

EUROPEAN PATENT OFFICE  
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 1237

DATE: MAY 1, 2022

PROJECT RP10460

**The following classification changes will be affected by this Notice of Changes:**

<u>Action</u>	<u>Subclass</u>	<u>Group(s)</u>
<b>SCHEME:</b>		
Symbols Deleted:	H04L	29/00, 29/02, 29/04, 29/06, 29/06006, 29/06013, 29/0602, 29/06027, 29/06034, 29/0604, 29/06047, 2029/06054, 29/06061, 29/06068, 29/06074, 29/06081, 29/06088, 29/06095, 29/06102, 29/06108, 29/06115, 29/06122, 29/06129, 29/06136, 29/06142, 29/06149, 29/06156, 29/06163, 29/0617, 29/06176, 29/06183, 29/0619, 29/06197, 29/06204, 29/0621, 29/06217, 29/06224, 29/06231, 29/06238, 29/06244, 29/06251, 29/06258, 29/06265, 29/06272, 29/06278, 29/06285, 29/06292, 29/06299, 29/06306, 29/06312, 29/06319, 29/06326, 29/06333, 29/0634, 29/06346, 29/06353, 29/0636, 29/06367, 29/06374, 29/0638, 29/06387, 29/06394, 29/06401, 29/06408, 29/06414, 29/06421, 29/06428, 29/06435, 29/06442, 29/06448, 29/06455, 29/06462, 29/06469, 29/06476, 29/06482, 29/06489, 29/06496, 29/06503, 29/0651, 29/06517, 29/06523, 29/0653, 29/06537, 29/06544, 29/06551, 29/06557, 29/06564, 29/06571, 29/06578, 29/06585, 29/06591, 29/06598, 29/06605, 29/06612, 29/06619, 29/06625, 29/06632, 29/06639, 29/06646, 29/06653, 29/06659, 29/06666, 29/06673, 29/0668, 29/06687, 29/06693, 29/067, 29/06707, 29/06714, 29/06721, 29/06727, 29/06734, 29/06741, 29/06748, 29/06755, 29/06761, 29/06768, 29/06775, 29/06782, 29/06789, 29/06795, 29/06802, 29/06809, 29/06816, 29/06823, 29/06829, 29/06836, 29/06843, 29/0685, 29/06857, 29/06863, 29/0687, 29/06877, 29/06884, 29/06891, 29/06897, 29/06904, 29/06911, 29/06918, 29/06925, 29/06931, 29/06938, 29/06945, 29/06952, 29/06959, 29/06965, 29/06972, 29/06979, 29/06986, 29/06993, 29/08, 29/08009, 29/08018, 29/08027, 29/08036, 29/08045, 29/08054, 29/08063, 29/08072, 29/08081, 29/0809, 29/08099, 29/08108, 29/08117, 29/08126, 29/08135, 29/08144, 29/08153, 29/08162, 29/08171, 29/0818, 29/08189, 29/08198, 29/08207, 29/08216, 29/08225, 29/08234, 29/08243, 29/08252, 29/08261, 29/0827, 29/08279, 29/08288, 29/08297, 29/08306, 29/08315, 29/08324, 29/08333, 29/08342, 29/08351, 29/0836, 29/08369, 29/08378, 29/08387, 29/08396, 29/08405, 29/08414, 29/08423, 29/08432, 29/08441, 29/0845, 29/08459, 29/08468, 29/08477, 29/08486, 29/08495, 29/08504, 29/08513, 29/08522, 29/08531, 29/0854, 29/08549, 29/08558, 29/08567, 29/08576, 29/08585, 29/08594, 29/08603, 29/08612, 29/08621, 29/0863, 29/08639, 29/08648, 29/08657, 29/08666, 29/08675, 29/08684, 29/08693, 29/08702, 29/08711, 29/0872, 29/08729, 29/08738, 29/08747, 29/08756, 29/08765, 29/08774, 29/08783, 29/08792, 29/08801, 29/0881, 29/08819, 29/08828, 29/08837, 29/08846, 29/08855, 29/08864, 29/08873, 29/08882, 29/08891, 29/089, 29/08909, 29/08918, 29/08927, 29/08936, 29/08945, 29/08954, 29/08963, 29/08972, 29/08981, 29/0899, 29/10, 29/12, 29/12009, 29/12018, 29/12028, 29/12037, 29/12047, 29/12056, 29/12066, 29/12075, 29/12084, 29/12094, 29/12103, 29/12113, 29/12122, 29/12132, 29/12141, 29/1215, 29/1216, 29/12169, 29/12179, 29/12188, 29/12198, 29/12207, 29/12216, 29/12226, 29/12235, 29/12245, 29/12254, 29/12264, 29/12273, 29/12283, 29/12292, 29/12301, 29/12311, 29/1232, 29/1233, 29/12339, 29/12349, 29/12358, 29/12367,

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<b>Action</b>	<b>Subclass</b>	<b>Group(s)</b>
		29/12377, 29/12386, 29/12396, 29/12405, 29/12415, 29/12424, 29/12433, 29/12443, 29/12452, 29/12462, 29/12471, 29/12481, 29/1249, 29/125, 29/12509, 29/12518, 29/12528, 29/12537, 29/12547, 29/12556, 29/12566, 29/12575, 29/12584, 29/12594, 29/12603, 29/12613, 29/12622, 29/12632, 29/12641, 29/1265, 29/1266, 29/12669, 29/12679, 29/12688, 29/12698, 29/12707, 29/12716, 29/12726, 29/12735, 29/12745, 29/12754, 29/12764, 29/12773, 29/12783, 29/12792, 29/12801, 29/12811, 29/1282, 29/1283, 29/12839, 29/12849, 29/12858, 29/12867, 29/12877, 29/12886, 29/12896, 29/12905, 29/12915, 29/12924, 29/12933, 29/12943, 29/12952, 29/12962, 29/12971, 29/12981, 29/1299, 29/14
	H04L	41/0206, 41/5035, 41/5038
	H04L	45/7457
	H04L	47/14
	H04L	51/12, 51/14, 51/16, 51/20, 51/22, 51/24, 51/26, 51/28, 51/30, 51/32, 51/34, 51/36, 51/38
	H04L	61/15, 61/1505, 61/1511, 61/1517, 61/1523, 61/1529, 61/1535, 61/1541, 61/1547, 61/1552, 61/1558, 61/1564, 61/157, 61/1576, 61/1582, 61/1588, 61/1594, 61/20, 61/2007, 61/2015, 61/2023, 61/203, 61/2038, 61/2046, 61/2053, 61/2061, 61/2069, 61/2076, 61/2084, 61/2092, 61/2507, 61/303, 61/3035, 61/304, 61/3045, 61/305, 61/3055, 61/306, 61/3065, 61/307, 61/3075, 61/308, 61/3085, 61/309, 61/3095, 61/60, 61/6004, 61/6009, 61/6013, 61/6018, 61/6022, 61/6027, 61/6031, 61/6036, 61/604, 61/6045, 61/605, 61/6054, 61/6059, 61/6063, 61/6068, 61/6072, 61/6077, 61/6081, 61/6086, 61/609, 61/6095
	H04L	65/1003, 65/1006, 65/1009, 65/105, 65/4007, 65/4023, 65/4069, 65/4076, 65/4084, 65/4092, 65/601, 65/602, 65/604, 65/605, 65/607, 65/608
	H04L	67/1002, 67/16, 67/18, 67/20, 67/22, 67/24, 67/26, 67/28, 67/2804, 67/2809, 67/2814, 67/2819, 67/2823, 67/2828, 67/2833, 67/2838, 67/2842, 67/2847, 67/2852, 67/2857, 67/2861, 67/32, 67/322, 67/325, 67/327, 67/36, 67/38, 67/40, 67/42
	H04L	2209/38
Symbols New:	H04L	9/40, 9/50
	H04L	41/045, 41/052, 41/0894, 41/0895, 41/0897, 41/122, 41/149, 41/34, 41/342, 41/344, 41/40
	H04L	43/091, 43/20, 43/55
	H04L	45/03, 45/033, 45/036, 45/037, 45/0377, 45/17, 45/243, 45/247, 45/484, 45/488, 45/645, 45/655, 45/7452, 45/7459, 45/74591, 45/76, 45/80, 45/85, 45/851
	H04L	47/129, 47/265, 47/267, 47/43, 47/431, 47/83
	H04L	49/111, 49/112, 49/113, 49/115, 49/116, 49/118, 49/9023
	H04L	51/07, 51/21, 51/212, 51/214, 51/216, 51/222, 51/224, 51/226, 51/23, 51/234, 51/42, 51/48, 51/52, 51/56, 51/58
	H04L	61/09, 61/45, 61/4505, 61/4511, 61/4517, 61/4523, 61/4535, 61/4541, 61/4547, 61/4552, 61/4553, 61/4555, 61/4557, 61/457, 61/4588, 61/4594, 61/50, 61/5007, 61/5014, 61/503, 61/5038, 61/5046, 61/5053, 61/5061, 61/5069, 61/5076, 61/5084, 61/5092, 61/58, 61/59

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	H04L	65/1045, 65/1055, 65/1094, 65/1095, 65/1101, 65/1104, 65/1106, 65/1108, 65/401, 65/402, 65/4025, 65/61, 65/611, 65/612, 65/613, 65/65, 65/70, 65/75, 65/752, 65/756, 65/762, 65/764, 65/765
	H04L	67/01, 67/1001, 67/10015, 67/131, 67/133, 67/1396, 67/2869, 67/50, 67/51, 67/52, 67/53, 67/535, 67/54, 67/55, 67/56, 67/561, 67/562, 67/563, 67/564, 67/565, 67/5651, 67/566, 67/567, 67/568, 67/5681, 67/5682, 67/5683, 67/59, 67/60, 67/61, 67/62, 67/63, 67/75
	H04L	69/085
	H04L	2101/00, 2101/30, 2101/32, 2101/33, 2101/345, 2101/35, 2101/355, 2101/365, 2101/37, 2101/375, 2101/38, 2101/385, 2101/39, 2101/395, 2101/60, 2101/604, 2101/618, 2101/622, 2101/627, 2101/631, 2101/636, 2101/64, 2101/645, 2101/65, 2101/654, 2101/659, 2101/663, 2101/668, 2101/672, 2101/677, 2101/681, 2101/686, 2101/69, 2101/695
Titles Changed:	H04L	SUBCLASS
	H04L	9/00
	H04L	12/54
	H04L	41/00, 41/02, 41/0213, 41/022, 41/0226, 41/0233, 41/024, 41/0246, 41/0253, 41/026, 41/0266, 41/0273, 41/028, 41/0286, 41/0293, 41/04, 41/042, 41/044, 41/046, 41/06, 41/0604, 41/0631, 41/0654, 41/0659, 41/0663, 41/0668, 41/0677, 41/0681, 41/0686, 41/069, 41/0695, 41/08, 41/0803, 41/0806, 41/0813, 41/0816, 41/082, 41/0823, 41/0826, 41/083, 41/0833, 41/084, 41/085, 41/0853, 41/0856, 41/0859, 41/0866, 41/0869, 41/0873, 41/0893, 41/0896, 41/12, 41/14, 41/142, 41/147, 41/16, 41/18, 41/22, 41/28, 41/50, 41/5003, 41/5006, 41/5009, 41/5019, 41/5022, 41/5025, 41/5029, 41/5041, 41/5051, 41/5054, 41/5058, 41/5061, 41/5064, 41/5067, 41/507, 41/5074, 41/5083, 41/5087, 41/509, 41/5093, 41/5096
	H04L	43/00, 43/02, 43/022, 43/024, 43/026, 43/028, 43/04, 43/045, 43/06, 43/062, 43/065, 43/067, 43/08, 43/0805, 43/0811, 43/0817, 43/0823, 43/0829, 43/0852, 43/0864, 43/087, 43/0876, 43/0882, 43/0888, 43/0894, 43/10, 43/103, 43/106, 43/12, 43/16, 43/18, 43/50
	H04L	45/00, 45/02, 45/021, 45/023, 45/028, 45/08, 45/10, 45/12, 45/121, 45/122, 45/125, 45/126, 45/128, 45/16, 45/18, 45/24, 45/28, 45/30, 45/302, 45/304, 45/306, 45/42, 45/44, 45/48, 45/50, 45/52, 45/563, 45/58, 45/586, 45/60, 45/64, 45/70, 45/74, 45/741, 45/742, 45/745, 45/7453, 45/748
	H04L	47/00, 47/10, 47/11, 47/12, 47/122, 47/125, 47/127, 47/17, 47/19, 47/193, 47/20, 47/21, 47/215, 47/22, 47/24, 47/2408, 47/2416, 47/2425, 47/2441, 47/2466, 47/2475, 47/2483, 47/2491, 47/25, 47/26, 47/263, 47/27, 47/28, 47/283, 47/29, 47/30, 47/31, 47/32, 47/326, 47/33, 47/34, 47/35, 47/36, 47/38, 47/40, 47/41, 47/50, 47/52, 47/525, 47/56, 47/60, 47/62, 47/6225, 47/623, 47/6235, 47/625, 47/6275, 47/628, 47/629, 47/6295, 47/70, 47/72, 47/722, 47/724, 47/726, 47/74, 47/76, 47/762, 47/765, 47/78, 47/781, 47/782, 47/783, 47/785, 47/80
	H04L	49/00, 49/10, 49/101, 49/102, 49/103, 49/104, 49/109, 49/15, 49/1515, 49/1546, 49/20, 49/201, 49/25, 49/253, 49/254, 49/35, 49/351, 49/354, 49/355, 49/356, 49/40, 49/45, 49/50, 49/505, 49/506, 49/55, 49/552, 49/60, 49/65, 49/90, 49/9005, 49/901, 49/9015, 49/9047, 49/9057

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	H04L	51/00, 51/02, 51/04, 51/043, 51/046, 51/06, 51/063, 51/066, 51/08, 51/10, 51/18
	H04L	61/00, 61/10, 61/103, 61/106, 61/25, 61/2503, 61/251, 61/2514, 61/2517, 61/2521, 61/2539, 61/2546, 61/255, 61/2553, 61/2557, 61/256, 61/2564, 61/2567, 61/2575, 61/2578, 61/2582, 61/2585, 61/2589, 61/2592, 61/2596, 61/30, 61/301, 61/3015, 61/302
	H04L	65/00, 65/10, 65/1016, 65/102, 65/1023, 65/1033, 65/1043, 65/1046, 65/1053, 65/1056, 65/1059, 65/1063, 65/1066, 65/1069, 65/1073, 65/1076, 65/1079, 65/1083, 65/1089, 65/1093, 65/1096, 65/40, 65/4015, 65/403, 65/4038, 65/4053, 65/4061, 65/60, 65/80
	H04L	67/00, 67/02, 67/025, 67/04, 67/06, 67/08, 67/10, 67/1004, 67/1006, 67/1008, 67/101, 67/1012, 67/1014, 67/1017, 67/1019, 67/1021, 67/1023, 67/1025, 67/1027, 67/1029, 67/1031, 67/1034, 67/1036, 67/1038, 67/104, 67/1042, 67/1044, 67/1048, 67/1061, 67/1074, 67/108, 67/1087, 67/1095, 67/1097, 67/12, 67/125, 67/14, 67/141, 67/142, 67/143, 67/145, 67/146, 67/147, 67/148, 67/2866, 67/2871, 67/2876, 67/288, 67/2885, 67/289, 67/2895, 67/30, 67/303, 67/306, 67/34
	H04L	69/00, 69/03, 69/04, 69/06, 69/08, 69/10, 69/12, 69/14, 69/16, 69/161, 69/163, 69/164, 69/165, 69/166, 69/167, 69/168, 69/169, 69/18, 69/22, 69/24, 69/28, 69/30, 69/32, 69/321, 69/322, 69/323, 69/324, 69/325, 69/326, 69/327, 69/328, 69/329, 69/40
Indents Changed:	H04L	41/0663, 41/0856, 41/0863, 41/5019, 41/5022, 41/5025
	H04L	45/04, 45/06, 45/08, 45/10, 45/302
	H04L	47/215, 47/266
	H04L	49/153, 49/1538, 49/9015, 49/9094
	H04L	51/08, 51/10, 51/18
	H04L	61/10, 61/103, 61/106, 61/25, 61/2503, 61/2521, 61/2525, 61/2528, 61/2532, 61/2535, 61/2539, 61/2542, 61/2546, 61/255, 61/2553, 61/2557, 61/256, 61/2564, 61/2567, 61/2571, 61/2575, 61/2578, 61/2582, 61/2585, 61/2589, 61/2592, 61/2596
	H04L	65/1016, 65/102, 65/1023, 65/1026, 65/103, 65/1033, 65/1036, 65/104, 65/1046, 65/1053, 65/1056, 65/1059, 65/1063, 65/1066, 65/1069, 65/1073, 65/1076, 65/1079, 65/1083, 65/1086, 65/1089, 65/1093, 65/1096
	H04L	67/02, 67/025, 67/04, 67/06, 67/08, 67/10, 67/1004, 67/1006, 67/1008, 67/101, 67/1012, 67/1014, 67/1017, 67/1019, 67/1021, 67/1023, 67/1025, 67/1027, 67/1029, 67/1031, 67/1034, 67/1036, 67/1038, 67/104, 67/1042, 67/1061, 67/1063, 67/1065, 67/1068, 67/107, 67/1072, 67/1074, 67/1076, 67/1078, 67/108, 67/1082, 67/1085, 67/1087, 67/1089, 67/1091, 67/1093, 67/1095, 67/1097, 67/12, 67/125, 67/2866, 67/2871, 67/2876, 67/288, 67/2885, 67/289, 67/2895, 67/30, 67/303, 67/306

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<b>Action</b>	<b>Subclass</b>	<b>Group(s)</b>
Warnings Deleted:	H04L	29/06027, 29/06176, 29/08072, 29/08702, 29/0872, 29/08729, 29/08792, 29/12009, 29/12018, 29/12028, 29/12037, 29/12047, 29/12056, 29/12066, 29/12075, 29/12084, 29/12094, 29/12103, 29/12113, 29/12122, 29/12132, 29/12141, 29/1215, 29/1216, 29/12169, 29/12179, 29/12188, 29/12198, 29/12207, 29/12216, 29/12226, 29/12235, 29/12245, 29/12254, 29/12264, 29/12273, 29/12283, 29/12292, 29/12301, 29/12311, 29/1232, 29/1233, 29/12339, 29/12349, 29/12358, 29/12367, 29/12377, 29/12386, 29/12396, 29/12405, 29/12415, 29/12424, 29/12433, 29/12443, 29/12452, 29/12462, 29/12481, 29/1249, 29/125, 29/12509, 29/12518, 29/12528, 29/12537, 29/12547, 29/12556, 29/12566, 29/12575, 29/12584, 29/12594, 29/12603, 29/12613, 29/12622, 29/12632, 29/12641, 29/1265, 29/1266, 29/12669, 29/12679, 29/12688, 29/12698, 29/12707, 29/12716, 29/12726, 29/12735, 29/12745, 29/12754, 29/12764, 29/12773, 29/12783, 29/12792, 29/12801, 29/12811, 29/1282, 29/1283, 29/12839, 29/12849, 29/12858, 29/12867, 29/12877, 29/12886, 29/12896, 29/12905, 29/12915, 29/12924, 29/12933, 29/12943, 29/12952, 29/12962, 29/12971, 29/12981, 29/1299
Warnings New:	H04L	9/40
	H04L	41/00, 41/04, 41/045, 41/052, 41/08, 41/0893, 41/0894, 41/0895, 41/0896, 41/0897, 41/12, 41/122, 41/14, 41/147, 41/149, 41/34, 41/40
	H04L	43/08, 43/20
	H04L	45/00, 45/02, 45/03, 45/033, 45/036, 45/17, 45/22, 45/243, 45/247, 45/48, 45/484, 45/488, 45/645, 45/745, 45/7452, 45/7459, 45/76, 45/80
	H04L	47/10, 47/12, 47/129, 47/26, 47/265, 47/267, 47/43, 47/70, 47/83
	H04L	49/10, 49/111, 49/112, 49/113, 49/90, 49/9023
	H04L	51/00, 51/07, 51/21
	H04L	61/09
	H04L	63/00
	H04L	65/1053, 65/1055, 65/1083, 65/1094, 65/1095, 65/1101, 65/1108, 65/40, 65/401, 65/402, 65/403, 65/4061, 65/60, 65/75, 65/752, 65/756
	H04L	67/01, 67/02, 67/04, 67/06, 67/08, 67/10, 67/1001, 67/10015, 67/1004, 67/1006, 67/1008, 67/101, 67/1012, 67/1014, 67/1017, 67/1019, 67/1021, 67/1023, 67/1025, 67/1027, 67/1029, 67/1031, 67/1034, 67/1036, 67/1038, 67/104, 67/1095, 67/1097, 67/12, 67/131, 67/133, 67/1396, 67/2866, 67/50
	H04L	69/08, 69/085, 69/32, 69/321, 69/322
Warnings Modified:	H04L	SUBCLASS
Notes Deleted:	H04L	29/06176, 29/08144, 29/08576, 29/12009
Notes New:	H04L	9/40
Notes Modified:	H04L	SUBCLASS
	H04L	12/4641
	H04T	2029/06
<b>DEFINITIONS:</b>		
Definitions Deleted:	H04L	29/00

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	H04L	41/0206, 41/5035, 41/5038
	H04L	65/1003, 65/1006, 65/1009, 65/105, 65/4007, 65/4023, 65/4069, 65/4076, 65/4084, 65/4092, 65/601, 65/602, 65/604, 65/605, 65/607, 65/608
	H04L	67/1002, 67/16, 67/18, 67/20, 67/22, 67/24, 67/28, 67/2804, 67/2809, 67/2814, 67/2819, 67/2823, 67/2828, 67/2833, 67/2838, 67/2842, 67/2861, 67/36, 67/38
Definitions New:	G06F	11/0727, 11/0793, 11/3034, 15/1735
	G06K	7/10297
	H04L	12/54, 12/1813, 12/1845
	H04L	41/045, 41/052, 41/0823, 41/0826, 41/0893, 41/0894, 41/0895, 41/0897, 41/122, 41/149, 41/34, 41/342, 41/344, 41/40
	H04L	43/091, 43/20, 43/55
	H04L	45/02, 45/021, 45/023, 45/025, 45/026, 45/028, 45/03, 45/033, 45/036, 45/037, 45/0377, 45/04, 45/06, 45/08, 45/10, 45/12, 45/121, 45/122, 45/123, 45/124, 45/125, 45/126, 45/127, 45/128, 45/1283, 45/1287, 45/14, 45/16, 45/17, 45/18, 45/20, 45/22, 45/24, 45/243, 45/245, 45/247, 45/26, 45/28, 45/30, 45/302, 45/304, 45/306, 45/3065, 45/308, 45/32, 45/34, 45/36, 45/38, 45/40, 45/42, 45/44, 45/46, 45/48, 45/484, 45/488, 45/50, 45/502, 45/505, 45/507, 45/52, 45/54, 45/56, 45/563, 45/566, 45/58, 45/583, 45/586, 45/60, 45/62, 45/64, 45/645, 45/655, 45/66, 45/68, 45/70, 45/72, 45/74, 45/741, 45/742, 45/745, 45/7452, 45/7453, 45/7459, 45/74591, 45/748, 45/76, 45/80, 45/85, 45/851
	H04L	47/10, 47/11, 47/115, 47/12, 47/122, 47/125, 47/127, 47/129, 47/13, 47/135, 47/15, 47/17, 47/18, 47/19, 47/193, 47/196, 47/20, 47/21, 47/215, 47/22, 47/225, 47/23, 47/24, 47/2408, 47/2416, 47/2425, 47/2433, 47/2441, 47/245, 47/2458, 47/2466, 47/2475, 47/2483, 47/2491, 47/25, 47/26, 47/263, 47/265, 47/266, 47/267, 47/27, 47/28, 47/283, 47/286, 47/29, 47/30, 47/31, 47/32, 47/323, 47/326, 47/33, 47/34, 47/35, 47/36, 47/365, 47/37, 47/38, 47/39, 47/40, 47/41, 47/43, 47/431, 47/50, 47/52, 47/521, 47/522, 47/524, 47/525, 47/527, 47/528, 47/54, 47/56, 47/562, 47/564, 47/566, 47/568, 47/58, 47/60, 47/62, 47/6205, 47/621, 47/6215, 47/622, 47/6235, 47/624, 47/6245, 47/625, 47/6255, 47/626, 47/6265, 47/627, 47/6275, 47/628, 47/6285, 47/629, 47/6295, 47/70, 47/72, 47/722, 47/724, 47/726, 47/728, 47/74, 47/741, 47/743, 47/745, 47/746, 47/748, 47/76, 47/762, 47/765, 47/767, 47/78, 47/781, 47/782, 47/783, 47/785, 47/786, 47/787, 47/788, 47/80, 47/801, 47/803, 47/805, 47/806, 47/808, 47/82, 47/821, 47/822, 47/823, 47/824, 47/825, 47/826, 47/827, 47/828, 47/829, 47/83
	H04L	49/10, 49/15, 49/20, 49/30, 49/35, 49/40, 49/45, 49/50, 49/55, 49/60, 49/65, 49/70, 49/90
	H04L	51/00, 51/02, 51/04, 51/043, 51/046, 51/06, 51/063, 51/066, 51/07, 51/08, 51/10, 51/18, 51/21, 51/212, 51/214, 51/216, 51/222, 51/224, 51/226, 51/23, 51/234, 51/42, 51/48, 51/52, 51/56, 51/58

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<u>Action</u>	<u>Subclass</u>	<u>Group(s)</u>
	H04L	61/09, 61/10, 61/103, 61/106, 61/25, 61/2503, 61/251, 61/2514, 61/2517, 61/2521, 61/2525, 61/2528, 61/2532, 61/2535, 61/2539, 61/2546, 61/255, 61/2553, 61/2557, 61/256, 61/2564, 61/2567, 61/2571, 61/2575, 61/2578, 61/2582, 61/2585, 61/2589, 61/2592, 61/2596, 61/30, 61/301, 61/302, 61/3025, 61/45, 61/4505, 61/4511, 61/4517, 61/4523, 61/4535, 61/4541, 61/4547, 61/4552, 61/4553, 61/4555, 61/4557, 61/4588, 61/4594, 61/50, 61/5007, 61/5014, 61/503, 61/5038, 61/5046, 61/5053, 61/5061, 61/5069, 61/5076, 61/5084, 61/5092, 61/58, 61/59
	H04L	65/1045, 65/1055, 65/1094, 65/1101, 65/1104, 65/1106, 65/1108, 65/401, 65/402, 65/4025, 65/61, 65/611, 65/612, 65/613, 65/65, 65/70, 65/75, 65/762, 65/764, 65/765
	H04L	67/01, 67/02, 67/025, 67/04, 67/06, 67/08, 67/1001, 67/131, 67/133, 67/1396, 67/2869, 67/30, 67/303, 67/306, 67/50, 67/51, 67/52, 67/53, 67/535, 67/54, 67/55, 67/56, 67/561, 67/562, 67/563, 67/564, 67/565, 67/5651, 67/566, 67/567, 67/568, 67/5681, 67/5682, 67/5683, 67/59, 67/60, 67/75
	H04M	3/5141, 3/566
	H04M	7/0039
	H04N	1/00228
Definitions Modified:	H04L	SUBCLASS
	H04L	9/00
	H04L	41/00, 41/022, 41/0226, 41/0246, 41/0253, 41/026, 41/0266, 41/0273, 41/028, 41/0286, 41/0293, 41/044, 41/046, 41/06, 41/0604, 41/0631, 41/0654, 41/0659, 41/0668, 41/0672, 41/0681, 41/0686, 41/08, 41/0806, 41/0896, 41/12, 41/14, 41/142, 41/145, 41/147, 41/20, 41/22, 41/24, 41/28, 41/30, 41/32, 41/50, 41/5003, 41/5025, 41/5029, 41/5054, 41/5058, 41/5064, 41/5067, 41/507, 41/5074, 41/5077, 41/5083, 41/5087, 41/509, 41/5093, 41/5096
	H04L	43/00, 43/024, 43/028, 43/04, 43/045, 43/065, 43/08, 43/0811, 43/0817, 43/0823, 43/10, 43/12, 43/18, 43/50
	H04L	45/00
	H04L	47/00
	H04L	49/00
	H04L	61/00
	H04L	65/00, 65/10, 65/1013, 65/1016, 65/102, 65/1043, 65/1053, 65/1059, 65/1063, 65/1066, 65/1069, 65/1073, 65/1076, 65/1079, 65/1083, 65/40, 65/4015, 65/403, 65/4038, 65/4061, 65/80
	H04L	67/00, 67/10, 67/1004, 67/1006, 67/1008, 67/1021, 67/1029, 67/1034, 67/1036, 67/104, 67/1044, 67/1048, 67/1061, 67/1068, 67/1074, 67/1095, 67/1097, 67/12, 67/125, 67/14, 67/141, 67/142, 67/146, 67/148, 67/2866, 67/34
	H04L	69/00, 69/03, 69/04, 69/08, 69/16, 69/161, 69/162, 69/164, 69/167, 69/168, 69/169, 69/18, 69/22, 69/24, 69/26, 69/325, 69/326, 69/327, 69/328, 69/329, 69/40

**The following subclasses/groups are also impacted by this Notice of Changes (indicate subclasses/groups outside of the project scope, such as those listed in the CRL):**

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A63B, A63F, B60R, B67D, D03D, G01C, G03H, G05B, G06F, G06K, G06N, G06Q, G07C, G08B, G08G, G09B, G09G, G11B, H03M, H04B, H04J, H04L12/00, H04L12/18, H04L12/1813, H04L12/1845, H04L12/2801, H04L12/2803, H04L12/2807, H04L12/2809, H04L12/281, H04L12/2812, H04L12/2814, H04L12/2818, H04L12/2821, H04L12/2825, H04L12/2832, H04L12/2836, H04L12/2856, H04L12/2863, H04L12/40104, H04L12/4604, H04L12/4633, H04L12/4641, H04L63/00, H04L63/0218, H04L63/0227, H04L63/0281, H04M, H04N, H04W

**This Notice of Changes includes the following** *[Check the ones included]:*

1. CLASSIFICATION SCHEME CHANGES

- A. New, Modified or Deleted Group(s)
- B. New, Modified or Deleted Warning(s)
- C. New, Modified or Deleted Note(s)
- D. New, Modified or Deleted Guidance Heading(s)

2. DEFINITIONS

- A. New or Modified Definitions (Full definition template)
- B. Modified or Deleted Definitions (Definitions Quick Fix)

- 3.  REVISION CONCORDANCE LIST (RCL)
- 4.  CHANGES TO THE CPC-TO-IPC CONCORDANCE LIST (CICL)
- 5.  CHANGES TO THE CROSS-REFERENCE LIST (CRL)

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1. CLASSIFICATION SCHEME CHANGES

A. New, Modified or Deleted Group(s)

**SUBCLASS H04L - TRANSMISSION OF DIGITAL INFORMATION, e.g. TELEGRAPHIC COMMUNICATION (arrangements common to telegraphic and telephonic communication H04M)**

<u>Type*</u>	<u>Symbol</u>	<u>Indent Level Number of dots (e.g. 0, 1, 2)</u>	<u>Title</u> “CPC only” text should normally be enclosed in {curly brackets}**	<u>Transferred to#</u>
M	H04L	subclass	TRANSMISSION OF DIGITAL INFORMATION, e.g. TELEGRAPHIC COMMUNICATION (arrangements common to telegraphic and telephonic communication H04M)	
M	H04L 9/00	0	{Cryptographic mechanisms or cryptographic } arrangements for secret or secure communications; Network security protocols	
U	H04L 9/38	1	Encryption being effected by mechanical apparatus, e.g. rotating cams, switches, keytape punchers	
Q	H04L 9/40	1	Network security protocols	H04L 9/40, H04L 61/09, H04L 63/00, H04L 65/60, H04L 65/61, H04L 65/611, H04L 65/612, H04L 65/613, H04L 65/65, H04L 65/70, H04L 65/75, H04L 65/752, H04L 65/756, H04L 67/01, H04L 67/1001, H04L 67/10015, H04L 67/131, H04L 67/133, H04L 67/1396, H04L 67/50
N	H04L 9/50	1	{using hash chains, e.g. blockchains or hash trees }	
M	H04L 12/54	1	Store-and-forward switching systems (packet switching systems H04L 45/00, H04L 47/00)	
D	H04L 29/00	0	Arrangements, apparatus, circuits or systems, not covered by a single one of groups H04L 1/00 - H04L 27/00	<Administrative transfer to H04L 69/00>
D	H04L 29/02	1	Communication control {(in satellite networks H04B 7/185)}; Communication processing (H04L 29/12, H04L 29/14 take precedence)	<Administrative transfer to H04L 65/00>
D	H04L 29/04	2	for plural communication lines	<Administrative transfer to H04L 69/14>

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D	H04L 29/06	2	characterised by a protocol	<Administrative transfer to H04L 9/40>
D	H04L 29/06006	3	{Protocol performance }	<Administrative transfer to H04L 69/02>
D	H04L 29/06013	3	{Protocol definition or specification (protocol conformance testing H04L 1/244)}	<Administrative transfer to H04L 69/03>
D	H04L 29/0602	3	{Protocols characterised by their application (H04L 29/08081 takes precedence)}	<Administrative transfer to H04L 67/00>
D	H04L 29/06027	4	{Protocols for multimedia communication }	<Administrative transfer to H04L 65/1101>
D	H04L 29/06034	4	{Protocols for telewriting; Protocols for networked simulations, virtual reality or games }	<Administrative transfer to H04L 67/131>
D	H04L 29/0604	4	{Protocols for data compression (compression in general H03M 7/30)}	<Administrative transfer to H04L 69/04>
D	H04L 29/06047	4	{Protocols for client-server architecture }	<Administrative transfer to H04L 67/00>
D	H04L 2029/06054	5	{Access to distributed or replicated servers, e.g. using brokers }	<Administrative transfer to H04L 67/10015>
D	H04L 29/06061	3	{Notations for structuring of protocol data, e.g. Abstract Syntax Notation One (ASN 1)}	<Administrative transfer to H04L 69/06>
D	H04L 29/06068	3	{Protocols for interworking or protocol conversion }	<Administrative transfer to H04L 69/08>
D	H04L 29/06074	3	{Streamlined, light-weight or high-speed protocols, e.g. express transfer protocol [XTP], byte stream}	<Administrative transfer to H04L 69/10>
D	H04L 29/06081	3	{Protocol engines, e.g. VLSIs, transputer}	<Administrative transfer to H04L 69/12>
D	H04L 29/06088	3	{Multichannel or multilink protocols }	<Administrative transfer to H04L 69/14>
D	H04L 29/06095	3	{Special adaptations or provisions of the transmission control protocol/internet protocol [TCP/IP] or the user datagram protocol [UDP] (flow control in data switching networks in general H04L 47/10; adapting video multiplex streams to a specific network H04N 21/2381; network layer protocol adaptations for supporting mobility, e.g. mobile IP H04W 80/04)}	<Administrative transfer to H04L 69/16>
D	H04L 29/06102	4	{Implementation details of TCP/IP or UDP/IP stack architecture; specification of modified or new header fields}	<Administrative transfer to H04L 69/161>

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			(protocols engines in general H04L 29/06081; OSI stack based layering aspects H04L 29/08009; protocol header analysis in general H04L 29/0653)}	
D	H04L 29/06108	5	{involving adaptations of sockets based mechanisms (secure socket layer H04L 29/06965)}	<Administrative transfer to H04L 69/162>
D	H04L 29/06115	4	{Adaptation of TCP data exchange control procedures (generic OSI layer 4 protocols, e.g. SCTP H04L 29/08045; TCP or UDP flow control procedures H04L 47/19; error control procedures in general H04L 1/18)}	<Administrative transfer to H04L 69/163>
D	H04L 29/06122	4	{Adaptation or special uses of UDP protocol}	<Administrative transfer to H04L 69/164>
D	H04L 29/06129	4	{involving combined use or selection criteria between TCP and UDP protocols (multi-protocol arrangements in general H04L 29/06163; multilink protocols in general H04L 29/06088)}	<Administrative transfer to H04L 69/165>
D	H04L 29/06136	4	{IP fragmentation or TCP segmentation aspects (evaluation of maximum transfer unit H04L 47/36; assembly or disassembly of packets in wireless networks H04W 28/065)}	<Administrative transfer to H04L 69/166>
D	H04L 29/06142	4	{Transitional provisions between IPv4 and IPv6 (address translation between IPv4 and IPv6 H04L 29/12358; involvement of different protocol versions in wireless network layer protocols, e.g. MIPv4 and MIPv6, H04W 80/045)}	<Administrative transfer to H04L 69/167>
D	H04L 29/06149	4	{Special adaptations of TCP, UDP or IP to match specific link layer protocols, e.g. ATM, SONET or PPP (IP over ATM H04Q 11/0478; special adaptation of TCP protocol for wireless media H04W 80/06)}	<Administrative transfer to H04L 69/168>
D	H04L 29/06156	4	{Special adaptations of TCP, UDP or IP for interworking of IP based networks with other networks (protocols for interworking in general H04L 29/06068)}	<Administrative transfer to H04L 69/169>
D	H04L 29/06163	3	{Multi-protocol handler, e.g. single device capable of handling multiple protocols}	<Administrative transfer to H04L 69/18>

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D	H04L 29/0617	3	{Protocols for remote procedure call}	<Administrative transfer to H04L 67/133>
D	H04L 29/06176	3	{Arrangements for real-time multimedia communications (data switching systems for broadcast or conference H04L 12/18; network applications in general H04L 29/08081; message switching systems H04L51/00; systems providing special services to telephonic subscribers H04M 3/42; interconnection arrangements between switching centres for working between exchanges having different types of switching equipment where the types of switching equipment comprise PSTN/ISDN equipment and equipment of networks other than PSTN/ISDN H04M 7/1205; television systems H04N 7/00)}	<Administrative transfer to H04L 65/00>
D	H04L 29/06183	4	{Signalling, control or architecture (data network management H04L 41/00; data network testing or monitoring H04L 43/00; selecting or control in telephonic networks H04Q 3/00)}	<Administrative transfer to H04L 65/1101>
D	H04L 29/0619	5	{Signalling or session protocols }	<Administrative transfer to H04L 65/1101>
D	H04L 29/06197	6	{SIP [Session Initiation Protocol]}	<Administrative transfer to H04L 65/1104>
D	H04L 29/06204	6	{H.323}	<Administrative transfer to H04L 65/1106>
D	H04L 29/0621	5	{Network architectures, gateways, control or user entities }	<Administrative transfer to H04L 65/1013>
D	H04L 29/06217	6	{IMS [IP multimedia subsystem] (wireless communication networks H04W)}	<Administrative transfer to H04L 65/1016>
D	H04L 29/06224	6	{Gateways (protocols for interworking or protocol conversion H04L 29/06068; interconnection between PSTN/ISDN networks and networks other than PSTN/ISDN H04M 7/1205; arrangements for connecting between networks having differing types of switching systems H04L 12/66)}	<Administrative transfer to H04L 65/102>
D	H04L 29/06231	7	{Media gateways }	<Administrative transfer to H04L 65/1023>

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D	H04L 29/06238	8	{at the edge}	<Administrative transfer to H04L 65/1026>
D	H04L 29/06244	8	{in the network}	<Administrative transfer to H04L 65/103>
D	H04L 29/06251	7	{Signalling gateways}	<Administrative transfer to H04L 65/1033>
D	H04L 29/06258	8	{at the edge}	<Administrative transfer to H04L 65/1036>
D	H04L 29/06265	8	{in the network}	<Administrative transfer to H04L 65/104>
D	H04L 29/06272	6	{MGC [media gateway control], MGCP or Megaco (decomposed PSTN/ISDN-IP gateways H04M 7/1255)}	<Administrative transfer to H04L 65/1043>
D	H04L 29/06278	6	{Call controllers; Call servers}	<Administrative transfer to H04L 65/1046>
D	H04L 29/06285	6	{Proxies, e.g. SIP proxies}	<Administrative transfer to H04L 65/1045>
D	H04L 29/06292	6	{Arrangements providing PBX functionality, e.g. IP PBX (circuit switched PBXs H04M 3/42314; PBX networks H04M 7/009)}	<Administrative transfer to H04L 65/1053>
D	H04L 29/06299	7	{for multi-site}	<Administrative transfer to H04L 65/1056>
D	H04L 29/06306	6	{End-user terminal functionality (substation equipment for use by subscribers H04M 1/00; terminal profiles H04L 29/08927; terminal emulation H04L 29/08126; adaptation for terminals with limited resources or for terminal portability H04L 29/08108)}	<Administrative transfer to H04L 65/1059>
D	H04L 29/06312	6	{Application servers (systems providing special services to telephonic subscribers H04M 3/42)}	<Administrative transfer to H04L 65/1063>
D	H04L 29/06319	5	{Session control}	<Administrative transfer to H04L 65/1066>
D	H04L 29/06326	6	{Setup (connection or session management in network applications H04L 29/08576; arrangements for peer-to-peer networking in network applications H04L 29/08306; negotiation of communication capabilities H04L 29/06537)}	<Administrative transfer to H04L 65/1069>
D	H04L 29/06333	6	{Registration (arrangements for addressing or naming in data networks H04L 29/12009)}	<Administrative transfer to H04L 65/1073>

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D	H04L 29/0634	6	{Screening (arrangements for screening incoming telephone calls H04M 3/436; arrangements for network security H04L 29/06551)}	<Administrative transfer to H04L 65/1076>
D	H04L 29/06346	7	{of unsolicited session attempts, e.g. SPIT [SPAM prevention in IP telephony] (message switching systems H04L 51/00)}	<Administrative transfer to H04L 65/1079>
D	H04L 29/06353	6	{In-session procedures}	<Administrative transfer to H04L 65/1083>
D	H04L 29/0636	7	{session scope modification}	<Administrative transfer to H04L 65/1086>
D	H04L 29/06367	8	{by adding or removing media}	<Administrative transfer to H04L 65/1089>
D	H04L 29/06374	8	{by adding or removing participants}	<Administrative transfer to H04L 65/1093>
D	H04L 29/0638	6	{Features, e.g. call-forwarding or call hold (systems providing special services to telephonic subscribers H04M 3/42)}	<Administrative transfer to H04L 65/1096>
D	H04L 29/06387	4	{Services or applications (systems providing special services to telephonic subscribers H04M 3/42; contact center services H04M 3/51; information services comprising voice H04M 3/487)}	<Administrative transfer to H04L 65/40>
D	H04L 29/06394	5	{Services involving a main real time session and one or more additional parallel sessions (multichannel or multilink protocols H04L 29/06088; services and arrangements where telephone services are combined with data services H04M 7/0024)}	<Administrative transfer to H04L 65/401>
D	H04L 29/06401	6	{where at least one of the additional parallel sessions is real time or time sensitive, e.g. white board sharing, collaboration, spawning of a subconference (telewriting, virtual reality or network gaming H04L 29/06034)}	<Administrative transfer to H04L 65/4015>
D	H04L 29/06408	6	{where none of the additional parallel sessions is real time or time sensitive, e.g. downloading a file in a parallel FTP session, initiating an email, combinational services (web-based applications H04L 29/0809; file transfer H04L 29/08117; message switching	<Administrative transfer to H04L 65/4025>

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			systems H04L 51/00; instant messaging H04L 51/04}}	
D	H04L 29/06414	5	{Arrangements for multiparty communication, e.g. conference (television conferencing systems H04N 7/15; telephonic conference systems H04M 3/56; data switching systems for broadcast or conference H04L 12/18)}	<Administrative transfer to H04L 65/403>
D	H04L 29/06421	6	{with central floor control}	<Administrative transfer to H04L 65/4038>
D	H04L 29/06428	6	{with distributed floor control}	<Administrative transfer to H04L 65/4046>
D	H04L 29/06435	6	{without floor control}	<Administrative transfer to H04L 65/4053>
D	H04L 29/06442	5	{"Push-to-X" services (Push-to-Talk services in wireless networks H04W 4/025)}	<Administrative transfer to H04L 65/4061>
D	H04L 29/06448	5	{Services related to one way streaming}	<Administrative transfer to H04L 65/61>
D	H04L 29/06455	6	{Multicast or broadcast (data switching systems for broadcast or conference H04L 12/18; television systems in general H04N 5/00, H04N 7/00; arrangements for broadcast or distribution combined with broadcast H04H 20/00; arrangements for broadcast applications with a direct linkage of broadcast information H04H 60/00; arrangements for push based network services H04L 29/08693)}	<Administrative transfer to H04L 65/611>
D	H04L 29/06462	6	{Content on demand (television systems using two way working H04N 7/173)}	<Administrative transfer to H04L 65/612>
D	H04L 29/06469	6	{Control of source by destination, e.g. user controlling streaming rate of server (television systems using two way working H04N 7/173)}	<Administrative transfer to H04L 65/613>
D	H04L 29/06476	4	{Media handling, encoding, streaming or conversion}	<Administrative transfer to H04L 65/60>

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D	H04L 29/06482	5	{Media manipulation, adaptation or conversion (transmission of television signals using pulse code modulation H04N 7/24; adaptation for terminals or networks with limited resources or for terminal portability H04L 29/08108; data reduction or adaptation H04L 29/08792; network application being adapted for the location of the user terminal H04L 29/08657)}	<Administrative transfer to H04L 65/75>
D	H04L 29/06489	6	{at the source}	<Administrative transfer to H04L 65/762>
D	H04L 29/06496	6	{at the destination}	<Administrative transfer to H04L 65/764>
D	H04L 29/06503	6	{intermediate}	<Administrative transfer to H04L 65/765>
D	H04L 29/0651	5	{Stream encoding details (transmission of television signals using pulse code modulation H04N 7/24; protocols for data compression H04L 29/0604; header parsing or analysis H04L 29/0653)}	<Administrative transfer to H04L 65/70>
D	H04L 29/06517	5	{Streaming protocols, e.g. RTP, RTCP}	<Administrative transfer to H04L 65/65>
D	H04L 29/06523	4	{Quality of Service (QoS) aspects (arrangements for scheduling or organising the servicing of requests whereby quality of service or priority requirements are taken into account H04L 29/08954; adaptation for terminals and/or networks with limited resources or for terminal portability H04L 29/08108; data reduction and/or adaptation H04L 29/08792; network application is adapted for the location of the user terminal H04L 29/08657)}	<Administrative transfer to H04L 65/80>
D	H04L 29/0653	3	{Header parsing and analysis}	<Administrative transfer to H04L 69/22>
D	H04L 29/06537	3	{Negotiation of communication capabilities}	<Administrative transfer to H04L 69/24>
D	H04L 29/06544	3	{Special purpose or proprietary protocols or architectures (H04L 29/08558 takes precedence)}	<Administrative transfer to H04L 69/26>

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D	H04L 29/06551	3	{Arrangements for network security (security arrangements for protecting computers or computer systems against unauthorised activity G06F 21/00; arrangements for secret or secure communication H04L 9/00; security arrangements specially adapted for wireless communication networks H04W 12/00)}	<Administrative transfer to H04L 63/00>
D	H04L 29/06557	4	{Separating internal and external traffic, e.g. firewalls }	<Administrative transfer to H04L 63/02>
D	H04L 29/06564	5	{Architectural arrangements, e.g. perimeter networks, demilitarized zones }	<Administrative transfer to H04L 63/0209>
D	H04L 29/06571	6	{Distributed architectures }	<Administrative transfer to H04L 63/0218>
D	H04L 29/06578	5	{Filtering policies }	<Administrative transfer to H04L 63/0227>
D	H04L 29/06585	6	{Filtering by address, protocol, port number or service, e.g. IP-address, URL }	<Administrative transfer to H04L 63/0236>
D	H04L 29/06591	6	{Filtering by information in the payload }	<Administrative transfer to H04L 63/0245>
D	H04L 29/06598	6	{Stateful filtering }	<Administrative transfer to H04L 63/0254>
D	H04L 29/06605	6	{Rule management }	<Administrative transfer to H04L 63/0263>
D	H04L 29/06612	5	{Virtual private networks }	<Administrative transfer to H04L 63/0272>
D	H04L 29/06619	5	{Proxies }	<Administrative transfer to H04L 63/0281>
D	H04L 29/06625	5	{Firewall traversal, e.g. tunnelling, creating pinholes }	<Administrative transfer to H04L 63/029>
D	H04L 29/06632	4	{Protecting information from access by third parties }	<Administrative transfer to H04L 63/04>
D	H04L 29/06639	5	{Protecting a party's identity, e.g. anonymous }	<Administrative transfer to H04L 63/0407>
D	H04L 29/06646	6	{during transmission, i.e. identity only known to the other party or parties involved in the communication }	<Administrative transfer to H04L 63/0414>
D	H04L 29/06653	6	{Anonymous communication, i.e. identity not known to any party at all }	<Administrative transfer to H04L 63/0421>
D	H04L 29/06659	5	{Protecting the content, e.g. encryption }	<Administrative transfer to H04L 63/0428>
D	H04L 29/06666	6	{using symmetric encryption, i.e. same key used for encryption and decryption }	<Administrative transfer to H04L 63/0435>

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D	H04L 29/06673	6	{using asymmetric encryption, i.e. different keys for encryption and decryption}	<Administrative transfer to H04L 63/0442>
D	H04L 29/0668	6	{using hybrid encryption, i.e. combination of symmetric and asymmetric encryption}	<Administrative transfer to H04L 63/045>
D	H04L 29/06687	6	{using dynamic encryption, e.g. stream encryption}	<Administrative transfer to H04L 63/0457>
D	H04L 29/06693	6	{Re-encryption }	<Administrative transfer to H04L 63/0464>
D	H04L 29/067	6	{Hardware and software architectures for enhanced packet encryption processing}	<Administrative transfer to H04L 63/0485>
D	H04L 29/06707	4	{Key management }	<Administrative transfer to H04L 63/06>
D	H04L 29/06714	5	{Key exchange, e.g. in peer-to-peer networks }	<Administrative transfer to H04L 63/061>
D	H04L 29/06721	5	{Key distribution, e.g. centrally by trusted party}	<Administrative transfer to H04L 63/062>
D	H04L 29/06727	6	{Hierarchical key distribution, e.g. by multi-tier trusted parties }	<Administrative transfer to H04L 63/064>
D	H04L 29/06734	5	{for group communications }	<Administrative transfer to H04L 63/065>
D	H04L 29/06741	5	{One-time keys }	<Administrative transfer to H04L 63/067>
D	H04L 29/06748	5	{Time-dependent keys, e.g. periodically changing keys }	<Administrative transfer to H04L 63/068>
D	H04L 29/06755	4	{Authentication mechanisms }	<Administrative transfer to H04L 63/08>
D	H04L 29/06761	5	{Tickets, e.g. Kerberos }	<Administrative transfer to H04L 63/0807>
D	H04L 29/06768	5	{Single-sign-on }	<Administrative transfer to H04L 63/0815>
D	H04L 29/06775	5	{Certificates }	<Administrative transfer to H04L 63/0823>
D	H04L 29/06782	5	{Passwords }	<Administrative transfer to H04L 63/083>
D	H04L 29/06789	6	{One-time-passwords }	<Administrative transfer to H04L 63/0838>
D	H04L 29/06795	6	{Time-dependent-passwords, e.g. periodically changing passwords }	<Administrative transfer to H04L 63/0846>
D	H04L 29/06802	5	{using an additional device, e.g. smartcard, SIM }	<Administrative transfer to H04L 63/0853>
D	H04L 29/06809	5	{using biometrical features, e.g. fingerprint, retina-scan }	<Administrative transfer to H04L 63/0861>

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D	H04L 29/06816	5	{Mutual authentication}	<Administrative transfer to H04L 63/0869>
D	H04L 29/06823	4	{Access control}	<Administrative transfer to H04L 63/10>
D	H04L 29/06829	5	{Access control lists [ACL]}	<Administrative transfer to H04L 63/101>
D	H04L 29/06836	5	{User profiles }	<Administrative transfer to H04L 63/102>
D	H04L 29/06843	5	{Grouping of users }	<Administrative transfer to H04L 63/104>
D	H04L 29/0685	5	{Multiple levels of security }	<Administrative transfer to H04L 63/105>
D	H04L 29/06857	4	{Verifying the information received }	<Administrative transfer to H04L 63/12>
D	H04L 29/06863	5	{Checking the content, e.g. message integrity }	<Administrative transfer to H04L 63/123>
D	H04L 29/0687	5	{Checking the source, e.g. non-repudiation }	<Administrative transfer to H04L 63/126>
D	H04L 29/06877	4	{Detection of malicious traffic; protection against malicious traffic }	<Administrative transfer to H04L 63/14>
D	H04L 29/06884	5	{Monitoring network traffic }	<Administrative transfer to H04L 63/1408>
D	H04L 29/06891	6	{Event detection }	<Administrative transfer to H04L 63/1416>
D	H04L 29/06897	6	{Traffic logging }	<Administrative transfer to H04L 63/1425>
D	H04L 29/06904	5	{Vulnerability analysis }	<Administrative transfer to H04L 63/1433>
D	H04L 29/06911	5	{Countermeasures against attacks }	<Administrative transfer to H04L 63/1441>
D	H04L 29/06918	6	{Viruses; Trojans; Worms }	<Administrative transfer to H04L 63/145>
D	H04L 29/06925	6	{Denial of Service }	<Administrative transfer to H04L 63/1458>
D	H04L 29/06931	6	{Session hijacking, e.g. TCP sequence number attacks }	<Administrative transfer to H04L 63/1466>
D	H04L 29/06938	6	{Session spying, e.g. eavesdropping }	<Administrative transfer to H04L 63/1475>
D	H04L 29/06945	4	{Security features implemented at a particular protocol layer }	<Administrative transfer to H04L 63/16>
D	H04L 29/06952	5	{at the data link layer, e.g. SILS, EAP }	<Administrative transfer to H04L 63/162>
D	H04L 29/06959	5	{at the network layer, e.g. IPSec AH, ESP }	<Administrative transfer to H04L 63/164>
D	H04L 29/06965	5	{at the transport layer, e.g. SSL, TLS }	<Administrative transfer to H04L 63/166>

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D	H04L 29/06972	5	{above the transport layer, e.g. https, JAVA }	<Administrative transfer to H04L 63/168>
D	H04L 29/06979	4	{using a different network or path for securing the traffic }	<Administrative transfer to H04L 63/18>
D	H04L 29/06986	4	{Security management; Security policies in general (filtering policies H04L 29/06578)}	<Administrative transfer to H04L 63/20>
D	H04L 29/06993	3	{Timer mechanisms used in protocols }	<Administrative transfer to H04L 69/28>
D	H04L 29/08	3	Transmission control procedure, e.g. data link level control procedure	<Administrative transfer to H04L 65/40>
D	H04L 29/08009	4	{Open systems interconnection [OSI] architecture, e.g. layering, entities, standards; Interface between layers; Software aspects }	<Administrative transfer to H04L 69/32>
D	H04L 29/08018	5	{Physical layer, i.e. layer one }	<Administrative transfer to H04L 69/323>
D	H04L 29/08027	5	{Data link layer, i.e. layer two, e.g. HDLC }	<Administrative transfer to H04L 69/324>
D	H04L 29/08036	5	{Network layer, i.e. layer three, e.g. X.25 }	<Administrative transfer to H04L 69/325>
D	H04L 29/08045	5	{Transport layer, i.e. layer four }	<Administrative transfer to H04L 69/326>
D	H04L 29/08054	5	{Session layer, i.e. layer five }	<Administrative transfer to H04L 69/327>
D	H04L 29/08063	5	{Presentation layer, i.e. layer six }	<Administrative transfer to H04L 69/328>
D	H04L 29/08072	5	{Application layer, i.e. layer seven (not used)}	<Administrative transfer to H04L 69/329>
D	H04L 29/08081	4	{Protocols for network applications (protocols for multimedia communication H04L 29/06027; protocols for telewriting H04L 29/06034; message switching systems H04L 51/00)}	<Administrative transfer to H04L 67/00>
D	H04L 29/0809	5	{involving the use of web-based technology, e.g. Hyper Text Transfer Protocol [HTTP], (information retrieval from the Internet G06F 16/95)}	<Administrative transfer to H04L 67/02>
D	H04L 29/08099	6	{for remote control or remote monitoring (network management using Internet technology H04L 41/0246; network monitoring H04L 43/00)}	<Administrative transfer to H04L 67/025>
D	H04L 29/08108	5	{adapted for terminals or networks with limited resources and for terminal portability, e.g. Wireless Application	<Administrative transfer to H04L 67/04>

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			Protocol [WAP] (services or facilities specially adapted for wireless communication networks H04W 4/00)}	
D	H04L 29/08117	5	{adapted for file transfer, e.g. File Transfer Protocol [FTP]}	<Administrative transfer to H04L 67/06>
D	H04L 29/08126	5	{adapted for terminal emulation, e.g. telnet (protocols for telewriting or protocols for networked simulations, virtual reality or games H04L 29/06034)}	<Administrative transfer to H04L 67/08>
D	H04L 29/08135	5	{in which application tasks are distributed across nodes in the network (multiprogramming arrangements G06F 9/46)}	<Administrative transfer to H04L 67/10>
D	H04L 29/08144	6	{Network arrangements or communication protocol arrangements for accessing one among a plurality of replicated servers, e.g. load balancing (rebalancing the processing load in a distributed system G06F 9/5083; arrangements for peer-to-peer networking H04L 29/08306; wireless network traffic load balancing H04W 28/08; network load balancing, traffic engineering H04L 47/125; video servers using load balancing strategies H04N 21/23103)}	<Administrative transfer to H04L 67/1001>
D	H04L 29/08153	7	{Server selection in load balancing (allocation of processing resources to service a request in a distributed system G06F 9/5027)}	<Administrative transfer to H04L 67/1004>
D	H04L 29/08162	8	{with static server selection, e.g. the same server being selected for a specific client (allocation of processing resources considering data affinity G06F 9/5033)}	<Administrative transfer to H04L 67/1006>
D	H04L 29/08171	8	{based on parameters of servers, e.g. available memory or workload (allocation of processing resources considering the load G06F 9/505)}	<Administrative transfer to H04L 67/1008>
D	H04L 29/0818	8	{based on network conditions}	<Administrative transfer to H04L 67/101>
D	H04L 29/08189	8	{based on compliance of requirements or conditions with available server resources}	<Administrative transfer to H04L 67/1012>
D	H04L 29/08198	8	{based on the content of a request}	<Administrative transfer to H04L 67/1014>

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D	H04L 29/08207	8	{based on round robin mechanisms }	<Administrative transfer to H04L 67/1017>
D	H04L 29/08216	8	{based on random server selection }	<Administrative transfer to H04L 67/1019>
D	H04L 29/08225	8	{based on locations of client and servers }	<Administrative transfer to H04L 67/1021>
D	H04L 29/08234	8	{based on other criteria, e.g., hash applied to IP address, specific algorithms or cost }	<Administrative transfer to H04L 67/1023>
D	H04L 29/08243	7	{Dynamic adaptation of server selection criteria for load balancing }	<Administrative transfer to H04L 67/1025>
D	H04L 29/08252	7	{Persistence of sessions during load balancing }	<Administrative transfer to H04L 67/1027>
D	H04L 29/08261	7	{Collection and organization of data related to the state of servers by a load balancer }	<Administrative transfer to H04L 67/1029>
D	H04L 29/0827	7	{Controlling of the operation of servers by a load balancer, e.g. adding or removing servers that serve requests }	<Administrative transfer to H04L 67/1031>
D	H04L 29/08279	7	{Reaction to server failures by a load balancer }	<Administrative transfer to H04L 67/1034>
D	H04L 29/08288	7	{Load balancing of requests to servers for services different from user content provisioning, e.g. load balancing to DNS servers or firewalls (internet service provider selection H04L 12/5691)}	<Administrative transfer to H04L 67/1036>
D	H04L 29/08297	7	{Load balancing arrangements to avoid a single path through a load balancer }	<Administrative transfer to H04L 67/1038>
D	H04L 29/08306	6	{Arrangements for peer-to-peer networking [P2P]; functionalities, architectural details or applications of P2P networks (provisions for file transfer, upload, download H04L 29/08117; provisions for accessing replicated servers H04L 29/08144; security provisions H04L 29/06551; addressing provisions H04L 29/12009; scheduling provisions H04L 29/08945; presence management provisions H04L 29/08684; multimedia provisions H04L 29/06176; information retrieval provisions, file indexing, file systems G06F 16/00; wireless interfaces between terminal devices H04W 92/18; small scale hierarchical wireless network topologies H04W 84/10; peer-	<Administrative transfer to H04L 67/104>

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			to-peer connection between video clients H04N 21/632; peer-to-peer connection between video game machines A 63F 13/34)}	
D	H04L 29/08315	7	{involving topology management mechanisms }	<Administrative transfer to H04L 67/1042>
D	H04L 29/08324	8	{Group management mechanisms }	<Administrative transfer to H04L 67/1044>
D	H04L 29/08333	9	{Joining mechanisms }	<Administrative transfer to H04L 67/1046>
D	H04L 29/08342	9	{Departure and maintenance mechanisms (counter-measures to a fault H04L 29/14)}	<Administrative transfer to H04L 67/1048>
D	H04L 29/08351	9	{Group master selection mechanisms }	<Administrative transfer to H04L 67/1051>
D	H04L 29/0836	9	{with pre-configuration of logical or physical connections with a determined number of other peers }	<Administrative transfer to H04L 67/1053>
D	H04L 29/08369	10	{involving connection limits (involving dynamic management of active down/uploading connections H04L 29/08495)}	<Administrative transfer to H04L 67/1055>
D	H04L 29/08378	10	{involving pre-assessment of levels of reputation of peers }	<Administrative transfer to H04L 67/1057>
D	H04L 29/08387	8	{Inter-group management mechanisms, e.g. splitting, merging or interconnection of groups }	<Administrative transfer to H04L 67/1059>
D	H04L 29/08396	7	{involving resource based peer discovery mechanisms (access to replicated servers H04L 29/08144; arrangements for service discovery H04L 29/08648; topology discovery for routing H04L 45/02)}	<Administrative transfer to H04L 67/1061>
D	H04L 29/08405	8	{Discovery through centralizing entities }	<Administrative transfer to H04L 67/1063>
D	H04L 29/08414	8	{Discovery involving distributed pre-established resource-based relationships among peers, e.g. based on DHTs (pre-configuration of logical or physical connections H04L 29/0836)}	<Administrative transfer to H04L 67/1065>
D	H04L 29/08423	8	{Discovery involving direct consultation/announcement among potential requesting and potential source peers }	<Administrative transfer to H04L 67/1068>
D	H04L 29/08432	9	{with limitation/expansion of the discovery scope}	<Administrative transfer to H04L 67/107>

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D	H04L 29/08441	8	{Discovery involving ranked list compilation of candidate peers }	<Administrative transfer to H04L 67/1072>
D	H04L 29/0845	7	{involving resource distribution mechanisms }	<Administrative transfer to H04L 67/1074>
D	H04L 29/08459	8	{Resource dissemination mechanisms and resource keeping policies for optimal resource availability in the overlay network }	<Administrative transfer to H04L 67/1076>
D	H04L 29/08468	8	{Resource delivery mechanisms }	<Administrative transfer to H04L 67/1078>
D	H04L 29/08477	9	{characterized by resources being split in blocks or fragments }	<Administrative transfer to H04L 67/108>
D	H04L 29/08486	9	{involving incentive schemes }	<Administrative transfer to H04L 67/1082>
D	H04L 29/08495	9	{involving dynamic management of active down/uploading connections }	<Administrative transfer to H04L 67/1085>
D	H04L 29/08504	7	{involving cross functional aspects }	<Administrative transfer to H04L 67/1087>
D	H04L 29/08513	8	{Hierarchical topologies }	<Administrative transfer to H04L 67/1089>
D	H04L 29/08522	8	{Interfacing with client/server systems and between P2P systems }	<Administrative transfer to H04L 67/1091>
D	H04L 29/08531	8	{Some peer nodes performing special functions }	<Administrative transfer to H04L 67/1093>
D	H04L 29/0854	6	{Arrangements for replication or mirroring of data, e.g. data synchronisation between network nodes and/or user terminals }	<Administrative transfer to H04L 67/1095>
D	H04L 29/08549	6	{Arrangements and networking functions for distributed storage of data in a network, e.g. Storage Area Networks [SAN], Network Attached Storage [NAS]}	<Administrative transfer to H04L 67/1097>
D	H04L 29/08558	5	{adapted for proprietary or special purpose networking environments, e.g. medical networks, sensor networks, networks in a car (home automation networks H04L 12/2803; total factory control characterised by the network communication G05B 19/4185; games involving transmission A 63F 13/30)}	<Administrative transfer to H04L 67/12>
D	H04L 29/08567	6	{involving the management of devices over a network (device management using web-based technology H04L 29/08099; network management H04L 41/00)}	<Administrative transfer to H04L 67/125>

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D	H04L 29/08576	5	{Arrangements for session management (real-time session management for multimedia connections H04L 29/06176; negotiation of communication capabilities H04L 29/06537; packet switching or routing H04L 12/56; connection management in wireless networks, e.g. connection set-up, manipulation or release H04W 76/00; session management for telephonic communication and services H04M 7/00; intertask communications in multiprogramming arrangements G06F9/54)}	<Administrative transfer to H04L 67/14>
D	H04L 29/08585	6	{provided for setup of an application session}	<Administrative transfer to H04L 67/141>
D	H04L 29/08594	6	{provided for managing session state for stateless protocols, e.g. HTTP; Signalling a session state; State transitions; Keeping-state mechanisms }	<Administrative transfer to H04L 67/142>
D	H04L 29/08603	6	{provided for session termination, e.g., event controlled end of session}	<Administrative transfer to H04L 67/143>
D	H04L 29/08612	7	{provided for avoiding end of session (e.g. keep-alive, heartbeats, resumption message, wake-up for inactive or interrupted session)}	<Administrative transfer to H04L 67/145>
D	H04L 29/08621	6	{markers provided for unambiguous identification of a particular session, e.g. session identifier, session cookie or URL-encoding (verifying the identity or authority of a user or a system, ID-based authentication H04L 9/32; ID-based key exchange H04L 9/08)}	<Administrative transfer to H04L 67/146>
D	H04L 29/0863	6	{provided for signalling methods or particular messages providing extensions to IETF, ITU, ETSI or 3GPP protocols, e.g. additional proprietary messages, standard messages enhanced by additional header fields or standard messages being used for purposes other than originally intended}	<Administrative transfer to H04L 67/147>
D	H04L 29/08639	6	{provided for migration or transfer of sessions}	<Administrative transfer to H04L 67/148>
D	H04L 29/08648	5	{Arrangements for service discovery, e.g. Service Location Protocol [SLP] (address allocation to terminals or	<Administrative transfer to H04L 67/51>

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			nodes connected to a network H04L 29/12009}}	
D	H04L 29/08657	5	{in which the network application is adapted for the location of the user terminal (services specially adapted for wireless communication networks making use of the location of users or terminals H04W 4/02)}	<Administrative transfer to H04L 67/52>
D	H04L 29/08666	5	{involving third party service providers (e-commerce G06Q 30/00)}	<Administrative transfer to H04L 67/53>
D	H04L 29/08675	5	{Arrangements for tracking the activity of the application user (monitoring arrangements in general H04L 43/00; e-commerce G06Q 30/00)}	<Administrative transfer to H04L 67/535>
D	H04L 29/08684	5	{Arrangements for presence management (instant messaging H04L 51/04)}	<Administrative transfer to H04L 67/54>
D	H04L 29/08693	5	{Arrangements for push based network services (broadcast and multicast push services H04L 12/1859)}	<Administrative transfer to H04L 67/55 >
D	H04L 29/08702	5	{involving intermediate processing or storage in the network, e.g. proxy (billing provisions H04L 12/14; multimedia network architectures, gateways and control entities H04L 29/0621; multimedia handling, encoding and conversion H04L 29/06476; security provisions H04L 29/06551; addressing provisions H04L 29/12009; network management provisions H04L 41/00; monitoring provisions H04L 43/00)}	<Administrative transfer to H04L 67/56>
D	H04L 29/08711	6	{Arrangements for adding application control or application functional data, e.g. adding metadata}	<Administrative transfer to H04L 67/561>
D	H04L 29/0872	6	{Arrangements for brokering (protocols for client-server architecture H04L 29/06047; negotiation of communication capabilities H04L 29/06537; e-commerce G06Q 30/00)}	<Administrative transfer to H04L 67/562>
D	H04L 29/08729	6	{Arrangements for intermediate storage, e.g. caching (browsing optimisation of access to content G06F 16/9574)}	<Administrative transfer to H04L 67/568>
D	H04L 29/08738	6	{Arrangements for data redirection (access network selection H04L 12/5691; load balancing H04L	<Administrative transfer to H04L 67/563>

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			29/08144; context based routing H04L 29/08972; addressing aspects H04L 29/12009; routing path selection H04L 45/00}}	
D	H04L 29/08747	6	{Arrangements for evaluation of intercepted application data aiming at enhancement of application control}	<Administrative transfer to H04L 67/564>
D	H04L 29/08756	6	{Arrangements for conversion or adaptation of application content or format (H04L 29/08783 takes precedence; protocol conversion H04L 29/06068)}	<Administrative transfer to H04L 67/565>
D	H04L 29/08765	6	{Arrangements for grouping or aggregating service requests, e.g. for unified processing of service requests}	<Administrative transfer to H04L67/566>
D	H04L 29/08774	6	{Arrangements for integrating service provisioning from a plurality of service providers}	<Administrative transfer to H04L67/567>
D	H04L 29/08783	6	{Arrangements for reducing the amount or size of exchanged application data (protocols for header compression H04L 29/0604; optimizing visualization of content G06F 16/9577; digital video compression H04N 19/00)}	<Administrative transfer to H04L 67/5651>
D	H04L 29/08792	6	{Arrangements for data reduction and/or adaptation (protocols for data compression H04L 29/0604; optimising the visualization of content G06F 16/9577; digital video signal compression H04N 19/00)}	<Administrative transfer to H04L 67/565 and H04L 67/5651 simultaneously>
D	H04L 29/08801	6	{Arrangements for storing temporarily data at an intermediate stage, e.g. caching (browsing optimization of access to content by caching G06F 16/9574)}	<Administrative transfer to H04L 67/568>
D	H04L 29/0881	7	{involving pre-fetching or pre-delivering data}	<Administrative transfer to H04L 67/5681>
D	H04L 29/08819	7	{involving policies or rules for updating, deleting or replacing the stored data}	<Administrative transfer to H04L 67/5682>
D	H04L 29/08828	7	{involving storage of data provided by user terminals, i.e. reverse caching}	<Administrative transfer to H04L 67/5683>
D	H04L 29/08837	6	{Arrangements for providing operational support to end devices when they are unavailable, e.g. being off-line; off-loading of end devices (counter-measures to a fault H04L 29/14)}	<Administrative transfer to H04L 67/59>

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D	H04L 29/08846	6	{Arrangements to globally emulate or virtualize the functionalities of an end device (H04L 29/08837 takes precedence)}	<Administrative transfer to H04L 67/59>
D	H04L 29/08855	6	{Architectural aspects }	<Administrative transfer to H04L 67/2866>
D	H04L 29/08864	7	{Implementation details of a single intermediate entity }	<Administrative transfer to H04L 67/2871>
D	H04L 29/08873	7	{Pairs of interprocessing entities at each side of the network, e.g. split proxies }	<Administrative transfer to H04L 67/2876>
D	H04L 29/08882	7	{Distributed intermediate devices, i.e. intermediate device interaction with other intermediate devices on the same level }	<Administrative transfer to H04L 67/288>
D	H04L 29/08891	7	{Hierarchically arranged intermediate devices, e.g. hierarchical caching }	<Administrative transfer to H04L 67/2885>
D	H04L 29/089	7	{where the intermediate processing is functionally located closer to the data consumer application, e.g. in same machine, in same home or in same subnetwork }	<Administrative transfer to H04L 67/289>
D	H04L 29/08909	7	{where the intermediate processing is functionally located closer to the data provider application, e.g. reverse proxies; in same machine, in same cluster or subnetwork }	<Administrative transfer to H04L 67/2895>
D	H04L 29/08918	5	{involving profiles }	<Administrative transfer to H04L 67/30>
D	H04L 29/08927	6	{Terminal profiles }	<Administrative transfer to H04L 67/303>
D	H04L 29/08936	6	{User profiles }	<Administrative transfer to H04L 67/306>
D	H04L 29/08945	5	{Arrangements for scheduling and organising the servicing of requests, e.g. requests for data transmissions involving the analysis and optimisation of the requires network resources (broadcast or conference with schedule organisation H04L 12/1881)}	<Administrative transfer to H04L 67/60>
D	H04L 29/08954	6	{whereby quality of service and priority requirements are taken into account }	<Administrative transfer to H04L 67/61>
D	H04L 29/08963	6	{whereby a time schedule is established for servicing the requests }	<Administrative transfer to H04L 67/62>
D	H04L 29/08972	6	{whereby the routing of a service request to a node providing the service depends on the content and context of }	<Administrative transfer to H04L 67/63>

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			the request, e.g. profile, connectivity status }	
D	H04L 29/08981	5	{involving the movement of software and/or configuration parameters, e.g. applets, (programme loading or initiating G06F 9/445)}	<Administrative transfer to H04L 67/34>
D	H04L 29/0899	5	{involving the display to the application user of network conditions affecting the network application (terminal emulation H04L 29/08126; graphical user interfaces for network management H04L 41/22)}	<Administrative transfer to H04L 67/75>
D	H04L 29/10	2	characterised by an interface, e.g. the interface between the data link level and the physical level	<Administrative transfer to H04L 69/32 >
D	H04L 29/12	1	characterised by the data terminal	<Administrative transfer to H04L 61/00 >
D	H04L 29/12009	2	{Arrangements for addressing and naming in data networks }	<Administrative transfer to H04L 61/00>
D	H04L 29/12018	3	{Mapping of addresses of different types; address resolution }	<Administrative transfer to H04L 61/10>
D	H04L 29/12028	4	{across network layers, e.g. resolution of network layer into physical layer addresses, Address Resolution Protocol [ARP]}	<Administrative transfer to H04L 61/103>
D	H04L 29/12037	4	{across networks, e.g. mapping telephone numbers to data network addresses }	<Administrative transfer to H04L 61/106>
D	H04L 29/12047	3	{Directories; name-to-address mapping (telephone directories in user terminals H04M 1/27)}	<Administrative transfer to H04L 61/45>
D	H04L 29/12056	4	{involving standard directories and standard directory access protocols }	<Administrative transfer to H04L 61/4505>
D	H04L 29/12066	5	{using Domain Name System [DNS]}	<Administrative transfer to H04L 61/4511>
D	H04L 29/12075	5	{using Open Systems Interconnection Directories, i.e. X.500}	<Administrative transfer to H04L 61/4517>
D	H04L 29/12084	5	{using Lightweight Directory Access Protocol [LDAP]}	<Administrative transfer to H04L 61/4523>
D	H04L 29/12094	5	{using Voice over IP [VoIP] directories, e.g. Session Initiation Protocol [SIP] registrar or H.323 gatekeeper }	<Administrative transfer to H04L 61/4535>
D	H04L 29/12103	4	{using an address exchange platform which sets up a session between two nodes, e.g. Rendezvous server (H04L	<Administrative transfer to H04L 61/4535>

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			29/12094 takes precedence for address exchange for Voice over IP)}	
D	H04L 29/12113	4	{for service discovery (network applications for service discovery H04L 29/08648)}	<Administrative transfer to H04L 61/4541>
D	H04L 29/12122	4	{for personal communications, i.e. using a personal identifier}	<Administrative transfer to H04L 61/4547>
D	H04L 29/12132	4	{Mechanisms for table lookup, also between directories; Directory data structures; Synchronization of directories (information retrieval in file systems G06F 16/10; information retrieval in structured data stores G06F 16/20)}	<Administrative transfer to H04L 61/4552>
D	H04L 29/12141	4	{Object oriented directories, e.g. CORBA name server}	<Administrative transfer to H04L 61/4553>
D	H04L 29/1215	4	{Directories for electronic mail or instant messaging (message switching systems <u>per se</u> H04L 51/00)}	<Administrative transfer to H04L 61/4555>
D	H04L 29/1216	4	{Directories for hybrid networks, e.g. including also telephone numbers}	<Administrative transfer to H04L 61/4557>
D	H04L 29/12169	4	{Metadirectories, i.e. all encompassing global directory which interfaces to various underlying directories}	<Administrative transfer to H04L 61/4552>
D	H04L 29/12179	4	{containing identifiers of data entities on a computer, e.g. file names}	<Administrative transfer to H04L 61/457>
D	H04L 29/12188	4	{containing mobile subscriber information, e.g. Home Subscriber Server [HSS]}	<Administrative transfer to H04L 61/4588>
D	H04L 29/12198	4	{Address books, i.e. directories containing contact information about correspondents, e.g. on a user device (directories providing the best way to reach a correspondent H04L 29/12122)}	<Administrative transfer to H04L 61/4594>
D	H04L 29/12207	3	{Address allocation}	<Administrative transfer to H04L 61/50>
D	H04L 29/12216	4	{Internet Protocol [IP] addresses}	<Administrative transfer to H04L 61/5007>
D	H04L 29/12226	5	{using the Dynamic Host Configuration Protocol [DHCP] or variants}	<Administrative transfer to H04L 61/5014>
D	H04L 29/12235	5	{using the Bootstrap Protocol [BOOTP] or variants}	<Administrative transfer to H04L 61/5014>
D	H04L 29/12245	5	{using an authentication, authorization and accounting [AAA] protocol, e.g. remote authentication dial-in user	<Administrative transfer to H04L 61/503>

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			service [RADIUS] or diameter (authentication mechanisms H04L 29/06755)}	
D	H04L 29/12254	4	{for local use, e.g. on Local Area Networks [LAN] or on Universal Serial Bus [USB] networks (bus addresses inside a computer G06F 13/42)}	<Administrative transfer to H04L 61/5038>
D	H04L 29/12264	4	{involving the solving of address allocation conflicts; involving testing of addresses}	<Administrative transfer to H04L 61/5046>
D	H04L 29/12273	4	{involving timing and renewal aspects}	<Administrative transfer to H04L 61/5053>
D	H04L 29/12283	4	{involving aspects of pools of addresses, e.g. assignment of different pools of addresses to different Dynamic Host Configuration Protocol [DHCP] servers}	<Administrative transfer to H04L 61/5061>
D	H04L 29/12292	4	{for group-, multicast- and broadcast-communication}	<Administrative transfer to H04L 61/5069>
D	H04L 29/12301	4	{involving update or notification mechanisms, e.g. update of a Domain Name Server with Dynamic Host Configuration Protocol [DHCP] assigned addresses}	<Administrative transfer to H04L 61/5076>
D	H04L 29/12311	4	{involving portability aspects (mobility data transfer in wireless communication networks H04W 8/26; mobile IP, network layer protocols in wireless communication networks H04W 80/04)}	<Administrative transfer to H04L 61/5084>
D	H04L 29/1232	4	{by self assignment, e.g. pick address randomly and test if already in use}	<Administrative transfer to H04L 61/5092>
D	H04L 29/1233	3	{Mapping of addresses of the same type; Address translation}	<Administrative transfer to H04L 61/25>
D	H04L 29/12339	4	{Internet Protocol [IP] address translation}	<Administrative transfer to H04L 61/2503>
D	H04L 29/12349	5	{Translating between special types of IP addresses}	<Administrative transfer to H04L 61/2503>
D	H04L 29/12358	6	{between different IP versions}	<Administrative transfer to H04L 61/251>
D	H04L 29/12367	6	{between local and global IP addresses}	<Administrative transfer to H04L 61/2514>
D	H04L 29/12377	6	{involving port numbers}	<Administrative transfer to H04L 61/2517>

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D	H04L 29/12386	5	{Special translation architecture, different from a single Network Address Translation [NAT] server}	<Administrative transfer to H04L 61/2521>
D	H04L 29/12396	6	{Translation at a client }	<Administrative transfer to H04L 61/2525>
D	H04L 29/12405	6	{Translation at a proxy }	<Administrative transfer to H04L 61/2528>
D	H04L 29/12415	6	{Clique of NAT servers }	<Administrative transfer to H04L 61/2532>
D	H04L 29/12424	6	{Multiple local networks, e.g. resolving potential IP address conflicts }	<Administrative transfer to H04L 61/2535>
D	H04L 29/12433	5	{for hiding addresses or keeping them anonymous }	<Administrative transfer to H04L 61/2539>
D	H04L 29/12443	5	{involving dual-stack hosts }	<Administrative transfer to H04L 61/2542>
D	H04L 29/12452	5	{Mechanisms for avoiding unnecessary translation }	<Administrative transfer to H04L 61/2546>
D	H04L 29/12462	5	{Map-table maintenance and indexing }	<Administrative transfer to H04L 61/255>
D	H04L 29/12471	6	{Binding renewal aspects; Keep-alive messages }	<Administrative transfer to H04L 61/2553>
D	H04L 29/12481	5	{Translation policies and rules }	<Administrative transfer to H04L 61/2557>
D	H04L 29/1249	5	{NAT-Traversal}	<Administrative transfer to H04L 61/256>
D	H04L 29/125	6	{for a higher-layer protocol, e.g. for SIP}	<Administrative transfer to H04L 61/2564>
D	H04L 29/12509	6	{for reachability, e.g. inquiring the address of a correspondent behind a NAT server }	<Administrative transfer to H04L 61/2567>
D	H04L 29/12518	6	{for identification, e.g. for authentication, for billing }	<Administrative transfer to H04L 61/2571>
D	H04L 29/12528	6	{using address mapping retrieval, e.g. Simple Traversal of UDP through NATs [STUN]}	<Administrative transfer to H04L 61/2575>
D	H04L 29/12537	6	{transparent to the NAT server }	<Administrative transfer to H04L 61/2578>
D	H04L 29/12547	6	{through control of the NAT server, e.g. using Universal Plug and Play (UPnP)}	<Administrative transfer to H04L 61/2582>
D	H04L 29/12556	6	{through Application Level Gateway [ALG]}	<Administrative transfer to H04L 61/2585>
D	H04L 29/12566	6	{over a relay server, e.g. traversal using relay NAT [TURN]}	<Administrative transfer to H04L 61/2589>

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D	H04L 29/12575	5	{involving tunneling or encapsulation (protecting information from access by third parties H04L 29/06632)}	<Administrative transfer to H04L 61/2592>
D	H04L 29/12584	4	{Non-IP address translation}	<Administrative transfer to H04L 61/2596>
D	H04L 29/12594	3	{Arrangements for managing names, e.g. use of aliases or nicknames (retrieval from the Internet by using information identifiers, e.g. URLs G06F 16/955; name-to-address mapping H04L 29/12047)}	<Administrative transfer to H04L 61/30>
D	H04L 29/12603	4	{Mechanisms for avoiding name conflicts }	<Administrative transfer to H04L 61/3005>
D	H04L 29/12613	4	{Name conversion}	<Administrative transfer to H04L 61/301>
D	H04L 29/12622	4	{Name registration, generation or assignment}	<Administrative transfer to H04L 61/3015>
D	H04L 29/12632	5	{Administrative registration, e.g. for domain names at internet corporation for assigned names and numbers [ICANN] (data processing for administration G06Q 10/00)}	<Administrative transfer to H04L 61/302>
D	H04L 29/12641	5	{Domain name generation or assignment}	<Administrative transfer to H04L 61/3025>
D	H04L 29/1265	4	{Name structure }	<Administrative transfer to H04L 2101/30>
D	H04L 29/1266	5	{containing non-Latin characters, e.g. Chinese domain names }	<Administrative transfer to H04L 2101/32>
D	H04L 29/12669	5	{containing protocol addresses or telephone numbers (address type involved H04L 29/1283)}	<Administrative transfer to H04L 2101/33>
D	H04L 29/12679	5	{containing wildcard characters }	<Administrative transfer to H04L 2101/345>
D	H04L 29/12688	5	{containing special prefixes }	<Administrative transfer to H04L 2101/35>
D	H04L 29/12698	5	{containing special suffixes }	<Administrative transfer to H04L 2101/355>
D	H04L 29/12707	4	{Name types }	<Administrative transfer to H04L 2101/30>
D	H04L 29/12716	5	{Application layer names, e.g. buddy name, unstructured name chosen by a user or home appliance name }	<Administrative transfer to H04L 2101/365>
D	H04L 29/12726	5	{E-mail addresses (message switching systems H04L 51/00)}	<Administrative transfer to H04L 2101/37>
D	H04L 29/12735	5	{Access point names [APN], i.e. name of a gateway GPRS support node }	<Administrative transfer to H04L 2101/375>

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			[GGSN] connecting a mobile user to a packet data network [PDN]	
D	H04L 29/12745	5	{Telephone URI}	<Administrative transfer to H04L 2101/38>
D	H04L 29/12754	5	{Session initiation protocol [SIP] URI}	<Administrative transfer to H04L 2101/385>
D	H04L 29/12764	5	{Globally routable user-agent URI [GRUU] for SIP}	<Administrative transfer to H04L 2101/39>
D	H04L 29/12773	5	{IP multimedia private identity [IMPI] or IP multimedia public identity [IMPU]}	<Administrative transfer to H04L 2101/395>
D	H04L 29/12783	3	{involving non-standard use of addresses for implementing network functionalities, e.g. coding subscription information within the address, functional addressing, i.e. assigning an address to a function}	<Administrative transfer to H04L 61/35>
D	H04L 29/12792	3	{Details}	<Administrative transfer to H04L 2101/60>
D	H04L 29/12801	4	{about the structures and formats of addresses}	<Administrative transfer to H04L 2101/604>
D	H04L 29/12811	4	{Caching of addresses}	<Administrative transfer to H04L 61/58>
D	H04L 29/1282	4	{Proxying of addresses}	<Administrative transfer to H04L 61/59>
D	H04L 29/1283	4	{about address types}	<Administrative transfer to H04L 2101/618>
D	H04L 29/12839	5	{Layer 2 addresses, e.g. Medium Access Control [MAC] addresses}	<Administrative transfer to H04L 2101/622>
D	H04L 29/12849	5	{Control Area Network [CAN] identifiers (vehicle networks B60R 16/0315)}	<Administrative transfer to H04L 2101/627>
D	H04L 29/12858	5	{Small Computer System Interface [SCSI] addresses}	<Administrative transfer to H04L 2101/631>
D	H04L 29/12867	5	{IEEE1394 (FireWire) identification numbers}	<Administrative transfer to H04L 2101/636>
D	H04L 29/12877	5	{Asynchronous Transfer Mode [ATM] addresses}	<Administrative transfer to H04L 2101/64>
D	H04L 29/12886	5	{Fibre channel identifiers}	<Administrative transfer to H04L 2101/645>
D	H04L 29/12896	5	{Telephone numbers}	<Administrative transfer to H04L 2101/65>
D	H04L 29/12905	5	{International Mobile Subscriber Identity [IMSI] numbers}	<Administrative transfer to H04L 2101/654>
D	H04L 29/12915	5	{Internet Protocol version 6 (IPv6) addresses}	<Administrative transfer to H04L 2101/659>

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D	H04L 29/12924	5	{Transport layer addresses, e.g. aspects of Transmission Control Protocol [TCP] or User Datagram Protocol [UDP] ports }	<Administrative transfer to H04L 2101/663>
D	H04L 29/12933	4	{IP addresses subnets }	<Administrative transfer to H04L 2101/668>
D	H04L 29/12943	4	{Short addresses }	<Administrative transfer to H04L 2101/672>
D	H04L 29/12952	4	{Multiple interfaces, e.g. multihomed nodes }	<Administrative transfer to H04L 2101/677>
D	H04L 29/12962	4	{involving addresses for wireless personal area networks and wireless sensor networks, e.g. Zigbee addresses }	<Administrative transfer to H04L 2101/681>
D	H04L 29/12971	4	{involving dual-stack hosts, e.g. in IPv4/IPv6 networks }	<Administrative transfer to H04L 2101/686>
D	H04L 29/12981	4	{involving geographic information, e.g. room number }	<Administrative transfer to H04L 2101/69>
D	H04L 29/1299	4	{involving masks or ranges of addresses }	<Administrative transfer to H04L 2101/695>
D	H04L 29/14	1	Counter-measures to a fault	<Administrative transfer to H04L 69/40>
C	H04L 41/00	0	Arrangements for maintenance, administration or management of data switching networks, e.g. of packet switching networks	H04L 41/00, H04L 41/34, H04L 41/342, H04L 41/344, H04L 41/40
M	H04L 41/02	1	Standardisation; Integration	
D	H04L 41/0206	2	{using standardized network management architectures, e.g. telecommunication management network [TMN] or unified network management architecture [UNMA]}	<Administrative transfer to H04L 41/052>
M	H04L 41/0213	2	Standardised network management protocols, e.g. simple network management protocol [SNMP]	
M	H04L 41/022	2	Multivendor or multi-standard integration	
M	H04L 41/0226	2	Mapping or translating multiple network management protocols	
M	H04L 41/0233	2	Object-oriented techniques, for representation of network management data, e.g. common object request broker architecture [CORBA]	

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M	H04L 41/024	2	{using relational databases for representation of network management data, e.g. managing via structured query language [SQL]}	
M	H04L 41/0246	2	Exchanging or transporting network management information using the Internet; Embedding network management web servers in network elements; Web-services-based protocols	
M	H04L 41/0253	3	using browsers or web-pages for accessing management information	
M	H04L 41/026	3	using e-messaging for transporting management information, e.g. email, instant messaging or chat	
M	H04L 41/0266	3	using meta-data, objects or commands for formatting management information, e.g. using eXtensible markup language [XML]	
M	H04L 41/0273	3	using web services for network management, e.g. simple object access protocol [SOAP]	
M	H04L 41/028	4	{for synchronisation between service call and response}	
M	H04L 41/0286	4	{for search or classification or discovery of web services providing management functionalities}	
M	H04L 41/0293	4	{for accessing web services by means of a binding identification of the management service or element}	
C	H04L 41/04	1	Network management architectures or arrangements	H04L 41/04, H04L 41/045, H04L 41/052, H04L 41/34, H04L 41/342, H04L 41/344
M	H04L 41/042	2	comprising distributed management centres cooperatively managing the network	
M	H04L 41/044	2	comprising hierarchical management structures	
N	H04L 41/045	2	comprising client-server management architectures	
M	H04L 41/046	2	comprising network management agents or mobile agents therefor	
U	H04L 41/048	3	{mobile agents}	

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N	H04L 41/052	2	using standardised network management architectures, e.g. telecommunication management network [TMN] or unified network management architecture [UNMA]	
M	H04L 41/06	1	Management of faults, events, alarms or notifications	
M	H04L 41/0604	2	using filtering, e.g. reduction of information by using priority, element types, position or time	
M	H04L 41/0631	2	using root cause analysis; using analysis of correlation between notifications, alarms or events based on decision criteria, e.g. hierarchy, tree or time analysis	
M	H04L 41/0654	2	using network fault recovery (ring fault isolation or reconfiguration in loop networks without recovery actions by a network management system H04L 12/437)	
M	H04L 41/0659	3	by isolating or reconfiguring faulty entities	
M	H04L 41/0663	3	Performing the actions predefined by failover planning, e.g. switching to standby network elements	
M	H04L 41/0668	3	by dynamic selection of recovery network elements, e.g. replacement by the most appropriate element after failure	
M	H04L 41/0677	2	Localisation of faults	
M	H04L 41/0681	2	Configuration of triggering conditions	
M	H04L 41/0686	2	Additional information in the notification, e.g. enhancement of specific meta-data	
M	H04L 41/069	2	using logs of notifications; Post-processing of notifications	
M	H04L 41/0695	2	the faulty arrangement being the maintenance, administration or management system	
C	H04L 41/08	1	Configuration management of networks or network elements (address allocation H04L 61/50)	H04L 41/08, H04L 41/0895
M	H04L 41/0803	2	Configuration setting	
M	H04L 41/0806	3	for initial configuration or provisioning, e.g. plug-and-play	

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M	H04L 41/0813	3	characterised by the conditions triggering a change of settings	
M	H04L 41/0816	4	the condition being an adaptation, e.g. in response to network events	
M	H04L 41/082	4	the condition being updates or upgrades of network functionality	
M	H04L 41/0823	3	characterised by the purposes of a change of settings, e.g. optimising configuration for enhancing reliability (for optimising operational conditions of wireless networks H04W 24/02)	
M	H04L 41/0826	4	for reduction of network costs (H04L 41/0833 takes precedence)	
M	H04L 41/083	4	for increasing network speed	
M	H04L 41/0833	4	for reduction of network energy consumption	
M	H04L 41/084	3	Configuration by using pre-existing information, e.g. using templates or copying from other elements	
M	H04L 41/085	2	Retrieval of network configuration; Tracking network configuration history	
M	H04L 41/0853	3	by actively collecting configuration information or by backing up configuration information	
M	H04L 41/0856	4	{by backing up or archiving configuration information}	
M	H04L 41/0859	3	by keeping history of different configuration generations or by rolling back to previous configuration versions	
M	H04L 41/0863	4	{by rolling back to previous configuration versions}	
M	H04L 41/0866	2	Checking the configuration	
M	H04L 41/0869	3	Validating the configuration within one network element	
M	H04L 41/0873	3	Checking configuration conflicts between network elements	
C	H04L 41/0893	2	Assignment of logical groups to network elements	H04L 41/0893, H04L 41/0894
N	H04L 41/0894	2	Policy-based network configuration management	
N	H04L 41/0895	2	Configuration of virtualised networks or elements, e.g. virtualised network function or OpenFlow elements	

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C	H04L 41/0896	2	Bandwidth or capacity management, i.e. automatically increasing or decreasing capacities (flow or congestion control using dynamic resource allocation, e.g. in-call renegotiation, H04L 47/76)	H04L 41/0896, H04L 41/0897
N	H04L 41/0897	3	by horizontal or vertical scaling of resources, or by migrating entities, e.g. virtual resources or entities	
C	H04L 41/12	1	Discovery or management of network topologies	H04L 41/12, H04L 41/122, H04L 41/34, H04L 41/342, H04L 41/344, H04L 41/40
N	H04L 41/122	2	of virtualised topologies, e.g. software-defined networks [SDN] or network function virtualisation [NFV]	
C	H04L 41/14	1	Network analysis or design	H04L 41/14, H04L 41/149
M	H04L 41/142	2	using statistical or mathematical methods	
C	H04L 41/147	2	for predicting network behaviour	H04L 41/147, H04L 41/149
N	H04L 41/149	2	for prediction of maintenance	
M	H04L 41/16	1	using machine learning or artificial intelligence	
M	H04L 41/18	1	Delegation of network management function, e.g. customer network management [CNM]	
M	H04L 41/22	1	comprising specially adapted graphical user interfaces [GUI]	
M	H04L 41/28	1	Restricting access to network management systems or functions, e.g. using authorisation function to access network configuration	
U	H04L 41/30	1	{Decision processes by autonomous network management units using voting and bidding}	
U	H04L 41/32	1	{Specific management aspects for broadband networks }	
N	H04L 41/34	1	Signalling channels for network management communication	
N	H04L 41/342	2	between virtual entities, e.g. orchestrators, SDN or NFV entities	
N	H04L 41/344	2	Out-of-band transfers	

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N	H04L 41/40	1	using virtualisation of network functions or resources, e.g. SDN or NFV entities	
M	H04L 41/50	1	Network service management, e.g. ensuring proper service fulfilment according to agreements	
M	H04L 41/5003	2	Managing SLA; Interaction between SLA and QoS	
M	H04L 41/5006	3	Creating or negotiating SLA contracts, guarantees or penalties	
M	H04L 41/5009	3	Determining service level performance parameters or violations of service level contracts, e.g. violations of agreed response time or mean time between failures [MTBF]	
U	H04L 41/5016	5	{based on statistics of service availability, e.g. in percentage or over a given time }	
M	H04L 41/5019	3	Ensuring fulfilment of SLA	
M	H04L 41/5022	4	by giving priorities, e.g. assigning classes of service	
M	H04L 41/5025	4	by proactively reacting to service quality change, e.g. by reconfiguration after service quality degradation or upgrade	
M	H04L 41/5029	2	{Service quality level-based billing, e.g. dependent on measured service level customer is charged more or less }	
D	H04L 41/5035	2	{Measuring contribution of individual network components to actual service level (alarm or event correlation H04L 41/0631)}	<Administrative transfer to H04L 43/091>
D	H04L 41/5038	2	{Testing of service level quality, e.g. simulating service usage }	<Administrative transfer to H04L 43/55>
M	H04L 41/5041	2	characterised by the time relationship between creation and deployment of a service	
M	H04L 41/5051	3	Service on demand, e.g. definition and deployment of services in real time	
M	H04L 41/5054	3	Automatic deployment of services triggered by the service manager, e.g. service implementation by automatic configuration of network components	
M	H04L 41/5058	2	{Service discovery by the service manager }	

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M	H04L 41/5061	2	characterised by the interaction between service providers and their network customers, e.g. customer relationship management	
M	H04L 41/5064	3	{Customer relationship management }	
M	H04L 41/5067	3	Customer-centric QoS measurements	
M	H04L 41/507	3	Filtering out customers affected by service problems	
M	H04L 41/5074	3	Handling of user complaints or trouble tickets	
M	H04L 41/5083	3	{ wherein the managed service relates to web hosting }	
M	H04L 41/5087	3	{ wherein the managed service relates to voice services (management of VoIP services H04M 7/0081) }	
M	H04L 41/509	3	{ wherein the managed service relates to media content delivery, e.g. audio, video or TV }	
M	H04L 41/5093	3	{ wherein the managed service relates to messaging or chat services }	
M	H04L 41/5096	3	{ wherein the managed service relates to distributed or central networked applications }	
M	H04L 43/00	0	Arrangements for monitoring or testing data switching networks	
M	H04L 43/02	1	Capturing of monitoring data	
M	H04L 43/022	2	by sampling	
M	H04L 43/024	3	by adaptive sampling	
M	H04L 43/026	2	using flow identification	
M	H04L 43/028	2	by filtering	
M	H04L 43/04	1	Processing captured monitoring data, e.g. for logfile generation	
M	H04L 43/045	2	for graphical visualisation of monitoring data	
M	H04L 43/06	1	Generation of reports	
M	H04L 43/062	2	related to network traffic	
M	H04L 43/065	2	related to network devices	
M	H04L 43/067	2	using time frame reporting	
C	H04L 43/08	1	Monitoring or testing based on specific metrics, e.g. QoS, energy consumption or environmental parameters	H04L 43/08, H04L 43/20
M	H04L 43/0805	2	by checking availability	
M	H04L 43/0811	3	by checking connectivity	
M	H04L 43/0817	3	by checking functioning	
M	H04L 43/0823	2	Errors, e.g. transmission errors	

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M	H04L 43/0829	3	Packet loss	
M	H04L 43/0852	2	Delays	
M	H04L 43/0864	3	Round trip delays	
M	H04L 43/087	3	Jitter	
M	H04L 43/0876	2	Network utilisation, e.g. volume of load or congestion level	
M	H04L 43/0882	3	Utilisation of link capacity	
M	H04L 43/0888	3	Throughput	
M	H04L 43/0894	3	Packet rate	
N	H04L 43/091	2	Measuring contribution of individual network components to actual service level	
M	H04L 43/10	1	Active monitoring, e.g. heartbeat, ping or trace-route	
M	H04L 43/103	2	with adaptive polling, i.e. dynamically adapting the polling rate	
M	H04L 43/106	2	using time related information in packets, e.g. by adding timestamps	
M	H04L 43/12	1	Network monitoring probes	
M	H04L 43/16	1	Threshold monitoring	
M	H04L 43/18	1	Protocol analysers	
N	H04L 43/20	1	the monitoring system or the monitored elements being virtualised, abstracted or software-defined entities, e.g. SDN or NFV	
M	H04L 43/50	1	Testing arrangements	
N	H04L 43/55	2	Testing of service level quality, e.g. simulating service usage	
C	H04L 45/00	0	Routing or path finding of packets in data switching networks (routing or path finding in wireless networks H04W 40/00)	H04L 45/00, H04L 45/17, H04L 45/243, H04L 45/247, H04L 45/645, H04L 45/655, H04L 45/76, H04L 45/80, H04L 45/85, H04L 45/851
C	H04L 45/02	1	Topology update or discovery	H04L 45/02, H04L 45/03, H04L 45/033, H04L 45/036, H04L 45/037, H04L 45/0377

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M	H04L 45/021	2	Ensuring consistency of routing table updates, e.g. by using epoch numbers	
M	H04L 45/023	2	Delayed use of routing table updates	
M	H04L 45/028	2	Dynamic adaptation of the update intervals, e.g. event-triggered updates	
N	H04L 45/03	2	by updating link state protocols	
N	H04L 45/033	2	by updating distance vector protocols	
N	H04L 45/036	2	Updating the topology between route computation elements, e.g. between OpenFlow controllers	
N	H04L 45/037	3	Routes obligatorily traversing service-related nodes	
N	H04L 45/0377	4	for service chaining	
M	H04L 45/04	2	{Interdomain routing, e.g. hierarchical routing }	
M	H04L 45/06	2	{Deflection routing, e.g. hot-potato routing }	
M	H04L 45/08	2	{Learning-based routing, e.g. using neural networks or artificial intelligence }	
M	H04L 45/10	2	{Routing in connection-oriented networks, e.g. X.25 or ATM }	
M	H04L 45/12	1	Shortest path evaluation	
M	H04L 45/121	2	by minimising delays	
M	H04L 45/122	2	by minimising distances, e.g. by selecting a route with minimum of number of hops	
M	H04L 45/125	2	based on throughput or bandwidth	
M	H04L 45/126	2	{minimising geographical or physical path length }	
M	H04L 45/128	2	for finding disjoint paths	
M	H04L 45/16	1	Multipoint routing	
N	H04L 45/17	1	Shortcut routing, e.g. using next hop resolution protocol [NHRP]	
M	H04L 45/18	1	Loop-free operations	
C	H04L 45/22	1	{Alternate routing }	H04L 45/22, H04L 45/247
M	H04L 45/24	1	Multipath	
N	H04L 45/243	2	using M+N parallel active paths	
U	H04L 45/245	2	{Link aggregation, e.g. trunking }	
N	H04L 45/247	2	using M:N active or standby paths	
M	H04L 45/28	1	using route fault recovery	
M	H04L 45/30	1	Routing of multiclass traffic	
M	H04L 45/302	1	Route determination based on requested QoS	

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M	H04L 45/304	2	{Route determination for signalling traffic }	
M	H04L 45/306	2	{Route determination based on the nature of the carried application }	
M	H04L 45/42	1	Centralised routing	
M	H04L 45/44	1	Distributed routing	
C	H04L 45/48	1	Routing tree calculation	H04L 45/48, H04L 45/484, H04L 45/488
N	H04L 45/484	2	using multiple routing trees	
N	H04L 45/488	2	using root node determination	
M	H04L 45/50	1	using label swapping, e.g. multi-protocol label switch [MPLS]	
M	H04L 45/52	1	Multiprotocol routers	
M	H04L 45/563	2	{Software download or update }	
M	H04L 45/58	1	Association of routers	
M	H04L 45/586	2	of virtual routers	
M	H04L 45/60	1	Router architectures	
M	H04L 45/64	1	using an overlay routing layer	
N	H04L 45/645	1	Splitting route computation layer and forwarding layer, e.g. routing according to path computational element [PCE] or based on OpenFlow functionality	
N	H04L 45/655	2	Interaction between route computation entities and forwarding entities, e.g. for route determination or for flow table update	
M	H04L 45/70	1	{Routing based on monitoring results }	
M	H04L 45/74	1	Address processing for routing	
M	H04L 45/741	2	Routing in networks with a plurality of addressing schemes, e.g. with both IPv4 and IPv6	
M	H04L 45/742	2	{Route cache; Operation thereof }	
C	H04L 45/745	2	Address table lookup; Address filtering	H04L 45/745, H04L 45/7452, H04L 45/7459
N	H04L 45/7452	3	Multiple parallel or consecutive lookup operations (lookup operation involving Bloom filters H04L 45/7459)	
M	H04L 45/7453	3	using hashing	
D	H04L 45/7457	3	{using content-addressable memories [CAM]}	<Administrative transfer to H04L 45/74591>
N	H04L 45/7459	4	using Bloom filters	
N	H04L 45/74591	3	{using content-addressable memories [CAM]}	

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M	H04L 45/748	3	using longest matching prefix	
N	H04L 45/76	1	Routing in software-defined topologies, e.g. routing between virtual machines	
N	H04L 45/80	1	Ingress point selection by the source endpoint, e.g. selection of ISP or POP	
N	H04L 45/85	2	Selection among different networks	
N	H04L 45/851	3	Dynamic network selection or re-selection, e.g. after degradation of quality	
M	H04L 47/00	0	Traffic control in data switching networks (arrangements for detecting or correcting errors in the information received H04L 1/00)	
C	H04L 47/10	1	Flow control; Congestion control	H04L 47/10, H04L 47/43, H04L 47/431
M	H04L 47/11	2	Identifying congestion	
C	H04L 47/12	2	Avoiding congestion; Recovering from congestion	H04L 47/12, H04L 47/129
M	H04L 47/122	3	by diverting traffic away from congested entities	
M	H04L 47/125	3	by balancing the load, e.g. traffic engineering	
M	H04L 47/127	3	by using congestion prediction	
N	H04L 47/129	3	at the destination endpoint, e.g. reservation of terminal resources or buffer space	
D	H04L 47/14	2	{in wireless networks }	<Administrative transfer to H04W 8/04>
M	H04L 47/17	2	Interaction among intermediate nodes, e.g. hop by hop	
M	H04L 47/19	2	at layers above the network layer (network arrangements for networked applications for scheduling or organising the servicing of application requests H04L 67/60)	
M	H04L 47/193	3	at the transport layer, e.g. TCP related	
M	H04L 47/20	2	Traffic policing	
M	H04L 47/21	2	using leaky-bucket	
M	H04L 47/215	2	using token-bucket	
M	H04L 47/22	2	Traffic shaping	
M	H04L 47/24	2	Traffic characterised by specific attributes, e.g. priority or QoS	
M	H04L 47/2408	3	for supporting different services, e.g. a differentiated services [DiffServ] type of service	

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M	H04L 47/2416	3	Real-time traffic	
M	H04L 47/2425	3	for supporting services specification, e.g. SLA	
M	H04L 47/2441	3	relying on flow classification, e.g. using integrated services [IntServ]	
M	H04L 47/2466	3	using signalling traffic	
M	H04L 47/2475	3	for supporting traffic characterised by the type of applications	
M	H04L 47/2483	3	involving identification of individual flows	
M	H04L 47/2491	3	Mapping quality of service [QoS] requirements between different networks	
M	H04L 47/25	2	with rate being modified by the source upon detecting a change of network conditions	
C	H04L 47/26	2	using explicit feedback to the source, e.g. choke packets	H04L 47/26, H04L 47/265, H04L 47/267
M	H04L 47/263	3	Rate modification at the source after receiving feedback	
N	H04L 47/265	3	sent by intermediate network nodes	
M	H04L 47/266	3	{Stopping or restarting the source, e.g. X-on or X-off}	
N	H04L 47/267	3	sent by the destination endpoint (network streaming of media packets with control of the source by the destination H04L.65/613)	
M	H04L 47/27	2	Evaluation or update of window size, e.g. using information derived from acknowledged [ACK] packets	
M	H04L 47/28	2	in relation to timing considerations	
M	H04L 47/283	3	in response to processing delays, e.g. caused by jitter or round trip time [RTT]	
M	H04L 47/29	2	{using a combination of thresholds}	
M	H04L 47/30	2	in combination with information about buffer occupancy at either end or at transit nodes	
M	H04L 47/31	2	by tagging of packets, e.g. using discard eligibility [DE] bits	
M	H04L 47/32	2	by discarding or delaying data units, e.g. packets or frames	
M	H04L 47/326	3	{with random discard, e.g. random early discard [RED]}	
M	H04L 47/33	2	using forward notification	

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M	H04L 47/34	2	ensuring sequence integrity, e.g. using sequence numbers	
M	H04L 47/35	2	by embedding flow control information in regular packets, e.g. piggybacking	
M	H04L 47/36	2	by determining packet size, e.g. maximum transfer unit [MTU]	
M	H04L 47/38	2	by adapting coding or compression rate	
M	H04L 47/40	2	using split connections	
M	H04L 47/41	2	by acting on aggregated flows or links	
N	H04L 47/43	2	Assembling or disassembling of packets, e.g. segmentation and reassembly [SAR]	
N	H04L 47/431	3	using padding or de-padding	
M	H04L 47/50	1	Queue scheduling	
M	H04L 47/52	2	by attributing bandwidth to queues	
M	H04L 47/525	3	by redistribution of residual bandwidth	
M	H04L 47/56	2	implementing delay-aware scheduling	
M	H04L 47/60	2	implementing hierarchical scheduling	
M	H04L 47/62	2	characterised by scheduling criteria	
M	H04L 47/6225	4	{ Fixed service order, e.g. Round Robin }	
M	H04L 47/623	4	{ Weighted service order }	
M	H04L 47/6235	4	{ Variable service order }	
M	H04L 47/625	3	for service slots or service orders	
M	H04L 47/6275	4	based on priority	
M	H04L 47/628	4	based on packet size, e.g. shortest packet first	
M	H04L 47/629	3	Ensuring fair share of resources, e.g. weighted fair queuing [WFQ]	
M	H04L 47/6295	3	using multiple queues, one for each individual QoS, connection, flow or priority	
C	H04L 47/70	1	Admission control; Resource allocation	H04L 47/70, H04L 47/83
M	H04L 47/72	2	using reservation actions during connection setup	
M	H04L 47/722	3	at the destination endpoint, e.g. reservation of terminal resources or buffer space	
M	H04L 47/724	3	at intermediate nodes, e.g. resource reservation protocol [RSVP]	
M	H04L 47/726	3	Reserving resources in multiple paths to be used simultaneously (by balancing the load H04L 47/125)	

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M	H04L 47/74	2	measures in reaction to resource unavailability	
M	H04L 47/76	2	using dynamic resource allocation, e.g. in-call renegotiation requested by the user or requested by the network in response to changing network conditions	
M	H04L 47/762	3	triggered by the network	
M	H04L 47/765	3	triggered by the end-points	
M	H04L 47/78	2	Architectures of resource allocation	
M	H04L 47/781	3	{Centralised allocation of resources }	
M	H04L 47/782	3	{Hierarchical allocation of resources, e.g. involving a hierarchy of local and centralised entities }	
M	H04L 47/783	3	Distributed allocation of resources, e.g. bandwidth brokers	
M	H04L 47/785	4	among multiple network domains, e.g. multilateral agreements	
M	H04L 47/80	2	Actions related to the user profile or the type of traffic	
U	H04L 47/829	3	{Topology based }	
N	H04L 47/83	2	based on usage prediction	
M	H04L 49/00	0	Packet switching elements	
C	H04L 49/10	1	characterised by the switching fabric construction	H04L 49/10, H04L 49/111, H04L 49/112, H04L 49/113, H04L 49/115, H04L 49/116, H04L 49/118
M	H04L 49/101	2	using crossbar or matrix	
M	H04L 49/102	2	using shared medium, e.g. bus or ring	
M	H04L 49/103	2	using a shared central buffer; using a shared memory	
M	H04L 49/104	2	Asynchronous transfer mode [ATM] switching fabrics	
M	H04L 49/109	2	Integrated on microchip, e.g. switch-on-chip	
N	H04L 49/111	2	Switch interfaces, e.g. port details	
N	H04L 49/112	2	Switch control, e.g. arbitration	
N	H04L 49/113	2	Arrangements for redundant switching, e.g. using parallel planes	
N	H04L 49/115	3	Transferring a complete packet or cell through each plane	

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N	H04L 49/116	3	Transferring a part of the packet through each plane, e.g. by bit-slicing	
N	H04L 49/118	3	Address processing within a device, e.g. using internal ID or tags for routing within a switch	
M	H04L 49/15	1	Interconnection of switching modules	
M	H04L 49/1515	2	Non-blocking multistage, e.g. Clos	
M	H04L 49/153	3	{ ATM switching fabrics having parallel switch planes }	
M	H04L 49/1538	4	{ Cell slicing }	
M	H04L 49/1546	3	using pipelined operation	
M	H04L 49/20	1	Support for services	
M	H04L 49/201	2	Multicast operation; Broadcast operation	
M	H04L 49/25	1	Routing or path finding in a switch fabric	
M	H04L 49/253	2	using establishment or release of connections between ports	
M	H04L 49/254	3	{ Centralised controller, i.e. arbitration or scheduling }	
M	H04L 49/35	1	Switches specially adapted for specific applications	
M	H04L 49/351	2	for local area network [LAN], e.g. Ethernet switches	
M	H04L 49/354	2	for supporting virtual local area networks [VLAN]	
M	H04L 49/355	2	{ Application aware switches, e.g. for HTTP }	
M	H04L 49/356	2	for storage area networks	
M	H04L 49/40	1	Constructional details, e.g. power supply, mechanical construction or backplane	
M	H04L 49/45	1	Arrangements for providing or supporting expansion	
M	H04L 49/50	1	Overload detection or protection within a single switching element	
M	H04L 49/505	2	Corrective measures	
M	H04L 49/506	3	Backpressure	
M	H04L 49/55	1	Prevention, detection or correction of errors	
M	H04L 49/552	2	by ensuring the integrity of packets received through redundant connections	
M	H04L 49/60	1	Software-defined switches	
M	H04L 49/65	1	Re-configuration of fast packet switches	

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C	H04L 49/90	1	Buffering arrangements	H04L 49/90, H04L 49/9023
M	H04L 49/9005	2	using dynamic buffer space allocation	
M	H04L 49/901	2	using storage descriptor, e.g. read or write pointers	
M	H04L 49/9015	2	for supporting a linked list	
U	H04L 49/9021	2	{Plurality of buffers per packet }	
N	H04L 49/9023	2	for implementing a jitter-buffer	
M	H04L 49/9047	2	including multiple buffers, e.g. buffer pools	
M	H04L 49/9057	2	Arrangements for supporting packet reassembly or resequencing	
U	H04L 49/9089	3	{replacing packets in a storage arrangement, e.g. pushout }	
M	H04L 49/9094	4	{ Arrangements for simultaneous transmit and receive, e.g. simultaneous reading/writing from/to the storage element }	
C	H04L 51/00	0	User-to-user messaging in packet-switching networks, transmitted according to store-and-forward or real-time protocols, e.g. e-mail	H04L 51/00, H04L 51/07, H04L 51/21
M	H04L 51/02	1	using automatic reactions or user delegation, e.g. automatic replies or chatbot-generated messages	
M	H04L 51/04	1	Real-time or near real-time messaging, e.g. instant messaging [IM]	
M	H04L 51/043	2	using or handling presence information	
M	H04L 51/046	2	Interoperability with other network applications or services	
M	H04L 51/06	1	Message adaptation to terminal or network requirements	
M	H04L 51/063	2	Content adaptation, e.g. replacement of unsuitable content	
M	H04L 51/066	2	Format adaptation, e.g. format conversion or compression	
N	H04L 51/07	1	characterised by the inclusion of specific contents	
M	H04L 51/08	2	Annexed information, e.g. attachments	
M	H04L 51/10	2	Multimedia information	
D	H04L 51/12	1	{with filtering and selective blocking capabilities }	<Administrative transfer to H04L 51/212>
D	H04L 51/14	1	{with selective forwarding }	<Administrative transfer to H04L 51/214>

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D	H04L 51/16	1	{including conversation history, e.g. threads}	<Administrative transfer to H04L 51/216>
M	H04L 51/18	2	Commands or executable codes	
D	H04L 51/20	1	{Messaging using geographical location information (protocols for adapting network applications to user terminal location H04L 67/18; services specially adapted for wireless communication networks making use of the location of users or terminals H04W 4/02)}	<Administrative transfer to H04L 51/222>
N	H04L 51/21	1	Monitoring or handling of messages	
D	H04L 51/22	1	{Mailbox-related details (computer aided management of electronic mail G06Q 10/10)}	<Administrative transfer to H04L 51/42>
N	H04L 51/212	2	using filtering or selective blocking	
N	H04L 51/214	2	using selective forwarding	
N	H04L 51/216	2	Handling conversation history, e.g. grouping of messages in sessions or threads	
N	H04L 51/222	2	using geographical location information, e.g. messages transmitted or received in proximity of a certain spot or area	
N	H04L 51/224	2	providing notification on incoming messages, e.g. pushed notifications of received messages	
N	H04L 51/226	2	Delivery according to priorities	
N	H04L 51/23	2	Reliability checks, e.g. acknowledgments or fault reporting	
N	H04L 51/234	2	for tracking messages	
D	H04L 51/24	1	{with notification on incoming messages}	<Administrative transfer to H04L 51/224>
D	H04L 51/26	1	{Prioritized messaging (networked applications for intermediate processing whereby quality of service or priority requirements are taken into account H04L 67/322)}	<Administrative transfer to H04L 51/226>
D	H04L 51/28	1	{Details regarding addressing issues (arrangements and protocols for addressing and naming H04L 61/00)}	<Administrative transfer to H04L 51/48>
D	H04L 51/30	1	{with reliability check, e.g. acknowledgments or fault reporting}	<Administrative transfer to H04L 51/23>
D	H04L 51/32	1	{Messaging within social networks}	<Administrative transfer to H04L 51/52>
D	H04L 51/34	1	{with provisions for tracking the progress of a message}	<Administrative transfer to H04L 51/234>

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D	H04L 51/36	1	{Unified messaging, e.g. interactions between instant messaging, e-mail or other types of messages such as converged IP messaging [CPM]}	<Administrative transfer to H04L 51/56>
D	H04L 51/38	1	{in combination with wireless systems (mobile application service signalling using messaging, e.g. SMS, H04W 4/12)}	<Administrative transfer to H04L 51/58>
N	H04L 51/42	1	Mailbox-related aspects, e.g. synchronisation of mailboxes	
N	H04L 51/48	1	Message addressing, e.g. address format or anonymous messages, aliases	
N	H04L 51/52	1	for supporting social networking services	
N	H04L 51/56	1	Unified messaging, e.g. interactions between e-mail, instant messaging or converged IP messaging [CPM]	
N	H04L 51/58	1	Message adaptation for wireless communication	
M	H04L 61/00	0	Network arrangements, protocols or services for addressing or naming	
N	H04L 61/09	1	Mapping addresses	
M	H04L 61/10	2	of different types	
M	H04L 61/103	3	across network layers, e.g. resolution of network layer into physical layer addresses or address resolution protocol [ARP]	
M	H04L 61/106	3	across networks, e.g. mapping telephone numbers to data network addresses	
D	H04L 61/15	1	{Directories; Name-to-address mapping (telephone directories in user terminals H04M 1/27)}	<Administrative transfer to H04L 61/45>
D	H04L 61/1505	2	{involving standard directories or standard directory access protocols}	<Administrative transfer to H04L 61/4505>
D	H04L 61/1511	3	{using domain name system [DNS]}	<Administrative transfer to H04L 61/4511>
D	H04L 61/1517	3	{using open systems interconnection [OSI] directories, i.e. X.500}	<Administrative transfer to H04L 61/4517>
D	H04L 61/1523	3	{using lightweight directory access protocol [LDAP]}	<Administrative transfer to H04L 61/4523>
D	H04L 61/1529	3	{using voice over internet protocol [VoIP] directories, e.g. session initiation protocol [SIP] registrar or H.323 gatekeeper (real-time signaling or sessions protocols H04L 65/1003)}	<Administrative transfer to H04L 61/4535>

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D	H04L 61/1535	2	{using an address exchange platform which sets up a session between two nodes, e.g. "rendezvous" server (address exchange for voice over internet protocol [VoIP] H04L 61/1529)}	<Administrative transfer to H04L 61/4535>
D	H04L 61/1541	2	{for service discovery (network applications for service discovery H04L 67/16; discovery of network devices in wireless communication networks H04W 8/005)}	<Administrative transfer to H04L 61/4541>
D	H04L 61/1547	2	{for personal communications, i.e. using a personal identifier}	<Administrative transfer to H04L 61/4547>
D	H04L 61/1552	2	{Mechanisms for table lookup, e.g. between directories; Directory data structures; Synchronization of directories (information retrieval in file systems G06F 16/10; information retrieval in structured data stores G06F 16/20)}	<Administrative transfer to H04L 61/4552>
D	H04L 61/1558	2	{Object oriented directories, e.g. common object request broker architecture [CORBA] name server}	<Administrative transfer to H04L 61/4553>
D	H04L 61/1564	2	{Directories for electronic mail or instant messaging (arrangements for user-to-user messaging in packet-switching networks H04L 51/00)}	<Administrative transfer to H04L 61/4555>
D	H04L 61/157	2	{Directories for hybrid networks, e.g. including telephone numbers}	<Administrative transfer to H04L 61/4557>
D	H04L 61/1576	2	{Metadirectories, i.e. all encompassing global directory which interfaces to various underlying directories}	<Administrative transfer to H04L 61/4552>
D	H04L 61/1582	2	{containing identifiers of data entities on a computer, e.g. file names}	<Administrative transfer to H04L 61/457>
D	H04L 61/1588	2	{containing mobile subscriber information, e.g. home subscriber server [HSS]}	<Administrative transfer to H04L 61/4588>
D	H04L 61/1594	2	{Address books, i.e. directories containing contact information about correspondents, e.g. on a user device (directories providing the best way to reach a correspondent H04L 61/1547)}	<Administrative transfer to H04L 61/4594>
D	H04L 61/20	1	{Address allocation (configuration management of network or network elements H04L 41/08)}	<Administrative transfer to H04L 61/50>
D	H04L 61/2007	2	{internet protocol [IP] addresses}	<Administrative transfer to H04L 61/5007>

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D	H04L 61/2015	3	{using the dynamic host configuration protocol [DHCP] or variants }	<Administrative transfer to H04L 61/5014>
D	H04L 61/2023	3	{using the bootstrap protocol [BOOTP] or variants }	<Administrative transfer to H04L 61/5014>
D	H04L 61/203	3	{using an authentication, authorization and accounting [AAA] protocol, e.g. remote authentication dial-in user service [RADIUS] or diameter (supporting authentication of entities communicating through a packet data network H04L 63/08; cryptographic mechanisms or cryptographic arrangements for entity authentication H04L 9/32)}	<Administrative transfer to H04L 61/503>
D	H04L 61/2038	2	{for local use, e.g. on local area networks [LAN] or on universal serial bus [USB] networks (bus addresses inside a computer G06F 13/42)}	<Administrative transfer to H04L 61/5038>
D	H04L 61/2046	2	{involving the solving of address allocation conflicts or involving testing of addresses }	<Administrative transfer to H04L 61/5046>
D	H04L 61/2053	2	{involving timing or renewal aspects }	<Administrative transfer to H04L 61/5053>
D	H04L 61/2061	2	{involving aspects of pools of addresses, e.g. as assignment of different pools of addresses to different dynamic host configuration protocol [DHCP] servers }	<Administrative transfer to H04L 61/5061>
D	H04L 61/2069	2	{for group-, multicast- and broadcast-communication (broadcast or conference H04L 12/18)}	<Administrative transfer to H04L 61/5069>
D	H04L 61/2076	2	{involving update or notification mechanisms, e.g. update of a domain name server with dynamic host configuration protocol [DHCP] assigned addresses }	<Administrative transfer to H04L 61/5076>
D	H04L 61/2084	2	{involving portability aspects (network addressing or numbering for mobility support H04W 8/26; wireless network layer protocols, e.g. mobile IP H04W 80/04)}	<Administrative transfer to H04L 61/5084>
D	H04L 61/2092	2	{by self assignment, e.g. pick address randomly and test if already in use }	<Administrative transfer to H04L 61/5092>
M	H04L 61/25	2	of the same type	
M	H04L 61/2503	3	Translation of Internet protocol [IP] addresses	

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D	H04L 61/2507	3	{translating between special types of IP addresses}	<Administrative transfer to H04L 61/2503>
M	H04L 61/251	4	between different IP versions	
M	H04L 61/2514	4	between local and global IP addresses	
M	H04L 61/2517	4	using port numbers	
M	H04L 61/2521	4	Translation architectures other than single NAT servers	
M	H04L 61/2525	5	{Translation at a client}	
M	H04L 61/2528	5	{Translation at a proxy}	
M	H04L 61/2532	5	{Clique of NAT servers}	
M	H04L 61/2535	5	{Multiple local networks, e.g. resolving potential IP address conflicts}	
M	H04L 61/2539	4	Hiding addresses; Keeping addresses anonymous	
M	H04L 61/2542	4	{involving dual-stack hosts}	
M	H04L 61/2546	4	Arrangements for avoiding unnecessary translation	
M	H04L 61/255	4	Maintenance or indexing of mapping tables	
M	H04L 61/2553	5	Binding renewal aspects, e.g. using keep-alive messages	
M	H04L 61/2557	4	Translation policies or rules	
M	H04L 61/256	4	NAT traversal	
M	H04L 61/2564	5	{for a higher-layer protocol, e.g. for session initiation protocol [SIP]}	
M	H04L 61/2567	5	for reachability, e.g. inquiring the address of a correspondent behind a NAT server	
M	H04L 61/2571	5	{for identification, e.g. for authentication or billing (charging arrangements H04L 12/14)}	
M	H04L 61/2575	5	using address mapping retrieval, e.g. simple traversal of user datagram protocol through session traversal utilities for NAT [STUN]	
M	H04L 61/2578	5	without involvement of the NAT server	
M	H04L 61/2582	5	through control of the NAT server, e.g. using universal plug and play [UPnP]	
M	H04L 61/2585	5	through application level gateway [ALG]	
M	H04L 61/2589	5	over a relay server, e.g. traversal using relay for network address translation [TURN]	
M	H04L 61/2592	4	using tunnelling or encapsulation	

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M	H04L 61/2596	3	Translation of addresses of the same type other than IP, e.g. translation from MAC to MAC addresses	
M	H04L 61/30	1	Managing network names, e.g. use of aliases or nicknames (name-to-address mapping H04L 61/45)	
M	H04L 61/301	2	Name conversion	
M	H04L 61/3015	2	Name registration, generation or assignment	
M	H04L 61/302	3	{Administrative registration, e.g. for domain names at internet corporation for assigned names and numbers [ICANN]}	
D	H04L 61/303	2	{Name structure }	<Administrative transfer to H04L 2101/30>
D	H04L 61/3035	3	{containing non-Latin characters, e.g. Chinese domain names }	<Administrative transfer to H04L 2101/32>
D	H04L 61/304	3	{containing protocol addresses or telephone numbers (address type involved H04L 61/6018)}	<Administrative transfer to H04L 2101/33 >
D	H04L 61/3045	3	{containing wildcard characters }	<Administrative transfer to H04L 2101/345>
D	H04L 61/305	3	{containing special prefixes }	<Administrative transfer to H04L 2101/35>
D	H04L 61/3055	3	{containing special suffixes }	<Administrative transfer to H04L 2101/355>
D	H04L 61/306	2	{Name types }	<Administrative transfer to H04L 2101/30>
D	H04L 61/3065	3	{Application layer names, e.g. buddy name, unstructured name chosen by a user or home appliance name }	<Administrative transfer to H04L 2101/365>
D	H04L 61/307	3	{E-mail addresses (arrangements for user-to-user messaging in packet-switching networks H04L 51/00)}	<Administrative transfer to H04L 2101/37>
D	H04L 61/3075	3	{Access point names [APN], i.e. name of a gateway general packet radio service support node [GGSN] connecting a mobile user to a packet data network [PDN]}	<Administrative transfer to H04L 2101/375>
D	H04L 61/308	3	{Telephone uniform resource identifier [URI]}	<Administrative transfer to H04L 2101/38>
D	H04L 61/3085	3	{Session initiation protocol [SIP] uniform resource identifier [URI]}	<Administrative transfer to H04L 2101/385>
D	H04L 61/309	3	{Globally routable user-agent [GRUU] uniform resource identifier [URI] for the session initiation protocol [SIP]}	<Administrative transfer to H04L 2101/39>

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D	H04L 61/3095	3	{Internet protocol multimedia private identity [IMPI] or internet protocol multimedia public identity [IMPU]}	<Administrative transfer to H04L 2101/395>
U	H04L 61/35	1	{involving non-standard use of addresses for implementing network functionalities, e.g. coding subscription information within the address or functional addressing, i.e. assigning an address to a function}	
N	H04L 61/45	1	Network directories; Name-to-address mapping	
N	H04L 61/4505	2	using standardised directories; using standardised directory access protocols	
N	H04L 61/4511	3	using domain name system [DNS]	
N	H04L 61/4517	3	using open systems interconnection [OSI] directories, e.g. X.500	
N	H04L 61/4523	3	using lightweight directory access protocol [LDAP]	
N	H04L 61/4535	2	using an address exchange platform which sets up a session between two nodes, e.g. rendezvous servers, session initiation protocols [SIP] registrars or H.323 gatekeepers	
N	H04L 61/4541	2	Directories for service discovery	
N	H04L 61/4547	2	{for personal communications, i.e. using a personal identifier}	
N	H04L 61/4552	2	Lookup mechanisms between a plurality of directories; Synchronisation of directories, e.g. metadirectories	
N	H04L 61/4553	2	{Object oriented directories, e.g. common object request broker architecture [CORBA] name server}	
N	H04L 61/4555	2	{Directories for electronic mail or instant messaging}	
N	H04L 61/4557	2	Directories for hybrid networks, e.g. including telephone numbers	
N	H04L 61/457	2	{containing identifiers of data entities on a computer, e.g. file names}	
N	H04L 61/4588	2	containing mobile subscriber information, e.g. home subscriber server [HSS]	
N	H04L 61/4594	2	Address books, i.e. directories containing contact information about correspondents (telephone directories in user terminals H04M 1/27453)	
N	H04L 61/50	1	Address allocation	

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N	H04L 61/5007	2	Internet protocol [IP] addresses	
N	H04L 61/5014	3	using dynamic host configuration protocol [DHCP] or bootstrap protocol [BOOTP]	
N	H04L 61/503	3	using an authentication, authorisation and accounting [AAA] protocol, e.g. remote authentication dial-in user service [RADIUS] or Diameter	
N	H04L 61/5038	2	for local use, e.g. in LAN or USB networks, or in a controller area network [CAN]	
N	H04L 61/5046	2	Resolving address allocation conflicts; Testing of addresses (testing when self-assigning an address H04L 61/5092)	
N	H04L 61/5053	2	Lease time; Renewal aspects	
N	H04L 61/5061	2	Pools of addresses	
N	H04L 61/5069	2	for group communication, multicast communication or broadcast communication	
N	H04L 61/5076	2	Update or notification mechanisms, e.g. DynDNS	
N	H04L 61/5084	2	Providing for device mobility (network addressing or numbering for mobility support in wireless networks H04W 8/26; mobile IP H04W 80/04)	
N	H04L 61/5092	2	by self-assignment, e.g. picking addresses at random and testing if they are already in use	
N	H04L 61/58	1	Caching of addresses or names	
N	H04L 61/59	1	using proxies for addressing	
D	H04L 61/60	1	{Details }	<Administrative transfer to H04L 2101/60>
D	H04L 61/6004	2	{Structures or formats of addresses }	<Administrative transfer to H04L 2101/604>
D	H04L 61/6009	2	{Caching of addresses (caching data temporarily at an intermediate stage in general H04L 67/2842)}	<Administrative transfer to H04L 61/58>
D	H04L 61/6013	2	{Proxying of addresses }	<Administrative transfer to H04L 61/59>
D	H04L 61/6018	2	{Address types }	<Administrative transfer to H04L 2101/618>
D	H04L 61/6022	3	{Layer 2 addresses, e.g. medium access control [MAC] addresses }	<Administrative transfer to H04L 2101/622>
D	H04L 61/6027	3	{Control area network [CAN] identifiers (electric circuits specially adapted for vehicles for transmission of	<Administrative transfer to H04L 2101/627>

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			signals between vehicle parts and subsystems B60R 16/023}	
D	H04L 61/6031	3	{Small computer system interface [SCSI] addresses}	<Administrative transfer to H04L 2101/631>
D	H04L 61/6036	3	{IEEE1394 identification numbers}	<Administrative transfer to H04L 2101/636>
D	H04L 61/604	3	{Asynchronous transfer mode [ATM] addresses}	<Administrative transfer to H04L 2101/64>
D	H04L 61/6045	3	{Fibre channel identifiers}	<Administrative transfer to H04L 2101/645>
D	H04L 61/605	3	{Telephone numbers}	<Administrative transfer to H04L 2101/65>
D	H04L 61/6054	3	{International mobile subscriber identity [IMSI] numbers}	<Administrative transfer to H04L 2101/654>
D	H04L 61/6059	3	{Internet protocol version 6 [IPv6] addresses}	<Administrative transfer to H04L 2101/659>
D	H04L 61/6063	3	{Transport layer addresses, e.g. aspects of transmission control protocol [TCP] or user datagram protocol [UDP] ports (TCP/IP or UDP protocol aspects or techniques H04L 69/16)}	<Administrative transfer to H04L 2101/663>
D	H04L 61/6068	2	{Internet protocol [IP] addresses subnets}	<Administrative transfer to H04L 2101/668>
D	H04L 61/6072	2	{Short addresses}	<Administrative transfer to H04L 2101/672>
D	H04L 61/6077	2	{Multiple interfaces, e.g. multihomed nodes}	<Administrative transfer to H04L 2101/677>
D	H04L 61/6081	2	{involving addresses for wireless personal area networks and wireless sensor networks, e.g. Zigbee addresses (network addressing or numbering for mobility support H04W 8/26)}	<Administrative transfer to H04L 2101/681>
D	H04L 61/6086	2	{involving dual-stack hosts, e.g. in internet protocol version 4 [IPv4]/ internet protocol version 6 [IPv6] networks (implementation details of transmission control protocol [TCP]/internet protocol [IP] or user datagram protocol [UDP]/internet protocol [IP] stack architecture H04L 69/161)}	<Administrative transfer to H04L 2101/686>
D	H04L 61/609	2	{involving geographic information, e.g. room number}	<Administrative transfer to H04L 2101/69>
D	H04L 61/6095	2	{involving masks or ranges of addresses}	<Administrative transfer to H04L 2101/695>

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M	H04L 65/00	0	Network arrangements, protocols or services for supporting real-time applications in datapacket communication (real-time or near real-time messaging, e.g. instant messaging [IM] H04L 51/04; selective video distribution H04N 21/00)	
M	H04L 65/10	1	Architectures or entities	
D	H04L 65/1003	2	{Signalling or session protocols }	<Administrative transfer to H04L 65/1101>
D	H04L 65/1006	3	{SIP}	<Administrative transfer to H04L 65/1104>
D	H04L 65/1009	3	{H.323}	<Administrative transfer to H04L 65/1106>
M	H04L 65/1016	2	IP multimedia subsystem [IMS]	
M	H04L 65/102	2	Gateways (arrangements for connecting between networks having differing types of switching systems, e.g. gateways, H04L 12/66)	
M	H04L 65/1023	3	Media gateways	
M	H04L 65/1026	4	{at the edge}	
M	H04L 65/103	4	{in the network}	
M	H04L 65/1033	3	Signalling gateways	
M	H04L 65/1036	4	{at the edge}	
M	H04L 65/104	4	{in the network}	
M	H04L 65/1043	3	Gateway controllers, e.g. media gateway control protocol [MGCP] controllers	
N	H04L 65/1045	2	Proxies, e.g. for session initiation protocol [SIP]	
M	H04L 65/1046	2	Call controllers; Call servers	
D	H04L 65/105	3	{Proxies, e.g. SIP proxies }	<Administrative transfer to H04L 65/1045>
C	H04L 65/1053	2	IP private branch exchange [PBX] functionality entities or arrangements (circuit switched PBXs H04M 3/00)	H04L 65/1053, H04L 65/1055
N	H04L 65/1055	3	Single-site	
M	H04L 65/1056	3	Multi-site	
M	H04L 65/1059	2	End-user terminal functionalities specially adapted for real-time communication	
M	H04L 65/1063	2	Application servers providing network services (systems providing special services to telephonic subscribers H04M 3/42)	
M	H04L 65/1066	1	Session management	

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M	H04L 65/1069	2	Session establishment or de-establishment	
M	H04L 65/1073	2	Registration or de-registration	
M	H04L 65/1076	2	Screening of IP real time communications, e.g. spamover Internet telephony [SPIT]	
M	H04L 65/1079	3	{of unsolicited session attempts, e.g. SPIT}	
C	H04L 65/1083	2	In-session procedures	H04L 65/1083, H04L 65/1094, H04L 65/1095
M	H04L 65/1086	3	{session scope modification }	
M	H04L 65/1089	3	by adding media; by removing media	
M	H04L 65/1093	3	by adding participants; by removing participants	
N	H04L 65/1094	3	Inter-user-equipment sessions transfer or sharing	
N	H04L 65/1095	3	Inter-network session transfer or sharing	
M	H04L 65/1096	2	Supplementary features, e.g. call forwarding or call holding (systems providing special services or facilities to telephony subscribers H04M 3/42)	
Q	H04L 65/1101	2	Session protocols	H04L 65/1101, H04L 65/1108
N	H04L 65/1104	3	Session initiation protocol [SIP]	
N	H04L 65/1106	3	Call signalling protocols; H.323 and related	
N	H04L 65/1108	3	Web based protocols, e.g. webRTC	
C	H04L 65/40	1	Support for services or applications	H04L 65/40, H04L 65/401, H04L 65/4015, H04L 65/402, H04L 65/403, H04L 65/4038, H04L 65/4046, H04L 65/4053, H04L 65/4061
D	H04L 65/4007	2	{Services involving a main real-time session and one or more additional parallel sessions (real time messaging, e.g. instant messaging, interacting with other applications or services H04L 51/046; multichannel or multilink protocols H04L 69/14; services and arrangements where telephone services are combined with data services H04M 7/0024)}	<Administrative transfer to H04L 65/401>

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N	H04L 65/401	2	wherein the services involve a main real-time session and one or more additional parallel real-time or time sensitive sessions, e.g. white board sharing or spawning of a subconference	
M	H04L 65/4015	3	{ where at least one of the additional parallel sessions is real time or time sensitive, e.g. white board sharing, collaboration or spawning of a subconference }	
N	H04L 65/402	2	wherein the services involve a main real-time session and one or more additional parallel non-real time sessions, e.g. downloading a file in a parallel FTP session, initiating an email or combinational services	
D	H04L 65/4023	3	{ where none of the additional parallel sessions is real time or time sensitive, e.g. downloading a file in a parallel FTP session, initiating an email or combinational services (message switching systems H04L 51/00; instant messaging H04L 51/04; file transfer H04L 67/06; web-based applications H04L 67/02) }	<Administrative transfer to H04L 65/4025>
N	H04L 65/4025	3	{ where none of the additional parallel sessions is real time or time sensitive, e.g. downloading a file in a parallel FTP session, initiating an email or combinational services }	
M	H04L 65/403	2	Arrangements for multi-party communication, e.g. for conferences (data switching systems for conference H04L 12/18; arrangements for connecting several subscribers to a common circuit, i.e. affording conference facilities H04M 3/56; television conferencing systems H04N 7/15)	
M	H04L 65/4038	3	with floor control	
M	H04L 65/4053	3	without floor control	
M	H04L 65/4061	2	Push-to services, e.g. push-to-talk or push-to-video	
D	H04L 65/4069	2	{ Services related to one way streaming }	<Administrative transfer to H04L 65/61>
D	H04L 65/4076	3	{ Multicast or broadcast (data switching systems for broadcast or conference	<Administrative transfer to H04L 65/611>

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			H04L 12/18; analog television systems in general H04N 7/00; creating video channels for a dedicated end-user group H04N 21/2668; arrangements for broadcast or distribution combined with broadcast H04H 20/00; arrangements for broadcast applications with a direct linkage of broadcast information H04H 60/00; arrangements for push based network services H04L 67/26}	
D	H04L 65/4084	3	{Content on demand (analog television systems using two way working H04N 7/173; end-user applications for requesting content, additional data or services H04N 21/472)}	<Administrative transfer to H04L 65/612>
D	H04L 65/4092	3	{Control of source by destination, e.g. user controlling streaming rate of server (explicit feedback from the destination to the source to modify data rate for flow control or congestion control in packet switching networks, e.g. choke packet H04L 47/26; end-to-end flow control in packet switching networks H04L 47/18; analog television systems using two way working H04N 7/173; control signals to video servers issued by video clients H04N 21/6377)}	<Administrative transfer to H04L 65/613>
M	H04L 65/60	1	Network streaming of media packets	
D	H04L 65/601	2	{Media manipulation, adaptation or conversion (computer conferences, network arrangements for conference optimisation or adaptation H04L 12/1827; flow control or congestion control in packet switching networks H04L 47/10; message switching systems, e.g. electronic mail systems, with message adaptation based on network or terminal capabilities H04L 51/06; adaptation for terminals or networks with limited resources or for terminal portability H04L 67/04; network application being adapted for the location of the user terminal H04L 67/18; involving intermediate processing or storage in the network H04L 67/28; transmission of television	<Administrative transfer to H04L 65/75>

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			signals using pulse code modulation H04N 7/24)	
D	H04L 65/602	3	{at the source (reformatting of video signals in video distribution servers H04N 21/2343; reformatting of additional data in video distribution servers H04N 21/2355)}	<Administrative transfer to H04L 65/762>
D	H04L 65/604	3	{at the destination (reformatting of video signals in video clients H04N 21/4402; reformatting of additional data in video clients H04N 21/4355)}	<Administrative transfer to H04L 65/764>
D	H04L 65/605	3	{intermediate}	<Administrative transfer to H04L 65/765>
D	H04L 65/607	2	{Stream encoding details (interfacing the downstream path of a video distribution network H04N 21/238, H04N 21/438; controlling the complexity of a video stream H04N 21/2662, H04N 21/4621, H04N 21/64792; protocols for data compression H04L 69/04; header parsing or analysis H04L 69/22)}	<Administrative transfer to H04L 65/70>
D	H04L 65/608	2	{Streaming protocols, e.g. RTP or RTCP}	<Administrative transfer to H04L 65/65>
N	H04L 65/61	2	for supporting one-way streaming services, e.g. Internet radio	
N	H04L 65/611	3	for multicast or broadcast (systems for broadcast or conference H04L 12/18; arrangements for broadcast or distribution combined with broadcast H04H 20/00; arrangements for broadcast applications with a direct linkage to broadcast information or to broadcast space-time H04H 60/00; selective distribution of broadcast services, e.g. multimedia broadcast multicast service [MBMS], H04W 4/06)	
N	H04L 65/612	3	for unicast	
N	H04L 65/613	3	for the control of the source by the destination (control signals is sued by the client directed to the server or network components specially adapted for selective content distribution H04N 21/637)	

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N	H04L 65/65	2	Network streaming protocols, e.g. real-time transport protocol [RTP] or real-time control protocol [RTCP]	
N	H04L 65/70	2	Media network packetisation	
Q	H04L 65/75	2	Media network packet handling	H04L 65/75, H04L 65/752, H04L 65/756
N	H04L 65/752	3	adapting media to network capabilities	
N	H04L 65/756	3	adapting media to device capabilities	
N	H04L 65/762	3	{at the source (reformatting of additional data in video distribution servers H04N 21/2355)}	
N	H04L 65/764	3	{at the destination (reformatting of additional data in video clients H04N 21/4355)}	
N	H04L 65/765	3	{intermediate}	
M	H04L 65/80	1	Responding to QoS	
M	H04L 67/00	0	Network arrangements or protocols for supporting network services or applications (user-to-user messaging H04L 51/00; network arrangements, protocols or services for supporting real-time applications in data packet communications networks H04L 65/00)	
Q	H04L 67/01	1	Protocols	H04L 67/01, H04L 67/02, H04L 67/025, H04L 67/04, H04L 67/06, H04L 67/08, H04L 67/10, H04L 67/1001, H04L 67/1004, H04L 67/1006, H04L 67/1008, H04L 67/101, H04L 67/1012, H04L 67/1014, H04L 67/1017, H04L 67/1019, H04L 67/1021, H04L 67/1023, H04L 67/1025, H04L 67/1027, H04L 67/1029, H04L 67/1031, H04L 67/1034, H04L 67/1036, H04L 67/1038, H04L 67/104, H04L 67/1042, H04L 67/1044, H04L 67/1046, H04L 67/1048, H04L 67/1051, H04L 67/1053, H04L 67/1055, H04L 67/1057, H04L 67/1059, H04L 67/1061,

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				H04L 67/1063, H04L 67/1065, H04L 67/1068, H04L 67/107, H04L 67/1072, H04L 67/1074, H04L 67/1076, H04L 67/1078, H04L 67/108, H04L 67/1082, H04L 67/1085, H04L 67/1087, H04L 67/1089, H04L 67/1091, H04L 67/1093, H04L 67/1095, H04L 67/1097, H04L 67/12, H04L 67/125, H04L 67/131, H04L 67/133, H04L 67/1396, H04L 67/2866, H04L 67/2869, H04L 67/2871, H04L 67/2876, H04L 67/288, H04L 67/2885, H04L 67/289, H04L 67/2895, H04L 67/30, H04L 67/303, H04L 67/306
M	H04L 67/02	2	based on web technology, e.g. hypertext transfer protocol [HTTP]	
M	H04L 67/025	3	for remote control or remote monitoring of applications	
M	H04L 67/04	2	specially adapted for terminals or networks with limited capabilities; specially adapted for terminal portability	
M	H04L 67/06	2	specially adapted for file transfer, e.g. file transfer protocol [FTP]	
M	H04L 67/08	2	specially adapted for terminal emulation, e.g. Telnet	
M	H04L 67/10	2	in which an application is distributed across nodes in the network (software deployment G06F 8/60; multiprogramming arrangements G06F 9/46)	
N	H04L 67/1001	3	for accessing one among a plurality of replicated servers	
N	H04L 67/10015	4	{ Access to distributed or replicated servers, e.g. using brokers }	
D	H04L 67/1002	2	{ for accessing one among a plurality of replicated servers, e.g. load balancing (arrangements or protocols for peer-to-peer networking H04L 67/104;	<Administrative transfer to H04L 67/1001>

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			protocols for client-server architectures H04L 67/42; allocation of processing resources to service requests in a distributed system G06F 9/5027; rebalancing the processing load in a distributed system G06F 9/5083; wireless network traffic load balancing H04W 28/08; network load balancing, traffic engineering H04L 47/125; video servers using load balancing strategies H04N 21/23103; error detection or correction of the data by redundancy in hardware G06F 11/16}	
M	H04L 67/1004	4	Server selection for load balancing	
M	H04L 67/1006	5	with static server selection, e.g. the same server being selected for a specific client	
M	H04L 67/1008	5	based on parameters of servers, e.g. available memory or workload (monitoring of computer activity G06F 11/30)	
M	H04L 67/101	5	based on network conditions	
M	H04L 67/1012	5	based on compliance of requirements or conditions with available server resources	
M	H04L 67/1014	5	based on the content of a request	
M	H04L 67/1017	5	based on a round robin mechanism	
M	H04L 67/1019	5	Random or heuristic server selection	
M	H04L 67/1021	5	based on client or server locations	
M	H04L 67/1023	5	based on a hash applied to IP addresses or costs	
M	H04L 67/1025	5	Dynamic adaptation of the criteria on which the server selection is based	
M	H04L 67/1027	4	Persistence of sessions during load balancing	
M	H04L 67/1029	4	using data related to the state of servers by a load balancer	
M	H04L 67/1031	4	Controlling of the operation of servers by a load balancer, e.g. adding or removing servers that serve requests	
M	H04L 67/1034	4	Reaction to server failures by a load balancer	

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M	H04L 67/1036	4	Load balancing of requests to servers for services different from user content provisioning, e.g. load balancing across domain name servers	
M	H04L 67/1038	4	Load balancing arrangements to avoid a single path through a load balancer	
M	H04L 67/104	3	Peer-to-peer [P2P] networks	
M	H04L 67/1042	4	using topology management mechanisms	
M	H04L 67/1044	4	{Group management mechanisms (management of multicast group membership H04L 12/185; reconfiguring of node membership in a computing system to eliminate errors G06F 11/1425)}	
M	H04L 67/1048	5	{Departure or maintenance mechanisms }	
M	H04L 67/1061	4	using node-based peer discovery mechanisms (static access to replicated servers H04L 67/1006; service discovery H04L 67/51)	
M	H04L 67/1063	5	{Discovery through centralising entities }	
M	H04L 67/1065	5	{Discovery involving distributed pre-established resource-based relationships among peers, e.g. based on distributed hash tables [DHT] (pre-configuration of logical or physical connections H04L 67/1053)}	
M	H04L 67/1068	5	{Discovery involving direct consultation or announcement among potential requesting and potential source peers }	
M	H04L 67/107	6	{with limitation or expansion of the discovery scope }	
M	H04L 67/1072	5	{Discovery involving ranked list compilation of candidate peers }	
M	H04L 67/1074	4	for supporting data block transmission mechanisms (file transfer H04L 67/06)	
M	H04L 67/1076	5	{Resource dissemination mechanisms or network resource keeping policies for optimal resource availability in the overlay network }	
M	H04L 67/1078	5	{Resource delivery mechanisms }	
M	H04L 67/108	6	{characterised by resources being split in blocks or fragments }	

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M	H04L 67/1082	6	{involving incentive schemes }	
M	H04L 67/1085	6	{involving dynamic management of active down- or uploading connections }	
M	H04L 67/1087	4	using cross-functional networking aspects	
M	H04L 67/1089	5	{Hierarchical topologies }	
M	H04L 67/1091	5	{Interfacing with client-server systems or between P2P systems }	
M	H04L 67/1093	5	{Some peer nodes performing special functions }	
M	H04L 67/1095	3	Replication or mirroring of data, e.g. scheduling or transport for data synchronisation between network nodes	
M	H04L 67/1097	3	for distributed storage of data in networks, e.g. transport arrangements for network file system [NFS], storage area networks [SAN] or network attached storage [NAS]	
M	H04L 67/12	2	specially adapted for proprietary or special-purpose networking environments, e.g. medical networks, sensor networks, networks in vehicles or remote metering networks	
M	H04L 67/125	3	involving control of end-device applications over a network	
N	H04L 67/131	2	Protocols for games, networked simulations or virtual reality	
N	H04L 67/133	2	Protocols for remote procedure calls [RPC]	
N	H04L 67/1396	2	specially adapted for monitoring users' activity	
M	H04L 67/14	1	Session management (for real-time applications in datapacket communications networks H04L 65/1066)	
M	H04L 67/141	2	Setup of application sessions (admission control or resource allocation in data switching networks H04L 47/70)	
M	H04L 67/142	2	Managing session states for stateless protocols; Signalling session states; State transitions; Keeping-state mechanisms	
M	H04L 67/143	2	Termination or inactivation of sessions, e.g. event-controlled end of session	

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M	H04L 67/145	3	avoiding end of session, e.g. keep-alive, heartbeats, resumption message or wake-up for inactive or interrupted session	
M	H04L 67/146	2	Markers for unambiguous identification of a particular session, e.g. session cookie or URL-encoding	
M	H04L 67/147	2	Signalling methods or messages providing extensions to protocols defined by standardisation	
M	H04L 67/148	2	Migration or transfer of sessions	
D	H04L 67/16	1	{Service discovery or service management, e.g. service location protocol [SLP] or Web services (network service management for ensuring proper service fulfilment according to an agreement or contract between two parties H04L 41/50; address allocation to terminals or nodes connected to a network H04L 61/30; mobile application services specially adapted for wireless communication networks H04W 4/00)}	<Administrative transfer to H04L 67/51>
D	H04L 67/18	1	{in which the network application is adapted for the location of the user terminal (wireless application services making use of the location of users or terminals H04W 4/02 takes precedence; location based Web retrieval G06F16/9537)}	<Administrative transfer to H04L 67/52>
D	H04L 67/20	1	{involving third party service providers (e-commerce G06Q30/00)}	<Administrative transfer to H04L 67/53>
D	H04L 67/22	1	{Tracking the activity of the user (network monitoring arrangements H04L 43/00; recording of computer activity G06F 11/34; e-commerce G06Q 30/00)}	<Administrative transfer to H04L 67/535>
D	H04L 67/24	1	{Presence management (use and manipulation of presence information in instant messaging H04L 51/043)}	<Administrative transfer to H04L 67/54>
D	H04L 67/26	1	{Push based network services (broadcast or multicast push services H04L 12/1859)}	<Administrative transfer to H04L 67/55 >
D	H04L 67/28	1	{for the provision of proxy services, e.g. intermediate processing or storage in the network (network management provisions H04L 41/00; network	<Administrative transfer to H04L 67/56>

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			monitoring provisions H04L 43/00; proxies for network security H04L 63/0281; media manipulation, adaptation or conversion in real-time communications H04L 65/601; protocol conversion H04L 69/08}}	
D	H04L 67/2804	2	{for adding application control or application functional data, e.g. adding metadata}	<Administrative transfer to H04L 67/561>
D	H04L 67/2809	2	{for brokering (negotiation of communication capabilities H04L 69/24; e-commerce G06Q 30/00)}	<Administrative transfer to H04L 67/562>
D	H04L 67/2814	2	{for data redirection (load balancing of replicated servers H04L 67/1002; access network selection H04L 12/5691; routing or path finding of packets H04L 45/00; content or context based routing H04L 67/327; network addressing or naming provisions H04L 61/00)}	<Administrative transfer to H04L 67/563>
D	H04L 67/2819	2	{Enhancement of application control based on intercepted application data}	<Administrative transfer to H04L 67/564>
D	H04L 67/2823	2	{for conversion or adaptation of application content or format (message adaptation based on network or terminal capabilities H04L 51/06; media manipulation, adaptation or conversion in real-time communications H04L 65/601; protocol conversion H04L 69/08; optimising visualization of content for web browsing G06F 16/9577)}	<Administrative transfer to H04L 67/565>
D	H04L 67/2828	3	{for reducing the amount or size of exchanged application data (protocols for data compression H04L 69/04; digital video compression H04N 19/00)}	<Administrative transfer to H04L 67/5651>
D	H04L 67/2833	2	{for grouping or aggregating service requests, e.g. for unified processing of service requests (networking arrangements or communication protocols for scheduling or organising the servicing of application requests H04L 67/32)}	<Administrative transfer to H04L 67/566>
D	H04L 67/2838	2	{for integrating service provisioning from a plurality of service providers	<Administrative transfer to H04L 67/567>

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			(web site content organization and management G06F 16/958)}	
D	H04L 67/2842	2	{for storing data temporarily at an intermediate stage, e.g. caching (distributed storage of data in a network H04L 67/1097; browsing optimization of access to content by caching G06F 16/9574; addressing of a cache within a hierarchically structured memory system G06F 12/0802; disk caching G06F 12/0866)}	<Administrative transfer to H04L 67/568>
D	H04L 67/2847	3	{involving pre-fetching or pre-delivering data based on network characteristics (cache prefetching within a hierarchical structured memory system G06F 12/0862)}	<Administrative transfer to H04L 67/5681>
D	H04L 67/2852	3	{involving policies or rules for updating, deleting or replacing the stored data based on network characteristics (replacement control in memory systems G06F 12/12)}	<Administrative transfer to H04L 67/5682>
D	H04L 67/2857	3	{involving storage of data provided by user terminals, i.e. reverse caching}	<Administrative transfer to H04L 67/5683>
D	H04L 67/2861	2	{for providing operational support to end devices by emulation, e.g. when they are unavailable, or by off-loading in the network (techniques for recovering from a failure of a protocol instance or entity H04L 69/40; reactions to server failures by a load balancer H04L 67/1034; departure or maintenance mechanisms in peer-to-peer networks H04L 67/1048; terminal emulation H04L 67/08; disconnected operation in file systems G06F 16/10; emulation or software simulation G06F 9/455; input/output emulation function for peripheral devices G06F 13/105)}	<Administrative transfer to H04L 67/59>
M	H04L 67/2866	1	Architectures; Arrangements	
N	H04L 67/2869	2	Terminals specially adapted for communication	
M	H04L 67/2871	2	Implementation details of single intermediate entities	
M	H04L 67/2876	2	Pairs of inter-processing entities at each side of the network, e.g. split proxies	

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M	H04L 67/288	2	Distributed intermediate devices, i.e. intermediate devices for interaction with other intermediate devices on the same level	
M	H04L 67/2885	2	Hierarchically arranged intermediate devices, e.g. for hierarchical caching	
M	H04L 67/289	2	Intermediate processing functionally located close to the data consumer application, e.g. in same machine, in same home or in same sub-network	
M	H04L 67/2895	2	Intermediate processing functionally located close to the data provider application, e.g. reverse proxies	
M	H04L 67/30	2	Profiles	
M	H04L 67/303	3	Terminal profiles	
M	H04L 67/306	3	User profiles	
D	H04L 67/32	1	{for scheduling or organising the servicing of application requests, e.g. requests for application data transmissions involving the analysis and optimisation of the required network resources (computer conference arrangements H04L 12/1813; broadcast or conference with schedule organisation H04L 12/1881; network service management, ensuring proper service fulfilment according to an agreement or contract between two parties H04L 41/50; intermediate grouping or aggregating of service requests H04L 67/2833)}	<Administrative transfer to H04L 67/60>
D	H04L 67/322	2	{whereby quality of service [QoS] or priority requirements are taken into account (monitoring of QoS metrics H04L 43/08; QoS aspects in real-time communications H04L 65/80)}	<Administrative transfer to H04L 67/61>
D	H04L 67/325	2	{whereby a time schedule is established for servicing the requests}	<Administrative transfer to H04L 67/62>
D	H04L 67/327	2	{whereby the routing of a service request to a node providing the service depends on the content or context of the request, e.g. profile, connectivity status, payload or application type}	<Administrative transfer to H04L 67/63>
M	H04L 67/34	1	{involving the movement of software or configuration parameters (network booting or remote initial program loading [RIPL] G06F 9/4416)}	

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D	H04L 67/36	1	{involving the display of network or application conditions affecting the network application to the application user (graphical user interfaces for network management H04L41/22)}	<Administrative transfer to H04L 67/75>
D	H04L 67/38	1	{Protocols for telewriting; Protocols for networked simulations, virtual reality or games (games using an electronically generated display A 63F 13/00; remote windowing or X-Windows G06F 9/452)}	<Administrative transfer to H04L 67/131>
D	H04L 67/40	1	{Protocols for remote procedure calls [RPC] (remote procedure calls G06F 9/547)}	<Administrative transfer to H04L 67/133>
D	H04L 67/42	1	{Protocols for client-server architectures (access to replicated servers H04L 67/1002)}	<Administrative transfer to H04L 67/01>
N	H04L 67/50	1	Network services	
N	H04L 67/51	2	Discovery or management thereof, e.g. service location protocol [SLP] or web services	
N	H04L 67/52	2	specially adapted for the location of the user terminal	
N	H04L 67/53	2	using third party service providers	
N	H04L 67/535	2	{Tracking the activity of the user (network monitoring arrangements H04L 43/00; recording of computer activity G06F 11/34)}	
N	H04L 67/54	2	Presence management, e.g. monitoring or registration for receipt of user log-on information, or the connection status of the users	
N	H04L 67/55	2	Push-based network services	
N	H04L 67/56	2	Provisioning of proxy services (store-and-forward switching systems in data switching networks H04L 12/54)	
N	H04L 67/561	3	Adding application-functional data or data for application control, e.g. adding metadata	
N	H04L 67/562	3	Brokering proxy services	
N	H04L 67/563	3	Data redirection of data network streams	
N	H04L 67/564	3	Enhancement of application control based on intercepted application data	

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N	H04L 67/565	3	Conversion or adaptation of application format or content (adding application control or application functional data H04L 67/561)	
N	H04L 67/5651	4	Reducing the amount or size of exchanged application data	
N	H04L 67/566	3	Grouping or aggregating service requests, e.g. for unified processing	
N	H04L 67/567	3	Integrating service provisioning from a plurality of service providers	
N	H04L 67/568	3	Storing data temporarily at an intermediate stage, e.g. caching	
N	H04L 67/5681	4	Pre-fetching or pre-delivering data based on network characteristics	
N	H04L 67/5682	4	Policies or rules for updating, deleting or replacing the stored data	
N	H04L 67/5683	4	Storage of data provided by user terminals, i.e. reverse caching	
N	H04L 67/59	3	Providing operational support to end devices by off-loading in the network or by emulation, e.g. when they are unavailable	
N	H04L 67/60	2	Scheduling or organising the servicing of application requests, e.g. requests for application data transmissions using the analysis and optimisation of the required network resources (admission control or resource allocation H04L 47/70)	
N	H04L 67/61	3	taking into account QoS or priority requirements	
N	H04L 67/62	3	Establishing a time schedule for servicing the requests	
N	H04L 67/63	3	Routing a service request depending on the request content or context	
N	H04L 67/75	2	Indicating network or usage conditions on the user display	
M	H04L 69/00	0	Network arrangements, protocols or services independent of the application payload and not provided for in the other groups of this subclass (network security protocols H04L 9/40; wireless communication networks H04W)	

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M	H04L 69/03	1	{Protocol definition or specification (protocol conformance testing H04L 1/244)}	
M	H04L 69/04	1	Protocols for data compression, e.g. ROHC	
M	H04L 69/06	1	Notations for structuring of protocol data, e.g. abstract syntax notation one [ASN.1]	
C	H04L 69/08	1	Protocols for interworking; Protocol conversion	H04L 69/08, H04L 69/085
N	H04L 69/085	2	specially adapted for interworking of IP-based networks with other networks	
M	H04L 69/10	1	Streamlined, light-weight or high-speed protocols, e.g. express transfer protocol [XTP] or byte stream	
M	H04L 69/12	1	Protocol engines	
M	H04L 69/14	1	Multichannel or multilink protocols	
M	H04L 69/16	1	Implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP]	
M	H04L 69/161	2	{ Implementation details of TCP/IP or UDP/IP stack architecture; Specification of modified or new header fields }	
M	H04L 69/163	2	In-band adaptation of TCP data exchange; In-band control procedures	
M	H04L 69/164	2	Adaptation or special uses of UDP protocol	
M	H04L 69/165	2	Combined use of TCP and UDP protocols; selection criteria therefor	
M	H04L 69/166	2	IP fragmentation; TCP segmentation	
M	H04L 69/167	2	Adaptation for transition between two IP versions, e.g. between IPv4 and IPv6 (translation of Internet protocol [IP] addresses H04L 61/2503)	
M	H04L 69/168	2	specially adapted for link layer protocols, e.g. asynchronous transfer mode [ATM], synchronous optical network [SONET] or point-to-point protocol [PPP]	

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M	H04L 69/169	2	{Special adaptations of TCP, UDP or IP for interworking of IP based networks with other networks (protocols for interworking, protocol conversion H04L 69/08)}	
M	H04L 69/18	1	Multiprotocol handlers, e.g. single devices capable of handling multiple protocols	
M	H04L 69/22	1	Parsing or analysis of headers	
M	H04L 69/24	1	Negotiation of communication capabilities	
M	H04L 69/28	1	Timers or timing mechanisms used in protocols	
M	H04L 69/30	1	Definitions, standards or architectural aspects of layered protocol stacks	
C	H04L 69/32	2	Architecture of open systems interconnection [OSI] 7-layer type protocol stacks, e.g. the interfaces between the data link level and the physical level	H04L 69/32, H04L 69/321, H04L 69/322, H04L 69/323, H04L 69/324, H04L 69/325, H04L 69/326, H04L 69/327, H04L 69/328, H04L 69/329
M	H04L 69/321	3	Interlayer communication protocols or service data unit [SDU] definitions; Interfaces between layers	
M	H04L 69/322	3	Intralayer communication protocols among peer entities or protocol data unit [PDU] definitions	
M	H04L 69/323	4	in the physical layer [OSI layer 1]	
M	H04L 69/324	4	in the data link layer [OSI layer 2], e.g. HDLC	
M	H04L 69/325	4	in the network layer [OSI layer 3], e.g. X.25 (H04L 69/16 takes precedence)	
M	H04L 69/326	4	in the transport layer [OSI layer 4] (H04L 69/16 takes precedence)	
M	H04L 69/327	4	in the session layer [OSI layer 5]	
M	H04L 69/328	4	in the presentation layer [OSI layer 6]	
M	H04L 69/329	4	in the application layer [OSI layer 7]	
M	H04L 69/40	1	for recovering from a failure of a protocol instance or entity, e.g. service redundancy protocols, protocol state redundancy or protocol service redirection (management of faults, events, alarms or notifications in data switching networks H04L 41/06)	

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N	H04L 2101/00	0	Indexing scheme associated with group H04L 61/00	
N	H04L 2101/30	1	Types of network names	
N	H04L 2101/32	2	containing non-Latin characters, e.g. Chinese domain names	
N	H04L 2101/33	2	containing protocol addresses or telephone numbers	
N	H04L 2101/345	2	containing wildcard characters	
N	H04L 2101/35	2	containing special prefixes	
N	H04L 2101/355	2	containing special suffixes	
N	H04L 2101/365	2	Application layer names, e.g. buddy names, unstructured names chosen by a user or home appliance name	
N	H04L 2101/37	2	E-mail addresses	
N	H04L 2101/375	2	Access point names [APN]	
N	H04L 2101/38	2	Telephone uniform resource identifier [URI]	
N	H04L 2101/385	2	Uniform resource identifier for session initiation protocol [SIP URI]	
N	H04L 2101/39	2	Globally routable user-agent uniform resource identifier [GRUU] for the session initiation protocol [SIP]	
N	H04L 2101/395	2	Internet protocol multimedia private identity [IMPI]; Internet protocol multimedia public identity [IMPU]	
N	H04L 2101/60	1	Types of network addresses	
N	H04L 2101/604	2	Address structures or formats	
N	H04L 2101/618	2	Details of network addresses	
N	H04L 2101/622	3	Layer-2 addresses, e.g. medium access control [MAC] addresses	
N	H04L 2101/627	3	Controller area network [CAN] identifiers	
N	H04L 2101/631	3	Small computer system interface [SCSI] addresses	
N	H04L 2101/636	3	IEEE1394 identification numbers	
N	H04L 2101/64	3	Asynchronous transfer mode [ATM] addresses	
N	H04L 2101/645	3	Fibre channel identifiers	
N	H04L 2101/65	3	Telephone numbers	
N	H04L 2101/654	3	International mobile subscriber identity [IMSI] numbers	
N	H04L 2101/659	3	Internet protocol version 6 [IPv6] addresses	

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<b>Type*</b>	<b>Symbol</b>	<b>Indent Level Number of dots (e.g. 0, 1, 2)</b>	<b>Title</b> <b>“CPC only” text should normally be enclosed in {curly brackets}**</b>	<b>Transferred to#</b>
N	H04L 2101/663	3	Transport layer addresses, e.g. aspects of transmission control protocol [TCP] or user datagram protocol [UDP] ports	
N	H04L 2101/668	2	Internet protocol [IP] address subnets	
N	H04L 2101/672	2	Short addresses	
N	H04L 2101/677	2	Multiple interfaces, e.g. multihomed nodes	
N	H04L 2101/681	2	using addresses for wireless personal area networks or wireless sensor networks, e.g. Zigbee addresses	
N	H04L 2101/686	2	using dual-stack hosts, e.g. in Internet protocol version 4 [IPv4]/Internet protocol version 6 [IPv6] networks	
N	H04L 2101/69	2	using geographic information, e.g. room number	
N	H04L 2101/695	2	using masks or ranges of addresses	
U	H04L 2209/00	0	Additional information or applications relating to cryptographic mechanisms or cryptographic arrangements for secret or secure communication H04L9/00	
D	H04L 2209/38	1	Chaining, e.g. hash chain or certificate chain	<Administrative transfer to H04L 9/50>

\*N = new entries where reclassification into entries is involved; C = entries with modified file scope where reclassification of documents from the entries is involved; Q = new entries which are firstly populated with documents via administrative transfers from deleted (D) entries. Afterwards, the transferred documents into the Q entry will either stay or be moved to more appropriate entries, as determined by intellectual reclassification; T = existing entries with enlarged file scope, which receive documents from C or D entries, e.g. when a limiting reference is removed from the entry title; M = entries with no change to the file scope (no reclassification); D = deleted entries; F = frozen entries will be deleted once reclassification of documents from the entries is completed; U = entries that are unchanged.

NOTES:

- \*\*No {curly brackets} are used for titles in CPC only subclasses, e.g. C12Y, A23Y; 2000 series symbol titles of groups found at the end of schemes (orthogonal codes); or the Y section titles. The {curly brackets} are used for 2000 series symbol titles found interspersed throughout the main trunk schemes (breakdown codes).
- U groups: it is obligatory to display the required “anchor” symbol (U group), i.e. the entry immediately preceding a new group or an array of new groups to be created (in case new groups are not clearly subgroups of C-type groups). Always include the symbol, indent level and title of the U group in the table above.
- All entry types should be included in the scheme changes table above for better understanding of the overall scheme change picture. Symbol, indent level, and title are required for all types.
- “Transferred to” column must be completed for all C, D, F, and Q type entries. F groups will be deleted once reclassification is completed.
- When multiple symbols are included in the “Transferred to” column, avoid using ranges of symbols in order to be as precise as possible.
- For administrative transfer of documents, the following text should be used: “<administrative transfer to XX>”, “<administrative transfer to XX and YY simultaneously>”, or “<administrative transfer to XX, YY, ...and ZZ simultaneously>” when administrative transfer of the same documents is to more than one place.
- Administrative transfer to main trunk groups is assumed to be the source allocation type, unless otherwise indicated.
- Administrative transfer to 2000/Y series groups is assumed to be “additional information”.

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- If needed, instructions for allocation type should be indicated within the angle brackets using the abbreviations “ADD” or “INV”: <administrative transfer to XX ADD> , <administrative transfer to XX INV>, or < administrative transfer to XX ADD, YY INV, ... and ZZ ADD simultaneously>.
- In certain situations, the “D” entries of 2000-series or Y-series groups may not require a destination (“T transferred to”) symbol, however it is required to specify “<no transfer>” in the “T transferred to” column for such cases.
- For finalisation projects, the deleted “F” symbols should have <no transfer> in the “T transferred to” column.
- For more details about the types of scheme change, see CPC Guide.

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B. New, Modified or Deleted Warning(s)

**SUBCLASS H04L - TRANSMISSION OF DIGITAL INFORMATION, e.g. TELEGRAPHIC COMMUNICATION (arrangements common to telegraphic and telephonic communication H04M)**

<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
M	H04L	<p>1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:</p> <p>H04L9/18 covered by H04L9/065  H04L9/20 covered by H04L9/0656  H04L9/22 covered by H04L9/0662  H04L9/24 covered by H04L9/0662  H04L9/26 covered by H04L9/0668  H04L9/28 covered by H04L9/002,  H04L9/008, H04L9/06, H04L9/08, H04L9/30,  H04L9/32  H04L12/20 covered by H04L29/00  H04L25/04 covered by H04L25/03  H04L25/17 covered by H04L25/02 -  H04L25/0298  H04L25/18 covered by H04L25/027  H04L25/28 covered by H04L25/0268  H04L25/30 covered by H04L25/061  H04L25/32 covered by H04L25/49  H04L25/34 covered by H04L25/4917  H04L25/48 covered by H04L25/49  H04L25/52 covered by H04L25/20  H04L25/54 covered by H04L25/20  H04L25/56 covered by H04L25/202  H04L25/58 covered by H04L25/20  H04L25/60 covered by H04L25/207  H04L25/62 covered by H04L25/205  H04L25/64 covered by H04L25/245  H04L25/66 covered by H04L25/247</p> <p>2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.</p>	<p><u>Replace:</u> The symbol H04L 29/00 with a new symbol H04L 69/00 at the line</p> <p>H04L12/20 covered by  H04L29/00</p> <p>so that it appears as</p> <p>H04L12/20 covered by  H04L69/00</p>

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 9/40		Group H04L 9/40 is impacted by reclassification into groups H04L 61/09, H04L 63/00, H04L 65/60, H04L 65/61, H04L 65/611, H04L 65/612, H04L 65/613, H04L 65/65, H04L 65/70, H04L 65/75, H04L 65/752, H04L 65/756, H04L 67/01, H04L 67/1001, H04L 67/10015, H04L 67/131, H04L 67/133, H04L 67/1396 and H04L 67/50. All groups listed in this Warning should be considered in order to perform a complete search.
D	H04L29/06027	This group is no longer used for the classification of new documents as from 2008-04-21. The backlog of this group is being continuously reclassified to subgroups of H04L29/06176	<u>Delete</u> the entire existing warning.
D	H04L29/06176	Group H04L 29/06176 or subgroups are not complete pending reorganisation. See also H04L 29/06027	<u>Delete</u> the entire existing warning.
D	H04L29/08072	from 01.01.2006 onwards, documents relating to the application layer, and in particular to protocols for network applications are classified in H04L 29/08081 and subgroups. All documents previously classified in H04L 29/08072 are reclassified in these groups	<u>Delete</u> the entire existing warning.
D	H04L29/08702	The subgroups H04L29/08711, H04L29/08738 - H04L29/08783, and H04L29/08801 - H04L29/08855 are not complete pending reorganisation. See also H04L29/0872, H04L29/08729 and H04L29/08792)	<u>Delete</u> the entire existing warning.
D	H04L29/0872	This group is no longer used for the classification of new documents as from December 1, 2009. The backlog of this group is being continuously reclassified to the subgroups H04L29/08711 - H04L29/08909	<u>Delete</u> the entire existing warning.
D	H04L29/08729	This group is no longer used for the classification of new documents as from December 1, 2009. The backlog of this group is being continuously reclassified to the subgroups H04L29/08711 - H04L29/08909	<u>Delete</u> the entire existing warning.
D	H04L29/08792	This group is no longer used for the classification of new documents as from December 1, 2009. The backlog of this group is being continuously reclassified to the subgroups H04L 29/08711 - H04L 29/08909	<u>Delete</u> the entire existing warning.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
D	H04L29/12009	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/00	<u>Delete</u> the entire existing warning.
D	H04L29/12018	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/10	<u>Delete</u> the entire existing warning.
D	H04L29/12028	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/103	<u>Delete</u> the entire existing warning.
D	H04L29/12037	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/106	<u>Delete</u> the entire existing warning.
D	H04L29/12047	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/15	<u>Delete</u> the entire existing warning.
D	H04L29/12056	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1505	<u>Delete</u> the entire existing warning.
D	H04L29/12066	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1511	<u>Delete</u> the entire existing warning.
D	H04L29/12075	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1517	<u>Delete</u> the entire existing warning.
D	H04L29/12084	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1523	<u>Delete</u> the entire existing warning.
D	H04L29/12094	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1529	<u>Delete</u> the entire existing warning.
D	H04L29/12103	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1535	<u>Delete</u> the entire existing warning.
D	H04L29/12113	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1541	<u>Delete</u> the entire existing warning.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
D	H04L29/12113	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1541	<u>Delete</u> the entire existing warning.
D	H04L29/12122	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1547	<u>Delete</u> the entire existing warning.
D	H04L29/12132	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1552	<u>Delete</u> the entire existing warning.
D	H04L29/12141	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1558	<u>Delete</u> the entire existing warning.
D	H04L29/1215	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1564	<u>Delete</u> the entire existing warning.
D	H04L29/1216	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/157	<u>Delete</u> the entire existing warning.
D	H04L29/12169	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1576	<u>Delete</u> the entire existing warning.
D	H04L29/12179	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1582	<u>Delete</u> the entire existing warning.
D	H04L29/12188	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1588	<u>Delete</u> the entire existing warning.
D	H04L29/12198	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/1594	<u>Delete</u> the entire existing warning.
D	H04L29/12207	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/20	<u>Delete</u> the entire existing warning.
D	H04L29/12216	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2007	<u>Delete</u> the entire existing warning.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
D	H04L29/12226	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2015	<u>Delete</u> the entire existing warning.
D	H04L29/12235	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2023	<u>Delete</u> the entire existing warning.
D	H04L29/12245	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/203	<u>Delete</u> the entire existing warning.
D	H04L29/12254	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2038	<u>Delete</u> the entire existing warning.
D	H04L29/12264	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2046	<u>Delete</u> the entire existing warning.
D	H04L29/12273	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2053	<u>Delete</u> the entire existing warning.
D	H04L29/12283	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2061	<u>Delete</u> the entire existing warning.
D	H04L29/12292	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2069	<u>Delete</u> the entire existing warning.
D	H04L29/12301	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2076	<u>Delete</u> the entire existing warning.
D	H04L29/12311	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2084	<u>Delete</u> the entire existing warning.
D	H04L29/1232	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2092	<u>Delete</u> the entire existing warning.
D	H04L29/1233	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/25	<u>Delete</u> the entire existing warning.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
D	H04L29/12339	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2503	<u>Delete</u> the entire existing warning.
D	H04L29/12349	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2507	<u>Delete</u> the entire existing warning.
D	H04L29/12358	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/251	<u>Delete</u> the entire existing warning.
D	H04L29/12367	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2514	<u>Delete</u> the entire existing warning.
D	H04L29/12377	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2517	<u>Delete</u> the entire existing warning.
D	H04L29/12386	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2521	<u>Delete</u> the entire existing warning.
D	H04L29/12396	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2525	<u>Delete</u> the entire existing warning.
D	H04L29/12405	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2528	<u>Delete</u> the entire existing warning.
D	H04L29/12415	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2532	<u>Delete</u> the entire existing warning.
D	H04L29/12424	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2535	<u>Delete</u> the entire existing warning.
D	H04L29/12433	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2539	<u>Delete</u> the entire existing warning.
D	H04L29/12443	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2542	<u>Delete</u> the entire existing warning.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
D	H04L29/12452	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2546	<u>Delete</u> the entire existing warning.
D	H04L29/12462	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/255	<u>Delete</u> the entire existing warning.
D	H04L29/12481	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2557	<u>Delete</u> the entire existing warning.
D	H04L29/1249	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/256	<u>Delete</u> the entire existing warning.
D	H04L29/125	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2564	<u>Delete</u> the entire existing warning.
D	H04L29/12509	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2567	<u>Delete</u> the entire existing warning.
D	H04L29/12518	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2571	<u>Delete</u> the entire existing warning.
D	H04L29/12528	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2575	<u>Delete</u> the entire existing warning.
D	H04L29/12537	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2578	<u>Delete</u> the entire existing warning.
D	H04L29/12547	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2582	<u>Delete</u> the entire existing warning.
D	H04L29/12556	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2585	<u>Delete</u> the entire existing warning.
D	H04L29/12566	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2589	<u>Delete</u> the entire existing warning.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
D	H04L29/12575	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2592	<u>Delete</u> the entire existing warning.
D	H04L29/12584	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/2596	<u>Delete</u> the entire existing warning.
D	H04L29/12594	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/30	<u>Delete</u> the entire existing warning.
D	H04L29/12603	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/3005	<u>Delete</u> the entire existing warning.
D	H04L29/12613	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/301	<u>Delete</u> the entire existing warning.
D	H04L29/12622	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/3015	<u>Delete</u> the entire existing warning.
D	H04L29/12632	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/302	<u>Delete</u> the entire existing warning.
D	H04L29/12641	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/3025	<u>Delete</u> the entire existing warning.
D	H04L29/1265	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/303	<u>Delete</u> the entire existing warning.
D	H04L29/1266	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/3035	<u>Delete</u> the entire existing warning.
D	H04L29/12669	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/304	<u>Delete</u> the entire existing warning.
D	H04L29/12679	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/3045	<u>Delete</u> the entire existing warning.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
D	H04L29/12688	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/305	<u>Delete</u> the entire existing warning.
D	H04L29/12698	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/3055	<u>Delete</u> the entire existing warning.
D	H04L29/12707	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/306	<u>Delete</u> the entire existing warning.
D	H04L29/12716	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/3065	<u>Delete</u> the entire existing warning.
D	H04L29/12726	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/307	<u>Delete</u> the entire existing warning.
D	H04L29/12735	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/3075	<u>Delete</u> the entire existing warning.
D	H04L29/12745	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/308	<u>Delete</u> the entire existing warning.
D	H04L29/12754	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/3085	<u>Delete</u> the entire existing warning.
D	H04L29/12764	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/309	<u>Delete</u> the entire existing warning.
D	H04L29/12773	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/3095	<u>Delete</u> the entire existing warning.
D	H04L29/12783	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/35	<u>Delete</u> the entire existing warning.
D	H04L29/12792	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/60	<u>Delete</u> the entire existing warning.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
D	H04L29/12801	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6004	<u>Delete</u> the entire existing warning.
D	H04L29/12811	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6009	<u>Delete</u> the entire existing warning.
D	H04L29/1282	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6013	<u>Delete</u> the entire existing warning.
D	H04L29/1283	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6018	<u>Delete</u> the entire existing warning.
D	H04L29/12839	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6022	<u>Delete</u> the entire existing warning.
D	H04L29/12849	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6027	<u>Delete</u> the entire existing warning.
D	H04L29/12858	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6031	<u>Delete</u> the entire existing warning.
D	H04L29/12867	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6036	<u>Delete</u> the entire existing warning.
D	H04L29/12877	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/604	<u>Delete</u> the entire existing warning.
D	H04L29/12886	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6045	<u>Delete</u> the entire existing warning.
D	H04L29/12896	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/605	<u>Delete</u> the entire existing warning.
D	H04L29/12905	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6054	<u>Delete</u> the entire existing warning.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
D	H04L29/12915	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6059	<u>Delete</u> the entire existing warning.
D	H04L29/12924	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6063	<u>Delete</u> the entire existing warning.
D	H04L29/12933	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6068	<u>Delete</u> the entire existing warning.
D	H04L29/12943	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6072	<u>Delete</u> the entire existing warning.
D	H04L29/12952	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6077	<u>Delete</u> the entire existing warning.
D	H04L29/12962	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6081	<u>Delete</u> the entire existing warning.
D	H04L29/12971	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6086	<u>Delete</u> the entire existing warning.
D	H04L29/12981	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/609	<u>Delete</u> the entire existing warning.
D	H04L29/1299	This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to H04L 61/6095	<u>Delete</u> the entire existing warning.
N	H04L 41/00		Group H04L 41/00 is impacted by reclassification into groups H04L 41/34, H04L 41/342, H04L 41/344 and H04L 41/40. All groups listed in this Warning should be considered in order to perform a complete search.
N	H04L 41/04		Group H04L 41/04 is impacted by reclassification into groups H04L 41/045, H04L 41/052, H04L 41/34, H04L 41/342 and H04L 41/344. All groups listed in this Warning should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 41/045		Group H04L 41/045 is incomplete pending reclassification of documents from group H04L 41/04. Groups H04L 41/04 and H04L 41/045 should be considered in order to perform a complete search.
N	H04L 41/052		Group H04L 41/052 is incomplete pending reclassification of documents from group H04L 41/04. Groups H04L 41/04 and H04L 41/052 should be considered in order to perform a complete search.
N	H04L 41/08		Group H04L 41/08 is impacted by reclassification into group H04L 41/0895. Groups H04L 41/08 and H04L 41/0895 should be considered in order to perform a complete search.
N	H04L 41/0893		Group H04L 41/0893 is impacted by reclassification into group H04L 41/0894. Groups H04L 41/0893 and H04L 41/0894 should be considered in order to perform a complete search.
N	H04L 41/0894		Group H04L 41/0894 is incomplete pending reclassification of documents from group H04L 41/0893. Groups H04L 41/0893 and H04L 41/0894 should be considered in order to perform a complete search.
N	H04L 41/0895		Group H04L 41/0895 is incomplete pending reclassification of documents from group H04L 41/08. Groups H04L 41/08 and H04L 41/0895 should be considered in order to perform a complete search.
N	H04L 41/0896		Group H04L 41/0896 is impacted by reclassification into group H04L 41/0897. Groups H04L 41/0896 and H04L 41/0897 should be considered in order to perform a complete search.
N	H04L 41/0897		Group H04L 41/0897 is incomplete pending reclassification of documents from group H04L 41/0896. Groups H04L 41/0896 and H04L 41/0897 should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 41/12		Group H04L 41/12 is impacted by reclassification into groups H04L 41/122, H04L 41/34, H04L 41/342, H04L 41/344 and H04L 41/40. All groups listed in this Warning should be considered in order to perform a complete search.
N	H04L 41/122		Group H04L 41/122 is incomplete pending reclassification of documents from group H04L 41/12. Groups H04L 41/12 and H04L 41/122 should be considered in order to perform a complete search.
N	H04L 41/14		Group H04L 41/14 is impacted by reclassification into group H04L 41/149. Groups H04L 41/14 and H04L 41/149 should be considered in order to perform a complete search.
N	H04L 41/147		Group H04L 41/147 is impacted by reclassification into group H04L 41/149. Groups H04L 41/147 and H04L 41/149 should be considered in order to perform a complete search.
N	H04L 41/149		Group H04L 41/149 is incomplete pending reclassification of documents from groups H04L 41/14 and H04L 41/147. Groups H04L 41/14, H04L 41/147 and H04L 41/149 should be considered in order to perform a complete search.
N	H04L 41/34		Groups H04L 41/34, H04L 41/342 and H04L 41/344 are incomplete pending reclassification of documents from groups H04L 41/00, H04L 41/04 and H04L 41/12. All groups listed in this Warning should be considered in order to perform a complete search.
N	H04L 41/40		Group H04L 41/40 is incomplete pending reclassification of documents from groups H04L 41/00 and H04L 41/12. Groups H04L 41/00, H04L 41/12 and H04L 41/40 should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 43/08		Group H04L 43/08 is impacted by reclassification into group H04L 43/20. Groups H04L 43/08 and H04L 43/20 should be considered in order to perform a complete search.
N	H04L 43/20		Group H04L 43/20 is incomplete pending reclassification of documents from group H04L 43/08. Groups H04L 43/08 and H04L 43/20 should be considered in order to perform a complete search.
N	H04L 45/00		Group H04L 45/00 is impacted by reclassification into groups H04L 45/17, H04L 45/243, H04L 45/247, H04L 45/645, H04L 45/655, H04L 45/76, H04L 45/80, H04L 45/85 and H04L 45/851. All groups listed in this Warning should be considered in order to perform a complete search.
N	H04L 45/02		Group H04L 45/02 is impacted by reclassification into groups H04L 45/03, H04L 45/033, H04L 45/036, H04L 45/037 and H04L 45/0377. All groups listed in this Warning should be considered in order to perform a complete search.
N	H04L 45/03		Group H04L 45/03 is incomplete pending reclassification of documents from group H04L 45/02. Groups H04L 45/02 and H04L 45/03 should be considered in order to perform a complete search.
N	H04L 45/033		Group H04L 45/033 is incomplete pending reclassification of documents from group H04L 45/02. Groups H04L 45/02 and H04L 45/033 should be considered in order to perform a complete search.
N	H04L 45/036		Groups H04L 45/036, H04L 45/037 and H04L 45/0377 are incomplete pending reclassification of documents from group H04L 45/02. All groups listed in this Warning should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 45/17		Group H04L 45/17 is incomplete pending reclassification of documents from group H04L 45/00. Groups H04L 45/00 and H04L 45/17 should be considered in order to perform a complete search.
N	H04L 45/22		Group H04L 45/22 is impacted by reclassification into group H04L 45/247. Groups H04L 45/22 and H04L 45/247 should be considered in order to perform a complete search.
N	H04L 45/243		Group H04L 45/243 is incomplete pending reclassification of documents from group H04L 45/00. Groups H04L 45/00 and H04L 45/243 should be considered in order to perform a complete search.
N	H04L 45/247		Group H04L 45/247 is incomplete pending reclassification of documents from groups H04L 45/00 and H04L 45/22. Groups H04L 45/00, H04L 45/22 and H04L 45/247 should be considered in order to perform a complete search.
N	H04L 45/48		Group H04L 45/48 is impacted by reclassification into groups H04L 45/484 and H04L 45/488. Groups H04L 45/48, H04L 45/484 and H04L 45/488 should be considered in order to perform a complete search.
N	H04L 45/484		Group H04L 45/484 is incomplete pending reclassification of documents from group H04L 45/48. Groups H04L 45/48 and H04L 45/484 should be considered in order to perform a complete search.
N	H04L 45/488		Group H04L 45/488 is incomplete pending reclassification of documents from group H04L 45/48. Groups H04L 45/48 and H04L 45/488 should be considered in order to perform a complete search.
N	H04L 45/645		Groups H04L 45/645 and H04L 45/655 are incomplete pending reclassification of documents from group H04L 45/00. Groups H04L 45/00, H04L 45/645 and H04L 45/655 should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 45/745		Group H04L 45/745 is impacted by reclassification into groups H04L 45/7452 and H04L 45/7459. Groups H04L 45/745, H04L 45/7452 and H04L 45/7459 should be considered in order to perform a complete search.
N	H04L 45/7452		Group H04L 45/7452 is incomplete pending reclassification of documents from group H04L 45/745. Groups H04L 45/745 and H04L 45/7452 should be considered in order to perform a complete search.
N	H04L 45/7459		Group H04L 45/7459 is incomplete pending reclassification of documents from group H04L 45/745. Groups H04L 45/745 and H04L 45/7459 should be considered in order to perform a complete search.
N	H04L 45/76		Group H04L 45/76 is incomplete pending reclassification of documents from group H04L 45/00. Groups H04L 45/00 and H04L 45/76 should be considered in order to perform a complete search.
N	H04L 45/80		Groups H04L 45/80, H04L 45/85 and H04L 45/851 are incomplete pending reclassification of documents from group H04L 45/00. All groups listed in this Warning should be considered in order to perform a complete search.
N	H04L 47/10		Group H04L 47/10 is impacted by reclassification into groups H04L 47/43 and H04L 47/431. Groups H04L 47/10, H04L 47/43 and H04L 47/431 should be considered in order to perform a complete search.
N	H04L 47/12		Group H04L 47/12 is impacted by reclassification into group H04L 47/129. Groups H04L 47/12 and H04L 47/129 should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 47/129		Group H04L 47/129 is incomplete pending reclassification of documents from group H04L 47/12. Groups H04L 47/12 and H04L 47/129 should be considered in order to perform a complete search.
N	H04L 47/26		Group H04L 47/26 is impacted by reclassification into groups H04L 47/265 and H04L 47/267. Groups H04L 47/26, H04L 47/265 and H04L 47/267 should be considered in order to perform a complete search.
N	H04L 47/265		Group H04L 47/265 is incomplete pending reclassification of documents from group H04L 47/26. Groups H04L 47/26 and H04L 47/265 should be considered in order to perform a complete search.
N	H04L 47/267		Group H04L 47/267 is incomplete pending reclassification of documents from group H04L 47/26. Groups H04L 47/26 and H04L 47/267 should be considered in order to perform a complete search.
N	H04L 47/43		Groups H04L 47/43 and H04L 47/431 are incomplete pending reclassification of documents from group H04L 47/10. Groups H04L 47/10, H04L 47/43 and H04L 47/431 should be considered in order to perform a complete search.
N	H04L 47/70		Group H04L 47/70 is impacted by reclassification into group H04L 47/83. Groups H04L 47/70 and H04L 47/83 should be considered in order to perform a complete search.
N	H04L 47/83		Group H04L 47/83 is incomplete pending reclassification of documents from group H04L 47/70. Groups H04L 47/70 and H04L 47/83 should be considered in order to perform a complete search.
N	H04L 49/10		Group H04L 49/10 is impacted by reclassification into groups H04L 49/111, H04L 49/112, H04L 49/113, H04L 49/115, H04L 49/116 and H04L 49/118. All groups listed in this Warning should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 49/111		Group H04L 49/111 is incomplete pending reclassification of documents from group H04L 49/10. Groups H04L 49/10 and H04L 49/111 should be considered in order to perform a complete search.
N	H04L 49/112		Group H04L 49/112 is incomplete pending reclassification of documents from group H04L 49/10. Groups H04L 49/10 and H04L 49/112 should be considered in order to perform a complete search.
N	H04L 49/113		Groups H04L 49/113, H04L 49/115, H04L 49/116 and H04L 49/118 are incomplete pending reclassification of documents from group H04L 49/10. All groups listed in this Warning should be considered in order to perform a complete search.
N	H04L 49/90		Group H04L 49/90 is impacted by reclassification into group H04L 49/9023. Groups H04L 49/90 and H04L 49/9023 should be considered in order to perform a complete search.
N	H04L 49/9023		Group H04L 49/9023 is incomplete pending reclassification of documents from group H04L 49/90. Groups H04L 49/90 and H04L 49/9023 should be considered in order to perform a complete search.
N	H04L 51/00		Group H04L 51/00 is impacted by reclassification into groups H04L 51/07 and H04L 51/21. Groups H04L 51/00, H04L 51/07 and H04L 51/21 should be considered in order to perform a complete search.
N	H04L 51/07		Group H04L 51/07 is incomplete pending reclassification of documents from group H04L 51/00. Groups H04L 51/00 and H04L 51/07 should be considered in order to perform a complete search.
N	H04L 51/21		Group H04L 51/21 is incomplete pending reclassification of documents from group H04L 51/00. Groups H04L 51/00 and H04L 51/21 should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 61/09		Group H04L 61/09 is incomplete pending reclassification of documents from group H04L 9/40. Groups H04L 9/40 and H04L 61/09 should be considered in order to perform a complete search.
N	H04L 63/00		Group H04L 63/00 is incomplete pending reclassification of documents from group H04L 9/40. Groups H04L 9/40 and H04L 63/00 should be considered in order to perform a complete search.
N	H04L 65/1053		Group H04L 65/1053 is impacted by reclassification into group H04L 65/1055. Groups H04L 65/1053 and H04L 65/1055 should be considered in order to perform a complete search.
N	H04L 65/1055		Group H04L 65/1055 is incomplete pending reclassification of documents from group H04L 65/1053. Groups H04L 65/1053 and H04L 65/1055 should be considered in order to perform a complete search.
N	H04L 65/1083		Group H04L 65/1083 is impacted by reclassification into groups H04L 65/1094 and H04L 65/1095. Groups H04L 65/1083, H04L 65/1094 and H04L 65/1095 should be considered in order to perform a complete search.
N	H04L 65/1094		Group H04L 65/1094 is incomplete pending reclassification of documents from group H04L 65/1083. Groups H04L 65/1083 and H04L 65/1094 should be considered in order to perform a complete search.
N	H04L 65/1095		Group H04L 65/1095 is incomplete pending reclassification of documents from group H04L 65/1083. Groups H04L 65/1083 and H04L 65/1095 should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 65/1101		Group H04L 65/1101 is impacted by reclassification into group H04L 65/1108. Groups H04L 65/1101 and H04L 65/1108 should be considered in order to perform a complete search.
N	H04L 65/1108		Group H04L 65/1108 is incomplete pending reclassification of documents from group H04L 65/1101. Groups H04L 65/1101 and H04L 65/1108 should be considered in order to perform a complete search.
N	H04L 65/40		Group H04L 65/40 is impacted by reclassification into groups H04L 65/401, H04L 65/4015, H04L 65/402, H04L 65/403, H04L 65/4038, H04L 65/4046, H04L 65/4053 and H04L 65/4061. All groups listed in this Warning should be considered in order to perform a complete search.
N	H04L 65/401		Groups H04L 65/401 and H04L 65/4015 are incomplete pending reclassification of documents from group H04L 65/40. Groups H04L 65/40, H04L 65/401 and H04L 65/4015 should be considered in order to perform a complete search.
N	H04L 65/402		Group H04L 65/402 is incomplete pending reclassification of documents from group H04L 65/40. Groups H04L 65/40 and H04L 65/402 should be considered in order to perform a complete search.
N	H04L 65/403		Groups H04L 65/403, H04L 65/4038, H04L 65/4046 and H04L 65/4053 are incomplete pending reclassification of documents from group H04L 65/40. All groups listed in this Warning should be considered in order to perform a complete search.
N	H04L 65/4061		Group H04L 65/4061 is incomplete pending reclassification of documents from group H04L 65/40. Groups H04L 65/40 and H04L 65/4061 should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 65/60		Groups H04L 65/60, H04L 65/61, H04L 65/611, H04L 65/612, H04L 65/613, H04L 65/65 and H04L 65/70 are incomplete pending reclassification of documents from group H04L 9/40. All groups listed in this Warning should be considered in order to perform a complete search.
N	H04L 65/75		Group H04L 65/75 is incomplete pending reclassification of documents from group H04L 9/40. Group H04L 65/75 is also impacted by reclassification into groups H04L 65/752 and H04L 65/756. All groups listed in this Warning should be considered in order to perform a complete search.
N	H04L 65/752		Group H04L 65/752 is incomplete pending reclassification of documents from groups H04L 9/40 and H04L 65/75. Groups H04L 9/40, H04L 65/75 and H04L 65/752 should be considered in order to perform a complete search.
N	H04L 65/756		Group H04L 65/756 is incomplete pending reclassification of documents from groups H04L 9/40 and H04L 65/75. Groups H04L 9/40, H04L 65/75 and H04L 65/756 should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 67/01		<p>Group H04L 67/01 is incomplete pending reclassification of documents from group H04L 9/40. Group H04L 67/01 is also impacted by reclassification into groups H04L 67/02, H04L 67/025, H04L 67/04, H04L 67/06, H04L 67/08, H04L 67/10, H04L 67/1001, H04L 67/1004, H04L 67/1006, H04L 67/1008, H04L 67/101, H04L 67/1012, H04L 67/1014, H04L 67/1017, H04L 67/1019, H04L 67/1021, H04L 67/1023, H04L 67/1025, H04L 67/1027, H04L 67/1029, H04L 67/1031, H04L 67/1034, H04L 67/1036, H04L 67/1038, H04L 67/104, H04L 67/1042, H04L 67/1044, H04L 67/1046, H04L 67/1048, H04L 67/1051, H04L 67/1053, H04L 67/1055, H04L 67/1057, H04L 67/1059, H04L 67/1061, H04L 67/1063, H04L 67/1065, H04L 67/1068, H04L 67/107, H04L 67/1072, H04L 67/1074, H04L 67/1076, H04L 67/1078, H04L 67/108, H04L 67/1082, H04L 67/1085, H04L 67/1087, H04L 67/1089, H04L 67/1091, H04L 67/1093, H04L 67/1095, H04L 67/1097, H04L 67/12, H04L 67/125, H04L 67/131, H04L 67/133, H04L 67/1396, H04L 67/2866, H04L 67/2869, H04L 67/2871, H04L 67/2876, H04L 67/288, H04L 67/2885, H04L 67/289, H04L 67/2895, H04L 67/30, H04L 67/303 and H04L 67/306. All groups listed in this Warning should be considered in order to perform a complete search.</p>
N	H04L 67/02		<p>Groups H04L 67/02 and H04L 67/025 are incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01, H04L 67/02 and H04L 67/025 should be considered in order to perform a complete search.</p>

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 67/04		Group H04L 67/04 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/04 should be considered in order to perform a complete search.
N	H04L 67/06		Group H04L 67/06 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/06 should be considered in order to perform a complete search.
N	H04L 67/08		Group H04L 67/08 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/08 should be considered in order to perform a complete search.
N	H04L 67/10		Group H04L 67/10 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/10 should be considered in order to perform a complete search.
N	H04L 67/1001		Group H04L 67/1001 is incomplete pending reclassification of documents from groups H04L 9/40 and H04L 67/01. Groups H04L 9/40, H04L 67/01 and H04L 67/1001 should be considered in order to perform a complete search.
N	H04L 67/10015		Group H04L 67/10015 is incomplete pending reclassification of documents from group H04L 9/40. Groups H04L 9/40 and H04L 67/10015 should be considered in order to perform a complete search.
N	H04L 67/1004		Group H04L 67/1004 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1004 should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 67/1006		Group H04L 67/1006 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1006 should be considered in order to perform a complete search.
N	H04L 67/1008		Group H04L 67/1008 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1008 should be considered in order to perform a complete search.
N	H04L 67/101		Group H04L 67/101 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/101 should be considered in order to perform a complete search.
N	H04L 67/1012		Group H04L 67/1012 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1012 should be considered in order to perform a complete search.
N	H04L 67/1014		Group H04L 67/1014 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1014 should be considered in order to perform a complete search.
N	H04L 67/1017		Group H04L 67/1017 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1017 should be considered in order to perform a complete search.
N	H04L 67/1019		Group H04L 67/1019 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1019 should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 67/1021		Group H04L 67/1021 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1021 should be considered in order to perform a complete search.
N	H04L 67/1023		Group H04L 67/1023 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1023 should be considered in order to perform a complete search.
N	H04L 67/1025		Group H04L 67/1025 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1025 should be considered in order to perform a complete search.
N	H04L 67/1027		Group H04L 67/1027 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1027 should be considered in order to perform a complete search.
N	H04L 67/1029		Group H04L 67/1029 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1029 should be considered in order to perform a complete search.
N	H04L 67/1031		Group H04L 67/1031 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1031 should be considered in order to perform a complete search.
N	H04L 67/1034		Group H04L 67/1034 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1034 should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 67/1036		Group H04L 67/1036 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1036 should be considered in order to perform a complete search.
N	H04L 67/1038		Group H04L 67/1038 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1038 should be considered in order to perform a complete search.
N	H04L 67/104		Groups H04L 67/104, H04L 67/1042, H04L 67/1044, H04L 67/1046, H04L 67/1048, H04L 67/1051, H04L 67/1053, H04L 67/1055, H04L 67/1057, H04L 67/1059, H04L 67/1061, H04L 67/1063, H04L 67/1065, H04L 67/1068, H04L 67/107, H04L 67/1072, H04L 67/1074, H04L 67/1076, H04L 67/1078, H04L 67/108, H04L 67/1082, H04L 67/1085, H04L 67/1087, H04L 67/1089, H04L 67/1091 and H04L 67/1093 are incomplete pending reclassification of documents from group H04L 67/01. All groups listed in this Warning should be considered in order to perform a complete search.
N	H04L 67/1095		Group H04L 67/1095 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1095 should be considered in order to perform a complete search.
N	H04L 67/1097		Group H04L 67/1097 is incomplete pending reclassification of documents from group H04L 67/01. Groups H04L 67/01 and H04L 67/1097 should be considered in order to perform a complete search.
N	H04L 67/12		Groups H04L 67/12 and H04L 67/125 are incomplete pending reclassification of documents from group H04L 67/01. All groups listed in this Warning should be considered in order to perform a complete search.

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N	H04L 67/131		Group H04L 67/131 is incomplete pending reclassification of documents from groups H04L 9/40 and H04L 67/01. Groups H04L 9/40, H04L 67/01 and H04L 67/131 should be considered in order to perform a complete search.
N	H04L 67/133		Group H04L 67/133 is incomplete pending reclassification of documents from groups H04L 9/40 and H04L 67/01. Groups H04L 9/40, H04L 67/01 and H04L 67/133 should be considered in order to perform a complete search.
N	H04L 67/1396		Group H04L 67/1396 is incomplete pending reclassification of documents from groups H04L 9/40 and H04L 67/01. Groups H04L 9/40, H04L 67/01 and H04L 67/1396 should be considered in order to perform a complete search.
N	H04L 67/2866		Groups H04L 67/2866, H04L 67/2869, H04L 67/2871, H04L 67/2876, H04L 67/288, H04L 67/2885, H04L 67/289, H04L 67/2895, H04L 67/30, H04L 67/303 and H04L 67/306 are incomplete pending reclassification of documents from group H04L 67/01. All groups listed in this Warning should be considered in order to perform a complete search.
N	H04L 67/50		Group H04L 67/50 is incomplete pending reclassification of documents from group H04L 9/40. Groups H04L 9/40 and H04L 67/50 should be considered in order to perform a complete search.
N	H04L 69/08		Group H04L 69/08 is impacted by reclassification into group H04L 69/085. Groups H04L 69/08 and H04L 69/085 should be considered in order to perform a complete search.
N	H04L 69/085		Group H04L 69/085 is incomplete pending reclassification of documents from group H04L 69/08. Groups H04L 69/08 and H04L 69/085 should be considered in order to perform a complete search.

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<u>Type</u> *	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
N	H04L 69/32		Group H04L 69/32 is impacted by reclassification into groups H04L 69/321, H04L 69/322, H04L 69/323, H04L 69/324, H04L 69/325, H04L 69/326, H04L 69/327, H04L 69/328 and H04L 69/329. All groups listed in this Warning should be considered in order to perform a complete search.
N	H04L 69/321		Group H04L 69/321 is incomplete pending reclassification of documents from group H04L 69/32. Groups H04L 69/32 and H04L 69/321 should be considered in order to perform a complete search.
N	H04L 69/322		Groups H04L 69/322, H04L 69/323, H04L 69/324, H04L 69/325, H04L 69/326, H04L 69/327, H04L 69/328 and H04L 69/329 are incomplete pending reclassification of documents from group H04L 69/32. All groups listed in this Warning should be considered in order to perform a complete search.

\*N = new warning, M = modified warning, D = deleted warning

NOTE: The "Location" column only requires the symbol PRIOR to the location of the warning. No further directions such as "before" or "after" are required.

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C. New, Modified or Deleted Note(s)

**SUBCLASS – H04L TRANSMISSION OF DIGITAL INFORMATION, e.g. TELEGRAPHIC COMMUNICATION (arrangements common to telegraphic and telephonic communication H04M)**

<u>Type*</u>	<u>Location</u>	<u>Old Note</u>	<u>New/Modified Note</u>
M	H04L	This subclass <u>covers</u> transmission of signals having been supplied in digital form and includes data transmission, telegraphic communication and methods or arrangements for monitoring.	<p><u>Replace:</u> The existing NOTE with the following two new notes.</p> <p>1. This subclass <u>covers</u> transmission of signals having been supplied in digital form and includes data transmission, telegraphic communication, or methods or arrangements for monitoring.</p> <p>2. In this subclass, it is desirable to add the indexing codes of group H04L 2101/00.</p>
N	H04L 9/40		<p><u>Insert:</u> The following new NOTE.</p> <p>{ When allocating H04L 9/40 to patent documents, attention should be made to check whether other subgroups from H04L 63/00 need to be allocated also for a complete classification. }</p>
M	H04L 12/4641	<p>1. { This group covers: a group of hosts with a common set of requirements that communicate as if they were attached to the same broadcast domain, regardless of their physical location. }</p> <p>2. { This group does not cover:</p> <ul style="list-style-type: none"> <li>• group multicasting, which is covered by group H04L 12/18</li> <li>• configuration of switches supporting VLANs, which is covered by group H04L 41/08</li> <li>• multiprotocol label switching [MPLS], which is covered by group H04L 45/00</li> <li>• spanning tree protocols [STP], which are covered by group H04L 12/462</li> <li>• arrangements for network security, which are covered by group H04L 29/06612</li> <li>• encapsulation techniques, which are covered by group H04L 12/4633</li> </ul>	<p><u>Replace:</u> In Note 2, in the 5<sup>th</sup> bullet the symbol H04L 29/06612 with H04L 63/0272.</p>

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<u>Type*</u>	<u>Location</u>	<u>Old Note</u>	<u>New/Modified Note</u>
		<p>•access arrangements, which are covered by group H04L 12/2856                      }                      3. {In this group the following terms or expressions are used with the meaning indicated:                      B-Tag means Backbone VLAN Tag                      C-Tag means Customer VLAN Tag                      GARP means Generic Attribute Registration Protocol                      GVRP means GARP VLAN Registration Protocol                      I-SID means Service Instance Identifier                      MVRP means Multiple VLAN Registration Protocol                      PBB means Provider Backbone Bridges                      S-Tag means Service VLAN Tag                      VLAN means Virtual Local Area Network                      VPN means Virtual Private Network                      VTP means VLAN Trunking Protocol                      }</p>	
D	H04L29/06176	<p>1. [N: This group <u>covers</u>:</p> <ul style="list-style-type: none"> <li>• only communications which fulfil the following two conditions:                             <ol style="list-style-type: none"> <li>1. they are based on packet data;</li> <li>2. there is real-time or pseudo-real-time temporal association between source and destination, or source and network, or destination and network;</li> </ol> </li> <li>• provided that the above two conditions are met, this group <u>covers</u> arrangements relating to                              the transmission of the multimedia data itself, the user-to-user, user-to-network, inter-network or intra-network signalling supporting:                              the establishment of a session for the subsequent transmission of the multimedia data, or the maintenance of the session or the application services available to the user during the session (unless explicitly excluded in certain cases).</li> </ul> <p>2. This group <u>does not cover</u>:                      non-real-time multimedia file transfer, which is covered by group H04L 29/08117. multimedia store or forward messaging as in e-mail, MMS or the like, which are covered by group H04L 51/00 analogue multimedia streaming, as in analogue television systems, which is covered by groups H04N 7/00 or H04N 5/00 bit streaming, i.e. not packet-based, such as in ISDN, which is covered by group H04Q 11/04 instant messaging, which is covered by group H04L 51/04</p>	<p><u>Delete</u>: The entire NOTES (i.e. NOTES 1, 2 and 3)</p>

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<u>Type*</u>	<u>Location</u>	<u>Old Note</u>	<u>New/Modified Note</u>
		<p>any other multimodal data communications which do not meet the conditions of being packet-based and real-time or pseudo-real-time.</p> <p>3. In this group the following terms or expressions are used with the meaning indicated:                      H.323 means International Telecommunication Union Recommendation no. 323, series H, entitled "Packet-based multimedia communications systems"                      IP means Internet Protocol                      IMS means IP Multimedia Subsystem                      ISDN means Integrated Services Digital Network                      MGC means Media Gateway Control/Controller                      MGCP means Media Gateway Control Protocol                      MMS means Multimedia Messaging Service                      PBX means Private Branch Exchange                      PSTN means Public Switched Telephone Network                      QoS means Quality of Service                      RTP means Real Time Protocol                      RTCP means Real Time Control Protocol                      SIP means Session Initiation Protocol                      SPAM means unsolicited electronic mail                      SPIT means SPAM Prevention in IP Telephony</p>	
D	H04L 29/08144	In this group and its subgroups, the term "servers" includes non-dedicated servers, such as peer nodes in a peer-to-peer architecture	<u>Delete</u> the entire NOTE.
D	H04L 29/08576	This group <u>covers</u> session signaling at higher OSI layers to support networked applications.	<u>Delete</u> the entire NOTE.
D	H04L 29/12009	<p>1. H04L 61/00 covers aspects of data networks, excluding pure telephone solutions (H04M7/00) or addressing within a device, e.g. process, memory etc. (G06F13/42 or G06F12/00).</p> <p>2. Aspects relating to switching and routing are classified in H04L12/56.</p> <p>3. Main aspects covered by this groups are:                      address resolution; directories and name-to-address resolution; allocation of addresses; conversion of addresses; logical names and non-standard use of addresses</p>	<u>Delete</u> : The entire NOTES (i.e. NOTES 1, 2, and 3)

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<u>Type*</u>	<u>Location</u>	<u>Old Note</u>	<u>New/Modified Note</u>
M	H04T 2029/06	The indexing codes of this scheme are to be used mainly with classification in subgroups H04L 29/06 - H04L 29/06544. In this scheme H04T 2029/06 codes are mapped whenever possible or appropriate to the corresponding entries and have the same meaning	<u>Replace:</u> The existing NOTE with the following:  The indexing codes of this scheme are to be used mainly with classification in subgroups H04L 9/40 and H04L 69/02 – H04L 69/26. In this scheme H04T 2029/06 codes are mapped whenever possible or appropriate to the corresponding entries and have the same meaning.

\*N = new note, M = modified note, D = deleted note

NOTE: The “Location” column only requires the symbol PRIOR to the location of the note. No further directions such as “before” or “after” are required.

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**2. A. DEFINITIONS (new)**Insert: The following new definitions.**G06F 11/0727****References*****Limiting references****This place does not covers:*

Circuits for error detection or correction within digital recording or reproducing units	<a href="#">G11B 20/18</a>
Drivers for digital recording or reproducing units	<a href="#">G06F 3/06</a>
For distributed storage of data in networks, e.g. transport arrangements for network file system [NFS], storage area networks [SAN] or network attached storage [NAS]	<a href="#">H04L 67/1097</a>

**G06F 11/0793****References*****Limiting references****This place does not covers:*

By retry	<a href="#">G06F 11/1402</a>
Recovery from an exception in an instruction pipeline	<a href="#">G06F 9/3861</a>
For recovering from a failure of a protocol instance or entity	<a href="#">H04L 69/40</a>

**G06F 11/3034****References*****Limiting references****This place does not covers:*

Circuits for error detection or correction within digital recording or reproducing units	<a href="#">G11B 20/18</a>
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Drivers for digital recording or reproducing units	<a href="#">G06F 3/06</a>
For distributed storage of data in networks, e.g. transport arrangements for network file system [NFS], storage area networks [SAN] or network attached storage [NAS]	<a href="#">H04L 67/1097</a>

**G06F 15/1735****References*****Limiting references****This place does not cover:*

Protocol engines	<a href="#">H04L 69/12</a>
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**G06K 7/10297****References*****Limiting references****This place does not cover:*

Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	<a href="#">H04L 9/00</a>
Network architectures or network communication protocols for network security	<a href="#">H04L 63/00</a>
Network arrangements, protocols or services for supporting real-time applications in data packet communication	<a href="#">H04L 65/00</a>
Network arrangements or protocols for supporting network services or applications	<a href="#">H04L 67/00</a>

**H04L 12/1813****References*****Limiting references****This place does not cover:*

Protocols for multimedia communication	<a href="#">H04L 65/1101</a>
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Arrangements for multi-party communication	<a href="#">H04L 65/403</a>
Instant messaging	<a href="#">H04L 51/04</a>
Telephonic conference arrangements	<a href="#">H04M 3/56</a>
Television conference systems	<a href="#">H04N 7/15</a>

**H04L 12/1845****References*****Limiting references****This place does not cover:*

Protocols for adapting network applications to user terminal location	<a href="#">H04L 67/52</a>
Services specially adapted for wireless communication networks making use of the location of users or terminals	<a href="#">H04W 4/02</a>

**H04L 12/54****Definition statement***This place covers:*

Systems in which information is sent to an intermediate station where it is kept and sent at a later time to the final destination or to another intermediate station.

**References*****Limiting references****This place does not covers:*

Routing or path finding of packets in data switching networks	<a href="#">H04L 45/00</a>
Traffic control in data switching networks	<a href="#">H04L 47/00</a>

**H04L 41/045****Definition statement***This place covers:*

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Aspects related to the specific type of NM architecture comprising client and server type of relationship, i.e. one central server and one or multiple clients connected to the server, wherein the management network provides the client-server architecture (architecture of the managed network is irrelevant).

### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Standardised network management protocols, e.g. simple network management protocol [SNMP]	<a href="#">H04L 41/0213</a>
Protocols for client-server architectures	<a href="#">H04L 67/01</a>

### **H04L 41/052**

#### **Definition statement**

*This place covers:*

Aspects related to the specific type of standard NM architecture used.

### **H04L 41/0823**

#### **Definition statement**

*This place covers:*

Aspects focusing on the aim of the configuration settings, for improving certain conditions, e.g. reliability or reducing downtime.

### **References**

#### **Limiting references**

*This place does not cover:*

Optimising operational conditions of wireless networks	<a href="#">H04W 24/02</a>
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### **H04L 41/0826**

#### **Definition statement**

*This place covers:*

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Configuration aiming at reducing the number or use or maintenance of network components, devices, links, functionalities or the cost associated to a function of the network or the path.

## References

### Limiting references

*This place does not cover:*

For reduction of network energy consumption	<a href="#">H04L 41/0833</a>
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## H04L 41/0893

### Definition statement

*This place covers:*

Aspects related to the logical clustering of network elements, e.g. grouping according to configuration parameters or network element functionality.

## H04L 41/0894

### Definition statement

*This place covers:*

Aspects related to the definition and/or use of policies and/or rules for the processing of network element configuration data.

Aspects related to network management functionalities within Policy and Charging Control, e.g. 3GPP policy architecture (PCRF, PCEF, SPR).

## References

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Network security policies	<a href="#">H04L 63/20</a>
Policy and charging Control architecture for metering, charging or billing	<a href="#">H04L 12/1407</a>

## H04L 41/0895

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### Definition statement

*This place covers:*

Aspects covering specifically operations defined for configuration management when the network or network elements are virtualised.

### Special rules of classification

As far as configuration of the virtualised networks or network elements involves relevant aspects covered by subgroups [H04L 41/0803](#) - [H04L 41/0894](#), these aspects are additionally classified under the relevant subgroups, e.g. operations defined for the activation or instantiation of virtualised entities such as VNFs or Service Chains of VNFs are classified with [H04L 41/0895](#) and [H04L 41/0806](#).

### H04L 41/0897

#### Definition statement

*This place covers:*

Aspects dealing with the scaling by instantiating additional or removing virtualised entities or by adapting the capacity of the virtualised entities, e.g. runtime optimisation of network slices or VNFs or VMs.

Aspects dealing with the migration of virtualised entities in a virtualised environment in order to ensure the consistent transfer of information and connections.

Aspects of the orchestrator, cloud manager, SDN controller or virtual network manager entities performing these scaling and migration operations.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Hypervisor specific management aspects	<a href="#">G06F 9/45558</a>
Virtual machine migration in general	<a href="#">G06F 9/4856</a>

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**H04L 41/122****Definition statement***This place covers:*

Arrangements and functions wherein the appropriate topology for the virtualised network is determined and established, e.g. based on requirements such as the ones derived from "multi-tenant sites", "multi-sites" and customers' requirements.

Aspects related to the mapping of virtual or logical elements to physical elements, the virtualised network topology comprising hierarchies or layers of network elements and aspects of the distribution of controllers and forwarding entities in the network.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Local partitioning of resources	<a href="#">G06F 9/5077</a>
Arrangements for network security, VPNs	<a href="#">H04L 9/40</a> , <a href="#">H04L 63/0272</a>

**H04L 41/149****Definition statement***This place covers:*

Aspects related to the prediction of the maintenance needs due to the future forecast behaviour of network or network elements.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Fault management	<a href="#">H04L 41/06</a>
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**H04L 41/34****Definition statement***This place covers:*

Aspects of how network administration and management data are transferred, e.g. details of the transport procedure or details of transfer schemes for in-band transport of management data over the same physical and logical infrastructure as the user plane data traffic.

Data signalling between network management entities.

Aspects related to the use of network management tunnels between network devices, e.g. protocols for enveloping/encapsulation of management data.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Conversion of network management protocols	<a href="#">H04L 41/0226</a>
Exchanging or transporting network management information using Internet; Embedding network management web servers in network elements; Web-services-based protocols	<a href="#">H04L 41/0246</a>
Web-based network application protocols in general	<a href="#">H04L 67/02</a>
Web-based network application protocols for remote control of end-devices or monitoring of remote application data	<a href="#">H04L 67/025</a>
Proprietary application protocols for remote control of end-devices in special networking environments	<a href="#">H04L 67/125</a>

**H04L 41/342****Definition statement***This place covers:*

Actions and arrangements involving the communication between virtual network management entities, e.g. NFV-MANO orchestrator, cloud managers, VNFM, VIM, VMs, VNFs.

Actions and arrangements involving communication between a plurality of SDN controllers or communication between a network management entity and

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orchestrator(s)/controller(s). The communication including signalling between SDN controllers for indicating forwarding information on reachability at one or more layers for network management purposes.

Actions and arrangements involving the communication between an SDN controller and one or a plurality of forwarding entity/entities for network management.

## References

### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Management of faults, events, alarms or notifications	<a href="#">H04L 41/06</a>
Policy based network configuration management	<a href="#">H04L 41/0894</a>
Configuration management	<a href="#">H04L 41/08</a>
Ensuring SLA	<a href="#">H04L 41/5019</a>
Monitoring or testing data switching networks	<a href="#">H04L 43/00</a>
Using an overlay routing layer	<a href="#">H04L 45/64</a>
Updating the topology between route computation elements	<a href="#">H04L 45/036</a>

## H04L 41/344

### Definition statement

*This place covers:*

Definition or use of an out-of-band management signalling layer.

Aspects concerning management data transfer via outband or out-of-band (OOB) channel, e.g. wherein OOB signalling is channeled via dedicated NEs which are independent and physically distinct from those in the data network.

Aspects wherein NMS manages NEs even if an inband service channel fails by using a secondary transmission channel dedicated for the transport of network management information.

## References

### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Using different networks or paths for security, e.g. using out of band channels	<a href="#">H04L 63/18</a>
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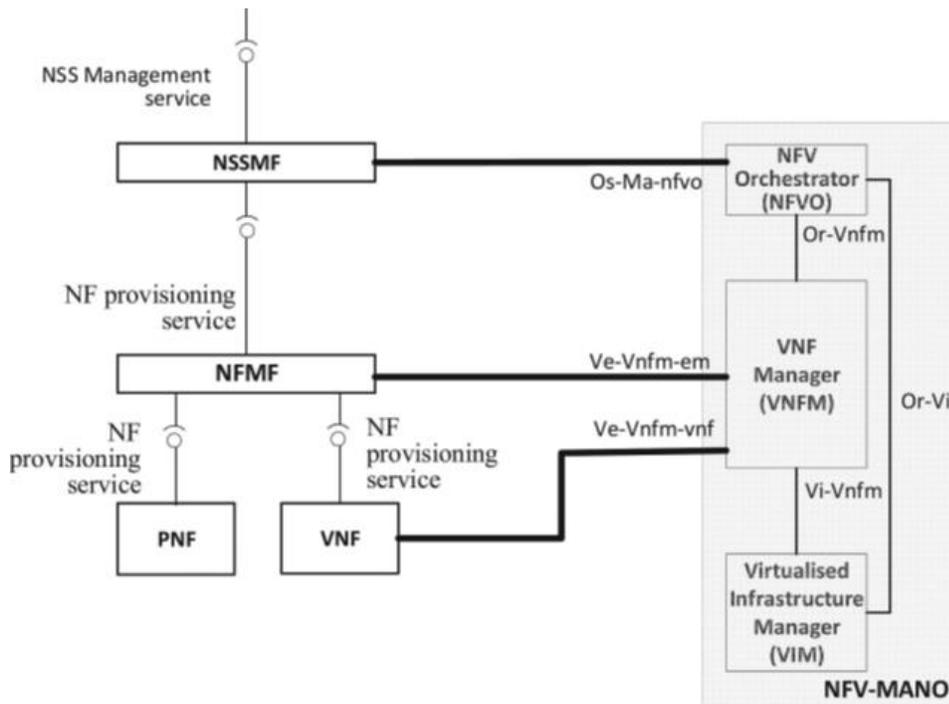
**H04L 41/40**

**Definition statement**

*This place covers:*

Aspects covering specific management or orchestration operations to explicitly specify them as being associated to network function virtualisation or resources virtualisation, e.g. virtualisation aspects in fault management.

Aspects covering logical centralisation of network intelligence and state, e.g. virtualisation of network resources as most relevant features such as those defined in Software Defined Network and ETSI NFV Network Function Virtualisation, e.g. NFV Management and Orchestration (NFV-MANO) or 3GPP Network Slice Subnet Management Function (NSSMF) as shown in the figure below.



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## References

### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Arrangements for monitoring or testing data switching networks	<a href="#">H04L 43/00</a>
Routing or path finding of packets in data switching networks	<a href="#">H04L 45/00</a>
Traffic control in data switching networks	<a href="#">H04L 47/00</a>
Packet switching elements	<a href="#">H04L 49/00</a>
Network arrangements or protocols for supporting network services or applications	<a href="#">H04L 67/00</a>
Optical switching	<a href="#">H04Q 11/0001</a>

### **Special rules of classification**

As far as network management using virtualisation of networks or network elements involves relevant aspects covered by [H04L 41/00](#) subgroups which are not exclusively defined for virtualised entities, these aspects are additionally classified under the relevant subgroups. For instance, root cause analysis in a virtualised network is classified in groups [H04L 41/0631](#) and [H04L 41/40](#).

## [H04L 43/091](#)

### **Definition statement**

*This place covers:*

Aspects related to identification of network entities such as nodes, links, applications, that contribute to or are responsible for actual Service Level performance, such as service failure or service quality degradation, wherein the network entities provide the service for which a Service Level Agreement exists.

Aspects related to measuring the contribution of network entities to the actual Service Level.

### **Relationships with other classification places**

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Aspects of Service Level Management between parties for Service Level Agreement definition, Service Level assurance or Service deployment are covered by [H04L 41/50](#) and its subgroups.

**References**

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Management of faults, events, alarms or notifications using root cause analysis; Using analysis of correlation between notifications, alarms or events based on decision criteria, e.g. hierarchy, tree or time analysis	<a href="#">H04L 41/0631</a>
Network service management, e.g. ensuring proper service fulfilment according to agreements	<a href="#">H04L 41/50</a>

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## H04L 43/20

### Definition statement

*This place covers:*

Aspects covering operations specifically defined for monitoring or testing data switching networks for virtualised systems, virtualised network functions, virtualised entities and network slices, e.g. being performed by an orchestrator, OpenFlow controller, NFV-MANO entities and cloud managers.

### Relationships with other classification places

As far as the virtualised monitoring system or monitored elements involve relevant aspects covered by other [H04L 43/00](#) subgroups, these aspects are additionally classified under the relevant subgroups.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Fault Management	<a href="#">H04L 41/06</a>
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## H04L 43/55

### Definition statement

*This place covers:*

Testing the quality level of a service, e.g. by simulating or emulating service usage by active agents to automatically measure Service Level compliance, testing based on artificial traffic, artificial customer's behaviour.

### Relationships with other classification places

The determination and monitoring of Service Level performance and of violations of Service Level requirements is covered by [H04L 41/5009](#). Measuring the contribution of individual network components to actual Service Level is covered by [H04L 43/091](#).

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**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Network Service Management, e.g. ensuring proper service fulfilment according to agreements	<a href="#">H04L 41/50</a>
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**H04L 45/02****Definition statement***This place covers:*

Details on network reconfiguration for routing purposes, topology database update and exchange, update of link metrics in a distributed routing system, conversion of physical to logical topology for routing.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Topology issues related specifically to wireless networks	<a href="#">H04W 40/24</a>
Routing tree calculation	<a href="#">H04L 45/48</a>
Topology discovery and update for network management	<a href="#">H04L 41/12</a>

**H04L 45/021****Definition statement***This place covers:*

Arrangements to make sure that the routing table contained in each router corresponds to the latest available version.

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## H04L 45/023

### Definition statement

*This place covers:*

Delay of the implementation of the just received updates, e.g. so that all nodes implement the update at the same time.

## H04L 45/025

### Definition statement

*This place covers:*

Updating techniques in which update information is broadcast with a hop counter so that only nodes at a certain distance receive the update; region-wise or limited-scope updates.

## H04L 45/026

### Definition statement

*This place covers:*

Routing update or discovery using “hello” or “keep-alive” packets sent or broadcast by a specific router in order to inform the neighbouring routers of its presence or to verify that the neighbouring routers are still up and running.

## References

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Avoiding end of session, e.g. keep-alive, heartbeats, resumption message or wake-up for inactive or interrupted session
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<a href="#">H04L 67/145</a>
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#### **H04L 45/028**

##### **Definition statement**

*This place covers:*

Conditions under which the exchange of routing table updates takes place.

#### **H04L 45/03**

##### **Definition statement**

*This place covers:*

Details on updating link state protocols for routing purposes.

#### **H04L 45/033**

##### **Definition statement**

*This place covers:*

Details on updating distance vector protocols for routing purposes.

#### **H04L 45/036**

##### **Definition statement**

*This place covers:*

Interaction between route computation elements for the purpose of routing topology update, e.g. between controllers located in different network domains.

##### **References**

###### ***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

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Configuration of virtualised networks or elements, e.g. virtualised network function or Openflow elements	<a href="#">H04L 41/0895</a>
Interdomain routing, e.g. hierarchical routing	<a href="#">H04L 45/04</a>

**H04L 45/037****Definition statement***This place covers:*

Route determination in which at least one of the nodes that must be part of the route is selected based on the type of application to be routed.

**H04L 45/0377****Definition statement***This place covers:*

Selection of paths in order to comprise nodes or devices that provide specific services to end users or end devices, e.g. according to a sequence of actions to be applied to the flow.

**H04L 45/04****Definition statement***This place covers:*

Inter-cluster routing Internet routing; provisions in routers for interdomain routing; inter LAN routing with bridges; routing in Hierarchical Networks; all hierarchical aspects of BGP and PNNI.

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Cluster building	<a href="#">H04L 45/46</a>
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## H04L 45/06

### Definition statement

*This place covers:*

Forwarding, by routing nodes of the received autonomous network data packets, without buffering in order to reduce traffic and network complexity. Hypercubes and hypertorus routing in multiprocessor networks such as the routing used for supercomputers.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Combinations of two or more digital computers	<a href="#">G06F 15/16</a>
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## H04L 45/08

### Definition statement

*This place covers:*

Routing with genetic algorithms, fuzzy logic, artificial intelligence (AI) for routing purposes, ants-routing.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Machine learning per se	<a href="#">G06N 20/00</a>
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## H04L 45/10

### Definition statement

*This place covers:*

Provisions for routing with virtual circuits; routing in Frame Relay.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Hierarchy definition for routing in ATM-PNNI	<a href="#">H04L 45/04</a>
Virtualisation or emulation of application or operating system execution engines	<a href="#">G06F 9/455</a>

## H04L 45/12

### Definition statement

*This place covers:*

Different techniques for the calculation of the shortest path based on any kind of single metric (Objective Functions) or metrics combination.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Function evaluation by approximation methods per se	<a href="#">G06F 17/17</a>
---	----------------------------

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#### **H04L 45/121**

##### **Definition statement**

*This place covers:*

Using minimum path delay or latency (e.g. queuing delay, round-trip time) in order to determine the best route.

#### **H04L 45/122**

##### **Definition statement**

*This place covers:*

Using the number of intermediate nodes between the source and the destination in order to determine the best route.

#### **H04L 45/123**

##### **Definition statement**

*This place covers:*

Applying a function to a basic parameter such as delay in order to create a new metric, e.g. delay statistics; refine a parameter to create a new metric. The link metric is obtained after operation of a link performance value, e.g. a link metric could be the average loss rate over a time interval.

##### **References**

###### ***Limiting references***

*This place does not cover:*

Techniques for monitoring network metrics	<a href="#">H04L 43/08</a>
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#### **H04L 45/124**

##### **Definition statement**

*This place covers:*

Details on using a combination of parameters to determine the best path, including constrained shortest path calculation. The parameter is a basic parameter or a combined/new parameter.

#### **H04L 45/125**

##### **Definition statement**

*This place covers:*

Routing based on minimum link metrics relating to available rate in the links; congestion, link occupancy.

#### **H04L 45/126**

##### **Definition statement**

*This place covers:*

Routing based on determining the paths having the minimum physical length.

#### **H04L 45/127**

##### **Definition statement**

*This place covers:*

Using different parameters of intermediate routing nodes as a route calculation metric, e.g. processing or storage capabilities.

##### **References**

###### ***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Battery capabilities in wireless routing	H04W 40/10
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#### H04L 45/128

##### Definition statement

*This place covers:*

Determining whether two routes between the same end-points do not share nodes or links.

#### H04L 45/1283

##### Definition statement

*This place covers:*

Determining whether two routes between the same end-points do not share links.

#### H04L 45/1287

##### Definition statement

*This place covers:*

Determining whether two routes between the same end-points do not share nodes.

#### H04L 45/14

##### Definition statement

*This place covers:*

Performance, stability and graph theory, e.g. Directed Acyclic Graph, DAG, Bellman-Ford, Dijkstra and other basic routing algorithms for path selection.

##### References

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### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Function evaluation by approximation methods per se	<a href="#">G06F 17/17</a>
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## **H04L 45/16**

### **Definition statement**

*This place covers:*

Specific arrangements for supporting broadcast such as dedicated routing tables or route discovery for multipoint packets.

### **References**

#### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Broadcast in general	<a href="#">H04L 12/18</a>
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## **H04L 45/17**

### **Definition statement**

*This place covers:*

Specific arrangements for shortcut routing, e.g. NHRP.

## **H04L 45/18**

### **Definition statement**

*This place covers:*

Routing arrangements for avoiding packets from travelling in loops, e.g. an identifier in a message is saved in a node to check if the same message is again passing the node; updating of a routing table is inhibited for a certain period of time, routing is only allowed in a certain direction.

### **References**

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**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Spanning tree techniques	<a href="#">H04L 45/48</a>
Updating of a routing table, wherein the updated routing values are inhibited for a certain period of time	<a href="#">H04L 45/023</a>

**H04L 45/20****Definition statement***This place covers:*

Age, time to live or hop counting for broadcast or loop free, such as Layer 2 TTL, timestamp to age out.

**H04L 45/22****Definition statement***This place covers:*

Routing techniques using different routes for communication between two nodes in which only one of the routes is used at a time; route diversity; primary and secondary routes; re-routing; 1:1 protection; link or path protection; shared link risk groups.

**H04L 45/24****Definition statement***This place covers:*

Routing techniques using multiple routes between two nodes used simultaneously for load sharing or higher speed, including when involving packet fragmentation; redundant transmission, 1+1 and n:m path redundancy.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Load sharing/balancing (without additional routing features)	<a href="#">H04L 47/125</a>
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#### **H04L 45/243**

##### **Definition statement**

*This place covers:*

Details on multipath routing using a different number of parallel active paths for redundancy purposes.

#### **H04L 45/245**

##### **Definition statement**

*This place covers:*

Using a logical identity for the selection of a physical link among all possible physical links between two terminals or nodes; trunk group/Link aggregation.

#### **H04L 45/247**

##### **Definition statement**

*This place covers:*

Details on multipath routing using a different number of active and standby paths for redundancy purposes.

#### **H04L 45/26**

##### **Definition statement**

*This place covers:*

Packets adapted for discovery of communication paths; scout packet; delay measuring packet; buffer occupancy measuring packet; path restoration message after route fault; traceroute; exploratory agent packet.

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**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Arrangements for monitoring or testing data switching networks	<a href="#">H04L 43/00</a>
RREQ-RREP for wireless routing	<a href="#">H04W 40/28</a>

**H04L 45/28****Definition statement***This place covers:*

Recovery of communication routes after route fault or node failure.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Using network fault recovery	<a href="#">H04L 41/0654</a>
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**H04L 45/30****Definition statement***This place covers:*

Selection of a path for multiclass traffic.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Routing based on transmission quality or channel quality	<a href="#">H04W 40/12</a>
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## H04L 45/302

### Definition statement

*This place covers:*

Route selection based on a requested QoS, such as delay, bandwidth etc., in which the selected route has a minimum requested QoS.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Routing based on shortest path evaluation	<a href="#">H04L 45/12</a>
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## H04L 45/304

### Definition statement

*This place covers:*

Selecting a path specially adapted for signalling purposes, route determination for signalling traffic, setting up and reservation of special routes for signalling and control traffic.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Modification of handling priority for control packets, e.g. for ACK or signalling traffic	<a href="#">H04L 47/2466</a>
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## H04L 45/306

### Definition statement

*This place covers:*

Selecting a path based on the nature of the application, e.g. browsing traffic HTTP, FTP traffic; content delivery networks using name based addressing.

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## H04L 45/3065

### Definition statement

*This place covers:*

Route determination for real time traffic, e.g. voice and video.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Network arrangements, protocols or services for supporting real-time applications in data packet communication	<a href="#">H04L 65/00</a>
Real-time or near real-time messaging, e.g. instant messaging [IM]	<a href="#">H04L 51/00</a>
Selective video distribution	<a href="#">H04N 21/00</a>

## H04L 45/308

### Definition statement

*This place covers:*

Route determination based on the profile of the user or Service Level Agreement of the user; policy-based routing.

## H04L 45/32

### Definition statement

*This place covers:*

Techniques of routing in which packets are sent unconstrained into the network with a unicast address and only one destination is expected to receive the packets, the other nodes act as blind relays; limited flooding with a hop count.

### References

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### **Limiting references**

*This place does not cover:*

Denial of service attacks	<a href="#">H04L 63/1458</a>
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### **H04L 45/34**

#### **Definition statement**

*This place covers:*

Routing techniques in which route preference (e.g. intermediate nodes) is declared in the packet or in which intermediate nodes record in a specific object the set of nodes through which a route establishment message passes and contents of record object are used for explicitly routing packets in subsequent messages.

#### **References**

##### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Routing using backward learning	<a href="#">H04L 45/36</a>
---------------------------------	----------------------------

### **H04L 45/36**

#### **Definition statement**

*This place covers:*

Routing based on learning address/port relationship from the passing traffic; learning the route followed from source to destination to use it again for the return traffic; update routing tables with learned relationship from passing traffic.

### **H04L 45/38**

#### **Definition statement**

*This place covers:*

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Routing techniques in which all packets in a flow are routed in the same manner along a routing path.

## H04L 45/40

### Definition statement

*This place covers:*

Routing operation pipelining for faster processing, e.g. cut-through, streaming or on the fly.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Cut-through or Wormhole switching	<a href="#">H04L 49/251</a>
Store and forward switching	<a href="#">H04L 49/252</a>

## H04L 45/42

### Definition statement

*This place covers:*

Routing in which a central entity collects (query/response) the routing metrics, calculates the appropriate routes and disseminates the routing information to the rest of the routers.

## H04L 45/44

### Definition statement

*This place covers:*

Arrangements for routing performed in a distributed manner, e.g. each node calculates the appropriate routes and disseminates the routing information to the rest of the routers and no central entity is responsible for routing.

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## H04L 45/46

### Definition statement

*This place covers:*

Routing in hierarchical networks; hierarchy definition; criteria for cluster membership.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Interdomain routing	<a href="#">H04L 45/04</a>
Wireless routing for defining a routing cluster membership	<a href="#">H04W 40/32</a>

## H04L 45/48

### Definition statement

*This place covers:*

Routing techniques adapted to tree topologies; spanning tree.

## H04L 45/484

### Definition statement

*This place covers:*

Routing aspects related to multiple trees, including definition, update and use of multiple tree topologies; multiple spanning trees.

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#### H04L 45/488

##### Definition statement

*This place covers:*

Routing aspects related to determination of the route node in tree topologies.

#### H04L 45/50

##### Definition statement

*This place covers:*

Routing techniques using label swapping, e.g. multi-protocol label switching MPLS.

##### References

###### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Traffic engineering	<a href="#">H04L 47/125</a>
---------------------	-----------------------------

#### H04L 45/502

##### Definition statement

*This place covers:*

Routing techniques using label swapping on frame-based transport, e.g. MPLS over IP based technology.

#### H04L 45/505

##### Definition statement

*This place covers:*

Routing techniques using label swapping on cell-based transport, e.g. MPLS over Asynchronous Transfer Mode (ATM) networks.

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#### **H04L 45/507**

##### **Definition statement**

*This place covers:*

Routing techniques detailing how to spread the labels among the nodes, e.g. Label Distribution Protocol (LDP).

#### **H04L 45/52**

##### **Definition statement**

*This place covers:*

Routing in networks having coexisting different routing protocols, e.g. RIP and OSPF, separated IPv4 and IPv6 routing stacks.

#### **H04L 45/54**

##### **Definition statement**

*This place covers:*

Details of the information and format of the routing tables; special routing tables.

#### **H04L 45/56**

##### **Definition statement**

*This place covers:*

Details on operating systems for routers, routing software architecture, scheduling of routing tasks software.

#### **H04L 45/563**

##### **Definition statement**

*This place covers:*

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Details on download or update of software for routing, e.g. initialization of download of routing software or software for improving security of routing decisions, downloading of modified versions of routing software.

#### **H04L 45/566**

##### **Definition statement**

*This place covers:*

Data packets containing routing instructions, e.g. routing instructions to modify the routing tables.

#### **H04L 45/58**

##### **Definition statement**

*This place covers:*

Association of routers for multiple purposes, e.g. Active (working)-Standby (reserve) routers, load balancing or load sharing, multiple physical routers or multiple routing instances (hard or soft) in the same device behave as a single logical routing entity.

#### **H04L 45/583**

##### **Definition statement**

*This place covers:*

Plurality of router instances (hard or soft) connected to, for example, the same backplane; physical association of routers, e.g. located in the same hardware chassis.

#### **H04L 45/586**

##### **Definition statement**

*This place covers:*

Plurality of physical routers behaving as a logical unit, e.g. working in active/standby, Virtual Router Redundancy Protocol (VRRP).

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**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Virtualisation or emulation of application or operating system execution engines	<a href="#">G06F 9/455</a>
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**H04L 45/60****Definition statement***This place covers:*

Details concerning physical or hardware structure of a routing unit.

**H04L 45/62****Definition statement***This place covers:*

Routing specially adapted for optical networks, e.g. selection of the wavelength.

**References****Limiting references***This place does not cover:*

Optical switching	<a href="#">H04Q 11/0062</a>
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**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Selecting arrangements for multiplex systems	<a href="#">H04Q 11/00</a>
Optical communications	<a href="#">H04B 10/00</a>

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## H04L 45/64

### Definition statement

*This place covers:*

Multiple layers comprising a routing control layer specialized in topology update and routing policy determination, and a data layer under the routing layer, including separation of controlling and forwarding.

## H04L 45/645

### Definition statement

*This place covers:*

Impact in the routing strategy of a separation between the routing control (computation) layer and the data (forwarding) layer. The route selection intelligence is (logically) centralised in software-based controllers (Path Computation Elements) that maintain a global view of the network topology, which appears to forwarding elements as a single, logical entity.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Network topology discovery or management	<a href="#">H04L 41/12</a>
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## H04L 45/655

### Definition statement

*This place covers:*

Forwarding and updating of routing rules or flow table information between controllers and forwarding elements, e.g. routing table reconfiguration.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

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Network topology discovery or management	<a href="#">H04L 41/12</a>
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#### **H04L 45/66**

##### **Definition statement**

*This place covers:*

Routing based on data link layer, e.g. using MAC address for routing.

#### **H04L 45/68**

##### **Definition statement**

*This place covers:*

Routing comprising emulation of services such as Frame Relay, ATM, ethernet, TDM and SONET/SDH over packet switched networks using IP or MPLS.

#### **H04L 45/70**

##### **Definition statement**

*This place covers:*

Routing based on monitoring, measuring or observing of parameters needed for routing or how these parameters are measured.

#### **References**

##### ***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Arrangements for monitoring or testing packet switching networks	<a href="#">H04L 43/00</a>
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## H04L 45/72

### Definition statement

*This place covers:*

Route or next hop determination based on the sender's node address indicated in a data packet.

## H04L 45/74

### Definition statement

*This place covers:*

Details on address processing for routing purposes.

## References

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Network arrangements, protocols or services for addressing or naming	<a href="#">H04L 61/00</a>
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## H04L 45/741

### Definition statement

*This place covers:*

Routing between domains using different addressing schemes.

## H04L 45/742

### Definition statement

*This place covers:*

Details on route cache as a way to shorten table lookup operations, e.g. the complex

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lookup operation in the general table is done only on the first packet of a sequence, aging of route cache entries.

## H04L 45/745

### Definition statement

*This place covers:*

Details on address table lookup and address filtering for routing purposes.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Network arrangements, protocols or services for addressing or naming	<a href="#">H04L 61/00</a>
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## H04L 45/7452

### Definition statement

*This place covers:*

Details of lookup operations that are conducted in parallel or in serial (cascading or series of consecutive lookups), using different lookup strategies.

### References

#### Limiting references

*This place does not cover:*

Lookup operation involving Bloom filters	<a href="#">H04L 45/7459</a>
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#### H04L 45/7453

##### Definition statement

*This place covers:*

Details on routing techniques using hashing operations.

#### H04L 45/7459

##### Definition statement

*This place covers:*

Use of Bloom filters in lookup operations as an alternative to the single hashing lookup.

##### References

###### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Complex mathematical operations	<a href="#">G06F 17/10</a>
---------------------------------	----------------------------

#### H04L 45/74591

##### Definition statement

*This place covers:*

Details on address table lookup operations and address filtering for routing purposes using content-addressable memories [CAM].

#### H04L 45/748

##### Definition statement

*This place covers:*

Use of longest prefix match in routing operations.

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## H04L 45/76

### Definition statement

*This place covers:*

Routing in virtual network topologies where virtual machines are adapted to run routing protocols.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Virtualisation or emulation of application or operating system execution engines	<a href="#">G06F 9/455</a>
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## H04L 45/80

### Definition statement

*This place covers:*

Details on ingress point selection by the source node for routing purposes.

## H04L 45/85

### Definition statement

*This place covers:*

Selection among different networks for routing purposes.

## H04L 45/851

### Definition statement

*This place covers:*

Dynamic network selection or re-selection for routing purposes, e.g. using artificial

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intelligence (AI).

**H04L 47/10****Definition statement***This place covers:*

General aspects of flow control or congestion control which do not fall under a sub-class.

**Glossary of terms***In this place, the following terms or expressions are used with the meaning indicated:*

Flow control	Prevent a sender from overwhelming a receiver, traffic is controlled between a sender and receiver, only the sender controls the transmission rate
Congestion control	Prevent a sender from overwhelming the network, the network is prevented from becoming congested

**H04L 47/11****Definition statement***This place covers:*

Congestion monitoring to detect a degradation in network performance, using QoS parameters which indicate congestion or impending congestion. Typically exemplified by increased delays, jitter, packet losses or errors, increased retransmission rates. In response, congestion control or congestion avoidance is activated.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Maintenance or administration or management of packet switching networks; Bandwidth or capacity management, i.e. automatically increasing or decreasing capacities, e.g. bandwidth on demand	<a href="#">H04L 41/00</a> , <a href="#">H04L 41/0896</a>
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Network monitoring of the performance of a network communications and QoS parameters	<a href="#">H04L 43/00</a> , <a href="#">H04L 43/08</a>
Routing; Evaluation of link metrics	<a href="#">H04L 45/00</a> , <a href="#">H04L 45/12</a>

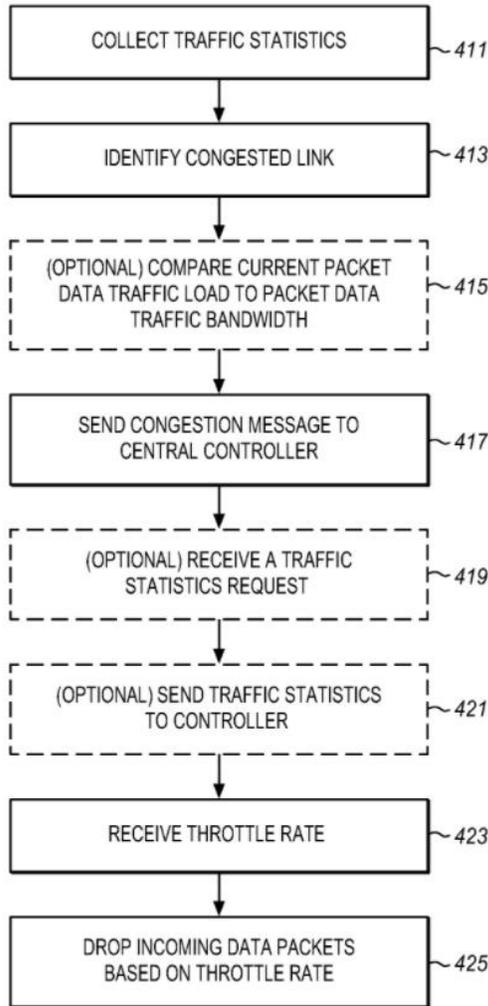
**H04L 47/115**

**Definition statement**

*This place covers:*

Either the receiver or intermediate nodes in the network can explicitly signal back to the sender that congestion has been identified using a dedicated packet rather than piggybacking a congestion indication in a data packet. The dedicated packet indicating congestion can be sent by a network controller, receiver, or intermediate node.

**FIG. 4**



**References**

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

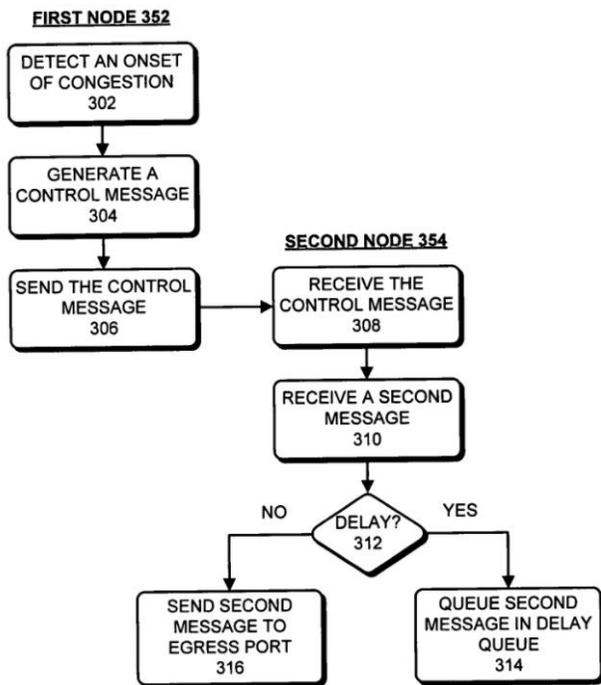
Maintenance or administration or management of packet switching networks	<a href="#">H04L 41/00</a>
Network monitoring of the performance of a network communications and QoS parameters	<a href="#">H04L 43/00</a>

**H04L 47/12**

**Definition statement**

*This place covers:*

Techniques for avoiding congestion including: monitoring ACKs and retransmissions at the sender, receiving feedback from the receiver. In response, the transmission rate, window size, etc. are adjusted.



**References**

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

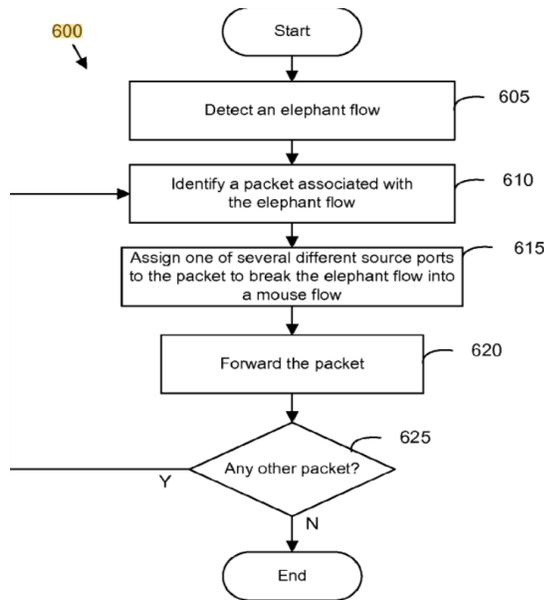
Routing	<a href="#">H04L 45/00</a>
Wireless Routing	<a href="#">H04W 40/00</a>
Load balancing, e.g. traffic engineering	<a href="#">H04L 47/125</a>

**H04L 47/122**

**Definition statement**

*This place covers:*

Localising congestion and selecting a different path/port/route with less congestion.



**References**

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Routing	<a href="#">H04L 45/00</a>
Wireless Routing	<a href="#">H04W 40/00</a>
Multipath routing – using multiple paths simultaneously	<a href="#">H04L 45/24</a>
Alternate routing – switching to a different path	<a href="#">H04L 45/22</a>
Routing based on performance – link metrics	<a href="#">H04L 45/123</a>
Routing based on performance – bandwidth	<a href="#">H04L 45/125</a>
Routing to minimize delay	<a href="#">H04L 45/121</a>

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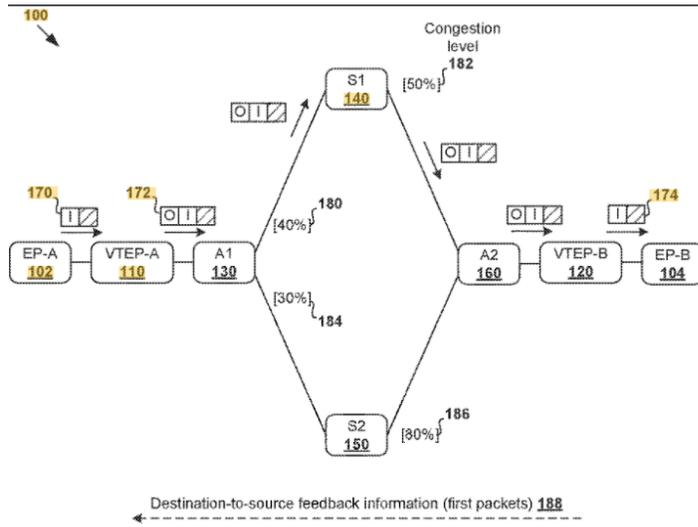
**H04L 47/125**

**Definition statement**

*This place covers:*

General field which relates to redistributing or balancing the flow to either avoid or recover from congestion. Load distribution can divert flow to different intermediate network nodes, paths, ports, queues or servers.

This code should be considered as a general one and applicable to [H04L 45/00](#) and [H04L 47/00](#) as well as to other fields in [H04L](#).



**References**

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Routing; Routing – Load balancing; Wireless Routing	<a href="#">H04L 45/00</a> , <a href="#">H04L 45/24</a> , <a href="#">H04W 40/00</a>
Wireless flow control; Wireless load balancing	<a href="#">H04W 28/00</a> , <a href="#">H04W 28/08</a>

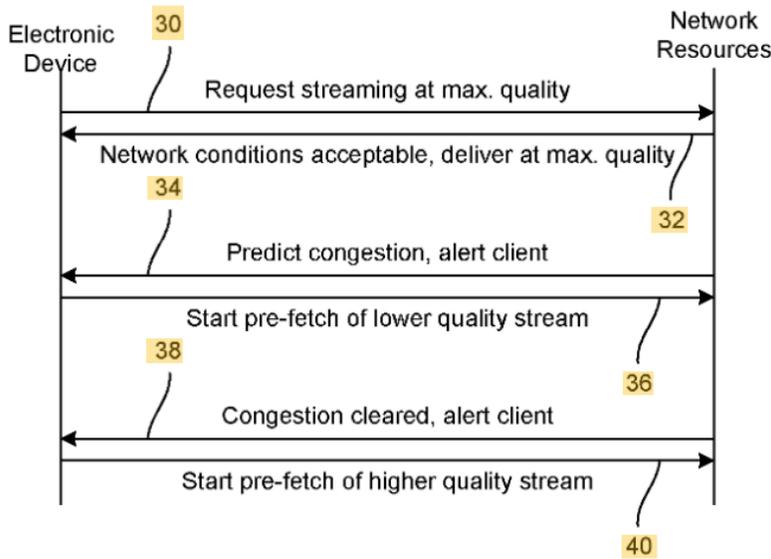
Network-specific arrangements or communication protocols supporting networked applications; Load balancing among servers	<a href="#">H04L 67/00</a> , <a href="#">H04L 67/1001</a>
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**H04L 47/127**

**Definition statement**

*This place covers:*

By monitoring to detect or forecast the onset of congestion and pre-emptively trigger congestion avoidance and recovery techniques.



**References**

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Network monitoring of the performance of a network communications and QoS parameters	<a href="#">H04L 43/00</a>
Real-time communications e.g. video streaming, voice conferencing QoS aspects	<a href="#">H04L 65/00</a> , <a href="#">H04L 65/80</a>
Prediction of resource usage	<a href="#">H04L 47/823</a>

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## H04L 47/129

### Definition statement

*This place covers:*

Techniques for congestion avoidance or recovery at a destination node.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Resource usage – mobile terminals	<a href="#">H04L 47/824</a>
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## H04L 47/13

### Definition statement

*This place covers:*

Techniques for congestion avoidance or recovery in a local area network, e.g. LAN segment, ring network or bus network.

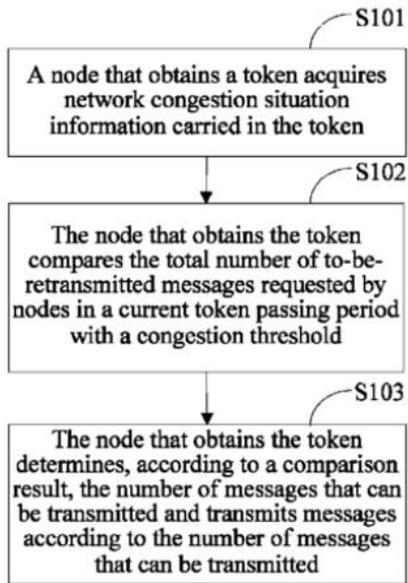


FIG. 1

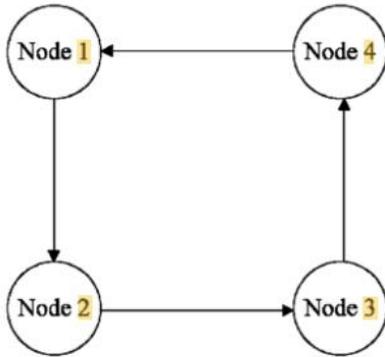


FIG. 2

**References**

***Informative references***

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*Attention is drawn to the following places, which may be of interest for search:*

Bus networks with decentralised control	<a href="#">H04L 12/413</a>
LAN switches, e.g. ethernet switches	<a href="#">H04L 49/351</a>
Loop networks with decentralised control with asynchronous transmission, e.g. token ring, register insertion	<a href="#">H04L 12/433</a>

## **H04L 47/135**

### **Definition statement**

*This place covers:*

When a collision condition is detected, the station stops transmitting that frame, transmits a jam signal, and then waits for a random time interval before trying to resend the frame, e.g. CSMA/CD in Ethernet segments.

## **H04L 47/15**

### **Definition statement**

*This place covers:*

Flow and congestion control for multicast/multipoint flows, e.g. source based control, receiver driven layered approaches, exploitation of IGMP and multicast routing protocols, admission control, TCP friendly rate control.

### **References**

#### **Limiting references**

*This place does not cover:*

Arrangements for multicast in data networks	<a href="#">H04L 12/18</a>
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#### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Routing multicast	<a href="#">H04L 45/16</a>
Arrangements for providing special services to substations for broadcast or conference, e.g. multicast with traffic restrictions for efficiency improvement, e.g. involving subnets or subdomains	<a href="#">H04L 12/1886</a>

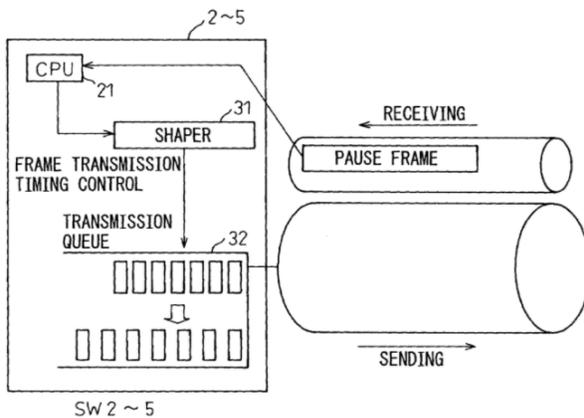
**H04L 47/17**

**Definition statement**

*This place covers:*

Neighbouring nodes cooperate to control the flow either using reservation, policies, PAUSE, backpressure, e.g. a congested node stops receiving packet from upstream node. This may cause the upstream node or nodes to become congested and rejects receiving data from above nodes. Backpressure is a node-to-node congestion control technique that propagate in the opposite direction of data flow.

Fig.6



**References**

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Flow control or congestion control using information about buffer occupancy at either end or transit nodes	<a href="#">H04L 47/30</a>
LAN switches, e.g. ethernet switches	<a href="#">H04L 49/351</a>
Backpressure	<a href="#">H04L 49/506</a>
Queuing arrangements	<a href="#">H04L 49/90</a>

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## H04L 47/18

### Definition statement

*This place covers:*

Congestion control and flow control is implemented between the sender and receiver.

## H04L 47/19

### Definition statement

*This place covers:*

Protocols adapted to include flow and congestion control techniques often in the context of client-server applications, e.g. TCP friendly rate control for UDP, TFRC. Application layer protocols adapted to support real-time communications: RTP, RTCP, RTSP, SIP etc.

When this scheme is crossed with [H04L67/00](#), it will yield documents concerning flow control in client/server communication.

Note: There is a specific subgroup dedicated to TCP related congestion control, see [H04L47/193](#) and [H04L69/163](#).

## References

### Limiting references

*This place does not cover:*

Network arrangements for networked applications for scheduling or organising the servicing of application requests	<a href="#">H04L 67/60</a>
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### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

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Network monitoring of the performance of a network communications and QoS parameters	H04L 43/00
Application independent communication protocol aspects or techniques in packet data networks; Adaptation of TCP data exchange control procedures; Adaptation of UDP	H04L 69/00, H04L 69/163, H04L 69/164
Network-specific arrangements or communication protocols supporting networked applications; For scheduling or organising the servicing of application requests	H04L 67/00, H04L 67/60

**H04L 47/193****Definition statement***This place covers:*

Modifications or adaptations of classical TCP behaviour.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

TCP/IP; Adaptations of TCP exchange control procedure	H04L 69/16, H04L 69/163
Traffic management, e.g. flow control or congestion control adapting protocols for flow control or congestion control to wireless environment, e.g. adapting transmission control protocol [TCP]	H04W 28/0273
Monitoring; Delay	H04L 43/08, H04L 43/0852
Network delay	H04L 47/283
Slow start – only if it describes a modification to the standard slow start	H04L 47/37

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**H04L 47/196****Definition statement***This place covers:*

Congestion control techniques based on integration of transport layer protocols.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Application independent communication protocol aspects or techniques in packet data networks	<a href="#">H04L 69/00</a>
Combined use of TCP and UDP	<a href="#">H04L 69/165</a>

**H04L 47/20****Definition statement***This place covers:*

Monitoring network traffic for compliance with a traffic contract and taking steps to enforce that contract at an ingress node. Traffic is monitored, metered and classified as being compliant/exceeding/violating the contract. The traffic contract can be described through various parameters: committed Information Rate CIR, Committed Burst Size CBS, and Excess Burst Size EBS. To enforce the contract, traffic can be discarded, flow control can be implemented (e.g. leaky buckets, traffic shaping and token buckets) or traffic can be marked as non-compliant, e.g. setting an ECN flag, DE, DSCP).

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

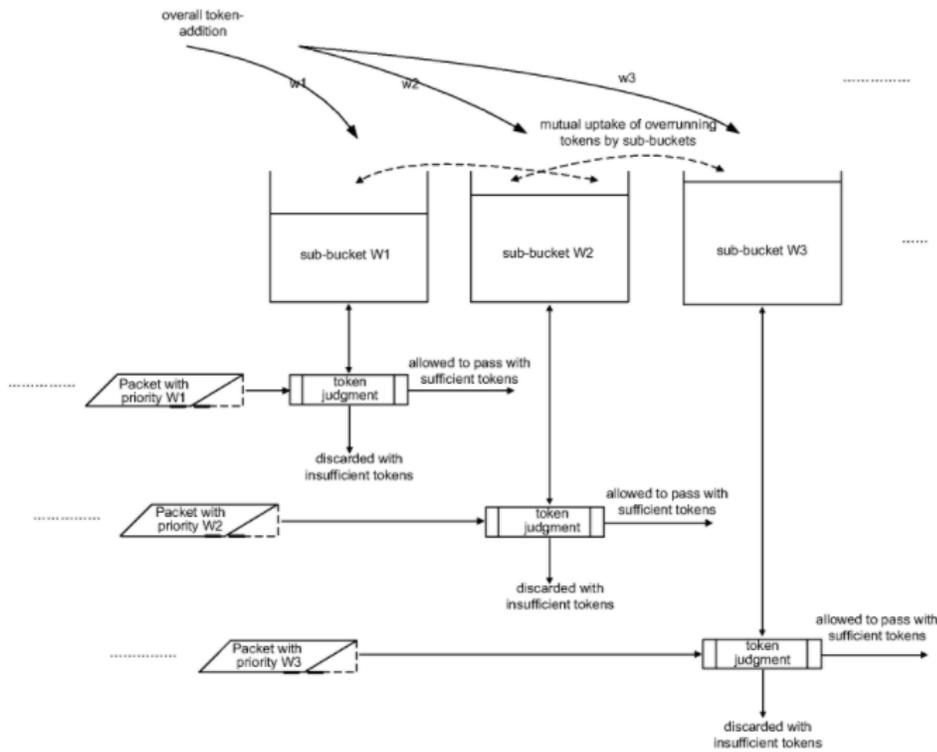
Network monitoring of the performance of a network communications and QoS parameters	<a href="#">H04L 43/00</a>
Ensuring SLA	<a href="#">H04L 41/5019</a>

**H04L 47/21**

**Definition statement**

*This place covers:*

A sender's packet is buffered in a leaky bucket. Packets are egressed from the leaky bucket at a constant rate. Consequently, bursty traffic is controlled and egressed as constant rate. Typically, the bucket is a finite queue that outputs at a finite rate.



**References**

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

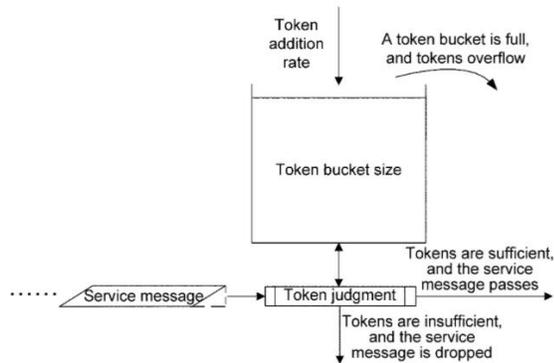
Network monitoring of the performance of a network communications and QoS parameters	<a href="#">H04L 43/00</a>
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**H04L 47/215**

**Definition statement**

*This place covers:*

A token bucket extends from the leaky bucket to allow flexibility for bursty traffic. Packets are egressed from the bucket in accordance with a deduction of corresponding tokens. Tokens are replenished at regular intervals.



**References**

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

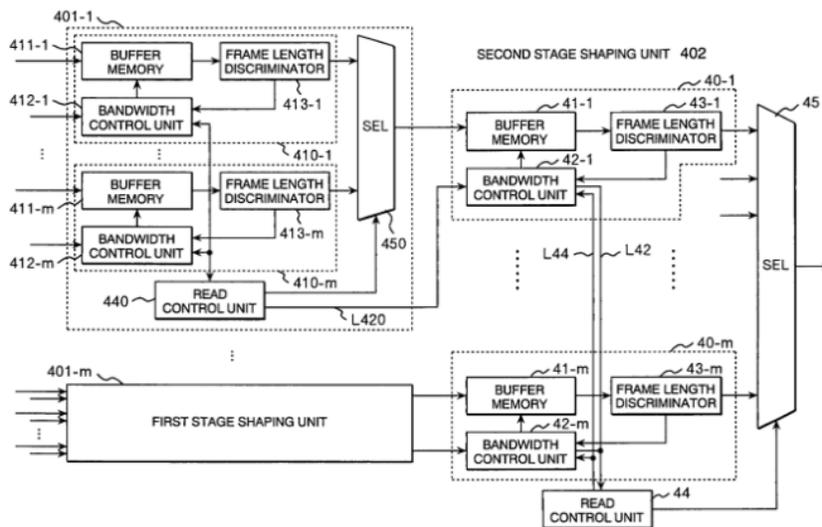
Network monitoring of the performance of a network communications and QoS parameters	<a href="#">H04L 43/00</a>
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**H04L 47/22**

**Definition statement**

*This place covers:*

Traffic shaping (also known as packet shaping) is a bandwidth management technique that delays the flow of certain types of network packets in order to ensure network performance for higher priority applications. Traffic shaping limits the amount of bandwidth that can be consumed by certain types of applications.



**References**

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Maintenance or administration or management of packet switching networks	<a href="#">H04L 41/00</a>
Bandwidth or capacity management, i.e. automatically increasing or decreasing capacities, e.g. bandwidth on demand	<a href="#">H04L 41/0896</a>

**H04L 47/225**

**Definition statement**

*This place covers:*

The shaping rate throttles the rate of packet transmission by setting a maximum bandwidth as a transmission rate or a maximum percentage of bandwidth for a queue or a forwarding class set.

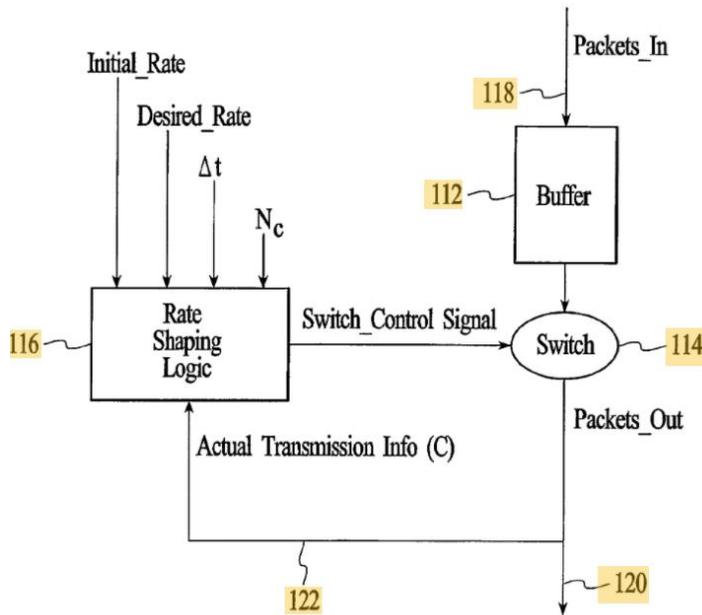


FIG. 2

**References**

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Packet Switching Systems	<a href="#">H04L 49/10</a>
Quality of Service based	<a href="#">H04L 49/205</a>

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### H04L 47/23

#### Definition statement

*This place covers:*

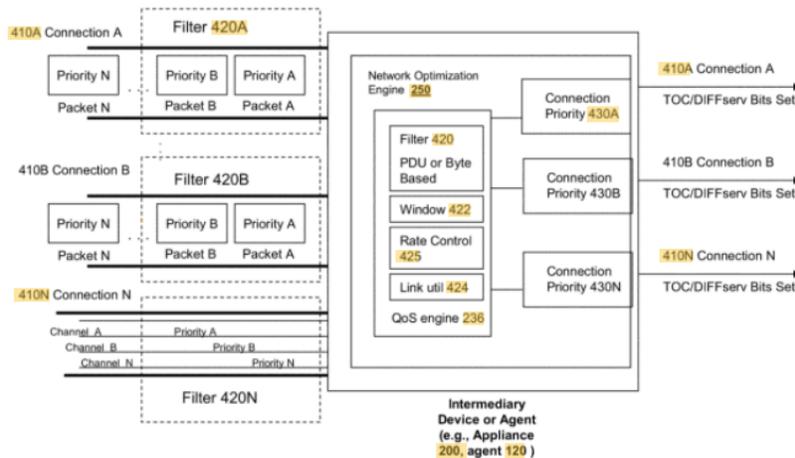
Relates to voice traffic.

### H04L 47/24

#### Definition statement

*This place covers:*

Network arrangements for networked applications for scheduling or organising the servicing of application requests whereby quality of service or priority requirements are taken into account.

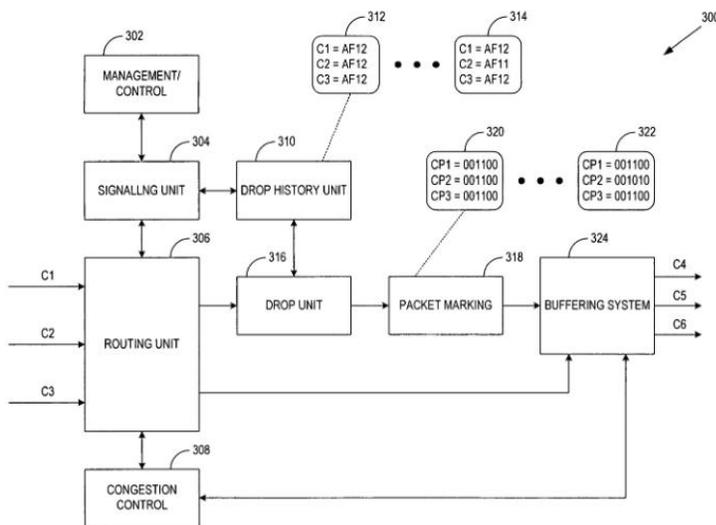


**H04L 47/2408**

**Definition statement**

*This place covers:*

Diff-Serv or differentiated services. Tags or labels (e.g. Class of Service CoS, Type of Service ToS, DSCP) in the packet header are used to provide a classification category of the type of traffic, wherein based on the tag or label, the packet receives a particular treatment or QoS in the network, for example: assured, expedited, default forwarding, class selection.



**References**

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Route determination based on requested QoS	<a href="#">H04L 45/302</a>
Special provisions for routing multiclass traffic	<a href="#">H04L 45/30</a>

**H04L 47/2416**

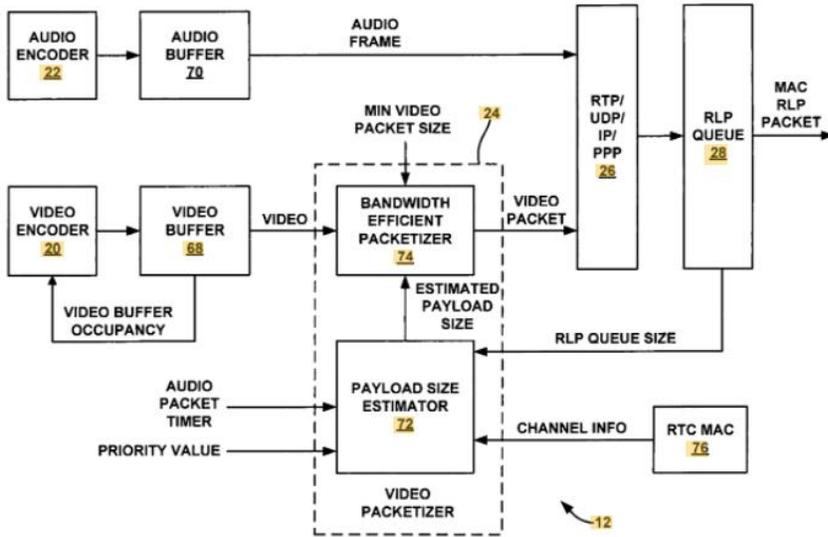
**Definition statement**

*This place covers:*

Flow control actions in relation to, for example, voice or video traffic.

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## References

### Informative references

Attention is drawn to the following places, which may be of interest for search:

Selective content distribution, e.g. interactive television or video on demand [VOD]	<a href="#">H04N 21/00</a>
Real-time bi-directional transmission of motion video data	<a href="#">H04N 7/14</a>

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**H04L 47/2425****Definition statement***This place covers:*

Service-level agreements [SLAs] are contracts that specify the performance parameters within which a network service is provided. The SLA might define parameters such as the type of service, data rate, and what the expected performance level is to be in terms of delay, error rate, availability, and network uptime.

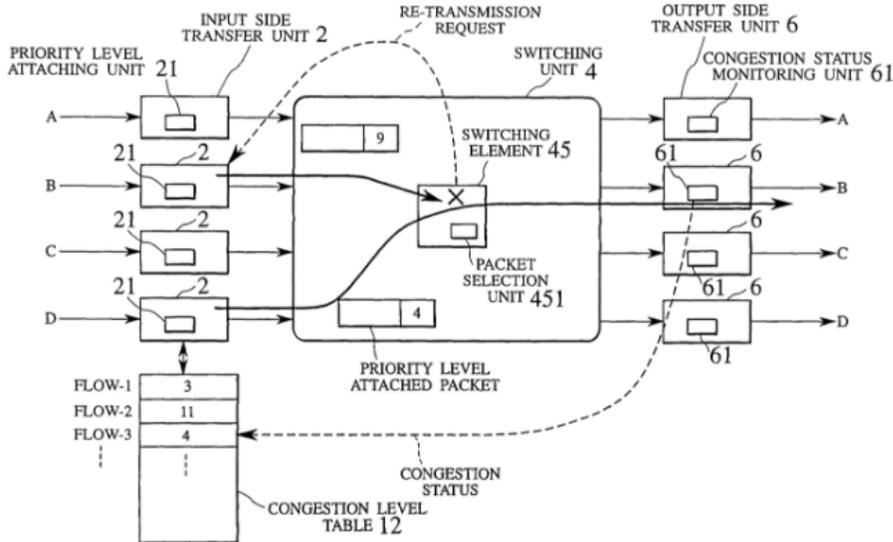
**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Ensuring SLA	<a href="#">H04L 41/5019</a>
Determining service level performance, e.g. measuring SLA quality parameters, determining contract or guarantee violations, response time or mean time between failure [MTBF]	<a href="#">H04L 41/5009</a>
General aspects of SLA management	<a href="#">H04L 41/5003</a>

**H04L 47/2433****Definition statement***This place covers:*

Congestion avoidance techniques adapted to perform allocation of priorities for each traffic type.

FIG. 5



**References**

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Priority, marking, classes	<a href="#">H04L 2012/5651</a>
Quality of Service based	<a href="#">H04L 49/205</a>

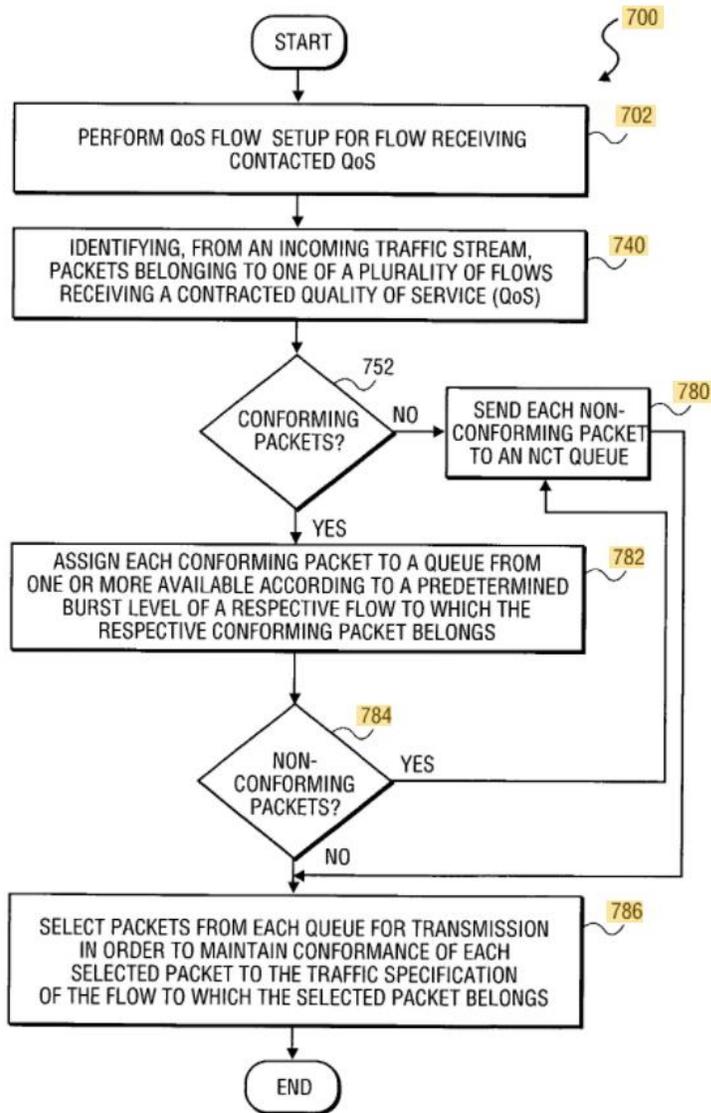
**H04L 47/2441**

**Definition statement**

This place covers:

IntServ is an architecture that identifies the elements needed to specify and guarantee QoS in networks. IntServ architecture is adapted to determine and classify incoming flows to apply the suitable policy. Every node in the system implements IntServ, and every application that requires some kind of QoS guarantee has to make an individual reservation. Flow specifications describe what the reservation is for, while RSVP is the underlying mechanism to signal it across the network.

This field can be generally applied to the determination of the class of the flow according to a given criteria(e.g. QoS). Queuing actions or corresponding flow control actions can be applied thereafter.



**FIG. 9**

**H04L 47/245**

**Definition statement**

*This place covers:*

Higher priority traffic (real-time, critical, public safety) is allowed to take precedence or pre-empt lower priority traffic when being scheduled, queued, allocated resources, or more generally when being communicated through the network.

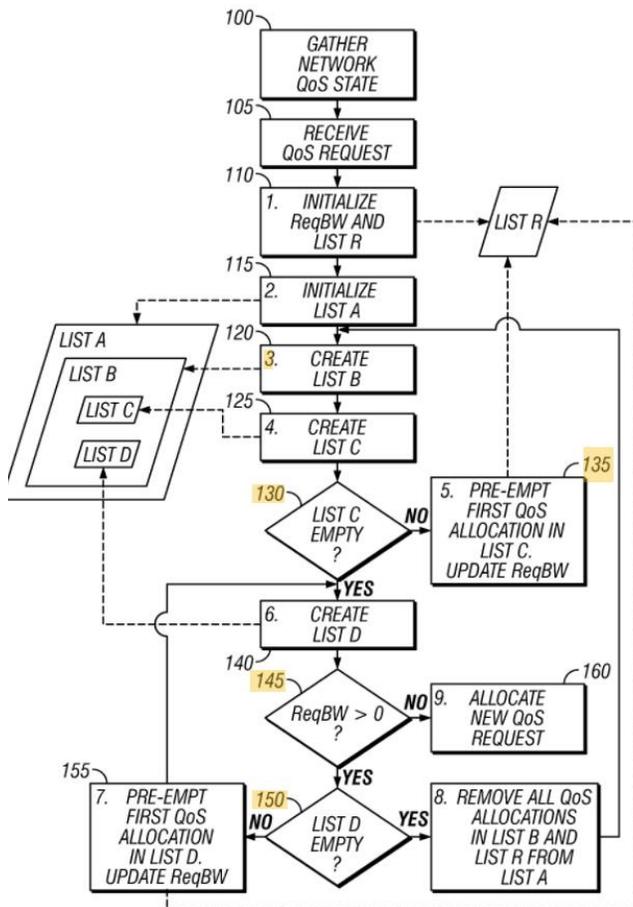


FIG. 2

**References**

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

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Traffic management, e.g. flow control or congestion control using specific QoS parameters for wireless networks, e.g. QoS class identifier [QCI] or guaranteed bit rate [GBR]	<a href="#">H04W 28/0268</a>
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#### **H04L 47/2458**

##### **Definition statement**

*This place covers:*

The priority of the packet is indicated in the packet and the priority in the packet is modified.

#### **H04L 47/2466**

##### **Definition statement**

*This place covers:*

The priority indicated within the packet is not modified; rather priority is applied to signalling traffic, ACKs, etc.

##### **References**

###### ***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

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Route determination for signalling traffic	<a href="#">H04L 45/304</a>
Adaptation of TCP data exchange control procedures	<a href="#">H04L 69/163</a>
Scheduling and prioritising arrangements	<a href="#">H04L 1/1854</a>
Network-specific arrangements or communication protocols supporting networked applications for the provision of proxy services, e.g. intermediate processing or storage in the network for providing operational support to end devices by emulation, e.g. when they are unavailable, or by off-loading in the network	<a href="#">H04L 67/59</a>

## **H04L 47/2475**

### **Definition statement**

*This place covers:*

Flow control actions that take into consideration the type of application.

### **References**

#### ***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Special provisions for routing multiclass traffic	<a href="#">H04L 45/30</a>
Header parsing or analysis	<a href="#">H04L 69/22</a>

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**H04L 47/2483****Definition statement***This place covers:*

Techniques to identify different flow types and apply flow control accordingly. Analysis of the packet header 5-tuple or statistical analysis of packets can be used to infer the particular flow type, e.g. small constant sized packets are indicative of voice.

Flow types include: Aggregated flows, Elephant or macro flows comprised of flowlets, sub-flows, mice flows, suspect or suspicious flows, audio, video etc.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Header parsing or analysis	<a href="#">H04L 69/22</a>
Enhancement of application control based on intercepted application data	<a href="#">H04L 67/564</a>

**H04L 47/2491****Definition statement***This place covers:*

Conversion of IP TOS to QCI.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Arrangements for connecting between networks having differing types of switching systems, e.g. gateways	<a href="#">H04L 12/66</a>
Interdomain routing	<a href="#">H04L 45/04</a>
Traffic management, e.g. flow control or congestion control	<a href="#">H04W 28/02</a>
Traffic management, e.g. flow control or congestion control based on communication conditions	<a href="#">H04W 28/0231</a>
Negotiating wireless communication parameters	<a href="#">H04W 28/18</a>

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Negotiating SLA [Service Level Agreement]; Negotiating QoS [Quality of Service]	<a href="#">H04W 28/24</a>
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#### **H04L 47/25**

##### **Definition statement**

*This place covers:*

Autonomous determination of congestion by the source endpoint in which there is no explicit feedback. Every source terminal or source node is able to determine the evolution of the congestion, e.g. by determining ACK packet loss or using techniques covered in other groups, such as H04L47/50 or H04L47/70.

#### **H04L 47/26**

##### **Definition statement**

*This place covers:*

The source endpoint is requested by the destination endpoint to apply rate correction actions. Explicit feedback can include feedback reports, e.g. RTCP, choke packets, e.g. a packet sent by a node to the source to inform it of congestion. Each router monitors its resources and the utilization at each of its output lines. Whenever the resource utilization exceeds the threshold value, which is set by the administrator, the router directly sends a choke packet to the source giving it a feedback to reduce the traffic. The intermediate nodes through which the packets have travelled are not warned about congestion.

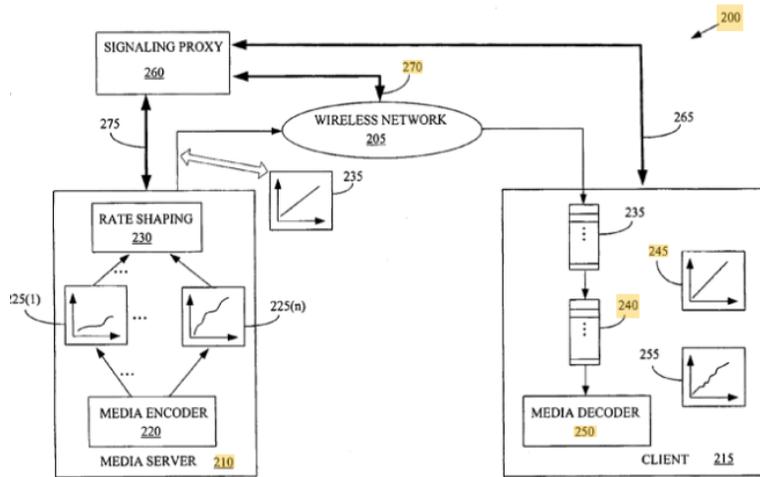


Figure 2

**References**

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

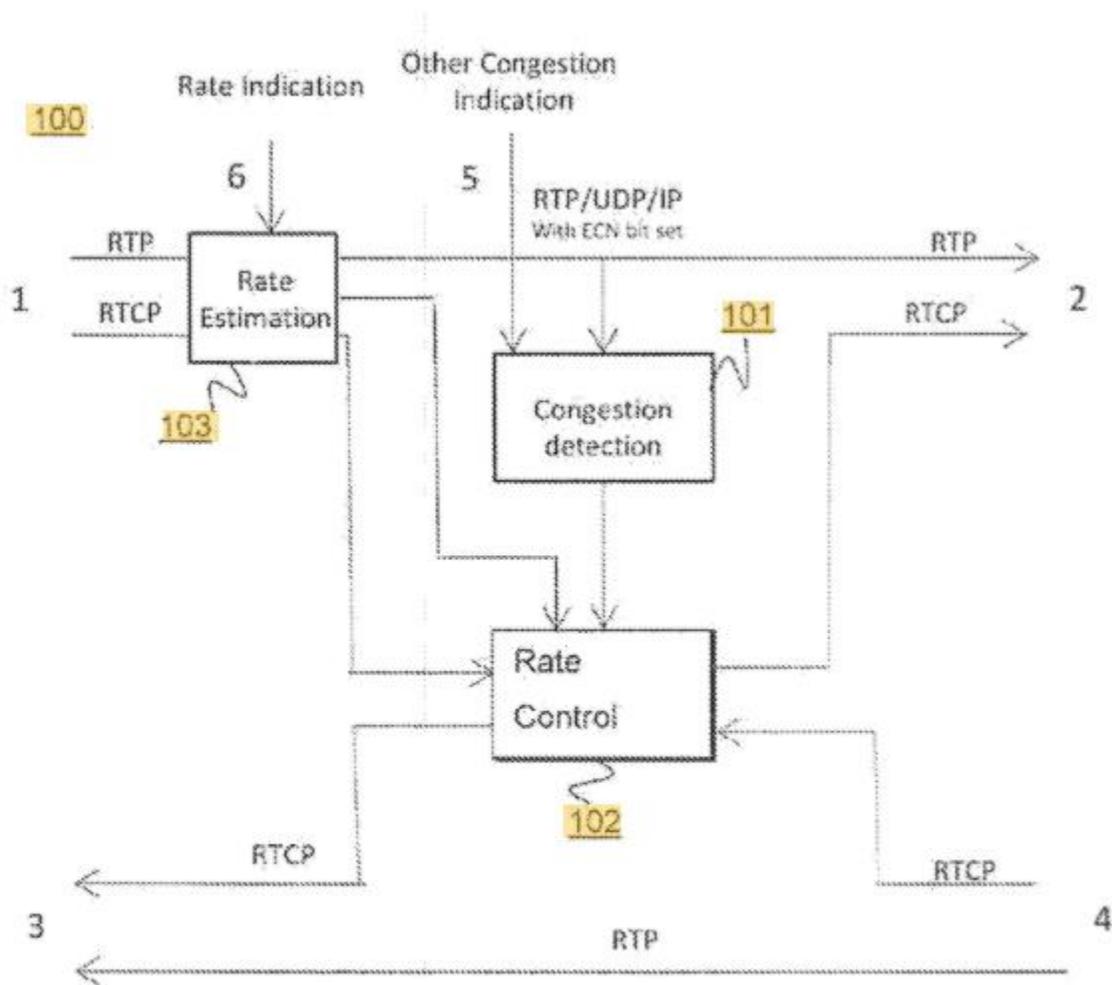
Traffic management, e.g. flow control or congestion control using buffer status reports	<a href="#">H04W 28/0278</a>
Traffic management, e.g. flow control or congestion control based on conditions of the access network or the infrastructure network	<a href="#">H04W 28/0247</a>
Monitoring of the downstream path of the transmission network, e.g. bandwidth available	<a href="#">H04N 21/2402</a>
Controlling the complexity of the video stream, e.g. by scaling the resolution or bitrate of the video stream based on the client capabilities	<a href="#">H04N 21/2662</a>

**H04L 47/263**

**Definition statement**

*This place covers:*

Techniques for flow control in which source is adapted to modify its transmission rate after receiving feedbacks.



**Figure 3**

**References**

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Backpressure	<a href="#">H04L 49/506</a>
Reallocation of resources, renegotiation of resources, e.g. in-call triggered by the end-points	<a href="#">H04L 47/765</a>
Flow control between communication endpoints	<a href="#">H04W 28/10</a>

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**H04L 47/265**

**Definition statement**

*This place covers:*

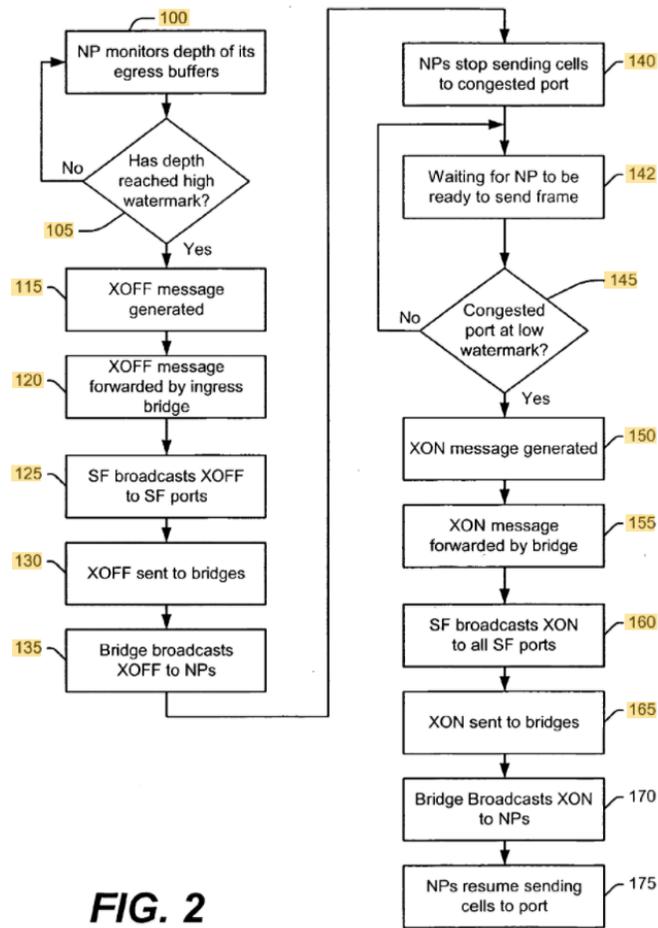
The intermediate node is requested by the destination endpoint to apply rate correction actions.

**H04L 47/266**

**Definition statement**

*This place covers:*

Flow control action is based on interrupting the source of packet transmission until congestion is alleviated.



**FIG. 2**

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## H04L 47/267

### Definition statement

*This place covers:*

The destination node is adapted to send explicit feedback to the source node.

### References

#### Limiting references

*This place does not cover:*

Network streaming of media packets with control of the source by the destination
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<a href="#">H04L 65/613</a>
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## H04L 47/27

### Definition statement

*This place covers:*

Recalculation of the congestion window to adapt to the network or destination endpoint situation.

This code is not meant for all documents that concerns windows based flow control.

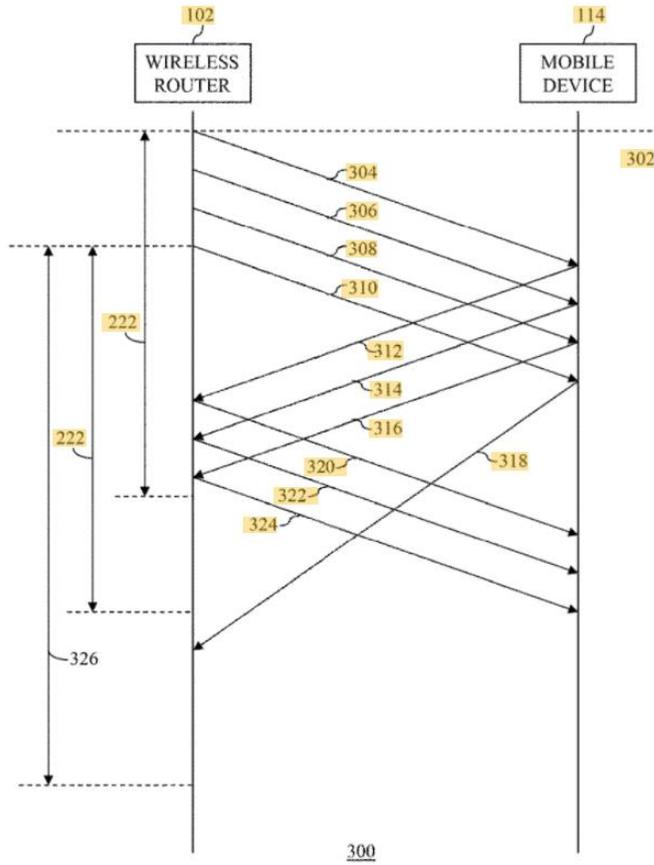


FIG. 3

**References**

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Sliding window management	<a href="#">H04L 1/187</a>
Adaptation of TCP data exchange control procedures	<a href="#">H04L 69/163</a>

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**H04L 47/28**

**Definition statement**

*This place covers:*

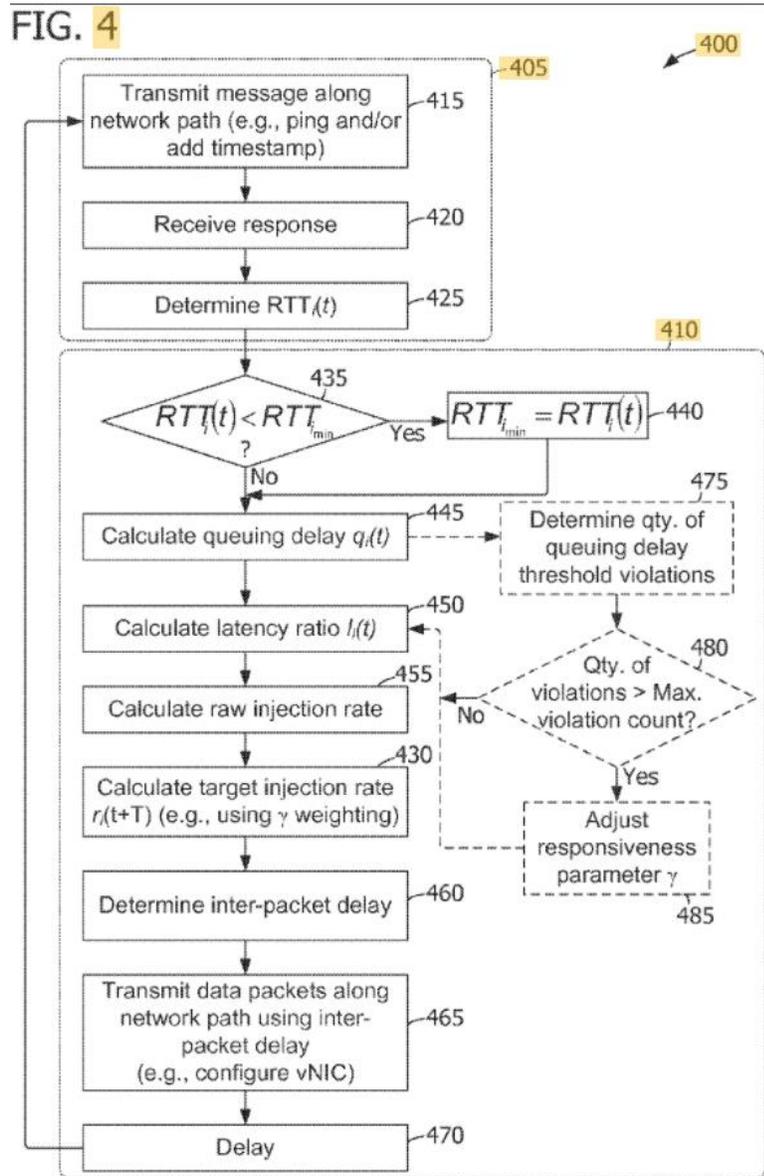
Flow control techniques taking into account time parameters, e.g. delays, latencies.

**H04L 47/283**

**Definition statement**

*This place covers:*

Flow control techniques taking into account processing delays.



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**References**

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

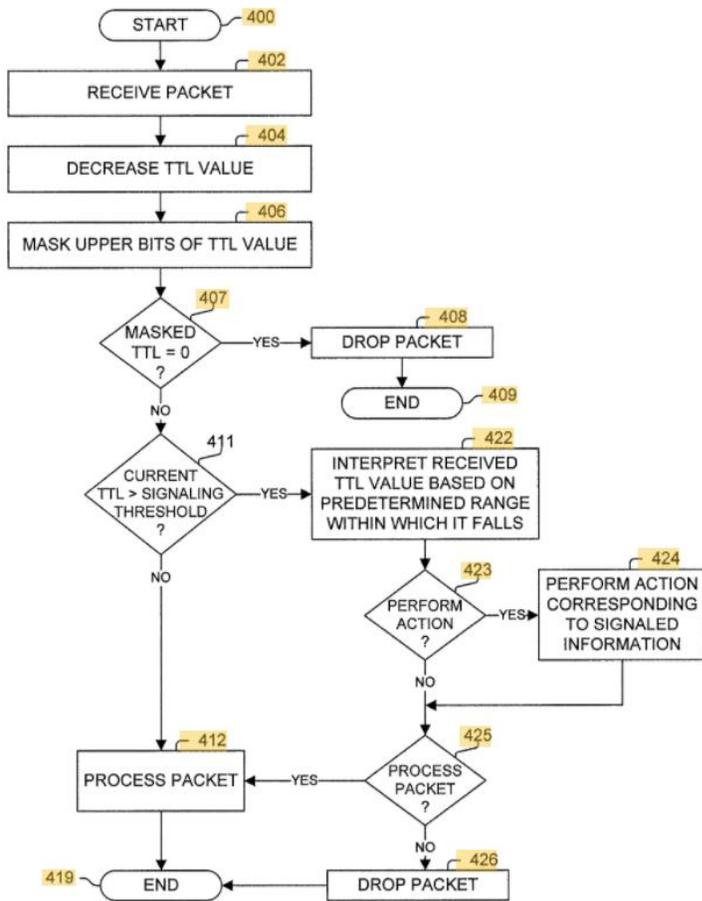
Network monitoring of the performance of a network communications and QoS parameters	<a href="#">H04L 43/00</a>
Delay	<a href="#">H04L 43/0852</a>
Round trip delays	<a href="#">H04L 43/0864</a>

**H04L 47/286**

**Definition statement**

*This place covers:*

Flow control techniques based on TTL.



**FIGURE 4**

**References**

**Informative references**

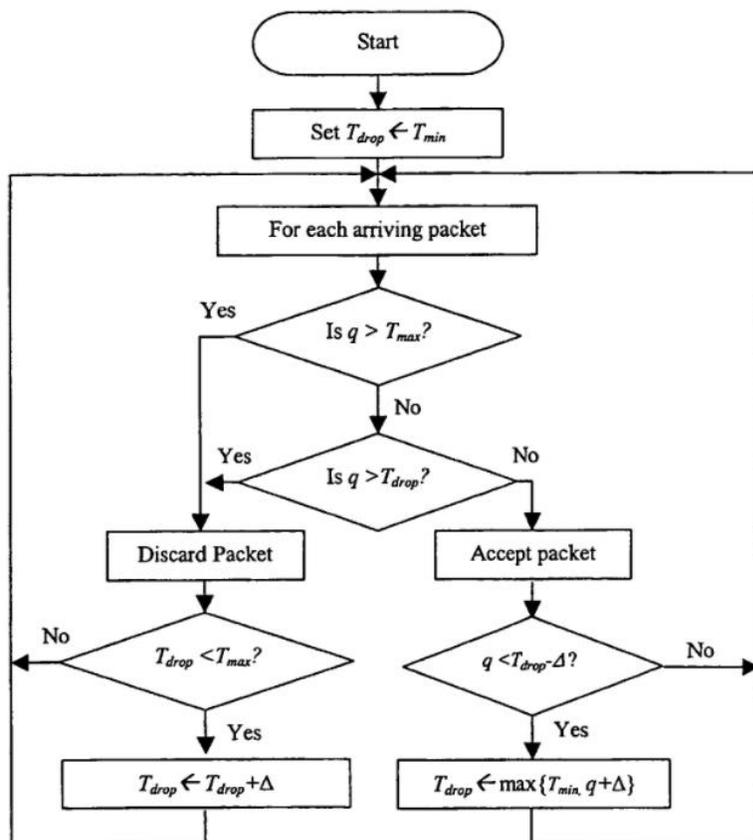
*Attention is drawn to the following places, which may be of interest for search:*

Hop count for routing TTL	H04L 45/20
Self-organising networks, e.g. ad-hoc networks or sensor networks	H04W 84/18

**H04L 47/29****Definition statement**

*This place covers:*

Using plural thresholds triggering different actions when they are reached, for example, hysteresis.



**Figure 5**

**References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

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Network monitoring of the performance of a network communications and QoS parameters	<a href="#">H04L 43/00</a>
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**H04L 47/30**

**Definition statement**

*This place covers:*

Flow control techniques taking into account buffer occupancy of nodes toward destination.

When giving this code, it is important to add the end-to-end or hop-by-hop codes if the feature is present.

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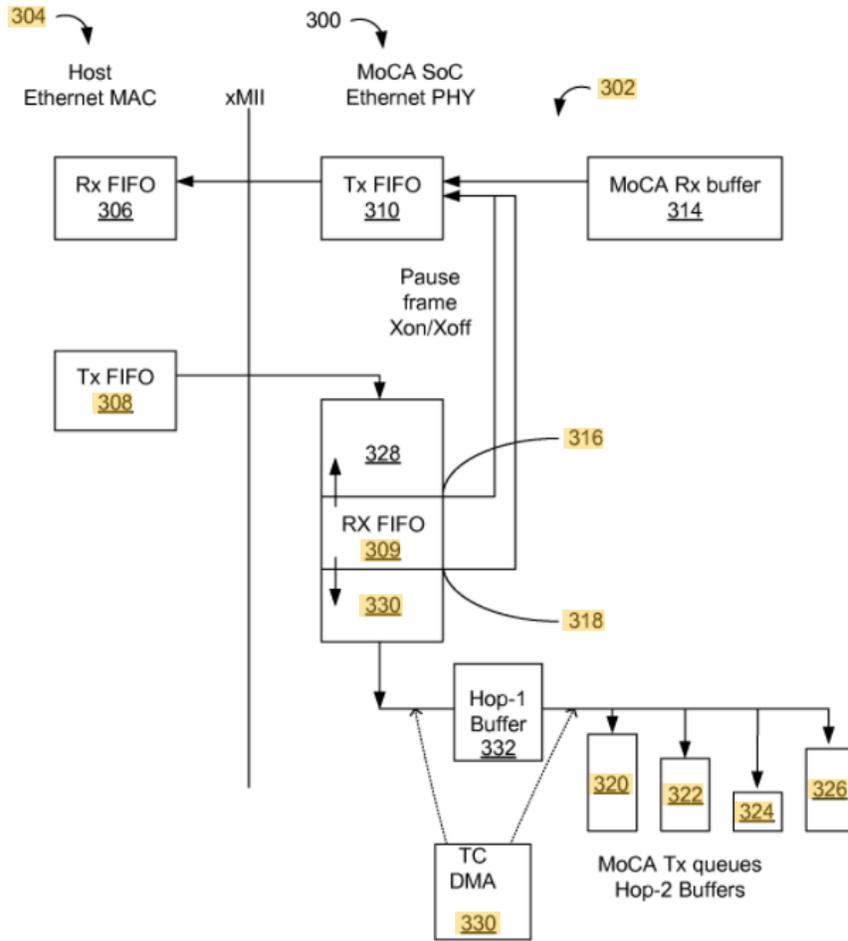


Fig. 3

**References**

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

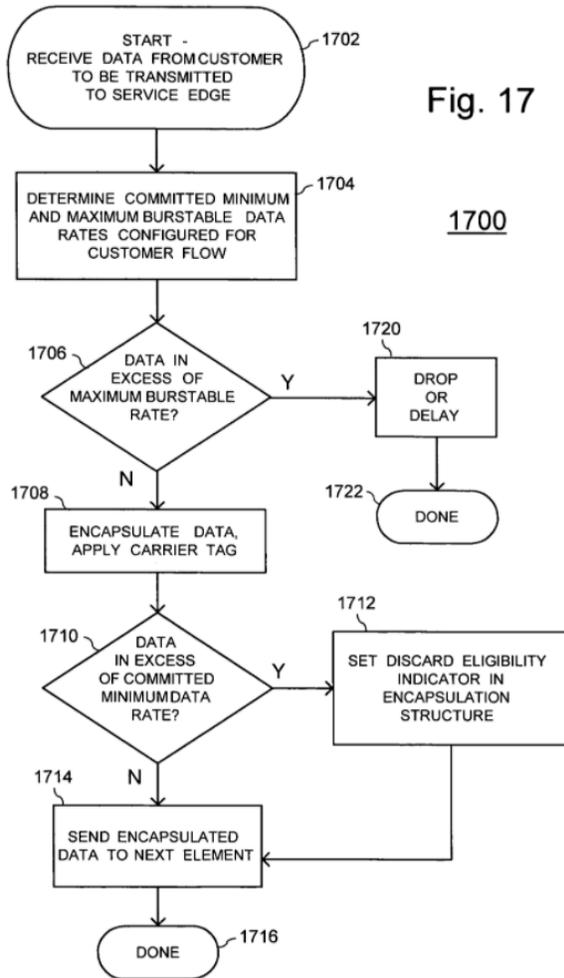
Wireless buffer status reports	<a href="#">H04W 28/0278</a>
Queueing arrangements many subclasses relating to buffers	<a href="#">H04L 49/90</a>
Flow control or congestion control with hop by hop codes	<a href="#">H04L 47/17</a>
Flow control or congestion control with end to end codes	<a href="#">H04L 47/18</a>

**H04L 47/31**

**Definition statement**

*This place covers:*

Flow control techniques using tagging of packets.



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**H04L 47/32****Definition statement***This place covers:*

Using discard policies for preventing congestion, e.g. partially discarding corrupted, excessively delayed or non-critical packets.

**References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

One way delays	<a href="#">H04L 43/0858</a>
Flow control between communication endpoints	<a href="#">H04W 28/10</a>

**H04L 47/323****Definition statement***This place covers:*

Techniques for preventing congestion related to acknowledgment. Since acknowledgements are also the part of the load in network, the acknowledgment policy imposed by the receiver may also affect congestion. The receiver should send acknowledgement for N packets rather than sending acknowledgement for a single packet. The receiver should send an acknowledgment only if it has to send a packet or a timer expires.

Special actions on ACK traffic not related to delay or discard are classified in [H04L 47/2466](#).

**H04L 47/326****Definition statement***This place covers:*

Flow control actions by using random early detection [RED], also known as random early discard or random early drop, e.g. queuing discipline for a network scheduler suited for congestion avoidance.

Various discard algorithms include: Weighted random early detection [WRED]; adaptive RED or active RED [ARED]; and Robust random early detection [RRED].

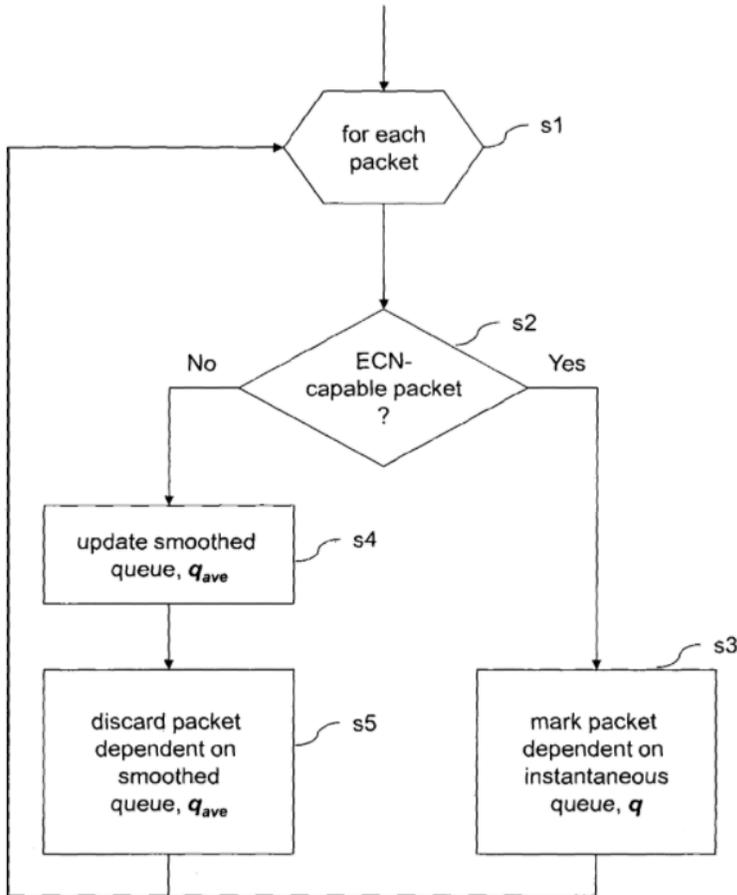


Figure 7 – Flow diagram for AQM with smoothed loss signalling but instantaneous ECN signalling

**References**

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Network monitoring of the performance of a network communications and QoS parameters	<a href="#">H04L 43/00</a>
Packet Switching Systems	<a href="#">H04L 49/10</a>
Queueing in packet switching networks	<a href="#">H04L 49/90</a>

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## H04L 47/33

### Definition statement

*This place covers:*

Communication of the congestion information to the destination terminal. This is a kind of feedback to the destination.

## H04L 47/34

### Definition statement

*This place covers:*

Flow control actions in combination with ensuring sequence integrity.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Alternate routing	<a href="#">H04L 45/22</a>
Arrangements for connecting between networks having differing types of switching systems, e.g. gateways	<a href="#">H04L 12/66</a>
Queuing arrangements	<a href="#">H04L 49/90</a>

## H04L 47/35

### Definition statement

*This place covers:*

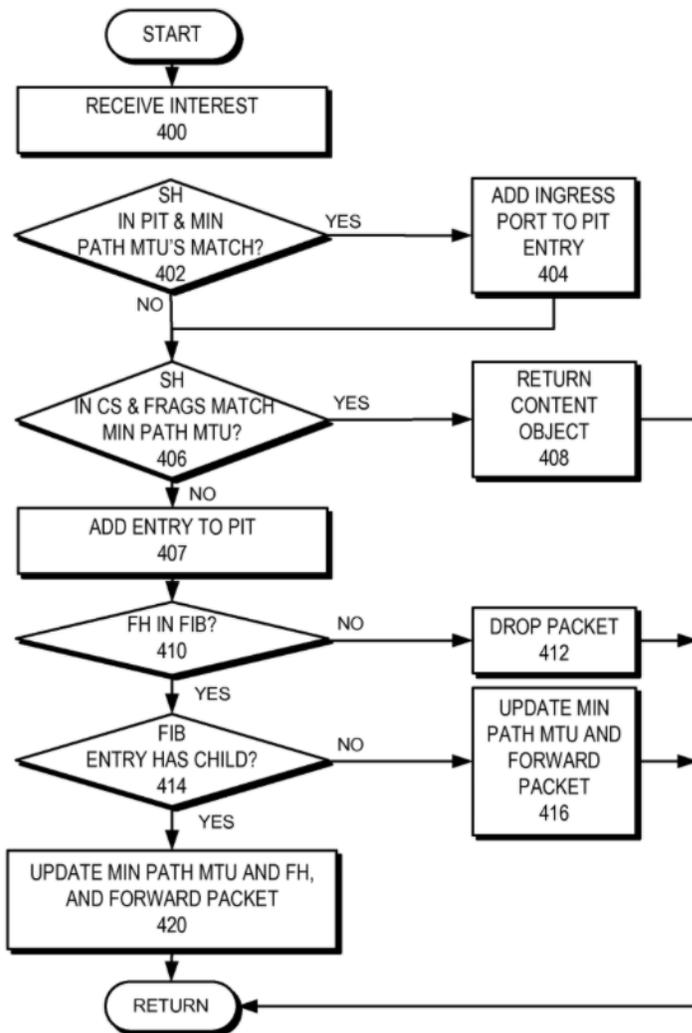
Flow control actions adapted to embedding specific flow control packets in data traffic packets.

**H04L 47/36**

**Definition statement**

*This place covers:*

Flow control actions in combination with packet size determination, sometimes performed at the beginning of the communication.



**FIG. 4**

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## References

### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Routing based on monitoring results	<a href="#">H04L 45/70</a>
IP fragmentation or TCP segmentation aspects	<a href="#">H04L 69/166</a>

### **H04L 47/365**

#### **Definition statement**

*This place covers:*

Dynamic adaptation of the packet size during communication.

### **H04L 47/37**

#### **Definition statement**

*This place covers:*

Modification of the starting window. This specific feature of TCP could appear in any other environment.

This code is used when the document describes an evolution from the standard procedure.

## References

### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Adaptation of TCP data exchange control procedures	<a href="#">H04L 69/163</a>
--	-----------------------------

**H04L 47/38**

**Definition statement**

*This place covers:*

Flow control actions in combination with adapting coding or compression rates, e.g. in video transmission with the purpose of adapting the multimedia signal to the receiving terminal.

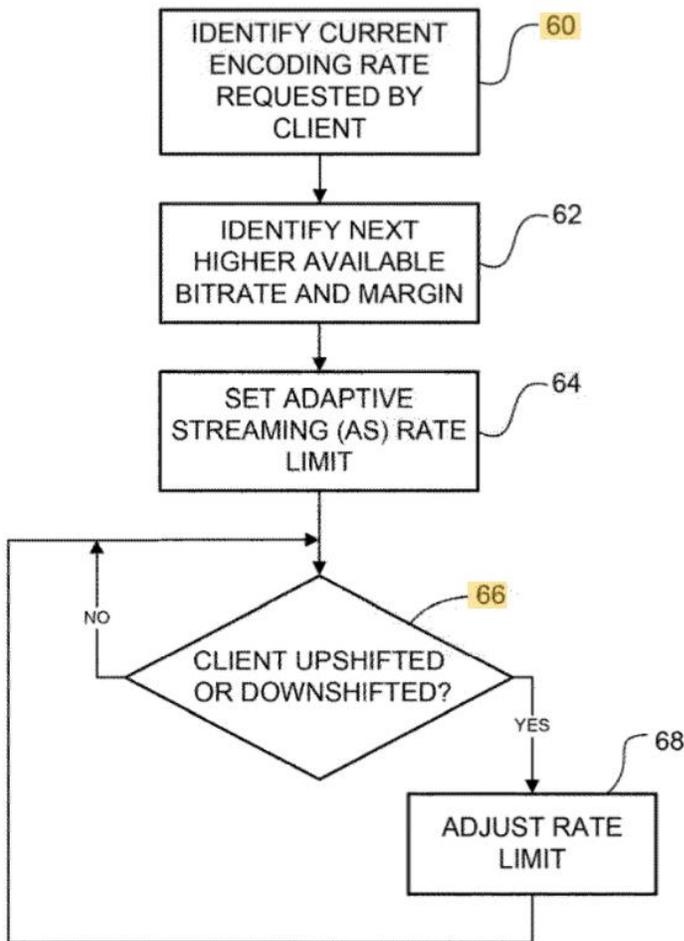


FIGURE 4

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**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Content on demand	<a href="#">H04L 65/612</a>
Media handling, encoding, streaming or conversion	<a href="#">H04L 65/60</a>
Controlling the feeding rate to the network, e.g. by controlling the video pump	<a href="#">H04N 21/23805</a>

**H04L 47/39****Definition statement***This place covers:*

Flow control actions in combination with credits indicating availability or available buffer space of the receiver. Before data can be forwarded over a link, the sender needs to receive credits from the receiver.

At various times, the receiver sends credits to the sender indicating availability of buffer space for receiving data.

**H04L 47/40****Definition statement***This place covers:*

Using a performance enhancing proxy access node that divides the end-to-end TCP connection between the client and the server into a multi-overlay-hop path where each overlay hop is an independent TCP connection, such that the RTT of each overlay hop is lower than the direct RTT between A and B, e.g. TCP splitting.



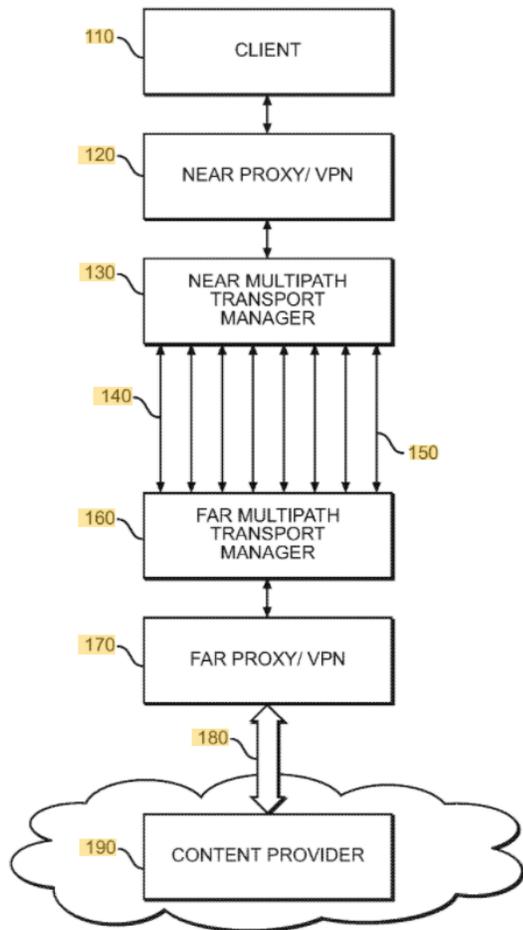


FIG. 1

**References**

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Link aggregation, e.g. trunking	<a href="#">H04L 45/245</a>
---------------------------------	-----------------------------

### H04L 47/43

#### Definition statement

*This place covers:*

Flow control actions in combination with assembling or disassembling of packets.

### H04L 47/431

#### Definition statement

*This place covers:*

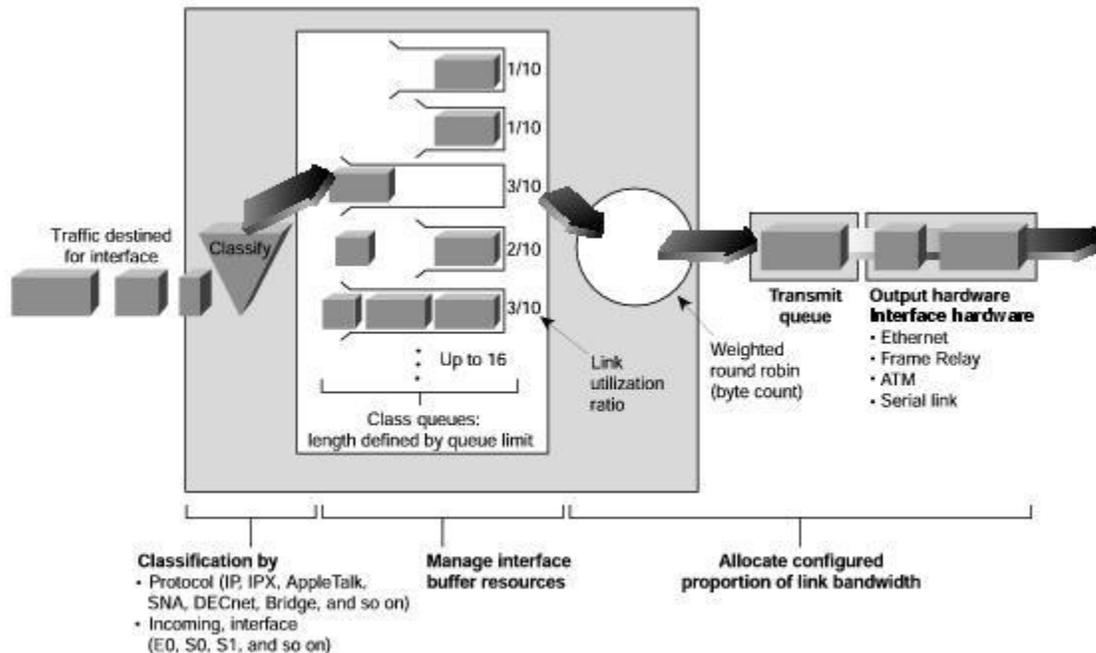
Flow control actions in combination with padding or de-padding of packets.

### H04L 47/50

#### Definition statement

*This place covers:*

Packet scheduling when multiple queues are competing to transmit packets on a common link. A typical example of queue scheduling is illustrated below.



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**References**

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Packet Switching Systems	<a href="#">H04L 49/10</a>
Input queuing	<a href="#">H04L 49/3018</a>
Output queuing	<a href="#">H04L 49/3027</a>
Shared queuing	<a href="#">H04L 49/3036</a>
Virtual queuing	<a href="#">H04L 49/3045</a>
Head of Line Blocking Avoidance	<a href="#">H04L 49/508</a>
Queueing and buffering in packet switching networks	<a href="#">H04L 49/90</a>
Common buffer combined with individual queues	<a href="#">H04L 49/9036</a>
Plurality of buffers per packet	<a href="#">H04L 49/9021</a>
Policing	<a href="#">H04L 49/503</a>

**H04L 47/52**

**Definition statement**

*This place covers:*

Scheduling policies that schedule the transmission of the data stored in the queue(s) taking into account the bandwidth consumed by the data. Such scheduling policies aim at optimizing the use of system bandwidth, by scheduling transmissions that neither underutilize nor saturate the transmission medium.

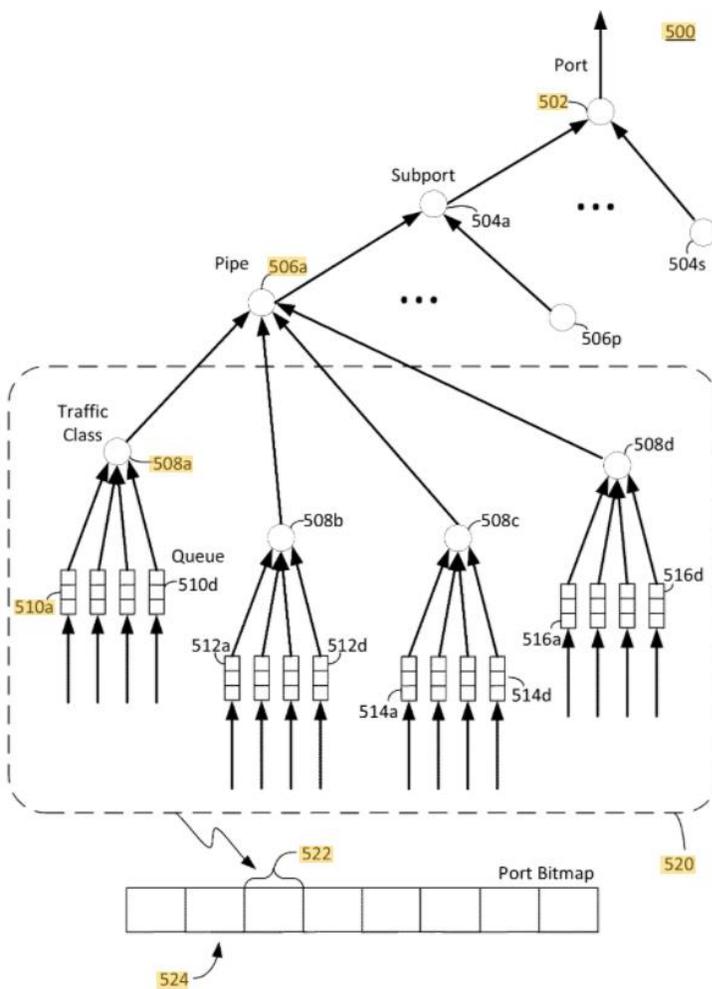


FIG. 5

**References**

**Informative references**

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Attention is drawn to the following places, which may be of interest for search:

Bandwidth or capacity management, i.e. automatically increasing or decreasing capacities, e.g. bandwidth on demand	<a href="#">H04L 41/0896</a>
--	------------------------------

**H04L 47/521**

**Definition statement**

*This place covers:*

Data in each queue are assured a portion of the total bandwidth as in the Weighted Fair Queueing scheduling method (see [H04L 47/56](#)) or the queue service slot (meaning the time that a queue is active each round) is fixed.

**H04L 47/522**

**Definition statement**

*This place covers:*

Schedulers which adapt the queue service slot (the time that a queue is active each round) or the bandwidth allocation in each service round based on different parameters. The queue service order can be fixed or variable and is classified under the group [H04L 47/62](#).

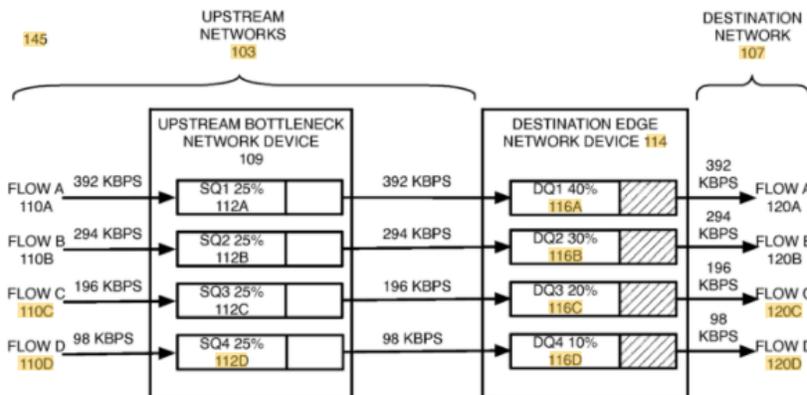


FIG. 1D

**H04L 47/524**

**Definition statement**

*This place covers:*

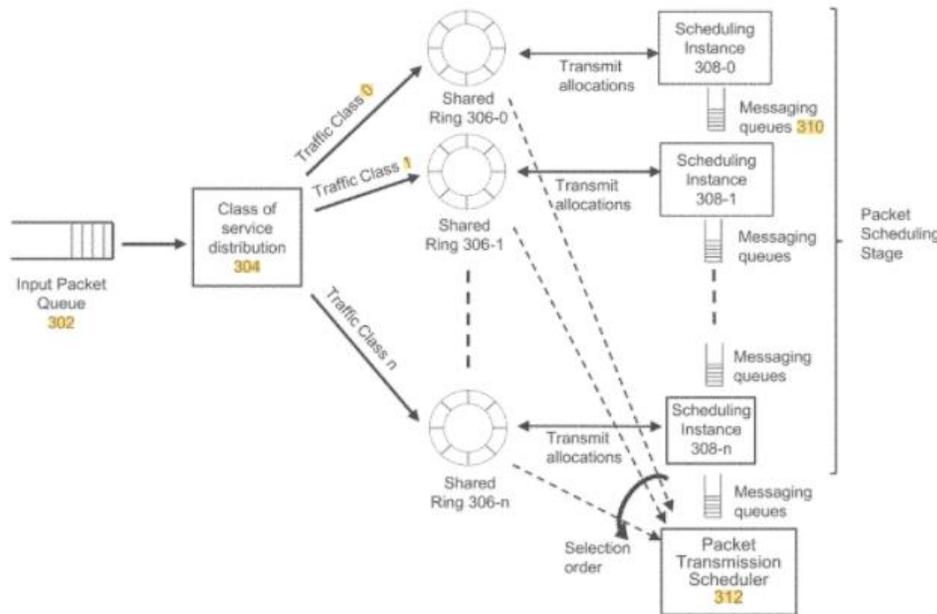
H04L 47/524 is a special case of H04L 47/522, wherein the scheduler does not assign any bandwidth to a given queue.

**H04L 47/525**

**Definition statement**

*This place covers:*

In this case, there is a minimum guaranteed bandwidth per each queue and the residual bandwidth is redistributed among the queues.



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#### **H04L 47/527**

##### **Definition statement**

*This place covers:*

Scheduling in which each poll session is assigned a weight (quantum) of bits to be transmitted.

If the queue has less bits, a credit is assigned to said queue and quantum credit can be transmitted during the next poll (see also [H04L 47/6265](#)).

Token banks involve assigning tokens to the queues and storing said tokens in a finite capacity bank. The tokens assigned to a queue whose associated bank has reached its maximum capacity are assigned to another queue whose bank is below its capacity. Access to the resources is allowed if the queue has a predetermined number of tokens in its associated bank, otherwise it is denied.

#### **H04L 47/528**

##### **Definition statement**

*This place covers:*

The scheduler assigns a guarantee minimum bandwidth to each queue.

#### **H04L 47/54**

##### **Definition statement**

*This place covers:*

Scheduling taking into account the history of losses per flow or per class in order to prioritise the flows or classes accordingly. Changing the loss tolerance, value used for scheduling, of packets depending on whether or not another packet from the same stream has been scheduled for transmission before or after its deadline.

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## **H04L 47/56**

### **Definition statement**

*This place covers:*

Scheduling taking into account delay constraints of packets, for example, real time packets. Under this code disciplines in which packets are scheduled according to a system potential (also referred to as virtual time) are also covered. The scheduler uses this global function to compute timestamps which specify when packets should be served. Packets are scheduled in increasing order of the corresponding timestamps. The specific function used as system potential determines the delay and fairness properties.

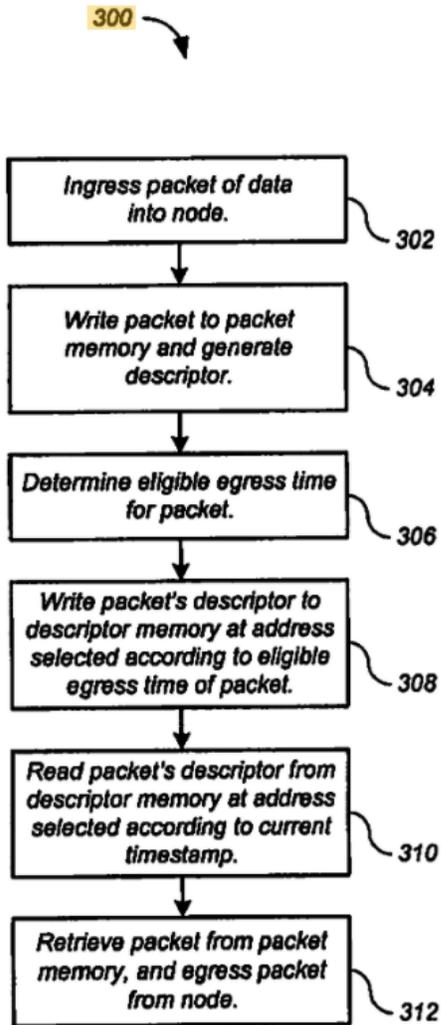
If different priorities are involved, then the corresponding group [H04L 47/24](#) is also used. For example, groups [H04L 47/245](#) and [H04L 47/2416](#) also apply.

## **H04L 47/562**

### **Definition statement**

*This place covers:*

Scheduling in which packets are grouped in buffers according to the corresponding session rate and only one timestamp is maintained per rate.



**FIG. 3**

**H04L 47/564**

**Definition statement**

*This place covers:*

Scheduling in which each packet is assigned a timestamp for transmission, for example, earliest.

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## **H04L 47/566**

### **Definition statement**

*This place covers:*

Excess bandwidth is used to try to equalize the delays of the connections.

## **H04L 47/568**

### **Definition statement**

*This place covers:*

Scheduling using calendar queues or timing rings.

A calendar queue is an ordered structure of bins representing possible values of timestamps in the system. The bins are ordered by increasing value of their timestamps. When the maximum difference between timestamps of backlogged sessions in the system is bounded, the calendar queue can become a circular queue where the bins can be reused as the time progresses. The bin associated with the minimum value must correspond with the value of the system potential at that time, and the total number of bins must be sufficient to cover the possible range of timestamps. Each bin is implemented as a list of pointers to individual connections. Every time a connection receives a new timestamp, it is linked to the corresponding bin.

The calendar queue can be automatically resized, i.e. the number of bins and the width of the bins (the number of possible timestamp values of a bin) can be changed depending on the distribution of backlogged connections in the bins. The granularity of the bins or slots in one calendar queue can be variable, for example, in the logarithmic calendar queue.

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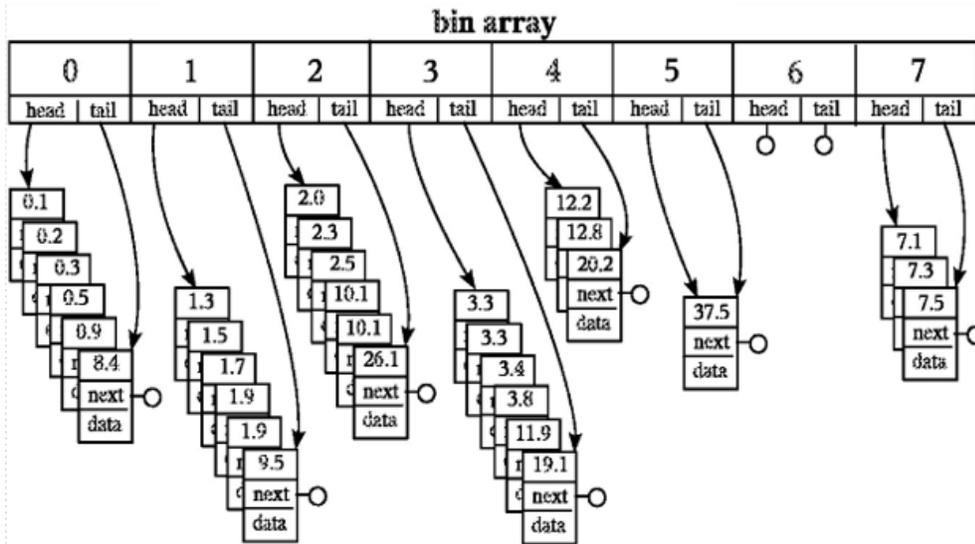
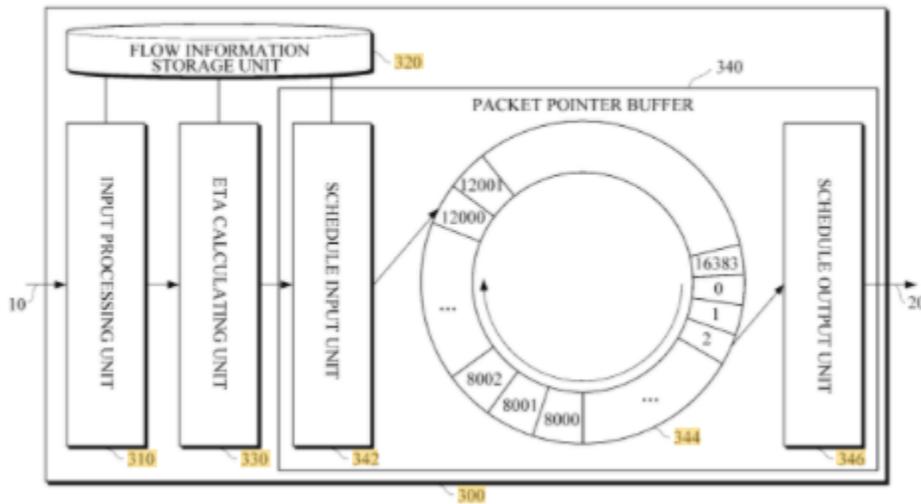


FIG. 3



**H04L 47/58**

**Definition statement**

*This place covers:*

Changing the scheduling discipline upon an event such as congestion.

## H04L 47/60

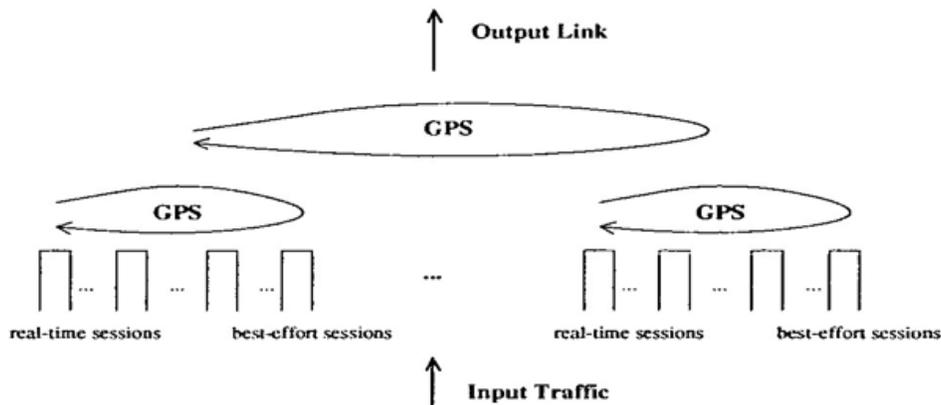
### Definition statement

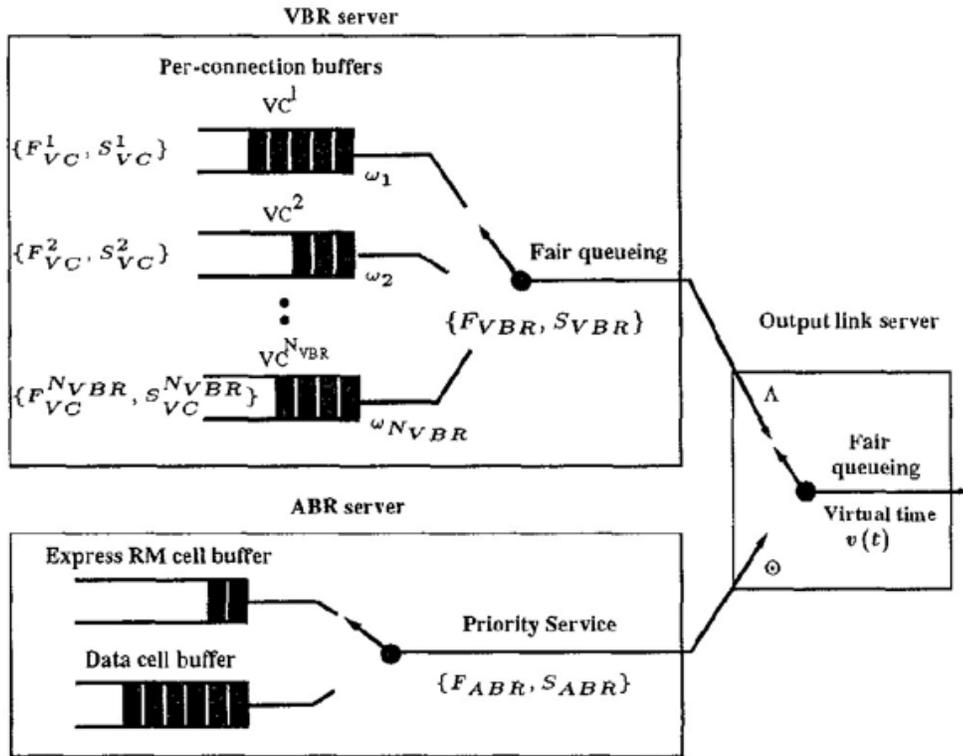
*This place covers:*

Hierarchical integration of schedulers.

A hierarchical scheduler can be represented by a tree where the root node corresponds to a scheduler which multiplexes the packets on the physical link, each intermediate node corresponds to a scheduler at that level of the hierarchy, and the leaf nodes correspond to the allocated sessions. Each leaf is connected to the root through a single path of intermediate nodes.

The classes for the specific schedulers should be also given. If different types of schedulers are used, the class [H04L 47/58](#) should be given also.





**H04L 47/62**

**Definition statement**

*This place covers:*

Various general aspects of queue scheduling.

**H04L 47/6205**

**Definition statement**

*This place covers:*

Scheduling techniques adapted to avoid Head of Line [HOL] Blocking, e.g. the first packet in a queue which is waiting for the corresponding output to be free prevents other packets from that queue to be transferred to the corresponding outputs which are free.

**H04L 47/621**

**Definition statement**

*This place covers:*

Scheduling techniques adapted to process each individual queue in a flow or connection.

**H04L 47/6215**

**Definition statement**

*This place covers:*

Scheduling techniques adapted to consider an individual queue for each QoS class, rate or priority of traffic.

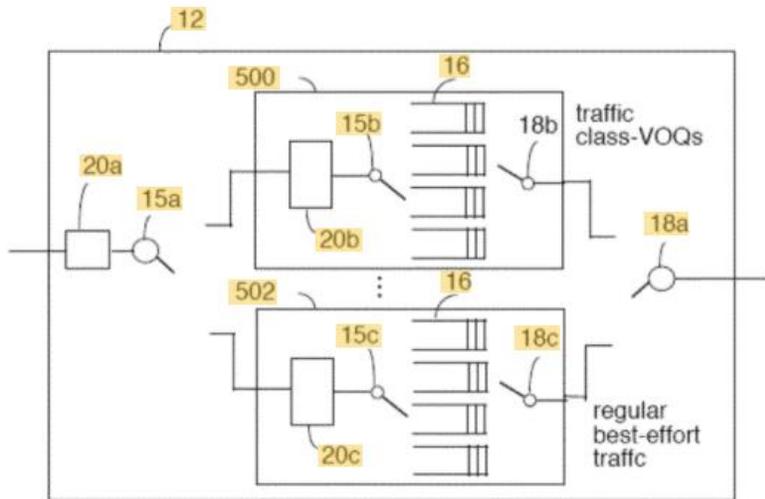


FIG. 19A

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#### **H04L 47/622**

##### **Definition statement**

*This place covers:*

Scheduling techniques adapted to consider the service order of the queues. The service order can be fixed, as in Round Robin scheduling method, or variable.

#### **H04L 47/6235**

##### **Definition statement**

*This place covers:*

Scheduling techniques in which the service order of the queues is variable.

Therefore, if in the first round queues 1, 2 and 3 are served in that order, in the second round queue 3 could be served as first queue followed by 1 and 2. To be used in conjunction with [H04L 47/625](#).

#### **H04L 47/624**

##### **Definition statement**

*This place covers:*

Scheduling techniques adapted to change the ordering of packets in a queue, e.g. a buffer manager manages a sequence of pointers each referencing a separate cell of the buffer, the sequence of pointers being ordered to indicate the order in which the buffer manager has to write/read into/from the single cell.

#### **H04L 47/6245**

##### **Definition statement**

*This place covers:*

Scheduling techniques in which the standard FIFO or LIFO procedure for writing/reading data in the queue is modified under certain conditions.

#### **H04L 47/625**

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### **Definition statement**

*This place covers:*

Scheduling techniques adapted to apply other criteria for service slot or service order than those covered by H04L 47/6205 - H04L 47/6245.

### **H04L 47/6255**

#### **Definition statement**

*This place covers:*

Scheduling techniques in which the load of the queue is constantly monitored and the next scheduled queue is the queue with the highest load. One or more predetermined thresholds can be used and priority can be set for choosing between queues which are in the same condition.

In this case, the classes [H04L 47/29](#) and [H04L 47/30](#) should also be considered. Otherwise, the bandwidth, for example, number of packets read from a queue can be changed based on load condition of a specific queue.

### **H04L 47/626**

#### **Definition statement**

*This place covers:*

Scheduling techniques where the order in which the respective queues are visited is chosen as a function of the propagation conditions on the transmission channel associated to each queue.

The same can apply to the bandwidth dedicated to each queue per service slot.

### **H04L 47/6265**

#### **Definition statement**

*This place covers:*

Techniques in which the scheduling of the queue is changed according to the previous bandwidth allocation. A credit (counter) system per queue is introduced. The history credit count of each queue is increased when data transmission from the queue is blocked and decreased when arbitration has been won on the basis of the history credit

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count. In this way, the reading sequence of the queues is determined.

#### **H04L 47/627**

##### **Definition statement**

*This place covers:*

Scheduling techniques in which each flow is metered to determine whether its bitrate is below/over its guaranteed bitrate requirement, and based on the measurement, a scheduling weight is determined. The traffic queues are then scheduled according to the determined scheduling weights.

#### **H04L 47/6275**

##### **Definition statement**

*This place covers:*

Scheduling techniques in which the order in which the respective queues are visited is chosen according to the queue priority, often in combination with [H04L47/6215](#).

##### **References**

###### ***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Individual queue per QoS, rate or priority	<a href="#">H04L 47/6215</a>
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#### **H04L 47/628**

##### **Definition statement**

*This place covers:*

The scheduler takes into account the packet size.

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#### **H04L 47/6285**

##### **Definition statement**

*This place covers:*

Scheduling techniques in which low priority queues are prevented from being empty.

#### **H04L 47/629**

##### **Definition statement**

*This place covers:*

Scheduling techniques designed in order to achieve a fair sharing of resources among different users.

#### **H04L 47/6295**

##### **Definition statement**

*This place covers:*

Scheduling techniques which further organise packets having same QoS/connection/flow/priority into multiple queues.

This is a further subdivision with respect to [H04L 47/6215](#).

#### **H04L 47/70**

##### **Definition statement**

*This place covers:*

The interaction between an endpoint and the network for ensuring resource availability for a requesting user.

A requested or negotiated resource can take many forms, for example, bandwidth, slots, buffer capacity or other transmission resources. Typically following negotiation, a reservation phase is performed before the actual communication is established, for example, call setup. Other aspects covered in this class is renegotiation, for example, bandwidth reallocation either requested by an already active user or by the ingress node network to adapt the available resources to serve

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new calls with higher priority.

In particular, it should be noted that the following classes have been allocated for network slicing applications:

Architecture	<a href="#">H04L 47/78</a>
Service chaining and classification	<a href="#">H04L 47/2441</a>

## References

### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Network dimensioning or reallocation of resources between areas of the network	<a href="#">H04L 41/00</a>
Bandwidth management and trading	<a href="#">H04L 41/0896</a>
Network fault recovery selecting new candidate element	<a href="#">H04L 41/0668</a>
Routing	<a href="#">H04L 45/00</a>
Alternate routing	<a href="#">H04L 45/22</a>
Route fault recovery	<a href="#">H04L 45/28</a>
Resource allocation architecture	<a href="#">H04L 47/78</a>
Flow classification	<a href="#">H04L 47/2441</a>
Protocols for multimedia access such as IMS or SIP	<a href="#">H04L 65/00</a>
For peer-to-peer [P2P] networking; Functionalities or architectural details of P2P networks	<a href="#">H04L 67/104</a>
Wireless load balancing or load distribution	<a href="#">H04W 28/08</a>
Wireless resource allocation	<a href="#">H04W 72/04</a>
Wireless resource scheduling	<a href="#">H04W 72/12</a>

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#### **H04L 47/72**

##### **Definition statement**

*This place covers:*

Admission control in which resources are reserved over the network in advance, usually at call setup time in order to assure a quality of service QoS. A traffic descriptor is provided so that the network can reserve enough bandwidth resource to handle the specified QoS.

#### **H04L 47/722**

##### **Definition statement**

*This place covers:*

Admission control ensuring that enough resources, e.g. buffer space, can be reserved at the receiver for the communication.

#### **H04L 47/724**

##### **Definition statement**

*This place covers:*

Admission control in which resources are reserved at the intermediate nodes, e.g. in the resource reservation protocol RSVP.

RSVP, described in RFC 2205, can be used by either hosts or routers to request or deliver specific levels of quality of service QoS for application data streams or flows. RSVP defines how applications place reservations and how they can relinquish the reserved resources once the need for them has ended. RSVP operation will generally result in resources being reserved in each node along a path.

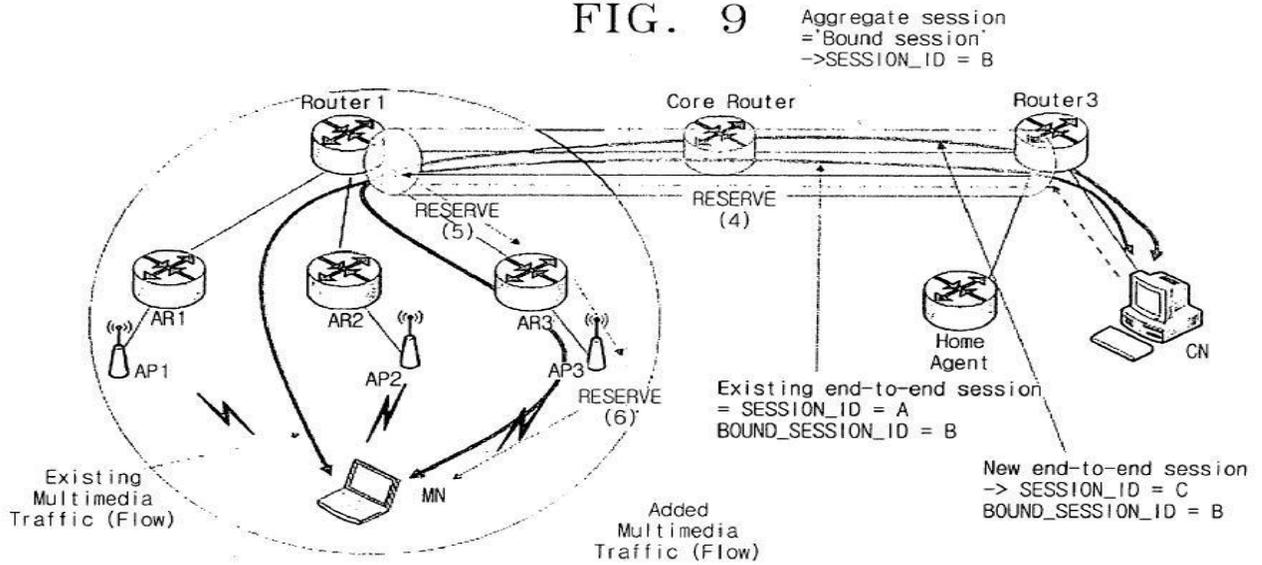
#### **H04L 47/726**

##### **Definition statement**

*This place covers:*

Admission control in which the reservation is performed over a plurality of paths for the communication, for example for load balancing.

FIG. 9



**References**

**Limiting references**

This place does not cover:

Reserving resources by balancing the load	<a href="#">H04L 47/125</a>
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**Informative references**

Attention is drawn to the following places, which may be of interest for search:

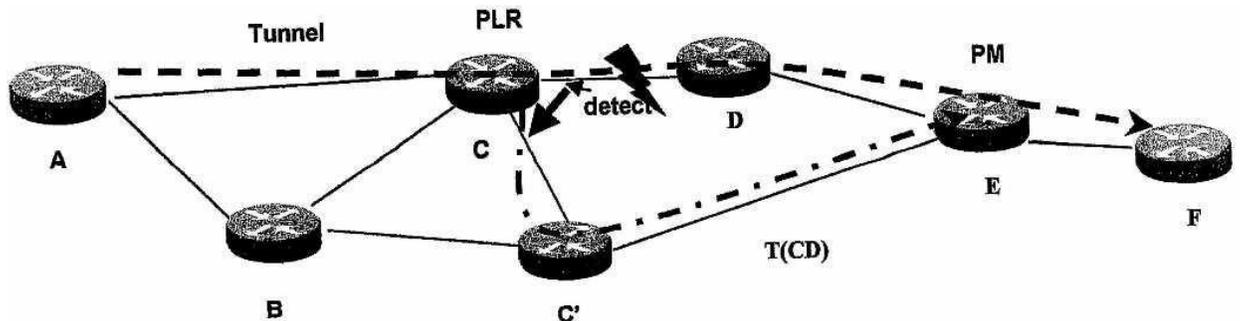
Wireless load balancing	<a href="#">H04W 28/08</a>
-------------------------	----------------------------

**H04L 47/728**

**Definition statement**

*This place covers:*

Admission control in which the reservation is performed for backup paths which are used in case of failure of the main path.



## H04L 47/74

### Definition statement

*This place covers:*

Admission control reacting to the situations in which there are not enough resources for a connection, including a new connection or an existing connection, e.g. due to a failure.

Typical reactions are rejecting the connection or storing the request until resources become available. For existing connections and in case the reaction is a flow control or congestion control action as, for example, packet dropping, flow control subgroups under [H04L 47/10](#) should be considered. An example is policing actions where [H04L 47/20](#) would apply. This group could be used in combination with the group [H04L 47/76](#) if the reaction is the reallocation of resources.

## H04L 47/741

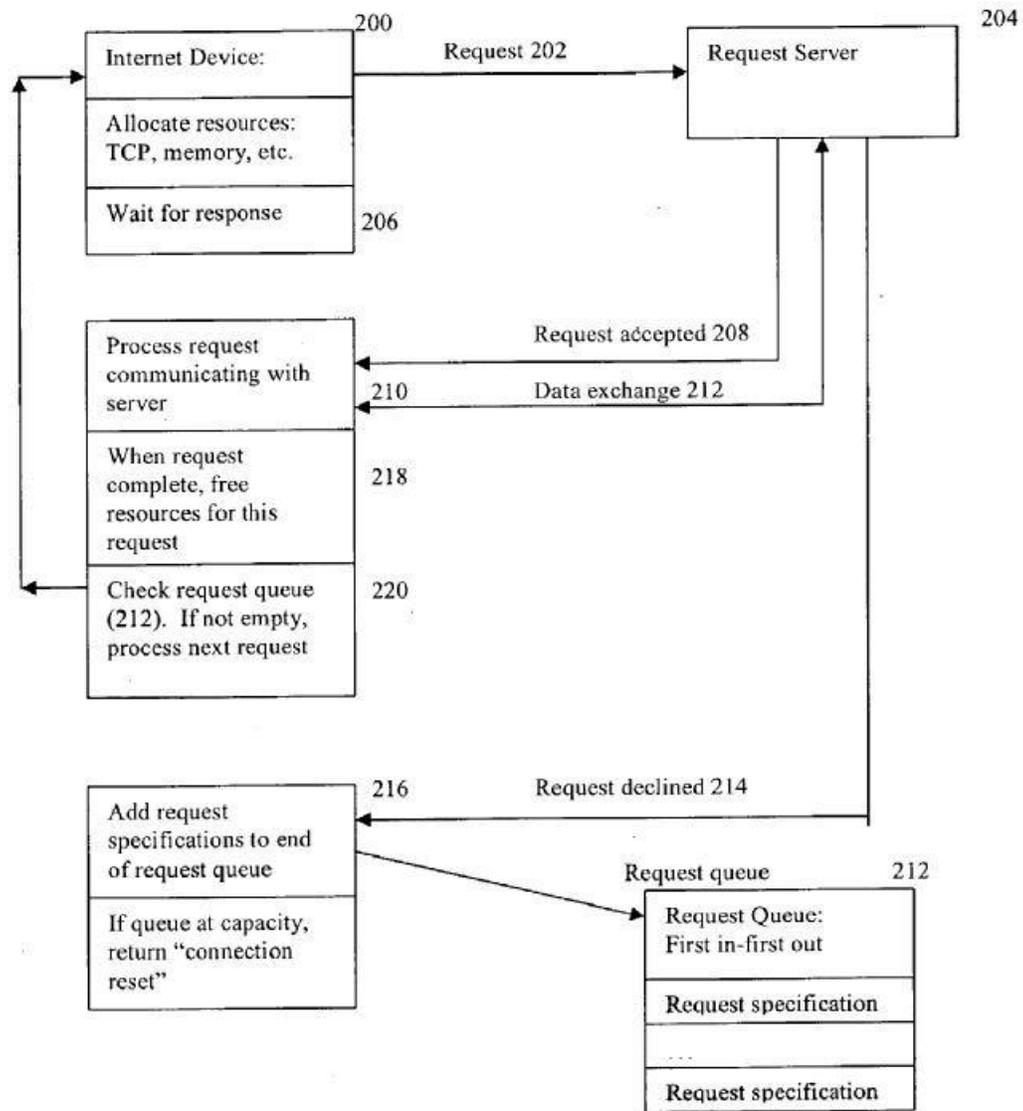
### Definition statement

*This place covers:*

Admission control in which an incoming request is held in a queue until the requested resources become available.

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**H04L 47/743**

**Definition statement**

*This place covers:*

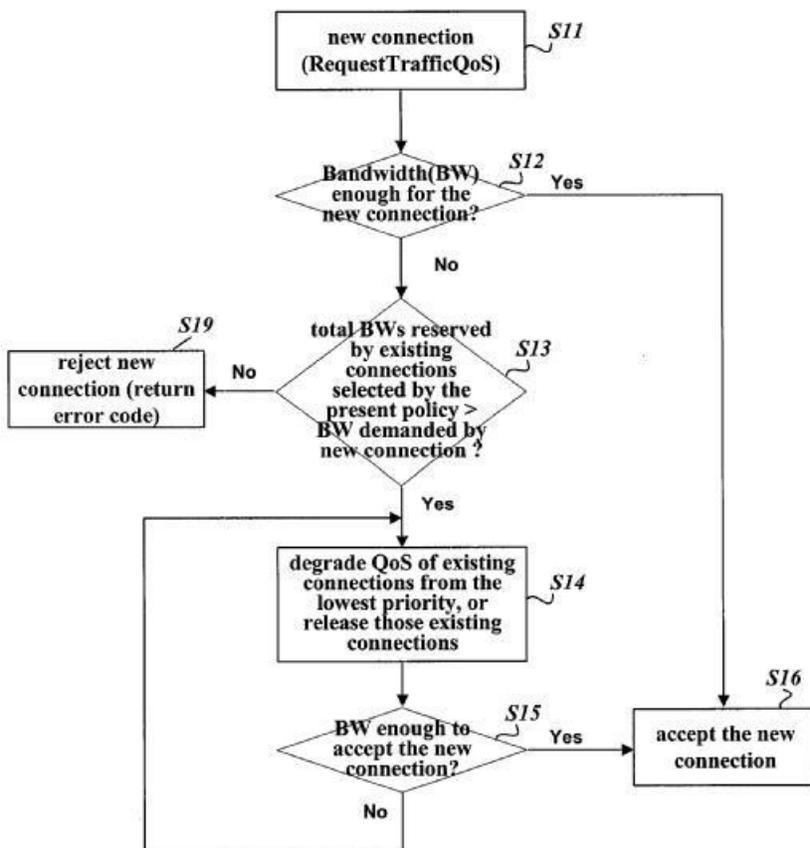
Admission control that includes reactions at the end nodes.

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**H04L 47/745****Definition statement***This place covers:*

Admission control that includes reactions in the network, e.g. when a new connection is accepted by diminishing the bandwidth reserved to other connections even if there is no sufficient bandwidth available.

**H04L 47/746****Definition statement***This place covers:*

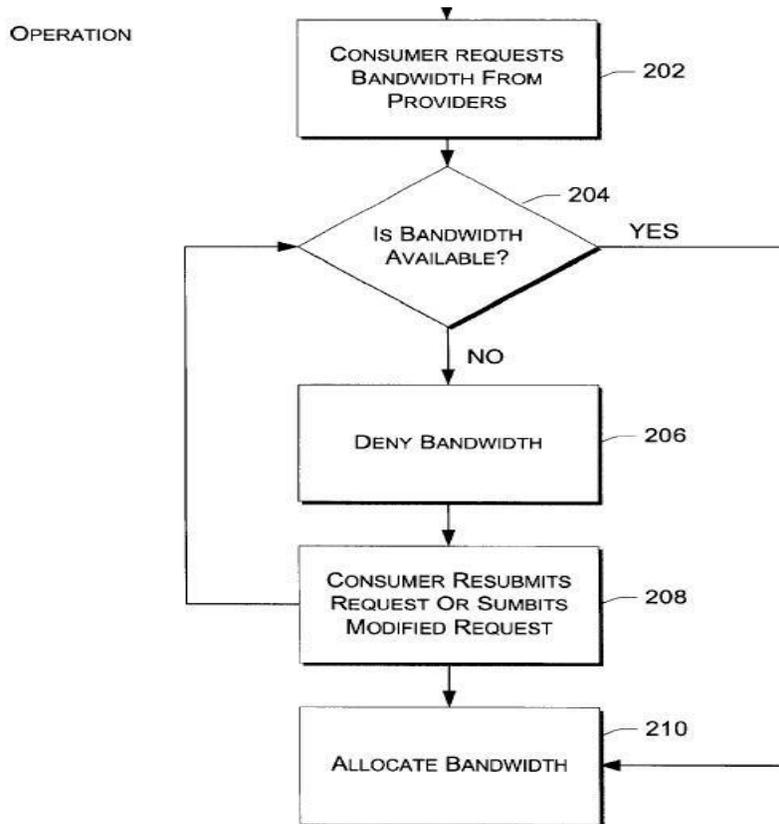
Admission control in which specific actions are performed as a reaction to a failure.

**H04L 47/748**

**Definition statement**

*This place covers:*

Admission control in which, if the user requests cannot be satisfied due to lack of resources, the user resubmits (or is offered) an alternative request or is offered an alternative to the request, e.g. a connection at a bandwidth lower than the originally requested one.



**H04L 47/76**

**Definition statement**

*This place covers:*

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Admission control in which resources of existing connections are reallocated, e.g. to accommodate a new connection being triggered by an end-point, to upgrade a connection or to improve efficiency according to monitored patterns by the network.

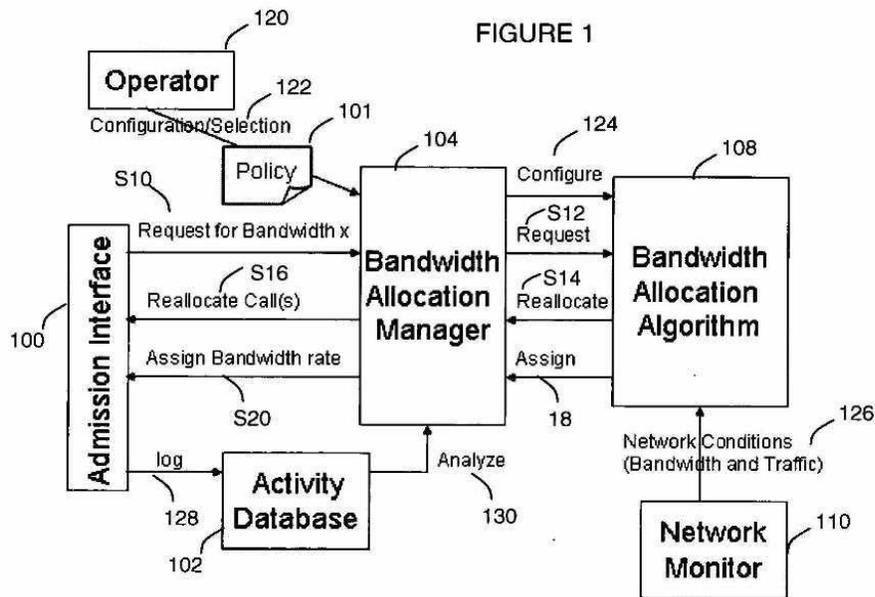
For existing connections and in case the action is a flow control or congestion control/avoidance action, e.g. modification of packet priorities while in transit, flow control subgroups under [H04L 47/10](#) should be considered. An example is policing actions where [H04L 47/20](#) would apply.

**H04L 47/762**

**Definition statement**

*This place covers:*

Admission control in which specific actions are initiated by the network.



**H04L 47/765**

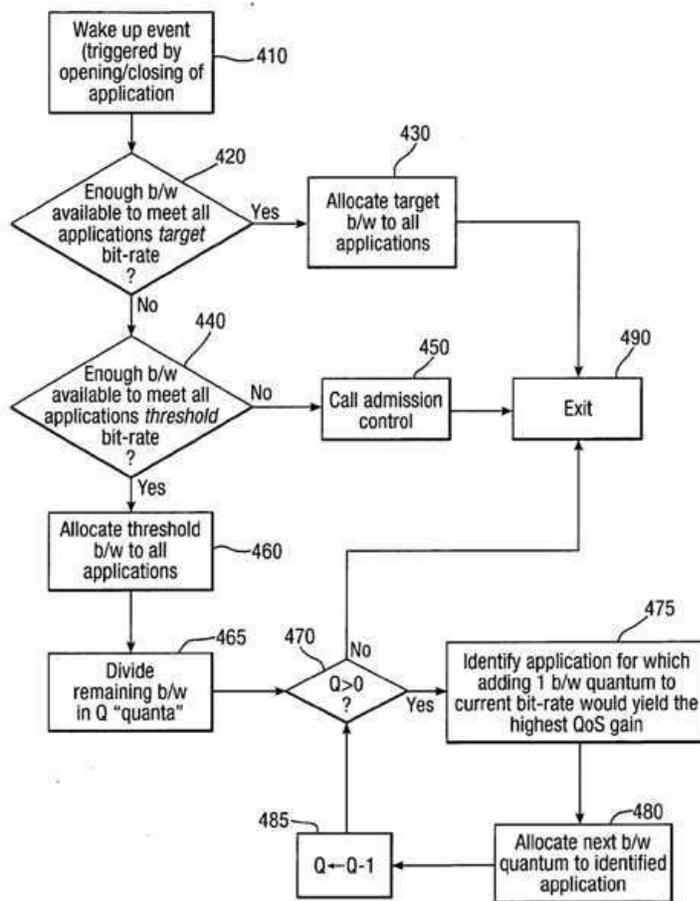
**Definition statement**

*This place covers:*

Admission control in which specific actions are initiated by the end nodes.

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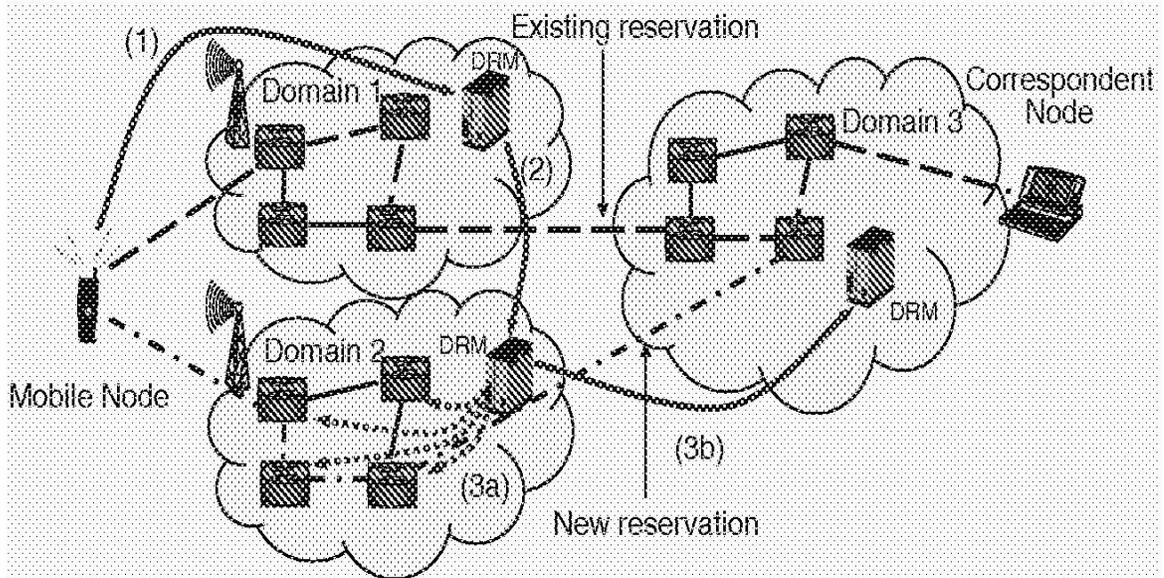
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**H04L 47/767****Definition statement**

*This place covers:*

Admission control in which specific actions are performed after changing of the attachment point such as an access node.

This group could be used in combination with [H04L 47/783](#) (Distributed allocation of resources) when, for example, as a result of the hand-off there is a change of network domain.



## References

### *Informative references*

Attention is drawn to the following places, which may be of interest for search:

Distributed allocation of resources, e.g. bandwidth brokers	<a href="#">H04L 47/783</a>
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## H04L 47/78

### Definition statement

*This place covers:*

Admission control relevant to specific network architectures.

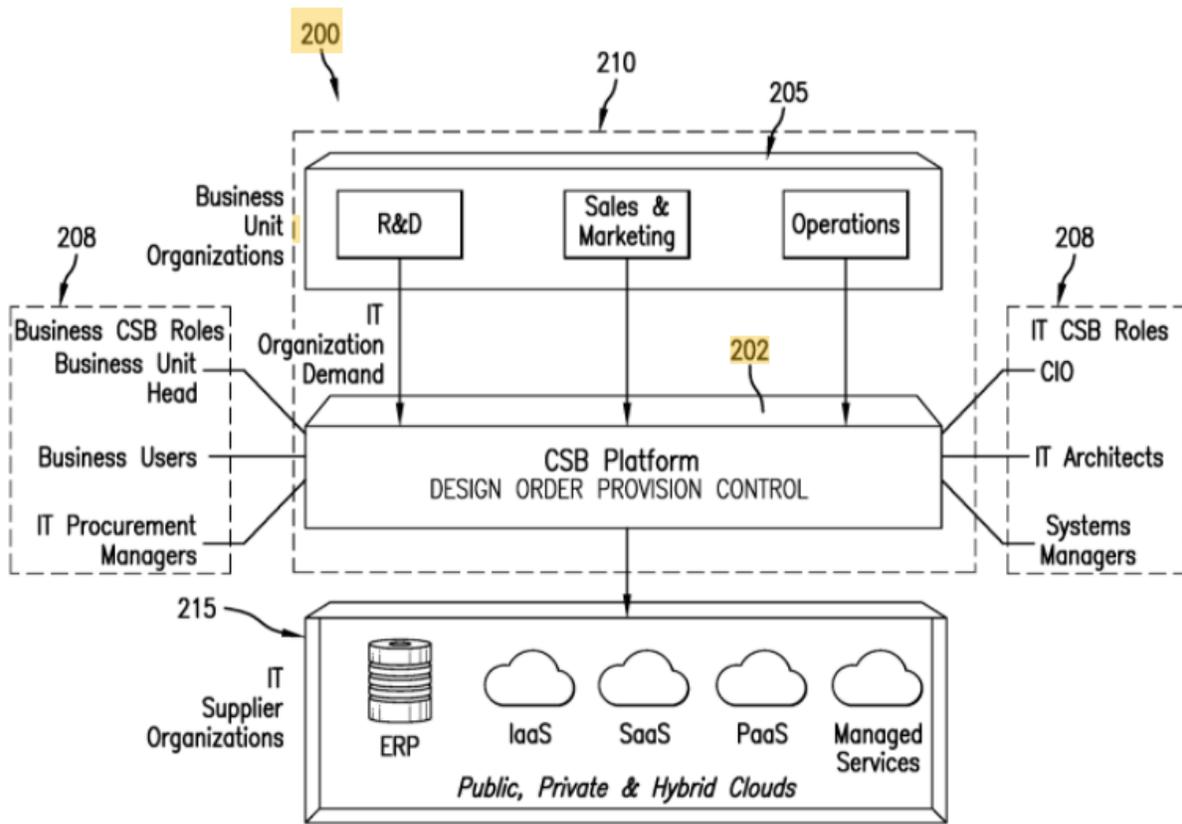


FIG. 2A

**H04L 47/781**

**Definition statement**

*This place covers:*

Admission control in which resources are allocated by a central unit.

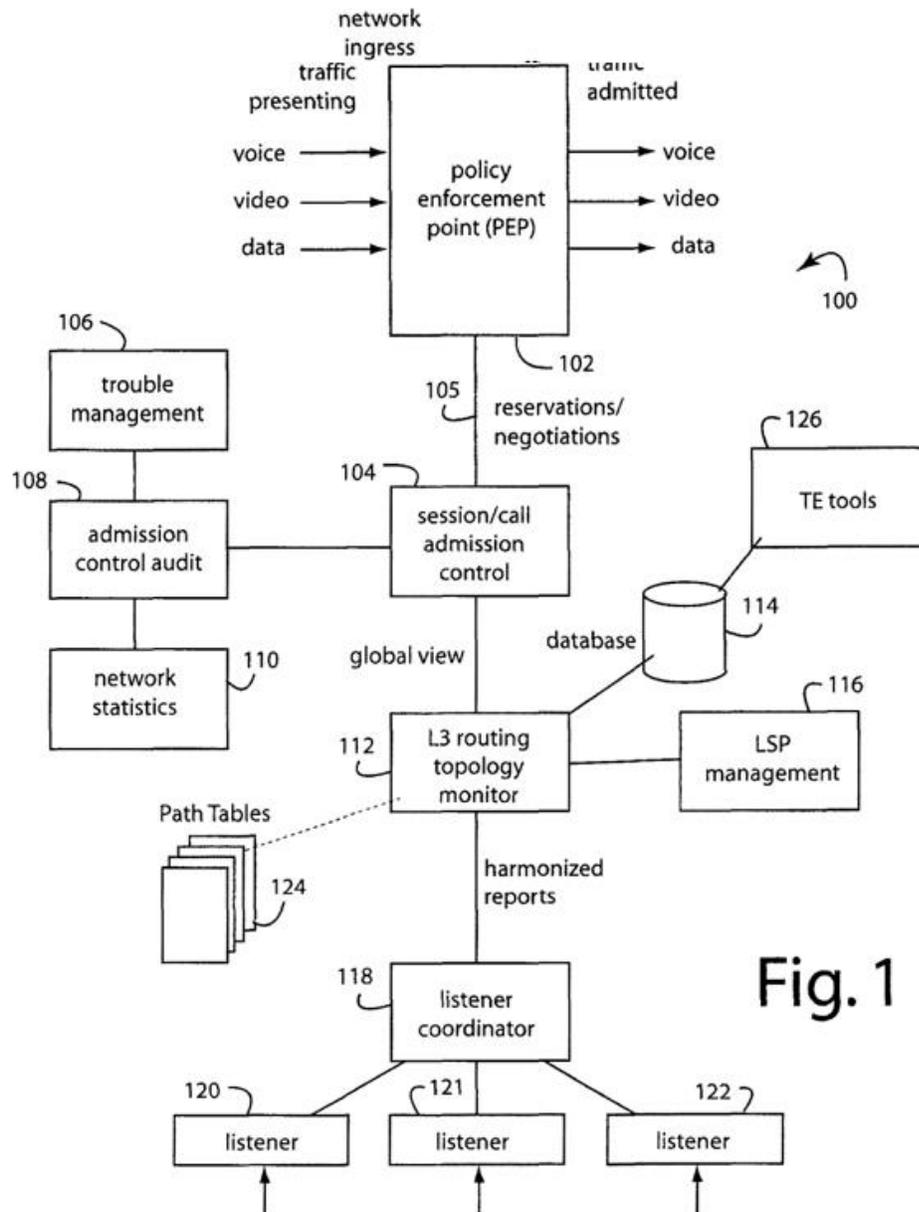
**H04L 47/782**

**Definition statement**

*This place covers:*

Admission control performed by nodes which are related in a hierarchical configuration.

1/5



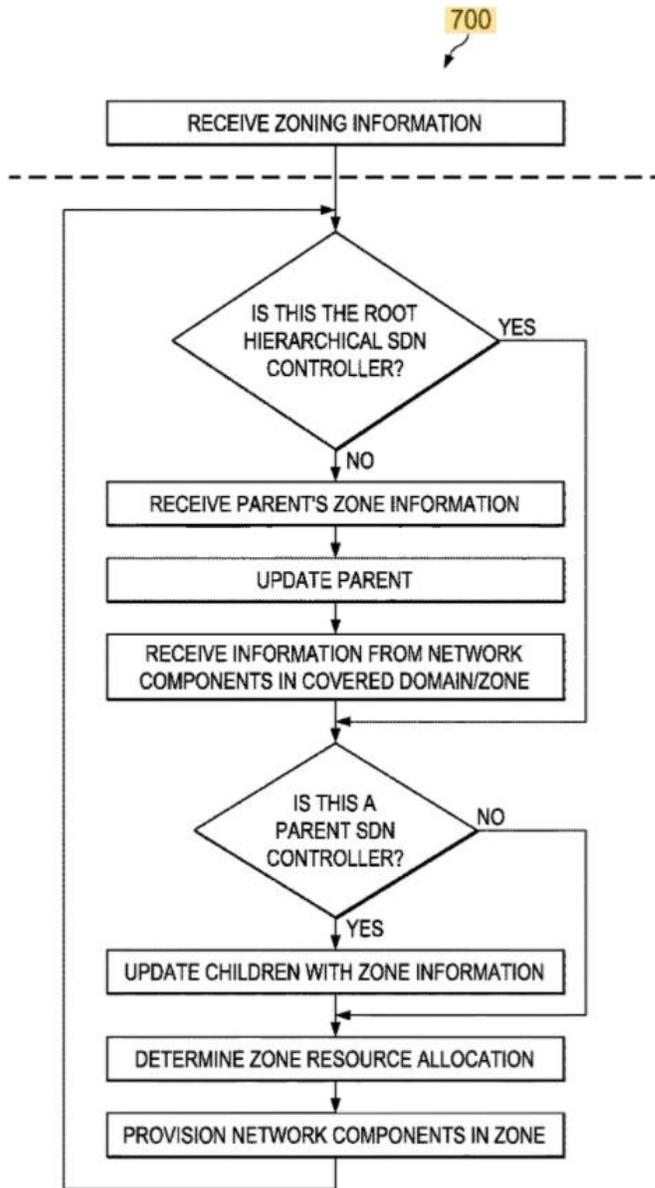


FIG. 7

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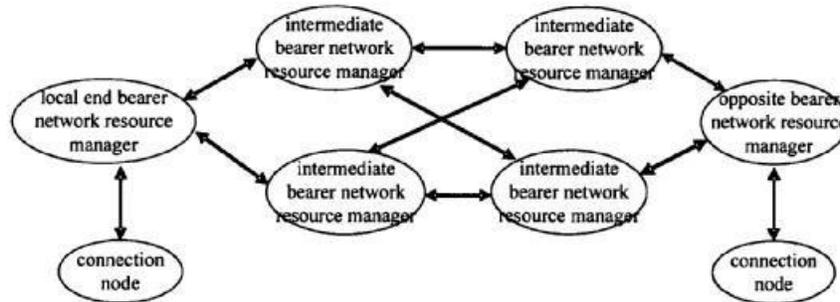
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### H04L 47/783

#### Definition statement

*This place covers:*

Admission control in which the allocation of resources is performed in a distributed way, e.g. by employing Bandwidth Brokers as agents that manage a domain and adapted to communicate with its adjacent peers, allowing end-to-end services to be constructed as a result of bilateral agreements.



### H04L 47/785

#### Definition statement

*This place covers:*

Admission control in which the allocation of resources is performed within multiple network domains allowing end-to-end services to be constructed as a result of multilateral agreements.

### H04L 47/786

#### Definition statement

*This place covers:*

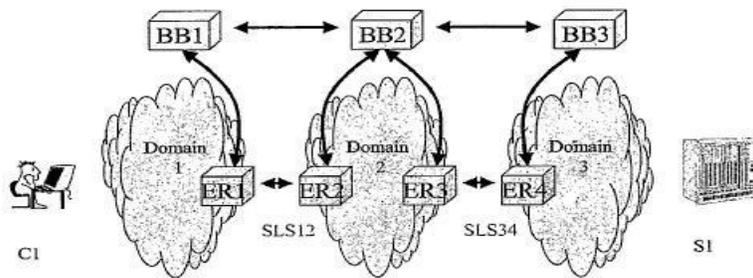
Admission control in which the allocation of resources comprises inter-domains correspondence of reservations.

**H04L 47/787**

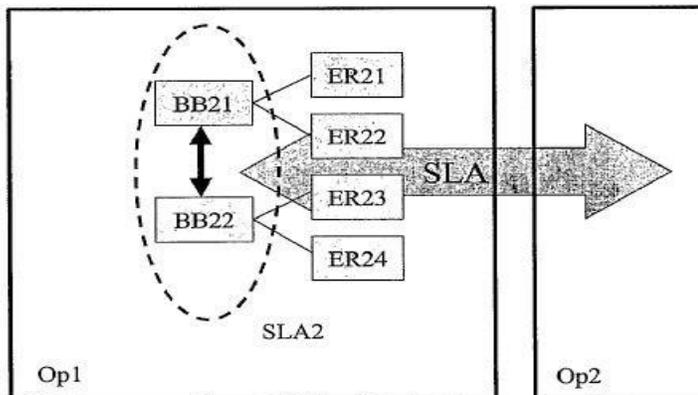
**Definition statement**

*This place covers:*

Multi-domain admission control in which the allocation of resources comprises bandwidth trade among domains.



*Fig 1*



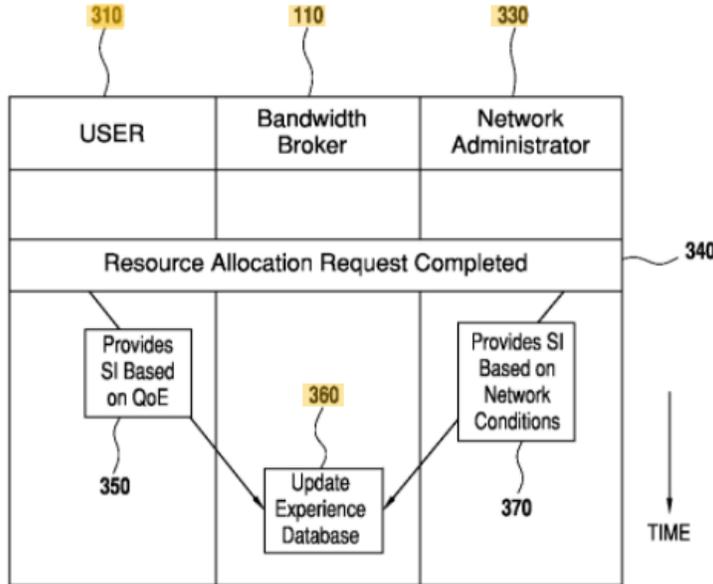


FIG. 3

**H04L 47/788**

**Definition statement**

*This place covers:*

The allocation of resources is done in an autonomous way by, e.g. an access point. The access point is responsible for the admission of new requests based on the current allocation of resources.

**H04L 47/80**

**Definition statement**

*This place covers:*

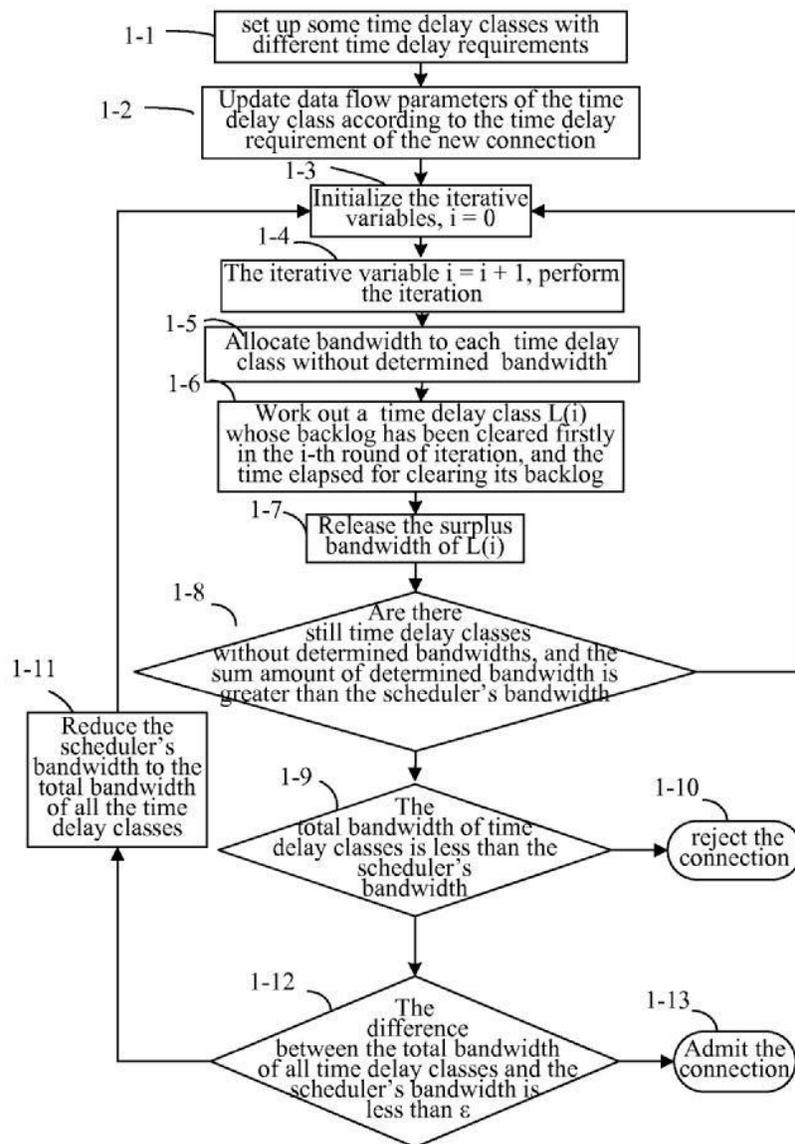
Reservation actions depending on the type of traffic, e.g. real time vs. non-real time traffic, quality of service, priority, application dependent etc. or user, e.g. service level agreement, SLA.

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**H04L 47/801****Definition statement***This place covers:*

Resource allocation is done with preference to real time traffic in case of mixed real time and non-real time traffic, due to the sensitivity of the real time traffic to delay.



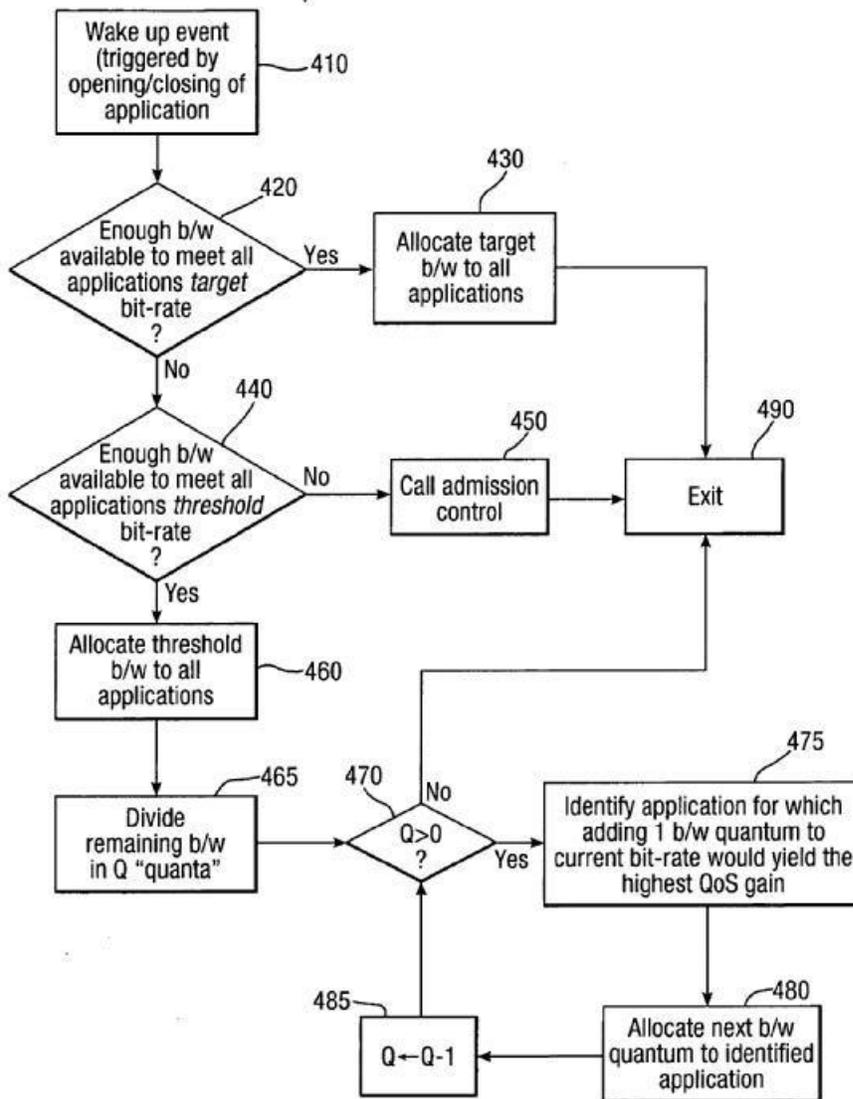
**H04L 47/803**

**Definition statement**

*This place covers:*

Allocation of resources or requesting of an access based on the application that is going to use the resources/access.

The bandwidth allocation problem becomes more difficult in multiservice networks that have a large variety of different applications, each one with different requirements in terms of bandwidth, duration or delay and information loss.

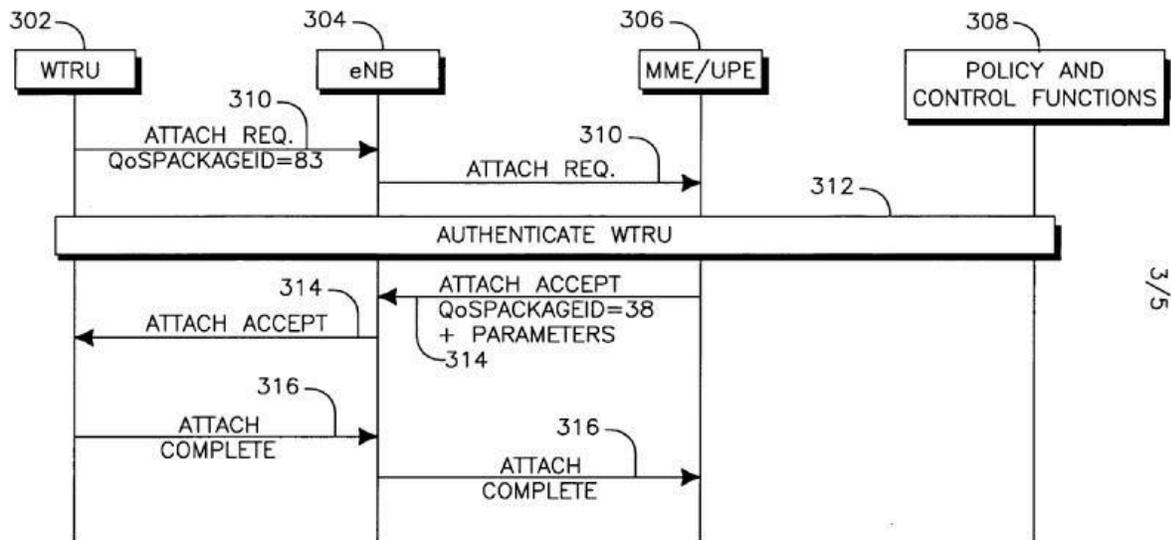


**H04L 47/805**

**Definition statement**

*This place covers:*

Allocation/reservation of resources based on specific QoS parameters requested by the connection.



**H04L 47/806**

**Definition statement**

*This place covers:*

Allocation/reservation for broadcast and multicast traffic.

**References**

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

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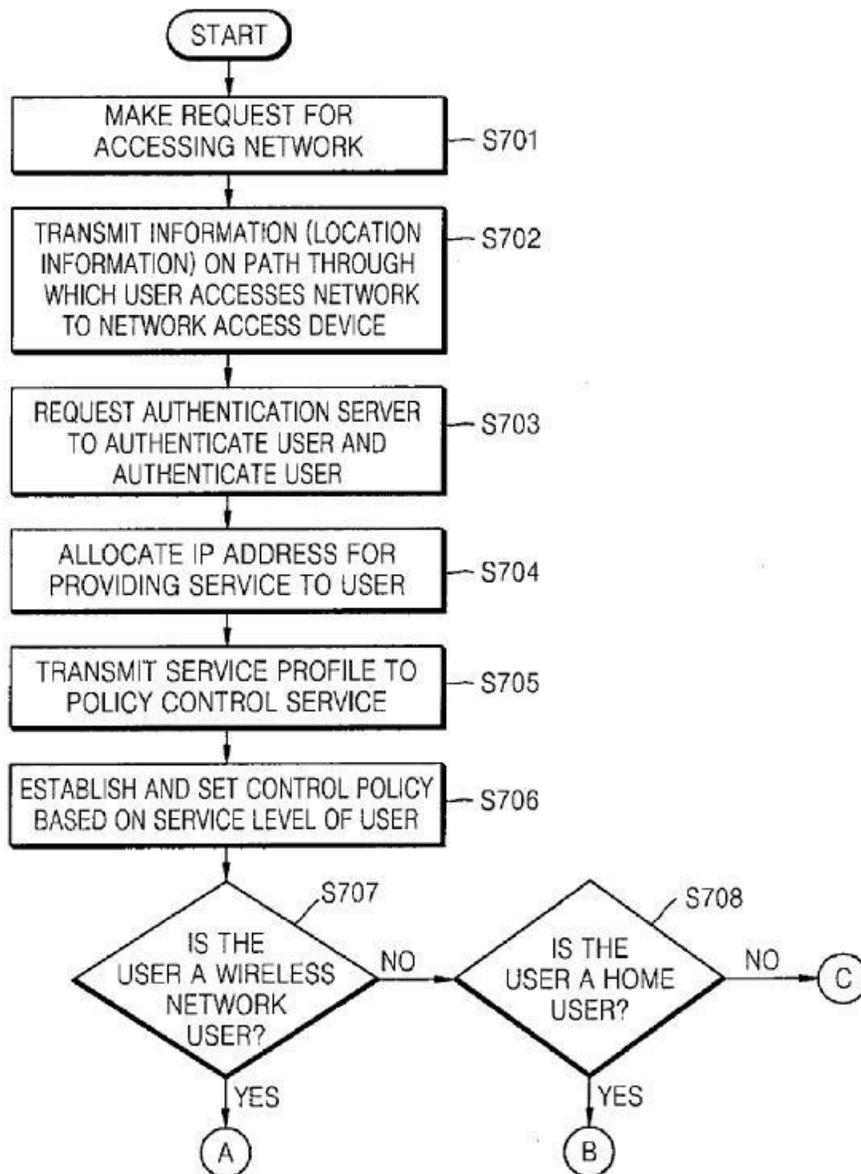
Multicast in flow control	<a href="#">H04L 47/15</a>
Multicast or broadcast media	<a href="#">H04L 65/611</a>
Resource management for broadcast services	<a href="#">H04W 72/005</a>

**H04L 47/808**

**Definition statement**

*This place covers:*

Allocation/reservation of resources is based on the type of user profile which is specified by the service level agreement SLA.



## H04L 47/82

### Definition statement

*This place covers:*

Other admission control aspects not covered by the previous subgroups.

## H04L 47/821

### Definition statement

*This place covers:*

Prioritisation of the resource allocation/reservation requests.

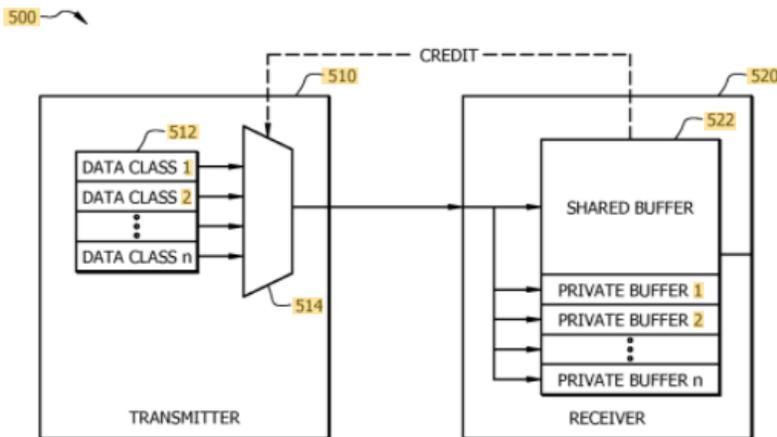


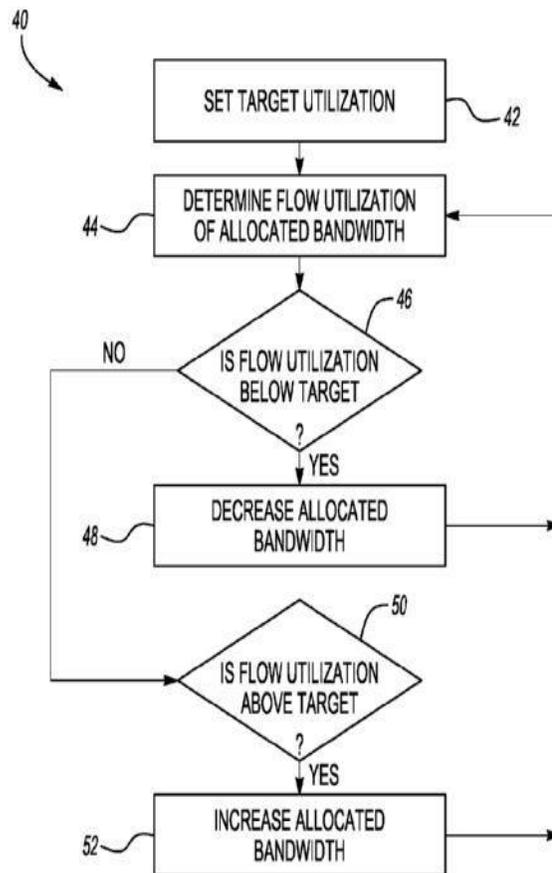
FIG. 4

**H04L 47/822**

**Definition statement**

*This place covers:*

Admission control in which the system measures and collects the resources that are still available and allocate said resources based on said measurement.



**H04L 47/823**

**Definition statement**

*This place covers:*

The allocation of resource is made by taking into account the effects that the

resources to be allocated will have on the whole system.

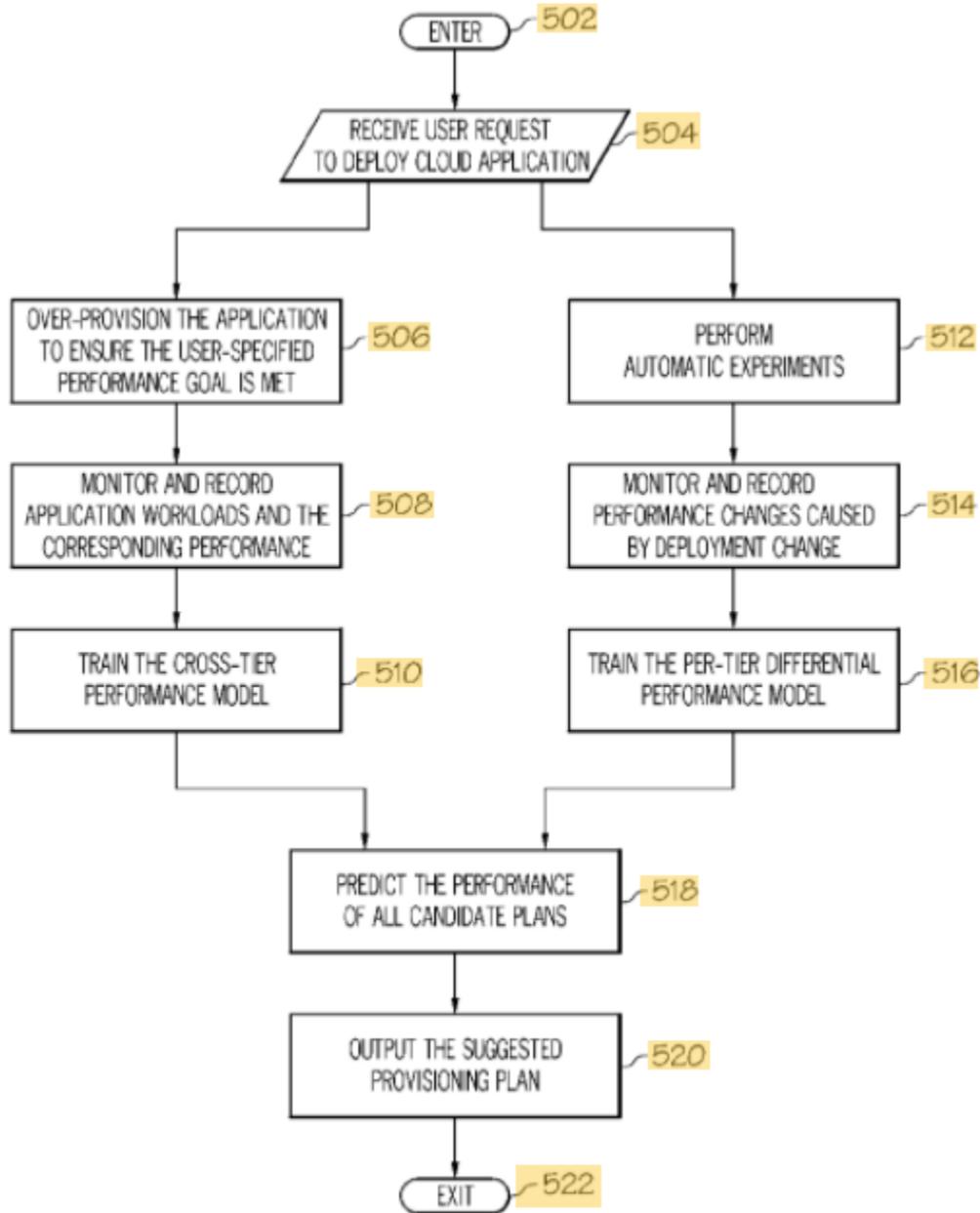


FIG. 5



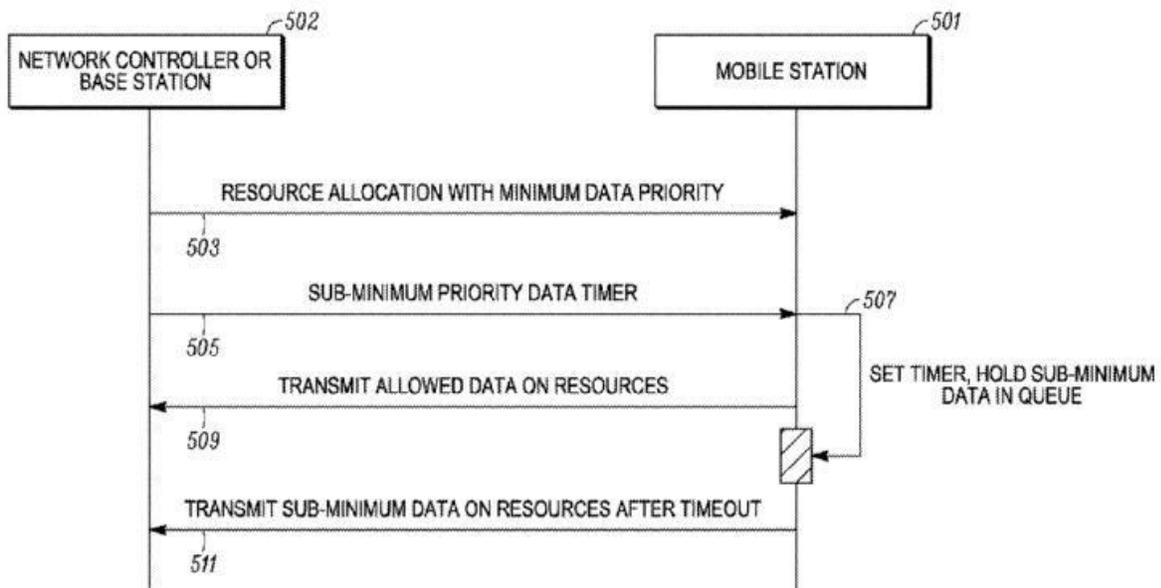
**H04L 47/826**

**Definition statement**

*This place covers:*

Resource allocation/reservation taking into account time parameters or performed in different periods of time, e.g. sending first data with high priority and at a later point in time data with less priority.

The class can also be used for resource reservation policies that vary with the time.

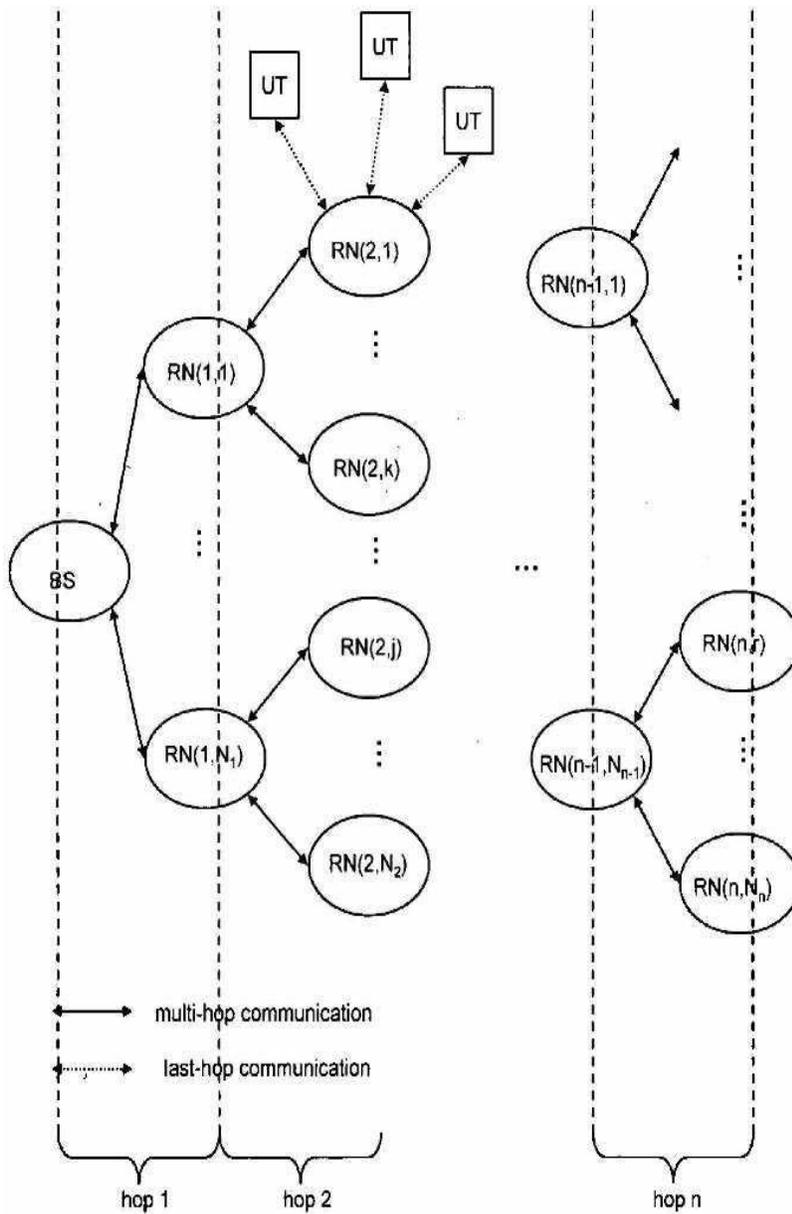


**H04L 47/827**

**Definition statement**

*This place covers:*

Admission control in which the resource reservations are aggregated and sent to the node that requested the reservation.

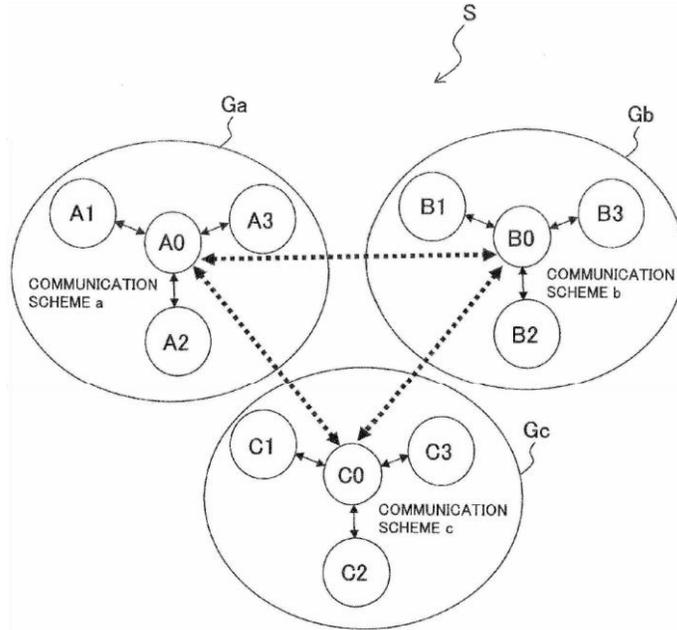


**H04L 47/828**

**Definition statement**

*This place covers:*

Admission control in which the allocation of resources is performed in relation to a group of connections.

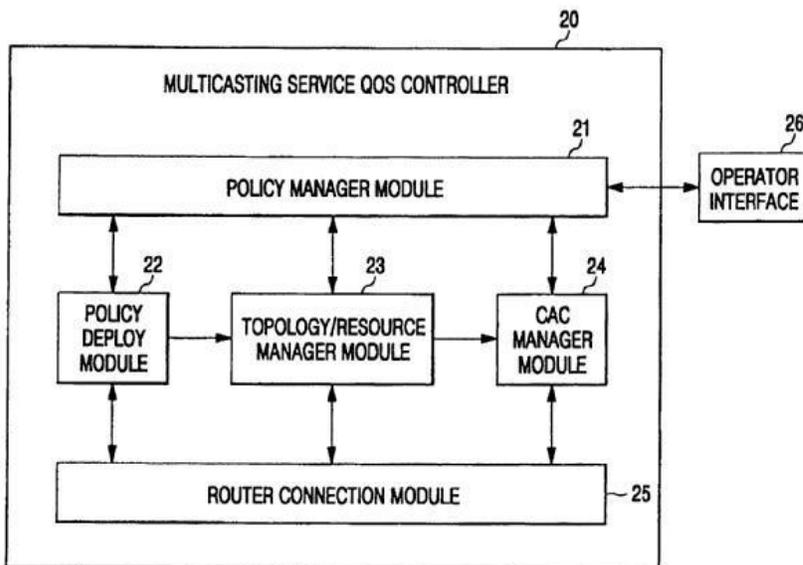


**H04L 47/829**

**Definition statement**

*This place covers:*

Admission control in which the allocation of resources is based on a particular topology or in relation to the change of topology of the network.



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#### **H04L 47/83**

##### **Definition statement**

*This place covers:*

Admission control in which the allocation of resources is based on predicted usage of said resources.

#### **H04L 49/10**

##### **Definition statement**

*This place covers:*

Construction of the interconnect, or switching fabric or switching network, which connects every input port of the switch to every output port of the switch.

#### **H04L 49/15**

##### **Definition statement**

*This place covers:*

Interconnection of the basic switching modules that are part of a switch fabric.

A switch fabric is built of basic switching building blocks, i.e. the switching modules. A switching module is the basic unit of the switch fabric. It can be implemented in a single integrated circuit element or on a printed circuit board. The routing information of the incoming packet is analysed at the input port, and the cell is then directed to the correct output port (outlet). In general, the switching element consists of an interconnection network, an IC (input controller) for each incoming line and an OC (output controller) for each outgoing line. The OC transports cells which have been received from the interconnection network toward the destination. The IC and OC are coupled by the interconnection network.

#### **H04L 49/20**

##### **Definition statement**

*This place covers:*

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Details of specific features of packet switches for support of certain services, e.g. application services or a certain quality of service (QoS).

#### **H04L 49/30**

##### **Definition statement**

*This place covers:*

Details of the peripherals units of a switch comprising functionalities taking place either between the end of the input link and the switching fabric, or between the switching fabric and the output link.

#### **H04L 49/35**

##### **Definition statement**

*This place covers:*

Packet switches, routers or bridges which are designed to support specific applications or protocols, e.g. LAN switches, Fibre Channel switches.

#### **H04L 49/40**

##### **Definition statement**

*This place covers:*

Details of the constructional aspects of a packet switch.

The constructional details may not only be mechanical but may also relate to clock distribution, connectors, backplane distribution, etc.

#### **H04L 49/45**

##### **Definition statement**

*This place covers:*

Details concerning the upgrading of a switch, expanding a switch, e.g. a switch which is already in operation needs to be upgraded in terms of adding more ports to the switch

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or other upgrades concerning the switching fabric, the processing capacity of the controller or the number of line cards.

## H04L 49/50

### Definition statement

*This place covers:*

Details concerning all functions within a packet switch that are used to detect an overload situation and/or to protect the packet switch from the negative consequence of degraded throughput due to overload, including functions used to prevent failure of the switch or errors in the switch, such as loss of packets, due to overload.

The overload may be either at the packet or at the call control level. It may be detected in any part of the switch, peripherals, switching fabric, control.

The most common overload situation of packet switches is the burst arrival of more packets than can be handled by the switch. This results in packets being discarded or a malfunction of the entire switch. However, other reasons for overload do exist, for instance the control plane for connection oriented packet switches (e.g. ATM switches) may receive more signalling messages than can be processed.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Diverting traffic away from congested spots	<a href="#">H04L 47/122</a>
Load balancing	<a href="#">H04L 47/125</a>
Congestion Prediction	<a href="#">H04L 47/127</a>
Reactions to storage capacity overflow	<a href="#">H04L 49/9084</a>
Replacing packets in a storage arrangement, e.g. pushout	<a href="#">H04L 49/9089</a>

## H04L 49/55

### Definition statement

*This place covers:*

Details concerning prevention, detection and corrections of errors such as packet loss,

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switch failure, internal routing errors.

## H04L 49/60

### Definition statement

*This place covers:*

Switches specially adapted for software-defined operations in cooperation with SDN controllers in network structures that centralise network intelligence in one network component, e.g. SDN controller, and separate the forwarding process or data plane from the routing process or control plane.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Updating the topology between route computation elements, e.g. between OpenFlow controllers	<a href="#">H04L 45/036</a>
Splitting route computation layer and forwarding layer, e.g. routing according to path computational element [PCE] or based on OpenFlow functionality	<a href="#">H04L 45/645</a>
Interaction between route computation entities and forwarding entities, e.g. for route determination or for flow table update	<a href="#">H04L 45/655</a>

## H04L 49/65

### Definition statement

*This place covers:*

Details concerning aligning the physical properties of the switch with the control software of that particular switch as an activity that is either executed by the switch itself (e.g. by the control software) or via a connected operation and maintenance system.

This implies that prior to the (re-)configuration of the switch, a change in the hardware structure of the switch has taken place. Such a change may comprise an addition or removal of hardware, for instance a line card or a switch card, the change of status of availability of some hardware, for instance due to a failure. Another reason can, for instance, be the need to expand the switch or to increase its functionality.

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## H04L 49/70

### Definition statement

*This place covers:*

Details concerning switching functionalities implemented as software programs that allows communications between virtual machines.

A virtual switch does more than just forward data packets. It can intelligently direct communication on the network by inspecting packets before passing them on. Some vendors embed virtual switches right into their virtualisation software, but a virtual switch can also be included in a server's hardware as part of its firmware.

Apart from the pure software implemented virtual switch, there are hybrid virtual switches comprising a real physical switching fabric interconnecting physical machines with a network. The control software of the switch implements virtual ports, i.e. emulates multiple logical ports on a physical port. This can have advantages if connections have to be moved from one physical port to another physical port and it also seems to have advantages in load balancing within the switch.

Another type of virtualisation is the provision of a logical switch or cluster switch that emulates a single switch on a plurality of physical switches.

## H04L 49/90

### Definition statement

*This place covers:*

Queueing arrangements in packet switching networks, buffer allocation to packets, e.g. memory location (internal, external), buffer pools, memory partition to adapt to packet size, linked list of buffers.

### NIC-mainframe interface

Intermediate buffering before the packet is transferred to the packet memory in the mainframe. Intermediate FIFO, circular list of descriptors, early interrupt after a number of bits has arrived, etc. In relation to those functions you will find also features like detection of too large, too short packets or CRC control.

When packets reach a store-and-forward unit they have to be temporarily buffered until the forwarding decision is made by the routing engine.

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**H04L 51/00****Definition statement***This place covers:*

Message switching systems in data switching networks. A message switching system is a system that switches messages on the application layer in the user plane. The messages have one or more individually identified recipients, although a user may have defined them to be part of a distribution list.

Examples:

Any electronic mail (email) systems and instant messaging (IM) systems.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Message passing systems for program control, e.g. messaging middleware	<a href="#">G06F 9/546</a>
Computer aided management of electronic mail, such as the handling of e-mail on a local workstation	<a href="#">G06Q 10/107</a>
With interactive means for internal management of messages	<a href="#">H04M 1/7243</a>
Voice mail systems for telephonic communication	<a href="#">H04M 3/5307</a>
Packet switching elements (selecting arrangements for multiplex arrangements using optical switching	<a href="#">H04Q 11/0001</a>
Client devices for e-mailing in television systems	<a href="#">H04N 21/4786</a>
Messaging specially adapted for wireless communication networks, e.g. SMS	<a href="#">H04W 4/12</a>
Messaging specially adapted for wireless communication networks, e.g. SMS	<a href="#">H04W 88/184</a>

**H04L 51/02****Definition statement***This place covers:*

Any system or technique for creating and sending automatic replies to messages.

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**H04L 51/04****Definition statement***This place covers:*

Instant messaging is data exchange in real-time between at least two end users connected to a packet-switching network where the users can be aware of the identity and the presence of the other party or parties.

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Messaging using presence information	<a href="#">H04L 51/043</a>
Messaging combined to or interacting with other services or applications	<a href="#">H04L 51/046</a>
Network arrangements or protocols for real-time communications	<a href="#">H04L 65/00</a>
Presence management and presence servers as such	<a href="#">H04L 67/54</a>

**H04L 51/043****Definition statement***This place covers:*

Instant Messaging in which user presence information is used for the message exchange.

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Use or manipulation of presence information in messaging presence management	<a href="#">H04L 67/54</a>
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#### H04L 51/046

##### Definition statement

*This place covers:*

Instant Messaging combined or interacting with other applications, which may be real-time or not.

#### H04L 51/06

##### Definition statement

*This place covers:*

Any manipulation of the message while in transit between the sender and the recipient for optimizing its delivery and display.

##### References

###### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Networked arrangements for intermediate processing of conversion or adaptation of application content or format	<a href="#">H04L 67/565</a>
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#### H04L 51/063

##### Definition statement

*This place covers:*

Content adaptation for body or attachments. This can include the deletion of unwanted parts of the message, e.g. parental guidance, or multimedia data, the augmentation of the message or the replacement of data with links or summaries.

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## **H04L 51/066**

### **Definition statement**

*This place covers:*

Format adaptation, conversion or compression of a part of message of the entire message, e.g. changing a picture from BITMAP to JPEG format or text-to-speech conversion, changing message protocol. Although this may lead to loss of information due to different compression techniques or content that cannot be converted, the content is intentionally adapted, but any loss of information (due to the examples listed) is not intentional, and can be attributed to the adaptation (translation).

## **H04L 51/07**

### **Definition statement**

*This place covers:*

Exchange of messages including content other than plaintext.

## **H04L 51/08**

### **Definition statement**

*This place covers:*

The attachment to a message that impacts transmission and/or handling of the message in the network.

## **H04L 51/10**

### **Definition statement**

*This place covers:*

Messages including multimedia data which impact transmission and/or handling of message in the network.

## **References**

### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

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Network arrangements or protocols for real-time communication	<a href="#">H04L 65/00</a>
Voice messaging in telephonic communication using automatic or semi-automatic exchanges with non-audio components	<a href="#">H04M 3/5307</a>

**H04L 51/18****Definition statement***This place covers:*

Messages including links, URLs, executable codes, etc. to be executed either at an intermediate node or at the recipient.

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Computer aided management of electronic mail	<a href="#">G06Q 10/10</a>
Networked applications for remote control or remote monitoring of the application	<a href="#">H04L 67/025</a>
Networked applications involving the movement of software or configuration parameters	<a href="#">H04L 67/34</a>

**H04L 51/21****Definition statement***This place covers:*

Message monitoring and processing over the network.

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**H04L 51/212****Definition statement***This place covers:*

Blocking or partial filtering of messages based on predetermined criteria, e.g. based on the age of the message(s).

**References*****Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Malware detection or handling	<a href="#">G06F 21/56</a>
Message adaptation to remove unwanted content	<a href="#">H04L 51/063</a>
Firewalls and in particular filtering policies	<a href="#">H04L 63/0227</a>
Access security using filters or firewalls in wireless networks	<a href="#">H04W 12/088</a>

**H04L 51/214****Definition statement***This place covers:*

Redirection of messages by an intermediate network node, e.g. a server, either for delivery optimisation especially based on network conditions and user profile.

**References*****Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

For profiles in general	<a href="#">H04L 67/306</a>
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## H04L 51/216

### Definition statement

*This place covers:*

- Grouping messages in conversations
- Forking conversations
- Keeping track of conversations

## H04L 51/222

### Definition statement

*This place covers:*

Transmission or handling of the message in the network based on the location of the sender's and/or recipient's terminal.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Protocols for adapting network applications to user terminal location	<a href="#">H04L 67/52</a>
Services specially adapted for wireless communication networks making use of the location of users or terminals	<a href="#">H04W 4/02</a>

## H04L 51/224

### Definition statement

*This place covers:*

Alternative means for notifying a user that a message has been received.

Examples:

- Notification that a message has been received by the server;
- Notification of pre-defined events;
- Notification on a wearable device.

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Alternative means includes an out-of-band communication channel, an audible alert, a visual alert or a vibration alert.

## References

### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Execution arrangements for user interfaces	<a href="#">G06F 9/451</a>
Computer aided management of electronic mail	<a href="#">G06Q 10/10</a>
User interfaces specially adapted for cordless or mobile telephones	<a href="#">H04M 1/724</a>

## H04L 51/226

### Definition statement

*This place covers:*

Scheduling (both delaying or prioritising) message transmission depending of determined priority levels to guarantee a better user service.

## References

### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Networked applications for intermediate processing whereby quality of service or priority requirements are taken into account	<a href="#">H04L 67/61</a>
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## H04L 51/23

### Definition statement

*This place covers:*

Informing the sender of a message about the correct reception of the message by the recipient, or on the missed or partial reception of the message.

## References

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**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Generation of monitoring or testing reports	<a href="#">H04L 43/06</a>
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**H04L 51/234**

**Definition statement**

*This place covers:*

Detecting and reporting the progress of messages along the network.

**H04L 51/42**

**Definition statement**

*This place covers:*

Message storage, synchronisation, categorisation and retrieval.

**References**

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Computer aided management of electronic mail	<a href="#">G06Q 10/107</a>
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**H04L 51/48**

**Definition statement**

*This place covers:*

Hiding, modifying, retrieving, converting addresses of messages.

**References**

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Arrangements and protocols for addressing and naming	<a href="#">H04L 61/00</a>
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## H04L 51/52

### Definition statement

*This place covers:*

Messages exchanged over one or more social networks.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Social network management and organisation	<a href="#">G06Q 50/01</a>
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## H04L 51/56

### Definition statement

*This place covers:*

Messages exchanged and accessed by the users through different platforms, protocols, applications.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Instant messages format conversion	<a href="#">H04L 51/066</a>
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## H04L 51/58

### Definition statement

*This place covers:*

Messaging system adapted to the wireless structure of the network, as well as to its advantages and its constraints (e.g. intermittent network connections or bandwidth constraints including SMS and MMS).

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**References****Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Services specially adapted for wireless communication networks Messaging; Mailboxes;	<a href="#">H04W 4/12</a>
Short messaging services	<a href="#">H04W 4/14</a>
Messaging devices, e.g. message centre	<a href="#">H04W 88/184</a>

**H04L 61/09****Definition statement**

*This place covers:*

The pairing of addresses, which require a mapping or a conversion in the network. Specific examples are given in the subgroups.

The mapping of names to addresses is classified in the subgroups of [H04L 61/45](#).

**H04L 61/10****Definition statement**

*This place covers:*

The pairing of addresses of different type which require a mapping or conversion in the network in contrast to mapping of addresses of the same type, e.g. NAT, which is classified in [H04L 61/25](#).

**Special rules of classification**

Directory aspects should be classified in the subgroups of [H04L 61/45](#). Preferably the types of addresses involved should be classified using the indexing scheme. Mapping of addresses of the same type, e.g. NAT, is classified in [H04L 61/25](#).

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## H04L 61/103

### Definition statement

*This place covers:*

The pairing of addresses across network layers, e.g. the pairing of an IP address and a MAC address (ARP).

Examples: IETF RFC 826 (ARP), IETF RFC 6830 (LISP).

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Data switching networks characterised by a path configuration; Interconnection of networks using encapsulation techniques, e.g. tunnelling	<a href="#">H04L 12/4633</a>
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## H04L 61/106

### Definition statement

*This place covers:*

The pairing of address across networks. The paired addresses relate to the same network entity. A typical example for a pairing across networks is the mapping of an IP address to a telephone number or to an address of a special purpose network.

IPv6 and IPv4 addresses are considered to be of the same type in the context of this group and the pairing of IPv4/IPv6 addresses is therefore classified in [H04L 61/2503](#).

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

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Application independent communication protocol aspects of techniques in packet data networks; Protocols for interworking or protocol conversion	<a href="#">H04L 69/08</a>
Data switching networks; Arrangements for connecting between networks having differing types of switching system, e.g. gateways	<a href="#">H04L 12/66</a>
Network arrangements of protocols for real-time communication; Signalling, control or architecture; Gateways	<a href="#">H04L 65/102</a>

**H04L 61/25****Definition statement***This place covers:*

The pairing of addresses of the same type. A typical example with regard to IP is NAT, i.e. the mapping between local and public addresses or the mapping between IPv4 and IPv6 addresses, which are considered to be of the same type in the context of the groups [H04L61/25](#) and [H04L61/106](#).

**H04L 61/2503****Definition statement***This place covers:*

The pairing of IP addresses, i.e. the translation between local and public IP addresses or the translation between IPv4 and IPv6 addresses, see the specific subgroups below.

**References****Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

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Network architectures or network communication protocols for network security for separating internal from external traffic, e.g. firewalls	<a href="#">H04L 9/40</a>
Network-specific arrangements or communication protocols supporting networked applications in which an application is distributed across nodes in the network for accessing one among a plurality of replicated servers, e.g. load balancing	<a href="#">H04L 67/1001</a>

### Special rules of classification

This group should be used for the classification of any aspect of IP address translation that is not covered by the specific scenarios in the sub-groups, such as IP redirection.

### H04L 61/251

#### Definition statement

*This place covers:*

Pairing of IPv4 and IPv6 addresses, e.g. NAT64.

Encapsulation should be classified in [H04L 12/4633](#).

#### References

##### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Data switching networks characterised by a path configuration; Interconnection of networks using encapsulation techniques, e.g. tunnelling	<a href="#">H04L 12/4633</a>
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## H04L 61/2514

### Definition statement

*This place covers:*

The pairing of local and global addresses, such as Network Address Translation [NAT].  
Examples: IETF RFC 3022, IETF RFC 4787

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Network architectures or network communication protocols for network security for separating internal from external traffic, e.g. firewalls	<a href="#">H04L 9/40</a>
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## H04L 61/2517

### Definition statement

*This place covers:*

The translation of TCP/UDP port numbers, such as in Network Address Port Translation [NAPT].

## H04L 61/2521

### Definition statement

*This place covers:*

Architectures different from a single NAT server, see the specific scenarios covered by the subgroups.

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**H04L 61/2525****Definition statement***This place covers:*

Architectures where (a part of) the translation/conversion is performed at a client or a host. The translation performed in hypervisors is also classified here.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Arrangements for program control using stored programs; Arrangements for executing specific programs; Emulation, Software simulation	<a href="#">G06F 9/455</a>
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**H04L 61/2528****Definition statement***This place covers:*

Architectures where (a part of) the translation/conversion is performed at an intermediary network element (other than a NAT server).

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Network-specific arrangements or communication protocols supporting networked applications for the provision of proxy services, e.g. intermediate processing or storage in the network	<a href="#">H04L 67/56</a>
Application level gateways, ALGs, for NAT traversal	<a href="#">H04L 61/2585</a>

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## H04L 61/2532

### Definition statement

*This place covers:*

Multiple servers performing coordinated address translation operations.

## H04L 61/2535

### Definition statement

*This place covers:*

Architectures connecting multiple LANs and requiring a translation of addresses due to overlapping address ranges.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Network architectures or network communication protocols for network security for providing a confidential data exchange among entities communicating through data packet networks	<a href="#">H04L 63/04</a>
Resolving address conflicts in the context of address allocation	<a href="#">H04L 61/5046</a>

## H04L 61/2539

### Definition statement

*This place covers:*

Architectures in which the translation/conversion is used to keep addresses anonymous. The architecture may be similar to [H04L 61/2514](#), the main reason for the conversion however is the privacy aspect.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

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Network architectures or network communication protocols for network security for providing a confidential data exchange among entities communicating through data packet networks; Anonymous communication, i.e. the party's identifiers are hidden from the other party or parties.	<a href="#">H04L 9/40</a>
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## **H04L 61/2546**

### **Definition statement**

*This place covers:*

Mechanisms for avoiding unnecessary address translation, e.g. tromboning.

### **References**

#### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Routing or path finding of packets in data switching networks	<a href="#">H04L 45/00</a>
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## **H04L 61/255**

### **Definition statement**

*This place covers:*

Aspects relating to the maintenance of the mapping (translation/binding) table, such as table setup, timers for deletion of entries, etc.

## **H04L 61/2553**

### **Definition statement**

*This place covers:*

Aspects relating to the renewal of mapping table entries.

### **References**

#### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

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Network architectures or network communication protocols for network security for separating internal from external traffic; Firewall traversal, e.g. tunnelling or creating pinholes	<a href="#">H04L 9/40</a>
Network-specific arrangements or communication protocols supporting networked applications for session management; provided for avoiding end of session	<a href="#">H04L 67/145</a>

#### [H04L 61/2557](#)

##### **Definition statement**

*This place covers:*

Any aspects relating to particular address translation policies or rules.

#### [H04L 61/256](#)

##### **Definition statement**

*This place covers:*

Any aspects relating to the traversal of NAT, e.g. enabling the connection initiation from nodes in an external network to nodes an internal network.

##### **References**

###### ***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Network architectures or network communication protocols for network security for separating internal from external traffic; Firewall traversal, e.g. tunnelling or creating pinholes	<a href="#">H04L 9/40</a>
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## H04L 61/2564

### Definition statement

*This place covers:*

Traversal of NAT for higher layer protocols, such as SIP, IPSec, SNMP.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Network arrangements or protocols for real-time communication; Signalling or session protocols, SIP	<a href="#">H04L 65/1104</a>
Arrangements for maintenance or administration or management of packet switching networks using standardised network management protocols	<a href="#">H04L 41/0213</a>
Network architectures or network communication protocols for network security for providing a confidential data exchange among entities communicating through data packet networks	<a href="#">H04L 63/04</a>

## H04L 61/2567

### Definition statement

*This place covers:*

Retrieving the routable (external) address of a client behind a NAT server for the purpose of NAT traversal.

## H04L 61/2571

### Definition statement

*This place covers:*

Identifying the source of traffic originating by a client behind NAT by an external entity, e.g. for billing.

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## References

### Limiting references

*This place does not cover:*

Data switching networks; Metering, charging or billing arrangements	<a href="#">H04L 12/14</a>
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### H04L 61/2575

#### Definition statement

*This place covers:*

Traversal methods in which a client retrieves its translated addresses, e.g. to share the address with potential peers.

### H04L 61/2578

#### Definition statement

*This place covers:*

Address translation traversal methods, which are transparent to the NAT server, contrary to the methods classified in [H04L 61/2521](#).

### H04L 61/2582

#### Definition statement

*This place covers:*

Address translation traversal methods, which require direct communication with the NAT server to control the behaviour of the NAT server, contrary to the methods classified in [H04L 61/2521](#). Popular examples are UPnP, Port Control Protocol (PCP) / Internet Gateway Device Protocol (IGD).

## References

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Data switching networks characterised by a path configuration; Home automation networks	<a href="#">H04L 12/28</a>
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## H04L 61/2585

### Definition statement

*This place covers:*

Address translation traversal methods using an ALG, which translates addresses and ports above Layer 4. Used for protocols that include lower layer addresses in the application layer payload, such as FTP or SIP.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Network-specific arrangements or communication protocols supporting networked applications for the provision of proxy services, e.g. intermediate processing or storage in the network	<a href="#">H04L 67/56</a>
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## H04L 61/2589

### Definition statement

*This place covers:*

Address translation traversal methods using a relay server for the communication between two peers.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Network-specific arrangements or communication protocols supporting networked applications for the provision of proxy services, e.g. intermediate processing or storage in the network	<a href="#">H04L 67/56</a>
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**H04L 61/2592****Definition statement***This place covers:*

The use of encapsulation/tunnelling in the context of address translation or address translation traversal.

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Network architectures or network communication protocols for network security for providing a confidential data exchange among entities communicating through data packet networks	<a href="#">H04L 9/40</a>
Data switching networks characterised by a path configuration; Interconnection of networks using encapsulation techniques, e.g. tunnelling	<a href="#">H04L 12/46</a>

**H04L 61/2596****Definition statement***This place covers:*

Translation of the same type of addresses, other than IP addresses, such as the translation between MAC addresses.

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Routing or path finding of packets in data switching networks	<a href="#">H04L 45/00</a>
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## H04L 61/30

### Definition statement

*This place covers:*

Aspects relating to any kind of names used in a network context (in contrast to a client-side only context) and the management of these names, such as conversion or registration.

### References

#### Limiting references

*This place does not cover:*

Name-to-address mapping	<a href="#">H04L 61/45</a>
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#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Detail of database functions independent of the retrieved data types; Retrieval from the web using information identifiers, e.g. uniform resource locators, URL	<a href="#">G06F 16/955</a>
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## H04L 61/301

### Definition statement

*This place covers:*

Any kind of name conversion, such as conversions to short names, anonymized names or character conversion.

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**H04L 61/302****Definition statement***This place covers:*

The registration of names, such as the registration of domain names and the use of RRP or EPP protocols for registration and management of domain names.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Commerce, e.g. shopping or e-commerce	<a href="#">G06Q 30/00</a>
Administration, e.g. office automation or reservations	<a href="#">G06Q 10/00</a>

**H04L 61/3025****Definition statement***This place covers:*

Aspects related to the generation of names and assignment of names to network nodes.

**H04L 61/45****Definition statement***This place covers:*

Distributed or centralised data network directories.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Information retrieval using distributed data base systems	<a href="#">G06F 16/27</a>
Directory assistance systems	<a href="#">H04M 3/4931</a>

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Details of addressing, directories or routing tables of networks other than PSTN/ISDN providing telephone service, e.g. Voice over Internet Protocol	<a href="#">H04M 7/0075</a>
Details of addressing, directories or routing tables for working between exchanges having different types of switching equipment, where the types of switching equipment comprises PSTN/ISDN equipment and switching equipment of networks other than PSTN/ISDN	<a href="#">H04M 7/128</a>

**H04L 61/4505****Definition statement***This place covers:*

The use of standardised directories according to the sub-groups.

**H04L 61/4511****Definition statement***This place covers:*

The Domain Name System [DNS]

Examples: IETF RFC 1035

**H04L 61/4517****Definition statement***This place covers:*

Directories based on the X.500 standard.

**H04L 61/4523****Definition statement***This place covers:*

The use of the LDAP protocol, e.g. Active Directory.

Aspects relating to the directory itself should be classified in [H04L 61/4517](#) (X.500).

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**H04L 61/4535****Definition statement***This place covers:*

Directories aspects of address exchange platforms, such as particular data stored in the directory, directory management etc.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Network arrangements or protocols for real-time communications; Signalling, control or architecture; Session control; Registration	<a href="#">H04L 65/1073</a>
Network-specific arrangements or communication protocols supporting networked applications for the provision of proxy services, e.g. intermediate processing or storage in the network	<a href="#">H04L 67/56</a>
Address translation traversal over a relay server, e.g. traversal using relay for network address translation [TURN]	<a href="#">H04L 61/2589</a>
Directories containing mobile subscriber information, e.g. home subscriber server [HSS]	<a href="#">H04L 61/4588</a>

**H04L 61/4541****Definition statement***This place covers:*

Directories for the discovery of network services, e.g. printing services in the network. Example technologies are the Directory Agents in the Service Location Protocol [SLP], or DNS Service Discovery [DNS-SD].

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

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Network-specific arrangements or communication protocols supporting networked applications; Service discovery or service management	<a href="#">H04L 67/51</a>
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## **H04L 61/4547**

### **Definition statement**

*This place covers:*

Directories linking a personal identifier of a user to multiple identifiers (e-mail address, telephone numbers etc.) associated with different communication channels of the user (similar to an address book) and e.g. providing the best way to reach the user.

### **References**

#### ***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Network-specific arrangements or communication protocols supporting networked applications; Presence management	<a href="#">H04L 67/54</a>
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## **H04L 61/4552**

### **Definition statement**

*This place covers:*

Aspects related to lookup mechanisms in a directory, lookup mechanisms between directories or synchronisation between directories, using e.g. OMA-SyncML.

### **References**

#### ***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Information retrieval; Database structures therefore; File system structures therefore of structured data, e.g. relational data	<a href="#">G06F 16/20</a>
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## H04L 61/4553

### Definition statement

*This place covers:*

Directories storing references to objects, e.g. COS Name service, for remote procedure calls.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Arrangements for program control; Multiprogramming arrangements; Distributed object oriented systems	<a href="#">G06F 9/465</a>
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## H04L 61/4555

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Message switching systems, e.g. electronic mail systems	<a href="#">H04L 51/00</a>
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## H04L 61/4557

### Definition statement

*This place covers:*

Directories used in hybrid voice communication networks, e.g. ENUM.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

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Network directories; Name-to-address mapping using domain name system [DNS]	<a href="#">H04L 61/4511</a>
Mapping addresses across networks, e.g. mapping telephone numbers to data network addresses	<a href="#">H04L 61/106</a>
Directories containing mobile subscriber information, e.g. home subscriber server [HSS]	<a href="#">H04L 61/4588</a>
Network directories; using an address exchange platform which sets up a session between two nodes, e.g. rendezvous servers, session initiation protocols, SIP, registrars or H.323 gatekeepers	<a href="#">H04L 61/4535</a>

**H04L 61/4588****Definition statement***This place covers:*

Directories used in mobile communication systems, such as HSS, HLR, VLR.

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Processing of mobility data, Registration at HLR or HSS	<a href="#">H04W 8/04</a>
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**H04L 61/4594****Definition statement***This place covers:*

Directories containing contact information of users and involving a network aspect, such as address books located in the network, e.g. the Converged Address Books of the Open Mobile Alliance (OMA).

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## References

### *Limiting references*

*This place does not cover:*

Telephone directories in user terminals	<a href="#">H04M 1/27453</a>
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## H04L 61/50

### Definition statement

*This place covers:*

The allocation of addresses to network devices.

## References

### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Arrangements for maintenance or administration or management of packet switching networks; Configuration management of network or network elements	<a href="#">H04L 41/08</a>
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## H04L 61/5007

### Definition statement

*This place covers:*

Allocation of IP addresses to network devices.

Any aspects relating to the allocation of IP addresses which are not covered by any of the subgroups should be classified in this group.

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## H04L 61/5014

### Definition statement

*This place covers:*

The use of the DHCP or BOOTP protocol for allocating IP addresses and sending further configuration information to network devices.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Arrangements for maintenance or administration or management of packet switching networks; Configuration management of network or network elements	<a href="#">H04L 41/08</a>
Network-specific arrangements or communication protocols supporting networked applications involving the movement of software and/or configuration parameters	<a href="#">H04L 67/34</a>

## H04L 61/503

### Definition statement

*This place covers:*

Allocation of IP addresses involving an AAA node, such as in 3GPP networks.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Network architectures or network communication protocols for network security for supporting authentication of entities communicating through a packet data network	<a href="#">H04L 9/40</a>
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**H04L 61/5038****Definition statement***This place covers:*

Allocation of any kind of addresses in data networks for local use in the network only, such as in a LAN, USB, bus or special purpose network, including the allocation of MAC addresses, e.g. in virtual machines.

**References****Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Network-specific arrangements or communication protocols supporting networked applications adapted for proprietary or special purpose networking environments	<a href="#">H04L 67/12</a>
Data switching networks characterised by a path configuration; Bus networks	<a href="#">H04L 12/40</a>
Network topologies; Self-organizing networks, e.g. ad-hoc networks or sensor networks	<a href="#">H04W 84/18</a>

**H04L 61/5046****Definition statement***This place covers:*

Methods for preventing address allocation conflicts in data networks, i.e. preventing that the same address is allocated to multiple devices.

**References****Limiting references***This place does not cover:*

Resolving address allocation conflicts in the context of address self-assignment, such as IPv4 and IPv6 DAD/SLAAC	<a href="#">H04L 61/5092</a>
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#### **H04L 61/5053**

##### **Definition statement**

*This place covers:*

Aspects relating to the lease time or the renewal of allocated addresses.

#### **H04L 61/5061**

##### **Definition statement**

*This place covers:*

Aspects related to pools of addresses in the context of address allocation, such as splitting an address pool in sub-pools and assigning the sub-pools to different DHCP servers.

#### **H04L 61/5069**

##### **Definition statement**

*This place covers:*

Generation and allocation of group address used to address multiple recipients.

##### **References**

###### ***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Data switching networks; Arrangements for providing special services to substations for broadcast or conference	<a href="#">H04L 12/18</a>
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**H04L 61/5076****Definition statement***This place covers:*

Update or notification mechanisms in the context of address allocation, e.g. notifying an entity which is originally not involved in the address allocation of a newly allocated address.

**References****Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Address allocation by self-assignment, e.g. picking addresses at random and testing if they are already in use	<a href="#">H04L 61/5092</a>
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**H04L 61/5084****Definition statement***This place covers:*

Address allocation arrangements in the context of device mobility/portability, such as in the Locator/Identifier Separation Protocol or Virtual Machine migration.

**References****Limiting references***This place does not cover:*

Network addressing or numbering for mobility support in wireless networks	<a href="#">H04W 8/26</a>
Wireless network protocols or protocol adaptations to wireless operation; Network layer protocols, e.g. mobile IP	<a href="#">H04W 80/04</a>

**H04L 61/5092****Definition statement***This place covers:*

The self-assignment of addresses, such as IPv6 Stateless Address Autoconfiguration, SLAAC or APIPA.

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## H04L 61/58

### Definition statement

*This place covers:*

Temporary storage of addresses or names in a cache, such as in an ARP cache or in a DNS cache.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Network-specific arrangements or communication protocols supporting networked applications for the provision of proxy services; for storing data temporarily at an intermediate stage, e.g. caching	<a href="#">H04L 67/568</a>
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## H04L 61/59

### Definition statement

*This place covers:*

Proxies for entities which are used for addressing, see the groups above: DHCP proxy, ARP proxy etc.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Network-specific arrangements or communication protocols supporting networked applications for the provision of proxy services, e.g. intermediate processing or storage in the network	<a href="#">H04L 67/56</a>
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#### **H04L 65/1045**

##### **Definition statement**

*This place covers:*

Details of entities acting on behalf of the user agent, e.g. SIP proxies, P-CSCF in IMS etc.

#### **H04L 65/1055**

##### **Definition statement**

*This place covers:*

Entities providing IP PBX or Software-defined PBX functionality related to the specific architecture of single-site PBX infrastructure.

#### **H04L 65/1094**

##### **Definition statement**

*This place covers:*

Session transfer or sharing between multiple UEs.

#### **H04L 65/1101**

##### **Definition statement**

*This place covers:*

All packet-based signalling protocols for packet-based networks, current and future, although only SIP and H.323 families of protocols are explicitly identified at present. The SIP and H.323 families of protocols are classified in their specific dependent subgroups. All non-SIP and non-H.323 protocols for signalling and session management are classified in this parent class. SIP and H.323 are classified in their dedicated dependent subgroups.

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#### **H04L 65/1104**

##### **Definition statement**

*This place covers:*

IETF SIP family of protocols, including SDP, etc.

#### **H04L 65/1106**

##### **Definition statement**

*This place covers:*

H.323 ITU family of protocols.

#### **H04L 65/1108**

##### **Definition statement**

*This place covers:*

The use of WebRTC in real-time or near real-time communications.

#### **H04L 65/401**

##### **Definition statement**

*This place covers:*

During an existing interactive real-time session, another parallel session is initiated and/or maintained. This entry covers the signalling for the initiation and the maintenance for this additional session. Note: adding a medium in an existing session is not considered a parallel session.

##### **References**

###### ***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

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Real time messaging, e.g. instant messaging, interacting with other applications or services	<a href="#">H04L 51/046</a>
Multichannel or multilink protocols	<a href="#">H04L 69/14</a>
Services and arrangements where telephone services are combined with data services	<a href="#">H04M 7/0024</a>

## **H04L 65/402**

### **Definition statement**

*This place covers:*

This entry involves an additional parallel session which is not time sensitive, e.g. the initiation of a parallel session for a file transfer using FTP, the sending of an e-mail message, etc.

### **References**

#### ***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Message switching systems	<a href="#">H04L 51/00</a>
Instant messaging	<a href="#">H04L 51/04</a>
WEB based applications	<a href="#">H04L 67/02</a>
File transfer	<a href="#">H04L 67/06</a>

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**H04L 65/4025****Definition statement***This place covers:*

This entry involves an additional parallel session which is not time sensitive, e.g. the initiation of a parallel session for a file transfer using FTP, the sending of an e-mail message, etc.

**References*****Informative references:***

*Attention is drawn to the following places, which may be of interest for search:*

Message switching systems	<a href="#">H04L 51/00</a>
Instant messaging	<a href="#">H04L 51/04</a>
WEB based applications	<a href="#">H04L 67/02</a>
File transfer	<a href="#">H04L 67/06</a>

**H04L 65/61****Definition statement***This place covers:*

This entry covers services involving streaming of data from a source to a destination (downstream) and not vice-versa (upstream). It is noted that the notion of one-way streaming is not related to the actual ability of a terminal to also stream in the other direction, but only to the nature of the particular service. A document describing the broadcast streaming of media to terminals is normally covered by a [H04L 65/61 – H04L 65/613](#) entry, even though the terminals may be capable to also stream media themselves to other destinations.

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**H04L 65/611****Definition statement***This place covers:*

Media is streamed in the downstream direction from a source to multiple destinations (e.g. from a head-end server to subscriber terminals). Applications that may be covered include DVB-IP, some aspects of WEBcasting, etc. Aspects that are covered by this entry involve the packet streaming protocols, the packet-based signalling, the gatewaying etc. General aspects of TV broadcast are normally covered by [H04N 7/00](#). The general aspects of data multicasting and broadcasting are normally covered by [H04L 12/18](#).

**References****Limiting references***This place does not cover:*

Data switching systems for broadcast or conference	<a href="#">H04L 12/18</a>
Arrangements for broadcast or distribution combined with broadcast	<a href="#">H04H 20/00</a>
Arrangements for broadcast applications with a direct linkage of broadcast information	<a href="#">H04H 60/00</a>
Selective distribution of broadcast services, e.g. multimedia broadcast multicast service [MBMS]	<a href="#">H04W 4/06</a>

**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Arrangements for push based network services	<a href="#">H04L 67/55</a>
Analog television systems in general	<a href="#">H04N 7/00</a>
Creating video channels for a dedicated end-user group	<a href="#">H04N 21/2668</a>

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**H04L 65/612****Definition statement***This place covers:*

Media is streamed in the downstream direction from a source to selected destinations which requested the media (e.g. from a head-end server to subscriber terminals). Applications that may be covered include on demand video streaming, etc. Aspects that are covered by this entry involve the packet streaming protocols, the packet-based signalling, the gatewaying, the possible session setup etc. General aspects of TV are normally covered by [H04N 7/00](#).

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Analog television systems using two way working	<a href="#">H04N 7/173</a>
End-user applications for requesting content, additional data or services	<a href="#">H04N 21/472</a>

**H04L 65/613****Definition statement***This place covers:*

The subscriber terminal can control the way media is streamed by the source (e.g. streaming rate, pause, stop etc.). Applications that may be covered include VCR-like control of the source, etc. Aspects that are covered by this entry involve the packet protocols (e.g. RTSP), the packet-based signalling, the gatewaying, the possible session setup etc. General aspects of TV are normally covered by [H04N 7/00](#).

**References*****Limiting references****This place does not cover:*

Control signals to video servers issued by video clients	<a href="#">H04N 21/637</a>
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**Informative references***Attention is drawn to the following places, which may be of interest for search:*

End-to-end flow control in packet switching networks	<a href="#">H04L 47/18</a>
Explicit feedback from the destination to the source to modify data rate for flow control or congestion control in packet switching networks, e.g. choke packet	<a href="#">H04L 47/26</a>
Analog television systems using two way working	<a href="#">H04N 7/173</a>

**H04L 65/65****Definition statement***This place covers:*

All the protocols dedicated to the transmission and the control of the transmission of real time streaming content, including the full IETF RTP family of protocols (RTP, RTCP, RTSP).

Note: an RTP packet header extension, with details of the encoding of the header, may be classified both in [H04L 65/70](#) and [H04L 65/65](#).

**H04L 65/70****Definition statement***This place covers:*

Details of the encoding of the packet streams; e.g. the encapsulation of MPEG transports into RTP packets, multiplexing of RTP/UDP packets, RTP packet header compression (may also be covered by [H04L 69/04](#)), RTP header extensions, piggy-bagging executable code in the content carrying packets, etc. Note that the encoding of the media data itself (i.e. voice coding or image coding in MPEG) is not covered by [H04L 65/00](#) but by [H04N 7/00](#), [H04N 21/00](#), [H04N 5/00](#).

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

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Protocols for data compression	<a href="#">H04L 69/04</a>
Header parsing or analysis	<a href="#">H04L 69/22</a>

**H04L 65/75****Definition statement***This place covers:*

Manipulating, converting and adapting the content, in support of its transition through the network. For example, selecting a different codec for BW saving or for matching to the capabilities of the terminal, dropping a medium for BW saving or for matching to the capabilities of the terminal, selecting or switching to a lower resolution version of the content for BW saving, etc.

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Computer conferences, network arrangements for conference optimisation or adaptation	<a href="#">H04L 12/1827</a>
Flow control or congestion control in packet switching networks	<a href="#">H04L 47/10</a>
Message switching systems, e.g. electronic mail systems, with message adaptation based on network or terminal capabilities	<a href="#">H04L 51/06</a>
Adaptation for terminals or networks with limited resources or for terminal portability	<a href="#">H04L 67/04</a>
Network application being adapted for the location of the user terminal	<a href="#">H04L 67/52</a>
Involving intermediate processing or storage in the network	<a href="#">H04L 67/56</a>
Transmission of television signals using pulse code modulation	<a href="#">H04N 7/24</a>

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## H04L 65/762

### Definition statement

*This place covers:*

The content handling takes place at the source.

### References

#### Limiting references

*This place does not cover:*

Reformatting of additional data in video distribution servers	<a href="#">H04N 21/2355</a>
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#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Reformatting of video signals in video distribution servers	<a href="#">H04N 21/2343</a>
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## H04L 65/764

### Definition statement

*This place covers:*

The content handling takes place at the destination.

### References

#### Limiting references

*This place does not cover:*

Reformatting of additional data in video clients	<a href="#">H04N 21/4355</a>
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#### Informative references

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*Attention is drawn to the following places, which may be of interest for search:*

Reformatting of video signals in video clients	<a href="#">H04N 21/4402</a>
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#### **H04L 65/765**

##### **Definition statement**

*This place covers:*

The content handling takes place at an intermediate node in the network.

#### **H04L 67/01**

##### **Definition statement**

*This place covers:*

Protocols for supporting directly end-user applications and processes (helping implement a network communication component by interacting with software applications; establishing a communication through the cooperating communication partners). Application layer services establish an interface to the network. "Protocols" provide the rules and formats that govern how data is treated.

#### **H04L 67/02**

##### **Definition statement**

*This place covers:*

Web applications that are accessed over a network and processed by a remote server.

#### **H04L 67/025**

##### **Definition statement**

*This place covers:*

Solutions supporting acquiring application data and processing or analysing the application data by the remote entity.

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**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Network management using Internet technology	<a href="#">H04L 41/0246</a>
Network monitoring	<a href="#">H04L 43/00</a>
Management of end-device applications over a special purpose or proprietor network	<a href="#">H04L 67/125</a>

**H04L 67/04****Definition statement***This place covers:*

Solutions specially adapted for terminals with restricted capabilities or functions (bandwidth, display, etc.).

**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Services or facilities specially adapted for wireless communication networks	<a href="#">H04W 4/00</a>
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**H04L 67/06****Definition statement***This place covers:*

Aspects relating to data transfers/sharing using specific protocols therefor.

**H04L 67/08****Definition statement***This place covers:*

Solutions enabling a user to connect to a remote host or device by establishing a network connection.

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**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Protocols for telewriting or protocols for networked simulations, virtual reality or games	<a href="#">H04L 67/131</a>
Emulation or software simulation	<a href="#">G06F 9/455</a>
Terminal emulation (relates to peripheral devices)	<a href="#">G06F 13/107</a>

**H04L 67/1001****Definition statement***This place covers:*

Documents involving a client-server (or peer-to-peer) communication in which, based on specific criteria, a decision is taken, either in the network or in the client, for selecting one of a plurality of replicated servers (or peers acting as servers) to provide a specific resource. The plurality of replicated servers are characterised by being able to provide basically the same content or service.

This definition is not limited to an interpretation of the term "server" as "content server", but also comprises the load balancing to other types of network elements such as caches or firewalls, under the condition that these elements can be seen as end points of a client connection (this excludes routers, gateways, switches, wireless switches, etc.).

Documents in this group are consequently characterised by two main aspects: Firstly, a plurality of replicated servers and secondly, a selection among the plurality of replicated servers.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Selection among a plurality of network devices that are routing or forwarding devices and not end points for the communication (this includes AP-Access Points, gateways, LNS-L2TP Network servers, Home Agents, MAP-Mobile Anchor Points)	<a href="#">H04L 12/2856</a> , <a href="#">H04L 47/125</a> , <a href="#">H04W 28/08</a>
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Link or network selection, i.e. routing, based on load balancing in core network without involving a selection of a server among a plurality of replicated servers	<a href="#">H04L 45/00</a>
Load balancing between the outbound interfaces (NICs) in a network device	<a href="#">H04L 47/125</a>
DNS resolutions when a plurality of DNS servers are involved but these are not replicated servers	<a href="#">H04L 61/50</a>
Authentication processes when a plurality of authentication servers are involved but these are not replicated servers	<a href="#">H04L 63/08</a>
Arrangements for mirroring or replication of data	<a href="#">H04L 67/1095</a>
Redirection of requests when the plurality of servers are not replicated servers, and are therefore not meant to provide the same content or service	<a href="#">H04L 67/56</a>
Routing according to the context/content of the requests when, if there is a plurality of servers, these are not replicated servers	<a href="#">H04L 67/60</a>
QoS and priority requirements taken into account in the scheduling (or organisation or prioritisation) of requests prior to the forwarding or routing of the request to a server	<a href="#">H04L 67/61</a>
Multichannel or multilink protocols; Load balancing between the outbound interfaces (NICs) in a network device	<a href="#">H04L 69/14</a>
Selection of a printer among a plurality	<a href="#">G06F 3/1296</a>
Allocation of resources to service a request, the resource being a machine, e.g. a server	<a href="#">G06F 9/5027</a>
Allocation of resources, i.e. techniques for rebalancing the load in a distributed system	<a href="#">G06F 9/5083</a>

### Special rules of classification

The architectural aspects of applications related to selection of a server among a plurality of replicated servers are classified in the architectural subgroups of the intermediate processing group [H04L 67/56](#).

Documents with the following additional aspects should be classified not only with their specific "selection among a plurality of servers" aspects but also in the following other groups:

- Monitoring and management of servers or networks: [H04L 41/00](#), [H04L 41/06](#)
- Selection of an ISP through which a selected server among a plurality can be reached: [H04L 12/2856](#)

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- Selection of network access among a plurality of available networks (PSTN, WLAN, ADSL, etc.) when a server among a plurality is also selected: [H04L 12/5691](#)
- Load balancing of DNS requests to a plurality of DNS servers when the load balancing is the main aspect of the application: [H04L 61/50](#)
- Load balancing of requests between a plurality of security devices such as firewalls, IDSs, SSL offload devices, etc.: [H04L 63/00](#)
- Load balancing of requests between a plurality of peers in a peer-to-peer network: [H04L 67/104](#)
- Load balancing of requests to servers that are part of a SAN: [H04L 67/1097](#)
- Session management: [H04L 67/14](#)
- Architectural implementation aspects of the load balancing intermediate functionality: [H04L 67/56](#)
- Failure recovery or redundancy of servers, where a backup server is selected among a plurality in case of failure of another server: [H04L 69/40](#)

## **H04L 67/131**

### **Definition statement**

*This place covers:*

Protocols for telewriting, networked virtual reality, and networked games.

Telewriting: the (remote) reproduction by means of a telecommunication system of the movements of a pointing device (for example a pen writing "electronic ink" into a digitizer tablet or a touch screen) in a remote display, in such a way as to transmit the handwriting of a user to a remote user. The information to be transmitted consists of the coordinates of the position of the pointing device and the movement vector, or similar representations of position and movement.

Networked virtual reality, networked simulation, networked games: transmitting to (remote) user device(s) the movements and interactions (i.e. shooting weapons in an aircraft combat simulation) of a 2D/3D representation of an entity (person, animal, vehicle, aircraft, avatar, etc...) in such a way that this entity can be represented in a display at the remote device, so as to enable the two (or more) users to interact with each other by means of the representation of the entity. The information to be transmitted here is more complex, and is dependent on the characteristics of the entity. It can include orientation, position, speed/velocity, rotation, acceleration, movement of sub-components of the entity (i.e. movement of an arm of a robot), interactions (i.e. shooting of weapons, change of colours, audio, voice, etc.).

The distinction between virtual reality, simulation or game is one of purpose of the interaction: in the networked simulation case the purpose is to teach the user in the

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control of an entity; in the networked games the purpose is entertainment. The devices used are classified in different places in the classification, see references below.

The protocols adapted to these kinds of applications are very specific, and contain a lot of application information in the protocol itself. For example, the transmission of packets to the participants in a simulation, which is of a multicast nature, is sometimes restricted to those objects for which the information is relevant: movements of a mobile out of sight of a participant (behind an obstacle or mountain, or very far away) are not relevant, and are thus not transmitted, to avoid congestion in the network.

## References

### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Games using an electronically generated display	<a href="#">A63F 13/00</a>
Remote windowing or X-Windows	<a href="#">G06F 9/452</a>
Features of games characterised by details of network, like secure communication, wireless, internet, peer-to-peer, etc.	<a href="#">A63F 2300/40</a> - <a href="#">A63F 2300/409</a>
Digital output (from CPU) to display device	<a href="#">G06F 3/14</a>
Digital output (from CPU) to display device, with simultaneous display of data in two or more (remote) display.	<a href="#">G06F 3/1454</a>
Information retrieval from the internet (browsers), virtual worlds or virtual tours	<a href="#">G06F 16/954</a>
Image processing, 2D image generation	<a href="#">G06T 11/00</a>
Image processing: animation	<a href="#">G06T 13/00</a>
Image processing: 3D image rendering	<a href="#">G06T 15/00</a>
Image processing: 3D image modelling, i.e. data description of 3D objects	<a href="#">G06T 17/00</a>
Coin-freed apparatus for playing games; Interconnected into groups; Casino-like gaming devices	<a href="#">G07F 17/32</a>
Simulators for teaching or training purposes; For teaching control of vehicles; Aircraft (i.e. flight) simulators	<a href="#">G09B 9/00</a> , <a href="#">G09B 9/02</a> , <a href="#">G09B 9/08</a>
Graphical user interfaces for network management	<a href="#">H04L 41/22</a>
Telephone sets including a gaming application	<a href="#">H04M 1/72427</a>

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**H04L 67/133****Definition statement***This place covers:*

Grouping messages in conversations. Forking conversations. Keeping track of conversations.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Remote procedure calls	<a href="#">G06F 9/547</a>
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**H04L 67/1396****Definition statement***This place covers:*

Monitoring/tracking a user's activity on a network.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Monitoring user activity for billing/charging purposes	<a href="#">H04L 12/14</a>
Network monitoring	<a href="#">H04L 43/00</a>
Instant messaging	<a href="#">H04L 51/04</a>
Presence management	<a href="#">H04L 67/54</a>
Creation/usage of user profiles	<a href="#">H04L 67/306</a>
Computers; monitoring of computer activity, of computer processes	<a href="#">G06F 11/30</a>
Databases; data mining	<a href="#">G06F 16/2465</a>
Synchronised browsing	<a href="#">G06F 16/954</a>
Time management; calendars; reminders	<a href="#">G06Q 10/109</a>

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Recording of computer activity	<a href="#">G06F 11/34</a>
Network management in voice network	<a href="#">H04Q 3/0062</a>
Wireless; selective distribution; user group management	<a href="#">H04W 4/08</a>

**H04L 67/2869****Definition statement***This place covers:*

Intermediate entities with data processing functionalities (usually allowing light-weight implementations on communication endpoints).

**H04L 67/30****Definition statement***This place covers:*

Applications making use of the characteristics (attributes) of either a terminal or a user.

**H04L 67/303****Definition statement***This place covers:*

Applications related to characteristics of a terminal (e.g. processing or storage capabilities).

**References****Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Allocation of resources considering hardware capabilities in multiprogramming arrangements	<a href="#">G06F 9/5044</a>
Client hardware characteristics in distribution of video content	<a href="#">H04N 21/25833</a>

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## H04L 67/306

### Definition statement

*This place covers:*

Applications related to characteristics of a user (e.g. past behaviour, preferences, demographics). Targeted advertisements based on user profiles are classified in G06Q 30/0269.

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Targeted advertisement based on user profile or attribute	<a href="#">G06Q 30/0269</a>
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## H04L 67/50

### Definition statement

*This place covers:*

Network services (usually provided by a server component) that run on one or more computers (often a dedicated server computer offering multiple services) and are accessed via a network by client components running on other devices. However, the client and server components can both be run on the same machine.

## H04L 67/51

### Definition statement

*This place covers:*

Service management arrangements to discover, search and advertise network services (i.e. network resources as servers, printers, etc.).

That includes network arrangements and mechanisms to make clients aware of available network services or resources.

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**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Service provisioning in data communication networks; Service Level Agreements, SLAs	<a href="#">H04L 41/50</a>
Address allocation to terminals or nodes connected to a network	<a href="#">H04L 61/30</a>
Selection of a specific server	<a href="#">H04L 67/1001</a>
Selection based on location	<a href="#">H04L 67/52</a>
Selection based on QoS; on context, content	<a href="#">H04L 67/61</a> , <a href="#">H04L 67/63</a>
Mobile application services specially adapted for wireless communication networks	<a href="#">H04W 4/00</a>
Wireless; Discovering of network services, e.g. terminals	<a href="#">H04W 8/005</a>
Discovery of wireless access points	<a href="#">H04W 48/20</a>

**[H04L 67/52](#)****Definition statement***This place covers:*

Network applications in which the position of the user, either geographical position, or topological position in the network, is used as a parameter to activate a set of value added functions that generate position dependant information (for example, using the geographical position of the user to inform him of the restaurants or gas stations around him).

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Navigation systems specially adapted for navigating in a road network (car navigation systems)	<a href="#">G01C 21/26</a>
Position determining by GPS or similar systems, using radio waves	<a href="#">G01S 5/00</a>
Location based Web retrieval	<a href="#">G06F 16/9537</a>
Geographical information databases	<a href="#">G06F 16/29</a>

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Telephonic communication terminals (i.e. phones) with means for adapting their capabilities according to geographical position	H04M 1/72457
Location based services in a PBX (telephonic exchange)	H04M 3/42348
Services making use of the location of users or terminals	H04W 4/02
Locating users or terminals in a mobile wireless (cellular) telecom network	H04W 64/00

**H04L 67/53****References*****Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Charging for the transmission of data	H04L 12/14
Tracking the activity of the user in network	H04L 67/535
Lawful interception	H04L 63/30
Providing advertisement messages in voice networks	H04M 3/4878
Charging for voice communications; Metering arrangements	H04M 15/00
E-commerce	G06Q 30/00

**H04L 67/535****Definition statement**

*This place covers:*

End user activity tracking/monitoring, e.g. behaviour (as opposite to monitoring of networks and network devices).

**References*****Limiting references***

*This place does not cover:*

Network monitoring	H04L 43/00
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Recording of computer activity	<a href="#">G06F 11/34</a>
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**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Monitoring user activity for billing/charging purposes	<a href="#">H04L 12/14</a>
Multicast; management of group membership	<a href="#">H04L 12/185</a>
Network management	<a href="#">H04L 41/00</a>
Instant messaging	<a href="#">H04L 51/04</a>
Presence management	<a href="#">H04L 67/54</a>
Creation/usage of user profiles	<a href="#">H04L 67/306</a>
Databases; data mining	<a href="#">G06F 16/2465</a>
Synchronised browsing	<a href="#">G06F 16/954</a>
Time management; calendars; reminders	<a href="#">G06Q 10/109</a>
E-commerce	<a href="#">G06Q 30/00</a>
Network management in voice networks	<a href="#">H04Q 3/0062</a>
Wireless; selective distribution; user group management	<a href="#">H04W 4/08</a>
Monitoring a user's activity on a network	<a href="#">H04L 67/1396</a>

**H04L 67/54****Definition statement**

*This place covers:*

Presence management, i.e. monitoring and registration of the log-on/connected status of users connected to data networks.

**References****Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Use and manipulation of presence information in instant messaging	<a href="#">H04L 51/043</a>
Tracking the activity of the user	<a href="#">H04L 67/535</a>

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**H04L 67/55**

**Definition statement**

*This place covers:*

Push based network services.

**References**

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Broadcast or multicast push services	<a href="#">H04L 12/1859</a>
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**H04L 67/56****Definition statement***This place covers:*

Arrangements involving intermediate processing and/or storage in the network, i.e. wherein additional processing of the application data is performed somewhere between the data provider and data consumer application.

Proxy servers.

**Relationships with other classification places**

Excluded from classification in [H04L 67/56](#) are, in general, interprocessing provisions which, due to their specific use or purpose, are already covered by other groups:

- Interprocessing at OSI layers 1-4 (e.g. routing, addressing conversion, mobile IP provisions, etc.) is per definition out of the scope of [H04L 67/56](#). This subject matter is classified in [H04L 12/00](#), [H04W](#).
- Third entities which are not involved during the active exchange of data between data provider and data consumer.
- Intermediate entities of application layer solutions defined in terms of rules or functioning of a specific application not involving more than trivial network/protocol elements (e.g. E-commerce [G06Q](#), Games applications [A63F](#)).

**References****Limiting references***This place does not cover:*

Store-and-forward switching systems	<a href="#">H04L 12/54</a>
-------------------------------------	----------------------------

**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Message passing systems or structures for intertask communication	<a href="#">G06F 9/546</a>
Billing provisions	<a href="#">H04L 12/14</a>
Network management	<a href="#">H04L 41/00</a>
Monitoring provisions	<a href="#">H04L 43/00</a>
Messaging system	<a href="#">H04L 51/00</a>
Pure addressing functionalities	<a href="#">H04L 61/00</a>

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Proxies for network security	<a href="#">H04L 63/0281</a>
Multimedia call management network architectures	<a href="#">H04L 65/1013</a>
Media manipulation, adaptation or conversion in real-time communications	<a href="#">H04L 65/75</a>
Generic protocol conversion	<a href="#">H04L 69/08</a>
Security provisions	<a href="#">H04L 63/00</a>
Mere presence of gateways performing its trivial functions, e.g. WAP gateways, WAP	<a href="#">H04L 67/04</a>
Load balancing	<a href="#">H04L 67/1001</a>
Transcoding algorithms, e.g. MPEG conversions	<a href="#">H04N 7/00</a>

### Special rules of classification

Documents with the following additional aspects should be classified not only with their specific interprocessing aspects but also in the following other groups:

- Data adaptation according to terminal reduced capabilities: [H04L 67/04](#)
- Permanent content data storage at intermediate nodes, e.g. replication, mirroring, in a storage area network: [H04L 67/1095](#), [H04L 67/1097](#)
- Connection and session management: [H04L 67/14](#)
- Data adaptation according to location context: [H04L 67/52](#)
- Presence management: [H04L 67/54](#)
- Push services: [H04L 67/55](#)
- Data adaptation according to terminal profiles: [H04L 67/303](#)
- Data adaptation according to user profiles: [H04L 67/306](#)
- Routing according to the context/content of the requests: [H04L 67/63](#)
- Data backup, redundancy and recovery functionalities: [H04L 69/40](#)

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**H04L 67/561****Definition statement***This place covers:*

Adding control or functional data, e.g. metadata. The intermediate processing consists in enhancing the functional value of the transmitted content; also in case of (partially) replacing the received content by content of more interest for the consumer application.

**H04L 67/562****References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Negotiation of communication capabilities	<a href="#">H04L 69/24</a>
E-commerce	<a href="#">G06Q 30/00</a>
Protocols for client-server architecture	<a href="#">H04L 67/01</a>

**H04L 67/563****Definition statement***This place covers:*

Providing redirection of requests for connection to a specified server or service, e.g. transparent proxying. A message that is initially sent by a first node and intended to a second node is redirected by said second node to a third node (either by resending the message by the second node or by providing the third node address to the first node).

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Access network selection	<a href="#">H04L 12/5691</a>
Routing or path finding of packets	<a href="#">H04L 45/00</a>
Addressing aspects	<a href="#">H04L 61/00</a>
Load balancing requests	<a href="#">H04L 67/1001</a>
Context based routing	<a href="#">H04L 67/63</a>

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### Special rules of classification

When data redirection of data network streams involves service providers providing different services, in case of selecting the most efficient server to provide one specific service, then H04L 67/1001 should be used.

#### H04L 67/564

##### Definition statement

*This place covers:*

Evaluating intercepted data for data control, e.g. exploiting metadata for cache control, inferring and storing control or functional data, validation of requests.

#### H04L 67/565

##### Definition statement

*This place covers:*

Converting/adapting contents/formats according to the application format type, e.g. using an intermediate format, transcoding (transcoding proxy, transcoding cache proxy).

##### References

###### Limiting references

*This place does not cover:*

Arrangements for adding application control or application functional data	<a href="#">H04L 67/561</a>
Arrangements for reducing the amount or size of exchanged application data	<a href="#">H04L 67/5651</a>

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**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Message adaptation based on network or terminal capabilities	<a href="#">H04L 51/06</a>
Media manipulation, adaptation or conversion in real-time communications	<a href="#">H04L 65/75</a>
Protocol conversion	<a href="#">H04L 69/08</a>
Optimising visualisation of content for web browsing	<a href="#">G06F 16/9577</a>

**Special rules of classification**

[H04L 67/565](#) is used when data is adapted for interoperability; if enhancing the functional value is relevant, then [H04L 67/561](#) takes precedence; otherwise [H04L 67/5651](#) takes precedence.

**H04L 67/5651****Definition statement***This place covers:*

Intermediate processing aimed to reduce the exchanged application data, e.g. for distillation of contents for a small display terminal.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Optimising visualisation of content	<a href="#">G06F 16/9577</a>
Protocols for data compression	<a href="#">H04L 69/04</a>
Digital video compression	<a href="#">H04N 19/00</a>

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**H04L 67/566****Definition statement***This place covers:*

Grouping service requests for unified processing; a plurality of requests from consumer application(s) are correlated somehow and dealt together as intermediate processing, e.g. push/pull proxy (push proxy, push-pull proxy).

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Networking arrangements or communication protocols for scheduling or organising the servicing of application requests	<a href="#">H04L 67/60</a>
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**H04L 67/567****Definition statement***This place covers:*

Integrating various data provision/service applications to appear as one single front-end, e.g. web portals including servlets. Web portals are also classified in [H04L 67/02](#). An intermediate application provides a multi-service or multi-provider experience to a consumer application by offering or integrating the provision of services from a plurality of background service providers.

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Web portals	<a href="#">H04L 67/02</a>
Redirecting requests to service providers	<a href="#">H04L 67/563</a>
Web site content organisation and management	<a href="#">G06F 16/958</a>

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**H04L 67/568****Definition statement***This place covers:*

Temporarily storing data at an intermediate stage, e.g. caching including:

- Caching involving pre-fetching or pre-delivering data;
- Managing the intermediate device storage space, e.g. policies for admission, Replacement, update, refresh, deletion;
- Caching involving storage of data provided by user terminals, i.e. reverse caching.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Distributed storage of data in a network	<a href="#">H04L 67/1097</a>
Addressing of a cache within a hierarchically structured memory system	<a href="#">G06F 12/0802</a>
Disk caching	<a href="#">G06F 12/0866</a>
Browsing optimisation of access to content by caching	<a href="#">G06F 16/9574</a>

**H04L 67/5681****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Cache prefetching within a hierarchical structured memory system	<a href="#">G06F 12/0862</a>
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**H04L 67/5682****References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Replacement control in memory systems	<a href="#">G06F 12/12</a>
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**H04L 67/5683****Definition statement***This place covers:*

The intermediate processing consists in taking over partially (i.e. off-loading) or temporally fully (i.e. when end terminal is unavailable) the tasks of an end node.

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Counter-measures to a fault	<a href="#">H04L 69/40</a>
Terminal emulation	<a href="#">H04L 67/08</a>
Reactions to server failures by a load balancer	<a href="#">H04L 67/1034</a>
Departure and maintenance mechanisms in Peer-to-Peer networks	<a href="#">H04L 67/1048</a>
Emulation or software simulation	<a href="#">G06F 9/455</a>
Input/output emulation function for peripheral devices	<a href="#">G06F 13/105</a>
Disconnected operation in file systems	<a href="#">G06F 16/10</a>

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**H04L 67/59****Definition statement***This place covers:*

The intermediate processing consists of failover where if the end device is unavailable, then tasks are off-loaded in the network.

**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Terminal emulation	<a href="#">H04L 67/08</a>
For recovering from a failure of a protocol instance or entity	<a href="#">H04L 69/40</a>
Reactions to server failures by a load balancer	<a href="#">H04L 67/1034</a>
Departure and maintenance mechanisms in Peer-to-Peer networks	<a href="#">H04L 67/1048</a>
Emulation or software simulation	<a href="#">G06F 9/455</a>
Input/output emulation function for peripheral devices	<a href="#">G06F 13/105</a>
Disconnected operation in file systems	<a href="#">G06F 16/10</a>

**H04L 67/60****Definition statement***This place covers:*

Management and scheduling of application requests.

**References*****Limiting references****This place does not cover:*

Admission control or resource allocation	<a href="#">H04L 47/70</a>
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**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Computer conference arrangements	<a href="#">H04L 12/1813</a>
Broadcast or conference with schedule organisation	<a href="#">H04L 12/1881</a>
Network service management, ensuring proper service fulfilment according to an agreement or contract between two parties	<a href="#">H04L 41/50</a>
Intermediate grouping or aggregating of service requests	<a href="#">H04L 67/566</a>

**H04L 67/75****Definition statement***This place covers:*

Aspects of the user interface that have to do with networking, i.e. indicating to the user some network condition with a special user interface.

**Relationships with other classification places**

Cordless telephone, i.e. mobile user terminal.

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Graphical user interfaces for network management	<a href="#">H04L 41/22</a>
Terminal emulation, networking aspects	<a href="#">H04L 67/08</a>
Pointing devices	<a href="#">G06F 3/033</a>
Interaction techniques for user interfaces, menus, icons, windows	<a href="#">G06F 3/048</a>
User interface programs, command shells, help systems, multi-language systems	<a href="#">G06F 9/451</a>
Terminal emulation	<a href="#">G06F 13/107</a>
Markup languages for text documents	<a href="#">G06F 40/143</a>
Speech synthesis; text to speech conversion	<a href="#">G10L 13/00</a>
Speech recognition	<a href="#">G10L 15/00</a>

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Cordless telephones for supporting an internet browser application	<a href="#">H04M 1/72445</a>
Interacting with a data network using a telephonic device, e.g. browsing the World Wide Web with a telephone	<a href="#">H04M 3/4938</a>

### H04M 3/5141

#### References

##### *Limiting references*

*This place does not cover.*

Unified messaging in packet-switching networks	<a href="#">H04L 51/56</a>
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### H04M 3/566

#### References

##### *Limiting references*

*This place does not cover.*

Arrangements for multi-party communication with floor control, e.g. for conferences	<a href="#">H04L 65/4038</a>
Arrangements for multi-party communication with distributed floor control, e.g. for conferences	<a href="#">H04L 65/4046</a>
Arrangements for multi-party communication without distributed floor control, e.g. for conferences	<a href="#">H04L 65/4053</a>

### H04M 7/0039

#### References

##### *Limiting references*

*This place does not cover.*

Network streaming of media packets	<a href="#">H04L 65/60</a>
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**H04N 1/00228**

**References**

***Limiting references***

*This place does not cover:*

Push-based network services	<a href="#">H04L 67/55</a>
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## 2. A. DEFINITIONS (modified)

Insert: The following modifications to the Definitions.

### H04L

#### Definition statement

Delete: The third bullet (“other arrangements, apparatus or systems, see definition for group H04L 29/00”) under the heading **Arrangements of general application:**.

#### References

##### Limiting references

Delete: The following table row from the **Limiting references** table.

Coding or ciphering apparatus for cryptographic or other purposes involving the need for secrecy	G09C
--	------

##### Informative references

Insert: The following new table row into the **Informative references** table.

Coding or ciphering apparatus for cryptographic or other purposes involving the need for secrecy	G09C
--	------

### H04L 9/00

#### Definition statement

Insert: The following new statement into the **Definition statement** immediately after the 2<sup>nd</sup> paragraph.

H04L9/00 covers also Financial cryptography.

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**References****Limiting references**Delete: The entire **Limiting references** section and table.**Informative references**Delete: The following table row from the **Informative references** table.

Electronic commerce or auctions	G06Q 30/00
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Insert: The following new table rows into the **Informative references** table.

Network architectures or network communication protocols for network security	H04L 63/00
Pseudo-random number generators (if not intended for cryptographic purposes)	G06F 7/584
Finite field arithmetic over elliptic curve (if not intended for cryptographic purposes)	G06F 7/725
Security arrangements for protecting computers, components thereof, programs or data against unauthorised activity	G06F 21/00
Coding or ciphering apparatuses for cryptographic or other purposes involving the need for secrecy	G09C
Network architectures or network communication protocols for wireless network security	H04W 12/00

Replace: The text for the references indicated below in the existing **Informative references** table with the new descriptions below.

Smarts-cards	G07F 7/10
Circuits for prevention of unauthorised reproduction	G11B 20/00086

**Special rules of classification**Delete: The 4<sup>th</sup> paragraph in the **Special rules of classification**.

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Examples: US2007061572 is to be classified under [H04L9/0863](#), [H04L9/3273](#) and [H04L9/3226](#) since the subject-matter relates to different aspects.

## H04L 41/00

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

#### *Informative references*

Insert: The following new table rows into the **Informative references** table.

Detection or prevention of error at physical layer	<a href="#">H04L 1/00</a>
Accounting or billing for the transport of the data-packets	<a href="#">H04L 12/14</a>
Operation and Maintenance of homogeneous ATM networks	<a href="#">H04L 2012/5625</a>
Arrangement for network security	<a href="#">H04L 63/00</a>
Controlling or operating of remote end-user devices' applications	<a href="#">H04L 67/125</a>
Network management of traditional telephonic (circuit-switched) networks	<a href="#">H04M 3/22</a>

### Synonyms and Keywords

Insert: The following Preamble for the existing table (shown below) in the Synonyms and Keywords section.

*In patent documents the following abbreviations are often used:*

Existing table:

OA&M, OAM	Operation, administration and management
OAM&O, OAMP	Operation, administration, management and provisioning
OSS	Operations support systems

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NM	Network Management
NMS	Network Management System
TMN	Telecommunications Management Network
SNMP	Simple Network Management Protocol
MIB	Management Information Base
TR-069	Technical Report 69 (Broadband forum standard)
ITU	International Telecommunication Union
IETF	Internet Engineering Task Force
OMA-DM	Open Mobile Alliance - Device Management
3GPP	3rd Generation Partnership Project
SOAP	Simple Object Access Protocol

Replace: The Description (as shown above) for OAM&O, OAMP, in the above table in the Synonyms and Keywords section. The spelling for “provisioning” has been corrected.

Delete: The following subsection from the **Synonyms and Keywords** section.

In patent documents the word "management" is often used with the meaning of "controlling", "commanding" , "operating".

In patent documents the expression "configured to" is often used with the meaning "adapted to", "suitable for" defining functional features of structural elements.

Insert: The following new section and table in the **Synonyms and Keywords**.

*In patent documents, the following words/expressions are often used with the meaning indicated:*

Management	Controlling, commanding or operating
Configured to	Adapted to or suitable for defining functional features of structural elements

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## H04L 41/022

### Definition statement

Delete: The following text from below the existing image.

Examples: EP1162784, US2006168117

## H04L 41/0226

### Definition statement

Delete: The following text from below the existing image.

Examples: EP1720286

## H04L 41/0246

### Relationships with other classification places

Replace: The first paragraph with the following paragraph.

This group relates to aspects where the Internet or web applications and protocols are used for management, and it does not for conventional management protocol, like SNMP.

## References

### Limiting references

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Conversion of network management protocols	H04L 41/0226
--	--------------

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Web-based network application protocols in general	<a href="#">H04L 67/02</a>
Web-based network application protocols for remote control of end-devices or monitoring of remote application data	<a href="#">H04L 67/025</a>
Proprietary application protocols for remote control of end-devices in special networking environments	<a href="#">H04L 67/125</a>
Retrieval from the Internet	<a href="#">G06F 16/95</a>

**H04L 41/0253****Definition statement**

Delete: The following text from the Definition statement.

Examples: EP1628221, US2007094380

**References*****Limiting references***

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Generic visualisation aspects of Graphical User Interface (GUI) for management	<a href="#">H04L 41/22</a>
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#### H04L 41/026

##### Definition statement

Delete: The following text from the Definition statement.

Examples: US2010220350

#### H04L 41/0266

##### Definition statement

Delete: The following text from the Definition statement.

Examples: EP2110991, EP2139161, EP2110991

#### H04L 41/0273

##### Definition statement

Delete: The following text from the Definition statement.

Examples: EP1715620, US7849472, WO2007084369

#### H04L 41/028

##### Definition statement

Delete: The following text from the Definition statement.

Examples: US2008189350, US2008184234

#### H04L 41/0286

##### Definition statement

Delete: The following text from the Definition statement.

Examples: EP2098012, US2010318370

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## References

### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

### *Informative references*

Attention is drawn to the following places, which may be of interest for search:

Network applications and protocols for service discovery	<a href="#">H04L 67/51</a>
--	----------------------------

### H04L 41/0293

#### **Definition statement**

Delete: The following text from the Definition statement.

Examples: US2009177768, EP1898556

### H04L 41/044

#### **Definition statement**

Delete: The following text from below the existing image.

Examples: EP0838919, US2002174207

### H04L 41/046

#### **Definition statement**

Delete: The following text from the Definition statement.

Examples: EP0831617

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**Special rules of classification**

Replace: The existing paragraph with the following paragraph.

This symbol is to be allocated for use and features of Agents other than or beyond the typical use already done in, e.g., SNMP standardised protocols, which can be considered in the group [H04L 41/0213](#).

**H04L 41/06****References****Limiting references**

Delete: The entire **Limiting references** section and table.

**Informative references**

Insert: The following new table rows into the **Informative references** table.

Alarm or failure messages notified by the user, customer (trouble ticket); Alarm or messages triggered by the user, handling of user's trouble tickets	<a href="#">H04L 41/5074</a>
Active monitoring the status or the connection of network elements	<a href="#">H04L 43/10</a> , <a href="#">H04L 43/0811</a> , <a href="#">H04L 43/0817</a>
Tracking events generated by the networked application user's	<a href="#">H04L 67/535</a>

**H04L 41/0604****References**

Delete: The entire **Limiting references** section and table.

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

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Insert: The following new table rows into the **Informative references** table.

Filtering or reduction of monitored data packets	<a href="#">H04L 43/02</a>
--	----------------------------

#### H04L 41/0654

##### Definition statement

*This place covers:*

Replace: In the last statement, the semicolon with a period, as shown below.

Automatically "repairing" broken links, nodes, routes by a NMS when the network is up.

##### References

Insert: The following new **Limiting references** section and table.

##### **Limiting references**

*This place does not cover:*

Ring fault isolation or reconfiguration	<a href="#">H04L 12/437</a>
---	-----------------------------

#### H04L 41/0659

##### Definition statement

Delete: The following text from the Definition statement.

Examples: EP1202175 (e.g. Claim 37), WO2007022183

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**H04L 41/0668**

**Definition statement**

Delete: The following text from the Definition statement.

Examples: EP1975802, US2011141879, EP2161877.

**H04L 41/0672**

**Definition statement**

Delete: The following text from the Definition statement.

Examples: EP2020776, EP2154827, EP1887759, EP1202175 (e.g. Claim 12).

**H04L 41/0681**

**Definition statement**

Delete: The following text from the Definition statement.

Examples: US2005076281

**References**

***Informative references***

Replace: The term “threshold” with “Threshold” in the description for reference H04L43/16.

Threshold monitoring	H04L 43/16
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**H04L 41/0686****Definition statement**Delete: The following text from the Definition statement.

Examples: EP2154828

**H04L 41/08****References****Limiting references**Replace: The existing 3 references in the **Limiting reference** table with the following new reference.

Address allocation	<a href="#">H04L 61/50</a>
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**Informative references**Delete: The following table row from the **Informative references** table.

Aspects of naming and addressing in general	<a href="#">H04L 61/00</a>
---	----------------------------

Insert: The following new table rows into the **Informative references** table.

Proprietary application protocols for remote control of end-devices in special networking environments	<a href="#">H04L 67/125</a>
Configuration management in the context of software development	<a href="#">G06F 8/71</a>
Configuration of software in general	<a href="#">G06F 9/44505</a>

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**H04L 41/0806****References****Limiting references**Delete: The entire **Limiting references** section and table.**Informative references**Insert: The following new **Informative references** section and table.

Configuration of networked applications configuration parameters	<a href="#">H04L 67/34</a>
Configuration management in the context of software development	<a href="#">G06F 8/71</a>
Configuration of software in general	<a href="#">G06F 9/44505</a>

**H04L 41/0896****References**Insert: The following new **Limiting references** section and table.**Limiting references***This place does not cover:*

Flow or congestion control using dynamic resource allocation, e.g. in-call renegotiation	<a href="#">H04L 47/76</a>
--	----------------------------

Delete: The entire **Informative references** section and table.

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## H04L 41/12

### References

#### *Limiting references:*

Delete: The entire **Limiting references** section and table.

#### *Informative references*

Insert: The following new table rows into the **Informative references** table.

Monitor simple connectivity of an element	<a href="#">H04L 43/0811</a>
Topology update for routing purposes	<a href="#">H04L 45/02</a>
Topology discovery in wireless networks for routing purposes	<a href="#">H04W 40/24</a>

## H04L 41/14

### References

Insert: The following new **Informative references** section and table.

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Network monitoring	<a href="#">H04L 43/00</a>
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## H04L 41/142

### Definition statement

Delete: The following text from the Definition statement.

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Examples: US2011078302, EP12160397

## H04L 41/145

### Definition statement

Replace: The entire Definition statement with the following new text.

Network design tools (e.g. with integrated simulation and design testing).

Modelling or abstraction of the network for behaviour simulation.

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

#### *Informative references*

Insert: The following new table rows into the **Informative references** table.

Modelling of isolated elements of the network, auditing	<a href="#">H04L 41/0233</a> , <a href="#">H04L 41/085</a>
Network topology's graph or modelling	<a href="#">H04L 41/12</a>
Radio cell planning	<a href="#">H04W 16/00</a>

## H04L 41/147

### Definition statement

Delete: The following text from the Definition statement.

Examples: EP2642692, US2011078302

### References

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### **Limiting references**

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Modelling of isolated elements of the network, auditing	<a href="#">H04L 41/0233</a> , <a href="#">H04L 41/085</a>
Fault management	<a href="#">H04L 41/06</a>
Radio cell planning	<a href="#">H04W 16/00</a>

### **H04L 41/20**

#### **Definition statement**

Delete: The following text from the Definition statement.

Examples: US8065660

### **H04L 41/22**

#### **Definition statement**

Delete: The following text from the Definition statement.

Examples: US7958450

### **References**

#### **Limiting references**

Delete: The entire **Limiting references** section and table.

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Insert: The following new **Informative references** section and table.

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Using a browser for accessing management information	<a href="#">H04L 41/0253</a>
Graphical visualization of monitored data	<a href="#">H04L 43/045</a>

**H04L 41/24**

**Definition statement**

Replace: The entire Definition statement text with the following text.

(Portable) hardware equipment for managing (e.g. configuring, logging management data, etc.) a device at a time.

Craft terminals used by fields technicians.

Built-in NM hardware.

**H04L 41/28**

**Definition statement**

Delete: The following text from the Definition statement.

Examples: EP11275030, WO2004047402, US8078707

**References**

***Limiting references***

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

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**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Cryptography for secret or secure communication	<a href="#">H04L 9/00</a>
Protocols or architecture for network security	<a href="#">H04L 63/00</a>
Protecting computers or computer systems against unauthorised activity	<a href="#">G06F 21/00</a>
Wireless network security	<a href="#">H04W 12/00</a>

**H04L 41/30**

**Definition statement**

Delete: The following text from the Definition statement.

Examples: EP2071764, GB2343583,

**H04L 41/32**

**Definition statement**

Delete: The following text from the Definition statement.

Examples: US6134238,

**H04L 41/50**

**Synonyms and Keywords**

Delete: The following text from the description portion of the Synonyms and Keywords table for "QoS".

(e.g. AU2008201028, paragraph 8)

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## H04L 41/5003

### Definition statement

Insert: The following statement in the Definition statement prior to the figure.

Illustrative example of subject matter (ITU-T Rec. E.860) classified in this group.

Delete: The following text from the Definition statement (below the figure).

ITU-T Rec. E.860 (Figure)

*Examples: ITU-T Rec. E.860 (Figure), WO2004102896, US2012011517*

## H04L 41/5025

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Network faults recovery	<a href="#">H04L 41/0654</a>
Changing configuration due to adaption	<a href="#">H04L 41/0813</a>

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## H04L 41/5029

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

General charging or billing for transport of data packets	<a href="#">H04L 12/14</a>
---	----------------------------

## H04L 41/5054

### References

#### **Informative references**

Delete: The following text below the **Informative reference** table.

Examples: EP1892966, US2011158111

## H04L 41/5058

### **Definition statement**

Delete: The following text from the Definition statement.

Example: EP2330847

### References

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**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Replace: The reference symbol H04L 67/16 with the following symbol [H04L 67/51](#) as shown below.

Arrangements for service discovery, e.g. Service Location Protocol (SLP)	<a href="#">H04L 67/51</a>
--	----------------------------

**H04L 41/5064**

**Definition statement**

Delete: The following text from the Definition statement.

Examples: EP1892966

**References**

**Limiting references**

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Arrangements involving Customer Network Management, i.e. giving the customer access to network management functions	<a href="#">H04L 41/18</a>
---	----------------------------

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**H04L 41/5067**

**Definition statement**

Delete: The following text from the Definition statement.

Examples: EP2326044

**H04L 41/507**

**Definition statement**

Delete: The following text from the Definition statement.

Examples: EP2237486

**H04L 41/5074**

**Definition statement**

Delete: The following text from the Definition statement.

Examples: WO2011003169, US2011082926.

**References**

***Limiting references***

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Alarm messages (automatically) triggered by faulty network elements	<a href="#">H04L 41/0677</a>
---	------------------------------

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#### H04L 41/5077

##### Definition statement

Delete: The following text from the Definition statement.

Examples: US2011060826, WO0215481

#### H04L 41/5083

##### References

##### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

##### ***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Web-based network application protocols	<a href="#">H04L 67/02</a>
Web site content organisation and management	<a href="#">G06F 16/958</a>
Video-hosting	<a href="#">H04N 21/2743</a>

#### H04L 41/5087

##### References

##### *Limiting references*

Replace: The term “management” with “Management” in the description for reference H04M 7/0081, as shown below.

Management of VoIP services	<a href="#">H04M 7/0081</a>
-----------------------------	-----------------------------

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Delete: The following table rows from the **Limiting references** table.

protocols for real-time multimedia communications	<a href="#">H04L 65/00</a>
management of telephonic communication services	<a href="#">H04M 3/22</a>

Insert: The following new **Informative references** section and table.

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Protocols for real-time multimedia communications	<a href="#">H04L 65/00</a>
Management of telephonic communication services	<a href="#">H04M 3/22</a>

**H04L 41/509**

**References**

***Limiting references***

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Protocols for real-time multimedia communications	<a href="#">H04L 65/00</a>
Interactive television or video on demand [VOD]	<a href="#">H04N 21/00</a>

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## H04L 41/5093

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Conducting a computer conference	<a href="#">H04L 12/1822</a>
Messaging, e.g. e-mail or instant messaging in packet-switching networks	<a href="#">H04L 51/00</a>

## H04L 41/5096

### References

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Management of file systems	<a href="#">G06F 16/10</a>
Management of structured data stores	<a href="#">G06F 16/20</a>

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## H04L 43/00

### Relationships with other classification places

**Insert:** A period at the end of the 3<sup>rd</sup> paragraph.

Aspects related to the generation or insertion of specific type of packets (e.g. ICMP, ping, traceroute) are classified under [H04L 43/10](#) whereas (test) traffic injection of data according to a pattern and characterization is under [H04L 43/50](#).

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new references into the **Informative references** table.

Monitoring of computer activity	<a href="#">G06F 11/34</a>
Filtering policies for separating internal from external traffic for security	<a href="#">H04L 63/0227</a>
Monitoring for detecting or protecting against malicious traffic	<a href="#">H04L 63/1408</a>
Tracking the activity of the application user	<a href="#">H04L 67/535</a>

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## H04L 43/024

### Definition statement

*This place covers:*

Delete: The following text from the Definition statement.

Examples: US2009257352

## H04L 43/028

### Definition statement

Delete: The following text from the Definition statement.

Examples: wo2011134739

## References

### Limiting references

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Alarm or event filtering	<a href="#">H04L 41/0604</a>
Filtering policy for separating internal from external traffic for security	<a href="#">H04L 63/0227</a>

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#### H04L 43/04

##### Definition statement

Delete: The following text from the Definition statement.

Examples: ep2317698 (fig.3), us2011292818, ep11168715

#### H04L 43/045

##### References

##### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

##### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Use of a GUI as a tool for monitoring or managing a network	<a href="#">H04L 41/22</a>
Display of network or application conditions affecting the applications	<a href="#">H04L 67/75</a>
Visual indication of the functioning of a computing machine	<a href="#">G06F 11/32</a>

#### H04L 43/065

##### References

##### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

##### *Informative references*

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*Attention is drawn to the following places, which may be of interest for search:*

Reporting of sensed information of home appliances managing a network	<a href="#">H04L 12/2803</a>
---	------------------------------

## H04L 43/08

### Definition statement

Replace: The entire Definition statement with the following new text.

Aspect of monitoring of packets on a network (link/node) level including QoS parameters;

Aspect of monitoring of network elements' parameters (temperature, power consumption, etc.) via network protocols.

## H04L 43/0811

### Limiting references

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Topology's determination	<a href="#">H04L 41/12</a>
--------------------------	----------------------------

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## H04L 43/0817

### Definition statement

Replace: The existing paragraph with the following paragraph.

Monitoring the status of the connected device for whether the device is working properly, monitoring network element resource metrics like memory utilization or printer utilization.

### References

#### Limiting references

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Monitoring appliance functionality of home appliances	<a href="#">H04L 12/2803</a>
Monitoring the activity of the application user	<a href="#">H04L 67/535</a>

## H04L 43/0823

### References

#### Limiting references

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Management of events, faults or alarms	<a href="#">H04L 41/06</a>
--	----------------------------

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## H04L 43/10

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Injection or characterisation of test traffic	<a href="#">H04L 43/50</a>
---	----------------------------

## H04L 43/12

### Definition statement

Replace: In the first paragraph, the term “e.g” with the corrected “e.g.”, as shown below.

Aspects specifically related to passive devices, e.g. meters, capturing data units (packets, cells, frames) transiting the monitored communications network;

Insert: A period at the end of the statement “Internal architecture of a probe (buffer, processor)”.

Delete: The following text from the Definition statement.

Examples: ep1487152, us2011286348

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

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**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Protocol analyser	<a href="#">H04L 43/18</a>
-------------------	----------------------------

**H04L 43/18**

**Definition statement**

Replace: In the first paragraph, the term “e.g” with the corrected “e.g.”, as shown below.

Devices able to capture data (i.e. cells, packets or frames) and "understand / parse / decode" the field structure of different networking protocols in a promiscuous mode (i.e. all the data they receive) and able to process the captured data for representing the parsed / decoded data fields along with their meanings of different packets specified by different networking protocols (e.g. Wireshark) in order to facilitate the analysis for a user.

Delete: The following text from below the existing image.

Examples: US6850852 (fig.7, above), EP1722509, US2002114273 (fig. 2, 3), WO2005018153 (fig.4, 5),

**References**

**Limiting references**

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Simple packet capture with probes	<a href="#">H04L 43/12</a>
Protocol compliance testing	<a href="#">H04L 43/50</a>

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## H04L 43/50

### Definition statement

Replace: The entire existing text with the following new text.

Testing of data networks, with specific focus on the following aspects:

Architectural aspects of testing: layout of the testing environment, design of the testing system, distribution of the testing nodes in the network at specific locations, devices dedicated for testing, or networking devices that have dedicated test modes.

Functional aspects of testing: benchmark testing, design of test scripts, test sequences, traffic patterns to be injected in the network system or device to be tested.

Testing groups of devices: testing groups of devices at once, for speeding-up the testing.

Compliance testing: testing whether a device complies to the specific protocol that it is supposed to adhere to.

### References

#### Limiting references

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Arrangements for detecting or preventing errors in the information received; testing correct operation	<a href="#">H04L 1/24</a>
Testing presence of Network Address Translation [NAT], e.g. STUN, TURN, MMUSIC/ICE	<a href="#">H04L 61/2575</a> , <a href="#">H04L 61/2589</a>

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Alarm or event or notifications correlation; root cause analysis; by additionally acting on or stimulating the network after receiving notifications	<a href="#">H04L 41/0645</a>
Testing of service level quality	<a href="#">H04L 43/55</a>
Active monitoring (e.g. heartbeat protocols or polling or ping or trace-route)	<a href="#">H04L 43/10</a>
Protocol analysers	<a href="#">H04L 43/18</a>
Arrangements for testing electric properties	<a href="#">G01R 31/00</a>
Software testing in computer systems	<a href="#">G06F 11/3668</a>
Line transmission systems; Monitoring; Testing	<a href="#">H04B 3/46</a>
Transmission of information-carrying signals; Monitoring; Testing	<a href="#">H04B 17/00</a>
Time-division multiplex systems; Provisions for broadband connections in integrated services digital network using frames of the Optical Transport Network [OTN] or using synchronous transfer mode [STM], e.g. SONET, SDH; Testing	<a href="#">H04J 2203/0062</a>
Telephonic communication; Supervisory, monitoring, or testing arrangements in automatic or semi-automatic exchanges	<a href="#">H04M 3/22</a>
Diagnosis, testing or measuring for television systems or their details	<a href="#">H04N 17/00</a>
Selective content distribution; detecting features or characteristics in audio or video streams	<a href="#">H04N 21/4394</a> , <a href="#">H04N 21/44008</a>
Selecting arrangements for multiplex systems; Using optical techniques; Testing; Monitoring	<a href="#">H04Q 2011/0083</a>

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## H04L 45/00

### References

#### *Limiting references*

Replace: The existing reference with the following updated reference description and symbol.

Routing or path finding of packets in data switching networks specially adapted for wireless routing	H04W 40/00
--	------------

## H04L 47/00

### References

#### *Limiting references*

Replace: The existing reference with the following updated reference description and symbol.

Traffic regulation in packet switching networks arrangements for detecting or correcting errors in the information received	H04L 1/00
---	-----------

## H04L 49/00

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Packet switching elements selecting arrangements for multiplex arrangements using optical switching	H04Q 11/0001
---	--------------

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**H04L 61/00****References*****Limiting references***Delete: The entire **Limiting references** section and table.***Informative references***Insert: The following new table rows into the existing **Informative references** table.

Accessing, addressing or allocating within memory systems or architectures	G06F 12/00
Bus transfer protocol, e.g. handshake; Synchronisation	G06F 13/42
Information retrieval from the Internet by using information identifiers, e.g. URLs	G06F 16/955
Routing or path finding of packets in data switching networks	H04L 45/00
Interconnection arrangements between switching centres	H04M 7/00

Replace: The description text for the following symbols as indicated below.

Arrangements for maintenance or administration or management of packet switching networks using standardised network management protocols	H04L 41/0213
Network architectures or network communication protocols for network security for separating internal from external traffic; Firewall traversal, e.g. tunnelling or creating pinholes	H04L 63/029
Network architectures or network communication protocols for network security for providing a confidential data exchange among entities communicating through data packet networks	H04L 63/04
Processing of mobility data, Registration at HLR or HSS	H04W 8/04

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Replace: The symbol H04L 67/1002 for the following table row

Network-specific arrangements or communication protocols supporting networked applications in which an application is distributed across nodes in the network for accessing one among a plurality of replicated servers, e.g. load balancing	H04L 67/1002
--	--------------

with [H04L 67/1001](#), as shown below.

Network-specific arrangements or communication protocols supporting networked applications in which an application is distributed across nodes in the network for accessing one among a plurality of replicated servers, e.g. load balancing	<a href="#">H04L 67/1001</a>
--	------------------------------

Replace: The symbol H04L 67/16 for the following table row

Network-specific arrangements or communication protocols supporting networked applications; Service discovery or service management	H04L 67/16
---	------------

with [H04L 67/51](#), as shown below.

Network-specific arrangements or communication protocols supporting networked applications; Service discovery or service management	<a href="#">H04L 67/51</a>
---	----------------------------

Replace: The symbol H04L 67/24 for the following table row

Network-specific arrangements or communication protocols supporting networked applications; Presence management	H04L 67/24
---	------------

with [H04L 67/54](#), as shown below.

Network-specific arrangements or communication protocols supporting networked applications; Presence management	<a href="#">H04L 67/54</a>
---	----------------------------

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Replace: The symbol H04L 67/28 for the following table row

Network-specific arrangements or communication protocols supporting networked applications for the provision of proxy services, e.g. intermediate processing or storage in the network	H04L 67/28
--	------------

with [H04L 67/56](#), as shown below.

Network-specific arrangements or communication protocols supporting networked applications for the provision of proxy services, e.g. intermediate processing or storage in the network	<a href="#">H04L 67/56</a>
--	----------------------------

### Special rules of classification

Replace: The existing bullets with the following new bullets (four of the five bullets had symbol changes, specifically bullet #1,2,3, and 5).

- Address resolution is covered in [H04L 61/10](#), whereas name-to-address-resolution is covered in [H04L 61/50](#).
- ENUM is based on DNS and should therefore be classified under Directories in [H04L 61/4557](#) and not in [H04L 61/106](#).
- The Address Allocation subgroup [H04L 61/5084](#) covers "portability" aspects not covered in [H04W 8/26](#) or [H04W 80/04](#), e.g. nomadic users in a hotel.
- IPv4 and IPv6 addresses are considered to be of the same type. Therefore a mapping between these address types should be classified in [H04L 61/251](#) and not in [H04L 61/10](#).
- The Details subgroup ([H04L 2101/60](#)) should be used as an additional classification in [H04L 61/00](#), i.e. if other [H04L 61/00](#) subgroups in the range [H04L 61/10](#) - [H04L 61/35](#) have already been assigned.

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## H04L 65/00

### Definition statement

Replace: The term “fulfil” in the first sentence with the term “fulfil”, as shown below.

Only communications which fulfil the following two conditions:

### Relationships with other classification places

Delete: The following bullet located in the second set of bullets (or 5th paragraph, “Examples of what is excluded are ... e.g. combinational or collaboration systems:”).

- Bit streaming (i.e. not packet) as in ISDN (H04Q 11/40).

Replace: In the same 5<sup>th</sup> paragraph, the 3<sup>rd</sup> bullet with the following revised bullet (deleted extra comma and parenthesis, and replace semicolon with period).

- Analogue multimedia streaming, e.g. in analogue television (H04N 5/00, H04N 7/00, H04N 21/00).

## References

### Limiting references

Delete: The following table rows from the Limiting reference table (and two more on the next page).

computer conference	H04L 12/1813
Multimedia store or forward messaging as in e-mail, MMS or the like	H04L 51/00
network applications in general	H04L 67/00
Non-real-time multimedia file transfer	H04L 67/06
systems providing special services to telephonic subscribers	H04M 3/42
interconnection arrangements between switching centres for working between exchanges having different types of switching equipment where the types of switching equipment comprise	H04M 7/1205

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PSTN/ISDN equipment and equipment of networks other than PSTN/ISDN	
Analogue multimedia streaming, as in analogue television systems	H04N 7/00, H04N 5/00, H04N 21/00
Bit streaming, i.e. not packet-based, as in ISDN	H04Q 11/04

Insert: The following new table row into the Limiting reference table

Analogue multimedia streaming, as in analogue television systems	H04N 21/00
--	------------

**Informative references**

Replace: The symbol H04L 67/1002 for the following table row

Arrangements to access one among a plurality of replicated servers, e.g. load balancing	H04L 67/1002
---	--------------

with H04L 67/1001, as shown below.

Arrangements to access one among a plurality of replicated servers, e.g. load balancing	H04L 67/1001
---	--------------

Replace: The symbol H04L 67/18 for the following table row

Network application being adapted for the location of the user terminal	H04L 67/18
---	------------

with H04L 67/52, as shown below.

Network application being adapted for the location of the user terminal	H04L 67/52
---	------------

Replace: The symbol H04L 67/26 for the following table row

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Arrangements for push based network services	<a href="#">H04L 67/26</a>
--	----------------------------

with [H04L 67/55](#), as shown below.

Arrangements for push based network services	<a href="#">H04L 67/55</a>
--	----------------------------

Replace: The symbol H04L 67/2828 for the following table row

Intermediate processing in the network with arrangements for data reduction or adaptation	<a href="#">H04L 67/2828</a>
---	------------------------------

with [H04L 67/5651](#), as shown below.

Intermediate processing in the network with arrangements for data reduction or adaptation	<a href="#">H04L 67/5651</a>
---	------------------------------

Replace: The symbol H04L 67/322 for the following table row

Arrangements for scheduling or organising the servicing of requests whereby quality of service or priority requirements are taken into account	<a href="#">H04L 67/322</a>
--	-----------------------------

with [H04L 67/61](#), as shown below.

Arrangements for scheduling or organising the servicing of requests whereby quality of service or priority requirements are taken into account	<a href="#">H04L 67/61</a>
--	----------------------------

Replace: The symbol H04L 67/38 for the following table row

Telewriting, virtual reality or network gaming	<a href="#">H04L 67/38</a>
--	----------------------------

with [H04L 67/131](#), as shown below.

Telewriting, virtual reality or network gaming	<a href="#">H04L 67/131</a>
--	-----------------------------

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**Special rules of classification**

Replace: The symbol H04L 65/1006 with [H04L 65/1104](#) in the first paragraph, as shown below.

The different entries and subentries of [H04L 65/00](#) are not mutually exclusive. On the contrary, a document has to be normally assigned more than one classes. For instance, a document describing the SIP call setup for a distributed control conference, the conference at first being audio only and later adding video as well, will be assigned the classes: [H04L 65/1104](#) (SIP), [H04L 65/1069](#) (session setup), [H04L 65/4046](#) (Distributed controlled conference) and [H04L 65/1089](#) (Adding or removing media).

**H04L 65/10****References****Limiting references**

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Data network management	<a href="#">H04L 41/00</a>
Data network testing or monitoring	<a href="#">H04L 41/06</a>
Admission control or resource reservation in packet switching networks	<a href="#">H04L 47/70</a>
Control signalling related to video distribution	<a href="#">H04N 21/63</a>
Selecting or control in telephonic networks	<a href="#">H04Q 3/00</a>

**Special rules of classification**

Delete: The entire **Special rules of classification** section.

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**H04L 65/1013****Definition statement**

Replace: The symbols H04L 65/4092 and H04L 65/608 in the paragraph with H04L65/4061 and H04L65/65, respectively, as shown below.

Architectures and all entities, whether in the network or near and at the customer premises, identified at present as being part of packet-based multimedia systems and networks. Functionalities and services provided by these entities may also be classified in [H04L 65/40 - H04L 65/4061](#) and [H04L 65/60 - H04L 65/65](#).

**References**

Insert: The following new **Informative references** section and table.

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

One-way network streaming services and controlling of the source by the destination	<a href="#">H04L 65/613</a>
Streaming protocols, e.g. RTP or RTCP	<a href="#">H04L 65/65</a>

**H04L 65/1016****References*****Limiting references***

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Wireless communication networks	<a href="#">H04W</a>
---------------------------------	----------------------

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**H04L 65/102****Definition statement**

Replace: The symbol H04L 65/608 with [H04L 65/65](#) in the first paragraph, as shown below.

Gateway is an inter-working entity providing some degree of adaptation between otherwise incompatible entities or networks. An entity providing pure media manipulation (e.g. multiplexing of packets, media resolution optimisation, etc.) does not normally fall within this definition of a gateway. Such functionality is normally covered by [H04L 65/60](#) - [H04L 65/65](#). This parent class is only used if the document cannot be classified in any of its dependent subclasses.

**References**

Insert: The following new **Limiting references** section and table.

***Limiting references***

*This place does not cover:*

Arrangements for connecting between networks having differing types of switching systems	<a href="#">H04L 12/66</a>
--	----------------------------

**H04L 65/1043****References*****Limiting references***

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Decomposed PSTN/ISDN-IP gateways	<a href="#">H04M 7/1255</a>
----------------------------------	-----------------------------

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## H04L 65/1053

### Definition statement

Replace: The term “class” with the term “group”, as shown below.

Entities providing IP PBX or Software-defined PBX functionality. However, the particular cases of IP PBX arrangements which may be distributed and provide effective local PBX service to users dispersed over multiple remotely located sites are covered by the following group.

### References

#### Limiting references

Delete: The following table row from the **Limiting reference** table.

PBX networks	<a href="#">H04M 7/009</a>
--------------	----------------------------

Replace: The symbol H04M 3/42314 for the following table row

Arrangements providing PBX functionality, e.g. IP PBX (circuit switched PBXs)	<a href="#">H04M 3/42314</a>
---	------------------------------

with [H04M 3/00](#), as shown below.

Arrangements providing PBX functionality, e.g. IP PBX (circuit switched PBXs)	<a href="#">H04M 3/00</a>
---	---------------------------

Insert: The following new **Informative references** section and table.

#### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

PBX networks	<a href="#">H04M 7/009</a>
--------------	----------------------------

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## H04L 65/1059

### Definition statement

Replace: The existing Definition statement text with the following text.

Functionalities of the user terminal associated with the signalling and control of the multimedia session and the handling of the media.

Insert: The following new **Relationships with other classification places** section and text.

### Relationships with other classification places

Constructional details and general features of a user terminal are normally covered by [H04M 1/00](#).

## References

### Limiting references

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Adaptation for terminals with limited resources or for terminal portability	<a href="#">H04L 67/04</a>
Terminal emulation	<a href="#">H04L 67/08</a>
Terminal profiles	<a href="#">H04L 67/303</a>
Substation equipment for use by subscribers	<a href="#">H04M 1/00</a>
Management of video client characteristics	<a href="#">H04N 21/258</a>
Management of video client characteristics	<a href="#">H04N 21/4516</a>

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## H04L 65/1066

### Definition statement

Replace: The existing Definition statement text with the following text.

All the signalling and procedures required for a multimedia session of any type (VoIP call, video call, streaming session, conference, etc.) to be prepared, set up, maintained and serviced.

### References

#### Limiting references

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Conducting a computer conference, e.g. admission, detection, selection or grouping of participants, correlating users to one or more conference session or prioritising transmission	<a href="#">H04L 12/1822</a>
Admission control/resource reservation in packet switching networks	<a href="#">H04L 47/70</a>

## H04L 65/1069

### References

#### Limiting references

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

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Computer conference organisation arrangements, e.g. handling schedules, setting up parameters needed by nodes to attend a conference, booking network resources or notifying involved parties	H04L 12/1818
Admission control or resource reservation in packet switching networks	H04L 47/70
Arrangements for peer-to-peer networking in network applications	H04L 67/104
Session management in network applications	H04L 67/14
Negotiation of communication capabilities	H04L 69/24

**H04L 65/1073****Definition statement**

Replace: The existing Definition statement text with the following paragraphs.

The procedure of a user registering in a network. The registration includes all aspects of the end user, i.e. addresses, aliases, capabilities, permissions, etc.

Re-registration, de-registration, maintaining or refreshing registrations, etc.

Insert: The following new **Relationships with other classification places** section and text.

**Relationships with other classification places**

Details of the registrar directories and the procedures for consulting these directories are covered by [H04L 61/00](#). A document describing both the registration procedure itself and the structure of the directory should be classified both in [H04L 65/1073](#) and in the appropriate [H04L 61/00](#) group.

**References****Limiting references**

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

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**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Arrangements for addressing or naming in data networks	<a href="#">H04L 61/00</a>
--	----------------------------

**H04L 65/1076**

**Definition statement**

Replace: The existing Definition statement text with the following text.

The procedure of admitting or rejecting a call or session setup request, either by the network or the destination.

Insert: The following new **Relationships with other classification places** section and text.

**Relationships with other classification places**

Security-related call admission control is normally covered by [H04L 63/00](#), with the exception of SPIT covered by [H04L65/1079](#). Also, billing-related call admission control is normally covered by [H04L 12/14](#) and [H04M 9/00](#).

**References**

**Limiting references**

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Arrangements for network security	<a href="#">H04L 63/00</a>
Arrangements for screening incoming telephone calls	<a href="#">H04M 3/436</a>

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**H04L 65/1079****References*****Limiting references***Delete: The entire **Limiting references** section and table.Insert: The following new **Informative references** section and table.***Informative references****Attention is drawn to the following places, which may be of interest for search:*

Message switching systems, e.g. electronic mail systems, with filtering and selective blocking capabilities	<a href="#">H04L 51/212</a>
---	-----------------------------

**H04L 65/1083****References*****Limiting references***Delete: The entire **Limiting references** section and table.Insert: The following new **Informative references** section and table.***Informative references****Attention is drawn to the following places, which may be of interest for search:*

Computer conferences, network arrangements for conference optimisation or adaptation	<a href="#">H04L 12/1827</a>
Reactions to resource unavailability in packet switching networks	<a href="#">H04L 47/74</a>
Reallocation or renegotiation of resources in packet switching networks	<a href="#">H04L 47/76</a>

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**Definition statement**Delete: The entire Definition statement section and text.Insert: The following new **Relationships with other classification places** section, text and table.**Relationships with other classification places**

Telephony services provided over legacy circuit switched networks are covered by [H04M 3/00](#). Documents relating to telephony services provided over VoIP networks are only covered by this entry if they relate to the VoIP signalling and protocols required for the provision of the services. Documents relating mainly to the "user experience" provided by the services, with little to no information on the VoIP signalling and protocols, are only covered by [H04M 3/00](#). The following table clarifies the distinction between the two places:

Services provided over legacy type circuit switched networks	<a href="#">H04M 3/00</a>
Services provided over VoIP packet-based networks, but the document describes mainly the "user experience" of the information services with insignificant to no details of the signalling involved in the VoIP packet-based network	<a href="#">H04M 3/00</a>
Information services provided over VoIP packet-based networks and the document describes details of the "user experience" of the information services as well as details of the signalling involved in the VoIP packet-based network	<a href="#">H04M 3/00</a> , <a href="#">H04L 65/40</a>
Services provided over VoIP packet-based networks and the document only concentrates on the details of the signalling involved in the packet-based network without any details of the "user experience"	<a href="#">H04L 65/40</a>

Note: Aspects of WEB related information services are also covered by [H04L 67/02](#) (e.g. click-to-dial from within a WEB a page).

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**References****Limiting references**Delete: The entire **Limiting references** section and table.Insert: The following new **Informative references** section and table.**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Network service management for ensuring proper service fulfilment	<a href="#">H04L 41/50</a>
Systems providing special services to telephonic subscribers	<a href="#">H04M 3/42</a>
Information services comprising voice	<a href="#">H04M 3/487</a>
Contact centre services	<a href="#">H04M 3/51</a>

**H04L 65/4015****Definition statement**Replace: The second paragraph with the following text.

Note: The addition of a participant in an existing session is not considered a parallel session, if this new participant becomes a full member of the existing session.

Insert: The following new **Relationships with other classification places** section and text.**Relationships with other classification places**

Aspects of Tele-writing, Virtual Reality and Network Gaming are also covered by [H04L 67/131](#).

**References****Limiting references**Delete: The entire **Limiting references** section and table.Insert: The following new **Informative references** section and table.

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**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Telewriting, virtual reality or network gaming	<a href="#">H04L 67/131</a>
--	-----------------------------

**H04L 65/403****References****Limiting references**

Replace: The following table row

data switching systems for computer conference	<a href="#">H04L 12/1813</a>
--	------------------------------

with the following new reference, as shown below.

Data switching systems for computer conference	<a href="#">H04L 12/18</a>
--	----------------------------

Replace: The following table row descriptions (sentence case only)

Telephonic conference systems	<a href="#">H04M 3/56</a>
Television conferencing systems	<a href="#">H04N 7/15</a>

**Special rules of classification**

Replace: The symbol H04L 65/1006 with the new symbol [H04L 65/1104](#) in the first paragraph of the **Special rules of classification** section, as shown below.

A document describing both a multiparty session as well as details of services and applications covered by other entries, should be classified in the other entries also. For example, a document describing setting up a multi party call using SIP, originally between 3 parties, the floor control being exercised by the originating participant with a 4th participant being added during the session, should be assigned the following

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groups: [H04L 65/1104](#) (SIP), [H04L 65/1069](#) (setup), [H04L 65/4038](#) (conference centrally controlled) and [H04L 65/1093](#) (adding a participant).

Delete: The third paragraph ("Note that this parent ... is suitable") entirely from the **Special rules of classification**.

## [H04L 65/4038](#)

### Definition statement

*This place covers:*

When the document explicitly describes a system/method with central floor control.

### References

#### Limiting references

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Data switching systems for conducting a computer conference, e.g. admission, detection, selection or grouping of participants	<a href="#">H04L 12/1822</a>
---	------------------------------

## [H04L 65/4061](#)

### Definition statement

*This place covers:*

Signalling involved to prepare and setup a "Push-To" half duplex one-to-one or one-to-many call. It covers all "Push-to" services like Push-to-Talk (PtT), Push-to-Video (PtV) etc. A document describing a PtT over IMS service should normally be assigned this symbol and [H04L 65/1016](#).

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## References

### Limiting references

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Push-to-talk services in wireless networks	<a href="#">H04W 4/10</a>
Connection management, e.g. connection set-up, manipulation or release for push-to-talk or push-on-call services in wireless communication networks	<a href="#">H04W 76/45</a>

## H04L 65/80

### Definition statement

Replace: The symbol H04L 67/1002 in the fifth paragraph (Note that some of these techniques ... when searching for particular techniques)  
with the new symbol [H04L 67/1001](#).

Replace: The symbol H04L 67/1002 in the bullet (Load balancing arrangements (see also [H04L 67/1002](#)) following the 12th paragraph (Content is streamed to a client using ... for an improved quality of the playback),  
with the new symbol [H04L 67/1001](#).

## References

### Limiting references

Delete: The entire **Limiting references** section and table.

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Insert: The following new **Informative references** section and table.

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Network service management, ensuring proper service fulfilment according to an agreement or contract between two parties, e.g. between an IT-provider and a customer	<a href="#">H04L 41/50</a>
Monitoring arrangements, testing arrangements, with monitoring of QoS metrics	<a href="#">H04L 43/08</a>
Traffic-type related flow control in packet switching networks, e.g. priorities or QoS	<a href="#">H04L 47/24</a>
Admission control/resource reservation in packet switching networks based on QoS or priority awareness	<a href="#">H04L 47/805</a>
Adaptation for terminals or networks with limited resources, or for terminal portability	<a href="#">H04L 67/04</a>
Network application adapted for the location of the user terminal	<a href="#">H04L 67/52</a>
Reducing the amount or size of exchanged application data	<a href="#">H04L 67/5651</a>
Arrangements for scheduling or organising the servicing of requests whereby quality of service or priority requirements are taken into account	<a href="#">H04L 67/61</a>
Monitoring of the downstream path of a video distribution network	<a href="#">H04N 21/2402</a> , <a href="#">H04N 21/44209</a>

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**H04L 67/00****References****Limiting references**

Delete: The following eight table rows from the **Limiting references** table.

lower layer network functionalities which support application layer provisions	H04L 12/00
network management protocols	H04L 41/00
routing or path finding of packets in data switching networks	H04L 45/00
distributed information systems	G06F 9/00, G06F 17/00
information retrieval	G06F 16/00
exchange systems providing special services or facilities to subscribers involving telephonic communications	H04M 3/42
network structures or processes for video distribution between server and client or between remote clients	H04N 21/00
services or facilities specially adapted for wireless communication networks	H04W 4/00

Replace: The following table row descriptions (sentence case only)

Message switching systems	H04L 51/00
Protocols for real-time multimedia communication	H04L 65/00

Insert: The following new **Informative references** section and eight new references.

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

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Lower layer network functionalities which support application layer provisions	H04L 12/00
Network management protocols	H04L 41/00
Routing or path finding of packets in data switching networks	H04L 45/00
Distributed information systems	G06F 9/00, G06F 17/00
Information retrieval	G06F 16/00
Exchange systems providing special services or facilities to subscribers involving telephonic communications	H04M 3/42
Network structures or processes for video distribution between server and client or between remote clients	H04N 21/00
Services or facilities specially adapted for wireless communication networks	H04W 4/00

**H04L 67/10**

**References**

***Limiting references***

Replace: The following description for symbol G06F 9/46 with the following.

Multiprogramming arrangements	G06F 9/46
-------------------------------	-----------

Insert: The following new reference into the **Limiting references** table.

Software deployment	G06F 8/60
---------------------	-----------

***Informative references***

Delete: The following table row from the **Informative references** table.

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Networking aspects of remote procedure calls	H04L 69/20
--	------------

Replace: The symbol H04L 67/327 for the following table row

Routing of messages based on application data	H04L 67/327
---	-------------

with H04L 67/63, as shown below.

Routing of messages based on application data	H04L 67/63
---	------------

## H04L 67/1004

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Allocation of processing resources to service a request in a distributed system, the resource being a machine, e.g. a server	G06F 9/5027
--	-------------

## H04L 67/1006

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

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**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Allocation of processing resources to service a request, considering data affinity	<a href="#">G06F 9/5033</a>
--	-----------------------------

**H04L 67/1008**

**References**

**Limiting references**

Delete: The following table row from the **Limiting references** table.

Allocation of processing resources to service a request, considering the load	<a href="#">G06F 9/505</a>
---	----------------------------

Insert: The following new reference into the **Limiting reference** table.

Monitoring of computer activity	<a href="#">G06F 11/30</a>
---------------------------------	----------------------------

Insert: The following new **Informative references** section and table.

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Allocation of processing resources to service a request, considering the load	<a href="#">G06F 9/505</a>
---	----------------------------

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**H04L 67/1021**

**References**

***Limiting references***

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Server selection based on network conditions	<a href="#">H04L 67/101</a>
--	-----------------------------

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**H04L 67/1029****References*****Limiting references***Delete: The entire **Limiting references** section and table.Insert: The following new **Informative references** section and table.***Informative references****Attention is drawn to the following places, which may be of interest for search:*

Server selection based on server parameters	<a href="#">H04L 67/1008</a>
Performance measurement for load balancing	<a href="#">G06F 11/3433</a>
Information retrieval in structured data stores	<a href="#">G06F 16/20</a>

**H04L 67/1034****References*****Limiting references***Delete: The entire **Limiting references** section and table.***Informative references***Insert: The following new references into **Informative references** table.

Network fault restoration	<a href="#">H04L 41/0654</a>
Error detection or correction of the data by redundancy in hardware	<a href="#">G06F 11/16</a>
Failing over workload from one server to another one	<a href="#">G06F 11/202</a>

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Replace: The symbol [H04L 67/28](#) for the following table row

Intermediate processing of operational support to end devices when they are unavailable	<a href="#">H04L 67/28</a>
---	----------------------------

with [H04L 67/56](#), as shown below.

Intermediate processing of operational support to end devices when they are unavailable	<a href="#">H04L 67/56</a>
---	----------------------------

Replace: The symbol [H04L 67/2861](#) for the following table row

intermediate processing providing operational support to end devices by emulation or by off-loading in the network	<a href="#">H04L 67/2861</a>
--	------------------------------

with [H04L 67/59](#), and change “intermediate” to sentence case, as shown below.

Intermediate processing providing operational support to end devices by emulation or by off-loading in the network	<a href="#">H04L 67/59</a>
--	----------------------------

## [H04L 67/1036](#)

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

#### *Informative references:*

Insert: The following new references into **Informative references** table.

Ingress point selection, Internet Service Provider [ISP] selection	<a href="#">H04L 12/5691</a>
--	------------------------------

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Replace: The symbol [H04L 61/20](#) for the following table row

Domain Name Service DNS arrangements	<a href="#">H04L 61/20</a>
--------------------------------------	----------------------------

with [H04L 61/50](#), as shown below.

Domain Name Service DNS arrangements	<a href="#">H04L 61/50</a>
--------------------------------------	----------------------------

## [H04L 67/104](#)

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

#### *Informative references*

Insert: The following new references into **Informative references** table.

Peer-to-peer connections between video game machines	<a href="#">A63F 13/34</a>
Distribution of tasks among a plurality of processors inside a multiprocessor computer	<a href="#">G06F 9/5027</a>
Information search/organisation/retrieval where the proposal relates mainly to managed objects as cognitive information units rather than as physical peer nodes (e.g. keywords based search, contents oriented indexing instead of peers oriented indexing)	<a href="#">G06F 16/00</a>
Small Scale hierarchical wireless network topologies	<a href="#">H04W 84/10</a>
Wireless Ad-hoc Networks involving group organisation only at OSI Layer 3 or lower (i.e. network routing)	<a href="#">H04W 84/18</a>
Wireless interfaces between video clients	<a href="#">H04W 92/18</a>

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Replace: The symbol [H04L 61/20](#) for the following table row

Applications for distributed directory services.	<a href="#">H04L 61/20</a>
--	----------------------------

with [H04L 61/50](#), as shown below.

Applications for distributed directory services.	<a href="#">H04L 61/50</a>
--	----------------------------

Replace: The symbol [H04L 65/1006](#) for the following table row

SIP.	<a href="#">H04L 65/1006</a>
------	------------------------------

with [H04L 65/1104](#), as shown below.

SIP.	<a href="#">H04L 65/1104</a>
------	------------------------------

Replace: The symbol [H04L 65/4069](#) for the following table row

One way streaming on demand.	<a href="#">H04L 65/4069</a>
------------------------------	------------------------------

with [H04L 65/61](#), as shown below.

One way streaming on demand.	<a href="#">H04L 65/61</a>
------------------------------	----------------------------

Replace: The symbol [H04L 67/1002](#) for the following table row

Mechanisms to access one among a plurality of peers with the same content (i.e. selection) in a peer-to-peer network.	<a href="#">H04L 67/1002</a>
---	------------------------------

with [H04L 67/1001](#), as shown below.

Mechanisms to access one among a plurality of peers with the same content (i.e. selection) in a peer-to-peer network.	<a href="#">H04L 67/1001</a>
---	------------------------------

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Replace: The symbol [H04L 67/24](#) for the following table row

Presence management.	<a href="#">H04L 67/24</a>
----------------------	----------------------------

with [H04L 67/54](#), as shown below.

Presence management.	<a href="#">H04L 67/54</a>
----------------------	----------------------------

Replace: The symbol [H04L 67/26](#) for the following table row

Push based mechanisms.	<a href="#">H04L 67/26</a>
------------------------	----------------------------

with [H04L 67/55](#), as shown below.

Push based mechanisms.	<a href="#">H04L 67/55</a>
------------------------	----------------------------

Replace: The symbol [H04L 67/28](#) for the following table row

Temporary content data storage at intermediate nodes.	<a href="#">H04L 67/28</a>
---	----------------------------

with [H04L 67/56](#), as shown below.

Temporary content data storage at intermediate nodes.	<a href="#">H04L 67/56</a>
---	----------------------------

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Replace: The symbol [H04L 67/2861](#) for the following table row

Intermediate processing of operational support to end devices when they are unavailable	<a href="#">H04L 67/2861</a>
---	------------------------------

with [H04L 61/59](#), as shown below.

Intermediate processing of operational support to end devices when they are unavailable	<a href="#">H04L 67/59</a>
---	----------------------------

Replace: The symbol [H04L 67/322](#) for the following table row

Scheduling (e.g. ordering) of responses to requests from different peers according to prioritising criteria.	<a href="#">H04L 67/322</a>
--	-----------------------------

with [H04L 67/61](#), as shown below.

Scheduling (e.g. ordering) of responses to requests from different peers according to prioritising criteria.	<a href="#">H04L 67/61</a>
--	----------------------------

Delete: All the periods at the end of the reference's description for all the table rows in the **Informative reference** table, where applicable.

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**H04L 67/1044**

**References**

***Limiting references***

Delete: The following reference from the Limiting references table.

user group management in wireless communication networks	<a href="#">H04W 4/08</a>
--	---------------------------

Insert: The following new **Informative references** section and table.

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

User group management in wireless communication networks	<a href="#">H04W 4/08</a>
--	---------------------------

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**H04L 67/1048**

**References**

***Limiting references***

Delete: The entire **Limiting references** section and table.

***Informative references***

Insert: The following new references into **Informative references** table.

Error detection or correction of the data by redundancy in operation	G06F 11/14
--	------------

Replace: The symbol [H04L 67/2861](#) for the following table row

Arrangements for providing operational support to end devices when they are unavailable	<a href="#">H04L 67/2861</a>
---	------------------------------

with [H04L 67/59](#), as shown below.

Arrangements for providing operational support to end devices when they are unavailable	<a href="#">H04L 67/59</a>
---	----------------------------

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**H04L 67/1061****Definition statement**Replace: The entire Definition statement text with the following.

Function of finding peer nodes able to provide a specific resource (thus not just for relaying purposes, which should be classified under Resource Distribution).

**References****Limiting references**Delete: The following references from the **Limiting references** table.

Topology update or discovery	H04L 45/02
File systems	G06F 16/10
in structured data stores	G06F 16/20

Replace: The symbol [H04L 67/16](#) for the following table row

Service discovery or service management	H04L 67/16
---	------------

with [H04L 67/51](#), as shown below.

Service discovery or service management	H04L 67/51
---	------------

Replace: The following reference in the Limiting reference table

for accessing one among a plurality of replicated servers	H04L 67/1002
---	--------------

with the following updated reference, as shown below.

Static access to replicated servers	H04L 67/1006
-------------------------------------	--------------

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Insert: The following new **Informative references** section and table.

### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Topology update or discovery	<a href="#">H04L 45/02</a>
File systems	<a href="#">G06F 16/10</a>
Information retrieval in structured data stores	<a href="#">G06F 16/20</a>

### **Special rules of classification**

Replace: The entire text in the Special rules of classification section with the following (two symbols have changed and removed space).

For selection mechanisms only this main entry to be given, as the selection details are meant to be classified under [H04L 67/1006](#). The node discovery mechanisms are quite specific in the context of P2P and therefore they should not be classified under [H04L 67/51](#) but with the subentries [H04L 67/1063](#) - [H04L 67/1065](#). Topology discovery for routing [H04L 45/02](#).

## **H04L 67/1074**

### **References**

Insert: The following new **Limiting references** section and table

### **References**

#### **Limiting references**

*This place does not cover:*

File transfer arrangements or protocols	<a href="#">H04L 67/06</a>
---	----------------------------

### **Informative references**

Delete: The following reference from the Informative reference table.

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file transfer	<a href="#">H04L 67/06</a>
---------------	----------------------------

Replace: The following table row descriptions (sentence case only)

Routing over an overlay routing layer	<a href="#">H04L 45/64</a>
---------------------------------------	----------------------------

## [H04L 67/1095](#)

### References

#### *Limiting references*

Delete: The **Limiting references** table and section.

#### *Informative references*

Insert: The following new references into **Informative references** table.

Mass storage redundancy by mirroring for error detection or correction of data	<a href="#">G06F 11/2056</a>
Synchronisation in information retrieval in file systems	<a href="#">G06F 16/10</a>
Synchronisation in structured data stores	<a href="#">G06F 16/27</a>

Replace: The symbol [H04L 67/2842](#) for the following table row

Caching arrangements in the network.	<a href="#">H04L 67/2842</a>
--------------------------------------	------------------------------

with [H04L 67/568](#), as shown below.

Caching arrangements in the network.	<a href="#">H04L 67/568</a>
--------------------------------------	-----------------------------

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**H04L 67/1097****References*****Limiting references***Delete: The **Limiting references** table and section.***Informative references***Insert: The following new references into **Informative references** table.

Temporary storage of data at an intermediate stage	<a href="#">H04L 67/568</a>
Dedicated interfaces to storage systems	<a href="#">G06F 3/0601</a>

Replace: The symbol [H04L 61/6045](#) for the following table row

Fibre Channel identifiers	<a href="#">H04L 61/6045</a>
---------------------------	------------------------------

with [H04L 2101/645](#), as shown below.

Fibre Channel identifiers	<a href="#">H04L 2101/645</a>
---------------------------	-------------------------------

**H04L 67/125****References*****Limiting references***Delete: The **Limiting references** table and section.Insert: The following new **Informative references** section and table.***Informative references****Attention is drawn to the following places, which may be of interest for search:*

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Device control and monitoring using web-based technology	<a href="#">H04L 67/025</a>
Network management of network elements	<a href="#">H04L 41/00</a>
Network management of network elements	<a href="#">H04L 67/025</a>

**H04L 67/14****Relationships with other classification places**

Replace: The existing paragraph with the following new text (changed symbols at the end of the paragraph).

In general, this group does not cover sessions at OSI layers 2-4, e.g. fixed or wireless data network access, packet switching or routing, mobile IP provisions, wireless connections, telephonic connections. These are classified in [H04L 12/28](#), [H04L 12/56](#), [H04L 12/46](#), [H04W](#), [H04L 69/163](#) and [H04L 69/326](#).

**References****Limiting references**

Delete: The following references from the Limiting references table.

Negotiation of communication capabilities	<a href="#">H04L 69/24</a>
Intertask communication in multiprogramming arrangements for program control	<a href="#">G06F 9/54</a>
Session management for telephonic communication and services	<a href="#">H04M 7/00</a>
Connection management in wireless networks, e.g. connection set-up, manipulation or release	<a href="#">H04W 76/00</a>

Replace: The following reference in the Limiting reference table

Real-time session management for multimedia connections	<a href="#">H04L 65/00</a>
---	----------------------------

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with the following updated reference, as shown below.

Session management for real-time applications in data packet communications networks	H04L 65/1066
--	--------------

**References out of a residual place**

Delete: The entire **References out of a residual place** table and section.

**Informative references**

Insert: The following new references into **Informative references** table.

Intertask communication in multiprogramming arrangements for program control	G06F 9/54
Data switching network	H04L 12/00
Arrangements and protocols for real-time communications	H04L 65/00
Negotiation of communication capabilities	H04L 69/24
Session management for telephonic communication and services	H04M 7/00
Connection management in wireless networks, e.g. connection set-up, manipulation or release	H04W 76/00
Services or facilities specially adapted for wireless communication networks	H04W

Replace: The symbol [H04L 65/1006](#) for the following table row

Session Initiation Protocol	H04L 65/1006
-----------------------------	--------------

with [H04L 65/1104](#), as shown below.

Session Initiation Protocol	H04L 65/1104
-----------------------------	--------------

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Replace: The symbol [H04L 67/1002](#) for the following table row

Access to replicated servers, e.g. loadbalancing	<a href="#">H04L 67/1002</a>
--	------------------------------

with [H04L 67/1001](#), as shown below.

Access to replicated servers, e.g. loadbalancing	<a href="#">H04L 67/1001</a>
--	------------------------------

Replace: The symbol [H04L 67/26](#) for the following table row

Push Services	<a href="#">H04L 67/26</a>
---------------	----------------------------

with [H04L 67/55](#), as shown below.

Push Services	<a href="#">H04L 67/55</a>
---------------	----------------------------

### Special rules of classification

Replace: The following existing bullets.

- Negotiation of communication capabilities: [H04L 69/24](#)
- Services running on top of user sessions, service discovery: [H04L 67/16](#)
- Location based services in general: [H04L 67/18](#)
- Presence data management: [H04L 67/24](#)
- Push Services: [H04L 67/26](#)

with the following new bullets (symbol changes only).

- Negotiation of communication capabilities: [H04L 69/24](#)
- Services running on top of user sessions, service discovery: [H04L 67/51](#)

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- Location based services in general: [H04L 67/52](#)
- Presence data management: [H04L 67/54](#)
- Push Services: [H04L 67/55](#)

## H04L 67/141

### References

#### *Limiting references*

Delete: The following references from the Limiting references table.

Setup in session control in real-time multimedia communications	<a href="#">H04L 65/1069</a>
---	------------------------------

Insert: The following references into the Limiting references table.

Admission control or resource allocation in data switching networks	<a href="#">H04L 47/70</a>
---	----------------------------

Insert: The following new **Informative references** section and table.

#### ***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Setup in session control in real-time multimedia communications	<a href="#">H04L 65/1069</a>
---	------------------------------

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**H04L 67/142****Definition statement**

Replace: The following existing text in the Definition statement with the following.

Arrangements for managing the state of a session in stateless protocols, e.g. HTTP, by using cookies or dynamic URLs.

**References****Limiting references**

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

In-session procedures in real-time multimedia communications	<a href="#">H04L 65/1083</a>
--	------------------------------

**H04L 67/146****References****Limiting references**

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

ID based key exchange	<a href="#">H04L 9/08</a>
Verifying the identity or authority of a user or a system, ID based authentication	<a href="#">H04L 9/32</a>
Assigning addresses to a networking function	<a href="#">H04L 2101/60</a>
IP multimedia subsystem	<a href="#">H04L 65/1016</a>

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## H04L 67/148

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

In-session procedures in real-time communications	<a href="#">H04L 65/1083</a>
Control or signalling for completing the hand-off in wireless networks	<a href="#">H04W 36/0005</a>

## H04L 67/2866

### Definition statement

Replace: All the existing bullets with the following six new bullets.

- Implementation details of a single intermediate entity;
- Pairs of interprocessing entities at each side of the network, e.g. split proxies;
- Distributed intermediate devices, i.e. intermediate device interaction with other intermediate devices on the same level;
- Hierarchically arranged intermediate devices, e.g. hierarchical caching;
- Where the intermediate processing is functionally located closer to the data consumer application, e.g. in same machine, in same home or in same subnetwork;

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- Where the intermediate processing is functionally located closer to the data provider application, e.g. reverse proxies; in same machine, in same cluster or subnetwork.

**H04L 67/34****References*****Limiting references***

Delete: The following references from the Limiting references table.

configuration management of network or network elements	<a href="#">H04L 41/08</a>
programme loading or initiating	<a href="#">G06F 9/445</a>

Replace: The following table row descriptions (sentence case only)

Remote booting	<a href="#">G06F 9/4416</a>
----------------	-----------------------------

**H04L 69/00****References*****Limiting references***

Delete: The following references from the Limiting references table.

Data switching networks	<a href="#">H04L 12/00</a>
Broadcast or multicast	<a href="#">H04L 12/18</a>
Network topologies, i.e. networks characterized by the path configuration, Media Access Control (MAC)	<a href="#">H04L 12/28</a>
Hybrid switching systems	<a href="#">H04L 12/64</a>
Gateways	<a href="#">H04L 12/66</a>

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Network management	H04L 41/00
Network monitoring or testing	H04L 41/06
Routing of packets	H04L 45/00
Flow control	H04L 47/10
Packet switches and switching fabrics	H04L 49/00
Intermediate storing or scheduling	H04L 49/90
Message switching systems, e.g. email	H04L 51/00
Transmission systems	H04B

Insert: The following new reference into the **Limiting references** table.

Network security protocols	H04L 9/40
----------------------------	-----------

Insert: The following new **Informative references** section and table.

***Informative references***

*Attention is drawn to the following places, which may be of interest for search:*

Data switching networks	H04L 12/00
Broadcast or multicast	H04L 12/18
Network topologies, i.e. networks characterized by the path configuration, Media Access Control [MAC]	H04L 12/28
Hybrid switching systems	H04L 12/64
Gateways	H04L 12/66
Network management	H04L 41/00
Network monitoring or testing	H04L 41/06
Routing of packets	H04L 45/00
Flow control	H04L 47/10
Packet switches and switching fabrics	H04L 49/00
Intermediate storing or scheduling	H04L 49/90

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Message switching systems, e.g. email	H04L 51/00
Transmission systems	H04B

**H04L 69/03**

**References**

***Limiting references***

Delete: The following reference from the Limiting references table.

specification techniques	G06F 8/10
--------------------------	-----------

Insert: A closing parenthesis after the term “testing” in the following table row description in the Limiting reference table.

Protocol definition or specification (protocol conformance testing)	H04L 1/244
---	------------

***Informative references***

Delete: The following reference from the Informative references table.

Protocol conformance testing; generators of test sequences	H04L 1/244
--	------------

Replace: The term “analyzers” in the following reference

Protocol analyzers	H04L 43/18
--------------------	------------

with “analysers”.

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**H04L 69/04****References*****Limiting references***Delete: The entire **Limiting references** section and table.***Informative references***Insert: The following new references into the **Informative references** table.

Data compression algorithms	<a href="#">H03M 7/30</a>
Optimizing, e.g. header compression, information sizing in wireless communication networks	<a href="#">H04W 28/06</a>

Replace: The symbol [H04L 67/2828](#) for the following table row

Reduction of the amount or size of exchanged application data at an intermediate network processing stage	<a href="#">H04L 67/2828</a>
---	------------------------------

with [H04L 67/5651](#), as shown below.

Reduction of the amount or size of exchanged application data at an intermediate network processing stage	<a href="#">H04L 67/5651</a>
---	------------------------------

**H04L 69/08****References*****Limiting references***Delete: The following reference from the Limiting references table.

Network management protocols conversion	<a href="#">H04L 41/0226</a>
---	------------------------------

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***Informative references***Insert: The following new reference into the **Informative references** table.

Network management protocols conversion	<a href="#">H04L 41/0226</a>
---	------------------------------

**H04L 69/16****References*****Limiting references***Delete: The entire **Limiting references** section and table.***Informative references***Delete: The following reference from the **Informative references** table.

Transport layer addressing aspects	<a href="#">H04L 61/6063</a>
------------------------------------	------------------------------

Insert: The following new references into the **Informative references** table.

Flow control in data switching networks in general	<a href="#">H04L 47/10</a>
Transport layer addressing aspects	<a href="#">H04L 2101/663</a>
Special adaptations of TCP, UDP or IP for interworking of IP based networks with other networks	<a href="#">H04L 69/169</a>
Network layer protocol adaptations for supporting mobility, e.g. mobile IP	<a href="#">H04W 80/04</a>

**H04L 69/161****Definition statement**Replace: The following existing text in the Definition statement with the following.

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Arrangements to implement the TCP, UDP or IP protocols at network nodes (mainly at end terminals) and proposed modifications of the TCP, UDP or IP protocol headers to enhance or improve the protocol functionalities.

## References

### *Limiting references*

Delete: The entire **Limiting references** section and table.

### *Informative references*

Insert: The following new reference into the **Informative references** table.

Specification of modified or new header fields protocols engines in general	<a href="#">H04L 2101/686</a>
---	-------------------------------

## H04L 69/162

## References

### *Limiting references*

Delete: The following reference from the **Limiting references** table.

Application session management for sessions established over TCP/UDP sockets	<a href="#">H04L 67/14</a>
--	----------------------------

Insert: The following new **Informative references** section and table.

### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Application session management for sessions established over TCP/UDP sockets	<a href="#">H04L 67/14</a>
--	----------------------------

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## H04L 69/164

### References

#### *Limiting references*

Delete: The entire **Limiting references** section and table.

Insert: The following new **Informative references** section and table.

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

Combined or selective use of TCP and UDP	<a href="#">H04L 69/165</a>
--	-----------------------------

## H04L 69/167

### References

#### *Limiting references*

Replace: The following reference in the Limiting reference table

Address translation between IPv4 and IPv6	<a href="#">H04L 61/251</a>
---	-----------------------------

with the following updated reference, as shown below.

Translation of internet protocol [IP] address	<a href="#">H04L 61/2503</a>
---	------------------------------

Delete: The following reference from the **Limiting references** table.

Involvement of different protocol versions in wireless network layer protocols, e.g. MIPv4 and MIPv6	<a href="#">H04W 80/045</a>
--	-----------------------------

Insert: The following new **Informative references** section and table.

#### *Informative references*

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*Attention is drawn to the following places, which may be of interest for search:*

Involvement of different protocol versions in wireless network layer protocols, e.g. MIPv4 and MIPv6	<a href="#">H04W 80/045</a>
--	-----------------------------

## Synonyms and Keywords

Insert: The following preamble for the following table.

*In patent documents the following abbreviations are often used:*

IPng	alternative designation for IPv6
------	----------------------------------

## H04L 69/168

### Definition statement

Delete: The following text and parenthesis from the paragraph in the Definition statement.

(e.g. EP0989711)

## References

### Limiting references

Delete: The entire **Limiting references** section and table.

### Informative references

Insert: The following new references into the **Informative references** table.

IP fragmentation and TCP segmentation	<a href="#">H04L 69/166</a>
IP over ATM	<a href="#">H04Q 11/0478</a>
Special adaptation of TCP protocol for wireless media	<a href="#">H04W 80/06</a>

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## H04L 69/169

### References

Insert: The following new **Limiting references** section and table.

#### **Limiting references**

*This place does not cover:*

Protocols for interworking , protocol conversion	<a href="#">H04L 69/08</a>
--	----------------------------

#### **Informative references**

Delete: The entire **Informative references** section and table.

## H04L 69/18

### References

#### **Informative references**

Insert: The following new reference into the **Informative references** table.

Multilayer or multiprotocol switches	<a href="#">H04L 49/602</a>
--------------------------------------	-----------------------------

## H04L 69/22

### References

#### **Limiting references**

Delete: The entire **Limiting references** section and table.

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**H04L 69/26****References**Insert: The following new **Limiting references** section and table.***Limiting references****This place does not cover:*

Network applications for proprietary or special purpose networking environments	<a href="#">H04L 67/12</a>
---	----------------------------

***Informative references***Delete: The entire **Informative references** section and table.**H04L 69/325****References*****Limiting references***Delete: The following reference from the **Limiting references** table.

Packet switching systems, packet routing	<a href="#">H04L12/56</a>
--	---------------------------

Insert: The following new reference into the **Limiting references** table.

Transmission Control Protocol/Internet Protocol, TCP/IP	<a href="#">H04L 69/16</a>
---	----------------------------

***Informative references***Insert: The following new reference into the **Informative references** table.

Packet switching systems, packet routing	<a href="#">H04L 12/56</a>
--	----------------------------

Delete: The following reference from the **Informative references** table.

Transmission Control Protocol/Internet Protocol, TCP/IP	<a href="#">H04L 69/16</a>
---	----------------------------

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**H04L 69/326****References**

Insert: The following new **Limiting references** section and table.

***Limiting references***

*This place does not cover:*

Transmission Control Protocol/Internet Protocol, TCP/IP	H04L 69/16
---	------------

***Informative references***

Replace: The symbol H04L 65/608 for the following table row

Streaming protocols, e.g. RTP	H04L 65/608
-------------------------------	-------------

with H04L 65/65, as shown below.

Streaming protocols, e.g. RTP	H04L 65/65
-------------------------------	------------

Delete: The following reference from the **Informative references** table.

Transmission Control Protocol/Internet Protocol, TCP/IP	H04L 69/16
---	------------

**H04L 69/328****References*****Limiting references***

Delete: The entire **Limiting references** section and table.

***Informative references***

Insert: The following new reference into the **Informative references** table.

Graphical user interface	G06F 3/048
--------------------------	------------

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**H04L 69/329****References****Limiting references**Delete: The entire **Limiting references** section and table.Insert: The following new **Informative references** section and table.**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Network arrangements or network communication protocols for networked applications	<a href="#">H04L 67/00</a>
Data processing systems and methods specially adapted for administrative, commercial, financial or managerial purposes	<a href="#">G06Q</a>

**H04L 69/40****References****Limiting references**Delete: The following reference from the **Limiting references** table.

Route fault recovery in network routing	<a href="#">H04L 45/28</a>
Fault recovery in packet switches	<a href="#">H04L 49/557</a>

**Informative references**Insert: The following new references into the **Informative references** table.

Route fault recovery in network routing	<a href="#">H04L 45/28</a>
Fault recovery in packet switches	<a href="#">H04L 49/557</a>

Replace: The symbol H04L 67/2861 for the following table row

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Intermediate processing of operational support to end device when they are unavailable	H04L 67/2861
--	--------------

with [H04L 67/59](#), as shown below.

Intermediate processing of operational support to end device when they are unavailable	<a href="#">H04L 67/59</a>
--	----------------------------

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2. B. DEFINITIONS QUICK FIX

Symbol	Location of change (e.g., section title)	Existing reference symbol or text	Action; New symbol; New text
H04L	Limiting references	Coding or ciphering apparatus for cryptographic or other purposes involving the need for secrecy G09C	<u>Delete:</u> The following row from the Limiting references table:  Coding or ciphering apparatus for cryptographic or other purposes involving the need for secrecy G09C
H04L	Informative references		<u>Insert:</u> The following new row into the Informative references table:  Coding or ciphering apparatus for cryptographic or other purposes involving the need for secrecy G09C
H04L	Definition statement	<ul style="list-style-type: none"> <li>other arrangements, apparatus or systems, see definition for group H04L29/00.</li> </ul> <p>network architectures or network communication protocols for network security H04L63/00</p>	<u>Replace:</u> The last bullet point of the fourth paragraph and the fifth paragraph of text with the following three bullet points. <ul style="list-style-type: none"> <li>network architectures or network communication protocols for network security, see definition for group H04L63/00</li> <li>real time communication protocols in data switching networks, see definition for group H04L 65/00;</li> <li>network protocols for data switching network services, see definition for group H04L67/00</li> </ul>
H04L 29/00	Definition		Delete the entire definition
H04L 41/0206	Definition		Delete the entire definition
H04L 41/0631	Informative references	H04L41/5035	H04L 43/091
H04L 41/5035	Definition		Delete the entire definition
H04L 41/5038	Definition		Delete the entire definition
H04L 65/1003	Definition		Delete the entire definition
H04L 65/1006	Definition		Delete the entire definition
H04L 65/1009	Definition		Delete the entire definition
H04L 65/105	Definition		Delete the entire definition
H04L 65/1063	Definition statement	H04L 65/4092	H04L 65/613
H04L 65/4007	Definition		Delete the entire definition
H04L 65/4023	Definition		Delete the entire definition
H04L 65/4069	Definition		Delete the entire definition
H04L 65/4076	Definition		Delete the entire definition

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H04L 65/4084	Definition		Delete the entire definition
H04L 65/4092	Definition		Delete the entire definition
H04L 65/601	Definition		Delete the entire definition
H04L 65/602	Definition		Delete the entire definition
H04L 65/604	Definition		Delete the entire definition
H04L 65/605	Definition		Delete the entire definition
H04L 65/607	Definition		Delete the entire definition
H04L 65/608	Definition		Delete the entire definition
H04L 67/1002	Definition		Delete the entire definition
H04L 67/1068	Special rules	H04L 67/1002	H04L 67/1001
H04L 67/12	Informative references	H04L 67/18	H04L 67/52
H04L 67/16	Definition		Delete the entire definition
H04L 67/18	Definition		Delete the entire definition
H04L 67/20	Definition		Delete the entire definition
H04L 67/22	Definition		Delete the entire definition
H04L 67/24	Definition		Delete the entire definition
H04L 67/28	Definition		Delete the entire definition
H04L 67/2804	Definition		Delete the entire definition
H04L 67/2809	Definition		Delete the entire definition
H04L 67/2814	Definition		Delete the entire definition
H04L 67/2819	Definition		Delete the entire definition
H04L 67/2823	Definition		Delete the entire definition
H04L 67/2828	Definition		Delete the entire definition
H04L 67/2833	Definition		Delete the entire definition
H04L 67/2838	Definition		Delete the entire definition
H04L 67/2842	Definition		Delete the entire definition
H04L 67/2861	Definition		Delete the entire definition
H04L 67/36	Definition		Delete the entire definition
H04L 67/38	Definition		Delete the entire definition
H04L 69/24	Informative references	H04L65/1003	H04L 65/1101
H04L 69/24	Informative references	H04L67/16	H04L 67/51
H04L 69/327	Informative references	H04L65/1006	H04L 65/1104

**Notes:**

Use this Definitions Quick Fix (DQF) table to:

- Delete an entire definition
- Delete an entire section
- Change a reference symbol
- Delete a reference symbol
- Delete text in a References section
- Correct one error in spelling, article use, or verb tense

Otherwise, use the standard template.

*Reminder: Never delete F symbol definitions.*

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3. REVISION CONCORDANCE LIST (RCL)

<b>Type*</b>	<b>From CPC Symbol (existing)</b>	<b>To CPC Symbol(s)</b>
Q	H04L 9/40	H04L 9/40, H04L 61/09, H04L 63/00, H04L 65/60, H04L 65/61, H04L 65/611, H04L 65/612, H04L 65/613, H04L 65/65, H04L 65/70, H04L 65/75, H04L 65/752, H04L 65/756, H04L 67/01, H04L 67/1001, H04L 67/10015, H04L 67/131, H04L 67/133, H04L 67/1396, H04L 67/50
D	H04L 29/00	<Administrative transfer to H04L 69/00>
D	H04L 29/02	<Administrative transfer to H04L 65/00>
D	H04L 29/04	<Administrative transfer to H04L 69/14>
D	H04L 29/06	<Administrative transfer to H04L 9/40>
D	H04L 29/06006	<Administrative transfer to H04L 69/02>
D	H04L 29/06013	<Administrative transfer to H04L 69/03>
D	H04L 29/0602	<Administrative transfer to H04L 67/00>
D	H04L 29/06027	<Administrative transfer to H04L 65/1101>
D	H04L 29/06034	<Administrative transfer to H04L 67/131>
D	H04L 29/0604	<Administrative transfer to H04L 69/04>
D	H04L 29/06047	<Administrative transfer to H04L 67/00>
D	H04L 2029/06054	<Administrative transfer to H04L 67/10015>
D	H04L 29/06061	<Administrative transfer to H04L 69/06>
D	H04L 29/06068	<Administrative transfer to H04L 69/08>
D	H04L 29/06074	<Administrative transfer to H04L 69/10>
D	H04L 29/06081	<Administrative transfer to H04L 69/12>
D	H04L 29/06088	<Administrative transfer to H04L 69/14>
D	H04L 29/06095	<Administrative transfer to H04L 69/16>
D	H04L 29/06102	<Administrative transfer to H04L 69/161>
D	H04L 29/06108	<Administrative transfer to H04L 69/162>
D	H04L 29/06115	<Administrative transfer to H04L 69/163>
D	H04L 29/06122	<Administrative transfer to H04L 69/164>
D	H04L 29/06129	<Administrative transfer to H04L 69/165>
D	H04L 29/06136	<Administrative transfer to H04L 69/166>
D	H04L 29/06142	<Administrative transfer to H04L 69/167>
D	H04L 29/06149	<Administrative transfer to H04L 69/168>
D	H04L 29/06156	<Administrative transfer to H04L 69/169>
D	H04L 29/06163	<Administrative transfer to H04L 69/18>
D	H04L 29/0617	<Administrative transfer to H04L 67/133>
D	H04L 29/06176	<Administrative transfer to H04L 65/00>
D	H04L 29/06183	<Administrative transfer to H04L 65/1101>
D	H04L 29/0619	<Administrative transfer to H04L 65/1101>
D	H04L 29/06197	<Administrative transfer to H04L 65/1104>
D	H04L 29/06204	<Administrative transfer to H04L 65/1106>
D	H04L 29/0621	<Administrative transfer to H04L 65/1013>
D	H04L 29/06217	<Administrative transfer to H04L 65/1016>
D	H04L 29/06224	<Administrative transfer to H04L 65/102>
D	H04L 29/06231	<Administrative transfer to H04L 65/1023>

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<b>Type*</b>	<b><u>From CPC Symbol (existing)</u></b>	<b><u>To CPC Symbol(s)</u></b>
D	H04L 29/06238	<Administrative transfer to H04L 65/1026>
D	H04L 29/06244	<Administrative transfer to H04L 65/103>
D	H04L 29/06251	<Administrative transfer to H04L 65/1033>
D	H04L 29/06258	<Administrative transfer to H04L 65/1036>
D	H04L 29/06265	<Administrative transfer to H04L 65/104>
D	H04L 29/06272	<Administrative transfer to H04L 65/1043>
D	H04L 29/06278	<Administrative transfer to H04L 65/1046>
D	H04L 29/06285	<Administrative transfer to H04L 65/1045>
D	H04L 29/06292	<Administrative transfer to H04L 65/1053>
D	H04L 29/06299	<Administrative transfer to H04L 65/1056>
D	H04L 29/06306	<Administrative transfer to H04L 65/1059>
D	H04L 29/06312	<Administrative transfer to H04L 65/1063>
D	H04L 29/06319	<Administrative transfer to H04L 65/1066>
D	H04L 29/06326	<Administrative transfer to H04L 65/1069>
D	H04L 29/06333	<Administrative transfer to H04L 65/1073>
D	H04L 29/0634	<Administrative transfer to H04L 65/1076>
D	H04L 29/06346	<Administrative transfer to H04L 65/1079>
D	H04L 29/06353	<Administrative transfer to H04L 65/1083>
D	H04L 29/0636	<Administrative transfer to H04L 65/1086>
D	H04L 29/06367	<Administrative transfer to H04L 65/1089>
D	H04L 29/06374	<Administrative transfer to H04L 65/1093>
D	H04L 29/0638	<Administrative transfer to H04L 65/1096>
D	H04L 29/06387	<Administrative transfer to H04L 65/40>
D	H04L 29/06394	<Administrative transfer to H04L 65/401>
D	H04L 29/06401	<Administrative transfer to H04L 65/4015>
D	H04L 29/06408	<Administrative transfer to H04L 65/4025>
D	H04L 29/06414	<Administrative transfer to H04L 65/403>
D	H04L 29/06421	<Administrative transfer to H04L 65/4038>
D	H04L 29/06428	<Administrative transfer to H04L 65/4046>
D	H04L 29/06435	<Administrative transfer to H04L 65/4053>
D	H04L 29/06442	<Administrative transfer to H04L 65/4061>
D	H04L 29/06448	<Administrative transfer to H04L 65/61>
D	H04L 29/06455	<Administrative transfer to H04L 65/611>
D	H04L 29/06462	<Administrative transfer to H04L 65/612>
D	H04L 29/06469	<Administrative transfer to H04L 65/613>
D	H04L 29/06476	<Administrative transfer to H04L 65/60>
D	H04L 29/06482	<Administrative transfer to H04L 65/75>
D	H04L 29/06489	<Administrative transfer to H04L 65/762>
D	H04L 29/06496	<Administrative transfer to H04L 65/764>
D	H04L 29/06503	<Administrative transfer to H04L 65/765>
D	H04L 29/0651	<Administrative transfer to H04L 65/70>
D	H04L 29/06517	<Administrative transfer to H04L 65/65>
D	H04L 29/06523	<Administrative transfer to H04L 65/80>
D	H04L 29/0653	<Administrative transfer to H04L 69/22>
D	H04L 29/06537	<Administrative transfer to H04L 69/24>
D	H04L 29/06544	<Administrative transfer to H04L 69/26>
D	H04L 29/06551	<Administrative transfer to H04L 63/00>
D	H04L 29/06557	<Administrative transfer to H04L 63/02>
D	H04L 29/06564	<Administrative transfer to H04L 63/0209>

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<b>Type*</b>	<b>From CPC Symbol (existing)</b>	<b>To CPC Symbol(s)</b>
D	H04L 29/06571	<Administrative transfer to H04L 63/0218>
D	H04L 29/06578	<Administrative transfer to H04L 63/0227>
D	H04L 29/06585	<Administrative transfer to H04L 63/0236>
D	H04L 29/06591	<Administrative transfer to H04L 63/0245>
D	H04L 29/06598	<Administrative transfer to H04L 63/0254>
D	H04L 29/06605	<Administrative transfer to H04L 63/0263>
D	H04L 29/06612	<Administrative transfer to H04L 63/0272>
D	H04L 29/06619	<Administrative transfer to H04L 63/0281>
D	H04L 29/06625	<Administrative transfer to H04L 63/029>
D	H04L 29/06632	<Administrative transfer to H04L 63/04>
D	H04L 29/06639	<Administrative transfer to H04L 63/0407>
D	H04L 29/06646	<Administrative transfer to H04L 63/0414>
D	H04L 29/06653	<Administrative transfer to H04L 63/0421>
D	H04L 29/06659	<Administrative transfer to H04L 63/0428>
D	H04L 29/06666	<Administrative transfer to H04L 63/0435>
D	H04L 29/06673	<Administrative transfer to H04L 63/0442>
D	H04L 29/0668	<Administrative transfer to H04L 63/045>
D	H04L 29/06687	<Administrative transfer to H04L 63/0457>
D	H04L 29/06693	<Administrative transfer to H04L 63/0464>
D	H04L 29/067	<Administrative transfer to H04L 63/0485>
D	H04L 29/06707	<Administrative transfer to H04L 63/06>
D	H04L 29/06714	<Administrative transfer to H04L 63/061>
D	H04L 29/06721	<Administrative transfer to H04L 63/062>
D	H04L 29/06727	<Administrative transfer to H04L 63/064>
D	H04L 29/06734	<Administrative transfer to H04L 63/065>
D	H04L 29/06741	<Administrative transfer to H04L 63/067>
D	H04L 29/06748	<Administrative transfer to H04L 63/068>
D	H04L 29/06755	<Administrative transfer to H04L 63/08>
D	H04L 29/06761	<Administrative transfer to H04L 63/0807>
D	H04L 29/06768	<Administrative transfer to H04L 63/0815>
D	H04L 29/06775	<Administrative transfer to H04L 63/0823>
D	H04L 29/06782	<Administrative transfer to H04L 63/083>
D	H04L 29/06789	<Administrative transfer to H04L 63/0838>
D	H04L 29/06795	<Administrative transfer to H04L 63/0846>
D	H04L 29/06802	<Administrative transfer to H04L 63/0853>
D	H04L 29/06809	<Administrative transfer to H04L 63/0861>
D	H04L 29/06816	<Administrative transfer to H04L 63/0869>
D	H04L 29/06823	<Administrative transfer to H04L 63/10>
D	H04L 29/06829	<Administrative transfer to H04L 63/101>
D	H04L 29/06836	<Administrative transfer to H04L 63/102>
D	H04L 29/06843	<Administrative transfer to H04L 63/104>
D	H04L 29/0685	<Administrative transfer to H04L 63/105>
D	H04L 29/06857	<Administrative transfer to H04L 63/12>
D	H04L 29/06863	<Administrative transfer to H04L 63/123>
D	H04L 29/0687	<Administrative transfer to H04L 63/126>
D	H04L 29/06877	<Administrative transfer to H04L 63/14>
D	H04L 29/06884	<Administrative transfer to H04L 63/1408>
D	H04L 29/06891	<Administrative transfer to H04L 63/1416>
D	H04L 29/06897	<Administrative transfer to H04L 63/1425>

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<b>Type*</b>	<b>From CPC Symbol (existing)</b>	<b>To CPC Symbol(s)</b>
D	H04L 29/06904	<Administrative transfer to H04L 63/1433>
D	H04L 29/06911	<Administrative transfer to H04L 63/1441>
D	H04L 29/06918	<Administrative transfer to H04L 63/145>
D	H04L 29/06925	<Administrative transfer to H04L 63/1458>
D	H04L 29/06931	<Administrative transfer to H04L 63/1466>
D	H04L 29/06938	<Administrative transfer to H04L 63/1475>
D	H04L 29/06945	<Administrative transfer to H04L 63/16>
D	H04L 29/06952	<Administrative transfer to H04L 63/162>
D	H04L 29/06959	<Administrative transfer to H04L 63/164>
D	H04L 29/06965	<Administrative transfer to H04L 63/166>
D	H04L 29/06972	<Administrative transfer to H04L 63/168>
D	H04L 29/06979	<Administrative transfer to H04L 63/18>
D	H04L 29/06986	<Administrative transfer to H04L 63/20>
D	H04L 29/06993	<Administrative transfer to H04L 69/28>
D	H04L 29/08	<Administrative transfer to H04L 65/40>
D	H04L 29/08009	<Administrative transfer to H04L 69/32>
D	H04L 29/08018	<Administrative transfer to H04L 69/323>
D	H04L 29/08027	<Administrative transfer to H04L 69/324>
D	H04L 29/08036	<Administrative transfer to H04L 69/325>
D	H04L 29/08045	<Administrative transfer to H04L 69/326>
D	H04L 29/08054	<Administrative transfer to H04L 69/327>
D	H04L 29/08063	<Administrative transfer to H04L 69/328>
D	H04L 29/08072	<Administrative transfer to H04L 69/329>
D	H04L 29/08081	<Administrative transfer to H04L 67/00>
D	H04L 29/0809	<Administrative transfer to H04L 67/02>
D	H04L 29/08099	<Administrative transfer to H04L 67/025>
D	H04L 29/08108	<Administrative transfer to H04L 67/04>
D	H04L 29/08117	<Administrative transfer to H04L 67/06>
D	H04L 29/08126	<Administrative transfer to H04L 67/08>
D	H04L 29/08135	<Administrative transfer to H04L 67/10>
D	H04L 29/08144	<Administrative transfer to H04L 67/1001>
D	H04L 29/08153	<Administrative transfer to H04L 67/1004>
D	H04L 29/08162	<Administrative transfer to H04L 67/1006>
D	H04L 29/08171	<Administrative transfer to H04L 67/1008>
D	H04L 29/0818	<Administrative transfer to H04L 67/101>
D	H04L 29/08189	<Administrative transfer to H04L 67/1012>
D	H04L 29/08198	<Administrative transfer to H04L 67/1014>
D	H04L 29/08207	<Administrative transfer to H04L 67/1017>
D	H04L 29/08216	<Administrative transfer to H04L 67/1019>
D	H04L 29/08225	<Administrative transfer to H04L 67/1021>
D	H04L 29/08234	<Administrative transfer to H04L 67/1023>
D	H04L 29/08243	<Administrative transfer to H04L 67/1025>
D	H04L 29/08252	<Administrative transfer to H04L 67/1027>
D	H04L 29/08261	<Administrative transfer to H04L 67/1029>
D	H04L 29/0827	<Administrative transfer to H04L 67/1031>
D	H04L 29/08279	<Administrative transfer to H04L 67/1034>
D	H04L 29/08288	<Administrative transfer to H04L 67/1036>
D	H04L 29/08297	<Administrative transfer to H04L 67/1038>
D	H04L 29/08306	<Administrative transfer to H04L 67/104>

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<b>Type*</b>	<b>From CPC Symbol (existing)</b>	<b>To CPC Symbol(s)</b>
D	H04L 29/08315	<Administrative transfer to H04L 67/1042>
D	H04L 29/08324	<Administrative transfer to H04L 67/1044>
D	H04L 29/08333	<Administrative transfer to H04L 67/1046>
D	H04L 29/08342	<Administrative transfer to H04L 67/1048>
D	H04L 29/08351	<Administrative transfer to H04L 67/1051>
D	H04L 29/0836	<Administrative transfer to H04L 67/1053>
D	H04L 29/08369	<Administrative transfer to H04L 67/1055>
D	H04L 29/08378	<Administrative transfer to H04L 67/1057>
D	H04L 29/08387	<Administrative transfer to H04L 67/1059>
D	H04L 29/08396	<Administrative transfer to H04L 67/1061>
D	H04L 29/08405	<Administrative transfer to H04L 67/1063>
D	H04L 29/08414	<Administrative transfer to H04L 67/1065>
D	H04L 29/08423	<Administrative transfer to H04L 67/1068>
D	H04L 29/08432	<Administrative transfer to H04L 67/107>
D	H04L 29/08441	<Administrative transfer to H04L 67/1072>
D	H04L 29/0845	<Administrative transfer to H04L 67/1074>
D	H04L 29/08459	<Administrative transfer to H04L 67/1076>
D	H04L 29/08468	<Administrative transfer to H04L 67/1078>
D	H04L 29/08477	<Administrative transfer to H04L 67/108>
D	H04L 29/08486	<Administrative transfer to H04L 67/1082>
D	H04L 29/08495	<Administrative transfer to H04L 67/1085>
D	H04L 29/08504	<Administrative transfer to H04L 67/1087>
D	H04L 29/08513	<Administrative transfer to H04L 67/1089>
D	H04L 29/08522	<Administrative transfer to H04L 67/1091>
D	H04L 29/08531	<Administrative transfer to H04L 67/1093>
D	H04L 29/0854	<Administrative transfer to H04L 67/1095>
D	H04L 29/08549	<Administrative transfer to H04L 67/1097>
D	H04L 29/08558	<Administrative transfer to H04L 67/12>
D	H04L 29/08567	<Administrative transfer to H04L 67/125>
D	H04L 29/08576	<Administrative transfer to H04L 67/14>
D	H04L 29/08585	<Administrative transfer to H04L 67/141>
D	H04L 29/08594	<Administrative transfer to H04L 67/142>
D	H04L 29/08603	<Administrative transfer to H04L 67/143>
D	H04L 29/08612	<Administrative transfer to H04L 67/145>
D	H04L 29/08621	<Administrative transfer to H04L 67/146>
D	H04L 29/0863	<Administrative transfer to H04L 67/147>
D	H04L 29/08639	<Administrative transfer to H04L 67/148>
D	H04L 29/08648	<Administrative transfer to H04L 67/51>
D	H04L 29/08657	<Administrative transfer to H04L 67/52>
D	H04L 29/08666	<Administrative transfer to H04L 67/53>
D	H04L 29/08675	<Administrative transfer to H04L 67/535>
D	H04L 29/08684	<Administrative transfer to H04L 67/54>
D	H04L 29/08693	<Administrative transfer to H04L 67/55 >
D	H04L 29/08702	<Administrative transfer to H04L 67/56>
D	H04L 29/08711	<Administrative transfer to H04L 67/561>
D	H04L 29/0872	<Administrative transfer to H04L 67/562>
D	H04L 29/08729	<Administrative transfer to H04L 67/568>
D	H04L 29/08738	<Administrative transfer to H04L 67/563>
D	H04L 29/08747	<Administrative transfer to H04L 67/564>

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<b>Type*</b>	<b>From CPC Symbol (existing)</b>	<b>To CPC Symbol(s)</b>
D	H04L 29/08756	<Administrative transfer to H04L 67/565>
D	H04L 29/08765	<Administrative transfer to H04L 67/566>
D	H04L 29/08774	<Administrative transfer to H04L 67/567>
D	H04L 29/08783	<Administrative transfer to H04L 67/5651>
D	H04L 29/08792	<Administrative transfer to H04L 67/565 and H04L 67/5651 simultaneously>
D	H04L 29/08801	<Administrative transfer to H04L 67/568>
D	H04L 29/0881	<Administrative transfer to H04L 67/5681>
D	H04L 29/08819	<Administrative transfer to H04L 67/5682>
D	H04L 29/08828	<Administrative transfer to H04L 67/5683>
D	H04L 29/08837	<Administrative transfer to H04L 67/59>
D	H04L 29/08846	<Administrative transfer to H04L 67/59>
D	H04L 29/08855	<Administrative transfer to H04L 67/2866>
D	H04L 29/08864	<Administrative transfer to H04L 67/2871>
D	H04L 29/08873	<Administrative transfer to H04L 67/2876>
D	H04L 29/08882	<Administrative transfer to H04L 67/288>
D	H04L 29/08891	<Administrative transfer to H04L 67/2885>
D	H04L 29/089	<Administrative transfer to H04L 67/289>
D	H04L 29/08909	<Administrative transfer to H04L 67/2895>
D	H04L 29/08918	<Administrative transfer to H04L 67/30>
D	H04L 29/08927	<Administrative transfer to H04L 67/303>
D	H04L 29/08936	<Administrative transfer to H04L 67/306>
D	H04L 29/08945	<Administrative transfer to H04L 67/60>
D	H04L 29/08954	<Administrative transfer to H04L 67/61>
D	H04L 29/08963	<Administrative transfer to H04L 67/62>
D	H04L 29/08972	<Administrative transfer to H04L 67/63>
D	H04L 29/08981	<Administrative transfer to H04L 67/34>
D	H04L 29/0899	<Administrative transfer to H04L 67/75>
D	H04L 29/10	<Administrative transfer to H04L 69/32 >
D	H04L 29/12	<Administrative transfer to H04L 61/00 >
D	H04L 29/12009	<Administrative transfer to H04L 61/00>
D	H04L 29/12018	<Administrative transfer to H04L 61/10>
D	H04L 29/12028	<Administrative transfer to H04L 61/103>
D	H04L 29/12037	<Administrative transfer to H04L 61/106>
D	H04L 29/12047	<Administrative transfer to H04L 61/45>
D	H04L 29/12056	<Administrative transfer to H04L 61/4505>
D	H04L 29/12066	<Administrative transfer to H04L 61/4511>
D	H04L 29/12075	<Administrative transfer to H04L 61/4517>
D	H04L 29/12084	<Administrative transfer to H04L 61/4523>
D	H04L 29/12094	<Administrative transfer to H04L 61/4535>
D	H04L 29/12103	<Administrative transfer to H04L 61/4535>
D	H04L 29/12113	<Administrative transfer to H04L 61/4541>
D	H04L 29/12122	<Administrative transfer to H04L 61/4547>
D	H04L 29/12132	<Administrative transfer to H04L 61/4552>
D	H04L 29/12141	<Administrative transfer to H04L 61/4553>
D	H04L 29/1215	<Administrative transfer to H04L 61/4555>
D	H04L 29/1216	<Administrative transfer to H04L 61/4557>
D	H04L 29/12169	<Administrative transfer to H04L 61/4552>
D	H04L 29/12179	<Administrative transfer to H04L 61/457>

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<b>Type*</b>	<b>From CPC Symbol (existing)</b>	<b>To CPC Symbol(s)</b>
D	H04L 29/12188	<Administrative transfer to H04L 61/4588>
D	H04L 29/12198	<Administrative transfer to H04L 61/4594>
D	H04L 29/12207	<Administrative transfer to H04L 61/50>
D	H04L 29/12216	<Administrative transfer to H04L 61/5007>
D	H04L 29/12226	<Administrative transfer to H04L 61/5014>
D	H04L 29/12235	<Administrative transfer to H04L 61/5014>
D	H04L 29/12245	<Administrative transfer to H04L 61/503>
D	H04L 29/12254	<Administrative transfer to H04L 61/5038>
D	H04L 29/12264	<Administrative transfer to H04L 61/5046>
D	H04L 29/12273	<Administrative transfer to H04L 61/5053>
D	H04L 29/12283	<Administrative transfer to H04L 61/5061>
D	H04L 29/12292	<Administrative transfer to H04L 61/5069>
D	H04L 29/12301	<Administrative transfer to H04L 61/5076>
D	H04L 29/12311	<Administrative transfer to H04L 61/5084>
D	H04L 29/1232	<Administrative transfer to H04L 61/5092>
D	H04L 29/1233	<Administrative transfer to H04L 61/25>
D	H04L 29/12339	<Administrative transfer to H04L 61/2503>
D	H04L 29/12349	<Administrative transfer to H04L 61/2503>
D	H04L 29/12358	<Administrative transfer to H04L 61/251>
D	H04L 29/12367	<Administrative transfer to H04L 61/2514>
D	H04L 29/12377	<Administrative transfer to H04L 61/2517>
D	H04L 29/12386	<Administrative transfer to H04L 61/2521>
D	H04L 29/12396	<Administrative transfer to H04L 61/2525>
D	H04L 29/12405	<Administrative transfer to H04L 61/2528>
D	H04L 29/12415	<Administrative transfer to H04L 61/2532>
D	H04L 29/12424	<Administrative transfer to H04L 61/2535>
D	H04L 29/12433	<Administrative transfer to H04L 61/2539>
D	H04L 29/12443	<Administrative transfer to H04L 61/2542>
D	H04L 29/12452	<Administrative transfer to H04L 61/2546>
D	H04L 29/12462	<Administrative transfer to H04L 61/255>
D	H04L 29/12471	<Administrative transfer to H04L 61/2553>
D	H04L 29/12481	<Administrative transfer to H04L 61/2557>
D	H04L 29/1249	<Administrative transfer to H04L 61/256>
D	H04L 29/125	<Administrative transfer to H04L 61/2564>
D	H04L 29/12509	<Administrative transfer to H04L 61/2567>
D	H04L 29/12518	<Administrative transfer to H04L 61/2571>
D	H04L 29/12528	<Administrative transfer to H04L 61/2575>
D	H04L 29/12537	<Administrative transfer to H04L 61/2578>
D	H04L 29/12547	<Administrative transfer to H04L 61/2582>
D	H04L 29/12556	<Administrative transfer to H04L 61/2585>
D	H04L 29/12566	<Administrative transfer to H04L 61/2589>
D	H04L 29/12575	<Administrative transfer to H04L 61/2592>
D	H04L 29/12584	<Administrative transfer to H04L 61/2596>
D	H04L 29/12594	<Administrative transfer to H04L 61/30>
D	H04L 29/12603	<Administrative transfer to H04L 61/3005>
D	H04L 29/12613	<Administrative transfer to H04L 61/301>
D	H04L 29/12622	<Administrative transfer to H04L 61/3015>
D	H04L 29/12632	<Administrative transfer to H04L 61/302>
D	H04L 29/12641	<Administrative transfer to H04L 61/3025>

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<b>Type*</b>	<b>From CPC Symbol (existing)</b>	<b>To CPC Symbol(s)</b>
D	H04L 29/1265	<Administrative transfer to H04L 2101/30>
D	H04L 29/1266	<Administrative transfer to H04L 2101/32>
D	H04L 29/12669	<Administrative transfer to H04L 2101/33>
D	H04L 29/12679	<Administrative transfer to H04L 2101/345>
D	H04L 29/12688	<Administrative transfer to H04L 2101/35>
D	H04L 29/12698	<Administrative transfer to H04L 2101/355>
D	H04L 29/12707	<Administrative transfer to H04L 2101/30>
D	H04L 29/12716	<Administrative transfer to H04L 2101/365>
D	H04L 29/12726	<Administrative transfer to H04L 2101/37>
D	H04L 29/12735	<Administrative transfer to H04L 2101/375>
D	H04L 29/12745	<Administrative transfer to H04L 2101/38>
D	H04L 29/12754	<Administrative transfer to H04L 2101/385>
D	H04L 29/12764	<Administrative transfer to H04L 2101/39>
D	H04L 29/12773	<Administrative transfer to H04L 2101/395>
D	H04L 29/12783	<Administrative transfer to H04L 61/35>
D	H04L 29/12792	<Administrative transfer to H04L 2101/60>
D	H04L 29/12801	<Administrative transfer to H04L 2101/604>
D	H04L 29/12811	<Administrative transfer to H04L 61/58>
D	H04L 29/1282	<Administrative transfer to H04L 61/59>
D	H04L 29/1283	<Administrative transfer to H04L 2101/618>
D	H04L 29/12839	<Administrative transfer to H04L 2101/622>
D	H04L 29/12849	<Administrative transfer to H04L 2101/627>
D	H04L 29/12858	<Administrative transfer to H04L 2101/631>
D	H04L 29/12867	<Administrative transfer to H04L 2101/636>
D	H04L 29/12877	<Administrative transfer to H04L 2101/64>
D	H04L 29/12886	<Administrative transfer to H04L 2101/645>
D	H04L 29/12896	<Administrative transfer to H04L 2101/65>
D	H04L 29/12905	<Administrative transfer to H04L 2101/654>
D	H04L 29/12915	<Administrative transfer to H04L 2101/659>
D	H04L 29/12924	<Administrative transfer to H04L 2101/663>
D	H04L 29/12933	<Administrative transfer to H04L 2101/668>
D	H04L 29/12943	<Administrative transfer to H04L 2101/672>
D	H04L 29/12952	<Administrative transfer to H04L 2101/677>
D	H04L 29/12962	<Administrative transfer to H04L 2101/681>
D	H04L 29/12971	<Administrative transfer to H04L 2101/686>
D	H04L 29/12981	<Administrative transfer to H04L 2101/69>
D	H04L 29/1299	<Administrative transfer to H04L 2101/695>
D	H04L 29/14	<Administrative transfer to H04L 69/40>
C	H04L 41/00	H04L 41/00, H04L 41/34, H04L 41/342, H04L 41/344, H04L 41/40
D	H04L 41/0206	<Administrative transfer to H04L 41/052>
C	H04L 41/04	H04L 41/04, H04L 41/045, H04L 41/052, H04L 41/34, H04L 41/342, H04L 41/344
C	H04L 41/08	H04L 41/08, H04L 41/0895
C	H04L 41/0893	H04L 41/0893, H04L 41/0894
C	H04L 41/0896	H04L 41/0896, H04L 41/0897
C	H04L 41/12	H04L 41/12, H04L 41/122, H04L 41/34, H04L 41/342, H04L 41/344, H04L 41/40
C	H04L 41/14	H04L 41/14, H04L 41/149
C	H04L 41/147	H04L 41/147, H04L 41/149

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<b>Type*</b>	<b>From CPC Symbol (existing)</b>	<b>To CPC Symbol(s)</b>
D	H04L 41/5035	<Administrative transfer to H04L 43/091>
D	H04L 41/5038	<Administrative transfer to H04L 43/55>
C	H04L 43/08	H04L 43/08, H04L 43/20
C	H04L 45/00	H04L 45/00, H04L 45/17, H04L 45/243, H04L 45/247, H04L 45/645, H04L 45/655, H04L 45/76, H04L 45/80, H04L 45/85, H04L 45/851
C	H04L 45/02	H04L 45/02, H04L 45/03, H04L 45/033, H04L 45/036, H04L 45/037, H04L 45/0377
C	H04L 45/22	H04L 45/22, H04L 45/247
C	H04L 45/48	H04L 45/48, H04L 45/484, H04L 45/488
C	H04L 45/745	H04L 45/745, H04L 45/7452, H04L 45/7459
D	H04L 45/7457	<Administrative transfer to H04L 45/74591>
C	H04L 47/10	H04L 47/10, H04L 47/43, H04L 47/431
C	H04L 47/12	H04L 47/12, H04L 47/129
D	H04L 47/14	<Administrative transfer to H04W 8/04>
C	H04L 47/26	H04L 47/26, H04L 47/265, H04L 47/267
C	H04L 47/70	H04L 47/70, H04L 47/83
C	H04L 49/10	H04L 49/10, H04L 49/111, H04L 49/112, H04L 49/113, H04L 49/115, H04L 49/116, H04L 49/118
C	H04L 49/90	H04L 49/90, H04L 49/9023
C	H04L 51/00	H04L 51/00, H04L 51/07, H04L 51/21
D	H04L 51/12	<Administrative transfer to H04L 51/212>
D	H04L 51/14	<Administrative transfer to H04L 51/214>
D	H04L 51/16	<Administrative transfer to H04L 51/216>
D	H04L 51/20	<Administrative transfer to H04L 51/222>
D	H04L 51/22	<Administrative transfer to H04L 51/42>
D	H04L 51/24	<Administrative transfer to H04L 51/224>
D	H04L 51/26	<Administrative transfer to H04L 51/226>
D	H04L 51/28	<Administrative transfer to H04L 51/48>
D	H04L 51/30	<Administrative transfer to H04L 51/23>
D	H04L 51/32	<Administrative transfer to H04L 51/52>
D	H04L 51/34	<Administrative transfer to H04L 51/234>
D	H04L 51/36	<Administrative transfer to H04L 51/56>
D	H04L 51/38	<Administrative transfer to H04L 51/58>
D	H04L 61/15	<Administrative transfer to H04L 61/45>
D	H04L 61/1505	<Administrative transfer to H04L 61/4505>
D	H04L 61/1511	<Administrative transfer to H04L 61/4511>
D	H04L 61/1517	<Administrative transfer to H04L 61/4517>
D	H04L 61/1523	<Administrative transfer to H04L 61/4523>
D	H04L 61/1529	<Administrative transfer to H04L 61/4535>
D	H04L 61/1535	<Administrative transfer to H04L 61/4535>
D	H04L 61/1541	<Administrative transfer to H04L 61/4541>
D	H04L 61/1547	<Administrative transfer to H04L 61/4547>
D	H04L 61/1552	<Administrative transfer to H04L 61/4552>
D	H04L 61/1558	<Administrative transfer to H04L 61/4553>
D	H04L 61/1564	<Administrative transfer to H04L 61/4555>
D	H04L 61/157	<Administrative transfer to H04L 61/4557>
D	H04L 61/1576	<Administrative transfer to H04L 61/4552>
D	H04L 61/1582	<Administrative transfer to H04L 61/457>
D	H04L 61/1588	<Administrative transfer to H04L 61/4588>

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<b>Type*</b>	<b>From CPC Symbol (existing)</b>	<b>To CPC Symbol(s)</b>
D	H04L 61/1594	<Administrative transfer to H04L 61/4594>
D	H04L 61/20	<Administrative transfer to H04L 61/50>
D	H04L 61/2007	<Administrative transfer to H04L 61/5007>
D	H04L 61/2015	<Administrative transfer to H04L 61/5014>
D	H04L 61/2023	<Administrative transfer to H04L 61/5014>
D	H04L 61/203	<Administrative transfer to H04L 61/503>
D	H04L 61/2038	<Administrative transfer to H04L 61/5038>
D	H04L 61/2046	<Administrative transfer to H04L 61/5046>
D	H04L 61/2053	<Administrative transfer to H04L 61/5053>
D	H04L 61/2061	<Administrative transfer to H04L 61/5061>
D	H04L 61/2069	<Administrative transfer to H04L 61/5069>
D	H04L 61/2076	<Administrative transfer to H04L 61/5076>
D	H04L 61/2084	<Administrative transfer to H04L 61/5084>
D	H04L 61/2092	<Administrative transfer to H04L 61/5092>
D	H04L 61/2507	<Administrative transfer to H04L 61/2503>
D	H04L 61/303	<Administrative transfer to H04L 2101/30>
D	H04L 61/3035	<Administrative transfer to H04L 2101/32>
D	H04L 61/304	<Administrative transfer to H04L 2101/33 >
D	H04L 61/3045	<Administrative transfer to H04L 2101/345>
D	H04L 61/305	<Administrative transfer to H04L 2101/35>
D	H04L 61/3055	<Administrative transfer to H04L 2101/355>
D	H04L 61/306	<Administrative transfer to H04L 2101/30>
D	H04L 61/3065	<Administrative transfer to H04L 2101/365>
D	H04L 61/307	<Administrative transfer to H04L 2101/37>
D	H04L 61/3075	<Administrative transfer to H04L 2101/375>
D	H04L 61/308	<Administrative transfer to H04L 2101/38>
D	H04L 61/3085	<Administrative transfer to H04L 2101/385>
D	H04L 61/309	<Administrative transfer to H04L 2101/39>
D	H04L 61/3095	<Administrative transfer to H04L 2101/395>
D	H04L 61/60	<Administrative transfer to H04L 2101/60>
D	H04L 61/6004	<Administrative transfer to H04L 2101/604>
D	H04L 61/6009	<Administrative transfer to H04L 61/58>
D	H04L 61/6013	<Administrative transfer to H04L 61/59>
D	H04L 61/6018	<Administrative transfer to H04L 2101/618>
D	H04L 61/6022	<Administrative transfer to H04L 2101/622>
D	H04L 61/6027	<Administrative transfer to H04L 2101/627>
D	H04L 61/6031	<Administrative transfer to H04L 2101/631>
D	H04L 61/6036	<Administrative transfer to H04L 2101/636>
D	H04L 61/604	<Administrative transfer to H04L 2101/64>
D	H04L 61/6045	<Administrative transfer to H04L 2101/645>
D	H04L 61/605	<Administrative transfer to H04L 2101/65>
D	H04L 61/6054	<Administrative transfer to H04L 2101/654>
D	H04L 61/6059	<Administrative transfer to H04L 2101/659>
D	H04L 61/6063	<Administrative transfer to H04L 2101/663>
D	H04L 61/6068	<Administrative transfer to H04L 2101/668>
D	H04L 61/6072	<Administrative transfer to H04L 2101/672>
D	H04L 61/6077	<Administrative transfer to H04L 2101/677>
D	H04L 61/6081	<Administrative transfer to H04L 2101/681>
D	H04L 61/6086	<Administrative transfer to H04L 2101/686>

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<b>Type*</b>	<b>From CPC Symbol (existing)</b>	<b>To CPC Symbol(s)</b>
D	H04L 61/609	<Administrative transfer to H04L 2101/69>
D	H04L 61/6095	<Administrative transfer to H04L 2101/695>
D	H04L 65/1003	<Administrative transfer to H04L 65/1101>
D	H04L 65/1006	<Administrative transfer to H04L 65/1104>
D	H04L 65/1009	<Administrative transfer to H04L 65/1106>
D	H04L 65/105	<Administrative transfer to H04L 65/1045>
C	H04L 65/1053	H04L 65/1053, H04L 65/1055
C	H04L 65/1083	H04L 65/1083, H04L 65/1094, H04L 65/1095
Q	H04L 65/1101	H04L 65/1101, H04L 65/1108
C	H04L 65/40	H04L 65/40, H04L 65/401, H04L 65/4015, H04L 65/402, H04L 65/403, H04L 65/4038, H04L 65/4046, H04L 65/4053, H04L 65/4061
D	H04L 65/4007	<Administrative transfer to H04L 65/401>
D	H04L 65/4023	<Administrative transfer to H04L 65/4025>
D	H04L 65/4069	<Administrative transfer to H04L 65/61>
D	H04L 65/4076	<Administrative transfer to H04L 65/611>
D	H04L 65/4084	<Administrative transfer to H04L 65/612>
D	H04L 65/4092	<Administrative transfer to H04L 65/613>
D	H04L 65/601	<Administrative transfer to H04L 65/75>
D	H04L 65/602	<Administrative transfer to H04L 65/762>
D	H04L 65/604	<Administrative transfer to H04L 65/764>
D	H04L 65/605	<Administrative transfer to H04L 65/765>
D	H04L 65/607	<Administrative transfer to H04L 65/70>
D	H04L 65/608	<Administrative transfer to H04L 65/65>
Q	H04L 65/75	H04L 65/75, H04L 65/752, H04L 65/756
Q	H04L 67/01	H04L 67/01, H04L 67/02, H04L 67/025, H04L 67/04, H04L 67/06, H04L 67/08, H04L 67/10, H04L 67/1001, H04L 67/1004, H04L 67/1006, H04L 67/1008, H04L 67/101, H04L 67/1012, H04L 67/1014, H04L 67/1017, H04L 67/1019, H04L 67/1021, H04L 67/1023, H04L 67/1025, H04L 67/1027, H04L 67/1029, H04L 67/1031, H04L 67/1034, H04L 67/1036, H04L 67/1038, H04L 67/104, H04L 67/1042, H04L 67/1044, H04L 67/1046, H04L 67/1048, H04L 67/1051, H04L 67/1053, H04L 67/1055, H04L 67/1057, H04L 67/1059, H04L 67/1061, H04L 67/1063, H04L 67/1065, H04L 67/1068, H04L 67/107, H04L 67/1072, H04L 67/1074, H04L 67/1076, H04L 67/1078, H04L 67/108, H04L 67/1082, H04L 67/1085, H04L 67/1087, H04L 67/1089, H04L 67/1091, H04L 67/1093, H04L 67/1095, H04L 67/1097, H04L 67/12, H04L 67/125, H04L 67/131, H04L 67/133, H04L 67/1396, H04L 67/2866, H04L 67/2869, H04L 67/2871, H04L 67/2876, H04L 67/288, H04L 67/2885, H04L 67/289, H04L 67/2895, H04L 67/30, H04L 67/303, H04L 67/306
D	H04L 67/1002	<Administrative transfer to H04L 67/1001>
D	H04L 67/16	<Administrative transfer to H04L 67/51>
D	H04L 67/18	<Administrative transfer to H04L 67/52>
D	H04L 67/20	<Administrative transfer to H04L 67/53>
D	H04L 67/22	<Administrative transfer to H04L 67/535>
D	H04L 67/24	<Administrative transfer to H04L 67/54>
D	H04L 67/26	<Administrative transfer to H04L 67/55 >
D	H04L 67/28	<Administrative transfer to H04L 67/56>
D	H04L 67/2804	<Administrative transfer to H04L 67/561>

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<b>Type*</b>	<b>From CPC Symbol (existing)</b>	<b>To CPC Symbol(s)</b>
D	H04L 67/2809	<Administrative transfer to H04L 67/562>
D	H04L 67/2814	<Administrative transfer to H04L 67/563>
D	H04L 67/2819	<Administrative transfer to H04L 67/564>
D	H04L 67/2823	<Administrative transfer to H04L 67/565>
D	H04L 67/2828	<Administrative transfer to H04L 67/5651>
D	H04L 67/2833	<Administrative transfer to H04L 67/566>
D	H04L 67/2838	<Administrative transfer to H04L 67/567>
D	H04L 67/2842	<Administrative transfer to H04L 67/568>
D	H04L 67/2847	<Administrative transfer to H04L 67/5681>
D	H04L 67/2852	<Administrative transfer to H04L 67/5682>
D	H04L 67/2857	<Administrative transfer to H04L 67/5683>
D	H04L 67/2861	<Administrative transfer to H04L 67/59>
D	H04L 67/32	<Administrative transfer to H04L 67/60>
D	H04L 67/322	<Administrative transfer to H04L 67/61>
D	H04L 67/325	<Administrative transfer to H04L 67/62>
D	H04L 67/327	<Administrative transfer to H04L 67/63>
D	H04L 67/36	<Administrative transfer to H04L 67/75>
D	H04L 67/38	<Administrative transfer to H04L 67/131>
D	H04L 67/40	<Administrative transfer to H04L 67/133>
D	H04L 67/42	<Administrative transfer to H04L 67/01>
C	H04L 69/08	H04L 69/08, H04L 69/085
C	H04L 69/32	H04L 69/32, H04L 69/321, H04L 69/322, H04L 69/323, H04L 69/324, H04L 69/325, H04L 69/326, H04L 69/327, H04L 69/328, H04L 69/329
D	H04L 2209/38	<Administrative transfer to H04L 9/50>

\* C = entries with modified file scope where reclassification of documents from the entries is involved; Q = new entries which are firstly populated with documents via administrative transfers from deleted (D) entries. Afterwards, the transferred documents into the Q entry will either stay or be moved to more appropriate entries, as determined by intellectual reclassification; D = deleted entries; F = frozen entries will be deleted once reclassification of documents from the entries is completed.

NOTES:

- Only C, D, F, and Q type entries are included in the table above.
- When multiple symbols are included in the “To” column, do not use ranges of symbols.
- For administrative transfer of documents, the following text should be used: “<administrative transfer to XX>”, “<administrative transfer to XX and YY simultaneously>”, or “<administrative transfer to XX, YY, ...and ZZ simultaneously>” when administrative transfer of the same documents is to more than one place.
- Administrative transfer to main trunk groups is assumed to be the source allocation type, unless otherwise indicated.
- Administrative transfer to 2000/Y series groups is assumed to be “additional information”.
- If needed, instructions for allocation type should be indicated within the angle brackets using the abbreviations “ADD” or “INV”: <administrative transfer to XX ADD>, <administrative transfer to XX INV>, or <administrative transfer to XX ADD, YY INV, ... and ZZ ADD simultaneously>.
- In certain situations, the “D” entries of 2000-series or Y-series groups may not require a destination (“To”) symbol, however it is required to specify “<no transfer>” in the “To” column for such cases.
- RCL is not needed for finalisation projects.

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4. CHANGES TO THE CPC-TO-IPC CONCORDANCE LIST (CICL)

<u>CPC</u>	<u>IPC</u>	<u>Action*</u>
H04L 9/40	H04L 9/40	NEW
H04L 9/50	H04L 9/00	NEW
H04L 29/00		DELETE
H04L 29/02		DELETE
H04L 29/04		DELETE
H04L 29/06		DELETE
H04L 29/06006		DELETE
H04L 29/06013		DELETE
H04L 29/0602		DELETE
H04L 29/06027		DELETE
H04L 29/06034		DELETE
H04L 29/0604		DELETE
H04L 29/06047		DELETE
H04L 2029/06054		DELETE
H04L 29/06061		DELETE
H04L 29/06068		DELETE
H04L 29/06074		DELETE
H04L 29/06081		DELETE
H04L 29/06088		DELETE
H04L 29/06095		DELETE
H04L 29/06102		DELETE
H04L 29/06108		DELETE
H04L 29/06115		DELETE
H04L 29/06122		DELETE
H04L 29/06129		DELETE
H04L 29/06136		DELETE
H04L 29/06142		DELETE
H04L 29/06149		DELETE
H04L 29/06156		DELETE
H04L 29/06163		DELETE
H04L 29/0617		DELETE
H04L 29/06176		DELETE
H04L 29/06183		DELETE
H04L 29/0619		DELETE
H04L 29/06197		DELETE
H04L 29/06204		DELETE
H04L 29/0621		DELETE
H04L 29/06217		DELETE
H04L 29/06224		DELETE
H04L 29/06231		DELETE

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<u>CPC</u>	<u>IPC</u>	<u>Action*</u>
H04L 29/06238		DELETE
H04L 29/06244		DELETE
H04L 29/06251		DELETE
H04L 29/06258		DELETE
H04L 29/06265		DELETE
H04L 29/06272		DELETE
H04L 29/06278		DELETE
H04L 29/06285		DELETE
H04L 29/06292		DELETE
H04L 29/06299		DELETE
H04L 29/06306		DELETE
H04L 29/06312		DELETE
H04L 29/06319		DELETE
H04L 29/06326		DELETE
H04L 29/06333		DELETE
H04L 29/0634		DELETE
H04L 29/06346		DELETE
H04L 29/06353		DELETE
H04L 29/0636		DELETE
H04L 29/06367		DELETE
H04L 29/06374		DELETE
H04L 29/0638		DELETE
H04L 29/06387		DELETE
H04L 29/06394		DELETE
H04L 29/06401		DELETE
H04L 29/06408		DELETE
H04L 29/06414		DELETE
H04L 29/06421		DELETE
H04L 29/06428		DELETE
H04L 29/06435		DELETE
H04L 29/06442		DELETE
H04L 29/06448		DELETE
H04L 29/06455		DELETE
H04L 29/06462		DELETE
H04L 29/06469		DELETE
H04L 29/06476		DELETE
H04L 29/06482		DELETE
H04L 29/06489		DELETE
H04L 29/06496		DELETE
H04L 29/06503		DELETE
H04L 29/0651		DELETE
H04L 29/06517		DELETE
H04L 29/06523		DELETE
H04L 29/0653		DELETE

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<u>CPC</u>	<u>IPC</u>	<u>Action*</u>
H04L 29/06537		DELETE
H04L 29/06544		DELETE
H04L 29/06551		DELETE
H04L 29/06557		DELETE
H04L 29/06564		DELETE
H04L 29/06571		DELETE
H04L 29/06578		DELETE
H04L 29/06585		DELETE
H04L 29/06591		DELETE
H04L 29/06598		DELETE
H04L 29/06605		DELETE
H04L 29/06612		DELETE
H04L 29/06619		DELETE
H04L 29/06625		DELETE
H04L 29/06632		DELETE
H04L 29/06639		DELETE
H04L 29/06646		DELETE
H04L 29/06653		DELETE
H04L 29/06659		DELETE
H04L 29/06666		DELETE
H04L 29/06673		DELETE
H04L 29/0668		DELETE
H04L 29/06687		DELETE
H04L 29/06693		DELETE
H04L 29/067		DELETE
H04L 29/06707		DELETE
H04L 29/06714		DELETE
H04L 29/06721		DELETE
H04L 29/06727		DELETE
H04L 29/06734		DELETE
H04L 29/06741		DELETE
H04L 29/06748		DELETE
H04L 29/06755		DELETE
H04L 29/06761		DELETE
H04L 29/06768		DELETE
H04L 29/06775		DELETE
H04L 29/06782		DELETE
H04L 29/06789		DELETE
H04L 29/06795		DELETE
H04L 29/06802		DELETE
H04L 29/06809		DELETE
H04L 29/06816		DELETE
H04L 29/06823		DELETE
H04L 29/06829		DELETE

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<u>CPC</u>	<u>IPC</u>	<u>Action*</u>
H04L 29/06836		DELETE
H04L 29/06843		DELETE
H04L 29/0685		DELETE
H04L 29/06857		DELETE
H04L 29/06863		DELETE
H04L 29/0687		DELETE
H04L 29/06877		DELETE
H04L 29/06884		DELETE
H04L 29/06891		DELETE
H04L 29/06897		DELETE
H04L 29/06904		DELETE
H04L 29/06911		DELETE
H04L 29/06918		DELETE
H04L 29/06925		DELETE
H04L 29/06931		DELETE
H04L 29/06938		DELETE
H04L 29/06945		DELETE
H04L 29/06952		DELETE
H04L 29/06959		DELETE
H04L 29/06965		DELETE
H04L 29/06972		DELETE
H04L 29/06979		DELETE
H04L 29/06986		DELETE
H04L 29/06993		DELETE
H04L 29/08		DELETE
H04L 29/08009		DELETE
H04L 29/08018		DELETE
H04L 29/08027		DELETE
H04L 29/08036		DELETE
H04L 29/08045		DELETE
H04L 29/08054		DELETE
H04L 29/08063		DELETE
H04L 29/08072		DELETE
H04L 29/08081		DELETE
H04L 29/0809		DELETE
H04L 29/08099		DELETE
H04L 29/08108		DELETE
H04L 29/08117		DELETE
H04L 29/08126		DELETE
H04L 29/08135		DELETE
H04L 29/08144		DELETE
H04L 29/08153		DELETE
H04L 29/08162		DELETE
H04L 29/08171		DELETE

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<u>CPC</u>	<u>IPC</u>	<u>Action*</u>
H04L 29/0818		DELETE
H04L 29/08189		DELETE
H04L 29/08198		DELETE
H04L 29/08207		DELETE
H04L 29/08216		DELETE
H04L 29/08225		DELETE
H04L 29/08234		DELETE
H04L 29/08243		DELETE
H04L 29/08252		DELETE
H04L 29/08261		DELETE
H04L 29/0827		DELETE
H04L 29/08279		DELETE
H04L 29/08288		DELETE
H04L 29/08297		DELETE
H04L 29/08306		DELETE
H04L 29/08315		DELETE
H04L 29/08324		DELETE
H04L 29/08333		DELETE
H04L 29/08342		DELETE
H04L 29/08351		DELETE
H04L 29/0836		DELETE
H04L 29/08369		DELETE
H04L 29/08378		DELETE
H04L 29/08387		DELETE
H04L 29/08396		DELETE
H04L 29/08405		DELETE
H04L 29/08414		DELETE
H04L 29/08423		DELETE
H04L 29/08432		DELETE
H04L 29/08441		DELETE
H04L 29/0845		DELETE
H04L 29/08459		DELETE
H04L 29/08468		DELETE
H04L 29/08477		DELETE
H04L 29/08486		DELETE
H04L 29/08495		DELETE
H04L 29/08504		DELETE
H04L 29/08513		DELETE
H04L 29/08522		DELETE
H04L 29/08531		DELETE
H04L 29/0854		DELETE
H04L 29/08549		DELETE
H04L 29/08558		DELETE
H04L 29/08567		DELETE

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<u>CPC</u>	<u>IPC</u>	<u>Action*</u>
H04L 29/08576		DELETE
H04L 29/08585		DELETE
H04L 29/08594		DELETE
H04L 29/08603		DELETE
H04L 29/08612		DELETE
H04L 29/08621		DELETE
H04L 29/0863		DELETE
H04L 29/08639		DELETE
H04L 29/08648		DELETE
H04L 29/08657		DELETE
H04L 29/08666		DELETE
H04L 29/08675		DELETE
H04L 29/08684		DELETE
H04L 29/08693		DELETE
H04L 29/08702		DELETE
H04L 29/08711		DELETE
H04L 29/0872		DELETE
H04L 29/08729		DELETE
H04L 29/08738		DELETE
H04L 29/08747		DELETE
H04L 29/08756		DELETE
H04L 29/08765		DELETE
H04L 29/08774		DELETE
H04L 29/08783		DELETE
H04L 29/08792		DELETE
H04L 29/08801		DELETE
H04L 29/0881		DELETE
H04L 29/08819		DELETE
H04L 29/08828		DELETE
H04L 29/08837		DELETE
H04L 29/08846		DELETE
H04L 29/08855		DELETE
H04L 29/08864		DELETE
H04L 29/08873		DELETE
H04L 29/08882		DELETE
H04L 29/08891		DELETE
H04L 29/089		DELETE
H04L 29/08909		DELETE
H04L 29/08918		DELETE
H04L 29/08927		DELETE
H04L 29/08936		DELETE
H04L 29/08945		DELETE
H04L 29/08954		DELETE
H04L 29/08963		DELETE

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<u>CPC</u>	<u>IPC</u>	<u>Action*</u>
H04L 29/08972		DELETE
H04L 29/08981		DELETE
H04L 29/0899		DELETE
H04L 29/10		DELETE
H04L 29/12		DELETE
H04L 29/12009		DELETE
H04L 29/12018		DELETE
H04L 29/12028		DELETE
H04L 29/12037		DELETE
H04L 29/12047		DELETE
H04L 29/12056		DELETE
H04L 29/12066		DELETE
H04L 29/12075		DELETE
H04L 29/12084		DELETE
H04L 29/12094		DELETE
H04L 29/12103		DELETE
H04L 29/12113		DELETE
H04L 29/12122		DELETE
H04L 29/12132		DELETE
H04L 29/12141		DELETE
H04L 29/1215		DELETE
H04L 29/1216		DELETE
H04L 29/12169		DELETE
H04L 29/12179		DELETE
H04L 29/12188		DELETE
H04L 29/12198		DELETE
H04L 29/12207		DELETE
H04L 29/12216		DELETE
H04L 29/12226		DELETE
H04L 29/12235		DELETE
H04L 29/12245		DELETE
H04L 29/12254		DELETE
H04L 29/12264		DELETE
H04L 29/12273		DELETE
H04L 29/12283		DELETE
H04L 29/12292		DELETE
H04L 29/12301		DELETE
H04L 29/12311		DELETE
H04L 29/1232		DELETE
H04L 29/1233		DELETE
H04L 29/12339		DELETE
H04L 29/12349		DELETE
H04L 29/12358		DELETE
H04L 29/12367		DELETE

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<u>CPC</u>	<u>IPC</u>	<u>Action*</u>
H04L 29/12377		DELETE
H04L 29/12386		DELETE
H04L 29/12396		DELETE
H04L 29/12405		DELETE
H04L 29/12415		DELETE
H04L 29/12424		DELETE
H04L 29/12433		DELETE
H04L 29/12443		DELETE
H04L 29/12452		DELETE
H04L 29/12462		DELETE
H04L 29/12471		DELETE
H04L 29/12481		DELETE
H04L 29/1249		DELETE
H04L 29/125		DELETE
H04L 29/12509		DELETE
H04L 29/12518		DELETE
H04L 29/12528		DELETE
H04L 29/12537		DELETE
H04L 29/12547		DELETE
H04L 29/12556		DELETE
H04L 29/12566		DELETE
H04L 29/12575		DELETE
H04L 29/12584		DELETE
H04L 29/12594		DELETE
H04L 29/12603		DELETE
H04L 29/12613		DELETE
H04L 29/12622		DELETE
H04L 29/12632		DELETE
H04L 29/12641		DELETE
H04L 29/1265		DELETE
H04L 29/1266		DELETE
H04L 29/12669		DELETE
H04L 29/12679		DELETE
H04L 29/12688		DELETE
H04L 29/12698		DELETE
H04L 29/12707		DELETE
H04L 29/12716		DELETE
H04L 29/12726		DELETE
H04L 29/12735		DELETE
H04L 29/12745		DELETE
H04L 29/12754		DELETE
H04L 29/12764		DELETE
H04L 29/12773		DELETE
H04L 29/12783		DELETE

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<u>CPC</u>	<u>IPC</u>	<u>Action*</u>
H04L 29/12792		DELETE
H04L 29/12801		DELETE
H04L 29/12811		DELETE
H04L 29/1282		DELETE
H04L 29/1283		DELETE
H04L 29/12839		DELETE
H04L 29/12849		DELETE
H04L 29/12858		DELETE
H04L 29/12867		DELETE
H04L 29/12877		DELETE
H04L 29/12886		DELETE
H04L 29/12896		DELETE
H04L 29/12905		DELETE
H04L 29/12915		DELETE
H04L 29/12924		DELETE
H04L 29/12933		DELETE
H04L 29/12943		DELETE
H04L 29/12952		DELETE
H04L 29/12962		DELETE
H04L 29/12971		DELETE
H04L 29/12981		DELETE
H04L 29/1299		DELETE
H04L 29/14		DELETE
H04L 41/0206		DELETE
H04L 41/045	H04L 41/045	NEW
H04L 41/052	H04L 41/052	NEW
H04L 41/0856	H04L 41/0853	UPDATE
H04L 41/0863	H04L 41/0859	UPDATE
H04L 41/0894	H04L 41/0894	NEW
H04L 41/0895	H04L 41/0895	NEW
H04L 41/0897	H04L 41/0897	NEW
H04L 41/122	H04L 41/122	NEW
H04L 41/149	H04L 41/149	NEW
H04L 41/34	H04L 41/34	NEW
H04L 41/342	H04L 41/342	NEW
H04L 41/344	H04L 41/344	NEW
H04L 41/40	H04L 41/40	NEW
H04L 41/5035		DELETE
H04L 41/5038		DELETE
H04L 43/091	H04L 43/091	NEW
H04L 43/20	H04L 43/20	NEW
H04L 43/55	H04L 43/55	NEW
H04L 45/03	H04L 45/03	NEW
H04L 45/033	H04L 45/033	NEW

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<b><u>CPC</u></b>	<b><u>IPC</u></b>	<b><u>Action*</u></b>
H04L 45/036	H04L 45/036	NEW
H04L 45/037	H04L 45/037	NEW
H04L 45/0377	H04L 45/0377	NEW
H04L 45/04	H04L 45/02	UPDATE
H04L 45/06	H04L 45/02	UPDATE
H04L 45/08	H04L 45/02	UPDATE
H04L 45/10	H04L 45/02	UPDATE
H04L 45/17	H04L 45/17	NEW
H04L 45/243	H04L 45/243	NEW
H04L 45/247	H04L 45/247	NEW
H04L 45/304	H04L 45/302	UPDATE
H04L 45/306	H04L 45/302	UPDATE
H04L 45/3065	H04L 45/302	UPDATE
H04L 45/308	H04L 45/302	UPDATE
H04L 45/484	H04L 45/484	NEW
H04L 45/488	H04L 45/488	NEW
H04L 45/645	H04L 45/645	NEW
H04L 45/655	H04L 45/655	NEW
H04L 45/7452	H04L 45/7452	NEW
H04L 45/7457		DELETE
H04L 45/7459	H04L 45/7459	NEW
H04L 45/74591	H04L 45/745	NEW
H04L 45/76	H04L 45/76	NEW
H04L 45/80	H04L 45/80	NEW
H04L 45/85	H04L 45/85	NEW
H04L 45/851	H04L 45/851	NEW
H04L 47/129	H04L 47/129	NEW
H04L 47/14		DELETE
H04L 47/265	H04L 47/265	NEW
H04L 47/266	H04L 47/26	UPDATE
H04L 47/267	H04L 47/267	NEW
H04L 47/43	H04L 47/43	NEW
H04L 47/431	H04L 47/431	NEW
H04L 47/823	H04L 47/70	UPDATE
H04L 47/83	H04L 47/83	NEW
H04L 49/111	H04L 49/111	NEW
H04L 49/112	H04L 49/112	NEW
H04L 49/113	H04L 49/113	NEW
H04L 49/115	H04L 49/115	NEW
H04L 49/116	H04L 49/116	NEW
H04L 49/118	H04L 49/118	NEW
H04L 49/9023	H04L 49/9023	NEW
H04L 51/07	H04L 51/07	NEW
H04L 51/12		DELETE

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<u>CPC</u>	<u>IPC</u>	<u>Action*</u>
H04L 51/14		DELETE
H04L 51/16		DELETE
H04L 51/20		DELETE
H04L 51/21	H04L 51/21	NEW
H04L 51/212	H04L 51/212	NEW
H04L 51/214	H04L 51/214	NEW
H04L 51/216	H04L 51/216	NEW
H04L 51/22		DELETE
H04L 51/222	H04L 51/222	NEW
H04L 51/224	H04L 51/224	NEW
H04L 51/226	H04L 51/226	NEW
H04L 51/23	H04L 51/23	NEW
H04L 51/234	H04L 51/234	NEW
H04L 51/24		DELETE
H04L 51/26		DELETE
H04L 51/28		DELETE
H04L 51/30		DELETE
H04L 51/32		DELETE
H04L 51/34		DELETE
H04L 51/36		DELETE
H04L 51/38		DELETE
H04L 51/42	H04L 51/42	NEW
H04L 51/48	H04L 51/48	NEW
H04L 51/52	H04L 51/52	NEW
H04L 51/56	H04L 51/56	NEW
H04L 51/58	H04L 51/58	NEW
H04L 61/09	H04L 61/09	NEW
H04L 61/15		DELETE
H04L 61/1505		DELETE
H04L 61/1511		DELETE
H04L 61/1517		DELETE
H04L 61/1523		DELETE
H04L 61/1529		DELETE
H04L 61/1535		DELETE
H04L 61/1541		DELETE
H04L 61/1547		DELETE
H04L 61/1552		DELETE
H04L 61/1558		DELETE
H04L 61/1564		DELETE
H04L 61/157		DELETE
H04L 61/1576		DELETE
H04L 61/1582		DELETE
H04L 61/1588		DELETE
H04L 61/1594		DELETE

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<u>CPC</u>	<u>IPC</u>	<u>Action*</u>
H04L 61/20		DELETE
H04L 61/2007		DELETE
H04L 61/2015		DELETE
H04L 61/2023		DELETE
H04L 61/203		DELETE
H04L 61/2038		DELETE
H04L 61/2046		DELETE
H04L 61/2053		DELETE
H04L 61/2061		DELETE
H04L 61/2069		DELETE
H04L 61/2076		DELETE
H04L 61/2084		DELETE
H04L 61/2092		DELETE
H04L 61/2507		DELETE
H04L 61/303		DELETE
H04L 61/3035		DELETE
H04L 61/304		DELETE
H04L 61/3045		DELETE
H04L 61/305		DELETE
H04L 61/3055		DELETE
H04L 61/306		DELETE
H04L 61/3065		DELETE
H04L 61/307		DELETE
H04L 61/3075		DELETE
H04L 61/308		DELETE
H04L 61/3085		DELETE
H04L 61/309		DELETE
H04L 61/3095		DELETE
H04L 61/45	H04L 61/45	NEW
H04L 61/4505	H04L 61/4505	NEW
H04L 61/4511	H04L 61/4511	NEW
H04L 61/4517	H04L 61/4517	NEW
H04L 61/4523	H04L 61/4523	NEW
H04L 61/4535	H04L 61/4535	NEW
H04L 61/4541	H04L 61/4541	NEW
H04L 61/4547	H04L 61/45	NEW
H04L 61/4552	H04L 61/4552	NEW
H04L 61/4553	H04L 61/45	NEW
H04L 61/4555	H04L 61/45	NEW
H04L 61/4557	H04L 61/4557	NEW
H04L 61/457	H04L 61/45	NEW
H04L 61/4588	H04L 61/4588	NEW
H04L 61/4594	H04L 61/4594	NEW
H04L 61/50	H04L 61/50	NEW

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<b><u>CPC</u></b>	<b><u>IPC</u></b>	<b><u>Action*</u></b>
H04L 61/5007	H04L 61/5007	NEW
H04L 61/5014	H04L 61/5014	NEW
H04L 61/503	H04L 61/503	NEW
H04L 61/5038	H04L 61/5038	NEW
H04L 61/5046	H04L 61/5046	NEW
H04L 61/5053	H04L 61/5053	NEW
H04L 61/5061	H04L 61/5061	NEW
H04L 61/5069	H04L 61/5069	NEW
H04L 61/5076	H04L 61/5076	NEW
H04L 61/5084	H04L 61/5084	NEW
H04L 61/5092	H04L 61/5092	NEW
H04L 61/58	H04L 61/58	NEW
H04L 61/59	H04L 61/59	NEW
H04L 61/60		DELETE
H04L 61/6004		DELETE
H04L 61/6009		DELETE
H04L 61/6013		DELETE
H04L 61/6018		DELETE
H04L 61/6022		DELETE
H04L 61/6027		DELETE
H04L 61/6031		DELETE
H04L 61/6036		DELETE
H04L 61/604		DELETE
H04L 61/6045		DELETE
H04L 61/605		DELETE
H04L 61/6054		DELETE
H04L 61/6059		DELETE
H04L 61/6063		DELETE
H04L 61/6068		DELETE
H04L 61/6072		DELETE
H04L 61/6077		DELETE
H04L 61/6081		DELETE
H04L 61/6086		DELETE
H04L 61/609		DELETE
H04L 61/6095		DELETE
H04L 65/1003		DELETE
H04L 65/1006		DELETE
H04L 65/1009		DELETE
H04L 65/1045	H04L 65/1045	NEW
H04L 65/105		DELETE
H04L 65/1055	H04L 65/1055	NEW
H04L 65/1094	H04L 65/1094	NEW
H04L 65/1095	H04L 65/1095	NEW
H04L 65/1101	H04L 65/1101	NEW

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<u>CPC</u>	<u>IPC</u>	<u>Action*</u>
H04L 65/1104	H04L 65/1104	NEW
H04L 65/1106	H04L 65/1106	NEW
H04L 65/1108	H04L 65/1108	NEW
H04L 65/4007		DELETE
H04L 65/401	H04L 65/401	NEW
H04L 65/402	H04L 65/402	NEW
H04L 65/4023		DELETE
H04L 65/4025	H04L 65/402	NEW
H04L 65/4069		DELETE
H04L 65/4076		DELETE
H04L 65/4084		DELETE
H04L 65/4092		DELETE
H04L 65/601		DELETE
H04L 65/602		DELETE
H04L 65/604		DELETE
H04L 65/605		DELETE
H04L 65/607		DELETE
H04L 65/608		DELETE
H04L 65/61	H04L 65/61	NEW
H04L 65/611	H04L 65/611	NEW
H04L 65/612	H04L 65/612	NEW
H04L 65/613	H04L 65/613	NEW
H04L 65/65	H04L 65/65	NEW
H04L 65/70	H04L 65/70	NEW
H04L 65/75	H04L 65/75	NEW
H04L 65/752	H04L 65/752	NEW
H04L 65/756	H04L 65/756	NEW
H04L 65/762	H04L 65/75	NEW
H04L 65/764	H04L 65/75	NEW
H04L 65/765	H04L 65/75	NEW
H04L 67/01	H04L 67/01	NEW
H04L 67/1001	H04L 67/1001	NEW
H04L 67/10015	H04L 67/1001	NEW
H04L 67/1002		DELETE
H04L 67/1044	H04L 67/104	UPDATE
H04L 67/1046	H04L 67/104	UPDATE
H04L 67/1048	H04L 67/104	UPDATE
H04L 67/1051	H04L 67/104	UPDATE
H04L 67/1053	H04L 67/104	UPDATE
H04L 67/1055	H04L 67/104	UPDATE
H04L 67/1057	H04L 67/104	UPDATE
H04L 67/1059	H04L 67/104	UPDATE
H04L 67/131	H04L 67/131	NEW
H04L 67/133	H04L 67/133	NEW

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<u>CPC</u>	<u>IPC</u>	<u>Action*</u>
H04L 67/1396	H04L 67/1396	NEW
H04L 67/16		DELETE
H04L 67/18		DELETE
H04L 67/20		DELETE
H04L 67/22		DELETE
H04L 67/24		DELETE
H04L 67/26		DELETE
H04L 67/28		DELETE
H04L 67/2804		DELETE
H04L 67/2809		DELETE
H04L 67/2814		DELETE
H04L 67/2819		DELETE
H04L 67/2823		DELETE
H04L 67/2828		DELETE
H04L 67/2833		DELETE
H04L 67/2838		DELETE
H04L 67/2842		DELETE
H04L 67/2847		DELETE
H04L 67/2852		DELETE
H04L 67/2857		DELETE
H04L 67/2861		DELETE
H04L 67/2869	H04L 67/2869	NEW
H04L 67/32		DELETE
H04L 67/322		DELETE
H04L 67/325		DELETE
H04L 67/327		DELETE
H04L 67/36		DELETE
H04L 67/38		DELETE
H04L 67/40		DELETE
H04L 67/42		DELETE
H04L 67/50	H04L 67/50	NEW
H04L 67/51	H04L 67/51	NEW
H04L 67/52	H04L 67/52	NEW
H04L 67/53	H04L 67/53	NEW
H04L 67/535	H04L 67/50	NEW
H04L 67/54	H04L 67/54	NEW
H04L 67/55	H04L 67/55	NEW
H04L 67/56	H04L 67/56	NEW
H04L 67/561	H04L 67/561	NEW
H04L 67/562	H04L 67/562	NEW
H04L 67/563	H04L 67/563	NEW
H04L 67/564	H04L 67/564	NEW
H04L 67/565	H04L 67/565	NEW
H04L 67/5651	H04L 67/5651	NEW

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<b><u>CPC</u></b>	<b><u>IPC</u></b>	<b><u>Action*</u></b>
H04L 67/566	H04L 67/566	NEW
H04L 67/567	H04L 67/567	NEW
H04L 67/568	H04L 67/568	NEW
H04L 67/5681	H04L 67/5681	NEW
H04L 67/5682	H04L 67/5682	NEW
H04L 67/5683	H04L 67/5683	NEW
H04L 67/59	H04L 67/59	NEW
H04L 67/60	H04L 67/60	NEW
H04L 67/61	H04L 67/61	NEW
H04L 67/62	H04L 67/62	NEW
H04L 67/63	H04L 67/63	NEW
H04L 67/75	H04L 67/75	NEW
H04L 69/085	H04L 69/085	NEW
H04L 2101/00	H04L 101/00	NEW
H04L 2101/30	H04L 101/30	NEW
H04L 2101/32	H04L 101/32	NEW
H04L 2101/33	H04L 101/33	NEW
H04L 2101/345	H04L 101/345	NEW
H04L 2101/35	H04L 101/35	NEW
H04L 2101/355	H04L 101/355	NEW
H04L 2101/365	H04L 101/365	NEW
H04L 2101/37	H04L 101/37	NEW
H04L 2101/375	H04L 101/375	NEW
H04L 2101/38	H04L 101/38	NEW
H04L 2101/385	H04L 101/385	NEW
H04L 2101/39	H04L 101/39	NEW
H04L 2101/395	H04L 101/395	NEW
H04L 2101/60	H04L 101/60	NEW
H04L 2101/604	H04L 101/604	NEW
H04L 2101/618	H04L 101/618	NEW
H04L 2101/622	H04L 101/622	NEW
H04L 2101/627	H04L 101/627	NEW
H04L 2101/631	H04L 101/631	NEW
H04L 2101/636	H04L 101/636	NEW
H04L 2101/64	H04L 101/64	NEW
H04L 2101/645	H04L 101/645	NEW
H04L 2101/65	H04L 101/65	NEW
H04L 2101/654	H04L 101/654	NEW
H04L 2101/659	H04L 101/659	NEW
H04L 2101/663	H04L 101/663	NEW
H04L 2101/668	H04L 101/668	NEW
H04L 2101/672	H04L 101/672	NEW
H04L 2101/677	H04L 101/677	NEW
H04L 2101/681	H04L 101/681	NEW

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<u>CPC</u>	<u>IPC</u>	<u>Action*</u>
H04L 2101/686	H04L 101/686	NEW
H04L 2101/69	H04L 101/69	NEW
H04L 2101/695	H04L 101/695	NEW
H04L 2209/38		DELETE

\*Action column:

- For an (N) or (Q) entry, provide an IPC symbol and complete the Action column with “NEW.”
- For an existing CPC main trunk entry or indexing entry where the existing IPC symbol needs to be changed, provide an updated IPC symbol and complete the Action column with “UPDATED.”
- For a (D) CPC entry or indexing entry complete the Action column with “DELETE.” IPC symbol does not need to be included in the IPC column.
- For an (N) 2000 series CPC entry which is positioned within the main trunk scheme (breakdown code) provide an IPC symbol and complete the action column with “NEW”.
- For an (N) 2000 series CPC entry positioned at the end of the CPC scheme (orthogonal code), with no IPC equivalent, complete the IPC column with “CPCONLY” and complete the action column with “NEW”.

NOTES:

- F symbols are not included in the CICL table above.
- T and M symbols are not included in the CICL table above unless a change to the existing IPC is desired.

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5. CROSS-REFERENCE LIST (CRL)

Scheme references impacted by this revision project

<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Action; New reference symbol; New text</u>
G06F 9/452	H04L 67/38	Replace symbol “H04L 67/38” and associated text with:  protocols for virtual reality H04L 67/131
G06F 11/0727	H04L 29/08549	Replace symbol “H04L 29/08549” and associated text with:  for distributed storage of data in networks, e.g. transport arrangements for network file system [NFS], storage area networks [SAN] or network attached storage [NAS], H04L 67/1097
G06F 11/0793	H04L 29/14	Replace symbol “H04L 29/14” and associated text with:  for recovering from a failure of a protocol instance or entity H04L 69/40
G06F 11/3034	H04L 29/08549	Replace symbol “H04L 29/08549” and associated text with:  for distributed storage of data in networks, e.g. transport arrangements for network file system [NFS], storage area networks [SAN] or network attached storage [NAS], H04L 67/1097
G06F 11/3438	H04L 67/22	Replace symbol “H04L 67/22” and associated text with:  tracking the activity of the user H04L 67/535
G06F 15/1735	H04L 29/06081	Replace symbol “H04L 29/06081” in the reference with “H04L 69/12”
G06K7/10297	H04L 29/06	Replace the reference “H04L 29/06” and associated text with the following references and associated text.  cryptographic protocols H04L 9/00; network security protocols H04L 63/00; real-time communication protocols in data switching networks H04L 65/00; network protocols for data switching network services H04L 67/00
G06Q 10/10	Office automation, e.g. computer aided management of electronic mail or groupware (electronic mail protocols H04L 29/06 {; arrangements for user-to-user messaging in packet-switching networks, e.g. e-mail or instant messages, H04L 41/00}); Time	Replace the entire Title with the following new Title.  Office automation, e.g. computer aided management of electronic mail or groupware (user-to-user messaging in packet switching-networks, transmitted according to store-and-forward or real-time protocols, e.g. e-mail, H04L 51/00); Time management, e.g. calendars, reminders, meetings or time accounting

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Action; New reference symbol; New text</u>
	management, e.g. calendars, reminders, meetings or time accounting {(organizing, planning, scheduling or allocating time G06Q 10/06)}	
G06Q 10/107	{Computer aided management of electronic mail (electronic mail protocols H04L 29/06; arrangements for user-to-user messaging in packet-switching networks, e.g. e-mail or instant messages, H04L 41/00)}	Replace the entire Title with the following new Title.  {Computer aided management of electronic mail (network security protocols H04L 63/00; real-time communication protocols in data switching networks H04L 65/00; network protocols for data switching network services H04L 67/00; arrangements for user-to-user messaging in packet-switching networks, e.g. e-mail or instant messages, H04L 51/00)}
G09B 9/00	H04L 29/06034	Replace symbol “H04L 29/06034” and associated text with:  protocols for games, networked simulations or virtual reality H04L 67/131
H04L 12/1813	H04L 29/06027	Replace symbol “H04L 29/06027” in the reference with “H04L 65/1101”
H04L 12/1813	H04L 29/06414	Replace symbol “H04L 29/06414” and associated text with:  arrangements for multi-party communication H04L 65/403
H04L 12/1845	H04L 29/08657	Replace symbol “H04L 29/08657” in the reference with “H04L 67/52”
H04L 12/2807	H04L 29/12207	Replace symbol “H04L 29/12207” in the reference with “H04L 61/50”
H04L 12/2809	H04L 29/08648	Replace symbol “H04L 29/08648” and associated text with:  discovery or management thereof, e.g. service location protocol [SLP] or web services, H04L 67/51
H04L 12/281	H04L 29/08099	Replace symbol “H04L 29/08099” and associated text with:  for remote control or remote monitoring of applications H04L 67/025
H04L 12/2818	H04L 29/08099	Replace symbol “H04L 29/08099” and associated text with:  for remote control or remote monitoring of applications H04L 67/025
H04L 12/2821	H04L 29/06551	Replace the reference “H04L 29/06551” and associated text with the following references and associated text.  cryptographic protocols H04L 9/00; protocols for network security H04L 63/00

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Action; New reference symbol; New text</u>
H04L 12/2825	H04L 29/08099	Replace symbol "H04L 29/08099" and associated text with:  for remote control or remote monitoring of applications H04L 67/025
H04L 12/2836	H04L 29/06068	Replace symbol "H04L 29/06068" in the reference with "H04L 69/08"
H04L 12/2863	H04L 29/06088	Replace symbol "H04L 29/06088" and associated text with:  multichannel or multilink protocols H04L 69/14
H04L 12/40104	H04L 29/06551	Replace the reference "H04L 29/06551" and associated text with the following references and associated text.  cryptographic protocols H04L 9/00; protocols for network security H04L 63/00
H04L 12/4641	H04L 29/06612	Replace symbol "H04L 29/06612" in the reference with "H04L 63/0272"
H04L 63/0227	H04L 51/12	Replace symbol "H04L 51/12" in the reference with "H04L 51/212"
H04M 1/2535	H04L 29/06095	Replace symbol "H04L 29/06095" and associated text with:  implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP] H04L 69/16
H04M 3/5141	H04L 51/36	Replace symbol "H04L 51/36" in the reference with "H04L 51/56"
H04M 3/566	{relating to a participants right to speak (protocols for floor control H04L 29/06421, H04L 29/06428, H04L 29/06435)}	Replace the entire Title with the following new Title.  {relating to a participants right to speak (arrangements for multi-party communication with floor control, e.g. for conferences, H04L 65/4038, H04L 65/4046, H04L 65/4053)}
H04M 7/0039	H04L 29/06476	Replace symbol "H04L 29/06476" and associated text with:  network streaming of media packets H04L 65/60
H04M 2203/4509	H04L 51/36	Replace symbol "H04L 51/36" in the reference with "H04L 51/56"
H04M 2203/4545	H04L 51/14	Replace symbol "H04L 51/14" in the reference with "H04L 51/214"
H04M 2203/4581	H04L 51/24	Replace symbol "H04L 51/24" in the reference with "H04L 51/224"
H04M 2203/655	H04L 51/32	Replace symbol "H04L 51/52" in the reference with "H04L 51/52"
H04N 1/00228	H04L 67/26	Replace symbol "H04L 67/26" and associated text with:  push-based network services H04L 67/55

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Action; New reference symbol; New text</u>
H04N 21/2181	H04L 29/08549	Replace symbol "H04L 29/08549" and associated text with:  distributed storage of data in networks, e.g. transport arrangements for network file system [NFS], storage area networks [SAN] or network attached storage [NAS], H04L 67/1097
H04N 21/2183	H04L 29/08801	Replace symbol "H04L 29/08801" in the reference with "H04L 67/568"
H04N 21/222	H04L 29/08702	Replace symbol "H04L 29/08702" and associated text with:  provisioning of proxy services in data packet switching networks H04L 67/56
H04N 21/2265	H04L 29/12009	Replace symbol "H04L 29/12009" and associated text with:  network arrangements, protocols or services for addressing or naming H04L 61/00
H04N 21/23103	H04L 29/08144	Replace symbol "H04L 29/08144" in the reference with "H04L 67/1001"
H04N 21/23106	H04L 29/08801	Replace symbol "H04L 29/08801" in the reference with "H04L 67/568"
H04N 21/23116	H04L 29/0854	Replace symbol "H04L 29/0854" in the reference with "H04L 67/1095"
H04N 21/2343	H04L 29/06489	Replace symbol "H04L 29/06489" and associated text with:  media packet handling at the source H04L 65/762
H04N 21/2355	H04L 29/06489	Replace symbol "H04L 29/06489" and associated text with:  media packet handling at the source H04L 65/762
H04N 21/2355	H04L 51/34	Replace symbol "H04L 51/34" and associated text with:  tracking of instant messages H04L 51/234
H04N 21/238	H04L 29/06176	Replace symbol "H04L 29/06176" and associated text with:  real-time communication protocols in data switching networks H04L 65/00
H04N 21/238	H04L 29/08945	Replace symbol "H04L 29/08945" and associated text with:  scheduling or organising the servicing of application requests H04L 67/60
H04N 21/239	H04L 29/06176	Replace symbol "H04L 29/06176" and associated text with:  real-time communication protocols in data switching networks H04L 65/00
H04N 21/239	H04L 29/08945	Replace symbol "H04L 29/08945" and associated text with:  scheduling or organising the servicing of application requests H04L 67/60
H04N 21/2393	H04L 29/08945	Replace symbol "H04L 29/08945" and associated text with:

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Action; New reference symbol; New text</u>
		scheduling or organising the servicing of application requests H04L 67/60
H04N 21/2396	H04L 29/06836	Replace symbol "H04L 29/06836" in the reference with "H04L 63/102"
H04N 21/2408	H04L 29/08945	Replace symbol "H04L 29/08945" and associated text with:  scheduling or organising the servicing of application requests H04L 67/60
H04N 21/254	H04L 29/08666	Replace symbol "H04L 29/08666" and associated text with:  network services using third party service providers H04L 67/53
H04N 21/2541	H04L 29/06986	Replace symbol "H04L 29/06986" in the reference with "H04L 63/20"
H04N 21/258	H04L 29/08918	Replace symbol "H04L 29/08918" and associated text with:  profiles in network data switching protocols H04L 67/30
H04N 21/25808	H04L 29/08927	Replace symbol "H04L 29/08927" and associated text with:  terminal profiles in network data switching protocols H04L 67/303
H04N 21/25816	H04L 29/06755	Replace the reference "H04L 29/06755" and associated text with the following references and associated text.  cryptographic authentication protocols H04L 9/32; networks authentication protocols H04L 63/08
H04N 21/25841	H04L 29/08657	Replace symbol "H04L 29/08657" and associated text with:  location of the user terminal in data switching networks H04L 67/52
H04N 21/25875	H04L 29/06755	Replace the reference "H04L 29/06755" and associated text with the following references and associated text.  networks authentication protocols H04L 63/08
H04N 21/25891	H04L 29/08936	Replace symbol "H04L 29/08936" and associated text with:  user profiles in network data switching protocols H04L 67/306
H04N 21/262	H04L 29/08963	Replace symbol "H04L 29/08963" and associated text with:  establishing a time schedule or organising the servicing of application requests H04L 67/62
H04N 21/26216	H04L 29/08954	Replace symbol "H04L 29/08954" and associated text with:  establishing a schedule or organising the servicing of application requests taking into account QoS H04L 67/61

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Action; New reference symbol; New text</u>
H04N 21/26613	H04L 29/06707	Replace symbol "H04L 29/06707" and associated text with: network support of key management H04L 63/06
H04N 21/4108	H04L 29/12009	Replace symbol "H04L 29/12009" and associated text with: network arrangements, protocols or services for addressing or naming H04L 61/00
H04N 21/42684	H04L 29/12009	Replace symbol "H04L 29/12009" and associated text with: network arrangements, protocols or services for addressing or naming H04L 61/00
H04N 21/43	H04L 29/06176	Replace symbol "H04L 29/06176" and associated text with: real-time communication protocols in data switching networks H04L 65/00
H04N 21/4355	H04L 29/06496	Replace symbol "H04L 29/06496" and associated text with: media handling at the source in data packet switching networks H04L 65/764
H04N 21/437	H04L 29/06176	Replace symbol "H04L 29/06176" and associated text with: streaming protocols, e.g. RTP or RTCP, H04L 65/65
H04N 21/437	H04L 29/08945	Replace symbol "H04L 29/08945" and associated text with: scheduling or organising the servicing of application requests in data packet switching networks H04L 67/60
H04N 21/438	H04L 29/06176	Replace symbol "H04L 29/06176" and associated text with: real-time communication protocols in data switching networks H04L 65/00
H04N 21/4402	H04L 29/06496	Replace symbol "H04L 29/06496" and associated text with: media handling at the source in data packet switching networks H04L 65/764
H04N 21/4415	H04L 29/06809	Replace the reference "H04L 29/06809" and associated text with the following references and associated text.  cryptography using biological data H04L 9/3231; authentication in networks using biometric H04L 63/0861
H04N 21/4524	H04L 29/08657	Replace symbol "H04L 29/08657" in the reference with "H04L 67/52"
H04N 21/4532	H04L 29/08936	Replace symbol "H04L 29/08936" and associated text with:  user profiles in network data switching protocols H04L 67/306
H04N 21/4627	H04L 29/06986	Replace symbol "H04L 29/06986" in the reference with "H04L 63/20"

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Action; New reference symbol; New text</u>
H04N 21/4661	H04L 29/08936	Replace symbol "H04L 29/08936" and associated text with:  user profiles in network data switching protocols H04L 67/306
H04N 21/472	H04L 29/06462	Replace symbol "H04L 29/08936" and associated text with:  network services for supporting unicast streaming H04L 65/612
H04N 21/47214	H04L 51/24	Replace symbol "H04L 51/24" in the reference with "H04L 51/224"
H04N 21/4753	H04L 29/06782	Replace the reference "H04L 29/06782" and associated text with the following references and associated text.  cryptographic authentication protocols H04L 9/32; networks authentication protocols H04L 63/08
H04N 21/4755	H04L 29/08936	Replace symbol "H04L 29/08936" and associated text with:  user profiles in network data switching protocols H04L 67/306
H04N 21/4788	H04L 29/08306	Replace symbol "H04L 29/08306" and associated text with:  distributed application using peer-to-peer [P2P] networks H04L 67/104
H04N 21/63	H04L 29/06183	Replace symbol "H04L 29/06183" and associated text with:  real-time session protocols H04L 65/1101
H04N 21/63	H04L 29/08306	Replace symbol "H04L 29/08306" and associated text with:  distributed application using peer-to-peer [P2P] networks H04L 67/104
H04N 21/632	H04L 29/08306	Replace symbol "H04L 29/08306" and associated text with:  distributed application using peer-to-peer [P2P] networks H04L 67/104
H04N 21/63345	H04L 29/06707	Replace symbol "H04L 29/06707" and associated text with:  network support of key management H04L 63/06
H04N 21/6375	H04L 29/06095	Replace symbol "H04L 29/06095" and associated text with:  implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP] H04L 69/16
H04N 21/6377	H04L 29/06469	Replace symbol "H04L 29/06469" and associated text with:  one-way streaming services wherein the source is controlled by the destination H04L 65/613

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Action; New reference symbol; New text</u>
H04N 21/63775	H04L 29/06707	Existing “H04L 29/06707” reference splits into multiple references. Delete existing one and add the following text and symbols.  key management H04L 9/08; network support of key management H04L 63/06
H04N 21/64	H04L 29/06455	Replace symbol “H04L 29/06455” and associated text with:  support for multicast or broadcast of one-way stream services H04L 65/611
H04N 21/64	H04L 29/12009	Replace symbol “H04L 29/12009” and associated text with:  network arrangements, protocols or services for addressing or naming H04L 61/00
H04N 21/6402	H04L 29/12207	Replace symbol “H04L 29/12207” in the reference with “H04L 61/50”
H04N 21/643	H04L 29/06517	Replace symbol “H04L 29/06517 ” and associated text with:  network streaming protocols, e.g. real-time transport protocol [RTP] or real-time control protocol [RTCP], H04L 65/65
H04N 21/647	H04L 29/06183	Replace symbol “H04L 29/06183” and associated text with:  real-time session protocols H04L 65/1101
H04N 21/64715	H04L 29/06857	Replace symbol “H04L 29/06857” in the reference with “H04L 63/12”
H04N 21/6473	H04L 29/14	Replace symbol “H04L 29/14” and associated text with:  for recovering from a failure of a protocol instance or entity H04L 69/40
H04N 21/64776	H04L 29/06095	Replace symbol “H04L 29/06095” and associated text with:  implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP] H04L 69/16
H04N 21/64784	H04L 29/08702	Replace symbol “H04L 29/08702” and associated text with:  provisioning of proxy services in datapacket switching networks H04L 67/56
H04N 21/64792	H04L 29/06503	Replace symbol “H04L 29/06503” and associated text with:  intermediate media network packet handling H04L 65/765
H04N 21/64792	H04L 29/08783	Replace symbol “H04L 29/08783” and associated text with:  proxy provisioning conversion or adaptation for reducing the amount or size of exchanged application data H04L 67/5651
H04N 21/8166	H04L 29/08981	Replace symbol “H04L 29/08981” and associated text with:

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Action; New reference symbol; New text</u>
		involving the movement of software or configuration parameters H04L 67/34
H04N 21/8586	H04L 29/0809	Replace symbol "H04L 29/0809" and associated text with: Web-based protocols H04L 67/02

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Definitions references impacted by this revision project

<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>						
A 63B 24/0084		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Protocols for real-time services in data packet switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Protocols for telewriting; Protocols for networked simulations, virtual reality or games</td> <td>H04L 67/131</td> </tr> </table>	Network security protocols	H04L 63/00	Protocols for real-time services in data packet switching networks	H04L 65/00	Protocols for telewriting; Protocols for networked simulations, virtual reality or games	H04L 67/131
Network security protocols	H04L 63/00								
Protocols for real-time services in data packet switching networks	H04L 65/00								
Protocols for telewriting; Protocols for networked simulations, virtual reality or games	H04L 67/131								
A 63B 24/0084	H04L 29/06034	Informative reference	Delete reference and associated text						
A 63F 13/00	H04L 29/06	Relationship with other classification places	<p>Replace the following bullet</p> <ul style="list-style-type: none"> <li>This group is an application place for telecommunication, in particular with respect to network games . Data network services are covered by H04L 29/06.</li> </ul> <p>with following new bullet</p> <ul style="list-style-type: none"> <li>This group is an application place, with respect to network games . Network services security are covered by H04L 63/00. Real-time data network services are covered by H04L 65/00. Data network services are covered by H04L 67/00.</li> </ul>						
A 63F 13/31	H04L 29/06	Informative reference	Delete reference and associated text						
A 63F 13/31		Informative reference	<p>Insert the following new references into the Informative reference table</p> <table border="1"> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Protocols for real-time services in data packet switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> </table>	Network security protocols	H04L 63/00	Protocols for real-time services in data packet switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00
Network security protocols	H04L 63/00								
Protocols for real-time services in data packet switching networks	H04L 65/00								
Network protocols for data switching network services	H04L 67/00								
A 63F 13/335	H04L 29/06	Informative references	Delete reference and associated text						
A 63F 13/335		Informative references	Insert the following new references into the Informative reference table.						

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>						
			<table border="1"> <tr> <td>Protocols for real-time services in datapacket s switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> </table>	Protocols for real-time services in datapacket s switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00		
Protocols for real-time services in datapacket s switching networks	H04L 65/00								
Network protocols for data switching network services	H04L 67/00								
A 63F 13/34	H04L 29/08	Informative reference	Replace symbol “H04L 29/08” in the reference with “H04L 67/104”						
A 63F 13/71	H04L 29/06	Informative reference	Replace symbol “H04L 29/06” in the reference with “H04L 63/00”						
A 63F 2300/402	H04L 29/06	Informative reference	Delete reference and associated text						
A 63F 2300/402		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Protocols for real-time services in datapacket s switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> </table>	Network security protocols	H04L 63/00	Protocols for real-time services in datapacket s switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00
Network security protocols	H04L 63/00								
Protocols for real-time services in datapacket s switching networks	H04L 65/00								
Network protocols for data switching network services	H04L 67/00								
A 63F 2300/407	H04L 29/06	Informative reference	Delete reference and associated text						
A 63F 2300/407		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Protocols for real-time services in datapacket s switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> </table>	Protocols for real-time services in datapacket s switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00		
Protocols for real-time services in datapacket s switching networks	H04L 65/00								
Network protocols for data switching network services	H04L 67/00								
A 63F 2300/408	H04L 29/08	Informative reference	Replace symbol “H04L 29/08” in the reference with “H04L 67/104”						
A 63F 2300/532	H04L 29/06	Informative reference	Replace symbol “H04L 29/06” in the reference with “H04L 9/40”						
B60R 16/00	H04L 29/08	Informative reference	Replace symbol “H04L 29/08” in the reference with “H04L 65/40”						
B67D 7/145	H04L 29/08081	Informative reference	Replace symbol “H04L 29/08081” in the reference with “H04L 67/00”						
B67D 7/348	H04L 29/08081	Informative reference	Replace symbol “H04L 29/08081” in the reference with “H04L 67/00”						
D03D 51/00	H04L 29/00	Informative reference	Delete reference and associated text						

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>								
D03D 51/00		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Cryptographic protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Protocols for real-time services in datapacket switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic protocols	H04L 9/00	Network security protocols	H04L 63/00	Protocols for real-time services in datapacket switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00
Cryptographic protocols	H04L 9/00										
Network security protocols	H04L 63/00										
Protocols for real-time services in datapacket switching networks	H04L 65/00										
Network protocols for data switching network services	H04L 67/00										
G01C 21/3679	H04L 29/08657	Informative reference	Replace symbol “H04L 29/08657” in the reference with “H04L 67/52”								
G03H	H04L 29/00	Application-oriented references	Replace symbol “H04L 29/00” in the reference with “H04L 63/08”								
G05B 23/00	H04L 29/00	Informative reference	Delete reference and associated text								
G05B 23/00		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Protocols for real-time services in datapacket switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> </table>	Protocols for real-time services in datapacket switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00				
Protocols for real-time services in datapacket switching networks	H04L 65/00										
Network protocols for data switching network services	H04L 67/00										
G06F 3/0601	H04L 29/06	Informative reference	Delete reference and associated text								
G06F 3/0601		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Cryptographic protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Protocols for real-time services in datapacket switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic protocols	H04L 9/00	Network security protocols	H04L 63/00	Protocols for real-time services in datapacket switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00
Cryptographic protocols	H04L 9/00										
Network security protocols	H04L 63/00										
Protocols for real-time services in datapacket switching networks	H04L 65/00										
Network protocols for data switching network services	H04L 67/00										
G06F 3/062	H04L 29/06551	Informative reference	Replace symbol “H04L 29/06551” in the reference with “H04L 63/00”								
G06F 3/0635	H04L 29/08549	Informative reference	<p>Replace symbol “H04L 29/08549” and associated text with:</p> <table border="1"> <tr> <td>Distributed storage of data in networks, e.g. transport arrangements for network file</td> <td>H04L 67/1097</td> </tr> </table>	Distributed storage of data in networks, e.g. transport arrangements for network file	H04L 67/1097						
Distributed storage of data in networks, e.g. transport arrangements for network file	H04L 67/1097										

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			system[NFS], storage area networks [SAN] or network attached storage [NAS]	
G06F 3/0637	H04L 29/06823	Informative reference	Replace symbol “H04L 29/06823” in the reference with “H04L 63/10”	
G06F 3/0638	H04L 29/0604	Informative reference	Replace symbol “H04L 29/0604” references with “H04L 69/04”	
G06F 3/0644	H04L 29/08549, H04L 67/1097	Informative reference	<u>Replace</u> existing row with:	
			Distributed storage of data in networks, e.g. transport arrangements for network file system[NFS], storage area networks [SAN] or network attached storage [NAS]	H04L 67/1097
G06F 3/0653	H04L 29/06884	Informative reference	<u>Replace</u> existing reference with:	
			Network monitoring to detect or protect against malicious traffic	H04L 63/1408
G06F 3/067	H04L 29/08549, H04L 67/1097	Informative reference	<u>Replace</u> existing row with:	
			Distributed storage of data in networks, e.g. transport arrangements for network file system[NFS], storage area networks [SAN] or network attached storage [NAS]	H04L 67/1097
G06F 3/1226		Limiting reference	Delete the entire Limiting reference table and section.	

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>										
G06F 3/1226		Informative reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Device discovery specifically adapted for a queued job and aiming at e.g. load balancing or optimised printing</td> <td>G06F 3/126</td> </tr> <tr> <td>Network services</td> <td>H04L 67/50</td> </tr> <tr> <td>Network management</td> <td>H04L 41/00</td> </tr> <tr> <td>For service discovery</td> <td>H04L 61/4541</td> </tr> <tr> <td>Network applications for service discovery</td> <td>H04L 67/51</td> </tr> </table>	Device discovery specifically adapted for a queued job and aiming at e.g. load balancing or optimised printing	G06F 3/126	Network services	H04L 67/50	Network management	H04L 41/00	For service discovery	H04L 61/4541	Network applications for service discovery	H04L 67/51
Device discovery specifically adapted for a queued job and aiming at e.g. load balancing or optimised printing	G06F 3/126												
Network services	H04L 67/50												
Network management	H04L 41/00												
For service discovery	H04L 61/4541												
Network applications for service discovery	H04L 67/51												
G06F 3/1229	G06F 3/1259, H04L 29/08, H04L 41/00	Limiting reference	Delete the entire Limiting reference table and section.										
G06F 3/1229		Informative reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Print job status</td> <td>G06F 3/1259</td> </tr> <tr> <td>Network services</td> <td>H04L 67/50</td> </tr> <tr> <td>Network management</td> <td>H04L 41/00</td> </tr> <tr> <td>for service discovery</td> <td>H04L 61/4541</td> </tr> <tr> <td>Network applications for service discovery</td> <td>H04L 67/51</td> </tr> </table>	Print job status	G06F 3/1259	Network services	H04L 67/50	Network management	H04L 41/00	for service discovery	H04L 61/4541	Network applications for service discovery	H04L 67/51
Print job status	G06F 3/1259												
Network services	H04L 67/50												
Network management	H04L 41/00												
for service discovery	H04L 61/4541												
Network applications for service discovery	H04L 67/51												
G06F 3/1454	H04L 29/0602, H04L 29/06027, H04L 29/06034	Informative reference	Delete the references and associated text from the Informative reference table row.										
G06F 3/1454		Informative reference	Insert the following new references into the Informative reference table.										

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			<table border="1"> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> <tr> <td>Real-time session protocols</td> <td>H04L 65/1101</td> </tr> <tr> <td>Protocols for games, networked simulations or virtual reality</td> <td>H04L 67/131</td> </tr> </table>	Network arrangements or protocols for supporting network services or applications	H04L 67/00	Real-time session protocols	H04L 65/1101	Protocols for games, networked simulations or virtual reality	H04L 67/131		
Network arrangements or protocols for supporting network services or applications	H04L 67/00										
Real-time session protocols	H04L 65/1101										
Protocols for games, networked simulations or virtual reality	H04L 67/131										
G06F 3/165	H04L 29/06	Relationship with other classification places	Replace existing reference and text “Control of streaming; H04L 29/06” with  Network security protocols H04L 9/40								
G06F 9/4416	H04L 61/2023, H04L 61/2015	Informative reference	Replace symbol “H04L 61/2023, H04L 61/2015” in the reference with “H04L 61/5014”								
G06F 9/452	H04L 67/38	Limiting reference	Replace symbol “H04L 67/38” and associated text with:  <table border="1"> <tr> <td>Protocols for virtual reality</td> <td>H04L 67/131</td> </tr> </table>	Protocols for virtual reality	H04L 67/131						
Protocols for virtual reality	H04L 67/131										
G06F 9/46	H04L 29/06	Informative reference	Delete the reference and associated text from the Informative table.								
G06F 9/46		Informative reference	Insert the following new references into the Informative reference table.  <table border="1"> <tr> <td>Cryptographic protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Protocols for real-time services in data packet switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic protocols	H04L 9/00	Network security protocols	H04L 63/00	Protocols for real-time services in data packet switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00
Cryptographic protocols	H04L 9/00										
Network security protocols	H04L 63/00										
Protocols for real-time services in data packet switching networks	H04L 65/00										
Network protocols for data switching network services	H04L 67/00										
G06F 9/50	H04L 29/06	Informative reference	Delete the reference and associated text from the Limiting table.								
G06F 9/50		Limiting reference	Insert the following new references into the Limiting reference table.  <table border="1"> <tr> <td>Cryptographic protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Protocols for real-time services in data packet switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic protocols	H04L 9/00	Network security protocols	H04L 63/00	Protocols for real-time services in data packet switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00
Cryptographic protocols	H04L 9/00										
Network security protocols	H04L 63/00										
Protocols for real-time services in data packet switching networks	H04L 65/00										
Network protocols for data switching network services	H04L 67/00										

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G06F 9/54	H04L 29/06	Informative reference	Delete the reference and associated text from the Informative table.								
G06F 9/54		Informative reference	<p>Insert the following new references into the Informative reference table</p> <table border="1"> <tr> <td>Cryptographic protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Protocols for real-time services in datapacket switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic protocols	H04L 9/00	Network security protocols	H04L 63/00	Protocols for real-time services in datapacket switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00
Cryptographic protocols	H04L 9/00										
Network security protocols	H04L 63/00										
Protocols for real-time services in datapacket switching networks	H04L 65/00										
Network protocols for data switching network services	H04L 67/00										
G06F 11/00	H04L 29/14	Informative reference	<p>Replace symbol “H04L 29/14” and associated text with:</p> <table border="1"> <tr> <td>Recovering in data packet switching network from a failure of a protocol instance or entity</td> <td>H04L 69/40</td> </tr> </table>	Recovering in data packet switching network from a failure of a protocol instance or entity	H04L 69/40						
Recovering in data packet switching network from a failure of a protocol instance or entity	H04L 69/40										
G06F 11/0703	H04L 29/06877	Informative reference	Replace symbol “H04L 29/06877” in the reference with “H04L 63/14”								
G06F 11/1443	H04L 29/00	Informative reference	Replace symbol “H04L 29/00” in the reference with “H04L 69/00”								
G06F 11/2056	H04L 29/0854	Informative reference	Replace symbol “H04L 29/0854” in the reference with “H04L 67/1095”								
G06F 11/30	H04L 29/06877	Informative reference	Replace symbol “H04L 29/06877” in the reference with “H04L 63/14”								
G06F 11/3438	H04L 67/22	Informative reference	Delete the entire Informative references table and section.								
G06F 11/3438		Limiting reference	<p>Insert the following new reference into a <u>new</u> Limiting references table.</p> <p><b>References</b> <b>Limiting references</b> <i>This place does not cover:</i></p> <table border="1"> <tr> <td>Tracking the activity of the user</td> <td>H04L 67/535</td> </tr> </table>	Tracking the activity of the user	H04L 67/535						
Tracking the activity of the user	H04L 67/535										
G06F 12/0866	H04L 67/2842	Informative reference	Replace symbol “H04L 67/2842” in the reference with “H04L 67/568”								
G06F 13/42	H04L 29/06	Informative reference	Delete the reference and associated text from the Informative table.								
G06F 13/42		Informative reference	Insert the following new references into the Informative reference table.								

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			<table border="1"> <tr> <td>Cryptographic protocols; Financial cryptography</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Protocols for real-time services in data packet switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic protocols; Financial cryptography	H04L 9/00	Network security protocols	H04L 63/00	Protocols for real-time services in data packet switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00
Cryptographic protocols; Financial cryptography	H04L 9/00										
Network security protocols	H04L 63/00										
Protocols for real-time services in data packet switching networks	H04L 65/00										
Network protocols for data switching network services	H04L 67/00										
G06F 15/16	H04L 29/06	Informative reference	Delete the reference and associated text from the Informative table.								
G06F 15/16	H04L 29/06	Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Cryptographic protocols; Financial cryptography</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Protocols for real-time services in datapacket switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic protocols; Financial cryptography	H04L 9/00	Network security protocols	H04L 63/00	Protocols for real-time services in datapacket switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00
Cryptographic protocols; Financial cryptography	H04L 9/00										
Network security protocols	H04L 63/00										
Protocols for real-time services in datapacket switching networks	H04L 65/00										
Network protocols for data switching network services	H04L 67/00										
G06F 16/00	H04L 29/00, H04L 67/00	Application-oriented references	Delete the reference H04L 29/00 <i>only</i> , from the exiting table row.								
G06F 16/00		Application-oriented references	<p>Insert the following new references into the Application-oriented reference table.</p> <table border="1"> <tr> <td>Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network arrangements or protocols for supporting network services or applications	H04L 67/00
Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00										
Network architectures or network communication protocols for network security	H04L 63/00										
Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00										
Network arrangements or protocols for supporting network services or applications	H04L 67/00										
G06F 16/172	H04L 67/2842	Informative reference	Replace symbol “H04L 67/2842” in the reference with “H04L 67/568”								
G06F 16/95	H04L 29/08	Relationship with other	Replace symbol with H04L 65/40.								

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>										
		classification places											
G06F 16/95	H04L 29/06, H04L 29/08, H04L 67/00	Informative reference	Delete the table row from the Informative table.										
G06F 16/95	H04L 29/06095	Informative reference	Delete the reference and associated text from the Informative table.										
G06F 16/95		Informative reference	Insert the following new references into the Informative reference table. <table border="1"> <tr> <td>Cryptographic protocols; Financial cryptography</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Protocols for real-time services in datapacket switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> <tr> <td>Implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP]</td> <td>H04L 69/16</td> </tr> </table>	Cryptographic protocols; Financial cryptography	H04L 9/00	Network security protocols	H04L 63/00	Protocols for real-time services in datapacket switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00	Implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP]	H04L 69/16
Cryptographic protocols; Financial cryptography	H04L 9/00												
Network security protocols	H04L 63/00												
Protocols for real-time services in datapacket switching networks	H04L 65/00												
Network protocols for data switching network services	H04L 67/00												
Implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP]	H04L 69/16												
G06F 16/95	H04L 29/12009	Informative reference	Replace symbol "H04L 29/12009" in the reference with "H04L 61/00"										
G06F 16/9535	H04L 29/06551	Informative reference	Replace symbol "H04L 29/06551" in the reference with "H04L 63/00"										
G06F 16/9537	H04L 29/08657	Informative reference	Replace symbol "H04L 29/08657" in the reference with "H04L 67/52"										
G06F 16/9537	H04L 51/20	Informative reference	Replace symbol "H04L 51/20" in the reference with "H04L 51/222"										
G06F 16/9566	H04L 29/12009	Informative reference	Replace symbol "H04L 29/12009" in the reference with "H04L 61/00"										
G06F 16/9566	H04L 29/12594	Informative reference	Replace symbol "H04L 29/12594" in the reference with "H04L 61/30"										
G06F 16/9566	H04L 29/12943	Informative reference	Replace symbol "H04L 29/12943" in the reference with "H04L 2101/672"										
G06F 16/9574	H04L 29/08801	Informative reference	Replace symbol "H04L 29/08801" in the reference with "H04L 67/568"										
G06F 16/9577	H04L 29/08108	Informative reference	Replace symbol "H04L 29/08108" in the reference with "H04L 67/04"										
G06F 16/9577	H04L 29/08756	Informative reference	Replace symbol "H04L 29/08756" in the reference with "H04L 67/565"										
G06F 21/00	H04L 29/06	Relationship with other	Replace the second paragraph "Furthermore, classification should be directed to group H04L 29/06 when network involvement or										

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>						
		classification places	<p>protocols are of relevance” in the <i>Relationship with other classification places</i> with the following new paragraph.</p> <p>Furthermore, classification should be directed to group when cryptographic protocols are of relevance H04L 9/00, H04L 63/00 when network security protocols are of relevance, H04L 65/60 when Media handling, encoding, streaming or conversion are of relevance, H04L 67/01 when network protocols for data switching network services are of relevance.</p>						
G06F 21/30	H04L 29/06789	Informative reference	Replace symbol “H04L 29/06789” in the reference with “H04L 63/0838”						
G06F 21/30	H04L 29/06795	Informative reference	Replace symbol “H04L 29/06795” in the reference with “H04L 63/0846”						
G06F 21/30	H04L 29/06755	Limiting reference	Replace symbol “H04L 29/06755” in the reference with “H04L 63/08”						
G06F 21/31	H04L 29/06755	Informative reference	Replace symbol “H04L 29/06755” in the reference with “H04L 63/08”						
G06F 21/32	H04L 29/06809	Informative reference	Replace symbol “H04L 29/06809” in the reference with “H04L 63/0861”						
G06F 21/33	H04L 29/06761	Informative reference	Replace symbol “H04L 29/06761” in the reference with “H04L 63/0807”						
G06F 21/33	H04L 29/06775	Informative reference	Replace symbol “H04L 29/06775” in the reference with “H04L 63/0823”						
G06F 21/34	H04L 29/06802	Informative reference	Replace symbol “H04L 29/06802” in the reference with “H04L 63/0853”						
G06F 21/35	H04L 29/06802	Informative reference	Replace symbol “H04L 29/06802” in the reference with “H04L 63/0853”						
G06F 21/445	H04L 29/06816	Informative reference	Replace symbol “H04L 29/06816” in the reference with “H04L 63/0869”						
G06F 2221/0788	H04L 29/06	Limiting reference	Delete the entire Limiting reference table and section.						
G06F 2221/0788	H04L 29/06	Limiting reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b>  <b>Informative references</b>  <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tbody> <tr> <td>Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> </tbody> </table>	Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00
Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00								
Network architectures or network communication protocols for network security	H04L 63/00								
Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00								

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>						
			<table border="1"> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Network arrangements or protocols for supporting network services or applications	H04L 67/00				
Network arrangements or protocols for supporting network services or applications	H04L 67/00								
G06K 9/00	H04L 29/06551	Application-oriented references	Replace symbol "H04L 29/06551" and associated text with: <table border="1"> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> </table>	Network security protocols	H04L 63/00				
Network security protocols	H04L 63/00								
G06N 3/006	H04L 29/06034	Informative reference	Replace symbol "H04L 29/06034" and associated text with: <table border="1"> <tr> <td>Protocols for games, networked simulations or virtual reality</td> <td>H04L 67/131</td> </tr> </table>	Protocols for games, networked simulations or virtual reality	H04L 67/131				
Protocols for games, networked simulations or virtual reality	H04L 67/131								
G06N 7/06	H04L 29/00	Application-oriented references	Delete the reference and associated text from the Informative table.						
G06N 7/06		Application-oriented references	Insert the following new references into the Informative reference table. <table border="1"> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network arrangements or protocols for supporting network services or applications	H04L 67/00
Network architectures or network communication protocols for network security	H04L 63/00								
Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00								
Network arrangements or protocols for supporting network services or applications	H04L 67/00								
G06Q 10/00		Limiting reference	Delete the entire existing Limiting reference table and section						
G06Q 10/00	H04L 29/06	Informative reference	Delete the following reference from the Informative reference table <table border="1"> <tr> <td>Protocols for controlled communication</td> <td>H04L 29/06</td> </tr> </table>	Protocols for controlled communication	H04L 29/06				
Protocols for controlled communication	H04L 29/06								

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>														
G06Q 10/00	H04L 29/06	Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Payment of bills</td> <td>G06Q 20/102</td> </tr> <tr> <td>Billing, shopping or e-commerce per se</td> <td>G06Q30/06</td> </tr> <tr> <td>Finance per se</td> <td>G06Q40/00</td> </tr> <tr> <td>Data processing specially adapted for complex mathematical operations</td> <td>G06F 17/10</td> </tr> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Payment of bills	G06Q 20/102	Billing, shopping or e-commerce per se	G06Q30/06	Finance per se	G06Q40/00	Data processing specially adapted for complex mathematical operations	G06F 17/10	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network arrangements or protocols for supporting network services or applications	H04L 67/00
Payment of bills	G06Q 20/102																
Billing, shopping or e-commerce per se	G06Q30/06																
Finance per se	G06Q40/00																
Data processing specially adapted for complex mathematical operations	G06F 17/10																
Network architectures or network communication protocols for network security	H04L 63/00																
Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00																
Network arrangements or protocols for supporting network services or applications	H04L 67/00																
G06Q 10/10		Limiting reference	<p>Insert the following new reference into a <u>new</u> Limiting references table.</p> <p><b>References</b> <b>Limiting references</b> <i>This place does not cover:</i></p> <table border="1"> <tr> <td>User-to-user messaging in packet-switching networks, transmitted according to store-and-forward or real-time protocols, e.g. e-mail</td> <td>H04L 51/00</td> </tr> </table>	User-to-user messaging in packet-switching networks, transmitted according to store-and-forward or real-time protocols, e.g. e-mail	H04L 51/00												
User-to-user messaging in packet-switching networks, transmitted according to store-and-forward or real-time protocols, e.g. e-mail	H04L 51/00																
G06Q 10/107		Limiting reference	<p>Insert the following new reference into a <u>new</u> Limiting references table.</p> <p><b>References</b> <b>Limiting references</b> <i>This place does not cover:</i></p> <table border="1"> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network arrangements or protocols for supporting network services or applications	H04L 67/00								
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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>								
			<table border="1"> <tr> <td>User-to-user messaging in packet switching networks, transmitted according to store and-forward or real-time protocols</td> <td>H04L 51/00</td> </tr> </table>	User-to-user messaging in packet switching networks, transmitted according to store and-forward or real-time protocols	H04L 51/00						
User-to-user messaging in packet switching networks, transmitted according to store and-forward or real-time protocols	H04L 51/00										
G06Q 20/00	H04L 29/06	Relationship with other classification places	<p>Replace the existing paragraph with the following new paragraph:</p> <p>It does not cover then generic network protocols, e.g. internet protocols, which are instead classified in H04L 67/00. It does not cover real-time protocols which are classified in H04L 65/00. It does not cover those network/secure protocols which are classified in H04L 63/00. It does not cover cryptographic protocols, e.g. blockchains which are classified in H04L 9/00.</p>								
G06Q 20/027	H04L 29/00	Informative reference	Delete the reference and associated text from the Informative table.								
G06Q 20/027		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network arrangements or protocols for supporting network services or applications	H04L 67/00
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Network arrangements or protocols for supporting network services or applications	H04L 67/00										
G06Q 20/1235	H04L 29/06	Informative reference	Replace symbol "H04L 29/06" in the reference with "H04L 63/00"								
G06Q 20/3229	H04L 29/06802	Informative reference	Replace symbol "H04L 29/06802" in the reference with "H04L 63/0853"								
G06Q 20/38215	H04L 29/06775	Informative reference	Replace symbol "H04L 29/06775" in the reference with "H04L 63/0823"								
G06Q 20/3829	H04L 29/06551	Informative reference	Replace symbol "H04L 29/06551" in the reference with "H04L 63/00"								
G06Q 20/409	H04L 29/06755	Informative reference	Replace symbol "H04L 29/06755" in the reference with "H04L 63/08"								
G06Q 30/0224	H04L 29/06, G10B	Informative reference	Delete only the reference "H04L 29/06," from the exiting table row.								
G06Q 30/0224		Informative reference	Insert the following new references into the Informative reference table.								

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			<table border="1"> <tr> <td>Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network arrangements or protocols for supporting network services or applications	H04L 67/00
Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00										
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Network arrangements or protocols for supporting network services or applications	H04L 67/00										
G06Q 30/0251	H04L 29/06	Informative reference	Delete only the reference “H04L 29/06,” from the exiting table row.								
G06Q 30/0251		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network arrangements or protocols for supporting network services or applications	H04L 67/00
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Network arrangements or protocols for supporting network services or applications	H04L 67/00										
G06Q 30/0271	H04L 29/06836	Informative reference	<p>Replace symbol “H04L 29/06836” and associated text with:</p> <table border="1"> <tr> <td>Controlling access to network resources using entity or user profiles</td> <td>H04L 63/102</td> </tr> </table>	Controlling access to network resources using entity or user profiles	H04L 63/102						
Controlling access to network resources using entity or user profiles	H04L 63/102										
G06Q 40/00	H04L 29/06	Informative reference	Delete the reference and associated text from the Informative table.								
G06Q 40/00	H04L 29/06	Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network arrangements or protocols for supporting network services or applications	H04L 67/00		
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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>						
G06Q 40/02	H04L 29/06	Informative reference	Delete the reference and associated text from the Informative table.						
G06Q 40/02		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network arrangements or protocols for supporting network services or applications	H04L 67/00
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G06Q 40/06	H04L 29/06	Informative reference	Delete the reference and associated text from the Informative table.						
G06Q 40/06		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network arrangements or protocols for supporting network services or applications	H04L 67/00
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Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00								
Network arrangements or protocols for supporting network services or applications	H04L 67/00								
G07C 5/008	H04L 29/00	Special rules	Delete second statement “The aspect of protocol of communication should be classified in H04L 29/00”.						
G07C 5/008		Special rules	<p>Insert the following new statements after the first statement.</p> <p>The aspect of network security protocols should be classified in H04L 63/00.</p> <p>The aspect of real-time data switching communication protocols should be classified in H04L 65/00.</p> <p>The aspects of network protocols for data switching network services H04L 67/00.</p>						
G07C 9/00	H04L 29/00	Relationship with other classification places	<p>Delete the following bullet.</p> <p>Protocols of communication, see H04L 29/00</p>						

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>						
G07C 9/00	H04L 9/00	Relationship with other classification places	Replace the text “Secret or secure communication” for the bullet H04L9/00, as shown below.  Cryptographic protocols, see H04L 9/00						
G07C 9/00		Relationship with other classification places	Insert the following three new bullets after the last bullet.  Network security protocols, see H04L 63/00 Real-time communication protocols in data switching networks see H04L 65/00 Network protocols for data switching network services see H04L 67/00						
G08B 13/00	H04L 9/00	Informative reference	Replace the reference text “Arrangements for secret or secure communication” with the following text.  <table border="1"> <tr> <td>Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols</td> <td>H04L 9/00</td> </tr> </table>	Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00				
Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00								
G08B 13/00		Informative reference	Insert the following new references into the Informative reference table.  <table border="1"> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network arrangements or protocols for supporting network services or applications	H04L 67/00
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Network arrangements or protocols for supporting network services or applications	H04L 67/00								
G08G 1/127	H04L 29/08558	Informative reference	Replace symbol “H04L 29/08558” in the reference with “H04L 67/12”						
G08G 1/20	H04L 29/08657	Informative reference	Replace symbol “H04L 29/08657” in the reference with “H04L 67/52”						
G08G 5/00	H04L 29/02	Informative reference	Delete the reference and associated text from the Informative table.						
G08G 5/00		Informative reference	Insert the following new references into the Informative reference table.  <table border="1"> <tr> <td>Real-time session management in datapacket switching networks</td> <td>H04L 65/1066</td> </tr> <tr> <td>Session management in data packet switching networks</td> <td>H04L 67/14</td> </tr> </table>	Real-time session management in datapacket switching networks	H04L 65/1066	Session management in data packet switching networks	H04L 67/14		
Real-time session management in datapacket switching networks	H04L 65/1066								
Session management in data packet switching networks	H04L 67/14								

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>				
G09B 9/00	H04L 29/06034	Informative reference	Delete the entire Informative references section and table.				
G09B 9/00		Limiting references	<p>Insert the following reference into a <u>new</u> Limiting references table.</p> <p><b>References</b> <b>Limiting references</b> <i>This place does not cover:</i></p> <table border="1"> <tr> <td>Protocols for games, networked simulations or virtual reality</td> <td>H04L 67/131</td> </tr> </table>	Protocols for games, networked simulations or virtual reality	H04L 67/131		
Protocols for games, networked simulations or virtual reality	H04L 67/131						
G09B 9/02	H04L 29/06034	Relationship with other classification places	Replace symbol “H04L 29/06034” in the reference with “H04L 67/131”				
G09G 5/006	H04L 29/02	Informative reference	Delete the reference and associated text from the Informative table.				
G09G 5/006		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Real-time session management in datapacket switching networks</td> <td>H04L 65/1066</td> </tr> <tr> <td>Session management in data packet switching networks</td> <td>H04L 67/14</td> </tr> </table>	Real-time session management in datapacket switching networks	H04L 65/1066	Session management in data packet switching networks	H04L 67/14
Real-time session management in datapacket switching networks	H04L 65/1066						
Session management in data packet switching networks	H04L 67/14						
G11B 20/0007	H04L 29/0604	Informative reference	Replace symbol “H04L 29/0604” references with “H04L 69/04”				
G11B 20/00086	H04L 29/0602	Informative reference	Replace symbol “H04L 29/0602” references with “H04L 67/00”				
G11B 20/00086	H04L 29/06027	Informative reference	Replace symbol “H04L 29/06027” references with “H04L 65/1101”				
G11B 20/00086	H04L 29/06659	Informative reference	Replace symbol “H04L 29/06659” references with “H04L 63/0428”				
G11B 20/00086	H04L 29/06666	Informative reference	Replace symbol “H04L 29/06666” references with “H04L 63/0435”				
G11B 20/00086	H04L 29/06673	Informative reference	Replace symbol “H04L 29/06673” references with “H04L 63/0442”				
G11B 20/00086	H04L 29/06707	Informative reference	Replace symbol “H04L 29/06707” references with “H04L 63/06”				
G11B 20/00086	H04L 29/06727	Informative reference	Replace symbol “H04L 29/06727” references with “H04L 63/064”				
G11B 27/00	H04L 29/06027	Informative reference	Replace symbol “H04L 29/06027” references with “H04L 65/1101”				

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>								
H03M 13/00	G06F 11/00, G11B 20/00, G11C 29/00, H04L 1/00, H04L 12/00, H04L 25/00, H04L 27/00, H04L 29/00, H04N 7/00	Informative reference	Delete only the reference symbol “H04L 29/00,” from the exiting table row.								
H03M 13/00		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network arrangements or protocols for supporting network services or applications	H04L 67/00
Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00										
Network architectures or network communication protocols for network security	H04L 63/00										
Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00										
Network arrangements or protocols for supporting network services or applications	H04L 67/00										
H03M 13/00	H04L 29/00	Relationship with other classification places (8 <sup>th</sup> bullet)	Replace symbol “H04L 29/00” in relationship with “H04L 65/00”								
H04B 7/14	H04L 29/06	Informative reference	Delete the reference and associated text from the Informative table.								
H04B 7/14	H04L 9/00	Informative reference	<p>Replace the text with the following new description.</p> <p>Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols</p>								
H04B 7/14		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network arrangements or protocols for supporting network services or applications	H04L 67/00		
Network architectures or network communication protocols for network security	H04L 63/00										
Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00										
Network arrangements or protocols for supporting network services or applications	H04L 67/00										

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>						
H04B 7/24	H04L 29/06	Informative reference	Delete the reference and associated text from the Informative table.						
H04B 7/24	H04L 9/00	Informative reference	Replace the text with the following new description.  Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols						
H04B 7/24		Informative reference	Insert the following new references into the Informative reference table. <table border="1"> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network arrangements or protocols for supporting network services or applications	H04L 67/00
Network architectures or network communication protocols for network security	H04L 63/00								
Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00								
Network arrangements or protocols for supporting network services or applications	H04L 67/00								
H04B 10/03	H04J 14/02, H04L 29/14	Limiting references	Delete the entire Limiting references table and section.						
H04B 10/03		Informative reference	Insert: A new Informative reference section with the following new references.  <b>References</b> <b><i>Informative references</i></b> <i>Attention is drawn to the following places, which may be of interest for search:</i> <table border="1"> <tr> <td>Fault recovery specific to wavelength division multiplex [WDM] systems</td> <td>H04J 14/02</td> </tr> <tr> <td>For recovering from a failure of a protocol instance or entity, e.g. service redundancy protocols, protocol state redundancy or protocol service redirection</td> <td>H04L 69/40</td> </tr> </table>	Fault recovery specific to wavelength division multiplex [WDM] systems	H04J 14/02	For recovering from a failure of a protocol instance or entity, e.g. service redundancy protocols, protocol state redundancy or protocol service redirection	H04L 69/40		
Fault recovery specific to wavelength division multiplex [WDM] systems	H04J 14/02								
For recovering from a failure of a protocol instance or entity, e.g. service redundancy protocols, protocol state redundancy or protocol service redirection	H04L 69/40								
H04J 3/00	H04L 29/00	Informative reference	Delete the reference and associated text from the Informative table.						
H04J 3/00		Informative reference	Insert: The following new references into the Informative reference table. <table border="1"> <tr> <td>Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> </table>	Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00	Network architectures or network communication protocols for network security	H04L 63/00		
Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00								
Network architectures or network communication protocols for network security	H04L 63/00								

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>								
			<table border="1"> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network protocols for data switching network services Network arrangements or protocols for supporting network services or applications	H04L 67/00				
Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00										
Network protocols for data switching network services Network arrangements or protocols for supporting network services or applications	H04L 67/00										
H04J 3/07	H04L 29/06	Informative reference	Delete the reference and associated text from the Informative table.								
H04J 3/07		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network protocols for data switching network services Network arrangements or protocols for supporting network services or applications	H04L 67/00
Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00										
Network architectures or network communication protocols for network security	H04L 63/00										
Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00										
Network protocols for data switching network services Network arrangements or protocols for supporting network services or applications	H04L 67/00										
H04J 3/1617	H04L 29/00	Informative reference	Delete the reference and associated text from the Informative table.								
H04J 3/1617		Informative reference	<p>Insert: The following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network architectures or network communication protocols for network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Network arrangements, protocols or services for supporting real-time applications in data packet communication</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services Network arrangements or protocols for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00	Network architectures or network communication protocols for network security	H04L 63/00	Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00	Network protocols for data switching network services Network arrangements or protocols for supporting network services or applications	H04L 67/00
Cryptographic mechanisms or cryptographic; arrangements for secret or secure communications; Network security protocols	H04L 9/00										
Network architectures or network communication protocols for network security	H04L 63/00										
Network arrangements, protocols or services for supporting real-time applications in data packet communication	H04L 65/00										
Network protocols for data switching network services Network arrangements or protocols for supporting network services or applications	H04L 67/00										
H04L 1/18	H04L 69/16	Informative reference	Replace H04L 69/16 text with the following:								

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>												
			<table border="1"> <tr> <td>Implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP]</td> <td>H04L 69/16</td> </tr> </table>	Implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP]	H04L 69/16										
Implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP]	H04L 69/16														
H04L 12/00	H04L 29/02, H04L 29/06	Informative reference	<p>Delete the following references and associated text from the Informative table.</p> <table border="1"> <tr> <td>Communication control for transmission of digital information in general</td> <td>H04L 29/02</td> </tr> <tr> <td>Data transfer characterised by protocol</td> <td>H04L 29/06</td> </tr> </table>	Communication control for transmission of digital information in general	H04L 29/02	Data transfer characterised by protocol	H04L 29/06								
Communication control for transmission of digital information in general	H04L 29/02														
Data transfer characterised by protocol	H04L 29/06														
H04L 12/00		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Cryptographic protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Protocols for real-time services in data packet switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Real-time session management in data packet switching networks</td> <td>H04L 65/1066</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> <tr> <td>Session management in data packet switching networks</td> <td>H04L 67/14</td> </tr> </table>	Cryptographic protocols	H04L 9/00	Network security protocols	H04L 63/00	Protocols for real-time services in data packet switching networks	H04L 65/00	Real-time session management in data packet switching networks	H04L 65/1066	Network protocols for data switching network services	H04L 67/00	Session management in data packet switching networks	H04L 67/14
Cryptographic protocols	H04L 9/00														
Network security protocols	H04L 63/00														
Protocols for real-time services in data packet switching networks	H04L 65/00														
Real-time session management in data packet switching networks	H04L 65/1066														
Network protocols for data switching network services	H04L 67/00														
Session management in data packet switching networks	H04L 67/14														
H04L 12/18	H04L 29/08657	Definition statement	<p><u>Replace</u> the existing reference symbol H04L29/08657 and text “protocols for adapting network applications to user terminal location H04L 29/08657” with:</p> <p style="text-align: center;">location of the user terminal in data switching networks H04L 67/52</p>												
H04L 12/18	H04L 29/08693	Definition statement	<p><u>Replace</u> existing reference symbol H04L29/08693 and text “Arrangements for push based network services in general, such as pushing personal data to (a) user(s), are clas fied in H04L 29/08693” with:</p> <p style="text-align: center;">Pushed-based network services H04L 67/55</p>												
H04L 12/18	H04L 29/06414	Informative reference	<p>Replace symbol “H04L 29/06414” and associated text with:</p>												

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>												
			<table border="1"> <tr> <td>Arrangements for multi-party communication, e.g. for conferences</td> <td>H04L 65/403</td> </tr> </table>	Arrangements for multi-party communication, e.g. for conferences	H04L 65/403										
Arrangements for multi-party communication, e.g. for conferences	H04L 65/403														
H04L 12/18	H04L 29/06448	Informative reference	Replace symbol “H04L 29/06448” and associated text with: <table border="1"> <tr> <td>Network services for supporting one-way streaming services</td> <td>H04L 65/61</td> </tr> </table>	Network services for supporting one-way streaming services	H04L 65/61										
Network services for supporting one-way streaming services	H04L 65/61														
H04L 12/18	H04W 4/10, H04L 29/06442	Informative	<u>Replace</u> existing references and text with:  Push-to-services, e.g. push-to-talk or push-to-video H04L 65/4061												
H04L 12/18		Informative	Insert the following reference and text in the Informative reference table  Push-to-Talk [PTT] or Push-On-Call services H04W 4/10												
H04L 12/2801	H04L 29/06176, H04M 7/006, H04N 7/173, H04N 7/24	Limiting references	Delete the entire Limiting references table.												
H04L 12/2801		Informative references	Insert the following new references into the Informative reference table. <table border="1"> <tr> <td>Cryptographic protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Real-time communication protocols in data switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> <tr> <td>Telephony over cable network</td> <td>H04M 7/006</td> </tr> <tr> <td>Video on demand and video coding</td> <td>H04N 7/173, H04N 7/24</td> </tr> </table>	Cryptographic protocols	H04L 9/00	Network security protocols	H04L 63/00	Real-time communication protocols in data switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00	Telephony over cable network	H04M 7/006	Video on demand and video coding	H04N 7/173, H04N 7/24
Cryptographic protocols	H04L 9/00														
Network security protocols	H04L 63/00														
Real-time communication protocols in data switching networks	H04L 65/00														
Network protocols for data switching network services	H04L 67/00														
Telephony over cable network	H04M 7/006														
Video on demand and video coding	H04N 7/173, H04N 7/24														
H04L 12/2803	H04L 29/06068	Informative reference	Replace symbol “H04L 29/06068” in the reference with “H04L 69/08”												
H04L 12/2803	H04L 29/06551	Informative reference	Replace symbol “H04L 29/06551” in the reference with “H04L 63/00”												
H04L 12/2803	H04L 29/0809	Informative reference	Replace symbol “H04L 29/0809” and associated text with: <table border="1"> <tr> <td>Web-based protocols</td> <td>H04L 67/02</td> </tr> </table>	Web-based protocols	H04L 67/02										
Web-based protocols	H04L 67/02														
H04L 12/2803	H04L 29/08099	Informative reference	Delete the reference and associated text from the Informative table.												

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>				
H04L 12/2803		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Remote control or remote monitoring of applications in data packet switching networks</td> <td>H04L 67/025</td> </tr> <tr> <td>Network monitoring</td> <td>H04L 43/00</td> </tr> </table>	Remote control or remote monitoring of applications in data packet switching networks	H04L 67/025	Network monitoring	H04L 43/00
Remote control or remote monitoring of applications in data packet switching networks	H04L 67/025						
Network monitoring	H04L 43/00						
H04L 12/2803	H04L 29/08648	Informative reference	<p>Replace symbol “H04L 29/08648” and associated text with:</p> <table border="1"> <tr> <td>Discovery or management thereof, e.g. service location protocol [SLP] or web services</td> <td>H04L 67/51</td> </tr> </table>	Discovery or management thereof, e.g. service location protocol [SLP] or web services	H04L 67/51		
Discovery or management thereof, e.g. service location protocol [SLP] or web services	H04L 67/51						
H04L 12/2807	H04L 29/12207	Limiting ref	<p>Replace symbol “H04L 29/12207” in the reference with “H04L 61/50”</p>				
H04L 12/2809	H04L 41/08, H04L 61/20	Limiting ref	<p>Delete the following references and associated text from the Limiting ref table.</p> <table border="1"> <tr> <td>Discovering of devices as part of configuration</td> <td>H04L 41/08</td> </tr> <tr> <td>Address allocation to terminals or nodes connected to a network</td> <td>H04L 61/20</td> </tr> </table>	Discovering of devices as part of configuration	H04L 41/08	Address allocation to terminals or nodes connected to a network	H04L 61/20
Discovering of devices as part of configuration	H04L 41/08						
Address allocation to terminals or nodes connected to a network	H04L 61/20						
H04L 12/2809	H04L 29/08648	Limiting ref	<p>Replace symbol “H04L 29/08648” in the reference with “H04L 67/51”</p>				
H04L 12/2809	H04L 41/08, H04L 61/20	Limiting ref	<p>Delete the reference and associated text from the Limiting references table.</p>				
H04L 12/2809		Informative reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b> <b><i>Informative references</i></b> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Discovering of devices as part of configuration</td> <td>H04L 41/08</td> </tr> <tr> <td>Address allocation to terminals or nodes connected to a network</td> <td>H04L 61/50</td> </tr> </table>	Discovering of devices as part of configuration	H04L 41/08	Address allocation to terminals or nodes connected to a network	H04L 61/50
Discovering of devices as part of configuration	H04L 41/08						
Address allocation to terminals or nodes connected to a network	H04L 61/50						
H04L 12/281	H04L 29/08099	Limiting ref	<p>Delete the reference and associated text from the Limiting references table.</p>				

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>				
H04L 12/281		Limiting ref	<p>Insert the following new references into the Limiting reference table.</p> <table border="1"> <tr> <td>Remote control or remote monitoring of applications in data packet switching networks</td> <td>H04L 67/025</td> </tr> <tr> <td>Network monitoring</td> <td>H04L 43/00</td> </tr> </table>	Remote control or remote monitoring of applications in data packet switching networks	H04L 67/025	Network monitoring	H04L 43/00
Remote control or remote monitoring of applications in data packet switching networks	H04L 67/025						
Network monitoring	H04L 43/00						
H04L 12/2812	H04L 29/0809	Limiting ref	Delete the reference and associated text from the Limiting references table				
H04L 12/2812		Informative reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Web-based protocols</td> <td>H04L 67/02</td> </tr> </table>	Web-based protocols	H04L 67/02		
Web-based protocols	H04L 67/02						
H04L 12/2814	H04L 29/08081, G06F 9/445 - G06F 9/44594	Limiting ref	<p>Delete the following references and associated text from the Limiting ref table.</p> <table border="1"> <tr> <td>Protocols for network applications</td> <td>H04L 29/08081</td> </tr> <tr> <td>Program loading or initiating</td> <td>G06F 9/445 - G06F 9/44594</td> </tr> </table>	Protocols for network applications	H04L 29/08081	Program loading or initiating	G06F 9/445 - G06F 9/44594
Protocols for network applications	H04L 29/08081						
Program loading or initiating	G06F 9/445 - G06F 9/44594						
H04L 12/2814		Informative reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Program loading or initiating</td> <td>G06F 9/445 - G06F 9/44594</td> </tr> <tr> <td>Network arrangements or protocols for supporting network services or applications in data packet networks</td> <td>H04L 67/00</td> </tr> </table>	Program loading or initiating	G06F 9/445 - G06F 9/44594	Network arrangements or protocols for supporting network services or applications in data packet networks	H04L 67/00
Program loading or initiating	G06F 9/445 - G06F 9/44594						
Network arrangements or protocols for supporting network services or applications in data packet networks	H04L 67/00						
H04L 12/2818	H04L 29/08099, G08C 17/02	Limiting ref	Delete the reference and associated text from the Limiting ref table.				
H04L 12/2818		Limiting ref	Insert the following new references into the Limiting reference table:				

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>				
			<table border="1"> <tr> <td>Access arrangements, e.g. Internet access</td> <td>H04L 12/2856</td> </tr> <tr> <td>Remote control or remote monitoring of applications in data packet switching networks</td> <td>H04L 67/025</td> </tr> </table>	Access arrangements, e.g. Internet access	H04L 12/2856	Remote control or remote monitoring of applications in data packet switching networks	H04L 67/025
Access arrangements, e.g. Internet access	H04L 12/2856						
Remote control or remote monitoring of applications in data packet switching networks	H04L 67/025						
H04L 12/2821	H04L 29/06551	Limiting ref	Replace symbol “H04L 29/06551” and associated text with new: <table border="1"> <tr> <td>Cryptographic protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> </table>	Cryptographic protocols	H04L 9/00	Network security protocols	H04L 63/00
Cryptographic protocols	H04L 9/00						
Network security protocols	H04L 63/00						
H04L 12/2821	H04L 29/06823	Limiting ref	Delete the reference and associated text from the Limiting ref table.				
H04L 12/2821		Informative reference	Insert: A new Informative reference section with the following new references. <p><b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Network access security</td> <td>H04L 63/10</td> </tr> </table>	Network access security	H04L 63/10		
Network access security	H04L 63/10						
H04L 12/2825	H04L 29/08099	Limiting ref	Replace symbol “H04L 29/08099” and associated text with: <table border="1"> <tr> <td>For remote control or remote monitoring of applications</td> <td>H04L 67/025</td> </tr> </table>	For remote control or remote monitoring of applications	H04L 67/025		
For remote control or remote monitoring of applications	H04L 67/025						
H04L 12/2825		Informative reference	Insert: A new Informative reference section with the following new references. <p><b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Network monitoring in data packet switching networks</td> <td>H04L 43/10</td> </tr> </table>	Network monitoring in data packet switching networks	H04L 43/10		
Network monitoring in data packet switching networks	H04L 43/10						

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>						
H04L 12/2832	H04L 12/462, H04L 29/06068, H04L 29/06163	Limiting ref	<p>Delete the following references and associated text from the Limiting ref table.</p> <table border="1"> <tr> <td>Bridging devices</td> <td>H04L 12/462</td> </tr> <tr> <td>Protocol conversion</td> <td>H04L 29/06068</td> </tr> <tr> <td>Devices adapted for communicating using different protocols</td> <td>H04L 29/06163</td> </tr> </table>	Bridging devices	H04L 12/462	Protocol conversion	H04L 29/06068	Devices adapted for communicating using different protocols	H04L 29/06163
Bridging devices	H04L 12/462								
Protocol conversion	H04L 29/06068								
Devices adapted for communicating using different protocols	H04L 29/06163								
H04L 12/2832		Informative reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Bridging devices</td> <td>H04L 12/462</td> </tr> <tr> <td>Protocols for interworking; Protocol conversion</td> <td>H04L 69/08</td> </tr> <tr> <td>Multiprotocol handlers, e.g. single devices capable of handling multiple protocols</td> <td>H04L 69/18</td> </tr> </table>	Bridging devices	H04L 12/462	Protocols for interworking; Protocol conversion	H04L 69/08	Multiprotocol handlers, e.g. single devices capable of handling multiple protocols	H04L 69/18
Bridging devices	H04L 12/462								
Protocols for interworking; Protocol conversion	H04L 69/08								
Multiprotocol handlers, e.g. single devices capable of handling multiple protocols	H04L 69/18								
H04L 12/2836	H04L 29/06068	Limiting ref	Replace symbol “H04L 29/06068” in the reference with “H04L 69/08”						
H04L 12/2836	H04L 29/06163	Limiting ref	Delete the reference and associated text from the Limiting ref table.						
H04L 12/2836		Informative reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Multiprotocol handlers, e.g. single devices capable of handling multiple protocols</td> <td>H04L 69/18</td> </tr> </table>	Multiprotocol handlers, e.g. single devices capable of handling multiple protocols	H04L 69/18				
Multiprotocol handlers, e.g. single devices capable of handling multiple protocols	H04L 69/18								
H04L 12/2856	H04L 29/06551	Informative reference	Replace symbol “H04L 29/06551” in the reference with “H04L 63/00”						

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>				
H04L 12/2863		Limiting ref	<p>Insert the following references into a <u>new</u> Limiting references table.</p> <p><b>References</b> <b>Limiting references</b> <i>This place does not cover:</i></p> <table border="1"> <tr> <td>Multichannel or multilink protocols</td> <td>H04L 69/14</td> </tr> </table>	Multichannel or multilink protocols	H04L 69/14		
Multichannel or multilink protocols	H04L 69/14						
H04L 12/40104		Limiting reference	<p>Insert the following references into a <u>new</u> Limiting references table.</p> <p><b>References</b> <b>Limiting references</b> <i>This place does not cover:</i></p> <table border="1"> <tr> <td>Cryptographic protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> </table>	Cryptographic protocols	H04L 9/00	Network security protocols	H04L 63/00
Cryptographic protocols	H04L 9/00						
Network security protocols	H04L 63/00						
H04L 12/40104	H04L 29/06551	Informative reference	Delete the reference and the Informative reference table.				
H04L 12/4604	H04L 29/06095	Limiting ref	Delete the reference and associated text from the Limiting ref table.				
H04L 12/4604		Informative reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b> <b>Informative references</b> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP]</td> <td>H04L 69/16</td> </tr> </table>	Implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP]	H04L 69/16		
Implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP]	H04L 69/16						
H04L 12/4633	H04L 29/06068	Informative reference	Replace symbol “H04L 29/06068” in the reference with “H04L 69/08”				
H04L 12/4633	H04L 29/06551	Informative reference	Replace symbol “H04L 29/06551” in the reference with “H04L 63/00”				
H04L 12/4641	H04L 29/06612	Limiting ref	Replace symbol “H04L 29/06612” in the reference with “H04L 63/0272”				
H04L 63/00	H04L 51/12	Limiting ref	Replace symbol “H04L 51/12” in the reference with “H04L 51/212”				
H04L 63/0218	H04L 67/1002	Relationship with other	Replace the reference H04L67/1002 and text with the following:				

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>		
		classification places	Distributed architecture for accessing one among a plurality of replicated servers H04L 67/1001		
H04L 63/0227		Limiting ref	<p>Insert the following reference into a <u>new</u> Limiting references table.</p> <p><b>References</b> <b>Limiting references</b> <i>This place does not cover:</i></p> <table border="1"> <tr> <td>Mail message filtering</td> <td>H04L 51/12</td> </tr> </table>	Mail message filtering	H04L 51/12
Mail message filtering	H04L 51/12				
H04L 63/0281	H04L 67/28	Informative reference	Replace symbol "H04L 67/28" in the reference with "H04L 67/56"		
H04M	H04L 29/02 (second paragraph)	Relationship with other classification places	<p>Replace the second paragraph "With regard to VoIP (Voice over Internet Protocol), voice is considered in ... should be classified in H04L"</p> <p>with the following new text:</p> <p>With regard to VoIP (Voice over Internet Protocol), voice is considered in this context to be a specific form of "digital information". Since the Internet Protocol and IP networks are classified in H04L (H04L 12/00, data switching networks and real-time session management in data packet switching networks H04L 65/1066, Session management in data packet switching networks H04L 67/14), the transmission of voice over IP networks should be classified in H04L.</p>		
H04M 1/2535	H04L 29/02 (second paragraph)	Definition statement	<p>Replace the second paragraph "With regard to VoIP (Voice over Internet Protocol), voice is considered in ... should be classified in H04L"</p> <p>with the following new text:</p> <p>With regard to VoIP (Voice over Internet Protocol), voice is considered in this context to be a specific form of "digital information". Since the Internet Protocol and IP networks are classified in H04L (H04L 12/00, data switching networks and H04L 41/00 - H04L 69/00, real-time communication in data packet switching networks H04L 65/00), the transmission of voice over IP networks should be classified in H04L.</p>		

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>				
H04M 1/2535	H04M 7/006, H04L 29/06095, H04L 29/06176, H04L 29/06306	Relationship with other classification places	<p>Replace the text in the <b>Relationship with other classification places</b> with following text (Note that the symbols are aligned with the associated text):</p> <p>Networks other than PSTN/ISDN providing telephone services and including a packet-switched transport layer such as the internet protocol multimedia system <b>H04M 7/006</b></p> <p>Implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP] <b>H04L 69/16</b></p> <p>Network arrangements, protocols or services for supporting real-time applications in data packet communication <b>H04L65/00</b></p> <p>End user terminal functionalities specially adapted for real-time communication <b>H04L 65/1059</b></p>				
H04M 1/2535		Limiting ref	<p>Insert the following references into a <u>new</u> Limiting references table.</p> <p><b>References</b> <b>Limiting references</b> <i>This place does not cover:</i></p> <table border="1"> <tr> <td>Voice over Internet Protocol (VoIP) network equipment and services</td> <td>H04M 7/006</td> </tr> <tr> <td>Internet protocols</td> <td>H04L 69/16</td> </tr> </table>	Voice over Internet Protocol (VoIP) network equipment and services	H04M 7/006	Internet protocols	H04L 69/16
Voice over Internet Protocol (VoIP) network equipment and services	H04M 7/006						
Internet protocols	H04L 69/16						
H04M 1/72412	H04L 29/08648	Informative reference	<p>Replace symbol “H04L 29/08648” and associated text with:</p> <table border="1"> <tr> <td>Discovery or management thereof, e.g. service location protocol [SLP] or web services</td> <td>H04L 67/51</td> </tr> </table>	Discovery or management thereof, e.g. service location protocol [SLP] or web services	H04L 67/51		
Discovery or management thereof, e.g. service location protocol [SLP] or web services	H04L 67/51						
H04M 1/72415	H04L 29/08567	Informative reference	<p>Replace symbol “H04L 29/08567” and associated text with:</p> <table border="1"> <tr> <td>Proprietary protocols involving control of end-device applications</td> <td>H04L 67/125</td> </tr> </table>	Proprietary protocols involving control of end-device applications	H04L 67/125		
Proprietary protocols involving control of end-device applications	H04L 67/125						
H04M 1/72448	H04L 29/08936	Informative reference	<p>Replace symbol “H04L 29/08936” in the reference with “H04L 67/306”</p>				

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>				
H04M 1/72451	H04L 29/08684	Informative reference	Replace symbol “H04L 29/08684” in the reference with “H04L 67/54”				
H04M 1/72457	H04L 29/08657	Informative reference	Replace symbol “H04L 29/08657” in the reference with “H04L 67/52”				
H04M 3/00	H04L 29/06	Relationship with other classification places	<p>Replace the third bullet “Implementation details and protocol details of... or SIP protocol are classified in H04L 29/06”</p> <p>with the following new text</p> <p>Implementation details and protocol details of networks comprising call agents, call controllers and call state control functions and/or employing the SIP or H.323 protocol are classified in H04L 65/1104 or H04L 65/1106.</p>				
H04M 3/487	H04L 29/0809	Special Rule	Replace symbol “H04L 29/0809” in the Special Rule with “H04L 67/02”				
H04M 3/56	H04L 29/06414	Special Rule	Replace symbol “H04L 29/06414” in the Special Rule with “H04L 65/403”				
H04M 7/006	H04L 29/06551	Special Rule	Replace symbol “H04L 29/06551” in the Special Rule with “H04L 63/00”				
H04M 7/125	H04L 12/66, H04L 29/06224	Limiting ref	<p>Replace symbol “H04L 29/06224” and associated text with the following (keep symbol H04L 12/66):</p> <table border="1"> <tr> <td>Data switching network gateways</td> <td>H04L 12/66, H04L 65/102</td> </tr> </table>	Data switching network gateways	H04L 12/66, H04L 65/102		
Data switching network gateways	H04L 12/66, H04L 65/102						
H04M 11/002	H04L 29/0809	Informative reference	<p>Replace symbol “H04L 29/0809” and associated text with:</p> <table border="1"> <tr> <td>Web-based protocols</td> <td>H04L 67/02</td> </tr> </table>	Web-based protocols	H04L 67/02		
Web-based protocols	H04L 67/02						
H04M 11/007	H04L 29/0809	Informative reference	<p>Replace symbol “H04L 29/0809” and associated text with:</p> <table border="1"> <tr> <td>Web-based protocols</td> <td>H04L 67/02</td> </tr> </table>	Web-based protocols	H04L 67/02		
Web-based protocols	H04L 67/02						
H04M 11/04	H04L 29/08657	Informative reference	Replace symbol “H04L 29/08657” in the reference with “H04L 67/52”				
H04M 11/08	H04L 29/08072	Informative reference	Delete only symbol “H04L 29/08072” and the comma preceding it.				
H04M 11/08		Informative reference	<p>Insert the following new references into the Informative reference table.</p> <table border="1"> <tr> <td>Intra-layer communication</td> <td>H04L 69/32</td> </tr> <tr> <td>In OSI layer 7</td> <td>H04L 69/329</td> </tr> </table>	Intra-layer communication	H04L 69/32	In OSI layer 7	H04L 69/329
Intra-layer communication	H04L 69/32						
In OSI layer 7	H04L 69/329						

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H04M 15/47	H04L 29/06877	Limiting ref	Delete the existing reference from the Limiting references table.				
H04M 15/47		Informative reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Detection or protecting against malicious traffic</td> <td>H04L 63/14</td> </tr> <tr> <td>Fraud detection and prevention in wireless networks</td> <td>H04W 12/12</td> </tr> </table>	Detection or protecting against malicious traffic	H04L 63/14	Fraud detection and prevention in wireless networks	H04W 12/12
Detection or protecting against malicious traffic	H04L 63/14						
Fraud detection and prevention in wireless networks	H04W 12/12						
H04M 15/48	H04L 29/06551	Limiting ref	Delete the existing reference from the Limiting references table.				
H04M 15/48		Informative reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Network security</td> <td>H04L 63/00</td> </tr> <tr> <td>Wireless network security</td> <td>H04W 12/00</td> </tr> </table>	Network security	H04L 63/00	Wireless network security	H04W 12/00
Network security	H04L 63/00						
Wireless network security	H04W 12/00						
H04M 15/56	H04L 29/06176	Limiting ref	Delete the existing references from the Limiting references table.				
H04M 15/56		Informative reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Voice over IP, VoIP Protocols and Services</td> <td>H04L 65/40</td> </tr> </table>	Voice over IP, VoIP Protocols and Services	H04L 65/40		
Voice over IP, VoIP Protocols and Services	H04L 65/40						
H04M 15/57	Text	Definition Statement	<p>Delete the existing text and replace with following text:</p> <p>IMS charging or billing, i.e. Integrated Multimedia messaging Subsystem charging/billing; IMS in general, see H04L 65/1016; IMS based services and session control, see H04L 65/40, H04L 65/1066.</p>				
H04M 15/57	H04L 29/06217	Limiting ref	Delete the existing references from the Limiting references table.				

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>								
	H04L 29/06387 H04L 29/06319										
H04M 15/57		Informative reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b> <b><i>Informative references</i></b> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Session initiation protocol [SIP]</td> <td>H04L 65/1104</td> </tr> <tr> <td>IP multimedia subsystem [IMS]</td> <td>H04L 65/1016</td> </tr> <tr> <td>Real-time session management in data packet switching networks</td> <td>H04L 65/1066</td> </tr> <tr> <td>Support for real-time services or applications in data packet switching networks</td> <td>H04L 65/40</td> </tr> </table>	Session initiation protocol [SIP]	H04L 65/1104	IP multimedia subsystem [IMS]	H04L 65/1016	Real-time session management in data packet switching networks	H04L 65/1066	Support for real-time services or applications in data packet switching networks	H04L 65/40
Session initiation protocol [SIP]	H04L 65/1104										
IP multimedia subsystem [IMS]	H04L 65/1016										
Real-time session management in data packet switching networks	H04L 65/1066										
Support for real-time services or applications in data packet switching networks	H04L 65/40										
H04M 15/63	H04L 29/06197 H04L 29/06319	Limiting ref	Delete the existing references from the Limiting references table.								
H04M 15/63		Informative reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b> <b><i>Informative references</i></b> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Session initiation protocol [SIP]</td> <td>H04L 65/1104</td> </tr> <tr> <td>Real-time session management in data packet switching networks</td> <td>H04L 65/1066</td> </tr> </table>	Session initiation protocol [SIP]	H04L 65/1104	Real-time session management in data packet switching networks	H04L 65/1066				
Session initiation protocol [SIP]	H04L 65/1104										
Real-time session management in data packet switching networks	H04L 65/1066										
H04M 15/765	H04L 29/06843 H04W 12/08	Limiting ref	Delete the existing references from the Limiting references table.								
H04M 15/765		Informative reference	<p>Insert: A new Informative reference section with the following new references.</p> <p><b>References</b> <b><i>Informative references</i></b> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Systems involving a hierarchy between servers</td> <td>H04L 63/104</td> </tr> <tr> <td>Wireless access security</td> <td>H04W 12/08</td> </tr> </table>	Systems involving a hierarchy between servers	H04L 63/104	Wireless access security	H04W 12/08				
Systems involving a hierarchy between servers	H04L 63/104										
Wireless access security	H04W 12/08										

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>								
H04N 1/00	H04L 29/06176	Informative reference	Replace symbol “H04L 29/06176” in the reference with “H04L 65/00”								
H04N 1/00	H04L 29/06551	Informative reference	Replace symbol “H04L 29/06551” in the reference with “H04L 63/00”								
H04N 1/00	H04L 29/08081	Informative reference	Replace symbol “H04L 29/08081” in the reference with “H04L 67/00”								
H04N 1/32	H04L 29/02	Informative reference	Replace the reference “H04L 29/02” and associated text with the following new references: <table border="1"> <tr> <td>Real-time session management in datapacket switching networks</td> <td>H04L 65/1066</td> </tr> <tr> <td>Session management in data packet switching networks</td> <td>H04L 67/14</td> </tr> </table>	Real-time session management in datapacket switching networks	H04L 65/1066	Session management in data packet switching networks	H04L 67/14				
Real-time session management in datapacket switching networks	H04L 65/1066										
Session management in data packet switching networks	H04L 67/14										
H04N 1/333	H04L 29/06537	Informative reference	Replace symbol “H04L 29/06537” in the reference with “H04L 69/24”								
H04N 1/4406	H04L 29/06632	Informative reference	Replace symbol “H04L 29/06632” in the reference with “H04L 63/04”								
H04N 1/4406	H04L 29/06823	Informative reference	Replace symbol “H04L 29/06823” in the reference with “H04L 63/10”								
H04N 7/1675	H04L 29/06551	Limiting reference	Replace symbol “H04L 29/06551” in the reference with “H04L 63/00”								
H04N 19/37	H04L 29/06	Informative reference	Replace the reference “H04L 29/06” and associated text with the following new references: <table border="1"> <tr> <td>Cryptographic protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Protocols for real-time services in datapacket switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/00</td> </tr> </table>	Cryptographic protocols	H04L 9/00	Network security protocols	H04L 63/00	Protocols for real-time services in datapacket switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/00
Cryptographic protocols	H04L 9/00										
Network security protocols	H04L 63/00										
Protocols for real-time services in datapacket switching networks	H04L 65/00										
Network protocols for data switching network services	H04L 67/00										
H04N 19/40	H04L 29/06	Informative reference	Replace the reference “H04L 29/06” and associated text with the following new references: <table border="1"> <tr> <td>Cryptographic protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Protocols for real-time services in datapacket switching networks</td> <td>H04L 65/00</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/01</td> </tr> </table>	Cryptographic protocols	H04L 9/00	Network security protocols	H04L 63/00	Protocols for real-time services in datapacket switching networks	H04L 65/00	Network protocols for data switching network services	H04L 67/01
Cryptographic protocols	H04L 9/00										
Network security protocols	H04L 63/00										
Protocols for real-time services in datapacket switching networks	H04L 65/00										
Network protocols for data switching network services	H04L 67/01										

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>		
H04N 21/00	H04L 29/06176	Informative reference	Replace symbol “H04L 29/06176” in the reference with “H04L 65/00”		
H04N 21/00	H04L 29/06551	Informative reference	Replace symbol “H04L 29/06551” in the reference with “H04L 63/00”		
H04N 21/00	H04L 29/08081	Informative reference	Replace symbol “H04L 29/08081” and associated text with: <table border="1"> <tr> <td>Network arrangements or protocols in data packet switching networks for supporting network services or applications</td> <td>H04L 67/00</td> </tr> </table>	Network arrangements or protocols in data packet switching networks for supporting network services or applications	H04L 67/00
Network arrangements or protocols in data packet switching networks for supporting network services or applications	H04L 67/00				
H04N 21/2181	H04L 29/08549	Limiting ref	Replace symbol “H04L 29/08549” and associated text with: <table border="1"> <tr> <td>Distributed storage of data in networks, e.g. transport arrangements for network file system [NFS], storage area networks [SAN] or network attached storage [NAS]</td> <td>H04L 67/1097</td> </tr> </table>	Distributed storage of data in networks, e.g. transport arrangements for network file system [NFS], storage area networks [SAN] or network attached storage [NAS]	H04L 67/1097
Distributed storage of data in networks, e.g. transport arrangements for network file system [NFS], storage area networks [SAN] or network attached storage [NAS]	H04L 67/1097				
H04N 21/2181	H04N 21/222	Limiting ref	Delete the reference from the Limiting references table.		
H04N 21/2181		Informative reference	Insert: A new Informative reference section with the following new references.  <b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i> <table border="1"> <tr> <td>Systems involving a hierarchy between servers</td> <td>H04N 21/222</td> </tr> </table>	Systems involving a hierarchy between servers	H04N 21/222
Systems involving a hierarchy between servers	H04N 21/222				
H04N 21/2183	H04L 29/08801	Limiting ref	Replace symbol “H04L 29/08801” in the reference with “H04L 67/568”		
H04N 21/2183	H04N 21/23106	Limiting ref	Delete the reference from the Limiting references table.		
H04N 21/2183		Informative reference	Insert: A new Informative reference section with the following new references.  <b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i> <table border="1"> <tr> <td>Caching operation on the server side</td> <td>H04N 21/23106</td> </tr> </table>	Caching operation on the server side	H04N 21/23106
Caching operation on the server side	H04N 21/23106				

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>		
H04N 21/222	H04L 29/08702	Limiting ref	Replace symbol “H04L 29/08702” and associated text with: <table border="1"> <tr> <td>Provisioning of proxy services in data packets switching networks</td> <td>H04L 67/56</td> </tr> </table>	Provisioning of proxy services in data packets switching networks	H04L 67/56
Provisioning of proxy services in data packets switching networks	H04L 67/56				
H04N 21/2265	H04L 29/12009	Limiting ref	Replace symbol “H04L 29/12009” and associated text with: <table border="1"> <tr> <td>Network arrangements in data packets switching networks, protocols or services for addressing or naming</td> <td>H04L 61/00</td> </tr> </table>	Network arrangements in data packets switching networks, protocols or services for addressing or naming	H04L 61/00
Network arrangements in data packets switching networks, protocols or services for addressing or naming	H04L 61/00				
H04N 21/23103	H04L 29/08144	Limiting ref	Replace symbol “H04L 29/08144” in the reference with “H04L 67/1001”		
H04N 21/23103	H04N 21/23116	Limiting ref	Delete the reference from the Limiting references table.		
H04N 21/23103		Informative reference	Insert: A new Informative reference section with the following new references.  <b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i> <table border="1"> <tr> <td>Data replication on different disks or servers</td> <td>H04N 21/23116</td> </tr> </table>	Data replication on different disks or servers	H04N 21/23116
Data replication on different disks or servers	H04N 21/23116				
H04N 21/23106	H04L 29/08801	Limiting ref	Replace symbol “H04L 29/08801” in the reference with “H04L 67/568”		
H04N 21/23106	H04N 21/23406	Limiting ref	Delete the reference from the Limiting references table.		
H04N 21/23106		Informative reference	Insert: A new Informative reference section with the following new references.  <b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i> <table border="1"> <tr> <td>Buffering on the encoder side</td> <td>H04N 21/23406</td> </tr> </table>	Buffering on the encoder side	H04N 21/23406
Buffering on the encoder side	H04N 21/23406				
H04N 21/23116	H04L 29/0854	Limiting ref	Replace symbol “H04L 29/0854” in the reference with “H04L 67/1095”		

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>		
H04N 21/2343	H04L 29/06489	Limiting ref	Replace symbol “H04L 29/06489” and associated text with: <table border="1"> <tr> <td>Media packet handling at the source in data packet switching networks</td> <td>H04L 65/762</td> </tr> </table>	Media packet handling at the source in data packet switching networks	H04L 65/762
Media packet handling at the source in data packet switching networks	H04L 65/762				
H04N 21/2343	H04N 7/01	Limiting ref	Delete the reference from the Limiting references table.		
H04N 21/2343		Informative reference	Insert: A new Informative reference section with the following new references. <p><b>References</b> <i>Informative references</i> <i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Details of conversion of video standards at pixel level</td> <td>H04N 7/01</td> </tr> </table>	Details of conversion of video standards at pixel level	H04N 7/01
Details of conversion of video standards at pixel level	H04N 7/01				
H04N 21/2355	H04L 29/06489	Limiting ref	Replace symbol “H04L 29/06489” and associated text with: <table border="1"> <tr> <td>Media packet handling at the source in data packet switching networks</td> <td>H04L 65/762</td> </tr> </table>	Media packet handling at the source in data packet switching networks	H04L 65/762
Media packet handling at the source in data packet switching networks	H04L 65/762				
H04N 21/2355	H04L 51/06	Limiting ref	Replace symbol “H04L 51/06” and associated text with: <table border="1"> <tr> <td>Tracking of instant messages</td> <td>H04L 51/234</td> </tr> </table>	Tracking of instant messages	H04L 51/234
Tracking of instant messages	H04L 51/234				
H04N 21/238	H04L 29/06176	Limiting ref	Replace symbol “H04L 29/06176” and associated text with: <table border="1"> <tr> <td>Real-time communication protocols in data switching networks</td> <td>H04L 65/00</td> </tr> </table>	Real-time communication protocols in data switching networks	H04L 65/00
Real-time communication protocols in data switching networks	H04L 65/00				
H04N 21/238	H04L 29/08945	Limiting ref	Replace symbol “H04L 29/08945” and associated text with: <table border="1"> <tr> <td>Scheduling or organising the servicing of application requests in data packet switching networks</td> <td>H04L 67/60</td> </tr> </table>	Scheduling or organising the servicing of application requests in data packet switching networks	H04L 67/60
Scheduling or organising the servicing of application requests in data packet switching networks	H04L 67/60				
H04N 21/239	H04L 29/06176	Limiting ref	Replace symbol “H04L 29/06176” and associated text with:		

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>
			Real-time communication protocols in data switching networks H04L 65/00
H04N 21/239	H04L 29/08945	Limiting ref	Replace symbol “H04L 29/08945” and associated text with: Scheduling or organising the servicing of application requests in data packet switching networks H04L 67/60
H04N 21/2393	H04L 29/08945	Limiting ref	Replace symbol “H04L 29/08945” and associated text with: Scheduling or organising the servicing of application requests in data packet switching networks H04L 67/60
H04N 21/2396	H04L 29/06836	Limiting ref	Replace symbol “H04L 29/06836” in the reference with “H04L 63/102”
H04N 21/2408	H04L 29/08945	Limiting ref	Replace symbol “H04L 29/08945” and associated text with: Scheduling or organising the servicing of application requests H04L 67/60
H04N 21/254	H04L 29/08666	Limiting ref	Replace symbol “H04L 29/08666” and associated text with: network services using third party service providers H04L 67/53
H04N 21/2541	H04L 29/06986	Limiting ref	Replace symbol “H04L 29/06986” in the reference with “H04L 63/20”
H04N 21/2541	H04N 21/44204, H04N 21/8355	Limiting ref	Delete the references and associated text from the Limiting references table.
H04N 21/2541		Informative reference	Insert: A new Informative reference section with the following new references.  <b>References</b> <b><i>Informative references</i></b> <i>Attention is drawn to the following places, which may be of interest for search:</i>  Client-side monitoring of content usage H04N 21/44204 Definition of usage data H04N 21/8355

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>				
H04N 21/258	H04L 29/08918	Limiting ref	Replace symbol “H04L 29/08918” and associated text with: <table border="1"> <tr> <td>Profiles in network data switching protocols</td> <td>H04L 67/30</td> </tr> </table>	Profiles in network data switching protocols	H04L 67/30		
Profiles in network data switching protocols	H04L 67/30						
H04N 21/25808	H04L 29/08927	Limiting ref	Replace symbol “H04L 29/08927” and associated text with: terminal profiles in network data switching protocols H04L 67/303				
H04N 21/25816	H04L 29/06755	Limiting ref	Existing “H04L 29/06755 ” reference splits into multiple references.  Replace the reference “H04L 29/06755” and associated text with the following new references: <table border="1"> <tr> <td>Cryptographic authentication protocols</td> <td>H04L 9/32</td> </tr> <tr> <td>Network authentication protocols</td> <td>H04L 63/08</td> </tr> </table>	Cryptographic authentication protocols	H04L 9/32	Network authentication protocols	H04L 63/08
Cryptographic authentication protocols	H04L 9/32						
Network authentication protocols	H04L 63/08						
H04N 21/25841	H04L 29/08657	Limiting ref	Replace symbol “H04L 29/08657” and associated text with: <table border="1"> <tr> <td>Location of the user terminal in data switching networks</td> <td>H04L 67/52</td> </tr> </table>	Location of the user terminal in data switching networks	H04L 67/52		
Location of the user terminal in data switching networks	H04L 67/52						
H04N 21/25875	H04L 29/06755	Limiting ref	Delete the references and associated text from the Limiting references table.				
H04N 21/25875		Limiting ref	Insert the following new reference into the Informative reference table. <table border="1"> <tr> <td>Network authentication protocols</td> <td>H04L 63/08</td> </tr> </table>	Network authentication protocols	H04L 63/08		
Network authentication protocols	H04L 63/08						
H04N 21/25891	H04L 29/08936	Limiting ref	Replace symbol “H04L 29/08936” and associated text with: <table border="1"> <tr> <td>User profiles in network data switching protocols</td> <td>H04L 67/306</td> </tr> </table>	User profiles in network data switching protocols	H04L 67/306		
User profiles in network data switching protocols	H04L 67/306						
H04N 21/25891	H04N 21/44213, H04N 21/658	Limiting ref	Delete the references and associated text from the Limiting references table.				
H04N 21/25891		Informative reference	Insert: A new Informative reference section with the following new references.  <b>References</b> <i>Informative references</i>				

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>				
			<p><i>Attention is drawn to the following places, which may be of interest for search:</i></p> <table border="1"> <tr> <td>Client-side monitoring of end-user</td> <td>H04N 21/44213</td> </tr> <tr> <td>Uploading data stored on the client to server</td> <td>H04N 21/658</td> </tr> </table>	Client-side monitoring of end-user	H04N 21/44213	Uploading data stored on the client to server	H04N 21/658
Client-side monitoring of end-user	H04N 21/44213						
Uploading data stored on the client to server	H04N 21/658						
H04N 21/262	H04L 29/08963	Limiting ref	<p>Replace symbol “H04L 29/08963” and associated text with:</p> <table border="1"> <tr> <td>Establishing a time schedule or organising the servicing of application requests in data packet switching network</td> <td>H04L 67/62</td> </tr> </table>	Establishing a time schedule or organising the servicing of application requests in data packet switching network	H04L 67/62		
Establishing a time schedule or organising the servicing of application requests in data packet switching network	H04L 67/62						
H04N 21/26216	H04L 29/08954	Limiting ref	<p>Replace symbol “H04L 29/08954” and associated text with:</p> <table border="1"> <tr> <td>establishing a schedule or organising the servicing of application requests taking into account QoS in data packet switching network</td> <td>H04L 67/61</td> </tr> </table>	establishing a schedule or organising the servicing of application requests taking into account QoS in data packet switching network	H04L 67/61		
establishing a schedule or organising the servicing of application requests taking into account QoS in data packet switching network	H04L 67/61						
H04N 21/26613	H04L 29/06707	Limiting ref	<p>Replace symbol “H04L 29/06707” and associated text with:</p> <table border="1"> <tr> <td>Network support of key management</td> <td>H04L 63/06</td> </tr> </table>	Network support of key management	H04L 63/06		
Network support of key management	H04L 63/06						
H04N 21/4108	H04L 29/12009	Limiting ref	<p>Replace symbol “H04L 29/12009” and associated text with:</p> <table border="1"> <tr> <td>Network arrangements in data packet switching network, protocols or services for addressing or naming</td> <td>H04L 61/00</td> </tr> </table>	Network arrangements in data packet switching network, protocols or services for addressing or naming	H04L 61/00		
Network arrangements in data packet switching network, protocols or services for addressing or naming	H04L 61/00						
H04N 21/42684	H04L 29/12009	Limiting ref	<p>Replace symbol “H04L 29/12009” and associated text with:</p> <table border="1"> <tr> <td>Network arrangements in data packet switching network, protocols or services for addressing or naming</td> <td>H04L 61/00</td> </tr> </table>	Network arrangements in data packet switching network, protocols or services for addressing or naming	H04L 61/00		
Network arrangements in data packet switching network, protocols or services for addressing or naming	H04L 61/00						
H04N 21/43	H04L 29/06176	Limiting ref	<p>Replace symbol “H04L 29/06176” and associated text with:</p> <table border="1"> <tr> <td>Real-time communication protocols in data switching networks</td> <td>H04L 65/00</td> </tr> </table>	Real-time communication protocols in data switching networks	H04L 65/00		
Real-time communication protocols in data switching networks	H04L 65/00						

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>				
H04N 21/4355	H04L 29/06496	Limiting ref	Replace symbol “H04L 29/06496” and associated text with: <table border="1"> <tr> <td>Media handling at the source in data packets switching networks</td> <td>H04L 65/764</td> </tr> </table>	Media handling at the source in data packets switching networks	H04L 65/764		
Media handling at the source in data packets switching networks	H04L 65/764						
H04N 21/437	H04L 29/06176	Limiting ref	Replace symbol “H04L 29/06176” and associated text with: <table border="1"> <tr> <td>Streaming protocols, e.g. RTP or RTCP</td> <td>H04L 65/65</td> </tr> </table>	Streaming protocols, e.g. RTP or RTCP	H04L 65/65		
Streaming protocols, e.g. RTP or RTCP	H04L 65/65						
H04N 21/437	H04L 29/08945	Limiting ref	Replace symbol “H04L 29/08945” and associated text with: <table border="1"> <tr> <td>Scheduling or organising the servicing of application requests in data packets switching networks</td> <td>H04L 67/60</td> </tr> </table>	Scheduling or organising the servicing of application requests in data packets switching networks	H04L 67/60		
Scheduling or organising the servicing of application requests in data packets switching networks	H04L 67/60						
H04N 21/438	H04L 29/06176	Limiting ref	Replace symbol “H04L 29/06176” and associated text with: <table border="1"> <tr> <td>Real-time communication protocols in data packets switching networks</td> <td>H04L 65/00</td> </tr> </table>	Real-time communication protocols in data packets switching networks	H04L 65/00		
Real-time communication protocols in data packets switching networks	H04L 65/00						
H04N 21/4402	H04L 29/06496	Limiting ref	Replace symbol “H04L 29/06496” and associated text with: <table border="1"> <tr> <td>Media handling at the source in data packets switching networks</td> <td>H04L 65/764</td> </tr> </table>	Media handling at the source in data packets switching networks	H04L 65/764		
Media handling at the source in data packets switching networks	H04L 65/764						
H04N 21/4415	H04L 29/06809	Limiting ref	Replace the reference “H04L 29/06809” and associated text with the following new references: <table border="1"> <tr> <td>Cryptography using biological data</td> <td>H04L 9/3231</td> </tr> <tr> <td>Authentication in networks using biometric</td> <td>H04L 63/0861</td> </tr> </table>	Cryptography using biological data	H04L 9/3231	Authentication in networks using biometric	H04L 63/0861
Cryptography using biological data	H04L 9/3231						
Authentication in networks using biometric	H04L 63/0861						
H04N 21/44222	H04L 29/08675	Informative reference	Replace the reference “H04L 29/08675” and associated text with the following new references: <table border="1"> <tr> <td>Lawful interception</td> <td>H04L 63/30</td> </tr> <tr> <td>Tracking the activity of the user</td> <td>H04L 67/535</td> </tr> </table>	Lawful interception	H04L 63/30	Tracking the activity of the user	H04L 67/535
Lawful interception	H04L 63/30						
Tracking the activity of the user	H04L 67/535						
H04N 21/4516	H04L 29/08927	Informative reference	Replace symbol “H04L 29/08927” and associated text with:				

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>
			Terminal profiles in network data switching protocols H04L 67/303
H04N 21/4524	H04L 29/08657	Limiting ref	Replace symbol “H04L 29/08657” in the reference with “H04L 67/52”
H04N 21/4532	H04L 29/08936	Limiting ref	Replace symbol “H04L 29/08936” and associated text with: User profiles in network data switching protocols H04L 67/306
H04N 21/454	H04L 51/12	Informative reference	Replace symbol “H04L 51/12” in the reference with “H04L 63/0227”
H04N 21/4627	H04L 29/06986	Limiting ref	Replace symbol “H04L 29/06986” in the reference with “H04L 63/20”
H04N 21/4661	H04L 29/08936	Limiting ref	Replace symbol “H04L 29/08936” and associated text with: User profiles in network data switching protocols H04L 67/306
H04N 21/4661	H04N 21/252	Limiting ref	Delete the references and associated text from the Limiting references table.
H04N 21/4661		Informative reference	Insert: A new Informative reference section with the following new references. <b>References</b> <b><i>Informative references</i></b> <i>Attention is drawn to the following places, which may be of interest for search:</i> Deriving collaborative data from a large group of end-users on the server H04N 21/252
H04N 21/47	H04L 29/06387	Informative reference	Replace symbol “H04L 29/06387” in the reference with “H04L 65/40”
H04N 21/472	H04L 29/06462	Limiting ref	Replace symbol “H04L 29/08936” and associated text with: Network services for supporting unicast streaming H04L 65/612
H04N 21/47214	H04L 51/24	Limiting ref	Replace symbol “H04L 51/24” in the reference with “H04L 51/224”

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>								
H04N 21/4753	H04L 29/06782	Limiting ref	Replace the reference “H04L 29/06782” and associated text with the following new references: <table border="1"> <tr> <td>Cryptographic authentication protocols</td> <td>H04L 9/32</td> </tr> <tr> <td>Network authentication protocols</td> <td>H04L 63/08</td> </tr> </table>	Cryptographic authentication protocols	H04L 9/32	Network authentication protocols	H04L 63/08				
Cryptographic authentication protocols	H04L 9/32										
Network authentication protocols	H04L 63/08										
H04N 21/4755	H04L 29/08936	Limiting ref	Replace symbol “H04L 29/08936” and associated text with: <table border="1"> <tr> <td>User profiles in network data switching protocols</td> <td>H04L 67/306</td> </tr> </table>	User profiles in network data switching protocols	H04L 67/306						
User profiles in network data switching protocols	H04L 67/306										
H04N 21/4782	H04L 29/0809	Informative reference	Replace symbol “H04L 29/0809” and associated text with: <table border="1"> <tr> <td>Web-based protocols</td> <td>H04L 67/02</td> </tr> </table>	Web-based protocols	H04L 67/02						
Web-based protocols	H04L 67/02										
H04N 21/4788	H04L 29/08306	Limiting ref	Replace symbol “H04L 29/08306” and associated text with: <table border="1"> <tr> <td>Distributed application using peer-to-peer [P2P] networks</td> <td>H04L 67/104</td> </tr> </table>	Distributed application using peer-to-peer [P2P] networks	H04L 67/104						
Distributed application using peer-to-peer [P2P] networks	H04L 67/104										
H04N 21/60	H04L 29/06	Informative reference	Replace the reference “H04L 29/06” and associated text with the following new references: <table border="1"> <tr> <td>Cryptographic protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Media handling, encoding, streaming or conversion</td> <td>H04L 65/60</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/01</td> </tr> </table>	Cryptographic protocols	H04L 9/00	Network security protocols	H04L 63/00	Media handling, encoding, streaming or conversion	H04L 65/60	Network protocols for data switching network services	H04L 67/01
Cryptographic protocols	H04L 9/00										
Network security protocols	H04L 63/00										
Media handling, encoding, streaming or conversion	H04L 65/60										
Network protocols for data switching network services	H04L 67/01										
H04N 21/60	H04L 67/42	Informative reference	Replace symbol “H04L 67/42” and associated text with: <table border="1"> <tr> <td>Protocols for client-server architecture</td> <td>H04L 67/01</td> </tr> </table>	Protocols for client-server architecture	H04L 67/01						
Protocols for client-server architecture	H04L 67/01										
H04N 21/63	H04L 29/06183	Limiting ref	Replace symbol “H04L 29/06183” and associated text with: <table border="1"> <tr> <td>Real-time session protocols</td> <td>H04L 65/1101</td> </tr> </table>	Real-time session protocols	H04L 65/1101						
Real-time session protocols	H04L 65/1101										
H04N 21/63	H04L 29/08306	Limiting ref	Replace symbol “H04L 29/08306” and associated text with:								

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>	
			Distributed application using peer-to-peer [P2P] networks	H04L 67/104
H04N 21/632	H04L 29/08306	Limiting ref	Replace symbol "H04L 29/08306" and associated text with:	
			Distributed application in data packet switching network using peer-to-peer [P2P] networks	H04L 67/104
H04N 21/63345	H04L 29/06707	Limiting ref	Replace symbol "H04L 29/06707" and associated text with:	
			Network support of key management	H04L 63/06
H04N 21/6375	H04L 29/06095	Limiting ref	Replace symbol "H04L 29/06095" and associated text with:	
			Implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP]	H04L 69/16
H04N 21/6377	H04L 29/06469	Limiting ref	Replace symbol "H04L 29/06469" and associated text with:	
			One-way streaming services wherein the source is controlled by the destination	H04L 65/613
H04N 21/63775	H04L 29/06707	Limiting ref	Replace the reference "H04L 29/06707" and associated text with the following new references:	
			Key management	H04L 9/08
			Network support of key management	H04L 63/06
H04N 21/64	H04L 29/06455	Limiting ref	Replace symbol "H04L 29/06455" and associated text with:	
			Support for multicast or broadcast of one-way streams services in data packet switching network	H04L 65/611
H04N 21/64	H04L 29/12009	Limiting ref	Replace symbol "H04L 29/12009" and associated text with:	

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>	
			Network arrangements in data packet switching network, protocols or services for addressing or naming	H04L 61/00
H04N 21/6402	H04L 29/12207	Limiting ref	Replace symbol “H04L 29/12207” in the reference with “H04L 61/50”	
H04N 21/643	H04L 29/06517	Limiting ref	Replace symbol “H04L 29/06517” and associated text with:	
			Network streaming protocols in data packet switching network, e.g. real-time transport protocol [RTP] or real-time control protocol [RTCP]	H04L 65/65
H04N 21/647	H04L 29/06183	Limiting ref	Replace symbol “H04L 29/06183” and associated text with:	
			Real-time session protocols in data packet switching network	H04L 65/1101
H04N 21/64715	H04L 29/06857	Limiting ref	Replace symbol “H04L 29/06857” in the reference with “H04L 63/12”	
H04N 21/6473	H04L 29/14	Limiting ref	Replace symbol “H04L 29/14” and associated text with:	
			Recovering in data packet switching network from a failure of a protocol instance or entity	H04L 69/40
H04N 21/64776	H04L 29/06095	Limiting ref	Replace symbol “H04L 29/06095” and associated text with:	
			Implementation or adaptation of Internet protocol [IP], of transmission control protocol [TCP] or of user datagram protocol [UDP]	H04L 69/16
H04N 21/64784	H04L 29/08702	Limiting ref	Replace symbol “H04L 29/08702” and associated text with:	
			Provisioning of proxy services in data packet switching networks	H04L 67/56
H04N 21/64784	H04N 21/222	Limiting ref	Delete the references and associated text from the Limiting references table.	
H04N 21/64784		Informative reference	Insert: A new Informative reference section with the following new references.	

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>								
			<p><b>References</b>  <i>Informative references</i>                      Attention is drawn to the following places, which may be of interest for search:</p> <table border="1"> <tr> <td>Secondary or local servers, which could also alter the data</td> <td>H04N 21/222</td> </tr> </table>	Secondary or local servers, which could also alter the data	H04N 21/222						
Secondary or local servers, which could also alter the data	H04N 21/222										
H04N 21/64792	H04L 29/06503	Limiting ref	Replace symbol "H04L 29/06503" and associated text with: <table border="1"> <tr> <td>Intermediate media network packet handling</td> <td>H04L 65/765</td> </tr> </table>	Intermediate media network packet handling	H04L 65/765						
Intermediate media network packet handling	H04L 65/765										
H04N 21/64792	H04L 29/08783	Limiting ref	Replace symbol "H04L 29/08783" and associated text with: <table border="1"> <tr> <td>Proxy provisioning conversion or adaptation for reducing the amount or size of exchanged application data</td> <td>H04L 67/5651</td> </tr> </table>	Proxy provisioning conversion or adaptation for reducing the amount or size of exchanged application data	H04L 67/5651						
Proxy provisioning conversion or adaptation for reducing the amount or size of exchanged application data	H04L 67/5651										
H04N 21/8166	H04L 29/08981	Limiting ref	Replace symbol "H04L 29/08981" and associated text with: <table border="1"> <tr> <td>Involving the movement of software or configuration parameters in data packet switching networks</td> <td>H04L 67/34</td> </tr> </table>	Involving the movement of software or configuration parameters in data packet switching networks	H04L 67/34						
Involving the movement of software or configuration parameters in data packet switching networks	H04L 67/34										
H04N 21/8586	H04L 29/0809	Limiting ref	Replace symbol "H04L 29/0809" and associated text with: <table border="1"> <tr> <td>Web-based protocols</td> <td>H04L 67/02</td> </tr> </table>	Web-based protocols	H04L 67/02						
Web-based protocols	H04L 67/02										
H04W	H04L 29/06	Informative reference	Replace the reference "H04L 29/06" and associated text with the following new references: <table border="1"> <tr> <td>Cryptographic protocols</td> <td>H04L 9/00</td> </tr> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Media handling, encoding, streaming or conversion</td> <td>H04L 65/60</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/01</td> </tr> </table>	Cryptographic protocols	H04L 9/00	Network security protocols	H04L 63/00	Media handling, encoding, streaming or conversion	H04L 65/60	Network protocols for data switching network services	H04L 67/01
Cryptographic protocols	H04L 9/00										
Network security protocols	H04L 63/00										
Media handling, encoding, streaming or conversion	H04L 65/60										
Network protocols for data switching network services	H04L 67/01										
H04W 8/005	H04L 29/0899	Informative reference	Replace symbol "H04L 29/0899" and associated text with: <table border="1"> <tr> <td>Network services indicating network or usage conditions on the user display</td> <td>H04L 67/75</td> </tr> </table>	Network services indicating network or usage conditions on the user display	H04L 67/75						
Network services indicating network or usage conditions on the user display	H04L 67/75										

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>		
H04W 8/005	H04L 29/08648	Informative reference	Replace symbol “H04L 29/08648” and associated text with: <table border="1"> <tr> <td>Discovery or management thereof, e.g. service location protocol [SLP] or web services</td> <td>H04L 67/51</td> </tr> </table>	Discovery or management thereof, e.g. service location protocol [SLP] or web services	H04L 67/51
Discovery or management thereof, e.g. service location protocol [SLP] or web services	H04L 67/51				
H04W 8/18	H04L 29/08918	Informative reference	Replace symbol “H04L 29/08918” and associated text with: <table border="1"> <tr> <td>Profiles in network data switching protocols</td> <td>H04L 67/30</td> </tr> </table>	Profiles in network data switching protocols	H04L 67/30
Profiles in network data switching protocols	H04L 67/30				
H04W 8/22	H04L 29/08567	Informative reference	Replace symbol “H04L 29/08567” and associated text with: <table border="1"> <tr> <td>Proprietary protocols involving control of end-device applications</td> <td>H04L 67/125</td> </tr> </table>	Proprietary protocols involving control of end-device applications	H04L 67/125
Proprietary protocols involving control of end-device applications	H04L 67/125				
H04W 8/245	H04L 29/08981	Informative reference	Replace symbol “H04L 29/08981” in the reference with “H04L 67/34”		
H04W 8/26	H04L 29/12311	Informative reference	Replace symbol “H04L 29/12311” in the reference with “H04L 61/5084”		
H04W 8/265	H04L 29/06823	Informative reference	Replace symbol “H04L 29/06823” in the reference with “H04L 63/10”		
H04W 8/30	H04L 29/14	Informative reference	Replace symbol “H04L 29/14” and associated text with: <table border="1"> <tr> <td>Recovering in data packet switching network from a failure of a protocol instance or entity, e.g. service redundancy protocols, protocol state redundancy or protocol service redirection</td> <td>H04L 69/40</td> </tr> </table>	Recovering in data packet switching network from a failure of a protocol instance or entity, e.g. service redundancy protocols, protocol state redundancy or protocol service redirection	H04L 69/40
Recovering in data packet switching network from a failure of a protocol instance or entity, e.g. service redundancy protocols, protocol state redundancy or protocol service redirection	H04L 69/40				
H04W 36/0011	H04L 29/06319	Informative reference	Replace symbol “H04L 29/06319” and associated text with: <table border="1"> <tr> <td>Real-time session management in data packet switching networks</td> <td>H04L 65/1066</td> </tr> </table>	Real-time session management in data packet switching networks	H04L 65/1066
Real-time session management in data packet switching networks	H04L 65/1066				
H04W 36/0038	H04L 29/06551	Informative reference	Replace symbol “H04L 29/06551” in the reference with “H04L 63/00”		
H04W 76/00	H04L 29/08576	Informative reference	Replace symbol “H04L 29/08576” and associated text with: <table border="1"> <tr> <td>Session management in data packet switching networks</td> <td>H04L 67/14</td> </tr> </table>	Session management in data packet switching networks	H04L 67/14
Session management in data packet switching networks	H04L 67/14				

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<u>Location of reference to be changed</u>	<u>Referenced subclass or group to be changed</u>	<u>Section of definition</u>	<u>Action; New reference symbol; New text</u>						
H04W 76/11	H04L 29/12009	Informative reference	Replace symbol “H04L 29/12009” and associated text with: <table border="1"> <tr> <td>Network arrangements, protocols or services for addressing or naming</td> <td>H04L 61/00</td> </tr> </table>	Network arrangements, protocols or services for addressing or naming	H04L 61/00				
Network arrangements, protocols or services for addressing or naming	H04L 61/00								
H04W 76/12	H04L 29/06551	Informative reference	Replace symbol “H04L 29/06551” in the reference with “H04L 63/00”						
H04W 76/15	H04L 29/06088	Informative reference	Replace symbol “H04L 29/06088” in the reference with “H04L 69/14”						
H04W 76/25	H04L 29/08576	Informative reference	Replace symbol “H04L 29/08576” and associated text with: <table border="1"> <tr> <td>Session management in data packet switching networks</td> <td>H04L 67/14</td> </tr> </table>	Session management in data packet switching networks	H04L 67/14				
Session management in data packet switching networks	H04L 67/14								
H04W 76/45	H04L 29/06442	Informative reference	Replace symbol “H04L 29/06442” in the reference with “H04L 65/4061”						
H04W 80/00	H04L 29/06	Informative reference	Replace the reference “H04L 29/06” and associated text with the following new references: <table border="1"> <tr> <td>Network security protocols</td> <td>H04L 63/00</td> </tr> <tr> <td>Media handling, encoding, streaming or conversion</td> <td>H04L 65/60</td> </tr> <tr> <td>Network protocols for data switching network services</td> <td>H04L 67/01</td> </tr> </table>	Network security protocols	H04L 63/00	Media handling, encoding, streaming or conversion	H04L 65/60	Network protocols for data switching network services	H04L 67/01
Network security protocols	H04L 63/00								
Media handling, encoding, streaming or conversion	H04L 65/60								
Network protocols for data switching network services	H04L 67/01								
H04W 84/18	H04L 29/08306	Informative reference	Replace symbol “H04L 29/08306” and associated text with: <table border="1"> <tr> <td>Distributed application using peer-to-peer [P2P] networks</td> <td>H04L 67/104</td> </tr> </table>	Distributed application using peer-to-peer [P2P] networks	H04L 67/104				
Distributed application using peer-to-peer [P2P] networks	H04L 67/104								
H04W 84/18	H04L 29/08567	Informative reference	Replace symbol “H04L 29/08567” in the reference with “H04L 67/125”						

NOTES:

- The CRL tables above are used for changes to locations **outside** of the project scope. Changes to references in scheme titles or definitions **inside** the project scope will be reflected in the “scheme change” template or one of the “definition” templates.
- In addition to other changes proposed in the tables above, in the column titled “Referenced subclass or group to be changed,” **referenced** D symbols should indicate an action of “delete” or should indicate a replacement symbol and **referenced** F symbols should indicate a replacement symbol.

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- When a reference is deleted, text related to that reference will also be deleted unless other references or a range of references associated with the same text remain.