

130	<b>SPREAD SPECTRUM</b>	228	.With indicator
131	.Hybrid form	229	<b>EQUALIZERS</b>
132	.Frequency hopping	230	.Automatic
133	..End-to-end transmission system	231	..Training period or initial set up
134	...Having specific code acquisition or tracking	232	..Adaptive
135	..Transmitter	233	...Decision feedback equalizer
136	..Receiver	234	...Fractionally spaced equalizer
137	...Having specific code acquisition or tracking	235	...Quadrature channels
138	.Time hopping	236	...Accumulator or up/down counter
139	.Chirp	237	<b>PULSE NUMBER MODULATION</b>
140	.Direct sequence	238	<b>PULSE WIDTH MODULATION</b>
141	..End-to-end transmission system	239	<b>PULSE POSITION, FREQUENCY, OR SPACING MODULATION</b>
142	...Having correlation-type receiver	240	<b>BANDWIDTH REDUCTION OR EXPANSION</b>
143	...Having matched-filter-type receiver	240.01	.Television or motion video signal
144	...Having multi-receiver or interference cancellation	240.02	..Adaptive
145	...Having specific signaling for code synchronization	240.03	...Quantization
146	..Transmitter	240.04	....Feed forward
147	..Receiver	240.05	....Feed back
148	...Multi-receiver or interference cancellation	240.06	...Feed forward
149	...Having specific code synchronization	240.07	...Feed back
150	...Correlation-type receiver	240.08	..Feature based
151	....Having SAW or charge-transfer device	240.09	...Polygonal approximation
152	...Matched-filter-type receiver	240.1	...Separate coders
153	....Having SAW or charge-transfer device	240.11	....Subband coding
211	<b>REPEATERS</b>	240.12	..Predictive
212	.Ring or star configuration	240.13	...Intra/inter selection
213	.Testing	240.14	...Plural
214	.Including pulse regeneration or conversion	240.15	...Bidirectional
215	..Phase locked loop	240.16	...Motion vector
216	<b>APPARATUS CONVERTIBLE TO ANALOG</b>	240.17	....Half-pixel refinement
217	.Muting circuit and squelch	240.18	..Transform
218	<b>EARTH OR WATER MEDIUM</b>	240.19	...Wavelet
219	<b>TRANSCEIVERS</b>	240.2	...Discrete cosine
220	.Transmission interface between two stations or terminals	240.21	..Subsampling
221	.Loopback mode	240.22	..Vector quantization
222	.Modems (data sets)	240.23	..Variable length coding
223	..Angle modulation	240.24	..Block coding
224	<b>TESTING</b>	240.25	..Specific decompression process
225	.Data rate	240.26	..Associated signal processing
226	.Phase error or phase jitter	240.27	...Error detection or correction
227	.Signal noise	240.28	...Synchronization
		240.29	...Pre/post filtering
		241	.Pulse code modulation
		242	<b>PULSE CODE MODULATION</b>
		243	.Correcting or reducing quantizing errors
		244	.Differential
		245	..Quantizer or inverse quantizer
		246	..Length coding
		247	..Single bit (delta)

248	...Nonamplitude delta (area, etc.)	292	.Disparity reduction
249	...Compand (overload prevention)	293	.Synchronized
250	...Redundancy removal	294	..Phase locked loop
251	...Syllabic	295	<b>TRANSMITTERS</b>
252	...Plural feedback loops	296	.Antinoise or distortion (includes predistortion)
253	.Length coding	297	..Power amplifier
254	.Noise or distortion reduction	298	.Quadrature amplitude modulation
256	<b>PULSE TRANSMISSION VIA RADIATED BASEBAND</b>	299	.Plural diversity
257	<b>CABLE SYSTEMS AND COMPONENTS</b>	300	.Amplitude modulation
258	.Transformer coupling	301	..Single or vestigial sideband or suppressed carrier
259	<b>SYSTEMS USING ALTERNATING OR PULSATING CURRENT</b>	302	.Angle modulation
260	.Plural channels for transmission of a single pulse train	303	..Frequency shift keying
261	..Quadrature amplitude modulation	304	...Antenna tuning with frequency shift
262	..Maximum likelihood decoder or viterbi decoder	305	...Minimum shift keying
263	...Partial response	306	...One oscillator
264	...Multilevel	307	...Two or more oscillators
265	...Trellis encoder or Trellis decoder	308	..Phase shift keying
267	..Diversity	309	.Keying circuits
268	.Amplitude modulation	310	..Remote controlled
269	..With phase or frequency shift keying	311	..Automatic
270	..Vestigial or single sideband or suppressed carrier	312	..Power or bias voltage supply keying
271	.Angle modulation	313	..Key shock or click prevention
272	..Frequency shift keying	314	..Including auxiliary control tube
273	...Combined with phase shift keying	315	..Modulation by absorption of signal, changing antenna dimension or changing antenna impedance
274	...Minimum shift keying	316	<b>RECEIVERS</b>
275	...More than two frequencies	317	.Automatic baseline or threshold adjustment
276	...One cycle or less per bit	318	..Differential amplifier
277	...Vestigial or single sideband, or suppressed carrier	319	..Automatic bias circuit for DC restoration
278	...Antinoise or distortion	320	.Amplitude modulation
279	..Phase shift keying	321	..Single or vestigial sideband or suppressed carrier
280	...More than two phases	322	.Angle modulation
281	...Quaternary	323	..Combined phase shift keyed and frequency shift keyed
282	...Biphase (manchester codes)	324	..Particular demodulator
283	...Differential phase shift keying (diphase)	325	...Including coherent detector
284	...Antinoise or distortion	326	...Carrier recovery circuit or carrier tracking
285	.Antinoise or distortion	327	...Phase locked loop
286	<b>MULTILEVEL</b>	328	...Including switching or gating (digital circuits)
287	.With threshold level	329	..Phase shift keying
288	.Transmission line	330	...Differential (diphase)
289	.Bipolar signal		
290	.Partial response		
291	..Duobinary		

331 ....More than two phases  
 332 ...Plural phase (>2)  
 333 ..Biphase (manchester code)  
 334 ..Frequency shift keying  
 335 ..More than two frequencies  
 336 ..Minimum shift keying  
 337 ...Separate mark and space channels  
 338 .Interrupted carrier wave  
 339 ..Carrier controlling local generator  
 340 .Particular pulse demodulator or detector  
 341 ..Maximum likelihood decoder or viterbi decoder  
 342 ..Locating predetermined portion of pulse  
 343 ..Correlative or matched filter  
 344 .Automatic frequency control  
 345 .Automatic gain control  
 346 .Interference or noise reduction  
 347 ..Diversity (frequency or time)  
 348 ..Intersymbol interference  
 349 ..Plural signal paths in receiver  
 350 ..By filtering (e.g., digital)  
 351 ..Gating, blanking, etc.  
 352 .With electromagnetic relay or solenoid  
 353 **PULSE AMPLITUDE MODULATION**  
 354 **SYNCHRONIZERS**  
 355 .Synchronizing the sampling time of digital data  
 356 .Network synchronizing more than two stations  
 357 .Synchronization failure prevention  
 358 .Feedback, receiver to transmitter  
 359 .Self-synchronizing signal (self-clocking codes, etc.)  
 360 ..With transition detector  
 361 ..Manchester code or biphase code  
 362 .Frequency or phase control using synchronizing signal  
 363 ..Synchronization bit insertion into artificially created gaps  
 364 ..Synchronization signals with unique amplitude, polarity, length, or frequency  
 365 ..Synchronization word  
 366 ...Plurality of synchronization words  
 367 ...Pseudo noise

368 ...Synchronizer pattern recognizers  
 369 ..Start - stop  
 370 ...With asynchronous data  
 371 .Phase displacement, slip or jitter correction  
 372 ..Elastic buffer  
 373 ..Phase locking  
 374 ...With charge pump or up and down counters  
 375 ...With frequency detector and phase detector  
 376 ...Phase locked loop  
 377 **MISCELLANEOUS**

**E-SUBCLASSES**

The following subclasses beginning with the letter E are E-subclasses. Each E-subclass corresponds in scope to a classification in a foreign classification system, for example, the European Classification system (ECLA). The foreign classification equivalent to an E-subclass is identified in the subclass definition. In addition to US documents classified in E-subclasses by US examiners, documents are regularly classified in E-subclasses according to the classification practices of any foreign Offices identified in parentheses at the end of the title. For example, "(EPO)" at the end of a title indicates both European and US patent documents, as classified by the EPO, are regularly added to the subclass. E-subclasses may contain subject matter outside the scope of this class. Consult their definitions, or the documents themselves to clarify or interpret titles.

E1.001 **SPREAD SPECTRUM TECHNIQUES IN GENERAL (EPO)**  
 E1.002 .Using direct sequence modulation (EPO)  
 E1.003 ..With code acquisition (EPO)  
 E1.004 ...Setting of lock conditions, e.g., threshold (EPO)  
 E1.005 ...Code identification (EPO)  
 E1.006 ...Multimode search, i.e., using multiple search strategies (EPO)  
 E1.007 ...Using partial detection (EPO)

- E1.008 ....Partial correlation (EPO)
- E1.009 ....Partial phase search (EPO)
- E1.01 ..Multistage acquisition (EPO)
- E1.011 ....Multidwell schemes, i.e., multiple accumulation times (EPO)
- E1.012 ....Parallel schemes (EPO)
- E1.013 ...Setting of search window, i.e., range of code offsets to be searched (EPO)
- E1.014 ...Masking/slewing, i.e., jumping within the code (EPO)
- E1.015 ...With increased resolution, i.e., higher than half a chip (EPO)
- E1.016 ..Using a code tracking loop, e.g., a delay locked loop (EPO)
- E1.017 ..With demodulation by means of convolvers, e.g., of the SAW type (EPO)
- E1.018 ..With demodulation by means of matched filters (EPO)
- E1.019 ..With asynchronous demodulation, i.e., not requiring code synchronisation (EPO)
- E1.02 ..Interference-related aspects (EPO)
- E1.021 ...The interference being narrowband (EPO)
- E1.022 ....With estimation filters (EPO)
- E1.023 ....With transform to frequency domain (EPO)
- E1.024 ...The interference being multiple access interference (EPO)
- E1.025 ....Using joint detection techniques, e.g., linear detectors (EPO)
- E1.026 .....Using decorrelation matrix (EPO)
- E1.027 .....Using minimum mean squared error (MMSE) detector (EPO)
- E1.028 .....Using maximum-likelihood sequence estimation (MLSE) (EPO)
- E1.029 ....Using subtractive interference cancellation (EPO)
- E1.03 .....Successive interference cancellation (EPO)
- E1.031 .....Parallel interference cancellation (EPO)
- E1.032 ...The interference being multi path interference, e.g., RAKE receivers (EPO)
- E1.033 .Using frequency hopping (EPO)
- E1.034 ..Arrangements for generation of hop frequencies (EPO)
- E1.035 ..Arrangements for generation of hop sequences (EPO)
- E1.036 ..Interference related aspects (EPO)
- E1.037 ..Arrangements for sequence synchronization (EPO)
- E7.001 **SYSTEMS FOR THE TRANSMISSION OF TELEVISION SIGNALS USING PULSE CODE MODULATION (EPO)**
- E7.002 .Arrangements for interfacing to the transmission channel or to the communication network (EPO)
- E7.003 .Bitstream control arrangements (EPO)
- E7.004 ..Involving pointers to the video stream (EPO)
- E7.005 ..Involving the control of media objects (EPO)
- E7.006 ...Presentation therefor, e.g., on the basis of a scene description (EPO)
- E7.007 ...User interaction therefor (EPO)
- E7.008 ....With hot-spots (EPO)
- E7.009 ...Intellectual Property Rights management and protection therefor (EPO)
- E7.01 ...Synchronization therefor, e.g., synchronization of elementary stream objects at the sync layer with time stamps (EPO)
- E7.011 ..Involving control of the complexity properties of the video bitstream, e.g., spatial or temporal resolution, SNR, bit rate, region of interest selection (EPO)
- E7.012 ..Where the control is performed by the receiver of the video, e.g., active selection by the receiver from a scalable bitstream or selective multicast subscription (EPO)

- E7.013 ...Where the control is performed by the transmitter of the video, e.g., active selection by the transmitter of parts of scalable bitstream to be sent (EPO)
- E7.014 ..Involving buffer level management (EPO)
- E7.015 ..Involving a control signal to the decoder, e.g., from the medium specific interface unit, or from the network (EPO)
- E7.016 ..Involving a control signal to the encoder, e.g., from the medium specific interface unit, or from the network (EPO)
- E7.017 ..Involving an exchange of control commands (EPO)
- E7.018 .Bitstream embedding arrangements, e.g. arrangements for blending, replacing, hiding, compositing or associating at bitstream level (EPO)
- E7.019 .Bitstream network arrangements (EPO)
- E7.02 .Bitstream transport arrangements (EPO)
- E7.021 ..Bitstream processing (EPO)
- E7.022 ...Involving modification of bitstream parameters, e.g., restamping of time stamps, remapping of identifiers transmultiplexing (EPO)
- E7.023 ...Involving switching between bitstreams (EPO)
- E7.024 ..Involving transporting of additional information over the bitstream (EPO)
- E7.025 ..Involving transporting of the bitstream over a delivery medium (EPO)
- E7.026 .Using bandwidth reduction ; source coding or decoding of digital video signal, e.g., digital video signal compression; Pre- or postprocessing therefor (EPO)
- E7.027 ..Decoder-specific arrangements (EPO)
- E7.028 ...For compensating inverse transform mismatch, e.g., IDCT mismatch (EPO)
- E7.029 ..Involving sub-band coding (EPO)
- E7.03 ...In combination with temporal predictive coding, e.g., in 'inter' mode (EPO)
- E7.031 ...With motion compensated temporal filtering (EPO)
- E7.032 ...With at least one adaptive element (EPO)
- E7.033 ....Involving variable length or entropy coding, e.g., Huffmann or arithmetic coding (EPO)
- E7.034 ....Involving normalization or quantizing (EPO)
- E7.035 ....Involving a bit-rate or bit-amount target (EPO)
- E7.036 .....With adaptive target allocation among the components (EPO)
- E7.037 ...With interframe prediction not only of coefficient values (EPO)
- E7.038 ....Suited to an interframe bitstream syntax (EPO)
- E7.039 ...Using sub-band domain temporal integration (EPO)
- E7.04 ...Of a single image (EPO)
- E7.041 ...In more than two frequency dimensions (EPO)
- E7.042 ...Of arbitrarily shaped image segments (EPO)
- E7.043 ...With details relating to the sub-band filter (EPO)
- E7.044 ....Concerning filter definition (EPO)
- E7.045 ....Concerning filter implementation (EPO)
- E7.046 ...With at least one adaptive element (EPO)
- E7.047 ....Involving variable length or entropy coding, e.g., Huffmann or arithmetic coding (EPO)
- E7.048 ....Involving normalization or quantizing (EPO)
- E7.049 ....Involving a bit-rate or bit-amount target (EPO)
- E7.05 .....With adaptive target allocation among the components (EPO)
- E7.051 ...Control aspects therefor (EPO)
- E7.052 ....Controlled element (EPO)
- E7.053 .....Subband structure, e.g., number of subbands (EPO)
- E7.054 ....Filter type or filtering coefficients (EPO)

- E7.055 .....Error protection, detection or correction (EPO)
- E7.056 .....Scan or transmission order of coefficients or bitplanes (EPO)
- E7.057 .....Switching of direction, e.g., horizontal, diagonal, vertical (EPO)
- E7.058 .....Unit of control (EPO)
- E7.059 .....Relating to sub-band structure (EPO)
- E7.06 .....Hierarchical level (EPO)
- E7.061 .....Directional tree, e.g., low-high (LH), high-low (HL), high-high (HH) (EPO)
- E7.062 .....Object or region (EPO)
- E7.063 .....Element used for control (EPO)
- E7.064 .....Position or location within image, e.g., center or periphery of picture (EPO)
- E7.065 .....Involving user interaction or information input by receiving side (EPO)
- E7.066 ....With prediction other than mere runlength (EPO)
- E7.067 .....Intraband (EPO)
- E7.068 .....Interband (EPO)
- E7.069 ....Involving the arranging of coefficients or bits, e.g., for scalability or progressive transmission (EPO)
- E7.07 .....Involving scan according to levels, e.g., breath-first (EPO)
- E7.071 .....Involving scan according to trees, e.g., depth-first (EPO)
- E7.072 .....Coding of bitplanes or significance, e.g., zero tree (EPO)
- E7.073 ....Involving error protection, detection or correction (EPO)
- E7.074 ....Suited to a bitstream syntax (EPO)
- E7.075 ....With grouping into blocks (EPO)
- E7.076 ..Involving video objects (EPO)
- E7.077 ...Involving both synthetic and natural picture components, e.g., synthetic natural hybrid coding (SNHC) (EPO)
- E7.078 ...Scalability, e.g., involving base and at least one enhancement video object layers (VOL) (EPO)
- E7.079 ....Spatial scalability (EPO)
- E7.08 ....Temporal scalability, e.g., layered VOP frame rate (EPO)
- E7.081 ...Shape coding therefor (EPO)
- E7.082 ....Using binary alpha-plane coding, e.g., Context based Arithmetic Encoding (CAE) (EPO)
- E7.083 ...Model based coding therefor (EPO)
- E7.084 ....Using a three-dimensional model (EPO)
- E7.085 ...Coding of regions that are present throughout a whole video segment, e.g., sprites (EPO)
- E7.086 ....Of static sprites, e.g., background, mosaic (EPO)
- E7.087 ...Scene description coding, e.g., binary format for scenes (BIFS) compression (EPO)
- E7.088 ..Involving coding of different picture or data components (EPO)
- E7.089 ...Involving the insertion of extra data, e.g., in the video data, in the coding parameters or by modification of said video data or parameters (EPO)
- E7.09 ...Involving separate coding of the error signal, i.e., the difference between the original picture and the locally reconstructed one (EPO)
- E7.091 ...Involving arrangements for adaptive allocation of coded information to different channels (EPO)
- E7.092 ...Involving multi-layer decomposition; subsequent reconstruction (EPO)
- E7.093 ..Implementation arrangements, e.g., implementation by hardware or software (EPO)
- E7.094 ...Memory arrangements (EPO)
- E7.095 ....Memory downsizing methods (EPO)
- E7.096 .....Display on the fly, e.g., simultaneous writing to and reading from decoder memory (EPO)
- E7.097 .....With 3:2 pulldown (EPO)
- E7.098 .....Recompression (EPO)
- E7.099 .....Decimation (EPO)

- E7.1 ...Motion estimation and/or compensation hardware (EPO)
- E7.101 ....Data flow inside motion estimator (EPO)
- E7.102 ....Access to external memory (EPO)
- E7.103 ...Parallel arrangements (EPO)
- E7.104 ..Motion estimation therefor; processing of motion vectors for bandwidth reduction purposes (EPO)
- E7.105 ...Methods (EPO)
- E7.106 ....Global motion vector estimation (EPO)
- E7.107 ....Multiresolution or hierarchical method (EPO)
- E7.108 ....Multistep search method, e.g., 3-step, 2D-log, One-at-a-Time Search (OTS) (EPO)
- E7.109 ....Nonblock-based processing (EPO)
- E7.11 .....Using feature points or meshes (EPO)
- E7.111 .....Using regions (EPO)
- E7.112 .....Contour motion estimation (EPO)
- E7.113 ....Sub-pixel accuracy (EPO)
- E7.114 ....Transform domain motion estimation (EPO)
- E7.115 ...Details (EPO)
- E7.116 ....Spatially constrained motion estimation, e.g., at image or region borders (EPO)
- E7.117 ....Dealing with occlusions (EPO)
- E7.118 ....Early exit, i.e., stopping a systematic computation based on a certain criteria, e.g., error magnitude is too large (EPO)
- E7.119 ....Search initialization, i.e., estimating a good candidate to initiate a search (EPO)
- E7.12 ....Padding, i.e., filling nonobject values in an arbitrary shaped block for motion estimation purposes (EPO)
- E7.121 ....Rate-distortion criteria (EPO)
- E7.122 ....Variable search window size or shape (EPO)
- E7.123 ...Processing of motion vectors (EPO)
- E7.124 ....Encoding (EPO)
- E7.125 .....Predictive encoding (EPO)
- E7.126 ..Adaptive or control aspects therefor (EPO)
- E7.127 ...Methods, elements or tools for adaptive control (EPO)
- E7.128 ....LaGrangian method (EPO)
- E7.129 ....Side information (EPO)
- E7.13 ....Iterative methods (EPO)
- E7.131 .....Two pass methods (EPO)
- E7.132 ...Controlled element or parameter (EPO)
- E7.133 ....Predictor (EPO)
- E7.134 ....Target code amount (EPO)
- E7.135 ....Filtering, e.g., for pre- or post-processing (EPO)
- E7.136 ....Grid, i.e., regular pattern of elementary coding units in a picture, e.g., block grid (EPO)
- E7.137 ....Encoder, i.e., selection among a plurality of heterogeneous encoders (EPO)
- E7.138 ...Encoding parameters processing, e.g., initialization, alteration, compression (EPO)
- E7.139 ....Quantizer (EPO)
- E7.14 .....Details of quantization, normalization or weighting functions, e.g., normalization parameters or matrices, variable uniform quantizes, weighting matrices (EPO)
- E7.141 ....Resource allocation (EPO)
- E7.142 ....Transform coefficients scan, e.g., zig-zag scan (EPO)
- E7.143 ....Transformer, e.g., 8x8 or 2x4x8 DCT, selection among a plurality of different transform operations (EPO)
- E7.144 ....Variable length coding (VLC) or entropy coding, e.g., Huffmann or arithmetic coding (EPO)
- E7.145 ....Skipping or zeroing of coding units, e.g., adaptive decimation, frame skipping, transform coefficient masking (EPO)
- E7.146 ....Coding or prediction mode selection (EPO)
- E7.147 .....Intra coding, e.g., selection among a plurality of spatially predictive coding modes (EPO)

- E7.148 .....Refresh, i.e., intra-coding mode decision, e.g., at macroblock or picture level (EPO)
- E7.149 .....Inter coding, i.e., selection among a plurality of temporally predictive coding modes (EPO)
- E7.15 .....Picture structure, e.g., interlaced/progressive (EPO)
- E7.151 .....Group-of-pictures (GOP) structure (EPO)
- E7.152 ...Controlling element, parameter or criteria (EPO)
- E7.153 ....Rate distortion criteria (EPO)
- E7.154 ....Data rate or code amount (EPO)
- E7.155 .....Using a combination of feedforward and feedback control (EPO)
- E7.156 .....Using feedforward control (EPO)
- E7.157 .....Based on model-estimated code amount (EPO)
- E7.158 .....Based on off-line generated code amount (EPO)
- E7.159 .....Feedback control, i.e., control using output code amount, e.g., buffer fullness (EPO)
- E7.16 .....Single-pass constant bit rate (CBR) encoding (EPO)
- E7.161 ....Input video signal characteristics (EPO)
- E7.162 .....Complexity, e.g., activity, edges (EPO)
- E7.163 .....Motion, e.g., field or frame difference (EPO)
- E7.164 .....Using motion vectors (EPO)
- E7.165 .....Scene cut (EPO)
- E7.166 .....Chrominance (EPO)
- E7.167 ....Visual quality (EPO)
- E7.168 ....Resource availability (EPO)
- E7.169 ....Coding mode (EPO)
- E7.17 .....Picture or macroblock type, e.g., I,P,B (EPO)
- E7.171 .....Picture structure, e.g., interlaced/progressive (EPO)
- E7.172 ....User input (EPO)
- E7.173 ....Receiver or channel (EPO)
- E7.174 .....Transmission errors (EPO)
- E7.175 ...Unit of control, i.e., structural or semantic portion of the video signal being the object of the control (EPO)
- E7.176 ....Block or macroblock (EPO)
- E7.177 ....Transform coefficient (EPO)
- E7.178 ....Pixel (EPO)
- E7.179 ....Group-of-pictures (GOP) (EPO)
- E7.18 ....Slice, e.g., line of blocks, group of blocks (EPO)
- E7.181 ....Picture (EPO)
- E7.182 ....Image region, e.g., region of interest (ROI), object (EPO)
- E7.183 ....Scene or shot (EPO)
- E7.184 ....Bit (EPO)
- E7.185 ....Chrominance (EPO)
- E7.186 ....Layer (EPO)
- E7.187 ..Compressed domain processing (EPO)
- E7.188 ..Involving subsampling at the transmitter and restitution of the omitted samples by interpolation (EPO)
- E7.189 ..Involving preprocessing or postprocessing therefor (EPO)
- E7.19 ...Involving reduction of coding artifacts, e.g., of blockiness (EPO)
- E7.191 ...Involving cinematographic video sequences, e.g., sequences originated from film and converted to video through 3:2 pulldown (EPO)
- E7.192 ...Involving scene cut detection in conjunction with bandwidth reduction (EPO)
- E7.193 ..Filtering (EPO)
- E7.194 ...In a prediction loop (EPO)
- E7.195 ..Standard related document (EPO)
- E7.196 ...Normative references, e.g., working documents of standardization bodies like ISO/IEC, ITU-T, SMPTE in the domain of digital image and video coding (EPO)
- E7.197 ...Illustrative references, e.g., overviews, reviews (EPO)
- E7.198 ..Transcoding therefor, i.e., conversion of video data, coding parameters, syntax or the like in order to realize interoperability between different video coding standards (EPO)

- E7.199 ..Syntax aspects, e.g., source coding bistream syntax (EPO)
- E7.209 ..Using vector coding (EPO)
- E7.21 ..Involving pulse code modulation and predictive coding (EPO)
- E7.211 ..Involving transform and predictive coding , e.g., hybrid coding, Motion Picture Experts Group (MPEG) coding (EPO)
- E7.212 ...Involving the use of at least one adaptive element (EPO)
- E7.213 ....Involving variable length or entropy coding, e.g., Huffman or arithmetic coding (EPO)
- E7.214 ....Quantization, normalization or weighting techniques therefor, e.g., normalization parameters or matrices, variable uniform quantizers, weighting matrices (EPO)
- E7.215 ....The output data rate being minimized down to or below the channel capacity (EPO)
- E7.216 ....With feedback control only of the data rate, e.g., buffer fullness being used (EPO)
- E7.217 ....With feedforward control only of the data rate, e.g., formation amount estimator or sorter being used (EPO)
- E7.218 ....With feedforward and feedback control of the data rate (EPO)
- E7.219 ....With iterative control of the data rate, e.g., multipass (EPO)
- E7.22 ....Involving adaptive allocation of the frame type, e.g., adaptive group-of-pictures (GOP) structure (EPO)
- E7.221 ....Motion adaptive (EPO)
- E7.222 ..Multiplexing arrangements therefor, e.g., suited to a video bitstream syntax (EPO)
- E7.223 ..Using nontransform coding for certain blocks (EPO)
- E7.224 ..Forced updating therefor, e.g., refresh techniques, intra/inter-coding mode selection at macroblock or picture level (EPO)
- E7.225 ...Using transform domain integration, i.e., the transform being operated outside the prediction loop (EPO)
- E7.226 ..Involving transform coding, e.g., using discrete cosine transform (DCT) (EPO)
- E7.227 ...Transforming in more than two dimensions (EPO)
- E7.228 ...Of arbitrarily shaped image segments (EPO)
- E7.229 ...Involving the use of at least one adaptive element, e.g., Joint Photographic Experts Group (JPEG) coding (EPO)
- E7.23 ...Adaptive scanning order of DCT coefficients, e.g., alternate scanning (EPO)
- E7.231 ....Involving variable length or entropy coding, e.g., Huffman or arithmetic coding (EPO)
- E7.232 ....Quantization, normalization or weighting techniques therefor, e.g., normalization parameters or matrices, variable uniform quantizes, weighting matrices (EPO)
- E7.233 ....The output data rate being minimized down to or below the channel capacity (EPO)
- E7.234 ....With feedback control only of the data rate, e.g., buffer fullness being used (EPO)
- E7.235 ....With feedforward control only of the data rate, e.g., information amount estimator or sorter being used (EPO)
- E7.236 ....With feedforward and feedback control of the data rate (EPO)
- E7.237 ....With iterative control of the data rate (EPO)
- E7.238 ...The output quality being above a minimum (EPO)
- E7.239 ..Involving hierarchical transmission of the transform coefficients, e.g., progressive JPEG (EPO)
- E7.24 ..Involving error detection or error correction (EPO)
- E7.241 ..Involving pre-processing of the picture element samples before transform coding or post-processing of the same after transform decoding (EPO)

- E7.242 ...Involving zonal sampling (EPO)
- E7.243 ..Involving predictive coding (EPO)
- E7.244 ...At least one coding element being controlled by the buffer fullness (EPO)
- E7.245 ...With an adaptive quantizer characteristic, e.g., controlled by forward or backward adaptation (EPO)
- E7.246 ...With error correction (EPO)
- E7.247 ...Involving delta modulation (EPO)
- E7.248 ...Using subsampling at the coder or sample restitution by interpolation at the coder or decoder (EPO)
- E7.249 ....With adaptive prediction (EPO)
- E7.25 ....With motion compensated interpolation, e.g., involving bidirectional frame interpolation, i.e., use of B-pictures (EPO)
- E7.251 ....Involving a generalized motion field, e.g., nonblock-based processing (EPO)
- E7.252 ....Involving spatial subsampling or upsampling; Alteration of picture size or resolution (EPO)
- E7.253 ....Involving temporal subsampling, e.g., frame decimation (EPO)
- E7.254 ....With control of frame rate, skipping or repetition at encoding or decoding side (EPO)
- E7.255 ...Using temporal prediction (EPO)
- E7.256 ....Using motion compensation, e.g., by means of motion vectors (EPO)
- E7.257 ....Long-term prediction (EPO)
- E7.258 ....Block-based (EPO)
- E7.259 .....Using overlapping blocks (EPO)
- E7.26 ....With sub-pixel accuracy (EPO)
- E7.261 ....Nonblock-based (EPO)
- E7.262 ....Multiple frame prediction (EPO)
- E7.263 ...Using motion detection, e.g., with detection of moving zones (EPO)
- E7.264 ....Involving conditional replenishment (EPO)
- E7.265 ...Using spatial prediction (EPO)
- E7.266 ....By separate coding of pixel blocks (EPO)
- E7.2 ..Specific techniques not provided for in other subgroups of E7.026 (EPO)
- E7.201 ...Involving N-Tree coding, e.g., quadtree, octree (EPO)
- E7.202 ...Involving run length coding (EPO)
- E7.203 ...Involving matching pursuit (EPO)
- E7.204 ...Involving fractal coding (EPO)
- E7.205 ...Adaptive dynamic range coding (ADRC) (EPO)
- E7.206 ...Involving both PCM encoding and DPCM encoding (EPO)
- E7.207 ...Using a dither signal (EPO)
- E7.208 ...Using noise or error feedback, e.g., quantization noise feedback (EPO)
- E7.267 .Systems for transmission of a pulse code modulated video signal with one or more other pulse code modulated signals, e.g., an audio signal, a synchronizing signal (EPO)
- E7.268 ..Involving more than one video signal (EPO)
- E7.269 ...The signals being asynchronous (EPO)
- E7.27 ...The signals being synchronous (EPO)
- E7.271 ..Said other signal being a related audio signal (EPO)
- E7.272 ..Said other signal being a private data stream, e.g., teletext, graphics (EPO)
- E7.273 ..According to geometrical constraints of the communication medium, e.g., data formatting for subsequent transmission to a digital storage medium (EPO)
- E7.274 ..Isochronously with the horizontal video sync, e.g., according to bit-parallel or bit-serial interface formats, as SMPTE 259M (EPO)
- E7.275 ..The signals being synchronous (EPO)
- E7.276 ...Synchronizing systems therefor (EPO)

- E7.277 ..The signals being asynchronous  
(EPO)
- E7.278 ...Synchronizing systems therefor  
(EPO)
- E7.279 .Systems for detection or  
correction of transmission  
errors (EPO)
- E7.28 ..Using redundant codes (EPO)
- E7.281 ..Using error concealment (EPO)

**FOREIGN ART COLLECTIONS****FOR 000 CLASS-RELATED FOREIGN DOCUMENTS**

Any foreign patents or non-patent literature from subclasses that have been reclassified have been transferred directly to FOR Collections listed below. These Collections contain ONLY foreign patents or non-patent literature. The parenthetical references in the Collection titles refer to the abolished subclasses from which these Collections were derived.

**FOR 100 SPREAD SPECTRUM (375/200)**

- FOR 101 .Hybrid forms (375/201)
- FOR 102 .Frequency hopping (375/202)
- FOR 103 .Time hopping (375/203)
- FOR 104 .Pulsed FM or chirp (375/204)
- FOR 105 .Direct sequence (375/206)
- FOR 106 .Matched filter (375/207)
- FOR 107 .Pseudo-noise correlation (375/  
208)
- FOR 108 ..Auto-correlation (375/209)
- FOR 109 ..Cross-correlation (375/210)

