(1) Note. This subclass includes an audible or other individualized signal for summoning an individual to a particular location.

(2) Note. The subject matter in this subclass excludes ringing or other nonindividualized call alerting signals.

171 Having plural stations with selective calling (e.g., master):
This subclass is indented under subclass 167. Subject matter having three or more station at least two of which have provision to direct a call to any other station.

172 With call addressing:
This subclass is indented under subclass 171. Subject matter in which an originating station generates a signal representing the called station which signal actuates equipment to cause the desired connection.

173 With call addressing:
This subclass is indented under subclass 167. Subject matter in which the originating station generates a signal representing the called station which signal actuates equipment to cause the desired connection.

174 Including body or apparel supported terminal (e.g., headgear):
This subclass is indented under subclass 167. Subject matter in which a system has a voice terminal peculiarly adapted to be retained by a body portion or an article of clothing.

SEE OR SEARCH THIS CLASS, SUBCLASS:
430, for a body supported terminal.

175 For underwater use (e.g., in diver's suit):
This subclass is indented under subclass 174. Subject matter in which terminal is specifically adapted for operation by a submerged user.

SEE OR SEARCH CLASS:
367, Communications, Electrical: Acoustic Wave Systems and Devices, subclass 132 for an underwater speech communication system using acoustical waves in water as a portion of the transmission link.

176 With central power source:
This subclass is indented under subclass 167. Subject matter having a single electrical energy source for the entire system.

177 POLYSTATION LINE SYSTEM (I.E., PARTY LINE):
This subclass is indented under the class definition. Subject matter wherein the terminals of plural subscribers having different call addresses are connected to the central switching office by a single line.

SEE OR SEARCH CLASS:
178, Telegraphy, subclass 2 for party line telegraph systems.
340, Communications: Electrical, subclasses 6.12 through 6.17 for selective party-line signaling.

178 Revertive call:
This subclass is indented under subclass 177. Subject matter which enables calling another party on the same line.

179 Call alerting (e.g., ringing):
This subclass is indented under subclass 177. Subject matter which directs a call alerting signal to a party line subscriber terminal.

SEE OR SEARCH THIS CLASS, SUBCLASS:
252+, for call alerting.

180 Full selective or tuned (e.g., harmonic):
This subclass is indented under subclass 179. Subject matter which uniquely directs the ringing signal to a particular subscriber terminal.

(1) Note. The unique direction often uses frequency selection of the ringing signal.

181 Semi-selective (e.g., line side, polarized):
This subclass is indented under subclass 179. Subject matter wherein the ringing signal is directed to a subset of the terminals connected to the line.

(1) Note. The signal direction often uses control of the polarity of, or the side to which, the signal is directed.

182 Automatic or unattended:
This subclass is indented under subclass 177. Subject matter including a switching exchange for performing call connection solely in response to a call address signal.

183 Station identification:
This subclass is indented under subclass 182. Subject matter which further ascertains the identity of a calling station.

184 Lockout:
This subclass is indented under subclass 182. Subject matter for blocking access to a line already in use.

185 Portable or mobile:
This subclass is indented under subclass 177. Subject matter wherein a terminal is either mounted in a vehicle, or is of such size and configuration so as to be carried by an individual.

SEE OR SEARCH THIS CLASS, SUBCLASS:
55.1, for similar subject matter having a near field link.
56.1+, for similar subject matter having a radio or an electromagnetic field link.

186 Central power source:
This subclass is indented under subclass 177. Subject matter having a common electrical energizing supply for the stations connected to a line.

187 Connected to central office:
This subclass is indented under subclass 177. Subject matter wherein a polystation line is connected to a central switching office.

188 CALL OR TERMINAL ACCESS ALARM OR CONTROL:
This subclass is indented under the class definition. Subject matter for restricting the calls that may be made from a particular station, or generating an alerting signal in response to a call or call attempt in violation of a call restriction.

189 Fraud or improper use mitigating or indication (e.g., 'blue box', 'black box'):
This subclass is indented under subclass 188. Subject matter to defeat or indicate an attempt to override the call range restriction without a proper authorization or control function.

190 Time out:
This subclass is indented under subclass 188. Subject matter which in response to a specified equipment status for a specified duration either changes the status, or generates an alerting signal.

(1) Note. This subclass would include disconnection of a terminal after a set time.

191 At switching center:
This subclass is indented under subclass 190. Subject matter wherein a status control or an alerting function is performed at a switching center remote from the terminal.

192 Of call duration (e.g., conversation timer):
This subclass is indented under subclass 191. Subject matter wherein a status control or an alerting function is performed when the duration of elapsed time during a call exceeds a predetermined length.

193 Of specific equipment:
This subclass is indented under subclass 191. Subject matter wherein the status of particular telephone system equipment is determined for the status control or alerting function.

194 Lockout or double use signalling:
This subclass is indented under subclass 188. Subject matter which locks access to, or indicates an attempt to access, the system by a station other than one previously in use.

SEE OR SEARCH THIS CLASS, SUBCLASS:
160, for this subject matter in a key telephone system.
168, for this subject matter in a private system.
184, for this subject matter in a party line system.

195 In automatic system:
This subclass is indented under subclass 194. Subject matter wherein the access prevention or attempt determination is made in an automatic switching system.

196 At switching center:
This subclass is indented under subclass 188. Subject matter wherein the call restriction function or generation of the alerting signal is performed at a switching station remote from a user terminal.

197 Central office:
This subclass is indented under subclass 196. Subject matter wherein the switching center is a central office.

198 PBX:
This subclass is indented under subclass 196. Subject matter wherein the switching center is a private branch exchange.

199 At substation:
This subclass is indented under subclass 188. Subject matter wherein the call or terminal restriction or alerting function is performed at a subscriber terminal.

200 Restrictive dialing circuit:
This subclass is indented under subclass 199. Subject matter wherein the call restriction limits the call address signals which may be generated.

201.01 SPECIAL SERVICES:
This subclass is indented under the class definition. Subject matter including a switching, connection, or control function additional to those necessary to establish and maintain a single call connection between two stations.

(1) Note. These services generally involve service logic (e.g., a computer program) or apparatus that implement a plurality of method steps. Often, these services involve three or more stations or two or more call connections.

(2) Note. Examples of such special services are locating, conferencing, call back, call blocking, call forwarding or transfer, call waiting, abbreviated dialing and audible paging.

SEE OR SEARCH THIS CLASS, SUBCLASS:
157 through 158, for this subject matter in a key telephone system.

SEE OR SEARCH CLASS:
370, Multiplex Communications, subclasses 259 through 271 for such special services combined with multiplex switching.
455, Telecommunications, subclasses 414 through 417 for such special services in a radiotelephone system.

201.02 Service profile (e.g., calling service):
This subclass is indented under subclass 201.01. Subject matter wherein service logic (e.g., a computer program) is designed or existing service logic is obtained, provided or modified to implement a special service.

201.03 Creation of service (e.g., using object oriented programming, primitive, function):
This subclass is indented under subclass 201.02. Subject matter wherein a specific technique or apparatus is used to develop service logic.

201.04 Display arrangement:
This subclass is indented under subclass 201.02. Subject matter wherein a specific technique or apparatus is used to display information regarding service logic or available special services.

201.05 Distribution of service (e.g., downloading, uploading):
This subclass is indented under subclass 201.02. Subject matter wherein a specific technique or apparatus is used to facilitate transmission of newly designed or existing service logic to one or more users or devices.

201.06 Locating using diverse technology (e.g., using infrared badge, sensor, card reader):
This subclass is indented under subclass 201.01. Subject matter wherein a specific technique or apparatus based upon a non-telephonic technology is used to determine a location.

201.07 Called party:

This subclass is indented under subclass 201.06. Subject matter wherein a specific technique or apparatus is used to determine the location of a party for whom a caller desires to be connected to based upon the last known or detected station address of the party.

201.08 Calling party:

This subclass is indented under subclass 201.06. Subject matter wherein a specific technique or apparatus is used to determine the last known or detected station address of a party placing or having previously placed a call.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

88.19 through 88.21, for this subject matter wherein calling information is audibly conveyed.

93.03, for this subject matter wherein the identity of a caller is used to determine whether access should be granted.

120, for this subject matter wherein the identity, or service entitlement of a calling line is ascertained to produce a permanent record showing a numerical quantity indicating a call charge or basis therefor.

127.01, for this subject matter wherein telephone message accounting equipment identifies the telephone number of a dialing station.

142.01 through 142.18, for this subject matter wherein the conveyed calling information is displayed.

245 through 249, for this subject matter wherein a central switching office determines which telephone component is used in a particular call.

201.09 Object:

This subclass is indented under subclass 201.06. Subject matter wherein a specific technique or apparatus is used to determine the last known or detected station address close to where an inanimate entity can be found.

201.1 Detecting presence or absence of party or object:

This subclass is indented under subclass 201.06. Subject matter wherein a specific technique or apparatus is used to sense the existence or non-existence of a party or object at a particular station address.

201.11 Anonymous party (e.g., protection of called or calling party s identity, privacy):

This subclass is indented under subclass 201.01. Subject matter wherein the calling address or identity of a called or calling party is kept confidential without impeding (i.e. blocking) a connection to a station.

201.12 Provisioning:

This subclass is indented under subclass 201.01. Subject matter wherein a specific technique or apparatus is used to provide beforehand a basic or additional service to a subscriber s station in response to receiving a service request.

202.01 Conferencing:

This subclass is indented under subclass 201.01. Subject matter which enables three or more terminals on distinct subscriber lines to be included in a single call connection when the call is initiated.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

158, for conferencing involving a key-type substation system.

203.01 Operator control:

This subclass is indented under subclass 202.01. Subject matter wherein the conferencing connection is performed by an attendant at a central switching office.

204.01 Subscriber control:

This subclass is indented under subclass 202.01. Subject matter wherein the conferencing connection is established or modified by central office switching equipment in response to signalling from a subscriber terminal.

205.01 Conferencing initiation by single calling station:
This subclass is indented under subclass 204.01. Subject matter wherein a signalling function is performed at the calling terminal to originate the conference call.

206.01 At substation:
This subclass is indented under subclass 202.01. Subject matter wherein the conference call line coupling or switching is performed at a subscriber station.

(1) Note. Included herein are plural line conferencing and audio conferencing.

SEE OR SEARCH THIS CLASS, SUBCLASS:
158, for a key telephone system having a conferencing circuit.

207.01 Three-way calling:
This subclass is indented under subclass 201.01. Subject matter wherein a third station is called by one of two stations participating in an existing call, and the third station is connected (bridged) to the existing call.

207.02 Service trigger (activation or deactivation):
This subclass is indented under subclass 201.01. Subject matter wherein a service is enabled or disabled in response to an event.

207.03 Time (e.g., time of day, expiration of time period, time zone, date):
This subclass is indented under subclass 207.02. Subject matter wherein the implementation of a service is controlled as a function of time.

207.04 Line or loop condition:
This subclass is indented under subclass 207.02. Subject matter wherein the implementation of a service is controlled in response to detecting a predetermined condition on a communication path (e.g., an in-band signal).

207.05 Busy signal (e.g., off-hook):
This subclass is indented under subclass 207.04. Subject matter wherein the implementation of a service is controlled in response to receiving an indication that a called party is unavailable.

207.06 Transition from off-hook to on-hook (e.g., busy to idle, hook flash):
This subclass is indented under subclass 207.04. Subject matter wherein the implementation of a service is controlled in response to receiving an indication that a party has completed a call (hung-up, no longer busy) or momentarily depressed a hookswitch of the party s telecommunications device.

207.07 Transition from on-hook to off-hook (e.g., idle to busy):
This subclass is indented under subclass 207.04. Subject matter wherein the implementation of a service is controlled in response to receiving an indication that the party has initiated a call, such as by lifting a handset off the hookswitch of the party s telecommunications device.

207.08 No answer (e.g., ringing signal, on hook, idle):
This subclass is indented under subclass 207.04. Subject matter wherein the implementation of a service is controlled in response to receiving an indication that a called party is not at a called location.

207.09 Number of rings:
This subclass is indented under subclass 207.08. Subject matter wherein the implementation of a service is controlled in response to counting a predetermined number of rings without receiving an answer from a called party.

207.1 Expiration of predetermined time period:
This subclass is indented under subclass 207.08. Subject matter wherein the implementation of a service is controlled in response to a predetermined period of time having elapsed.

207.11 Service access code:
This subclass is indented under subclass 207.02. Subject matter wherein the implementation of a service is controlled in response to receiving a predetermined combination of symbols (e.g., numbers, letters, *, #) associated with the service.

207.12 Party location:
This subclass is indented under subclass 207.02. Subject matter wherein the implementation of a service is controlled as a function of a geographic area where a calling party or called party is located.

207.13 Party identification or validation (e.g., personal identification number (PIN)):
This subclass is indented under subclass 207.02. Subject matter wherein the implementation of a service is controlled as a function of verification of who a calling party or called party is.

207.14 Dialed number identification service (DNIS):
This subclass is indented under subclass 207.02. Subject matter wherein the implementation of a service is controlled as a function of what station address was called (dialed).

207.15 Automatic number identification or calling number identification (ANI or CLID):
This subclass is indented under subclass 207.02. Subject matter wherein the implementation of a service is controlled as a function of what station address a call was placed from.

207.16 Ringing signal (e.g., having a predetermined cadence or distinctive ring):
This subclass is indented under subclass 207.02. Subject matter wherein the implementation of a service is controlled in response to receiving a predefined ringing pattern.

208.01 Priority override (e.g., butt-in):
This subclass is indented under subclass 201.01. Subject matter allowing a designated type of call to interrupt another telephone conversation.

SEE OR SEARCH THIS CLASS, SUBCLASS:

215.01, for call interruption or signalling therefor by any additional incoming call.

218.01, for call interruption performed by an operator.

209.01 Repetitive call attempts (e.g., camp-on-busy, retry):
This subclass is indented under subclass 201.01. Subject matter which includes producing successive repeated call attempts.

210.01 Reserved call (e.g., return call, call back, scheduled call, reestablished call):
This subclass is indented under subclass 201.01. Subject matter wherein a requested call is automatically initiated at a predetermined time after the previous receipt or disconnection of a call from a caller.

SEE OR SEARCH THIS CLASS, SUBCLASS:

202 through 206, for this subject matter wherein conference calls are scheduled.

209, for this subject matter wherein successive repeated call attempts to the same party are made by a caller, or a call is established in response to the availability of a previously busy party.

210.02 Call blocking:
This subclass is indented under subclass 201.01. Subject matter wherein a call is prohibited from being placed to a called party.

210.03 Call from anonymous caller:
This subclass is indented under subclass 210.02. Subject matter wherein a call from a calling party who intentionally blocks or fails to disclose the calling party s identity prior to connection to a called party, is prohibited from being placed through to the called party.

211.01 Call diversion (e.g., call capture):
This subclass is indented under subclass 201.01. Subject matter for directing a call connection from an addressed telephone station to another.

(1) Note. The changed connection may be either the calling or the called station.

211.02 Call forwarding:
This subclass is indented under subclass 211.01. Subject matter for rerouting an incoming call from an intended addressed station to another desired station without completion of the call connection to the addressed station.

211.03 Sequential ringing:

This subclass is indented under subclass 211.02. Subject matter for placing in sequence a call to a plurality of predetermined addressed stations one at a time, and ringing each station for either a predetermined period of time or number of rings, until one of the stations answers the call.

211.04 Simultaneous ringing:

This subclass is indented under subclass 211.02. Subject matter for placing a call to a plurality of addressed stations at the same time and ringing those stations until one of the stations answers the call.

211.05 Smart card:

This subclass is indented under subclass 211.02. Subject matter wherein a removably inserted portable memory is inserted into a memory reader to define (program) how a call should be routed or forwarded.

212.01 Call transfer:

This subclass is indented under subclass 211.01. Subject matter for changing a completed call connection to an addressed station to another station after completion of a call connection to the addressed station.

213.01 Intercept (e.g., dead or changed number):

This subclass is indented under subclass 211.01. Subject matter wherein a call made to one of a specified group of addresses is directed to a predetermined location.

214.01 Secretarial or answering service:

This subclass is indented under subclass 211.01. Subject matter for call completion to an alternative station upon a designated condition.

(1) Note. The designated condition may include: time, no answer for specified interval, or request.

215.01 Call waiting:

This subclass is indented under subclass 201.01. Subject matter for signalling a first station in communication with a second station that a third station desires communication with the first station.

(1) Note. The first station can usually communicate alternatively with the second and third stations.

216.01 Abbreviated dialing or direct call (e.g., hot line):

This subclass is indented under subclass 201.01. Subject matter responsive to either a service request condition or, to a line signal code of less than the complete call address signal, for completing the call address connection in the same manner as if the full call address signal were received.

(1) Note. The term 'service request condition' is generally an off-hook condition.

SEE OR SEARCH THIS CLASS, SUBCLASS:

355.01 through 359, for abbreviated call signal generation.

217.01 Audible paging:

This subclass is indented under subclass 201.01. Subject matter which connects a telephone circuit to a loudspeaker system for summoning an individual.

SEE OR SEARCH CLASS:

340, Communications: Electrical, subclass 311.1 for a paging system.

381, Electrical Audio Signal Processing Systems and Devices, subclass 75 for a megaphone and subclass 82 for a public address system.

218.01 Automatic directory service (e.g., on-line):

This subclass is indented under subclass 201.01. Subject matter for automatically providing a database of telephone numbers so as to provide directory assistance to a caller without the assistance of an operator.

218.02 Performed by operator (e.g., butt-in, busy verification):

This subclass is indented under subclass 201.01. Subject matter wherein the special service is performed by an attendant at a central or branch switching station.

SEE OR SEARCH THIS CLASS, SUBCLASS:

48, for telephone alarm butt-in equipment.

219 PLURAL EXCHANGE NETWORK OR INTERCONNECTION:

This subclass is indented under the class definition. Subject matter including a system having more than one exchange (e.g, switching office), or a circuit connection therebetween.

(1) Note. A branch exchange (e.g., PBX, PABX, etc.) is considered to be a separate switching office for purposes of this and its indented subclasses.

SEE OR SEARCH THIS CLASS, SUBCLASS:

242, for single exchange and generic centralized switching.

220.01 With interexchange network routing:

This subclass is indented under subclass 219. Subject matter for selecting one of plural paths for a call switched between two or more exchanges.

221.01 Alternate routing:

This subclass is indented under subclass 220.01. Subject matter for selecting a different path in response to an event.

SEE OR SEARCH THIS CLASS, SUBCLASS:

273 through 274, for alternate routing within a single exchange.

221.02 Service provider selection (e.g., local or long distance, primary and alternate carriers):

This subclass is indented under subclass 221.01. Subject matter wherein an alternate service provider is selected if a primary service provider is not available or does not meet a predetermined criteria.

221.03 Failure (e.g., disaster, overload, blockage):

This subclass is indented under subclass 221.01. Subject matter wherein a failure or call congestion exceeding a predetermined threshold is detected on a communications link.

221.04 Restoration (e.g., backup, recovery):

This subclass is indented under subclass 221.03. Subject matter wherein a problem on a previously bypassed communications link is corrected, thus permitting normal use of the communications link to resume.

221.05 Based upon historical data:

This subclass is indented under subclass 220.01. Subject matter wherein a call is routed based upon a previous call pattern or prior station activity with respect to an initiated or received call, or call attempt.

221.06 Algorithm (e.g., software, computer program):

This subclass is indented under subclass 220.01. Subject matter wherein a computer program is used to define and respond to a predetermined condition to route a call.

221.07 Parameter optimization or enhancement (e.g., capacity or bandwidth):

This subclass is indented under subclass 221.06. Subject matter wherein a call is routed in an intelligent and efficient manner to minimize possible congestion problems.

(1) Note. For example, routing is adjusted based on time of day.

221.08 Advanced intelligent network (AIN):

This subclass is indented under subclass 220.01. Subject matter wherein one or more databases are queried using signaling system 7 (SS7) to determine how a call should be handled.

221.09 Service control point (SCP, ISCP, external database):

This subclass is indented under subclass 221.08. Subject matter wherein a remote database within an AIN is specifically configured or has a special feature to carry out a particular process.

221.1 Signal transfer point (STP, ISTP):

This subclass is indented under subclass 221.08. Subject matter wherein a packet switch within an AIN that routes an SS7 signaling message is specifically configured or has a special feature to carry out a particular process.

221.11 Adjunct or intelligent peripheral (IP):
This subclass is indented under subclass 221.08. Subject matter wherein an auxiliary device is specifically configured or has a special feature to carry out a particular process.

(1) Note. For example, a device that provides a voice announcement or voice recognition.

221.12 Service switching point (SSP):
This subclass is indented under subclass 221.08. Subject matter wherein a digital telephone switch using SS7 signaling is specifically configured or has a special feature to carry out a particular process.

221.13 Local number portability (LNP):
This subclass is indented under subclass 220.01. Subject matter wherein a subscriber is assigned to or selects one of a plurality of competitive service providers such that the subscriber can change from one service provider to another without changing the subscriber s station address.

221.14 Routing parameter (e.g., area code, address, service provider identifier):
This subclass is indented under subclass 219. Subject matter wherein a special address configuration is used to identity a service provider or the location of a station.

221.15 Connection call model (e.g., virtual network, displayed models):
This subclass is indented under subclass 219. Subject matter wherein a computer program is used to simulate or display connections of an actual network.

222 Toll center:
This subclass is indented under subclass 219. Subject matter including a switching center for switching toll calls from other exchanges.

223 With operator assistance:
This subclass is indented under subclass 222. Subject matter where the toll center has an operator to assist in completion of toll calls.

224 Tandem switching center:
This subclass is indented under subclass 219. Subject matter having a switching center or office located intermediate between an originating and receiving switching office for switching the trunks connected to such offices.

225 Multi-PBX interconnection:
This subclass is indented under subclass 219. Subject matter which connects a plurality of private branch exchanges by shared trunks therebetween.

226 Having a manual exchange:
This subclass is indented under subclass 219. Subject matter wherein at least one of the plural exchanges has manual call connection.

227 With an automatic exchange:
This subclass is indented under subclass 226. Subject matter further including an exchange which switches calls in response to a call address signal.

228 Having signalling to operator:
This subclass is indented under subclass 227. Subject matter which causes an indication at an operator position at a remote switching office.

229 Interexchange signalling:
This subclass is indented under subclass 219. Subject matter including transmission of control or supervisory signals between exchanges.

230 Signalling path distinct from trunk (e.g., CCIS):
This subclass is indented under subclass 229. Subject matter wherein the control or supervisory signals for a group of trunks are multiplexed and transmitted over a single separate communication channel.

231 Central office-to-PBX signalling:
This subclass is indented under subclass 231. Subject matter including transmission of control or supervisory signals from a central office to a private branch exchange.

232 PBX trunk groups:
This subclass is indented under subclass 231. Subject matter including a plurality of shared trunk lines connecting the central office and the private branch exchange.

233 Direct inward dialing:
This subclass is indented under subclass 231. Subject matter wherein a call address designating a terminal connected to a private branch exchange will control connection to such a terminal.

234 PBX to central office signalling (e.g., direct outward dialing):
This subclass is indented under subclass 229. Subject matter which transmits control or supervisory signal from a private branch exchange to a central switching exchange.

235 Voice frequency signalling over trunk:
This subclass is indented under subclass 229. Subject matter wherein control or supervisory signals are transmitted as tones within the audible frequency range.

236 D.C. signalling over trunk:
This subclass is indented under subclass 229. Subject matter wherein the control or supervisory signal is represented by the presence or polarity of the current or voltage in a particular circuit.

237 Pulse or digital signalling:
This subclass is indented under subclass 236. Subject matter wherein the control or supervisory signals are represented by the time pattern of abrupt variations in a specified signal.

238 Having signalling repeater:
This subclass is indented under subclass 237. Subject matter including amplification of interexchange pulse or digital signals.

SEE OR SEARCH THIS CLASS, SUBCLASS:
341+, for a telephone pulse signalling repeaters, per se.

239 Using register-sender:
This subclass is indented under subclass 237. Subject matter including storage and subsequent retransmission of pulse or digital interexchange signalling information.

SEE OR SEARCH THIS CLASS, SUBCLASS:
288+, for a centralized switching register-sender.

240 Interexchange trunk circuit:
This subclass is indented under subclass 229. Subject matter including trunk circuit switching.

SEE OR SEARCH THIS CLASS, SUBCLASS:
333, for subscriber line and trunk switching.

241 Glare or simultaneous seizure mitigation:
This subclass is indented under subclass 240. Subject matter for prevention of call blocking caused by seizing of a trunk at both ends thereof.

242 CENTRALIZED SWITCHING SYSTEM:
This subclass is indented under the class definition. Subject matter which selectively connects two telephone subscriber lines for communication.

(1) Note. This subclass includes a single telephone office and generic telephone switching.

SEE OR SEARCH THIS CLASS, SUBCLASS:
219+, for a plural exchange network.

SEE OR SEARCH CLASS:
711, Electrical Computers and Digital Processing Systems: Memory, subclasses 1+ for addressing combined with specific memory configurations (e.g., extended, expanded, dynamic, etc.) in a digital data processing system, subclasses 100+ for generalized address forming in a digital data processing system, and subclasses 200+ for generalized storage accessing and control in a digital data processing system.

243 Class of service determination or transmission:
This subclass is indented under subclass 242. Subject matter to identify or supply a designation related to different types or levels of service applicable to calling station.

244 In common control system:
This subclass is indented under subclass 243. Subject matter which supplies a type of service designation in stored number switching equipment.

245 Identification:
This subclass is indented under subclass 242. Subject matter at a central switching office for determining which telephone system component is used in a particular call.

246 Of line or trunk:
This subclass is indented under subclass 245. Subject matter wherein the identified component is a telephone signal conductor unique to a terminal station or concentrator.

247 With display:
This subclass is indented under subclass 246. Subject matter for providing a visual indication of the line or trunk used.

SEE OR SEARCH THIS CLASS, SUBCLASS:
142, for a calling number display at a called substation.

248 Using matrix:
This subclass is indented under subclass 246. Subject matter including an array of elements to determine the line or trunk identity.

SEE OR SEARCH CLASS:
340, Communications: Electrical, subclasses 2.2 through 2.31 for a channel selecting matrix and subclasses 14.1-14.69 for a decoder matrix.

249 For nuisance call mitigation:
This subclass is indented under subclass 246. Subject matter for identifying a calling station which is a source of undesired, annoying, or abusive calls.

250 Four-wire switching:
This subclass is indented under subclass 242. Subject matter for connecting two lines, each of which has a physically separate pair for each direction of transmission.

251 With generating of call associated substation signal:
This subclass is indented under subclass 242. Subject matter which generates and transmits a signal to a substation which indicates the presence of, or result of, a call attempt.

SEE OR SEARCH THIS CLASS, SUBCLASS:
315+, for signalling to an operator at a switching facility.
372+, for line signalling received at substation.
418, for call signal generating, per se.

252 For alerting signal at called station (e.g., ringing):
This subclass is indented under subclass 251. Subject matter where the signal is a humanly perceptible signal at the called terminal.

253 Electronic:
This subclass is indented under subclass 252. Subject matter having an electric circuit element utilizing an electron discharge device or semiconductor component.

254 Associated with connector:
This subclass is indented under subclass 252. Subject matter wherein the call signal generating device is associated with a particular final stage selecting device.

255 With interrupter:
This subclass is indented under subclass 252. Subject matter having timing equipment which periodically blocks the alerting signal.

256 Having automatic or through ringing:
This subclass is indented under subclass 251. Subject matter which generates a call alerting signal in response to a connection being made to a line by the operator, or which enables an operator to by-pass another operator position for subscriber signalling.

257 For calling station (e.g., status or progress tones):
This subclass is indented under subclass 251. Subject matter where a line condition responsive or call associated signal is transmitted back to the calling terminal.

(1) Note. Included herein are tones indicating the condition or result of a call attempt.

258 Switching controlled in response to called station addressing signal:
This subclass is indented under subclass 242. Subject matter including ccontrol of line interconnection in response to a call address signal.

(1) Note. The call address signal is a selectively signal which specifies the identity of the particular line or terminal with which communication is desired.

SEE OR SEARCH THIS CLASS, SUBCLASS:
18+, for testing of automatic switching arrangement by use of a call address signal.
111+, for usage measurement.
173+, for an intercom with call addressing.
201+, for identification of a station address.

SEE OR SEARCH CLASS:
335, Electricity: Magnetically Operated Switches, Magnets, and Electromagnets, subclasses 105+ for an automatic telephone switch, per se.
340, Communications: Electrical, subclasses 1.1 through 16.1 for a signal controlled switching system, not limited to telephone switching.

259 Including deflected electron beam switching device or mechanical or optical switching control (e.g., fluidic):
This subclass is indented under subclass 258. Subject matter in which a supervisory or control signal controls the operation of (a) electron beam deflecting equipment, (b) a light modifying element, or (c) a mechanical force or flow modifying element, so as to cause a change in a detected pattern of the deflected to modified quantity, which in turn controls a call connection.

(1) Note. The supervisory or control signal is often a call address signal.

(2) Note. Such control often utilizes optical, fluidic, or mechanical logic.

260 With operator position or completion of call (e.g., dial '0', semi-automatic):
This subclass is indented under subclass 258. Subject matter where intervention by a human operator is necessary in order to complete at least some telephone calls.

(1) Note. There must be a called station addressing signal (e.g., dial pulses) included in order to classified here.

(2) Note. Some examples of semi-automatic systems are: Operator dialed calls and calls dialed at a terminal which cause a visible indication of the called station's number at a manual operator's position.

SEE OR SEARCH THIS CLASS, SUBCLASS:
308, through 332, for centralized switching systems having human operators without a called station signal.

261 Operator controlled register-sender:
This subclass is indented under subclass 260. Subject matter wherein a register-sender is located at an operator attended switchboard for manual actuation.

SEE OR SEARCH THIS CLASS, SUBCLASS:
239, for a plural exchange network with a register-sender.
288, for common control central switching with a register-sender.

262 Call extension by operator:
This subclass is indented under subclass 260. Subject matter where the operator dials the called station address.

263 With call indicator or announcer:
This subclass is indented under subclass 262. Subject matter having means to provide the operator with a visual or sound indication of a desired called station address.

264 A to B operator:
This subclass is indented under subclass 262. Subject matter in which a call is extended from an operator answering the calling station to another operator who completes the connection to the called station.

265.01 Call distribution to operator:
This subclass is indented under subclass 242. Subject matter for selecting and connecting a calling terminal to an operator.

265.02 Automatic call distributor (ACD) system:
This subclass is indented under subclass 265.01. Subject matter wherein, based on a computer implemented application, incoming calls are automatically assigned to agents in a call center.

265.03 Reporting status (e.g., supervisory reporting):
This subclass is indented under subclass 265.02. Subject matter wherein agent call center data is conveyed to a supervisor (e.g., such as via a terminal display).

265.04 Log-on or log-off of agent:
This subclass is indented under subclass 265.03. Subject matter wherein an agent inputs information into a call center computer indicating the agent s identity and whether the agent is available (by logging-on) or is not available (by logging-off) to answer calls received by the call center.

265.05 Agent assignment (e.g., allocation of agent s time to a specific task):
This subclass is indented under subclass 265.03. Subject matter wherein an agent is assigned to a call or other task based upon a particular criteria.

265.06 Monitoring agent performance (e.g., quality of agent s performance):
This subclass is indented under subclass 265.03. Subject matter wherein surveillance of the actions of an agent are used to judge how well the agent is carrying out required tasks for a call center.

265.07 Speech of agent or customer (e.g., talk time):
This subclass is indented under subclass 265.06. Subject matter wherein a call center conversation is monitored or recorded to determine the quality of customer service provided by an agent.

265.08 Average call length:
This subclass is indented under subclass 265.06. Subject matter wherein the length of a plurality of calls are measured from the time they are answered until their termination to determine or estimate how long an agent, a group of agents or an entire call center takes to handle a typical call.

265.09 Having a multimedia feature (e.g., connected to Internet, E-mail, etc.):
This subclass is indented under subclass 265.02. Subject matter wherein diverse media technology is used to facilitate call handling or other tasks in an agent call center.

265.1 Predictive (e.g., anticipating next available agent):
This subclass is indented under subclass 265.02. Subject matter wherein a call parameter in an agent call center is monitored and an algorithm is implemented to anticipate how the call should be handled.

265.11 Routing to available agent:
This subclass is indented under subclass 265.02. Subject matter wherein a call is routed based upon agent availability.

265.12 Based on agent s skill (e.g., language spoken by agent):
This subclass is indented under subclass 265.11. Subject matter wherein a call is routed based upon the knowledge of an agent.

265.13 Based on type of call:
This subclass is indented under subclass 265.11. Subject matter wherein a call is routed to an agent based upon a characteristic of the call.

(1) Note. For example, the location from which the call originated or the number a caller dialed.

265.14 Based on time (e.g., longest waiting agent):
This subclass is indented under subclass 265.11. Subject matter wherein a call is routed as a function of time.

266.01 Call or agent queuing:
This subclass is indented under subclass 265.02. Subject matter which processes a plurality of simultaneous call attempts to a lesser number of agents by holding each of the calls in excess of the number of agents until an agent becomes available.

266.02 Based on type of call:
This subclass is indented under subclass 266.01. Subject matter wherein a call is assigned to a particular agent based upon a predefined characteristic of the call.

266.03 Based on time (e.g., age of queued call, time of day, date):
This subclass is indented under subclass 266.01. Subject matter wherein a call is assigned as a function of time.

266.04 Overflow (e.g., queue-to-queue, ACD-to-ACD):
This subclass is indented under subclass 266.01. Subject matter wherein a call is moved from one queue to another, or one ACD to another such that it is handled more efficiently (e.g., lowers caller wait time).

266.05 Split:
This subclass is indented under subclass 266.01. Subject matter wherein a call is assigned to a particular queue or call center and answered by a specific group of agents based upon the characteristics of the call.

266.06 Estimating or reporting waiting time:
This subclass is indented under subclass 266.01. Subject matter wherein the time a call is calculated to remain in queue is conveyed to a caller or supervisor.

266.07 Call campaign (e.g., script, application, inbound/outbound balancing):
This subclass is indented under subclass 265.02. Subject matter wherein an application specifies a specific algorithm for handling incoming and outgoing calls in a call center.

266.08 Predictive algorithm:
This subclass is indented under subclass 266.07. Subject matter wherein a calculation based on a call center parameter such as a schedule of agent, skill of agent, capacity of a queue, etc., is used by a computer implemented program to maximize and enhance agent call center performance in handling incoming and outgoing calls.

266.09 Home agent:
This subclass is indented under subclass 265.02. Subject matter wherein a remotely located agent connected to an agent call center via a network (e.g., a PSTN) is forwarded a call received by the call center.

266.1 Call record:
This subclass is indented under subclass 265.02. Subject matter wherein a specific record is used to control or track a call in one or more agent call centers.

267 Operator's console:
This subclass is indented under subclass 260. Subject matter having details of the equipment used by the operator.

268 Having shared or common switching control:
This subclass is indented under subclass 258. Subject matter having a device which stores the call address signal and equipment for controlling switching in response to the stored signal.

(1) Note. This and indented subclasses include equipment for code conversion of the call address signal.

269 Distributed control:
This subclass is indented under subclass 268. Subject matter including plural switching stages and having several address signal storage means each providing control based on switching stage, level, or function.

270 In-stage or interstage scanning (e.g., link scanning):
This subclass is indented under subclass 268. Subject matter which sequentially provides connection between a plurality of link between or within plural switching stages.

271 Having multistage switching:
This subclass is indented under subclass 268. Subject matter wherein the switching is performed by plural interconnected and interactive switching stage.

272 Path selection or routing:
This subclass is indented under subclass 271. Subject matter which determines a path configuration through plural switching stage.

SEE OR SEARCH CLASS:
340, Communications: Electrical, subclasses 2.21 through 2.24 for channel selection through a plural stage-switching matrix.

273 Alternate routing:
This subclass is indented under subclass 272. Subject matter which modifies the path configuration in response to a blockage of a previous chosen configuration.

SEE OR SEARCH THIS CLASS, SUBCLASS:
221, for alternate routing in interexchange network routing.

SEE OR SEARCH CLASS:
340, Communications: Electrical, subclass 2.23 for alternate routing channel selecting switching not limited to telephone equipment.

274 With busy or idle test:
This subclass is indented under subclass 273. Subject matter which determine whether or not a component desired for use is already in use.

SEE OR SEARCH THIS CLASS, SUBCLASS:
277, 297 and 381, for busy or idle testing of a telephone system component other than in alternate routing multistage common control.

275 Including marking circuit:
This subclass is indented under subclass 272. Subject matter which includes placing a potential on a lead or contact of a path selecting multistage switching device and a hunting circuit for making a connection to the lead or contact in response to the potential thereon.

276 End-to-end marking (e.g., self-seeking):
This subclass is indented under subclass 275. Subject matter which includes placing a marking potential at both ends of the switching path.

277 With busy or idle test:
This subclass is indented under subclass 272. Subject matter which determines whether a line or a switching element is in use.

SEE OR SEARCH THIS CLASS, SUBCLASS:
274, for busy or idle testing of a telephone system component in alternate routing multistage common control equipment.
297, 337 and 381, for busy or idle testing of a telephone system component other than in multistage common control equipment.

278 Interstage junctor or 'trunk':
This subclass is indented under subclass 271. Subject matter including a circuit connecting the stages of multistage switching equipment.

279 Control reliability (e.g., redundancy):
This subclass is indented under subclass 268. Subject matter with switching control in accordance with the reliability of the control components.

SEE OR SEARCH CLASS:
714, Error Detection/Correction and Fault Detection/Recovery, subclasses 820+ for redundancy in a signal transmission facility or channel not limited to telephone equipment.

280 Including registering or storing device for call address signal:
This subclass is indented under subclass 268. Subject matter which includes a specific detail of a call address signal storage device.

SEE OR SEARCH CLASS:
377, Electrical Pulse Counters, Pulse Dividers, or Shift Registers; Circuit and Systems, appropriate subclasses for a register circuit, per se.
711, Electrical Computers and Digital Processing Systems: Memory, subclasses 1+ for addressing combined with specific memory configurations (e.g., extended, expanded, dynamic, etc.) and subclasses 101+ for storage accessing and control of specific

memory compositions in a digital data processing system.

281 Conversion between dial pulse and voice frequency signal:
This subclass is indented under subclass 280. Subject matter which changes the call address signal between a pattern of abrupt variation in a DC signal such as pulses and corresponding tone frequencies and variations thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:
339, for signal conversion in a telephone repeater.

282 Voice frequency receiver:
This subclass is indented under subclass 280. Subject matter which is selectively responsive to audio frequency signalling tones.

283 Dual tone multifrequency (DTMF) receiver:
This subclass is indented under subclass 282. Subject matter in which the voice frequency receiver is responsive to the simultaneous occurrence of designated frequency pairs.

284 With processor:
This subclass is indented under subclass 280. Subject matter which controls switching functions in accordance with instructions stored in memory.

SEE OR SEARCH CLASS:
709, Electrical Computers and Digital Data Processing Systems: Multiple Computer or Process Coordinating, appropriate subclasses for data transferring among multiple computer and digital processing systems.
710, Electrical Computers and Digital Data Processing Systems: Input/Output, subclasses 316 and 317 for intrasystem switching control.

285 With magnetic memory:
This subclass is indented under subclass 280. Subject matter having a magnetizable element for signal storage.

286 Signal processing (e.g., dial pulse analysis):
This subclass is indented under subclass 280. Subject matter wherein the call signal storage device or associated circuitry modifies the call address signal.

287 Electronic:
This subclass is indented under subclass 280. Subject matter in which the call address storage device includes an electron discharge device or a semiconductor component.

288 Register-sender:
This subclass is indented under subclass 280. Subject matter including storage and subsequent transmission of received call address signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:
239, for plural exchange signalling using a register-sender.

289 Translator:
This subclass is indented under subclass 268. Subject matter which changes an electrical signal appearing in one code representation of the same information.

SEE OR SEARCH CLASS:
341, Coded Data Generation or Conversion, appropriate subclasses for code converting devices.

290 With time division of control or supervisory signals:
This subclass is indented under subclass 268. Subject matter including a communication channel for control or monitoring signals corresponding to one of a plurality of distinct speech channels and in which access to the communication channel is divided into discrete time intervals, each of such intervals corresponding to one of the speech channels and which are switched so rapidly as to give the effect of simultaneous transmission of all of the control or indicating signals.

(1) Note. Placement in this subclass is limited to those systems in which only the control or supervisory signals are multiplex. Systems in which the voice signals

are also multiplexed are found in Class 370.

SEE OR SEARCH CLASS:
370, Multiplex Communications, appropriate subclasses for multiplexing of message signals.

291 With detail of crosspoint switching structure (e.g., crossbar):
This subclass is indented under subclass 268. Subject matter particularly describing a feature of selection equipment for an element of a switching array.

SEE OR SEARCH THIS CLASS, SUBCLASS:
306, for crosspoint switch detail in other than common control equipment.

SEE OR SEARCH CLASS:
335, Electricity: Magnetically Operated Switches, Magnets, and Electromagnets, subclass 112 for a telephone crossbar switch, per se.
340, Communications: Electrical, subclasses 14.1 through 14.69 for details of switching decoder arrays or matrices, not elsewhere classifiable.

292 Electronic crosspoint (e.g., solid-state):
This subclass is indented under subclass 291. Subject matter wherein the switching element includes an electron discharge device or a semiconductor component.

SEE OR SEARCH THIS CLASS, SUBCLASS:
287, for common control switching with registering or storing a call address signal and having an electronic component.

293 Having line finder:
This subclass is indented under subclass 258. Subject matter for locating and connecting a calling line to switching apparatus.

SEE OR SEARCH THIS CLASS, SUBCLASS:
377+, for an off-hook detector, per se.

294 Including electronic element (e.g., tube or semiconductor):
This subclass is indented under subclass 293. Subject matter including an electron discharge device or semiconductor component.

SEE OR SEARCH THIS CLASS, SUBCLASS:
287, and 292, for electronic elements in other telephone switching systems.

295 Plural:
This subclass is indented under subclass 293. Subject matter including multiple line finders.

296 With repeater:
This subclass is indented under subclass 258. Subject matter having means which receives, amplifies and retransmits a signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:
238, for interexchange signalling having a repeater.
338+, for a telephone repeater, per se.

297 Having specified busy-idle test:
This subclass is indented under subclass 258. Subject matter including equipment to determine whether or not a component desired for use is already in use.

SEE OR SEARCH THIS CLASS, SUBCLASS:
274, 277, 337, and 381, for busy-idle testing in specific equipment.

298 Direct control:
This subclass is indented under subclass 258. Subject matter wherein successive switching devices for making the call connection are directly responsive to the calls address pulse signal transmitted from the calling station.

299 Step-by-step system:
This subclass is indented under subclass 298. Subject matter having a plurality of switching stages working sequentially and independently of the state of subsequent stages.

300 Having plural wiper sets:
This subclass is indented under subclass 299. Subject matter having multiple rotary movable circuit contact elements.

301 Having potential control:
This subclass is indented under subclass 299. Subject matter which establishes or maintains electrical potential at some part of the switching system.

302 Having rotary switch:
This subclass is indented under subclass 299. Subject matter including a movable circuit completing device, which has rotational motion.

303 Coordinate system (e.g., X-Y):
This subclass is indented under subclass 299. Subject matter having a movable circuit completing element, the motion of which has two perpendicular components.

SEE OR SEARCH THIS CLASS, SUBCLASS:
302, for a step-by-step coordinate system where one of the components is angle of rotation.

304 All relay type:
This subclass is indented under subclass 298. Subject matter in which all switching is performed by electromagnetically controlled contact apparatus.

SEE OR SEARCH CLASS:
340, Communications: Electrical, subclasses 14.1 through 14.5 for a relay decoder matrix.
361, Electricity: Electrical Systems and Devices, subclasses 139+ for a relay control circuit.

305 Having motor-driven switch:
This subclass is indented under subclass 298. Subject matter having a switching element driven by a motor.

SEE OR SEARCH THIS CLASS, SUBCLASS:
302, for a similar subject matter in a step-by-step system.

306 With crosspoint switch detail:
This subclass is indented under subclass 258. Subject matter having a detail or a switching element of a rectangular switch array.

SEE OR SEARCH THIS CLASS, SUBCLASS:
291, for common control crosspoint switch detail.

SEE OR SEARCH CLASS:
335, Electricity: Magnetically Operated Switches, Magnets, and Electromagnets, subclass 112 for a telephone crossbar switch, per se.
340, Communications: Electrical, subclasses 14.1 through 14.69 for details of switching decoder arrays or matrices, not elsewhere classifiable.

307 With power supply:
This subclass is indented under subclass 258. Subject matter which provides electric power to at least part of the telephone equipment being used.

SEE OR SEARCH THIS CLASS, SUBCLASS:
322, for a power supply in centralized switching.

308 Switching apparatus for connecting calling line to operator's position:
This subclass is indented under subclass 242. Subject matter which connects a terminal to an operator's position in response to the presence of a call.

309 Call distribution or queuing:
This subclass is indented under subclass 308. Subject matter with circuitry for handling a plurality of calls at the same time to a lesser number of operator's positions.

SEE OR SEARCH THIS CLASS, SUBCLASS:
266, for call queuing to an operator an automatic or semiautomatic system.

310 Divided central (e.g., communication between switchboards):
This subclass is indented under subclass 242. Subject matter in which subscriber lines are grouped upon separate switchboards at a switching exchange.

SEE OR SEARCH THIS CLASS, SUBCLASS:
219+, for interexchange signalling.
264, for call extension from an A operator to a B operator.

311 Having signalling path feature:
This subclass is indented under subclass 310. Subject matter having signalling conductors connecting a plurality of the switchboards for signalling between any two switchboards.

312 Having multiple answering jacks for multiplied line:
This subclass is indented under subclass 242. Subject matter including plural jack connectors for a line on different switchboards of a switching exchange.

(1) Note. The plural line appearances enable a call to be handled by operators at different switchboards.

313 Multiple section switchboard:
This subclass is indented under subclass 242. Subject matter having a switchboard with plural sections, each section having a separate jack connector for each subscriber.

314 Auxiliary (e.g., overflow):
This subclass is indented under subclass 313. Subject matter in which a switchboard has an additional section which is used primarily when the capacity of the other sections is exceeded.

315 With line-signal control:
This subclass is indented under subclass 242. Subject matter having a switchboard with a line condition responsive indicator and controlled in response to an operator's action on the call connection.

SEE OR SEARCH THIS CLASS, SUBCLASS:
350+, for telephone line signalling.

316 Spring-jack cut-off:
This subclass is indented under subclass 315. Subject matter wherein the switchboard has a jack containing resilient contact elements which contact elements are disconnected by insertion of plug into the jack and which insertion stops the operation of the indicating signal.

317 Relay cut-off:
This subclass is indented under subclass 315. Subject matter wherein the line signal operation is stopped by a relay in response to insertion of a plug into a switchboard jack.

318 Central power source:
This subclass is indented under subclass 315. Subject matter including a common, centrally located, power supply for signalling, talking, or both.

SEE OR SEARCH THIS CLASS, SUBCLASS:
322+, for power supplies in centralized switching systems.

319 Single switchboard (e.g, cord circuit):
This subclass is indented under subclass 242. Subject matter including structure or circuitry of a manual line switching apparatus actuated by a single operator.

320 Switchboard circuit:
This subclass is indented under subclass 319. Subject matter including a detail of the switchboard circuitry.

321 Connection to operator's terminal:
This subclass is indented under subclass 320. Subject matter including a detail of a connection between the switchboard and the operator's telephone set.

322 Power supply:
This subclass is indented under subclass 242. Subject matter which supplies electricity to a telephone system component.

323 Power to switching equipment:
This subclass is indented under subclass 322. Subject matter which supplies electricity to the centralized switching equipment.

324 Central power source (e.g., common battery, line current feed):
This subclass is indented under subclass 322. Subject matter where a single power supply provides electricity for a plurality of branches connected to the central switching equipment.

SEE OR SEARCH THIS CLASS, SUBCLASS:
318, for line signal control with a central power source.

325 Structure of equipment:
This subclass is indented under subclass 242. Subject matter directed to the physical configuration of the switching system.

326 Wire or cable distribution:
This subclass is indented under subclass 325. Subject matter including the structure of conductors in central switching equipment.

327 Main or intermediate distribution frame:
This subclass is indented under subclass 326. Subject matter having a structure for holding the wires or cables.

328 Equipment mounting or support:
This subclass is indented under subclass 325. Subject matter which retains the equipment at a given location against the force of gravity.

329 Allowing movement of equipment (e.g., movable, modular):
This subclass is indented under subclass 328. Subject matter permitting relative motion between the mounting or support and the equipment.

330 Housing:
This subclass is indented under subclass 325. Subject matter including a cover for a part of the equipment.

331 Having protective circuit:
This subclass is indented under subclass 242. Subject matter which prevents damage to the circuits of the central switching system from improper conditions.

332 Plug and socket:
This subclass is indented under subclass 242. Subject matter in which part of the equipment is inserted to a cooperating connector in another part of the equipment.

333 CONCENTRATOR OR TRUNK SELECTOR:
This subclass is indented under the class definition. Subject matter for connecting a large number of subscriber lines to a smaller number of shared or trunk lines.

(1) Note. The subscriber lines are only connected alternatively to the shared or trunk lines; for simultaneous transmission see Class 370, Multiplex Communications.

334 Concentrator-distributor pair (e.g., line concentrator):
This subclass is indented under subclass 333. Subject matter having two similar complementary contractors to permit a large number of subscriber lines to be connected and supervised over a small number of trunk lines connecting the two complementary concentrators.

335 Using crossbar or crosspoint switching:
This subclass is indented under subclass 333. Subject matter wherein the connection is performed either by a rectangular switch array or a selective plural stage switch having plural horizontal and vertical contact paths.

SEE OR SEARCH THIS CLASS, SUBCLASS:
291+, for crosspoint switching structure in a common control system.
306, for crosspoint switch detail in a centralized switching system.

336 With magnet, electromagnet, or relay:
This subclass is indented under subclass 333. subject matter wherein the concentrator includes either (a) an electrically excited, or a permanent, source of magnetic polarization, or (b) a magnetically operated switch.

337 With busy-idle test (e.g., idle trunk finder):
This subclass is indented under subclass 333. Subject matter which determines if a trunk is in use and controls the switching in response to a determination of nonuse.

SEE OR SEARCH THIS CLASS, SUBCLASS:
274, 277, 297, and 381, for busy or idle testing.

338 REPEATER (E.G., VOICE FREQUENCY):
This subclass is indented under the class definition. Subject matter which receives and retransmits a signal which is amplified or processed in a telephone system.

(1) Note. This subclass excludes amplifiers in terminal sets, particularly of the hands-free type.

SEE OR SEARCH THIS CLASS, SUBCLASS:
4, for testing of a repeater.
146+, for a coin signal repeater.
238, for a interexchange signalling repeater.
296, for an automatic centralized switching system with a repeater.
420, for a hands-free terminal.
432, for terminal having an amplifier.

SEE OR SEARCH CLASS:
330, Amplifiers, appropriate subclasses for an amplifier.
381, Electrical Audio Signal Processing Systems and Devices, appropriate subclasses for an amplifier in an electrical audio system.

339 With signal conversion (e.g., dial to DTMF, analog to PCM):
This subclass is indented under subclass 338. Subject matter which coverts a signal from variations in one parameter to variations of another.

(1) Note. an example such variations conversion is from that of abrupt variations in a DC signal such as pulses to variations of tone frequency.

SEE OR SEARCH THIS CLASS, SUBCLASS:
281, for signal conversion in a common control system.
353, for control line signalling.

340 Having line length compensation or equalization:
This subclass is indented under subclass 338. Subject matter including structure to either modify an electrical parameter in a complementary relationship with a distance-related effect on a telephone signal, or to cause the signal transmitted through the line to be independent of frequency.

SEE OR SEARCH THIS CLASS, SUBCLASS:
394, for line equalization at a telephone substation.
398, for telephone line equalization.

341 Pulse or tone repeater (e.g., electromechanical relay):
This subclass is indented under subclass 338. Subject matter for amplifying or restoring a pulse or tone signal.

(1) Note. Included in this subclass are electromagnetic relays.

SEE OR SEARCH THIS CLASS, SUBCLASS:
238, for interexchange signalling repeaters.
296, for similar subject matter combined with a centralized switching facility.

SEE OR SEARCH CLASS:
361, Electricity: Electrical Systems and Devices, subclasses 160+ for relay control circuits.
375, Pulse or Digital Communications, subclasses 211+ for a pulse repeater.

342 Electronic (e.g., logic circuitry):
This subclass is indented under subclass 341. Subject matter having a signal processing component utilizing an electron discharge device or semi-conductor component.

343 Controlled by a pilot or reference signal:
This subclass is indented under subclass 338. Subject matter wherein the repeater is controlled by a signal having a predetermined characteristic (e.g., frequency, amplitude).

344 Component processes bidirectional signals:
This subclass is indented under subclass 338. Subject matter including a component handling signals travelling in either direction over a telephone line.

SEE OR SEARCH CLASS:
370, Multiplex Communications, subclasses 276+ for a duplex repeater.

345 Including two-to-four wire conversion or hybrid circuit:
This subclass is indented under subclass 344. Subject matter including a component for coupling two physically separate line pairs each conducting a signal in opposite directions to a single two-wire line carrying signals in opposite directions.

SEE OR SEARCH THIS CLASS, SUBCLASS:
391+, and 402, for other hybrid circuits in telephone equipment.

346 With frequency discriminator or negative impedance element:
This subclass is indented under subclass 338. Subject matter which (a) selectively passes particular signal frequencies, or (b) has elements which have negative impedance.

347 With gain or attenuation control:
This subclass is indented under subclass 338. Subject matter having circuitry to maintain or modify any increase or decrease in the magnitude of the signal.

348 Transmission of power to distant repeater:
This subclass is indented under subclass 338. Subject matter where a repeater receives energizing power over the telephone line.

349 Having voice frequency transformer:
This subclass is indented under subclass 338. Subject matter under having a transformer specifically intended for use in the audio frequency range.

350 SUPERVISORY OR CONTROL LINE SIGNALLING:
This subclass is indented under the class definition. Subject matter for transmitting either a selective control signal, or a status indicating signal, over a telephone line.

(1) Note. Included herein are dialing, ringing, and off-hook signals.

SEE OR SEARCH THIS CLASS, SUBCLASS:
251+, for centralized switching combined with call associated signalling.

351 Signalling integrity protection (e.g., voice signal immunity):
This subclass is indented under subclass 350. Subject matter including circuitry to distinguish between the supervisory or control signal and other signals on the line and prevent response to the other signals.

352 Substation originated:
This subclass is indented under subclass 350. Subject matter which transmits a called station address signal over a telephone line from a subscriber terminal.

(1) Note. This subclass also includes a transmitted line signal.

(2) Note. Supervisory signals (e.g., off-hook) are excluded from this and indented subclasses are classified in subclasses 377+.

SEE OR SEARCH THIS CLASS, SUBCLASS:
31, for diagnostic testing of a line signal generator.
90+, for selective signalling over a telephone line for control of a diverse are device.

SEE OR SEARCH CLASS:
340, Communications: Electrical, subclasses 1.1 through 16.1 for selective signaling not limited to a telephone system.
362, Illumination, subclass 23.06 for illuminated telephone dial.

353 Conversion of signal form:
This subclass is indented under subclass 352. Subject matter which converts a signal from variations in one parameter to variations of another.

(1) Note. Examples of such parameters are amplitude, frequency, or phase of the control signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:
339, for a repeater having signal conversion.

SEE OR SEARCH CLASS:
341, Coded Data Generation or Conversion, appropriate subclasses for code converters.

354 With called number display:
This subclass is indented under subclass 352. Subject matter which produces a visual indication of the called station address.

355.01 Repertory or abbreviated call signal generation:
This subclass is indented under subclass 352. Subject matter wherein a complete call address signal is produced in response to actuation of a single key or in response to a generated code of less than the complete address signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:
88.03, for voice dialing
216, for abbreviated calling performed at a central switching office.

355.02 Call address signal stored in terminal:
This subclass is indented under subclass 355.01. Subject matter wherein the call address signal is stored for access or modification in a subscriber station apparatus.

355.03 Including terminal other than telephone:
This subclass is indented under subclass 355.02. Subject matter wherein the subscriber station includes connection with apparatus in addition to a telephone.

(1) Note. For example, computer terminal or other locally connected apparatus.

355.04 Call address signal stored in network:
This subclass is indented under subclass 355.01. Subject matter wherein the call address signal is stored at a central office, private branch exchange, interexchange network, or key system with access thereto via a terminal.

355.05 Modification of call address signal for abbreviated dialing:
This subclass is indented under subclass 355.01. Subject matter including editing, deleting, or associating the call address signal.

355.06 Modification by other than key input:
This subclass is indented under subclass 355.05. Subject matter wherein the modification includes a process provided by other than key input (e.g., handwriting, bar code, voice, data transfers, etc.).

355.07 Including modification of indicia associated with a call address:
This subclass is indented under subclass 355.05. Subject matter wherein the modification includes manipulation of data used for subscriber correlation (e.g., names, addresses, or other associated information).

355.08 Including prefix in the call address signal:
This subclass is indented under subclass 355.01. Subject matter wherein the generated call address signal comprises an additional code affixed to the beginning of the destination call address signal (e.g., area code, country code, access code, identification code, or other codes needed to complete a call).

355.09 Selection of registered call address signal:
This subclass is indented under subclass 355.01. Subject matter including manipulation of an input device for retrieval of at least one desired stored call address signal.

(1) Note. Example of input device includes key input, touch screen, bar coder, handwriting recognition, audio command, etc.

355.1 Selection of multiple call address signals:
This subclass is indented under subclass 355.09. Subject matter with selection of more than one call address signal for dialing simultaneously or one after the other.

356.01 Including dynamic memory:
This subclass is indented under subclass 355.01. Subject matter including storage or retrieval of dialing information by relative motion between transducer and a relatively movable storage medium (e.g., tape, discs, drum, etc.) a property of which is altered in accordance with the stored information.

SEE OR SEARCH THIS CLASS, SUBCLASS:
68, for a dynamic audio signal memory combined with a telephone system component.

SEE OR SEARCH CLASS:
369, Dynamic Information Storage or Retrieval, appropriate subclasses for dynamic recording reproduction.

357.01 Insertable control element or circuitry (e.g., card):
This subclass is indented under subclass 355.01. Subject matter comprising circuit element or other object which controls the generation of the call signal and is readily removable from the signal generator.

357.02 Personal computer memory card (e.g., PCMCIA card):
This subclass is indented under subclass 357.01. Subject matter wherein the removable object or element consists of a standardized memory card attachable to a bus.

357.03 Acoustical generation:
This subclass is indented under subclass 355.01. Subject matter wherein a call address signal is provided by generating acoustic signals into a microphone of a terminal.

357.04 Circuitry of call signal generator:
This subclass is indented under subclass 355.01. Subject matter including interconnection of electronic components which generate a dial train of at least one dialing signal.

357.05 Including solid state memory storage:
This subclass is indented under subclass 355.01. Subject matter wherein storage for the call address signal is provided by an electronic static storage device.

358 By motor driven dial rotating device:
This subclass is indented under subclass 355. Subject matter wherein the abbreviated call signal controls an electromechanical device which actuates a rotary dial pulse generator.

SEE OR SEARCH THIS CLASS, SUBCLASS:
363, for an electromechanical dial rotating device.

359 Pulse signal generating (e.g., dialing):
This subclass is indented under subclass 355. Subject matter which produces a call address signal in the form of several sequential groups of pulses.

SEE OR SEARCH THIS CLASS, SUBCLASS:
362+, for pulse signal call address generators.

360 Voice frequency band signalling (e.g., reed devices):
This subclass is indented under subclass 352. Subject matter wherein of tones within the audible sound spectrum and which have distinct frequencies to perform selective control.

(1) Note. The voice frequency tones are often combination of frequencies.

(2) Note. This subclass also includes read devices.

SEE OR SEARCH THIS CLASS, SUBCLASS:
235, for voice frequency signalling between exchanges.
282+, for a voice frequency call address signal receiver.
341+, for tone repeaters.
386, for voice frequency line signalling reception.

SEE OR SEARCH CLASS:
341, Coded Data Generation or Conversion, appropriate subclasses for code converters.
375, Pulse or Digital Communications, subclasses 272+ and 303+ for voice frequency digital communications and transmitters.

361 Electronic (e.g., tone generator):
This subclass is indented under subclass 360. Subject matter wherein the signalling tones are produced by an electron discharge device or a semiconductor component.

362 Pulse signal generator (e.g., rotary dial):
This subclass is indented under subclass 352. Subject matter wherein the selective control signal is composed of abrupt variations imposed upon a signal.

SEE OR SEARCH CLASS:
341, Coded Data Generation or Conversion, subclasses 30 and 184+ for a numerical pulse code transmitter.
375, Pulse or Digital Communications, appropriate subclasses for digital pulse communications.

363 Control of motor driven dial rotating device:
This subclass is indented under subclass 362. Subject matter which includes an electromechanical apparatus for actuating a rotary dial.

SEE OR SEARCH THIS CLASS, SUBCLASS:
358, for repertory or abbreviated dialing using a motor driven dial rotating device.

364 With nonrotary actuator (e.g., key or slide type):
This subclass is indented under subclass 362. Subject matter having a pulse producer actuated by a mechanism having linear motion.

(1) Note. Included herein are actuators of the slide or push button type.

365 Specified switching contact (e.g., contact spring):
This subclass is indented under subclass 362. Subject matter including structure of the electrical switching element.

(1) Note. Included herein are contact spring arrangements.

366 With detail of dial return mechanism (e.g., driving spring, speed governor):
This subclass is indented under subclass 362. Subject matter including structure of the mechanical arrangement for returning the dial to its original position.

(1) Note. Included are driving spring arrangements.

367 Finger wheel or mechanical adjunct (e.g., finger stop):
This subclass is indented under subclass 362. Subject matter including structure of the rotary finger engaging element.

(1) Note. A subcombination limited in extent to a finger wheel, per se, is also classified herein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
456, for a dialing tool.

368 Plural-switch number input device (e.g., keypad):
This subclass is indented under subclass 352. Subject matter including a manually actuated device having several switches for determining the content of the selective control signal.

SEE OR SEARCH CLASS:
341, Coded Data Generation or Conversion, subclasses 20+ and 173+ for code transmitters.

369 Detail of mounting of switch pad or dial:
This subclass is indented under subclass 352. Subject matter including a support of a manual actuator for the address signal.

370 In handset:
This subclass is indented under subclass 369. Subject matter wherein the actuator and mounting are located in a unitary housing containing both a microphone and earphone.

371 Magneto signalling:
This subclass is indented under subclass 352. Subject matter contains a manually actuated generator for providing a line signal.

(1) Note. These are generally the older hand crank telephone.

(2) Note. The line signal is considered an address signal for purposes of subclass 352.

372 Signal reception at substation:
This subclass is indented under subclass 350. subject matter wherein a control or line signal is received at a subscriber terminal.

SEE OR SEARCH THIS CLASS, SUBCLASS:
386, for systems where the signals are received at a point not specifically designated to be a subscriber terminal.

373.01 Incoming call alerting:
This subclass is indented under subclass 372. Subject matter where the control or supervisory signal is generated in response to a call directed to the subscriber terminal.

373.02 Distinctive or selective alerting:
This subclass is indented under subclass 373.01. Subject matter where the control or supervisory signal generates a distinctive or selective alert signal.

373.03 Registration of alerting signal in association with incoming signal:
This subclass is indented under subclass 373.02. Subject matter where an association process is performed so that the incoming signal is associated with a distinctive alert or particular local appliance.

373.04 Recording audio for use as the alerting signal:
This subclass is indented under subclass 373.03. Subject matter wherein a recording process is used to store an alert signal for a terminal.

373.05 Directing incoming call to local appliance:
This subclass is indented under subclass 373.02. Subject matter where decoding of the incoming signal results in directing of an incoming call to particular local apparatus.

374.01 Including musical sound generation:
This subclass is indented under subclass 373.01. Subject matter wherein the alerting signal composes of a succession of tones or sounds with rhythm, melody or harmony.

374.02 Including audible message generation:
This subclass is indented under subclass 373.01. Subject matter where the alerting signal comprises a voice message (e.g., a synthesized spoken message).

374.03 Alerting by other than sight or sound (e.g., vibration):
This subclass is indented under subclass 373.01. Subject matter where the alert comprises alternate sensory stimulus.

375.01 Having electronic call sounder (e.g., tone "ringer"):
This subclass is indented under subclass 373.01. Subject matter where the alerting signal is generated by an electronic device producing tones.

376.01 Visual indication of incoming call (e.g., LED or light bulb):
This subclass is indented under subclass 373.01. Subject matter where the alert comprises a visual stimulus.

376.02 Silencing ring signal:
This subclass is indented under subclass 372. Subject matter for silencing an incoming ring signal for at least one ring cycle.

377 Using line or loop condition detection (e.g., line circuit):
This subclass is indented under subclass 350. Subject matter in which the supervisory or control signal is generated in response to an electrical state of a subscriber circuit.

378 With current controlling electromagnetic core device (e.g., Hall-effect device):
This subclass is indented under subclass 377. Subject matter having a magnetizable element within a coiled conductor for current control.

379 With optical link between line and switching system:
This subclass is indented under subclass 377. Subject matter including a communication link between a subscriber's line and a central switching system which uses light waves.

SEE OR SEARCH CLASS:
359, Optical: Systems and Elements, subclasses 109+ for optical communications.

380 By bridge circuit:
This subclass is indented under subclass 377. Subject matter including a network arranged so that, when an electromotive force is present across one branch, the response of a suitable detecting device in another branch may be zeroed by suitable adjustment of the electrical consistents of still other branches.

381 Busy test or make busy:
This subclass is indented under subclass 377. Subject matter for determining whether or not a loop or line connected to a terminal is in use, or to simulate such an in-use condition on a line.

SEE OR SEARCH THIS CLASS, SUBCLASS:
274, 277 and 337, for various busy testing circuits.

382 For ring trip or polarity reversal detection:
This subclass is indented under subclass 377. Subject matter including detection of a change in the polarity of the potential difference across the line or loop, or of an off-hook condition of the called terminal to cause cessation of the alerting signal.

(1) Note. Off-hook detection often accomplished by distinguishing a voice signal from an A.C. ringing signal.

383 Of plural lines:
This subclass is indented under subclass 377. Subject matter having more than one line or loop.

SEE OR SEARCH THIS CLASS, SUBCLASS:
156+, for a multiline system with selective switching and central office connection.
264+, for identification of a line in a central office.
333+, for a line concentrator.

384 By scanning:
This subclass is indented under subclass 383. Subject matter where a condition of each of the plural loops or lines is detected by sensing each line in sequence.

385 Relayless:
This subclass is indented under subclass 377. Subject matter wherein line or loop condition signalling is performed by circuitry other than electromagnetically operated contacts.

386 Signal receiver (e.g., tone decoder):
This subclass is indented under subclass 350. Subejct matter for receiving the supervisory or control line signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:
351, for similar subject matter having spurious response protection.
372, for supervisory or control line signalling reception at a subscriber terminal.

SEE OR SEARCH CLASS:
340, Communications: Electrical, subclasses 6.1 through 8.1 for selective signal indicating.
375, Pulse or Digital Communications, subclasses 316+ for a pulse communication receiver.

387.01 SUBSTATION OR TERMINAL CIRCUITRY:
This subclass is indented under the class definition. Subject matter comprising electrical relationships of circuit elements of a terminal set or a group of such sets connected to a single line circuit.

SEE OR SEARCH THIS CLASS, SUBCLASS:
156 through 166, for a key substation system.
177 through 187, for a polystation line system.
199 through 200, for a call limiting substation system.
419 through 440, for the structure of a terminal.

387.02 Conversion of signal form (e.g., A/D, frequency or phase):
This subclass is indented under subclass 387.01. Subject matter including circuitry to convert a signal to a different form of presentation.

388.01 For loudspeaking terminal:
This subclass is indented under subclass 387.01. Subject matter including a terminal set having an electrical-to -audio signal transducer which produces an audible signal of sufficient intensity to be intelligible to a user not in contact with the telephone terminal.

SEE OR SEARCH THIS CLASS, SUBCLASS:
420.01 through 420.02, for a loudspeaking terminal structure.
432, for a loudspeaking terminal housing.

388.02 Speakerphone with build-in microphone:
This subclass is indented under subclass 388.01. Subject matter including a electrical-to-audio and an audio-to-electrical signal transducer.

388.03 Automatic gain or volume control (AGC or AVC):
This subclass is indented under subclass 388.02. Subject matter including a self acting compensation device which maintains the output level of the speaker constant over a wide range of input signals.

388.04 Voice control of transmission direction:
This subclass is indented under subclass 387.02. Subject matter having circuitry permitting operation of the terminal in only one direction in response to the presence of a voice signal to be transmitted.

SEE OR SEARCH CLASS:
381, Electrical Audio Signal Processing Systems and Devices, subclass 110 for a voice controlled one-way audio system.

388.05 Voice switching by attenuation/amplification:
This subclass is indented under subclass 388.04. Subject matter wherein the transmission direction is perform by reducing or intensifying the volume of the voice signal.

388.06 Comparing signal level of receiving and transmitting circuits:
This subclass is indented under subclass 388.04. Subject matter including the detection of signal strength differences at the input and the output.

388.07 Controlling acoustic feedback:
This subclass is indented under subclass 388.04. Subject matter in which the return path of sound signal is monitored.

390.01 Amplification or attenuation level control:
This subclass is indented under subclass 387.02. Subject matter having a circuit for adjusting or maintaining the level of signal strength.

SEE OR SEARCH THIS CLASS, SUBCLASS:
347, for amplification or attenuation control in a telephone repeater.

SEE OR SEARCH CLASS:
381, Electrical Audio Signal Processing Systems and Devices, subclasses 104 through 109, for amplitude or volume control for an audio system.

390.02 Filtering (FIR, HPF, Widrow-Hoff, or LMS):
This subclass is indented under subclass 390.01. Subject matter including circuitry for selectively allowing the passing through or blocking certain signals or frequencies.

390.03 Automatic gain control:
This subclass is indented under subclass 390.01. Subject matter including a self acting compensation device which maintains an output level constant over a wide range of input signals.

390.04 Hybrid circuit:
This subclass is indented under subclass 390.01. Subject matter including a two-wire to four-wire converter.

391 Sidetone control or hybrid circuit (e.g., induction coil):
This subclass is indented under subclass 387. Subject matter for maintaining that portion of the speech signal which is transmitted from a telephone transmitter and reproduced at adjacent receiver at a desired degree of separation.

SEE OR SEARCH THIS CLASS, SUBCLASS:
402, for similar subject matter at a telephone line interface.

392 Suppression (e.g., anti-sidetone):
This subclass is indented under subclass 391. Subject matter for minimizing the amount of sidetone reproduced by a receiver.

392.01 Noise suppression:
This subclass is indented under subclass 387.01. Subject matter including circuitry for eliminating undesired signals.

393 Hold circuit:
This subclass is indented under subclass 387. Subject matter for maintaining a subscriber loop circuit in an active but noncommunicating mode.

SEE OR SEARCH THIS CLASS, SUBCLASS:
162+, for a key system hold circuit.

394 Impedance matching or line equalizing:
This subclass is indented under subclass 387. Subject matter wherein the terminal includes a circuit to either make the terminal and line impedances equal, or to equalize frequency attenuation characteristic.

SEE OR SEARCH THIS CLASS, SUBCLASS:
398, for telephone line equalization or impedance matching, other than in terminal circuitry.

395 Amplifying (e.g., AGC or AVC):
This subclass is indented under subclass 387.01. Subject matter including circuitry for increasing or adjusting the audio signal amplitude at a terminal.

SEE OR SEARCH CLASS:
330, Amplifiers, appropriate subclasses for an amplifier.
381, Electrical Audio Signal Processing Systems and Devices, subclasses 120+ for audio systems with amplifiers.

395.01 Power control or detection circuit:
This subclass is indented under subclass 387.01. Subject matter including circuitry for detecting or regulating the power supply, voltage or current in the terminal.

396 Visual signalling (e.g., lamp):
This subclass is indented under subclass 387. Subject matter to modify or emit light in response to one or more terminal conditions.

SEE OR SEARCH THIS CLASS, SUBCLASS:
376+, for visual call alerting.

397 Wire distribution:
This subclass is indented under subclass 387. Subject matter including the placement of conductors within the terminal.

SEE OR SEARCH THIS CLASS, SUBCLASS:
326+, for wire or cable distribution at a centralized switching facility.

398 LINE EQUALIZATION OR IMPEDANCE MATCHING:
This subclass is indented under the class definition. Subject matter including a circuit to cause the signal transmitted through the line to be independent of frequency, or providing for adjustment of the impedance thereof to optimize signal transmission to, and reception from, a telephone line.

SEE OR SEARCH THIS CLASS, SUBCLASS:
394, for this subject matter in terminal circuitry.

399.01 SUBSCRIBER LINE OR TRANSMISSION LINE INTERFACE:
This subclass is indented under the class definition. Subject matter including a link for connecting at least one telephone communications line to a central switching office or subscriber station.

399.02 Circuitry to provide a coder and decoder function:
This subclass is indented under subclass 399.01. Subject matter including at least one electronic circuit component which provides a coder or decoder of the BORSCHT functions to a subscriber line.

(1) Note. BORSCHT functions include battery feed, over voltage protection, ringing, supervision, codec, hybrid and testing.

400 For line length compensation:
This subclass is indented under subclass 399. Subject matter including structure to change an electrical parameter in a complementary relationship with a distance-related effect on a telephone signal.

(1) Note. Amplifying of a telephone signal is classified in subclasses 338+.

401 Voltage boosting circuit:
This subclass is indented under subclass 400. Subject matter which increases the magnitude of a voltage source in accordance with the length of a related telephone line.

402 Hybrid circuit:
This subclass is indented under subclass 399. Subject matter including a two-wire to four-wire converter.

SEE OR SEARCH THIS CLASS, SUBCLASS:
3, for testing of a hybrid circuits.
344, for similar subject matter including a telephone repeater.
391+, for a hybrid circuit in a substation of terminal.

SEE OR SEARCH CLASS:
333, Wave Transmission Lines and Networks, subclasses 24+ for a coupling network.

403 With adjustable balance circuit:
This subclass is indented under subclass 402. Subject matter which includes a circuit having an impedance the reactive component of which is substantially equal in magnitude and opposite in sign to that of the two-wire line, the impedance being variable for adjustment purposes.

404 Automatic adjustment:
This subclass is indented under subclass 403. Subject matter which varies the impedance of the balance circuit in accordance with a sensed unbalanced condition.

405 Electronic noninductive:
This subclass is indented under subclass 402. Subject matter which connects the bidirectional two-wire line with two unidirection two-wire lines and operated by means of an element in which signal transmission is controlled by an electron discharge device or a semiconductor component.

406.01 ECHO CANCELLATION OR SUPPRESSION:
This subclass is indented under the class definition. Subject matter including circuitry to prevent undesired reflection, oscillation, feedback, or signal transmission.

SEE OR SEARCH THIS CLASS, SUBCLASS:
3, for testing an echo suppressor.

388.01 through 390.04, for loudspeaker with circuitry for voice control of transmission direction.
391, for side tone control.
392, for side tone suppression in a terminal or substation.

SEE OR SEARCH CLASS:
381, Electrical Audio Signal Processing Systems and devices, subclass 66 for wired one-way audio deverberation (elimination of acoustic echoes in space), subclasses 71.1-71.14 for acoustic sound cancellation such as active noise cancelers using LMS adaptive filtering.
348, Television, subclass 611 for echo suppression in a video image, subclass 614 for ghost elimination.
370, Multiplex Communications, subclasses 278 and 282-292, for transmit/receive interaction control in a wireless and in a general duplex communication system, respectively, particularly subclasses 286-292 for echo cancellation.
455, Telecommunication, subclass 570, for echo cancellation or suppression in a wireless communication environment.

406.02 Combined diverse function:
This subclass is indented under subclass 406.01. Subject matter including functions, hardware, or processing other than echo cancellation or suppression per se.

406.03 Additional signal enhancement (e.g., voice processing or recognition):
This subclass is indented under subclass 406.02. Subject matter including means to improve the quality of the signal.

(1) Note. For example, using speech recognition or voice processing, etc.

SEE OR SEARCH CLASS:
704, Data Processing, Speech Signal Processing, Linguistics, Language Translation, and Audio Compression/Decompression, appropriate subclasses for significant data processing for speech or voice.

406.04 Disable or inhibit function:
This subclass is indented under subclass 406.01. Subject matter including means to stop or prevent the functioning of an echo canceler or circuitry associated with an echo canceler.

406.05 Residual echo cancellation:
This subclass is indented under subclass 406.01. Subject matter including means to cancel echo which remains at the output of a first or primary echo canceler.

SEE OR SEARCH CLASS:
370, Multiplex Communications, subclass 289, for residual echo cancellation in a general multiplexed signal environment.

406.06 Using digital signal processing:
This subclass is indented under subclass 406.01. Subject matter in which signals being processed have been sampled at discrete times and converted into numbers represented in binary form.

406.07 Using attenuator:
This subclass is indented under subclass 406.06. Subject matter in which amplitude is controlled either by hardware or software according to the value of a number represented in binary form.

406.08 Adaptive filtering:
This subclass is indented under subclass 406.06. Subject matter in which a filter having coefficients which change according to an algorithm is used to generate a model of the feedback or echo path in order to generate a counterwave to cancel the echo or feedback.

406.09 Least mean squares (LMS) algorithm:
This subclass is indented under subclass 406.08. Subject matter in which the least mean square algorithm is used in the adaptive filter.

406.1 With training sequence:
This subclass is indented under subclass 406.08. Subject matter in which a sequence of signals, such as a pseudo random sequence, is employed to cause the adaptive filter coefficients to converge to a solution which effectively models the echo or feedback path.

406.11 Convolution processing:
This subclass is indented under subclass 406.06. Subject matter in which useful information is obtained by convolving two signal sequences.

406.12 Frequency domain analysis:
This subclass is indented under subclass 406.06. Subject matter in which processing is performed on subsets or restricted bands of the entire domain of frequencies present in the signal in which echo is to be canceled.

406.13 Fourier analysis:
This subclass is indented under subclass 406.12. Subject matter in which the frequency subsets take the form of complexed number pairs or frequency bins obtained from the DFT (Discrete Fourier Transform) or the FFT (Fast Fourier Transform).

406.14 Sub-band analysis:
This subclass is indented under subclass 406.12. Subject matter in which the frequency subsets are obtained as separate digital signal streams from the outputs of separate digital filters which collectively divide the signal being processed into distinct frequency bands.

406.15 Additional analog processing:
This subclass is indented under subclass 406.06. Subject matter in which significant analog signal processing take place in addition to digital signal processing.

(1) Note. Significant here means analog processing other than the usual amplification, sample-and-hold, etc. used to prepare the signal for analog-to-digital conversion or to prepare it for delivery to an electroacoustic transducer after digital-to-analog conversion.

406.16 Having analog variolosser or attenuator:
This subclass is indented under subclass 406.01. Subject matter in which the echo cancellation or suppression is effected primarily or solely by use of analog amplitude control in one of the primary signal paths.

412 Protective circuit:
This subclass is indented under subclass 399. Subject matter having a circuit which prevents damage to the telephone line.

SEE OR SEARCH CLASS:
361, Electricity: Electrical Systems and Device, subclass 119 for high voltage surge protection of a communication line.

413 Power supply (e.g., battery feed):
This subclass is indented under subclass 399. Subject matter wherein the interface further includes a source of electrical energy.

SEE OR SEARCH THIS CLASS, SUBCLASS:
322+, for a power supply at a central switching office.

413.01 Circuitry to provide ringing current supply:
This subclass is indented under subclass 413. Subject matter including an electronic circuit component which provides the ringing current supply function of the BORSCHT functions to a subscriber line.

413.02 Network interface device (NID):
This subclass is indented under subclass 399.01. Subject matter including details of a network interface box for providing a point of demarcation between incoming and outgoing telephone connection wires at customer premise equipment (CPE).

413.03 Including connection for alternate communication line (e.g., cable):
This subclass is indented under subclass 413.02. Subject matter wherein the demarcation point includes additional accommodation for connection to a link other than the telephone line (e.g., cable).

413.04 Connection block or module:
This subclass is indented under subclass 413.02. Subject matter which includes details of at least one connector internal of a NID.

SEE OR SEARCH CLASS:
439, Electrical Connectors, for electrical connectors per se, not specific to telephony.

414 TRANSMISSION LINE CONDITIONING:
This subclass is indented under the class definition. Subject matter for varying an electrical parameter of a telephone channel.

(1) Note. This subject matter is often included to bring a circuit value of a desired or standard value.

SEE OR SEARCH THIS CLASS, SUBCLASS:
22+, for diagnostic testing of a telephone transmission line.
381, for a make busy arrangement.

SEE OR SEARCH CLASS:
174, Electricity: Conductors and Insulators, appropriate subclasses for a telephone conductor.
333, Wave Transmission Lines and Networks, appropriate subclasses for a load line.

415 Reactance neutralizing:
This subclass is indented under subclass 414. Subject matter for adding a reactive impedance to counteract reactive line impedance.

SEE OR SEARCH THIS CLASS, SUBCLASS:
394, for impedance matching in a telephone substation or terminal.
398, for impedance matching or line equalization.

416 Interference suppression:
This subclass is indented under subclass 414. Subject matter which reduces or eliminates an undesired signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:
3, for testing of an echo suppressor.
400+, for echo cancellation or antisinging in a subscriber line or transmission line interface.

417 Anti-crosstalk:
This subclass is indented under subclass 416. Subject matter to reduce or eliminate a signal from one telephone channel induced in another.

418 CALL SIGNAL GENERATING (E.G., RINGING OR TONE GENERATOR):
This subclass is indented under the class definition. Subject matter which produces an electrical signal which actuates a device producing a perceptible signal indicative of the status or presence of a desired call connection.

SEE OR SEARCH THIS CLASS, SUBCLASS:
31, for testing of a line signalling generator.
65, for a single channel telephone carrier system including call signalling.
164, for call alerting in a multiline or key substation.
179+, for call alerting in a polystation line system.
201+, for a special service.
251+, for call signal generation in a centralized switching system.
352+, for substation originated call signal generation.
373+, for reception of a call alerting signal.

SEE OR SEARCH CLASS:
340, Communications: Electrical, subclasses 384.1+ for an audible indication.

419 TERMINAL:
This subclass is indented under the class definition. Subject matter including an audio reproducer and microphone.

(1) Note. This and indented subclasses also include subcombinations and components peculiar to such devices and not elsewhere classified.

SEE OR SEARCH THIS CLASS, SUBCLASS:
110.01, for a composite terminal.
156+, for key system.
167+, for an intercom system station.
352+, for call address or other line signalling structure at a terminal.
441+, for accessory or auxiliary equipment usable with the subject matter of this subclass.

SEE OR SEARCH CLASS:

362, Illumination, subclass 88 for an illuminated telephone instrument.

381, Electrical Audio Signal Processing Systems and Devices, subclasses 150+ for a microphone or speaker, per se.

420.01 Having loudspeaker conversation capability (e.g. hands-free type or speakerphone):
This subclass is indented under subclass 419. Subject matter which permits conversation with a user without physical contact with the terminal.

SEE OR SEARCH THIS CLASS, SUBCLASS:

388 through 390, for circuitry particularly designed for a loudspeaking terminal.

420.02 Hands-free loudspeaker feature:
This subclass is indented under subclass 420.01. Subject matter having an audio reproducer mounting assembly.

420.03 Hands-free microphone feature:
This subclass is indented under subclass 420.01. Subject matter having an audio to electrical converting device mounting assembly.

420.04 Hands-free accessory or attachment:
This subclass is indented under subclass 420.01. Subject matter including additional communication elements

(1) Note. For example, an additional set of microphone or speaker.

421 Having muting:
This subclass is indented under subclass 419. Subject matter where a transducer in the terminal is prevented from being operational.

422 Switch or switch actuator structure:
This subclass is indented under subclass 419. Subject matter comprising a mechanical or electrical device which completes, breaks, or changes the path of an electrical current.

SEE OR SEARCH CLASS:

200, Electricity: Circuit Makers and Breakers, appropriate subclasses for a switch, per se.

423 Line selection:
This subclass is indented under subclass 422. Subject matter where the switch connects one of a plurality of lines to a component of the system.

SEE OR SEARCH THIS CLASS, SUBCLASS:

156+, for substation circuitry including plural lines used with line selecting terminals.

424 Receiver or handset position responsive (e.g., hookswitch):
This subclass is indented under subclass 422. Subject matter which opens or closes the switch contacts in response to a change of relative position between the part of the terminal containing the audio reproducer and the rest of the terminal.

425 With mechanism for latching hookswitch or plunger against motion:
This subclass is indented under subclass 424. Subject matter which includes structure to prevent a hook or plunger operated switch from being operated by the handset or receiver.

426 Movable holder for receiver or handset:
This subclass is indented under subclass 424. Subject matter having a switch actuator which holds the telephone reproducer, the actuator being movable relative to the rest of the terminal.

427 Having plunger and lever linkage:
This subclass is indented under subclass 424. Subject matter where the switch actuator includes a movable rodlike place engaging a rigid piece that pivots about a point to actuate the switch.

428.01 Housing or housing component:
This subclass is indented under subclass 419. Subject matter having a casing enclosing component of a terminal set.

428.02 Handset or headset combined with telephone base:
This subclass is indented under subclass 428.01. Subject matter having a handheld or headgear transceiver communication module.

428.03 Display on telephone base:
This subclass is indented under subclass 428.01. Subject matter having a viewing module.

428.04 Base having detachable accessory:
This subclass is indented under subclass 428.01. Subject matter having an additional device attached on the telephone terminal.

429 Having distinct circuitry support structure (e.g., circuit board):
This subclass is indented under subclass 428. Subject matter including structure separate from the other terminal elements to hold or connect an electrical component of a telephone.

SEE OR SEARCH CLASS:
361, Electricity: Electrical Systems and Devices, subclasses 600+ for a housing or mounting assembly for a plurality of diverse electrical components.

430 Body supported (e.g., headgear):
This subclass is indented under subclass 428. Subject matter including apparatus for frictional abutting engagement between the user's body and a telephone terminal receiver-transmitter device.

(1) Note. These instruments include structure to support both a receiver and a transmitter casing adjacent a user's head by engagement therewith.

SEE OR SEARCH THIS CLASS, SUBCLASS:
449, for handset holders that are attachable to terminal housing.

SEE OR SEARCH CLASS:
381, Electrical Audio Signal Processing Systems and Devices, subclasses 321+ for a stereo headphone, subclass 74 for a headphone circuit, and subclasses 370+ and 385 for a headphone.

431 Separate housings for earphone and microphone (e.g, candlestick type):
This subclass is indented under subclass 428. Subject matter including a transmitter and a receiver in different cases.

(1) Note. The different cases may be separately positioned.

SEE OR SEARCH THIS CLASS, SUBCLASS:
426, for similar subject matter including a hookswitch supported receiver.

432 Loudspeaking set:
This subclass is indented under subclass 428. Subject matter in which a telephone housing radiates reproduced sound to a user located away from the terminal.

SEE OR SEARCH THIS CLASS, SUBCLASS:
420, for a loudspeaking terminal.

433.01 Handset structure:
This subclass is indented under subclass 428.01. Subject matter including a housing that contains both the receiver and the transmitter device.

433.02 Speaker mounting (i.e., speaker phone feature):
This subclass is indented under subclass 433.01. Subject matter including an audio reproducer (receiver) mounting assembly that allows conversation with a user without physical contact with the terminal.

433.03 Microphone mounting:
This subclass is indented under subclass 433.01. Subject matter including an audio to electrical converting device (transmitter) mounting assembly.

433.04 Display on handset:
This subclass is indented under subclass 433.01. Subject matter having a viewing module.

433.05 Connector:
This subclass is indented under subclass 433.01. Subject matter having electrical link either internal, between the main body and a moveable part, or external, to other electrical device.

433.06 Button or switch having specific function:
This subclass is indented under subclass 433.01. Subject matter having a telephone operation in response to a switching device.

433.07 Keypad:
This subclass is indented under subclass 433.06. Subject matter including a small hand-held input keyboard.

433.08 Battery:
This subclass is indented under subclass 433.01. Subject matter having a power supply.

433.09 Card (e.g., SIM or magnetic strip card):
This subclass is indented under subclass 433.01. Subject matter including a flat object bearing information that can be accessed by the communication device and can be readily removed from the communication device.

433.1 Handset having special feature (e.g., wrist watch):
This subclass is indented under subclass 433.01. Subject matter including other accessories mounted within the communication housing.

433.11 Moveable or removeable element (e.g., cover):
This subclass is indented under subclass 433.01. Subject matter having a lid that can be moved from one position to another, or an attachment that can be separated from the handset.

433.12 Slidable mechanism:
This subclass is indented under subclass 433.11. Subject matter having a lid that can be moved over a surface.

433.13 Rotatable mechanism (e.g., hinge):
This subclass is indented under subclass 433.11. Subject matter having a lid that can be turned on an axis.

434 Specified terminal configuration (e.g., novelty type):
This subclass is indented under subclass 428. Subject matter having a specific shape, orientation, simulation or other geometric relation of portions of a telephone terminal housing.

(1) Note. The term simulation is intended to comprehend fanciful characters and caricatures.

SEE OR SEARCH CLASS:
446, Amusement Devices: Toys, subclasses 141+ for a nonoperative toy telephone.
D14, Recording, Communication, or Information Retrieval Equipment, subclasses 140+ for an ornamental design of telephone equipment.

435 Wall set or convertible type:
This subclass is indented under subclass 428. Subject matter wherein the telephone set includes structure to provide support from an adjacent vertical building element or to convert the wall set for use upon a horizontal planar surface.

436 Desk set:
This subclass is indented under subclass 428. Subject matter wherein the terminal is configured so as to provide normal operation with the terminal base resting on a horizontal planar surface.

437 Protective structure:
This subclass is indented under subclass 428. Subject matter wherein a terminal includes apparatus to prevent damage to the terminal or some component thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:
451, for similar subject matter separable from telephone terminal structure.

438 Of cord or connector:
This subclass is indented under subclass 437. Subject matter for protecting a terminal lead wire or connector.

439 Antiseptic:
This subclass is indented under subclass 437. Subject matter for protective germicidal or hygienic structure.

SEE OR SEARCH THIS CLASS, SUBCLASS:
452, for an antiseptic terminal accessory.

440 Casing or enclosure, per se:
This subclass is indented under subclass 428. Subject matter consisting of housing structure surrounding the electromechanical parts of the telephone set.

441 TERMINAL ACCESSORY OR AUXILIARY EQUIPMENT:
This subclass is indented under the class definition. Subject matter used with and not part of a telephone set.

442 With circuit connection to terminal:
This subclass is indented under subclass 441. Subject matter for connecting a device to the line by direct connection through the terminal.

(1) Note. Included herein is a terminal patch cord or connector.

SEE OR SEARCH THIS CLASS, SUBCLASS:
90.01+, for a similar circuit connection for diverse art device.

SEE OR SEARCH CLASS:
439, Electrical Connectors, appropriate subclasses for circuit connectors, per se.

443 Including coupler (e.g., inductive);
This subclass is indented under subclass 441. Subject matter for transferring a signal from a telepone terminal other than by direct circuit connection.

(1) Note. Such transfer may be performed by an inductive or other coupling to the telephone terminal.

SEE OR SEARCH THIS CLASS, SUBCLASS:
55.1, for an inductive or other near field link telephone system.

444 Acoustic:
This subclass is indented under subclass 443. Subject matter where the transfer is performed by direct circuit connection.

SEE OR SEARCH THIS CLASS, SUBCLASS:
78, for this subject matter combined with a telephone answering device.

445 Locking device:
This subclass is indented under subclass 441. Subject matter wherein a fastening apparatus prevents unauthorized usage of a telephone.

SEE OR SEARCH CLASS:
70, Locks, appropriate subclasses for a lock, per se.

446 Telephone receiver support:
This subclass is indented under subclass 441. Subject matter including apparatus for holding a telephone receiver to a telephone set.

(1) Note. A support to hold a telephone reproducer to structure other than at telephone set is classified in Class 381, Electrical Audio Signal Processing Systems and Devices, subclasses 386+.

SEE OR SEARCH THIS CLASS, SUBCLASS:
426, for a terminal having a movable holder or a telephone receiver which operates a switch.

SEE OR SEARCH CLASS:
248, Supports, appropriate subclasses, for a support, per se.

447 Attachable to terminal housing:
This subclass is indented under subclass 441. Subject matter having structure to support the accessory or auxiliary equipment adjacent the terminal housing.

448 Hookswitch operator:
This subclass is indented under subclass 447. Subject matter including apparatus for depressing the actuator of a receiver or handset position responsive switch.

SEE OR SEARCH THIS CLASS, SUBCLASS:
424+, for a hookswitch.

449 Handset holder (e.g., shoulder rest):
This subclass is indented under subclass 447. Subject matter including apparatus for holding a handset on a human body.

450 Clips onto terminal structure:
This subclass is indented under subclass 447. Subject matter including a device that attaches to the telephone terminal structure.

451 Protective structure:
This subclass is indented under subclass 441. Subject matter including apparatus that guards and/or shields the telephone or some part thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:
437+, for a terminal including apparatus to prevent damage to the terminal or a component thereof.

452 Antiseptic, disinfecting, or disposable:
This subclass is indented under subclass 451. Subject matter including structure to prevent cross-infection by telephone users.

(1) Note. Included herein is antiseptic, disinfecting, or disposable structure.

SEE OR SEARCH THIS CLASS, SUBCLASS:
439, for antiseptic terminal structure.

453 Hood or enclosure (e.g., booth):
This subclass is indented under subclass 441. Subject matter including a protective covering for a telephone or a fenced off or confined area for a telephone as in a telephone booth.

SEE OR SEARCH CLASS:
52, Static Structures (e.g., Buildings), appropriate subclasses for structural detail of a telephone booth absent any significant telephone component structure or relationship.

454 Support or stand:
This subclass is indented under subclass 441. Subject matter including structure to retain the telephone apparatus in a desired position.

(1) Note. The structure can serve as a mounting for a push button, a volume control or other items.

SEE OR SEARCH THIS CLASS, SUBCLASS:
446, for structure to support a telephone receiver from another part of the telephone terminal.

SEE OR SEARCH CLASS:
248, Supports, appropriate subclasses for a support, per se.

455 Handset holder:
This subclass is indented under subclass 454. Subject matter including apparatus that supports the telephone handset.

SEE OR SEARCH THIS CLASS, SUBCLASS:
449, for handset holder attachable to a telephone terminal housing.

456 Dialing tool:
This subclass is indented under subclass 441. Subject matter comprising a device having structure for dialing a telephone.

(1) Note. This subclass requires the device to have a limitation particularly designed for cooperation with the manual actuation device and not merely incidentally useful therewith (e.g., a pencil).

457 MISCELLANEOUS:
This subclass is indented under the class definition. Subject matter not provided for in any of the preceding subclasses.

SEE OR SEARCH CLASS:
381, Electrical Audio Processing Systems and Devices, appropriate subclasses for one way-audio circuits and audio transducers, per se.

CROSS-REFERENCE ART COLLECTIONS

900 INTERNET (e.g., Internet phone, web-phone, Internet-based telephony):
Subject matter comprising combination of a telephone system or component and the Internet, wherein telephonic conversations are conducted, controlled, or monitored via the Internet.

901 VIRTUAL NETWORKS OR VIRTUAL PRIVATE NETWORKS:
Subject matter for programmably effecting as needed, or for controlling, telephone networks, as distinguished from "hard-wired" networks. Sometimes called "software-defined" networks.

SEE OR SEARCH CLASS:
370, Multiplex Communications, subclasses 351+ for a pathfinding or routing through a switching network or a packet switching network.

902 AUTO-SWITCH FOR AN INCOMING VOICE, DATA, OR FAX TELEPHONE CALL (E.G., COMP/FAX/TEL):
Subject matter comprising a receiving device for automatically detecting an incoming telephone call on a single line and routing to one of several divergent devices intended for communication of voice or data over that telephone line (e.g., answering machine, fax machine, telephone, computer), or for switching between such devices by remote control of a caller.

SEE OR SEARCH THIS CLASS, SUBCLASS:
93.09+, for the telephone switching between different terminal types.
100.01+, for a fax telephone.

903 PASSWORD:
Subject matter for entering a code through a telephone system to identify an authorized user.

SEE OR SEARCH THIS CLASS, SUBCLASS:
93.03, for a personal identification.

904 AUTO-CALLING:
Subject matter for automated dialing and completion of telephone calls to plural, predetermined destinations.

(1) Note. Such systems may use memory-, repertory- or speed-dialers for addressing of calls, but also perform some additional functions such as automatically retrieving plural stored numbers, or automatically detecting answering devices or persons.

SEE OR SEARCH THIS CLASS, SUBCLASS:
355+, for an auto dialer.

905 FAX MAIL:
Subject matter for storing or transmitting a non-telephone signal (that is, a visual or s:graphic representation of a document for producing a visually readable reproduction at a receiving station) from or to a predetermined facsimile destination via a telephone communication channel, usually within a pre-specified time window.

SEE OR SEARCH THIS CLASS, SUBCLASS:
100.08, for an electronic mailbox.

906 TOUCHTONE MESSAGE TRANSMISSION:
Subject matter comprising a system or device using a standard or modified telephone keypad for transmitting an alphanumeric message over a telephone line or channel.

907 SPEECH RECOGNITION VIA TELEPHONE SYSTEM OR COMPONENT:
Subject matter for recognizing speech or voice by means of a telephone set or system component, for purpose of control, identification or access limitation.

SEE OR SEARCH CLASS:
704, Data Processing: Speech Signal Processing, Linguistics, Language Translation, and Audio Compression/Decompression, subclasses 231+ for speech recognition per se.

908 MULTIMEDIA:
Subject matter comprising a telephone system for transmitting and receiving more than one data type (e.g., text/fax/voice) during a single call session, or for one form of communication to be converted to another (e.g., speech-to-text,

text-to-speech, handwriting-to-text or voice, etc.).

SEE OR SEARCH CLASS:
704, Data Processing: Speech Signal Processing, Linguistics, Language Translation, and Audio Compression/ Decompression, subclass 260 for speech synthesis including an image-to-speech conversion.

909 ALTERNATIVES:
Subject matter comprising more than one way or preference to perform a specific telephone function or operation.

910 BAR CODE OR OPTICAL CHARACTER READER WITH TELEPHONE:
Subject matter combining a bar code or optical character reader with a telephone component and providing for transmission of data read by the reader over a telephone line or channel.

SEE OR SEARCH CLASS:
235, Registers, subclass 462 for a bar code reader.

911 DISTINCTIVE RINGING:
Subject matter for the generation or detection of telephone ringing signals distinguishable from the standard mechanical-bell signals, for selective identification or routing of received calls relative to the caller or called party or equipment.

SEE OR SEARCH THIS CLASS, SUBCLASS:
180, for full selective or tuned (e.g., harmonic).

912 GEOGRAPHICALLY ADAPTIVE:
Subject matter for selective adaptation of aspects of the telephone system or equipment dependent on where a caller, called party, terminal, or call-processing equipment is geographically located.

913 PERSON LOCATOR OR PERSON-SPECIFIC:
Subject matter for tracking the location (i.e., finding) of a telephone-system subscriber, user, or terminal, or for adapting an aspect of the system or terminal to a specific person.

SEE OR SEARCH THIS CLASS, SUBCLASS:
211, for a call forwarding.

914 PROGRAMMABLE TELEPHONE COMPONENT:
Subject matter to enable or facilitate programming of a telephone system component by a subscriber or user, e.g., enabling a user to use a Dual Tone Multifrequency (DTMF) set to remotely program operational features of a telephone switching system or terminal.

915 "SOFT" KEY:
Subject matter wherein the telephone system component is a programmable function key or an adjunct device coupled to the set and intended for effecting transmission of signals over a telephone line or channel, or controlling the transmission thereof.

916 TOUCH SCREEN ASSOCIATED WITH TELEPHONE SET:
Subject matter combining a telephone set with sensors in front of a display screen which respond to the presence, or touch, of an operator for controlling transmission of signals over a telephone line or channel.

SEE OR SEARCH CLASS:
178, Telegraphy, subclasses 18.01+ for a writing digitizer pad.
345, Computer Graphics Processing and Selective Visual Display Systems, subclasses 173+ for a combined touch panel and a selective display.

917 VOICE MENUS:
Subject matter for providing stored-voice message strings that offer telephone users a variety of selectable responses.

SEE OR SEARCH THIS CLASS, SUBCLASS:
67.1+, for a telephone system having audio message storage or retrieval capability.

FOREIGN ART COLLECTIONS

The definitions below correspond to abolished subclasses from which these collections were formed. See the Foreign Art Collection schedule of this class for spe-

cific correspondences. **[Note:** The titles and definitions for *indented* art collections include all the details of the one(s) that are hierarchically superior.]

FOR 100 HAVING NEAR FIELD LINK (E.G., CAPACITIVE, INDUCTIVE):
Foreign art collection having a transceiver, a base station, and a near field or limited range system (i.e., field strength=k/d where d=distance between the transceiver and base station antennas) whereby signal transfer is inductive or capacitive, rather than electromagnetic.

FOR 101 HAVING ELECTROMAGNETIC LINK FOR SPEECH OR PAGING SIGNAL (E.G., LIGHT WAVE LINK):
Foreign art collection wherein a circuit connection is made by a transmitted electromagnetic field or wave group.

FOR 102 Control of selectively responsive paging arrangement over telephone line:
Foreign art collection in which telephone equipment is used to transmit a signal to selectively operate or control equipment to produce a perceptible notification signal over an electromagnetic link.

FOR 112 TELEPHONE LINE OR SYSTEM COMBINED WITH DIVERSE ELECTRICAL SYSTEM OR SIGNALLING (E.G., COMPOSITE):
Foreign art collection wherein a nontelephone signal is transmitted over a conductor of telephone signals, or a telephone signal is transmitted over nontelephone electrical circuitry.

FOR 113 Credit authorization:
Foreign art collection to permit or deny a charge to an individual account by nonvoice signals over a telephone line.

FOR 114 Polling (e.g., audience survey):
Foreign art collection wherein plural controlled devices transmit a personal or personal choice status signal in response to an interrogating signal.

FOR 115 With transmission of a digital message signal over a telephone line:
Foreign art collection for transmission of message information by either a multi-level pulse signal, or a digital data signal, over lines specifically described as telephone lines.

FOR 116 Including switching station:
Foreign art collection including a switching facility having structure or circuitry for digital message signal processing.

FOR 117 Access restricting:
Foreign art collection for restricting telephone access to digital computing or communication equipment.

FOR 118 Including terminal for display of digital information:
Foreign art collection including structure particularly adapted for conversion of a digital information signal into a visual message signal.

FOR 119 By voice frequency signal (e.g., tone code):
Foreign art collection wherein the pulse or digital data signal is specifically described as converted into one or more tones lying within the audible frequency spectrum.

FOR 120 By modulated audio tone:
Foreign art collection wherein a pulse or digital data signal causes a variation in the frequency, phase or amplitude of an audible tone.

FOR 121 Having acoustic link:
Foreign art collection wherein a digital signalling device is connected to a telephone line by a sound wave passing between a complementary pair of electroacoustal transducers.

FOR 122 To produce visual-s:graphic copy reproduction (e.g., facsimile):
Foreign art collection where the nontelephone signal is a visual or s:graphic representation of a static document for producing a visually readable permanent copy at a receiving station.

FOR 123 Audio program distribution:
Foreign art collection where an audio program is transmitted to subscribers over a telephone system.

FOR 124 Remote control:
Foreign art collection having signalling over a telephone line for control of a nontelephone device at a remote location.

FOR 125 Of entrance of exit lock:
Foreign art collection which controls a mechanism for permitting or preventing access through a door or other similar structural closure.

FOR 126 With indication:
Foreign art collection which indicates a condition of the controlled device.

FOR 127 From terminal:
Foreign art collection wherein a device is controlled from a telephone terminal.

FOR 128 Remote indication over telephone line (e.g., telemetry):
Foreign art collection for providing a signal representing a sensed condition at a remote location over the telephone line.

FOR 129 Meter reading:
Foreign art collection where a sensed condition is an indication of a quantitative indicating device.

FOR 130 Telegraphy:
Foreign art collection for transmitting a telephone signal over a telegraph circuit.

FOR 131 Over telephone line:
Foreign art collection for transmitting a telegraph signal over a telephone line.

FOR 132 COMPOSITE SUBSTATION OR TERMINAL (E.G., HAVING CALCULATOR, RADIO):
Foreign art collection in which a telephone instrument also has structure or circuitry for performing a diverse independent (i.e., nontelephone) function.

FOR 133 WITH AUDIO MESSAGE STORAGE OR RETRIEVAL:
Foreign art collections including subject matter combined with structure for retention of an audio massage signal, or for retrieval thereof.

FOR 134 Stored in digital form:
Foreign art collections including subject matter including a feature of digital storage or retrieval of the audio signal.

FOR 135 Subscriber control of central office message storage or retrieval:
Foreign art collections including subject matter wherein the message storage is located at a central switching office and wherein the content of the audio message is controlled from a subscriber terminal.

FOR 136 DIAGNOSTIC TESTING, MALFUNCTION INDICATION, OR ELECTRICAL CONDITION MEASUREMENT (379/1):
Foreign art collection for either (a) evaluating or monitoring the condition of a telephone system or a component thereof in order to determine the presence of a faulty or nonstandard condi or (b) quantitatively determining an electrical parameter of a telephone system or component thereof.

FOR 137 By loopback (379/5):
Foreign art collection including transmitting a known signal from a testing location over a communi path to a second remote location which retransmits the known signal back to the testing location for use in evaluating the transmission path or a device are the remote location.

FOR 138 By analysis of injected tone signal (379/6):
Foreign art collection which includes placing a signal into the system to be tested and comparing the parameters of the output signal from the system over a continuous range with the corresponding parameters of the signal input.

FOR 139 By automatic testing sequence (e.g., programmable, scanning) (379/10):
Foreign art collection which serially performs plural steps included in a central switching arrange evaluation.

FOR 140 Of automatic switching equipment (379/15):
Foreign art collection for testing switching equipment which performs a selective call connection in response to a call address signal.

FOR 141 Fault detection or location (e.g., continuity, leakage) (379/26)::
Foreign art collection to determine the presence or location of a conductor fault in a telephone line conductor.

FOR 142 Of subscriber loop or terminal (379/27):
Foreign art collection for evaluating, measuring, or monitoring a characteristic of a subscriber line or station.

FOR 143 Terminal arrangement to enable remote testing (e.g., testing interface) (379/29):
Foreign art collection which includes an arrangement to facilitate localization of faults in, or local testing of, either a substation or a sub loop.

FOR 144 Indication of nonstandard condition of telephone equipment (379/32):
Foreign art collection for monitoring the condition of telephone equipment and providing a percepti indication of a fault or other improper equipment condition.

FOR 145 SERVICE MONITORING OR OBSERVATION (379/34):
Foreign art collection for monitoring the response of a telephone operator, or the response time of telephone equipment.

FOR 146 Computer or processor control (379/112):
Foreign art collection wherein telephone usage deter is controlled by a digital signal pro calculating device.

FOR 147 Call traffic recording (379/113):
Foreign art collection where a computer or processor counts the number of calls.

FOR 148 Call charge metering or monitoring (379/114):
Foreign art collection for a particular telephone set or the cost to a subscriber.

FOR 149 Interexchange operations (379/115):
Foreign art collection wherein the charge determina is made at one exchange and then transmit to another related to the calling station.

FOR 150 At central office (379/121):
Foreign art collection wherein the determination is made at the central switching office to which the telephone set is connected.

FOR 151 Having line identification (e.g., automatic number identification-"ANI") (379/127):
Foreign art collection in which telephone message accounting equipment identifies the telephone number of the dialing station.

FOR 152 WITH CALLING NUMBER DISPLAY OR RECORDING AT CALLED SUBSTATION (379/142):
Foreign art collection located at the called substation which provides either a visible indication, or a permanent or semi-permanent record, of the telephone number of a calling terminal.

FOR 153 Other than coin (379/144):
Foreign art collection wherein the telephone paystation accepts paper currency or a credit card.

FOR 154 PRIVATE (E.G., HOUSE OR INTERCOM) OR SINGLE LINE SYSTEM (379/167):
Foreign art collection having (a) a plurality of stations none of which is connected to the pub telephone system, (b) two subsets connected by a single line.

FOR 155 SPECIAL SERVICES (379/201):
Foreign art collection including a switching, connection, or control function additional to those necessary to establish and maintain a single call connection between two stations.

FOR 156 Conferencing (379/202):
Foreign art collection which enables three or more terminals on distinct subscriber lines to be included in a single call connection.

FOR 157 Operator control (379/203):
Foreign art collection wherein the conferencing connection is performed by an attendant at a central switching office.

FOR 158 Subscriber control (379/204):
Foreign art collection wherein the conferencing connection is established or modified by central office switching equipment in response to signalling from a subscriber terminal.

FOR 159 Conference initiation by single calling station (379/205):
Foreign art collection wherein a signalling function is performed at the calling terminal to originate the conference call.

FOR 160 At substation (379/206):
Foreign art collection wherein the conference call line coupling or switching is performed at a sub station.

(1) Note. Included herein are plural line conferencing and audio conferencing.

FOR 161 At plural exchanges (379/207):
Foreign art collection providing a modification of normal telephone call signalling or connection between different exchanges.

FOR 162 Priority override (e.g., butt-in) (379/208):
Foreign art collection allowing a designated type of call to interrupt another telephone conversation.

FOR 163 Repetitive call attempts (e.g., camp-on-busy, retry) (379/209):
Foreign art collection which includes producing suc repeated call attempts.

FOR 164 Call diversion (e.g., call capture) (379/210):
Foreign art collection for directing a call connection from an addressed telephone station to another.

FOR 165 Call forwarding (379/211):
Foreign art collection for rerouting an incoming call from an intended addressed station to another desired station without completion of the call connection to the addressed station.

FOR 166 Call transfer (379/212):
Foreign art collection for changing a completed call connection to an addressed station to another station after completion of call connection to the addressed station.

FOR 167 Intercept (e.g., dead or changed number) (379/213):
Foreign art collection wherein a call made to one of a specified group of addresses is directed to a predetermined location.

FOR 168 Secretarial or answering service (379/214):
Foreign art collection for call completion to an alter station upon a designated condition.

(1) Note. The designated condition may include: time, no answer for specified interval, or request.

FOR 169 Call waiting (379/215):
Foreign art collection for signalling a first station in communication with a second station that a third station desires communication with the first station.

(1) Note. The first station can usually com alternatively with the second and third stations.

FOR 170 Abbreviated dialing or direct call (e.g., hot line) (379/216):
Foreign art collection responsive to either a service request condition or, to a line signal code of less than the complete call address signal, for completing the call address connection in the same manner as if the full call address signal were received.

(1) Note. The term "service request condition" is generally an off-hook condition.

FOR 171 Audible paging (379/217):
Foreign art collection which connects a telephone circuit to a loudspeaker system for summoning an individual.

FOR 172 Performed by operator (e.g., butt-in, busy verification) (379/218):
Foreign art collection wherein the special service is performed by an attendant at a central or branch switching station.

FOR 173 With interexchange network routing (379/220):
Foreign art collection for selecting one of plural paths for a call switched between two or more exchanges.

FOR 174 Alternate routing (379/221):
Foreign art collection for selecting a different path in response to a blockage or other failure to con.

FOR 175 Call distribution to operator (379/265):
Foreign art collection for selecting and connecting a calling terminal to an operator.

FOR 176 Call queuing (379/266):
Foreign art collection which processes a plurality of simultaneous call attempts to a lesser number of operators by holding each of the calls in excess of the number of operators until an operator is available.

FOR 177 Repertory or abbreviated call signal generation (379/355):
Foreign art collection which produces a complete call address signal in response to actuation of a single key or in response to a generated code of less than the complete address signal.

FOR 178 With dynamic memory (379/356):
Foreign art collection including storage or retrieval of dialing code information by relative motion between a transducer and a relatively movable storage medium a property of which is altered in accordance with the stored information.

FOR 179 Insertable control element or circuitry (e.g., card) (379/357):
Foreign art collection comprising a circuit element or other object which controls the generation of the call signal, and is readily removable from the signal generator.

FOR 180 Incoming call alerting (e.g., ringing) (379/373):
Foreign art collection where the control or supervisory signal is generated in response to a call directed to a subscriber terminal.

FOR 181 With music or audible message generation (379/374):
Foreign art collection for generating an audible alert signal consisting of music or of a recorded or synthesized spoken message.

FOR 182 With electronic call sounder (e.g., tone "ringer") (379/375):
Foreign art collection where an audible alerting signal is generated at a subscriber terminal by a cir having at least one electronic device.

FOR 183 With visual indication of incoming call (379/376):
Foreign art collection where there is a visible indica at a subscriber terminal which indicates the presence of an incoming telephone call.

FOR 184 SUBSTATION OR TERMINAL CIRCUITRY (379/387):
Foreign art collection comprising electrical rela of circuit elements of a terminal set or a group of such sets connected to a single line circuit.

FOR 185 For loudspeaking terminal (379/388):
Foreign art collection including a terminal set having an electrical-to-audio signal transducer which produces an audible signal of sufficient inten to be intelligible to a user not in contact with the telephone terminal.

FOR 186 With circuitry for voice control of transmission direction (379/389):
Foreign art collection permitting operation of the terminal in only one direction in response to the presence of a voice signal to be transmitted.

FOR 187 With amplification or attenuation level control (379/390):
Foreign art collection having a circuit for adjusting or maintaining the level of signal strength.

FOR 188 SUBSCRIBER LINE OR TRANSMISSION LINE INTERFACE (379/399):
Foreign art collection including a circuit for connecting a telephone communications line to a central switching office or a subscriber sta.

FOR 189 Echo suppression, antisinging, or reverse path blocking (379/406):
Foreign art collection including circuitry to prevent undesired reflection, oscillation, or signal transmission.

FOR 190 Disable or inhibit (379/407):
Foreign art collection wherein the undesirable signal prevention device includes signal blocking.

FOR 191 Control by pilot frequency signal (379/408):

Foreign art collection wherein the undesirable signal is prevented by equipment responsive to a reference frequency signal.

FOR 192 Having variolosser or attenuator (379/409):

Foreign art collection wherein the undesired path signal prevention device reduces the magnitude of the signal.

FOR 193 Echo cancellation (e.g., phase opposition) (379/410):

Foreign art collection which produces a replica of the undesired signal and offsetting the undesired signal by said replica.

FOR 194 Having transversal filter (379/411):

Foreign art collection wherein an echo is cancelled by a multiply tapped delay line with a summing or weighting circuit.

FOR 195 Having loudspeaking conversation capability (e.g., hands-free type or speakerphone) (379/420):

Foreign art collection which permits conversation with a user without physical contact with the terminal.

FOR 196 Housing or housing component (379/428):

Foreign art collection having a casing enclosing components of a terminal set.

FOR 197 Handset structure (379/433):

Foreign art collection including a housing that contains both the receiver and the transmitter devices.

END