

Access Grant Channel The access grant channel (AGCH) is used by the network to assign a signaling channel to the MS. After the mobile requests a signaling channel over the RACH the network will assign a channel to the mobile by transmitting this information over the AGCH. The AGCH is only transmitted in the downlink direction.

Dedicated Control Channels

The last group of broadcast channels is known as the dedicated control channels (DCCHs). These dedicated channels are used for specific call setup, handover, measurement, and short message delivery functions. The four DCCHs are the stand-alone dedicated control channel (SDCCH), the slow associated control channel (SACCH), the fast associated control channel (FACCH), and the cell broadcast channel (CBCH).

Stand-alone Dedicated Control Channel Both the mobile station and the BTS switch over to the network-assigned stand-alone dedicated control channel (SDCCH) that is assigned over the access grant channel in response to the mobile's request that has been transmitted over the random access channel. The call setup procedure (i.e., the initial steps required to set up a radio link) is performed on the SDCCH. The SDCCH is transmitted in both the uplink and downlink directions. When the call setup procedure is complete, both the mobile and the BTS switch to a preassigned available traffic channel.

Slow Associated Control Channel The slow associated control channel (SACCH) is used to transmit information about measurements made by the MS or instructions from the BTS about the mobile's parameters of operation. In the uplink direction the mobile sends measurements of the received signal strength from its own BTS and those of neighboring BTSs. In the downlink direction, the MS receives information from the BTS about the mobile's output power level and the timing advance that the mobile needs to use. The SACCH is transmitted in both the uplink and downlink directions over the same physical channels as the SDCCH or the TCH.

Fast Associated Control Channel The fast associated control channel (FACCH) is used to facilitate the handover operation in a GSM system. If handover is required, the necessary handover signaling information is transmitted instead of a 20-ms segment of speech over the TCH. This operation is known as "stealing mode" since the time allotted for the voice conversation is stolen from the system for a short period. The subscriber is usually not aware of this loss of speech since the speech coder in the mobile simply repeats the last received voice block during this process.

Cell Broadcast Channel The cell broadcast channel (CBCH) is used to deliver short message service in the downlink direction. It uses the same physical channel as the SDCCH.