

GSM Networks: Protocols, Terminology, and Implementation

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number. To make subscriber tracking more difficult, the IMSI is used only as an identifier when the temporary mobile subscriber identity (TMSI) is not available, e.g., for initial system connections. Figure G.37 shows the format of the IMSI.

IMSI attach/detach [GSM 04.08, 09.02] The BTS permanently broadcasts the parameter ATT in the BCCH / SYS_INFO 3 message. This parameter indicates whether the IMSI attach/detach procedure is required. IMSI detach is a procedure to inform the network that a mobile station will go into an inactive state and thus is no longer available for incoming calls, for example, because of powerdown or because the SIM is removed. The mobile station sends an IMSI_DET_IND message to the network each time it is powered down. The VLR keeps track of that state. The merit of this approach is that it saves radio resources and processing time. The call processing can switch to secondary call treatment, without the need of first sending a PAGING message and then waiting for expiration of the respective timers. Secondary call treatment means initiating call forwarding, voice mail, or simply indicating to the caller that the subscriber is currently not reachable. The complementary operation to IMSI detach is IMSI attach. It indicates to the network that a mobile station is active again. IMSI attach is related to periodic location updating. The location updating procedure is utilized to perform IMSI attach.

Inband signaling The counterpart to outband signaling. Inband signaling describes the situation when control information is transmitted within the traffic channel rather than in dedicated channels for signaling. Examples of outband signaling are SS7, LAPD signaling; examples of inband signaling are FACCH and SACCH (Air-interface).

Incoming call [GSM 04.08, 08.08, 09.02] A call request for a mobile subscriber. Also referred to as mobile terminating call (MTC). See Chapter 12.

Incoming handover [GSM 04.08, 05.08, 08.08, 09.02] During handover, the originating BTS or old BTS that the mobile station is leaving is involved in

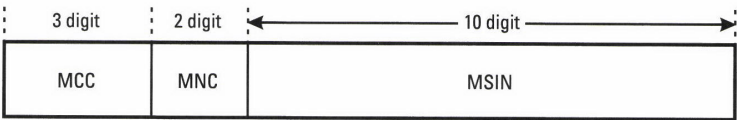


Figure G.37 Format of the IMSI.