

<MM> Interfaces (GSM Location Update)									
Highway		Virginia			GSM	Maryland			EventHelix.com/EventStudio 2.5
GSM Mobiles		Virginia Location Area	Virginia GSM Equipment		GSM Databases	Maryland Location Area		Maryland GSM Equipment	
Other GSM Mobile	GSM Mobile	Vienna Cell	Virginia BSC	Virginia MSC VLR	HLR	Rockville Cell	Bethesda Cell	Maryland MSC VLR	31-Oct-04 21:29 (Page 1)

RR SABM + MM LOCATION UPDATING REQUEST  
 Maryland TMSI, Maryland LAI

SABM + MM LOCATION UPDATING REQUEST  
 Maryland TMSI, Maryland LAI

MM LOCATION UPDATING REQUEST  
 Maryland TMSI, Maryland LAI

MM AUTHENTICATION REQUEST  
 RAND

MM AUTHENTICATION RESPONSE  
 SRES

MM LOCATION UPDATING ACCEPT  
 Virginia TMSI

MM TMSI REALLOCATION COMPLETE

The mobile tunes to the assigned radio channel and sends the SABM to initiate the radio connection. The location update is also piggybacked on the message.

The BSC receives the location update with the SABM.

The location updating request is forwarded to the MSC in the "BSSMAP COMPLETE LAYER 3 INFORMATION" message.

**LEG: Inter MSC-VLR location update**

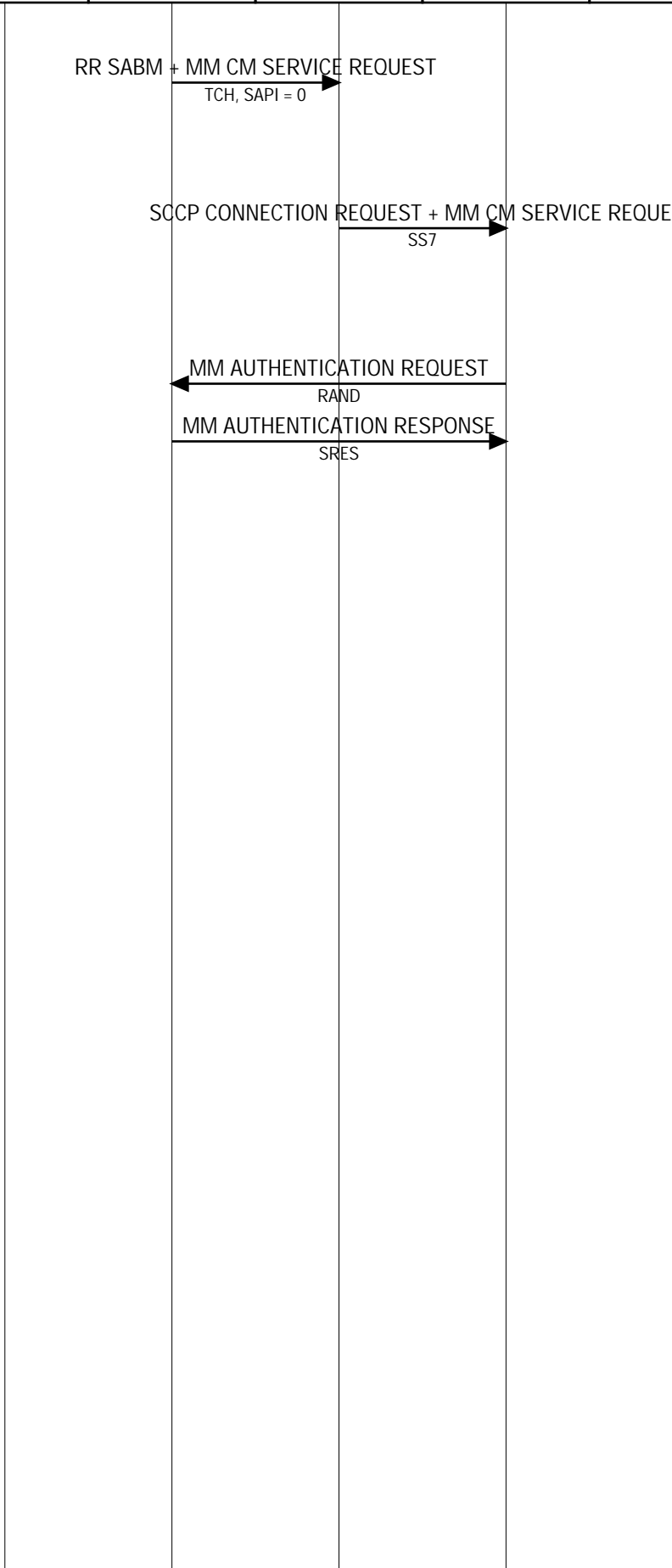
The MSC VLR decides to authenticate the subscriber. The RAND value received from the HLR is sent to the mobile.

The mobile passes the computed SRES value in the response.

The new MSC replies back to the mobile via the Virginia BSC. The message also assigns a new Temporary Mobile Subscriber Id (TMSI) to the terminal. Since the TMSI assignment is being sent after ciphering is enabled, the relationship between TMSI and the subscriber cannot be obtained by unauthorized users.

The GSM mobile replies back indicating that the new TMSI allocation has been completed.

<MM> Interfaces (GSM Originating Call)					
Cell		Mobile Network		Fixed Network	EventHelix.com/EventStudio 2.5
Mobile Station		Base Stations	NSS	PSTN	
User	Mobile	BSS	MSC VLR	PSTN	31-Oct-04 21:29 (Page 2)



**LEG: GSM Mobile Originated Call**

This is the first message that is sent after tuning to the channel. The Mobile initiates a LAPm connection with the BSC by sending a Set Asynchronous Balanced Mode (SABM) message. The service request message meant for the MSC is also sent in this message.

The BSS receives the CM Service Request message from the mobile and forms a "BSSMAP COMPLETE LAYER 3 INFORMATION". The BSS then piggy backs the message on the SCCP connection request message.

**LEG: Initiate Authentication Procedure**

**LEG: Mobile initiates call release**