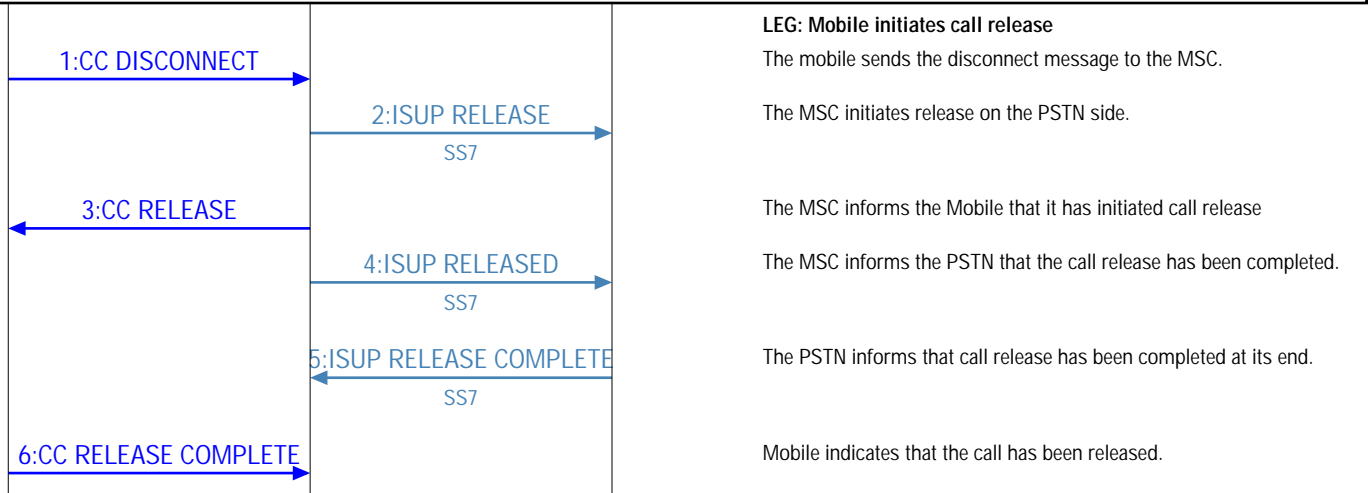


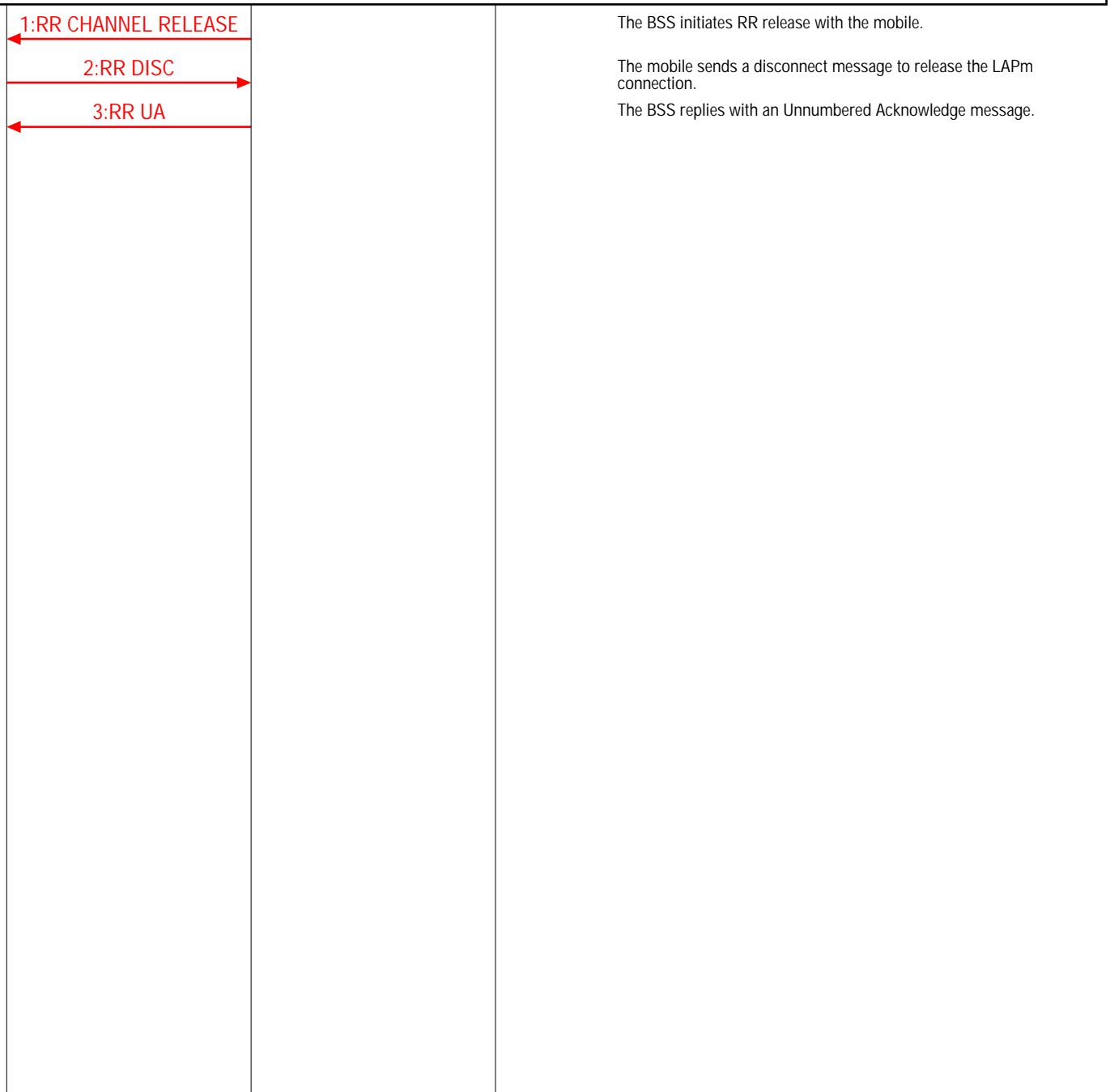
**Module Interfaces (GSM Originating Call)**

Cell	Mobile Network	Fixed Network	EventStudio System Designer 4.0
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**Call Release**



**RR Connection Release**



**Module Interfaces (Mobile Terminated Call)**

Cell	Mobile Network	Fixed Network	EventStudio System Designer 4.0
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LEG: GSM Mobile Terminated Call

1:RR PAGING REQUEST TYPE 1

**Begin RR Connection Establishment**

1:RR CHANNEL REQUEST  
RACH

RR connection establishment is triggered by sending the Channel Request message. This message requests the Base Station System (BSS) for allocation for radio resources for the RR connection setup. The mobile now waits for an assignment on the Access Grant Channel (AGCH). At this point the mobile is listening to the AGCH for a reply.

2:RR IMMEDIATE ASSIGNMENT  
AGCH,  
Radio\_Resource = (TCH, Frequency, Timeslot),  
Time Correction,  
Frequency Correction

The BSS transmits the radio resource assignment to the Mobile via the AGCH channel. The message also contains the time and frequency corrections. The time corrections allow the mobile to time its transmissions so that they reach the BSS only in the specified slot. The frequency corrections correct for the Doppler shift caused by the mobile's motion.

3:RR SABM + RR PAGING RESPONSE  
TCH,  
SAPI = 0

4:RR UA  
TCH,  
SAPI = 0

The BSS replies with Unnumbered Acknowledge (UA) to complete the LAPm setup handshake

LEG: Initiate Authentication Procedure

5:MM AUTHENTICATION REQUEST  
RAND

6:MM AUTHENTICATION RESPONSE  
SRES

**Enable Ciphering**

1:RR CIPHERING MODE COMMAND  
mode = CLEAR

The BSS sends the CIPHERING MODE COMMAND to the mobile. The mobile will be able to receive this message as the transmission from the BSS is still in clear.

2:RR CIPHERING MODE COMPLETE  
mode = CIPHERED

Ciphering has already been enabled, so this message is transmitted with ciphering. The BSS will receive this message as it is already expecting ciphered data in the receive direction.

**RR Connection Establishment Completed**

**Call Setup**

1:CC SETUP  
Dialed Digits

The Mobile sends the setup message to establish a voice call. The message contains the dialed digits and other information needed for call establishment.

2:CC CALL PROCEEDING

The mobile is informed that the call setup is in progress.

**Mode Modify**

1:RR CHANNEL MODE MODIFY

The BSS notifies the Mobile about the changeover to voice mode.

2:RR CHANNEL MODE MODIFY ACKNOWLEDGE

Mobile acknowledges.

3:ISUP INITIAL ADDRESS MESSAGE  
SS7,  
Dialed Digits

The MSC routes the call and sends the call towards the called subscriber

4:ISUP ADDRESS COMPLETE MESSAGE  
SS7

The PSTN indicates to the MSC that it has received all the digits and the called subscriber is being rung.

5:CC ALERTING

The MSC informs the mobile that the called subscriber is being alerted via a ring

6:ISUP ANSWER  
SS7

The called subscriber answers the call.

**Module Interfaces (Mobile Terminated Call)**

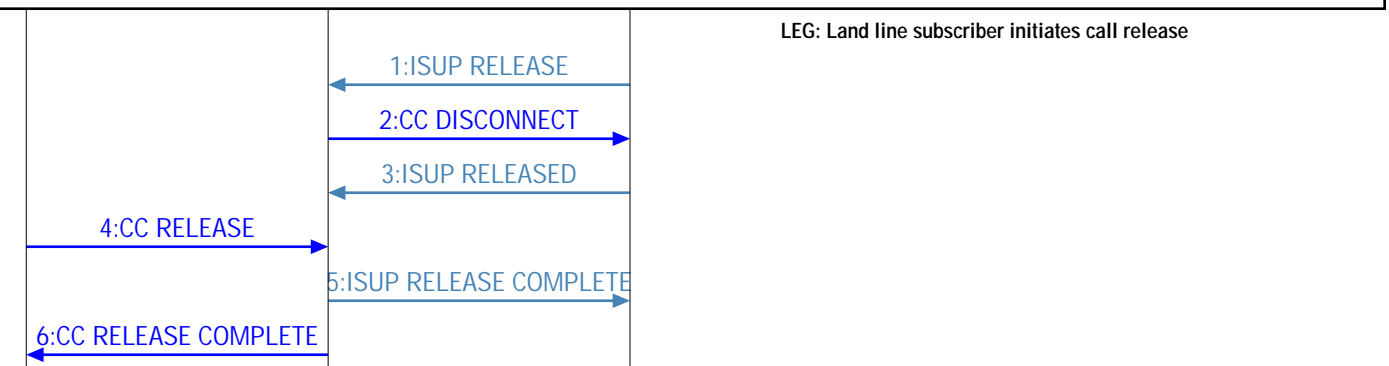
Cell	Mobile Network	Fixed Network	<b>EventStudio System Designer 4.0</b>
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**Conversation**



**Call Release**



**RR Connection Release**

