

GSM_BSC Interfaces (Intra MSC Handover Call Flow)						
Highway	GSM Coverage				GSM Equipment	EventHelix.com/EventStudio 2.5
GSM Mobile	Bethesda		Rockville		MSC VLRs	
Mobile	Bethesda Cell	Bethesda BSC	Rockville Cell	Rockville BSC	Maryland MSC VLR	31-Dec-04 08:05 (Page 1)

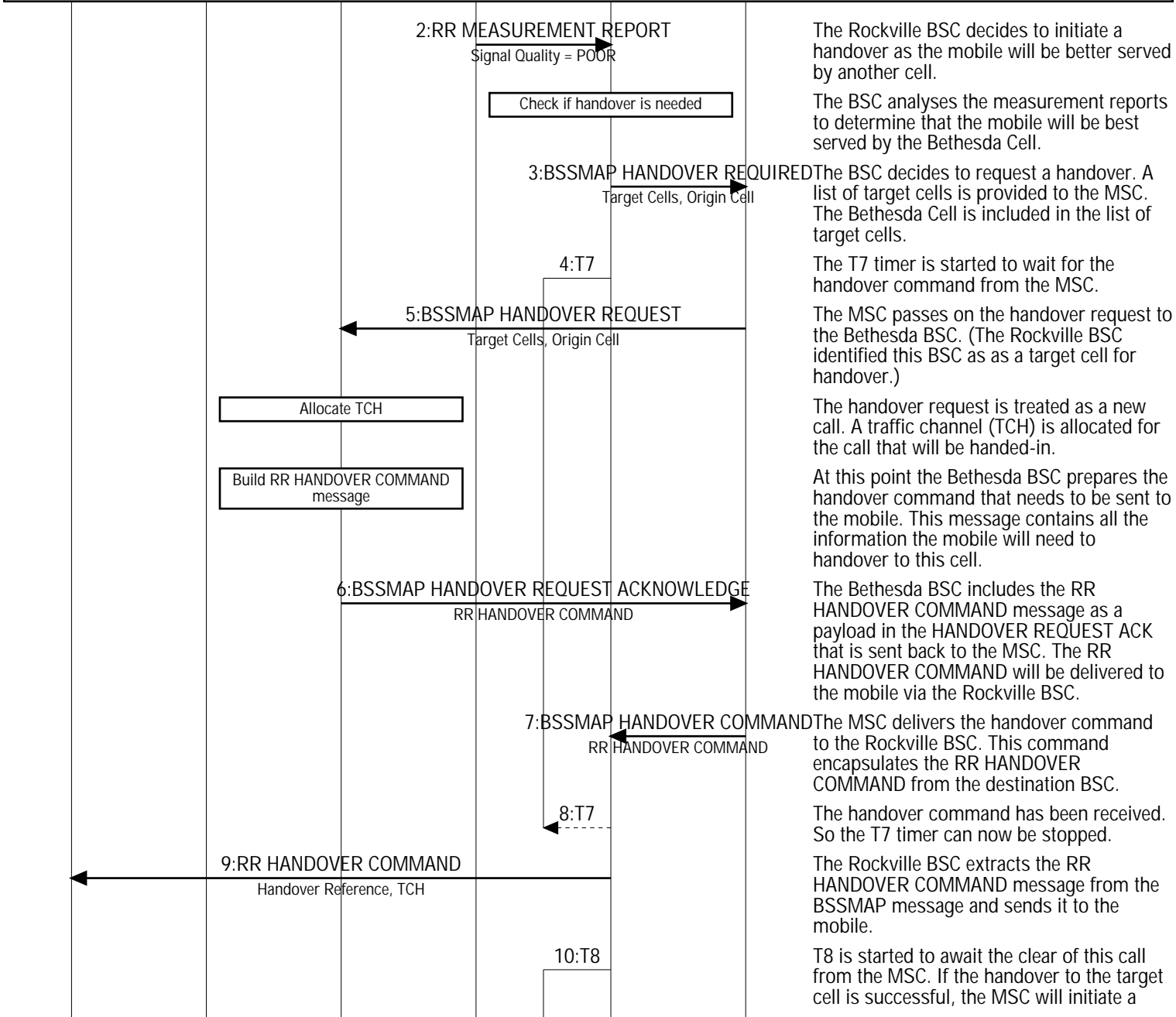
This call flow was generated with EventStudio 2.5 (<http://www.EventHelix.com/EventStudio>).

How does a GSM mobile phone maintain a call even when moving from one cell to another?
 The calls are maintained by handing over a call from one cell to another. This call flow covers a simple case of call handover in GSM. Here a user has an active call and is moving from the Rockville Cell to the Bethesda Cell. As the user moves, the call will be handed over by the Rockville Cell to the Bethesda Cell.
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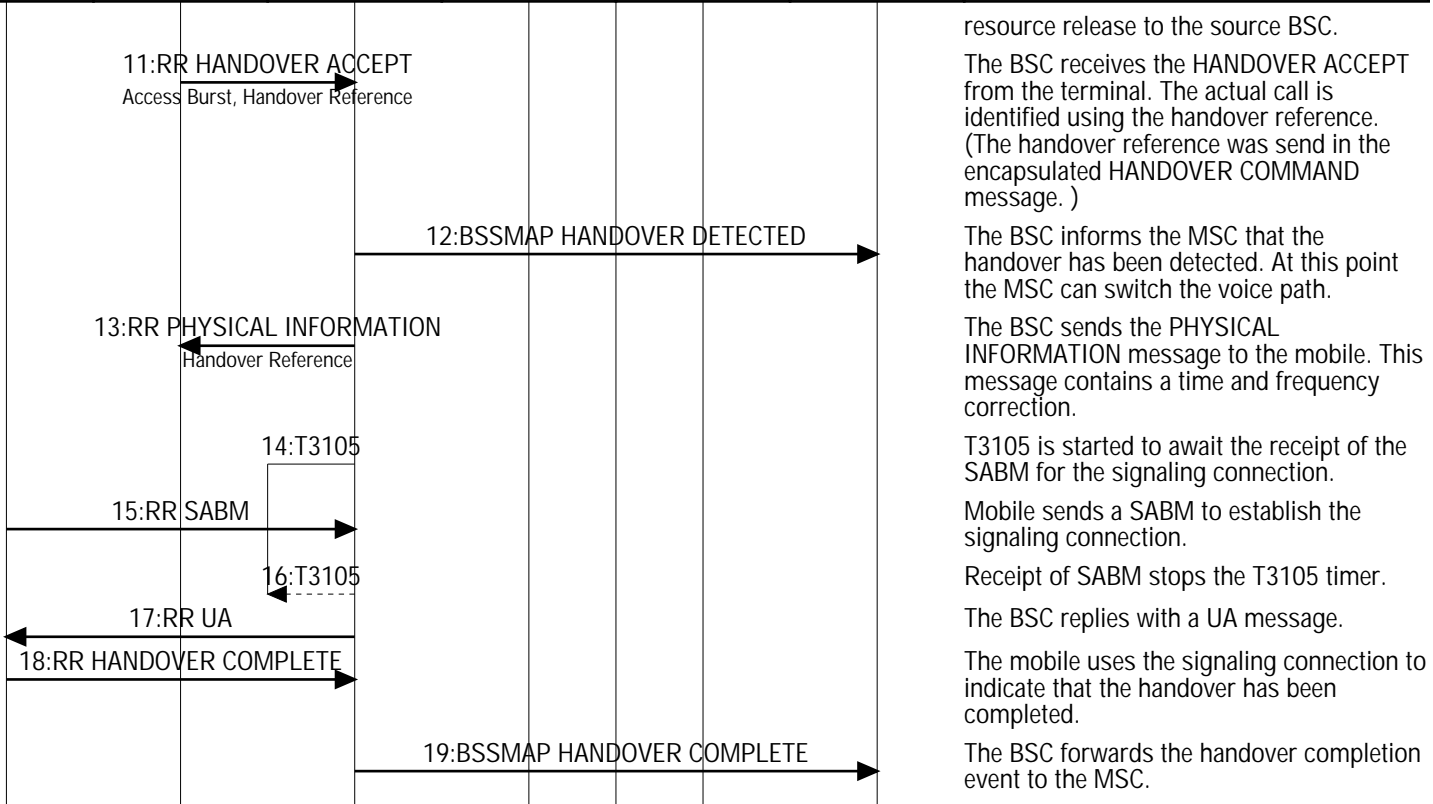
The GSM Mobile has an active call in the Rockville Cell.

	1:RR MEASUREMENT REPORT Signal Quality = GOOD	The mobile is reporting good signal quality, so no further action is taken.
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The user reaches the boundary between the Rocville Cell and Bethesda cell.



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resource release to the source BSC.

The BSC receives the HANDOVER ACCEPT from the terminal. The actual call is identified using the handover reference. (The handover reference was send in the encapsulated HANDOVER COMMAND message.)

The BSC informs the MSC that the handover has been detected. At this point the MSC can switch the voice path.

The BSC sends the PHYSICAL INFORMATION message to the mobile. This message contains a time and frequency correction.

T3105 is started to await the receipt of the SABM for the signaling connection.

Mobile sends a SABM to establish the signaling connection.

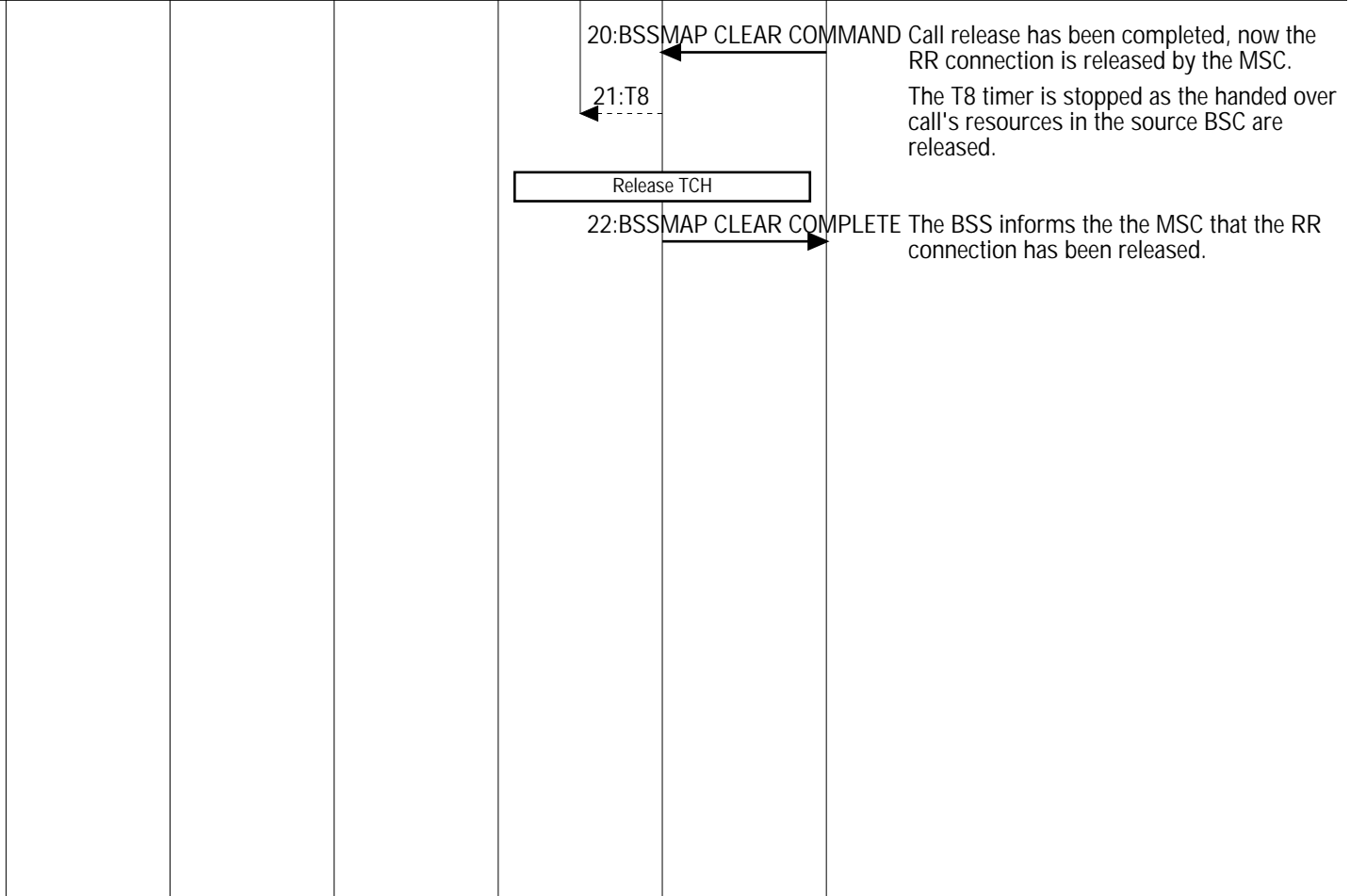
Receipt of SABM stops the T3105 timer.

The BSC replies with a UA message.

The mobile uses the signaling connection to indicate that the handover has been completed.

The BSC forwards the handover completion event to the MSC.

Release call resources in Rockville BSC.



Call release has been completed, now the RR connection is released by the MSC.

The T8 timer is stopped as the handed over call's resources in the source BSC are released.

The BSS informs the the MSC that the RR connection has been released.

GSM_BSC Interfaces (Inter MSC Handover Call Flow)						
Highway	GSM Coverage					EventHelix.com/EventStudio 2.5
GSM Mobile	Bethesda			Rockville		
Mobile	Bethesda Cell	Bethesda BSC	Bethesda MSC VLR	Rockville MSC VLR	Rockville BSC	Rockville Cell
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This call flow was generated with EventStudio 2.5 (<http://www.EventHelix.com/EventStudio>).

How does a GSM mobile phone maintain a call even when moving from a cell controlled by one MSC to a cell controlled by a different MSC?

The calls are maintained by handing over the call from the source MSC to the target MSC. The MAP/E protocol is used to manage the interactions between the source MSC and the target MSC.

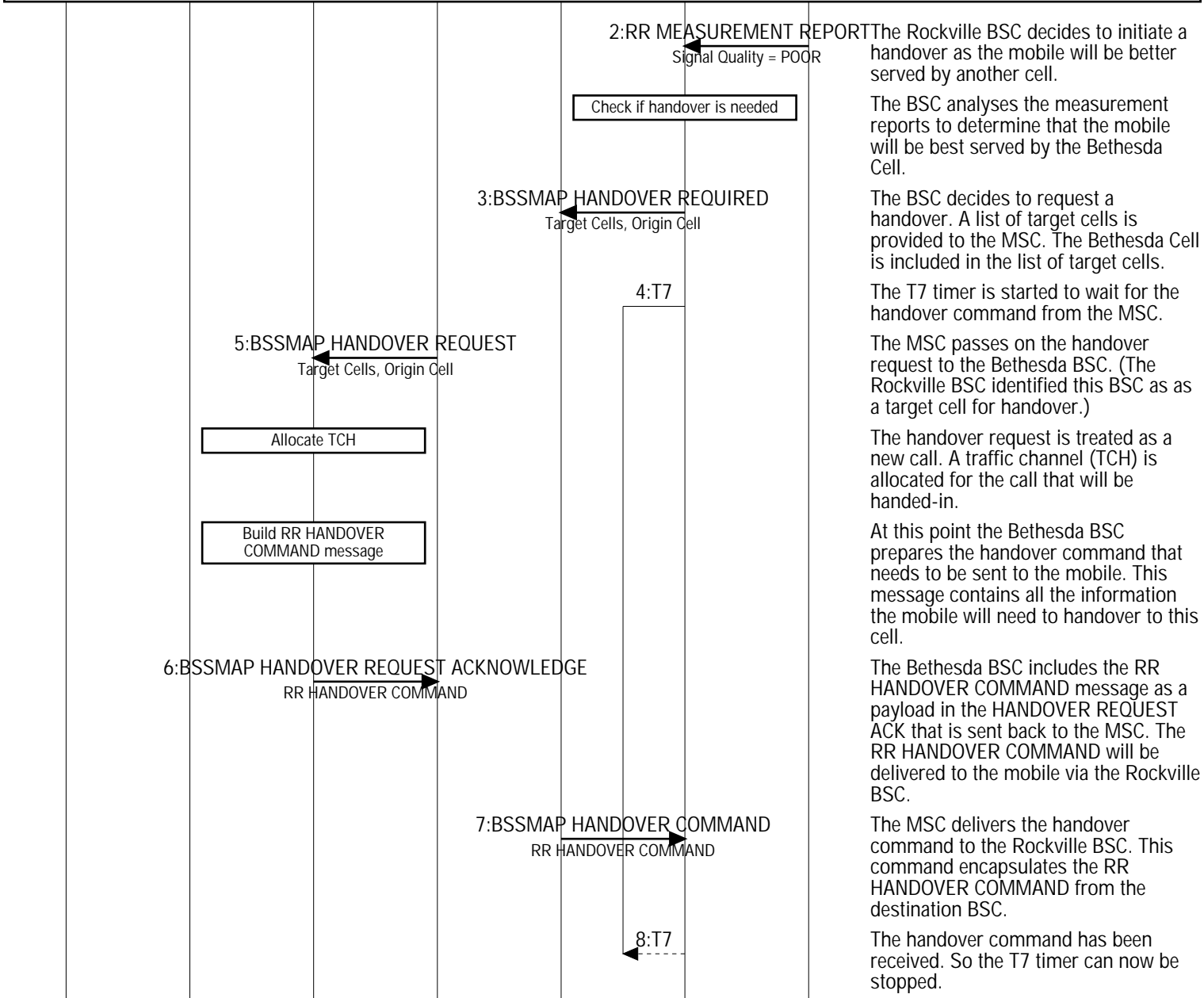
In this example, a user has an active call and is moving from the Rockville Cell to the Bethesda Cell. As the user moves, the call will be handed over by the Rockville Cell to the Bethesda Cell. The Bethesda cell and the Rockville cell are controlled by different MSCs, thus an Inter-MSC handover will be performed from the Rockville MSC to the Bethesda MSC.

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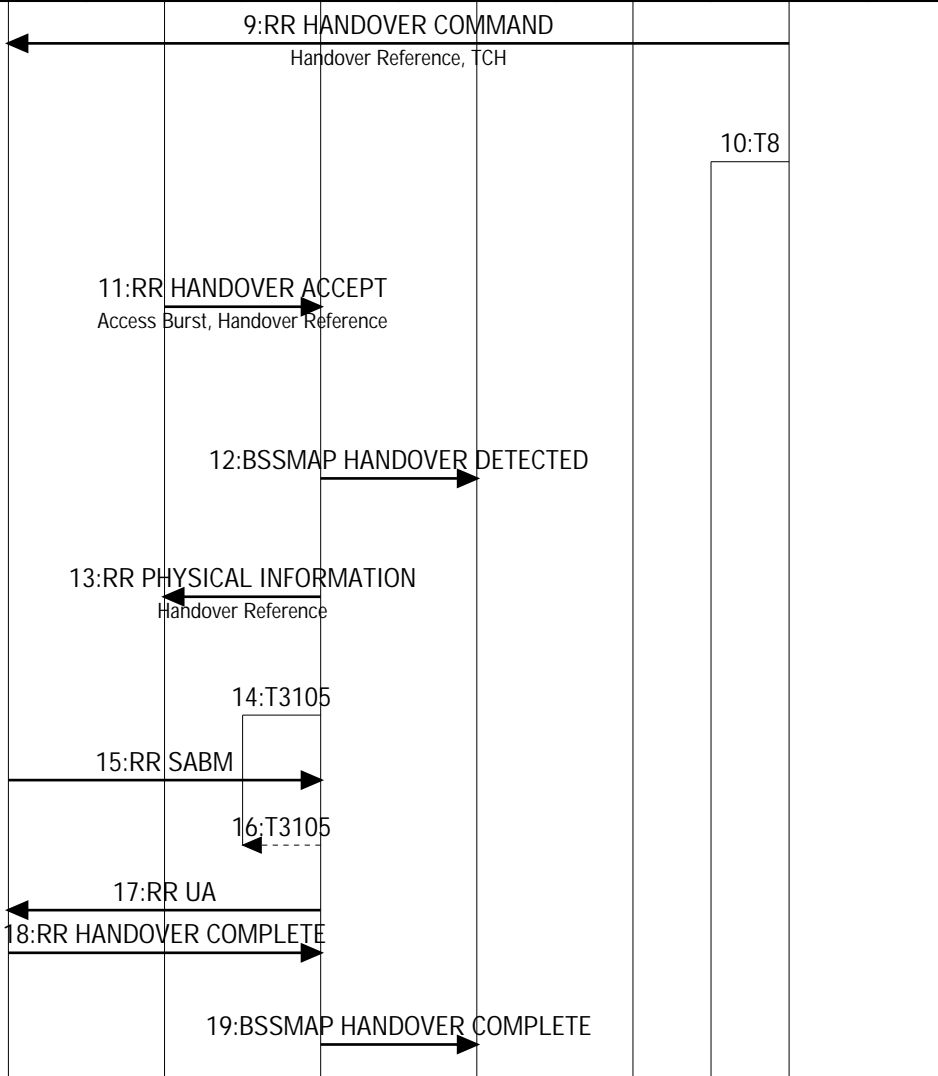
The GSM Mobile has an active call in the Rockville Cell.

1:RR MEASUREMENT REPORT
 Signal Quality = GOOD
 The mobile is reporting good signal quality, so no further action is taken.

The user reaches the boundary between the Rocville Cell and Bethesda cell.



GSM_BSC Interfaces (Inter MSC Handover Call Flow)						
Highway	GSM Coverage					EventHelix.com/EventStudio 2.5
GSM Mobile	Bethesda			Rockville		
Mobile	Bethesda Cell	Bethesda BSC	Bethesda MSC VLR	Rockville MSC VLR	Rockville BSC	Rockville Cell
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The Rockville BSC extracts the RR HANDOVER COMMAND message from the BSSMAP message and sends it to the mobile.

T8 is started to await the clear of this call from the MSC. If the handover to the target cell is successful, the MSC will initiate a resource release to the source BSC.

The BSC receives the HANDOVER ACCEPT from the terminal. The actual call is identified using the handover reference. (The handover reference was send in the encapsulated HANDOVER COMMAND message.)

The BSC informs the MSC that the handover has been detected. At this point the MSC can switch the voice path.

The BSC sends the PHYSICAL INFORMATION message to the mobile. This message contains a time and frequency correction.

T3105 is started to await the receipt of the SABM for the signaling connection.

Mobile sends a SABM to establish the signaling connection.

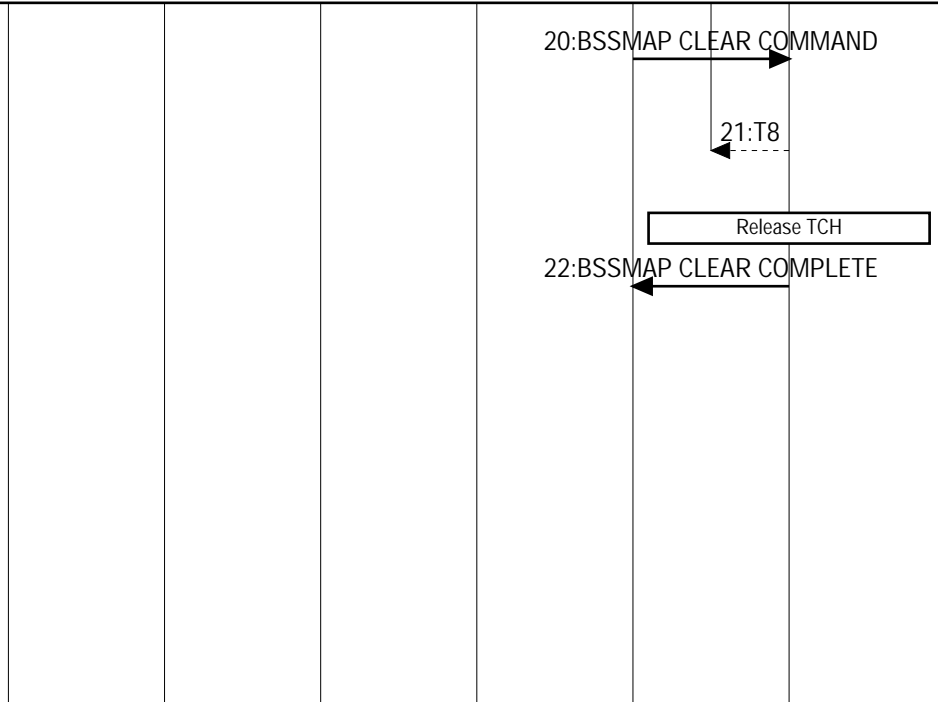
Receipt of SABM stops the T3105 timer.

The BSC replies with a UA message.

The mobile uses the signaling connection to indicate that the handover has been completed.

The BSC forwards the handover completion event to the MSC.

Release call resources in Rockville BSC.



Call release has been completed, now the RR connection is released by the MSC.

The T8 timer is stopped as the handed over call's resources in the source BSC are released.

The BSS informs the the MSC that the RR connection has been released.