Inter MSC Handover Call Flow (GSM Inter MSC Handover Call Flow) Highway GSM Coverage						
GSM Mobile	Vienna (Target) Bethesda (Source)					EventStudio System Designer 4.0
Mobile	Vienna Cell Vier	nna BSC Vienna	MSC VLR Bethesda MSC Be	thesda BSC	Bethesda Cell	25-Jan-08 07:27 (Page 1)
is call flow was q	enerated with EventStudio	System Designer 4.0		tudio). The Eve	entStudio source	files for this document can be downloaded from
	lix.com/call-flow/gsm-inter	<u> </u>	1			
w does a GSM m	nobile phone maintain a call	even when moving f	rom a cell controlled by one MSC to	a cell controlle	d by a different N	MSC?
e calls are mainta SC.	nined by handing over the ca	all from the source M	ISC to the target MSC. The MAP pro	tocol is used to	manage the inte	ractions between the source MSC and the target
		-		e user moves, th performed from	ne call will be har the Bethesda Mi	nded over by the Bethesda Cell to the Vienna Cell. SC to the Vienna MSC. (Please refer to the diagran
	lix.com/RealtimeMantra/Tel		_example.htm			
. , ,	2008 EventHelix.com Inc. A s an active call in the Bethe					
e down Mobile Ha		Voice		Voice	Voice	Call is in conversation. The voice path from the mobile is routed to the PSTN via the Bethesda M When a call is active, the mobile periodically rep the signal quality to the network via the Measurement Report message. This message is sent in every SACCH frame with a periodicity of ms. The measurement report also includes the signal quality measurements for neighboring cell. The mobile is reporting good signal quality, so not the mobile is reporting good signal quality, so not the mobile is reporting good signal quality.
•			\			
			MENT REPORT Bity = GOOD			
		Signal Qu		RR MEASUREM	ENT REPORT	
				Signal Quality	y = GOOD	further action is taken.
user reaches th	e boundary between the Be					The mobile is at the call. Cu. D. V.
			MENT REPORT ality = POOR			The mobile is at the edge of the Bethesda cell ar reports that it is seeing a much weaker signal from the Bethesda cell.
				RR MEASUREM Signal Quality		The Bethesda BSC decides to initiate a handove the mobile will be better served by another cell.
				handover is needed		The BSC analyses the measurement reports to determine that the mobile will be best served by Vienna Cell.
			BSSMAP HANDOVER Target Cells, Origin			The BSC decides to request a handover. A list of target cells is provided to the MSC. The Vienna is included in the list of target cells.
		N40	P PREPARE HANDOVER	7		The T7 timer is started to wait for the handover command from the MSC. This is an inter MSC handover, so pass the
		IVIA	Target Cells, Origin Cell			handover request to the target MSC via a MAP message.
	BSS	MAP HANDOVER RE	T101 OUEST			The MSC-VLR starts a timer to await the respor from the Vienna BSC. The MSC passes on the handover request to the
		Target Cells, Origin Cel	-			Vienna BSC. (The Bethesda BSC identified this I as as a target cell for handover.)
	Allo	cate TCH				The handover request is treated as a new call. A traffic channel (TCH) is allocated for the call tha be handed-in.
		ER COMMAND message				At this point the Vienna BSC prepares the hando command that needs to be sent to the mobile. T message contains all the information the mobile need to handover to this cell.
	BSSMAP HA	NDOVER REQUEST A	>			The Vienna BSC includes the RR HANDOVER COMMAND message as a payload in the HANDOVER REQUEST ACK that is sent back to MSC. The RR HANDOVER COMMAND will be delivered to the mobile via the Bethesda BSC.
		Handove	ocate er Number			The Vienna MSC obtains a handover number from the VLR. The Bethesda MSC will use this number initiate an inter-MSC call to carry the voice from Bethesda MSC to the Vienna MSC.
			PARE HANDOVER RESPONSE OVER COMMAND, Handover Number			Pass the handover request acknowledgement fr the target MSC to the source MSC. The messag also includes the handover number to call for th inter-MSC voice call.
			T101			The MSC has heard back from the destination M thus the T101 timer is stopped.
			Handover Number			The Bethesda MSC initiates a voice call to the Vienna MSC. The call is initiated with the ISUP Initial Address Message (IAM) addressed to the "Handover Number".
			ISUP ACM			The Vienna MSC accepts the call with the Addre Complete (ACM) message.
			BSSMAP HANDOVER	1	1	The MSC delivers the handover command to th

T102

RR HANDOVER COMMAND Handover Reference, TCH

Tune to the channel specified in the handover command

RR HANDOVER ACCEPT Access Burst, Handover Reference T7

T8

T102 is started to track the completion of the handover.

The handover command has been received. So the T7 timer can now be stopped.

The Bethesda 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 extracts the destination channel information from the message and tunes to the assigned channel.

After tuning to the assigned channel, the mobile starts sending the handover accept message. Note that this message is sent as an access burst as the mobile is not completely synchronized to send

