

*If this is your First-Time-Use of MAPS™ GSM A IP application, then we recommend you follow all the steps explained in MAPS™ GSM A IP -Quick-Install-Guide to install MAPS™ GSM A IP application before proceeding with the steps below.*



**Quick Checkout Procedure**

Functional verification of MAPS™ GSMA application requires a system with 2 NIC cards for loopback testing. MAPS™ GSMA is configured as **MSC** [Mobile Switching Centre] on one NIC and as **BSC** [Base Station Controller] on the other to simulate GSM A interface procedures and RTP traffic

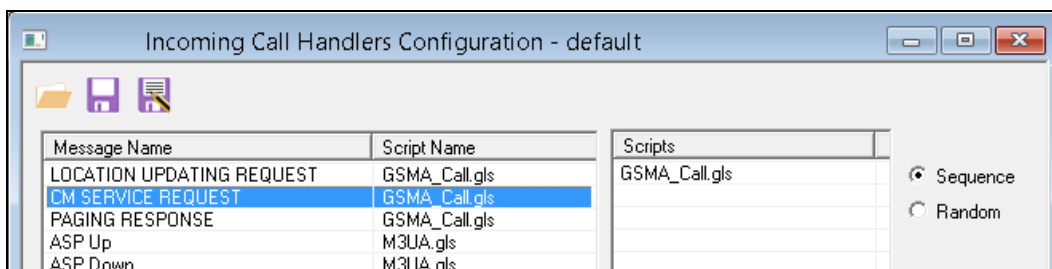
Note down the IP address of NIC1 and NIC2 on the Test PC, and in this example the IP addresses used and configured are:

- NIC1 IP address is 192.xx.xx.3, and configured as MSC
- NIC2 IP address is 192.xx.xx.2, and configured as BSC

**First MAPS™ GSMAIP (GUI) – (MSC)**



- Click to invoke *MAPS-GSMAIP* application using shortcut icon on the desktop. This instance of MAPS™ is configured for **Call Reception**.
- While invoking the first MAPS™ GSMAIP instance, verify the following in the **Protocol Selection** window -
  - **Protocol Standard** is set to *GsmAip*
  - **Protocol Version** to *GSM900*
  - Select **Node** as *MSC*
  - Select **Transport** as *M3UA*. Click *Ok*
- By default, **Testbed Setup** window is displayed. Click  and select *TestBedDefault* and check for the parameter default values as listed below:
  - **M3UA Termination Type** is set to *IPSP*, to handle server association.
  - **Enable RTP Simulation**
  - **RTP Hardware Interface Type** as “PC NIC”
  - Set **MSC IP Address** to 192.xx.xx.3 (NIC 1 IP address)
  - Set **MGW IP Address** to 192.xx.xx.3 (NIC 1 IP address)
  - Verify that **MSC Point Code** is set to *2.2.2*
  - Set **BSC IP Address** to 192.xx.xx.2 (NIC 2 IP address)
  - Verify that **BSC Port** is set to *2905*
  - Verify that **BSC Point Code** is set to *1.1.1*
  - Verify that **MSC Port** to *2905*
  - Click  **Save** button.
- From MAPS™ GSMAIP main window, select **Configuration** → **Incoming Call Handler Configuration** and verify that the *GSMA\_Call.gls* script is loaded against LocationUpdate and CM Request messages.

Config	Value
MSC Configurations	
M3UA Termination Type	IPSP
Enable RTP Simulation	Enable
RTP Hardware Interface Type	PC NIC
MSC	1
MSC 1	
MSC IP Address	192.168.13.3
MGW IP Address	192.168.13.3
PLMN Identifiers	
MTP Parameters	
MSC Point Code	2.2.2
Signaling Link Selection	1
Network Indicator	International
MSC Address Indicator	National
BSC Parameters	
Supported BSCs	1
Supported BSCs 1	
BSC IP Address	192.168.13.2
BSC Port	2905
BSC Point Code	1.1.1
BSC Address Ind...	National
MSC Port	2905
Location Area Id...	
HD RTP Media Configuration	
End User Configuration	MS_Profiles.xml
CSV File Name for Key IMSI	MS_Profiles_IMSI.CSV
CSV File Name for Key Calling Num...	MS_Profiles_Calling...
Enable SMS Ratio for CSV	False
Ratio of SMS Calls	10 %





Message Name	Script Name	Scripts
LOCATION UPDATING REQUEST	GSMA_Call.gls	GSMA_Call.gls
CM SERVICE REQUEST	GSMA_Call.gls	
PAGING RESPONSE	GSMA_Call.gls	
ASP Up	M3UA.gls	
ASP Down	M3UA.gls	

Sequence (selected) / Random



- From MAPS™ GSMAIP (MSC) main window, select **Editor > Profile Editor**. Click  and select “**MS\_Profiles**”. Check for the following parameter default values.
  - Select **MSProfile0001** profile from left pane
  - Set **Type of Call** to **Terminate MO Call**
  - Set **Service Type for MT Call** = **Speech Call** to allow voice traffic over signaling
  - Scroll down to **Traffic Configuration** → set **Traffic Type** to **Auto Traffic File**. This option allows to automatically send and receive voice files.
  - Set the **Traffic Direction** to **Tx Rx type**
  - Click on  **Save** button. Exit from the Profile Editor window.

**Second MAPS™ GSMAIP (GUI) – (BSC)**

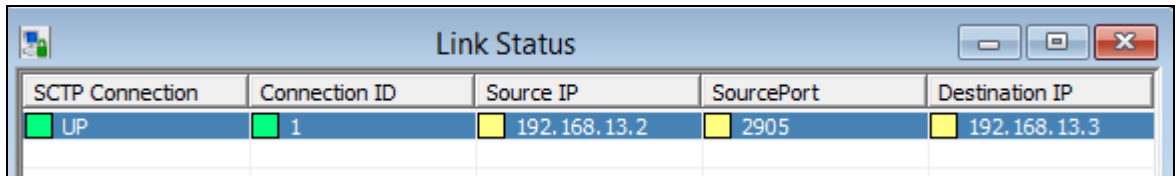
- Click to invoke **MAPS-GSMAIP** application using shortcut icon on the desktop. This instance of MAPS™ is configured for **Call Generation**
- While invoking the second MAPS™ GSMAIP instance, verify the following in the **Protocol Selection** window -
  - **Protocol Standard** is set to **GsmAlp**
  - **Protocol Version** to **GSM900**
  - Select **Node** as **BSC**
  - Select **Transport** as **M3UA**. Click **Ok**

- By default, **Testbed Setup** window is displayed. Click  and select **BSC\_RTP\_NIC** and check for the parameter default values as listed below:
  - **M3UA Termination Type** is set to **IPSP**, to handle client association.
  - **Enable RTP Simulation**
  - **RTP Hardware Interface Type** as “PC NIC”
  - Set **BSC IP Address** to 192.xx.xx.2 (NIC 2 IP address)
  - Set **MGW IP Address** to 192.xx.xx.2 (NIC 2 IP address)
  - Verify that **BSC Port** is set to **2905**
  - Verify that **BSC Point Code** is set to **1.1.1**
  - Set **MSC IP address** to 192.xx.xx.3 (NIC 1 IP address)
  - Verify that **MSC Port** is set to **2905**
  - Verify that **MSC Point Code** is set to **2.2.2**. Click  **Save** button.



Config	Value
[-] BSC Configurations	
- M3UA Termination Type	IPSP
- Enable RTP Simulation	Enable
- RTP Hardware Interface Type	PC NIC
[-] BSC	
[-] BSC 1	1
- BSC IP Address	192.168.13.2
- MGW IP Address	192.168.13.2
- BSC Port	2905
[-] PLMN Identifiers	
[-] MTP Parameters	
- BSC Point Code	1.1.1
- Signaling Link Selection	1
- Network Indicator	International
- BSC Address Indicator	National
[-] MSC Parameters	
- MSC IP Address	192.168.13.3
- MSC Port	2905
- MSC Point Code	2.2.2
- MSC Address Indicator	National
[-] HD RTP Media Configuration	
- End User Configurations	MS_Profiles.xml
- CSV File Name	MS_Profiles_IMSI.CSV
- Enable SMS Ratio for CSV	False
- Ratio of SMS Calls	80 %

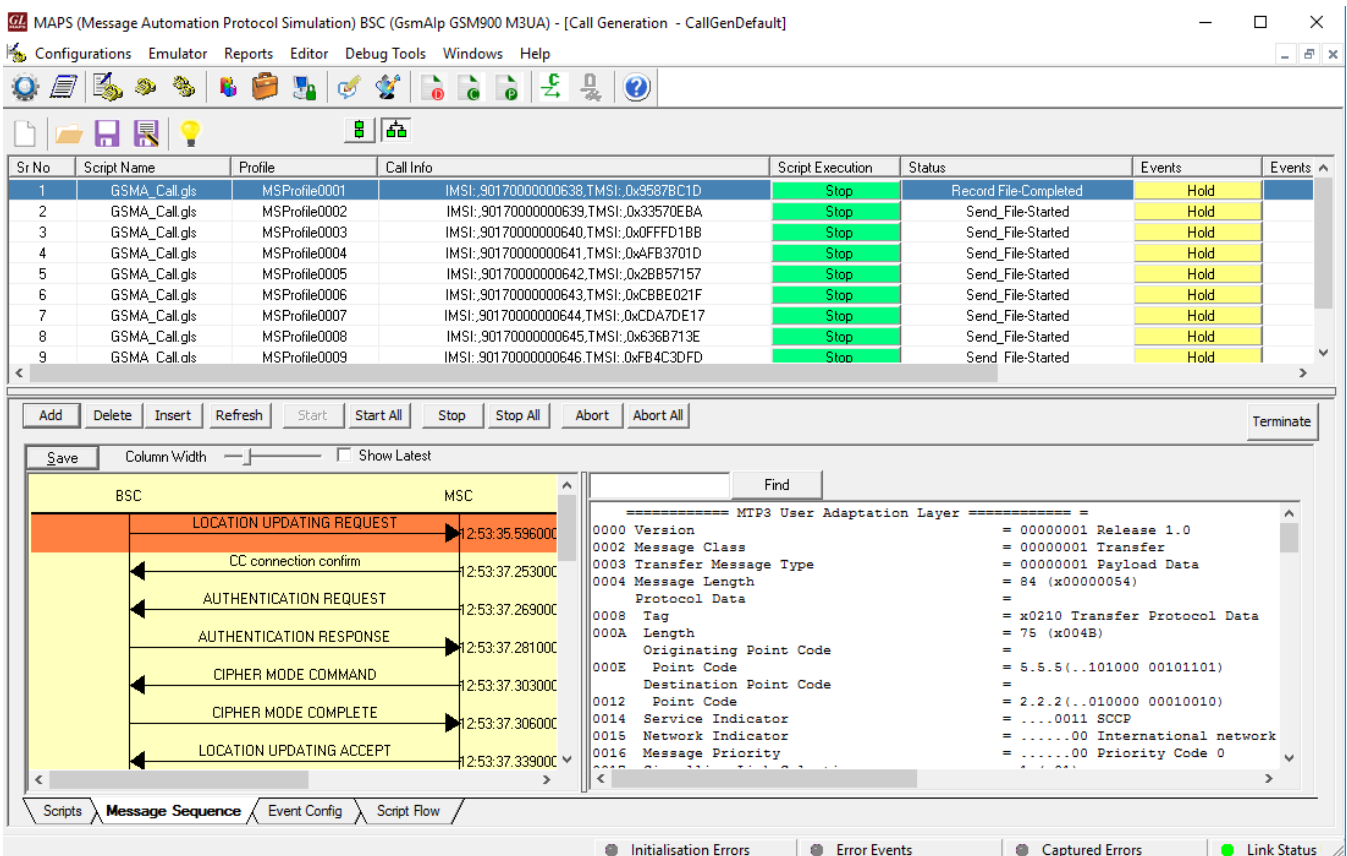
- From MAPS™ GSMAIP (BSC) main window, select **Editor → Profile Editor**. Click  and select “**MS\_Profiles**”. Check for the following parameter default values.
  - Select **MSProfile0001** profile from left pane
  - Set **CM Service Type** to **Mobile Originating Call Establishment**
  - Set **Location Update Type** to **Normal location updating**
  - Scroll down to **Traffic Configuration** → set **Traffic Type** to **Auto Traffic File**. This option allows to automatically send and receive voice files.
  - Set the **Traffic Direction** to **Tx Rx type**
  - Click on the  **Save** button. Exit from the Profile Editor window.

- **Start** the testbed on both the MAPS™ GSM A IP (MSC and BSC) instances.
- On both the MAPS instances main window, from **Reports** menu → select **Link Status** option to verify the link status. Verify that the **SCTP Link Status** is **UP** (indicated in Green color) before placing the call. If SCTP connection is not up, then refer to [Troubleshoot](#) section explained in this document.



SCTP Connection	Connection ID	Source IP	SourcePort	Destination IP
UP	1	192.168.13.2	2905	192.168.13.3

- In the second MAPS™ instance (**BSC**) main window, click  icon and invoke **Call Generation** window
- By default, you will observe multiple call instances loaded with **GSMA\_Call.gls** script and **MSPProfile00\*\*** profiles respectively.
- Select the first instance loaded with **GSMA\_Call.gls** script and **MSPProfile0001** profile and click **Start** button.
- Return to first instance of MAPS™ GSMAIP (**MSC**), click **Call Reception**  icon and observe that the calls are automatically received running the Rx script.
- Wait for the calls to terminate, and verify the call flow under the **Message Sequence** tab at both generation and reception end.
- Select any message in the ladder diagram and observe the respective decode message on the right pane for the respective message.



Sr No	Script Name	Profile	Call Info	Script Execution	Status	Events	Events
1	GSMA_Call.gls	MSPProfile0001	IMSI: 90170000000638.TMSI: 0x9587BC1D	Stop	Record File-Completed	Hold	
2	GSMA_Call.gls	MSPProfile0002	IMSI: 90170000000639.TMSI: 0x33570EBA	Stop	Send_File-Started	Hold	
3	GSMA_Call.gls	MSPProfile0003	IMSI: 90170000000640.TMSI: 0x0FFFD1BB	Stop	Send_File-Started	Hold	
4	GSMA_Call.gls	MSPProfile0004	IMSI: 90170000000641.TMSI: 0xAFB3701D	Stop	Send_File-Started	Hold	
5	GSMA_Call.gls	MSPProfile0005	IMSI: 90170000000642.TMSI: 0x2BB57157	Stop	Send_File-Started	Hold	
6	GSMA_Call.gls	MSPProfile0006	IMSI: 90170000000643.TMSI: 0xCB8E021F	Stop	Send_File-Started	Hold	
7	GSMA_Call.gls	MSPProfile0007	IMSI: 90170000000644.TMSI: 0xCDA7DE17	Stop	Send_File-Started	Hold	
8	GSMA_Call.gls	MSPProfile0008	IMSI: 90170000000645.TMSI: 0x636B713E	Stop	Send_File-Started	Hold	
9	GSMA_Call.gls	MSPProfile0009	IMSI: 90170000000646.TMSI: 0xFB4C3DFD	Stop	Send_File-Started	Hold	

Time	Direction	Message	Time
12:53:35.596000	→	LOCATION UPDATING REQUEST	12:53:37.253000
12:53:37.253000	←	CC connection confirm	12:53:37.269000
12:53:37.269000	→	AUTHENTICATION REQUEST	12:53:37.281000
12:53:37.281000	←	AUTHENTICATION RESPONSE	12:53:37.303000
12:53:37.303000	→	CIPHER MODE COMMAND	12:53:37.306000
12:53:37.306000	←	CIPHER MODE COMPLETE	12:53:37.339000
12:53:37.339000	→	LOCATION UPDATING ACCEPT	

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----- MTP3 User Adaptation Layer -----
0000 Version = 00000001 Release 1.0
0002 Message Class = 00000001 Transfer
0003 Transfer Message Type = 00000001 Payload Data
0004 Message Length = 84 (x00000054)
Protocol Data =
0008 Tag = x0210 Transfer Protocol Data
000A Length = 75 (x004B)
000E Originating Point Code =
Destination Point Code = 5.5.5(..101000 00101101)
0012 Point Code = 2.2.2(..010000 00010010)
0014 Service Indicator = ...0011 SCCP
0015 Network Indicator = .....00 International network
0016 Message Priority = .....00 Priority Code 0
  
```