

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

Quick Check Out Procedure

Functional verification of MAPS-IuCS application requires a system with 2 NIC cards for testing. MAPS-IuCS is configured as **RNC (Radio Network Controller)** on one NIC and as **MSC (Mobile Switching Center)** on the other.


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


- NIC1 IP address is 192.xx.xx.27, and configured as RNC
- NIC2 IP address is 192.xx.xx.28, and configured as MSC

***Note:** In this test scenario, we have configured MAPS™ IuCS as RNC generating calls and MSC to receive calls.

MAPS™ IuCS (GUI) – (MSC)

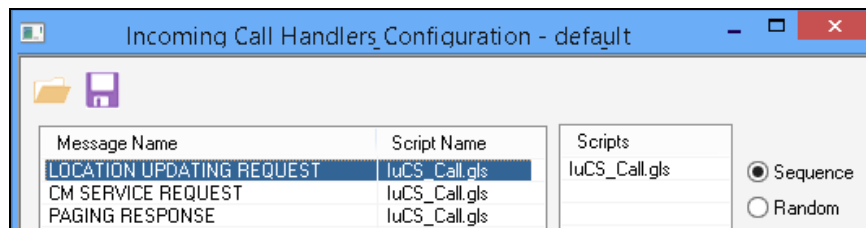
- Right-click on **MAPS-IuCS** application shortcut icon created on the desktop and select ‘Run as Administrator’ to invoke the application. The first instance of MAPS™ is configured for **Call Reception**.
- While invoking the MAPS-IuCS instance, verify the following in the Protocol Selection window -
 - **Protocol Standard** is set to **UMTS IUCS**
 - **Protocol Version** to **3GPP**
 - Select **Node** as **MSC**
 - **Transport** to **SCTP**. 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**
- Enable RTP Simulation = **Enable**
- Set **RTP Hardware Interface Type** to **PC NIC**
- Set **MSC IP Address** to 192.xx.xx.28 (NIC2 IP address)
- Set **MGW IP Address** to 192.xx.xx.28 (NIC2 IP address)
- Set **MSC Point Code** to **2.2.2**
- Set **RNC IP address** to 192.xx.xx.27 (NIC1 IP address)
- By default, **RNC Port** to **2905**
- By default, **MSC Port** to **2905**
- Set **RNC Point Code** to **1.1.1**
- Click  **Save** button and overwrite the **TestBedDefault** file.

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	192.168.13.28
MGW IP Address	192.168.13.28
PLMN Identifiers	
MTP Parameters	
MSC Point Code	2.2.2
Signaling Link Selection	1
Network Indicator	National
MSC Address Indicator	National
RNC Parameters	
Supported RNCs	1
Supported RNCs 1	
RNC IP Address	192.168.13.27
RNC Port	2905
MSC Port	2905
RNC Point Code	1.1.1
RNC Address Indicator	National
Location Area Identifier	1
HD RTP Media Configuration	
End User Configurations	MS_Profiles.xml
CSV File Name for Key IMSI	MS_Profiles_IMSI.CSV
CSV File Name for Key Calling Number	MS_Profiles_CallingNumber.CSV
Enable SMS Ratio for CSV	False
Ratio of SMS Calls	20



- On the same MAPS-IuCS main window, from **Configuration** menu → select **Incoming Call Handler Configuration**. Verify that **IuCS_Call.gls** script is set against **LOCATION UPDATING REQUEST**, **CM SERVICE REQUEST**, and **PAGING RESPONSE** messages. Exit from the window.





- From MAPS™ main window, select **Editor → Profile Editor**. Click  and select **MS_Profiles** and from the left pane, choose **MSPProfile0001** profile. Verify the following settings:
 - Set Type of Call = Terminate MO Call, Service Type for MT Call = Speech Call,
 - Make sure that the LAC = 0001, SAC = 0001, and RNC ID = 01 parameter values are same as configured in the testbed setup window.
 - Scroll down and Set **Codec Options = PCMU**
 - In Traffic Config list → set **Traffic Type = Auto Traffic File** and **Traffic Direction = TxOnly**.
 - By default, the **Traffic Profile Name** is set to **Profile0001**
 - Click  **Save** button and overwrite **MS_Profiles** file. Exit from the Profile Editor window.

MAPS™ IuCS (GUI) – (RNC)

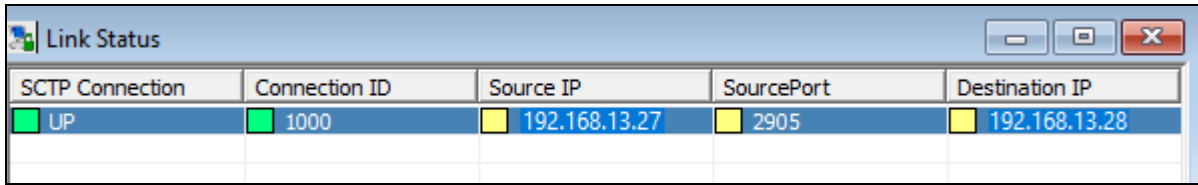
- Right-click on **MAPS-IuCS** application shortcut icon created on the desktop and select ‘Run as Administrator’ to invoke the application. This instance of MAPS™ is configured for **Call Generation**.
- While invoking another MAPS-IuCS instance, verify the following in the Protocol Selection window-
 - **Protocol Standard** is set to **IuCS**
 - **Protocol Version** to **3GPP**
 - Select **Node** as **RNC**.
 - **Transport** to **SCTP**. Click **Ok**

- By default, **Testbed Setup** window is displayed. Click  and select **TestBedSetup** and check for the parameter default values as listed below:
 - **M3UA Termination Type** is set to **IPSP**
 - Enable RTP Simulation = Enable
 - Set **RTP Hardware Interface Type** to **PC NIC**
 - Set **SCTP mode** to **Client**
 - Set **RNC IP Address** to 192.xx.xx.27 (NIC1 IP Address)
 - Set **MGW IP Address** to 192.xx.xx.27 (NIC1 IP Address)
 - By default, **RNC Port** is set to **2905**
 - Set **RNC Point Code** to **1.1.1**
 - Set **MSC IP address** to 192.xx.xx.28 (NIC2 IP Address)
 - By default, **MSC Port** to **2905**
 - Set **MSC Point Code** to **2.2.2**
 - Click  **Save** button and overwrite the **TestBedSetup** file.


Config	Value
[-] RNC Configurations	
M3UA Termination Type	IPSP
Enable RTP Simulation	Enable
RTP Hardware Interface Type	PC NIC
SCTP Mode	client
[-] RNC	1
[-] RNC 1	
RNC IP Address	192.168.13.27
MGW IP Address	192.168.13.27
RNC Port	2905
[-] PLMN Identifiers	
[-] M3UA Parameters	
RNC Point Code	1.1.1
Signaling Link Selection	1
Network Indicator	International
RNC Address Indicator	National
[-] MSC Parameters	
MSC IP Address	192.168.13.28
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	0

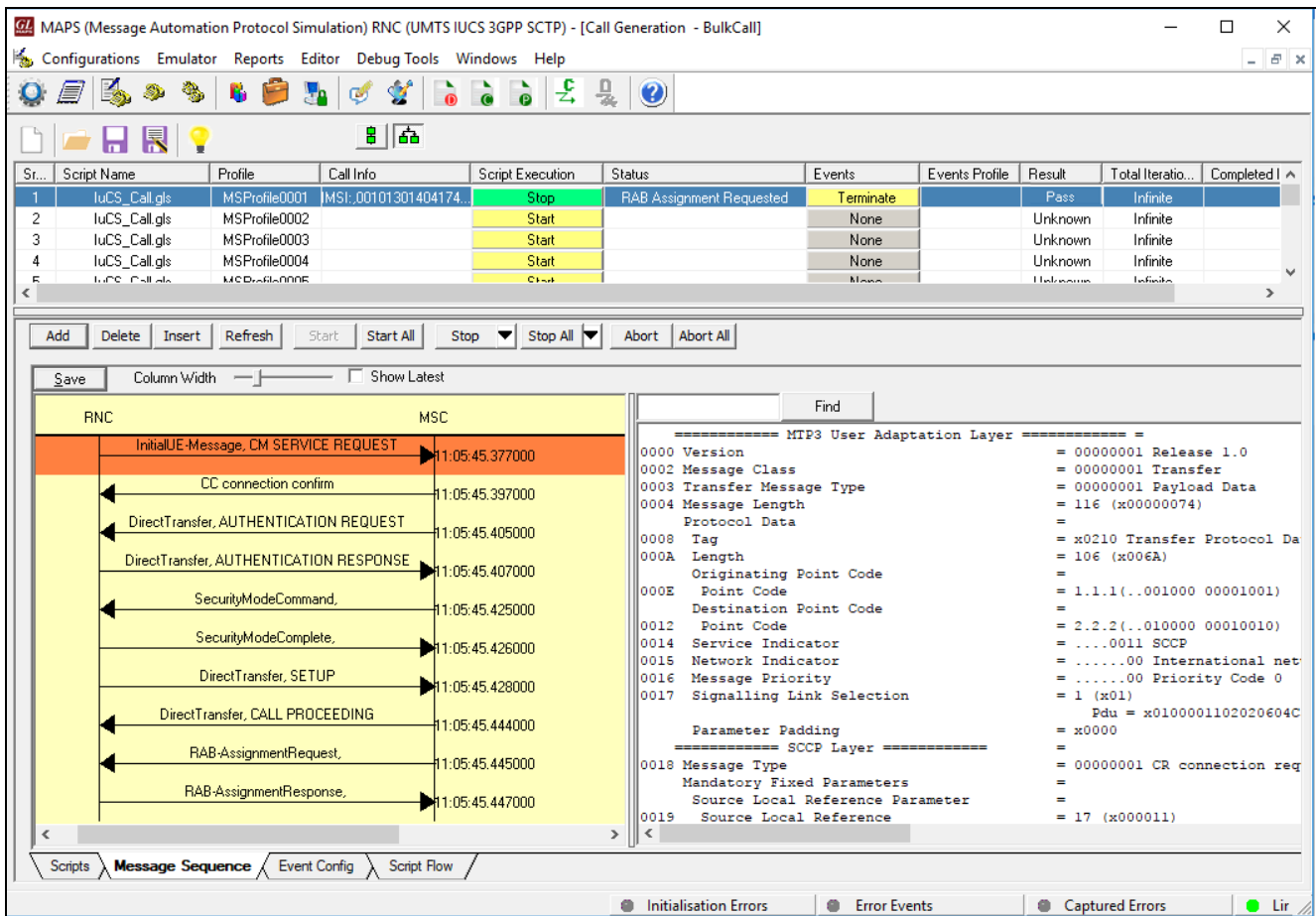
- From MAPS™ main window, select **Editor → Profile Editor**. Click  and select **MS_Profiles** and from the left pane, choose **MSPProfile0001** profile. Verify the following settings:
 - Set CM Service Type = Mobile Originating Call Establishment; Location Update Type = Normal location updating
 - Make sure that the Location Area Code = 0001, Service Area Code = 0001, and RNC ID = 01 parameter values are same as configured in the testbed setup window.
 - Scroll down and Set **Codec Options = PCMU**
 - In Traffic Config list → set **Traffic Type = Auto Traffic File** and **Traffic Direction = TxOnly**.
 - By default, **Traffic Profile Name** is set to **Profile0001**
 - Click  **Save** button and overwrite **MS_Profiles** file. Exit from the Profile Editor window.
- Start** the testbed on both the MAPS instances (RNC and MSC)

- 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.



SCTP Connection	Connection ID	Source IP	SourcePort	Destination IP
UP	1000	192.168.13.27	2905	192.168.13.28

- Note: Fails to start SCTP Services and associated SCTP Link status is Down**, then **Turn OFF Windows Firewall** (navigate to Control Panel → Systems & Security → Windows Firewall, click Turn Off Windows Firewall for all networks).
- In the MAPS-IuCS RNC instance, click the **Call Generation**  icon on main window, and invoke the **Call Generation** window.
- In the first row of the “**Call Generation**” table, double-click the “**Scripts**” cell and select **IuCS_Call.gls**. Similarly, double-click the “**Profile**” cell and select **MSPProfile0001** and click **Start** button to initiate call generation.
- 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.



Sl...	Script Name	Profile	Call Info	Script Execution	Status	Events	Events Profile	Result	Total Iteratio...	Completed I ^
1	IuCS_Call.gls	MSPProfile0001	MSI:00101301404174...	Stop	RAB Assignment Requested	Terminate		Pass	Infinite	
2	IuCS_Call.gls	MSPProfile0002		Start		None		Unknown	Infinite	
3	IuCS_Call.gls	MSPProfile0003		Start		None		Unknown	Infinite	
4	IuCS_Call.gls	MSPProfile0004		Start		None		Unknown	Infinite	
5	IuCS_Call.gls	MSPProfile0005		Start		None		Unknown	Infinite	

Time	Direction	Message
11:05:45.377000	RNC → MSC	InitialUE-Message, CM SERVICE REQUEST
11:05:45.397000	MSC → RNC	CC connection confirm
11:05:45.405000	RNC → MSC	DirectTransfer, AUTHENTICATION REQUEST
11:05:45.407000	MSC → RNC	DirectTransfer, AUTHENTICATION RESPONSE
11:05:45.425000	RNC → MSC	SecurityModeCommand,
11:05:45.426000	MSC → RNC	SecurityModeComplete,
11:05:45.428000	RNC → MSC	DirectTransfer, SETUP
11:05:45.444000	MSC → RNC	DirectTransfer, CALL PROCEEDING
11:05:45.445000	RNC → MSC	RAB-AssignmentRequest,
11:05:45.447000	MSC → RNC	RAB-AssignmentResponse,


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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 = 116 (x00000074)
Protocol Data =
0008 Tag = x0210 Transfer Protocol Da
000A Length = 106 (x006A)
000E Originating Point Code =
Point Code = 1.1.1(..001000 00001001)
Destination Point Code =
Point Code = 2.2.2(..010000 00010010)
0014 Service Indicator = ..0011 SCCP
0015 Network Indicator = .....00 International net
0016 Message Priority = .....00 Priority Code 0
0017 Signalling Link Selection = 1 (x01)
Pdu = x01000001102020604C
Parameter Padding = x0000
===== SCCP Layer =====
0018 Message Type = 00000001 CR connection req
Mandatory Fixed Parameters
Source Local Reference Parameter =
0019 Source Local Reference = 17 (x000011)
  
```

- Return to the MAPS-IuCS (MSC) instance, click on  icon and invoke **Call Reception** window, observe that the calls are automatically received running the Rx script.