

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

## Pre-requisites

The Quick check-out procedure explained in this document requires **a PC with 2 NIC cards** to perform loopback testing using a single MAPS™ LTESLs application.

If the PC has only one NIC card, then the MAPS™ SLs can be tested against any DUT in the network in a similar manner, with destination IP address and port set to that of the DUT's.

We assume that the following purchased licenses are installed on the test PC as explained in the *MAPS™ SLs Quick Install Guide*.

- PKS148 (MAPS SLs Interface Emulator)

## Quick Check-out Procedure

For *self-test* of MAPS™ SLs application, you may prepare **a single PC with 2 NIC cards**, one as source and other as destination. Ensure that both NIC cards are within the same subnet, assigned with proper free IP addresses available in the subnet, and connected to a switch. If the system is connected to a LAN, contact your system administrator to avoid IP address conflicts before you perform the steps below. If the PC has only one NIC card, then the MAPS™ SLs can be tested against any DUT in the network in a similar manner, with destination IP address and port set to that of the DUT's.

For functional verification, MAPS-LTESLs is configured as **E-SMLC** (Enhanced- Serving Mobile Location Centre) on one NIC and as **MME** (Mobile Management Entity) on the other.

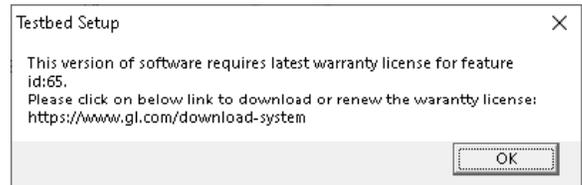
Note down the IP addresses of NIC1 and NIC2. In this example the IP addresses used and configured are:

- NIC1 IP address is 192.xx.xx.120, and configured as **E-SMLC**
- NIC2 IP address is 192.xx.xx.122, and configured as **MME**

**\*Note:** In this test scenario, we have configured MAPS™ LTE SLs as MME generating calls and E-SMLC to receive calls.

**Note:** Ensure that latest warranty license (GLSupportWarrantyLicenseInstaller.exe) is installed and confirm that PKS148 (MAPS™ SLs Interface Emulator) is listed in Warranty Application List. Refer to *MAPS-SLs-Quick-Install-Guide*

**Note:** The "Warranty Error" as shown in the figure may be prompted, when the user tries to start the testbed, then you may not have installed the Warranty licenses, or the license has been expired.

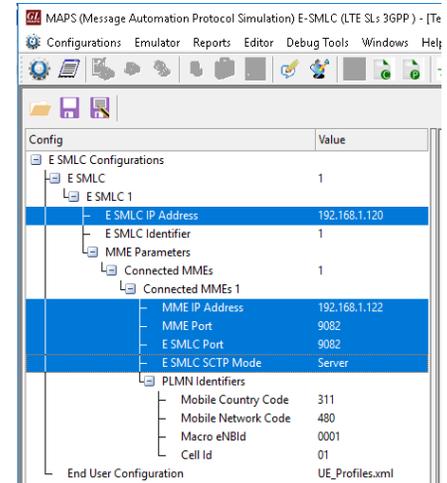


## MAPS™ LTE SLs (GUI) – (E-SMLC)

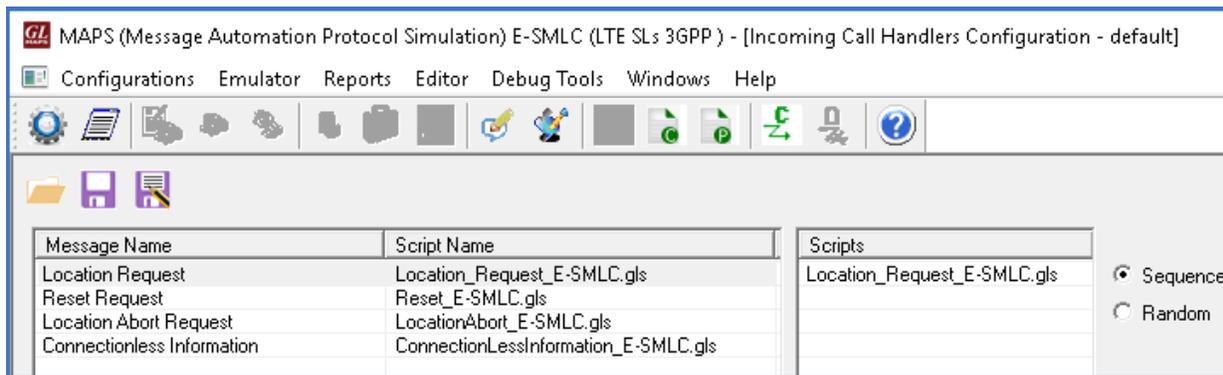


- Right-click on **MAPS-LTESLs** application using shortcut icon **MAPSLTESLs** created on the desktop and select '**Run as Administrator**'. This instance of MAPS™ is configured for **Call Reception**.
- While invoking the first MAPS™ LTE SLs instance, verify the following in the **Protocol Selection** window -
  - **Protocol Standard** is set to **LTE SLs**
  - **Protocol Version** to **3GPP**
  - Select **Node** as **E-SMLC**. Click **Ok**

- By default, **Testbed Setup** window is displayed. Click  and select **TestBedDefault** configuration and check for the parameter default values as listed below:
  - Set **E-SMLC IP Address** to 192.xx.xx.120 (NIC1 IP address)
  - Set **MME IP address** to 192.xx.xx.122 (NIC2 IP address)
  - Set **MME Port** to **9082**
  - Set **E-SMLC Port** to **9082**
  - **E-SMLC SCTP Mode** is set to **Server**
  - Click on the **Save**  button



- From MAPS™ SLs (E-SMLC) main window, select **Configuration** → **Incoming Call Handler Configuration**. Verify that the **Location\_Request\_E-SMLC.gls** script is loaded against the **Location Request** message. Exit from the window.

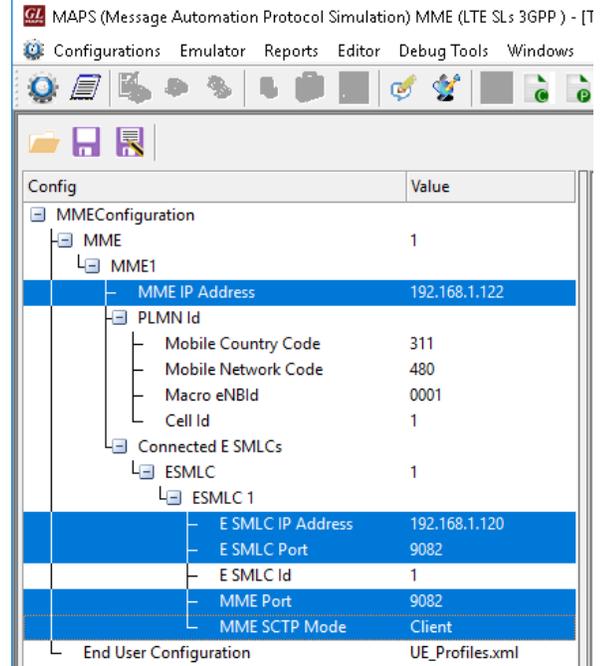


## MAPS™ LTESLs (GUI) – (MME)

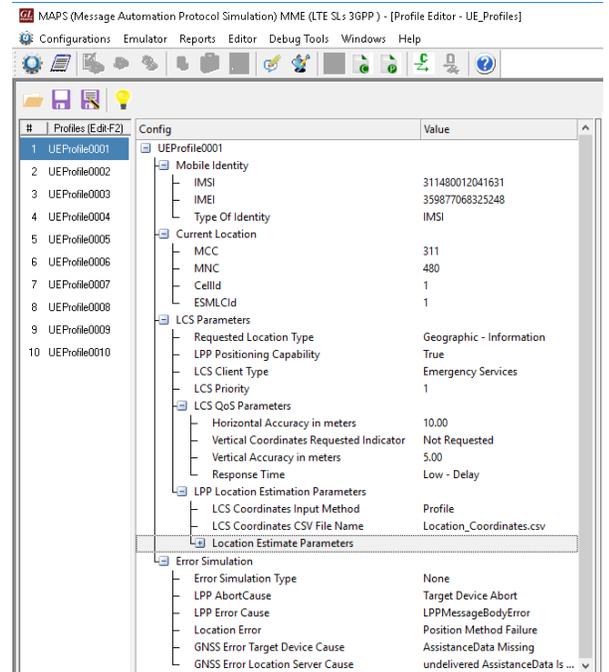


- Right-click on the **MAPS-LTE SLs** application using shortcut icon  created on the desktop and select '**Run as Administrator**'. This instance of MAPS™ is configured for **Call Generation**.
- While invoking the second MAPS™ LTE SLs instance, verify the following in the **Protocol Selection** window -
  - **Protocol Standard** is set to **LTE SLs**
  - **Protocol Version** to **3GPP**
  - Select **Node** as **MME**. Click **Ok**

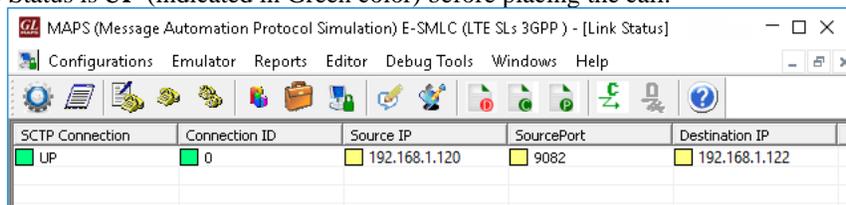
- By default, **Testbed Setup** window is displayed. Click  and select **TestBedDefault** configuration and check for the parameter default values as listed below:
  - Set **MME IP Address** to 192.xx.xx.122 (NIC2 IP address)
  - Set **E-SMLC IP address** to 192.xx.xx.120 (NIC1 IP address)
  - Set **E-SMLC Port** to **9082**
  - Set **MME Port** to **9082**
  - **MME SCTP Mode** is set to **Client**
  - Click **Save**  button.



- From **MAPS SLs (MME)** main window, select **Editor** → **Profile Editor**. Profile Editor window is invoked. Click  **Load Configuration** and select **UE\_Profiles**. Select the sub-profile from the left pane, used in [Call Generation window](#) for procedure simulation.
- For this quick procedure, select **UEProfile0001**, from left pane and verify the **Mobile Identity** and **LCS Parameter** settings as shown in the figure.
- Click  **Save** and save the changes to the same configuration file. close from the Profile Editor window.

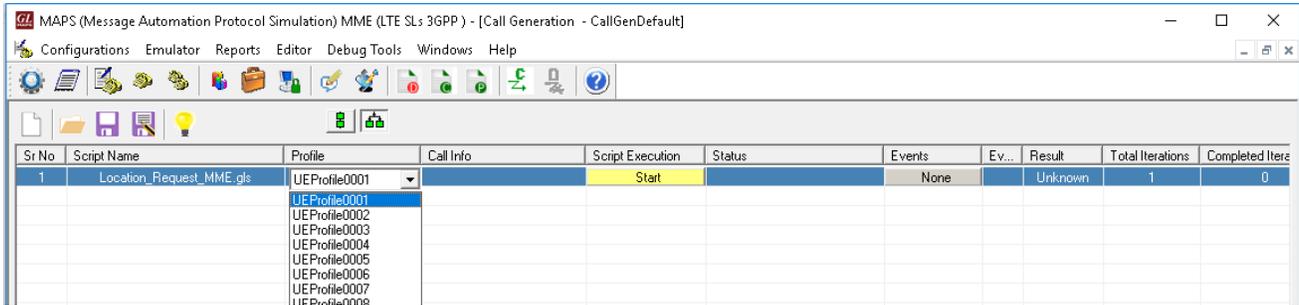


- Start** the testbed on both the MAPS (E-SMLC and MME) instances.
- On both the MAPS™ instances main window, from **Reports** menu → select **Link Status** option to verify the link status. Verify that the **SCTP Link Status** is **UP** (indicated in Green color) before placing the call.

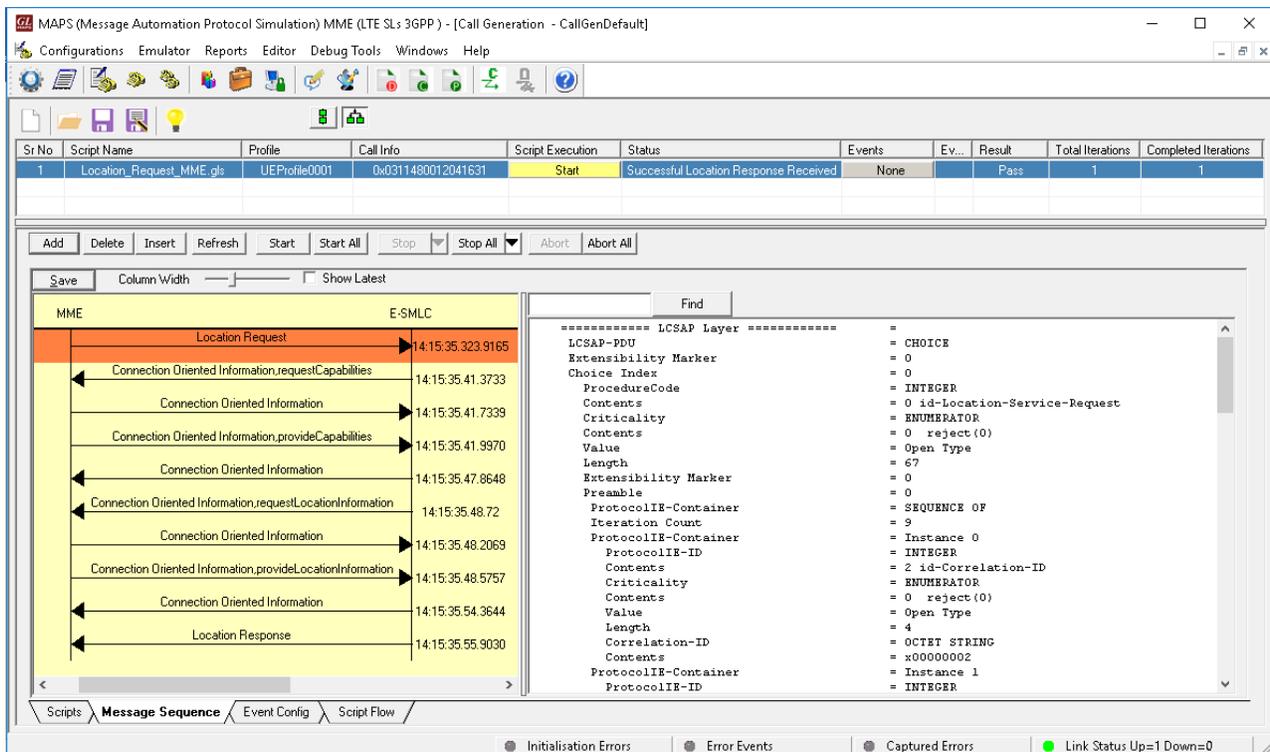


**Note:** Fails to start SCTP Services and associated SCTP Link status is Down, then **Turn OFF Windows Firewall** (navigate to Control Panel → Systems & Security → Windows Firewall, click Turn Off Windows Firewall for all networks).

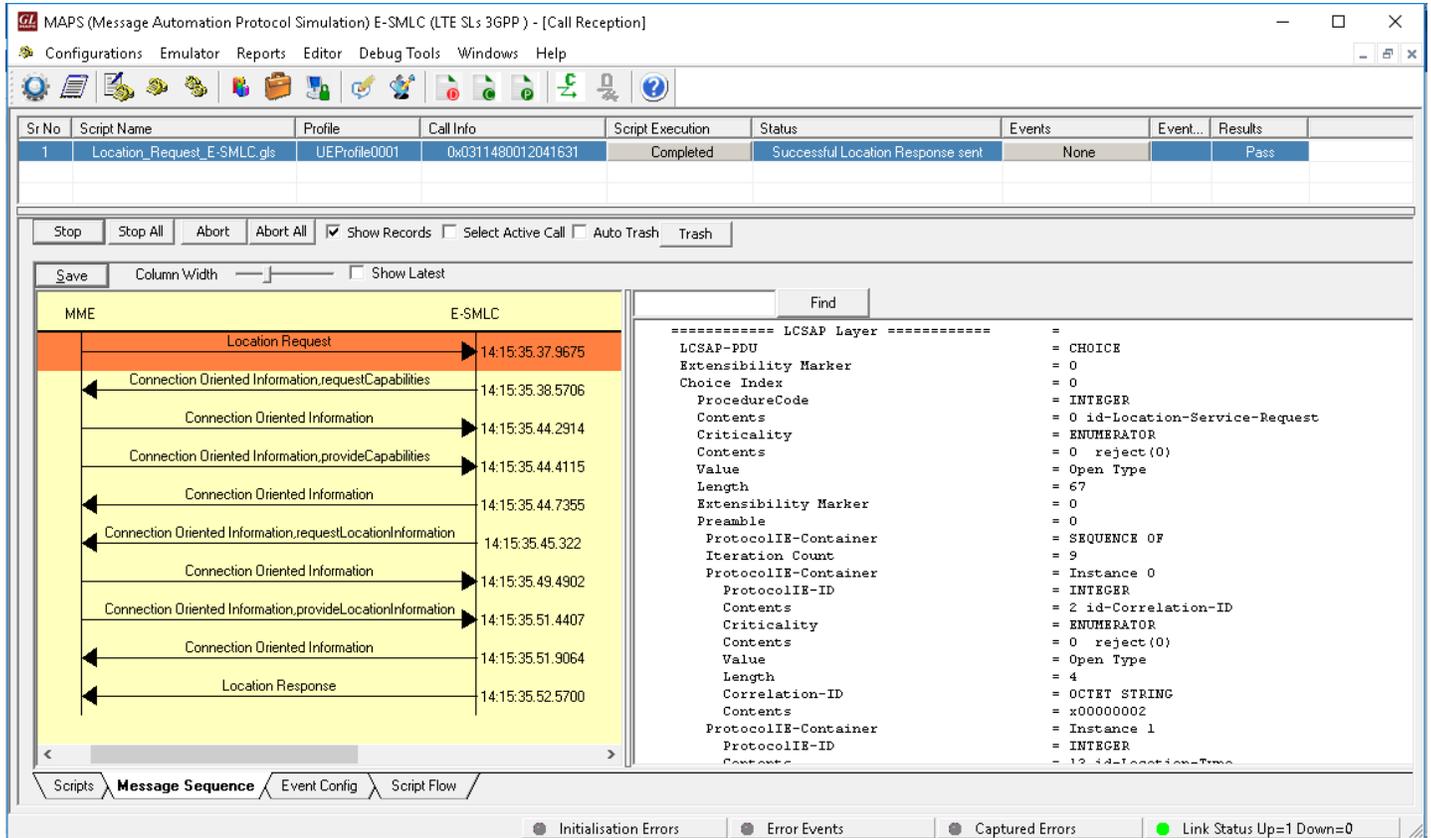
- In the MAPS- LTESLs (configured as MME) instance, click the **Call Generation**  icon on main window, and invoke the **Call Generation** window.
- By default, you will observe that multiple call instances are loaded with **Location\_Request\_MME.gls** script and **UEProfile00\*\*** profiles. **Note:** If the Profiles are not configured by default, then the user should manually click the area in the Profile column and select the configured profile (UEProfile0001) from the drop-down list.



- Select the first call instance loaded with **Location\_Request\_MME.gls** script and **UEProfile0001** profile in the Call Generation window and click **Start** button to initiate the call generation.
- 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.



- Return to the MAPS- LTESLs (configured as **E-SMLC**) instance, click the **Call Reception**  icon on main window, and invoke the **Call Reception** window.
- In the **Call Reception** window, observe that the same call is automatically received running the Rx script.



Sr No	Script Name	Profile	Call Info	Script Execution	Status	Events	Event...	Results
1	Location_Request_E-SMLC.gls	UEProfile0001	0x0311480012041631	Completed	Successful Location Response sent	None		Pass

MME	E-SMLC
	Location Request → 14:15:35.37.9675
← Connection Oriented Information,requestCapabilities	14:15:35.38.5706
← Connection Oriented Information	14:15:35.44.2914
← Connection Oriented Information,provideCapabilities	14:15:35.44.4115
← Connection Oriented Information	14:15:35.44.7355
← Connection Oriented Information,requestLocationInformation	14:15:35.45.322
← Connection Oriented Information	14:15:35.49.4902
← Connection Oriented Information,provideLocationInformation	14:15:35.51.4407
← Connection Oriented Information	14:15:35.51.9064
← Location Response	14:15:35.52.5700

```

===== LCSAP Layer =====
LCSAP-PDU = CHOICE
Extensibility Marker = 0
Choice Index = 0
ProcedureCode = INTEGER
Contents = 0 id-Location-Service-Request
Criticality = ENUMERATOR
Contents = 0 reject(0)
Value = Open Type
Length = 67
Extensibility Marker = 0
Preamble = 0
ProtocolIE-Container = SEQUENCE OF
Iteration Count = 9
ProtocolIE-Container = Instance 0
ProtocolIE-ID = INTEGER
Contents = 2 id-Correlation-ID
Criticality = ENUMERATOR
Contents = 0 reject(0)
Value = Open Type
Length = 4
Correlation-ID = OCTET STRING
Contents = x00000002
ProtocolIE-Container = Instance 1
ProtocolIE-ID = INTEGER
Contents = 12 id-Location-Tra
    
```

- This completes the functional verification of MAPS™ LTE SLs application. For any queries and technical issues contact GL Communications Inc at [info@gl.com](mailto:info@gl.com).