

*It is assumed that the T1/E1 Analyzer Hardware, Software and License installations are already performed referring to the purchased Hardware Installation Guide.*

## MAPS™ INAP Application Verification

For functional verification, 2 instances of MAPS™ INAP application can be configured on a single PC configured as gsmSCF and gsmSSF nodes. The following steps explain MAPS™ INAP configuration on the same PC in loopback mode to simulate IN service procedures.

On first instance, MAPS™ is configured as **gsmSCF**, and on the second instance, MAPS™ is configured as **gsmSSF** node generating supported procedure messages.

**Cross-connect T1/E1 Port #1 and Port #2 of the Hardware unit back-to-back using RJ48c loopback cable.**

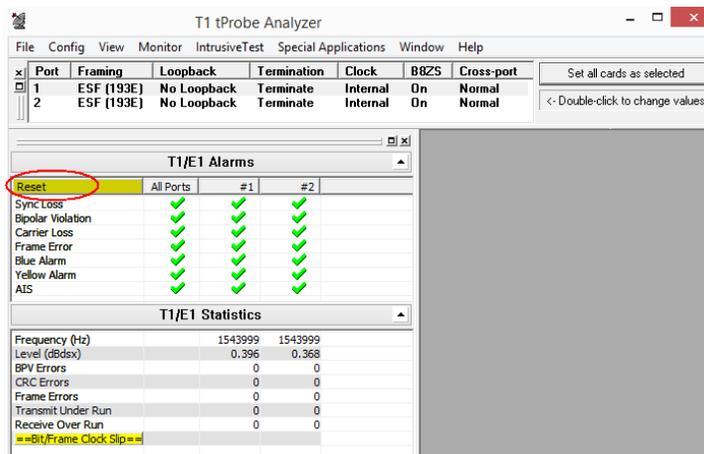


**RJ48c Loopback Cable**

- Click on the **T1/E1 Analyzer** icon created on the desktop (or) from the installation directory, click on **UsbNGT1.exe** and launch T1/E1 Analyzer application.

**Note:** The application may take some time to get started due to hardware and software initializations.

- Verify the following **Interface** settings in the T1/E1 main GUI
  - For **T1 Analyzer**, configure Port #1 and Port #2 with the following  
Framing = ESF, Loopback = No Loopback, Termination = Terminate, Clock = Internal, Cross Port = Normal
  - For **E1 Analyzer**, configure Port #1 and Port #2 with the following  
Framing = CCS, Loopback = No Loopback, Termination = Terminate, Clock = Internal, Cross Port = Normal
- Verify the **Sync and Alarm Status** between the ports are indicated in **Green** ✓ in **T1/E1 Alarms** pane. Click **Yellow Reset** button to reset the alarms.



- From T1/E1 Analyzer main window, invoke the WCS Server: **Special Applications > Windows Client Server (WCS) > WCS Server.**
- Configure WCS as follows -
  - Listen Port = 17090 (for E1 systems); 17080 (for T1 systems)

- Messaging = Binary
- Version = 4
- Click on **Start GL Server** button. Minimize the window.

### **First MAPS™ INAP (GUI) – (gsmSCF)**

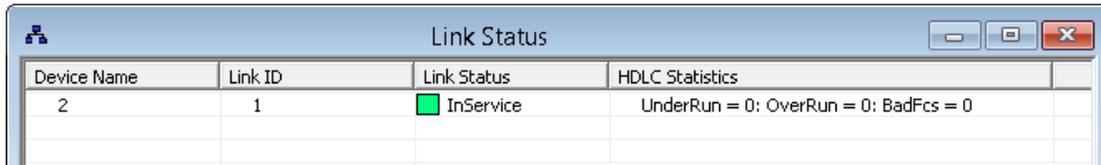
- From T1/E1 Analyzer main window, from **Special Applications** menu > select **Protocol Emulation > MAPS INAP Emulator**
- While invoking the MAPS™ INAP instance, verify the following in the **Protocol Selection** window -
  - Protocol Standard = INAP
  - Protocol Version = 3GPP
  - Node = gsmSCF
  - Click Ok
- This instance of MAPS™ is configured for **Call Reception**
- By default, Testbed Setup window is displayed. Click  and select **gsmSCF** file and check for the following parameter default values:
  - T1/E1 Port Number = 1
  - Signaling Timeslot = 23 (for T1); 31 (for E1)
  - SCF Point Code = 3.3.3
  - SCF Subsystem Number = INAP-12
  - Node Type = **SSF**
  - Destination Point Code = 2.2.2
  - Destination Subsystem Number = INAP-12
  - Adjacent Point Code = 2.2.2
- From MAPS INAP main window, select **Configuration > Incoming Call Handler Configuration**. Verify that the **INAP\_VoiceCall\_Service\_SCF.gls** script is loaded against the **initialDP** message. Exit from the window.

### **Second MAPS™ INAP (GUI) – (gsmSSF)**

- From T1/E1 Analyzer main window, from **Special Applications** menu > select **Protocol Emulation > MAPS INAP Emulator**
- While invoking another MAPS™ INAP instance, verify the following in the **Protocol Selection** window -
  - **Protocol Standard = INAP**
  - **Protocol Version = 3GPP**
  - **Node = gsmSSF**
  - Click **Ok**
- This instance of MAPS™ is configured for **Call Generation**
- By default, Testbed Setup window is displayed. Click  and select **gsmSSF** file and check for the following parameter default values:
  - T1/E1 Port Number = 2
  - Signaling Timeslot = 23 (for T1); 31 (for E1)
  - SCF Point Code = 2.2.2
  - SCF Subsystem Number = INAP-12
  - Node Type = **SCF**
  - Destination Point Code = 3.3.3
  - Destination Subsystem Number = INAP-12

➤ Adjacent Point Code = 3.3.3

- **Start** the testbed on both the MAPS™ instances.
- **Note:** Once the test bed setup is started on both the instances of MAPS™ INAP (gsmSCF and gsmSSF), from the main window, select **Reports** menu > invoke **Link Status** window. Verify that the **Link Status** is **UP** (indicated in Green color) before placing the call.



Device Name	Link ID	Link Status	HDLC Statistics
2	1	<span style="color: green;">■</span> InService	UnderRun = 0: OverRun = 0: BadFcs = 0

- On both the MAPS™ main window, click  icon and open **Call Reception** window. Observe that SLTM script is activated.
- In MAPS™ INAP (SSF) main window, from **Emulator** menu > select **Call Generation** option
  - By default, you will observe multiple call instances loaded with scripts supporting the INAP procedures and profiles. Select the call instance loaded with the **INAP\_VoiceCall\_Service\_SSF.gls** script and **MSPProfile01** profile.
  - Click on the yellow **Start** button and initiate the procedure.
- In MAPS™ SCF main window, click  icon and open **Call Reception** at the **gsmSCF** window. Observe that the calls are automatically received running the Rx script.
- Wait for the call to terminate, and verify the **Message Sequence** flow 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.

MAPS (Message Automation Protocol Simulation) gsmSSF (INAP 3GPP) - [Call Generation - INAP\_VoiceCall\_Service\_BulkCall]

Configurations Emulator Reports Editor Debug Tools Windows Help

Sr...	Script Name	Profile	Call Info	Script Execution	Status	Events	Eve...	Result	Total Iterat...	Completed Iter
1	INAP_VoiceCall_Service_SSF.gls	MSProfile001	0xDC00DEFBC	Stop	Event Report for o...	Report Event oDt...		Pass	Infinite	21
2	INAP_VoiceCall_Service_SSF.gls	MSProfile002		Start		None		Unknown	Infinite	0
3	INAP_VoiceCall_Service_SSF.gls	MSProfile003		Start		None		Unknown	Infinite	0
4	INAP_VoiceCall_Service_SSF.gls	MSProfile004		Start		None		Unknown	Infinite	0

Add Delete Insert Refresh Start Start All Stop Stop All Abort Abort All

Save Column Width Show Latest

SSF SCF

```

Initial DP → 16:43:38.353000
Request Report BCSM Event ← 16:43:38.972000
Request Report BCSM Event ← 16:43:38.982000
continue ← 16:43:38.994000
Event Report BCSM → 16:43:39.014000
Apply Charging ← 16:43:39.605000
        
```

Find

```

===== MTP3 Layer =====
0000 Service Indicator = ....0011 SCCP
0000 Priority Code = .11.... Priority Co
0000 Sub-service field = 10..... National Ne
0001 DPC = 3.3.3(00011011 ..01:
0002 OPC = 2.2.2(10..... 00000
0004 Signalling Link Code = 0001.... (1)
Higher Layer Data = x0901030E190B920C00:
===== SSCP Layer =====
0005 Message Type = 00001001 UDT unidate
Mandatory Fixed Parameters =
Protocol Class Parameter =
0006 Class = ....0001 Class 1
0006 Message Handling (Class 0 and 1 only) = 0000.... No Special
0007 Pointer to Mandatory Parameter = Parm0 offset x03 (
0008 Pointer to Mandatory Parameter = Parm1 offset x0E (
0009 Pointer to Mandatory Parameter = Parm2 offset x19 (
Mandatory Variable Length Parameters = -----
Called Party Address = mandatory parameter
000A Parameter length = 11
Address Indicators =
        
```

Scripts Message Sequence Event Config Script Flow

● Initialisation Errors ● Error Events ● Captured Errors ● Link Status Up=1 Down=0