TNMS NORTHBOUND TMF/CORBA IF (NTI)

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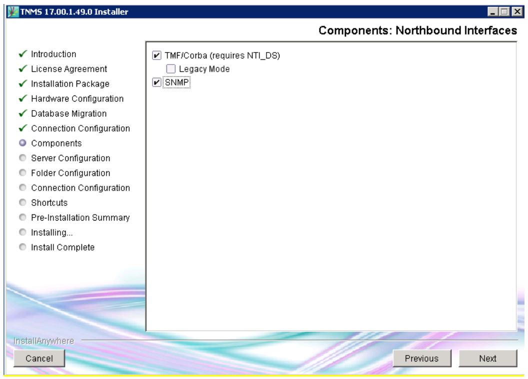
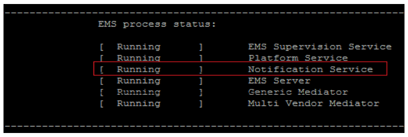
Contents

1. TMF Northbound IF Installation & Configuration

1.1 WM new Mesh String TMF 814 – 4.5 TNMS Installation

> *During TNMS Server installation, at the "**Northbound Interfaces**" step, the TMF/Corba component is required to be installed.*

Purpose	*Install Northbound TMF/Corba Interface (NTI) at TNMS Server*
Procedure	At the Northbound Interfaces step, during TNMS Server installation, select the TMF/Corba component with **no "Legacy Mode" (box unchecked)**. This will deploy the profile WM new Mesh String with TMF 814 – 4.5, as required. *The NTI_DS software installation is only required on Windows OS, LINUX OS deployments have NTI_DS natively.*  TNMS 17.00.1.49.0 Installer Components: Northbound Interfaces ☑ TMF/Corba (requires NTI_DS) □ Legacy Mode ☑ SNMP ✓ Introduction ✓ License Agreement ✓ Installation Package ✓ Hardware Configuration ✓ Database Migration ✓ Connection Configuration ● Components ○ Server Configuration ○ Folder Configuration ○ Connection Configuration ○ Shortcuts ○ Pre-Installation Summary ○ Installing... ○ Install Complete InstallAnywhere Cancel Previous Next Having the installation done, check that the appropriate **EMS processes** are running by means of executing the command: ***./opt/coriant/tnms/SCS/bin/emsstarterdaemon.sh status*** If not running, execute the command: ***./opt/coriant/tnms/SCS/bin/emsstarterdaemon.sh start*** Check that **Notification Service** is in the "*Running*" state.  EMS process status: [Running] EMS Supervision Service [Running] Platform Service [Running] Notification Service [Running] EMS Server [Running] Generic Mediator [Running] Multi Vendor Mediator
Notes	

1.2 TNMS TMF Northbound IF Configuration

1.2.1 ASON/GMPLS Configuration

For the ASON/GMPLS functionality to be available thru TMF Northbound IF, namely the establishment and release of (DSR) ASON calls, the operator needs to enable the functionality before it can be used. *This will rely on the used WM new Mesh String with TMF 814 – 4.5 profile*.

Purpose	Configure the **nti.properties** file to enable the ASON/GMPLS functionality thru TMF Northbound IF
Procedure	In order to be possible from TMF Northbound IF to establish and release DSR ASON Calls the following entries need to be changed/added to the file**:** **\**server\\bicnet\\deployments\\bicnet.ear\\conf\**nti.properties** # **nti.ChtPrivatePassEnabled=true** **nti.CallOperationsTimeout=30** **nti.EquipmentOperationsTimeout=10** **nti.PgOperationsTimeout=120** Restart the **EMS processes:** ***./opt/coriant/tnms/SCS/bin/emsstarterdaemon.sh stop*** ***./opt/coriant/tnms/SCS/bin/emsstarterdaemon.sh start***
Notes	

1.2.2 PM High Precision Configuration

For **Performance Management High Precision** to be available thru TMF Northbound IF, instead of using a **Float** variable (TMF standard), the operator needs to configure it according with the below steps.

Purpose	Configure the **nti.properties** file to set **High Precision** thru TMF Northbound IF related to **Performance Management Counters (e.g. good octets)**
Procedure	In order to be possible from TMF Northbound IF to report **Performance Management Counters (e.g. good octets)** in a **High Precision format,** change the following entry at the file: **\**server\\bicnet\\deployments\\bicnet.ear\\conf\**nti.properties** **nti.PmUploadUseHighPrecision=true** ***This change will "force" NTI to use exactly the same precision as TNMS/LCT.*** The file is readable by the Server with an interval of about 5 minutes, wait a longer time (e.g. 15m) to have it activated, or restart TNMS/EMS: *./opt/coriant/tnms/SCS/bin/emsstarterdaemon.sh stop* *./opt/coriant/tnms/SCS/bin/emsstarterdaemon.sh start*
Notes	

1.3 Firewall Configuration between TNMS/TMF and Umbrella System

In case a Firewall between TNMS/TMF IF and the Umbrella System exists, quite common, the one needs to open the relavant Protocol(s) and respective Port(s) at that Firewall. This section intends to cover the requirements related to the Firewall configuration in terms of Protocol(s) and respective Port(s), on both communication directions.

Purpose	Configure the relevant Protocol(s) and respective Port(s) at Firewall to allow communication between TNMS/TMF IF and the Umbrella System on both directions.
Procedure	In order to be possible the communication between TNMS/TMF IF and the Umbrella System thru an existing Firewall, the following Protocol(s) and respective Port(s) needed to be open at the Firewall: **1) FROM** Umbrella System **TO** TNMS/TMF IF: Destination Port: Default LINUX **59052** (**Configurable**) Protocol: TCP Application: **CORBA Notification Service** Encrypted: No Description: TMF-814 interface for integration into umbrella NMS. Destination Port: **3528** Protocol: TCP Application: **CORBA Naming Service** Encrypted: No Description: TMF-814 interface for integration into umbrella NMS. Regrading to the **Configurable Port** mentioned above (**CORBA Notification Service**), the one can change it following the next steps (at TNMS Server): a) Stop the following Service at TNMS Server / TMF IF: $SCS_BIN_DIR/scs_ctl stop NoSe

Procedure

b) Open and Edit the file:
$NOSE_HOME/domains/OpenFusion/localhost/NotificationService/**NotificationService.xml**
Change the follwowing Entry to the desired Port:

```
<Property lock="false" enabled="true" sysprop="false">
    <PropertyName>Port</PropertyName>
    <PropertyValue>59052</PropertyValue>
</Property>
```

c) start again the Service at TNMS Server / TMF IF:

```
$SCS_BIN_DIR/scs_ctl start NoSe
```

Remark: *When changing this Port (Configurable) the Umbrella System will stop to receive notifications for a while, which is expected.*

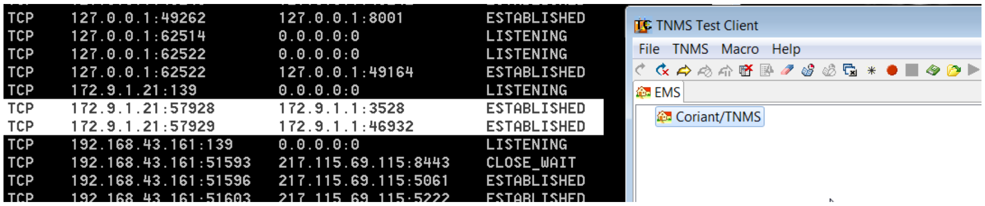
2) FROM TNMS/TMF IF **TO** Umbrella System:

Destination Port: **Configurable** => *The port where the Umbrella System binded the NmsSession_I CORBA object*
Protocol: TCP
Application: **CORBA**
Encrypted: No
Description: **NmsSession_I CORBA object**

The following Port range shall be ensured at TNMS/TMF IF side:
49152<-> 65535 => *NmsSession_I CORBA object entity selection, UNIX OS related*

EXAMPLE OF ESTABLISHED SESSIONS (*using netstat -na*)
Umbrella System (TTT-Tool): 172.9.1.21
TNMS/TMF (Server): 172.9.1.1

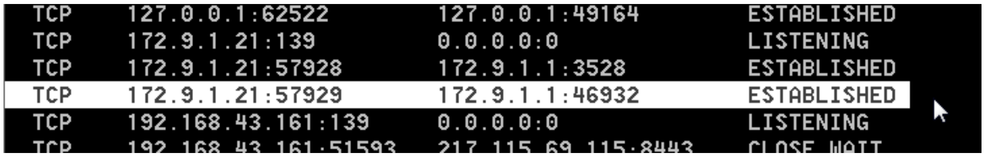
Just connecting the Umbrella System (TTT Tool) to TNMS Server (TMF-IF), with **No Notification Sevices Enabled**:



```
TCP    127.0.0.1:49262        127.0.0.1:8001         ESTABLISHED
TCP    127.0.0.1:62514        0.0.0.0:0              LISTENING
TCP    127.0.0.1:62522        0.0.0.0:0              LISTENING
TCP    127.0.0.1:62522        127.0.0.1:49164        ESTABLISHED
TCP    172.9.1.21:139         0.0.0.0:0              LISTENING
TCP    172.9.1.21:57928       172.9.1.1:3528         ESTABLISHED
TCP    172.9.1.21:57929       172.9.1.1:46932        ESTABLISHED
TCP    192.168.43.161:139     0.0.0.0:0              LISTENING
TCP    192.168.43.161:51593   217.115.69.115:8443    CLOSE_WAIT
TCP    192.168.43.161:51596   217.115.69.115:5061    ESTABLISHED
TCP    192.168.43.161:51603   217.115.69.115:5222    ESTABLISHED
```

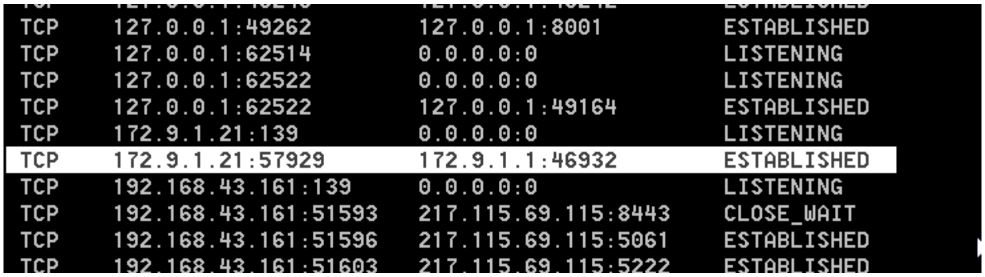
Procedure

1. **Session Request** based on Naming Service (**3528**)
2. A New Port was created (**46932** => NmsSession_I CORBA object entity selection, LINUX OS related) at TNMS Server side **establishing a session** between TNMS Server and Umbrella.



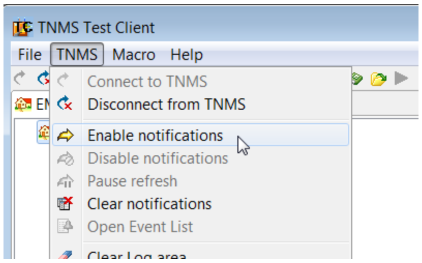
```
  TCP    127.0.0.1:62522        127.0.0.1:49164        ESTABLISHED
  TCP    172.9.1.21:139         0.0.0.0:0              LISTENING
  TCP    172.9.1.21:57928       172.9.1.1:3528         ESTABLISHED
  TCP    172.9.1.21:57929       172.9.1.1:46932        ESTABLISHED
  TCP    192.168.43.161:139     0.0.0.0:0              LISTENING
  TCP    192.168.43.161:51593   217.115.69.115:8443    CLOSE_WAIT
```

After a while the **Session Request** connection is dropped because the **communication session** is established:

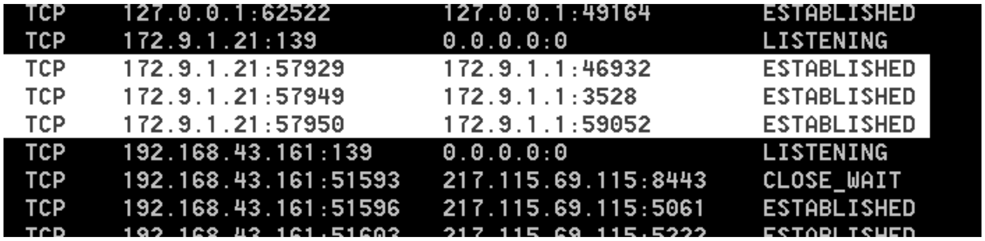


```
  TCP    127.0.0.1:49262        127.0.0.1:8001         ESTABLISHED
  TCP    127.0.0.1:62514        0.0.0.0:0              LISTENING
  TCP    127.0.0.1:62522        0.0.0.0:0              LISTENING
  TCP    127.0.0.1:62522        127.0.0.1:49164        ESTABLISHED
  TCP    172.9.1.21:139         0.0.0.0:0              LISTENING
  TCP    172.9.1.21:57929       172.9.1.1:46932        ESTABLISHED
  TCP    192.168.43.161:139     0.0.0.0:0              LISTENING
  TCP    192.168.43.161:51593   217.115.69.115:8443    CLOSE_WAIT
  TCP    192.168.43.161:51596   217.115.69.115:5061    ESTABLISHED
  TCP    192.168.43.161:51603   217.115.69.115:5222    ESTABLISHED
```

Enabling now the **Notification Service**:



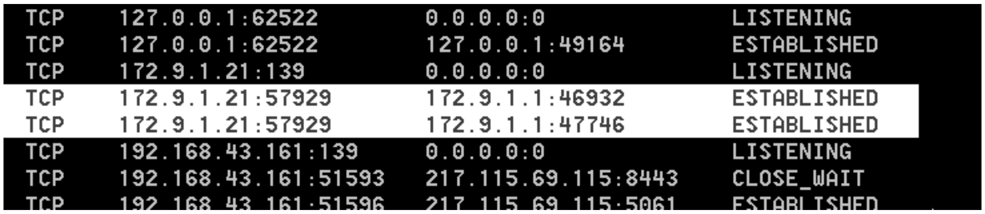
Port **59052** (**Default**, but can be configurable at TNMS Server) of the Notification Service was used to **request a new session** for the Notifications:



```
  TCP    127.0.0.1:62522        127.0.0.1:49164        ESTABLISHED
  TCP    172.9.1.21:139         0.0.0.0:0              LISTENING
  TCP    172.9.1.21:57929       172.9.1.1:46932        ESTABLISHED
  TCP    172.9.1.21:57949       172.9.1.1:3528         ESTABLISHED
  TCP    172.9.1.21:57950       172.9.1.1:59052        ESTABLISHED
  TCP    192.168.43.161:139     0.0.0.0:0              LISTENING
  TCP    192.168.43.161:51593   217.115.69.115:8443    CLOSE_WAIT
  TCP    192.168.43.161:51596   217.115.69.115:5061    ESTABLISHED
  TCP    192.168.43.161:51603   217.115.69.115:5222    ESTABLISHED
```

<table>
<tr>
<td><b>Procedure</b></td>
<td>

After a while the **Request Session connection** is also dropped because the new communication session is established:



```
TCP    127.0.0.1:62522        0.0.0.0:0              LISTENING
TCP    127.0.0.1:62522        127.0.0.1:49164        ESTABLISHED
TCP    172.9.1.21:139         0.0.0.0:0              LISTENING
TCP    172.9.1.21:57929       172.9.1.1:46932        ESTABLISHED
TCP    172.9.1.21:57929       172.9.1.1:47746        ESTABLISHED
TCP    192.168.43.161:139     0.0.0.0:0              LISTENING
TCP    192.168.43.161:51593   217.115.69.115:8443    CLOSE_WAIT
TCP    192.168.43.161:51596   217.115.69.115:5061    ESTABLISHED
```

Notice that, at the TNMS Server (TMF-IF), the Default Port (59052) was changed to a new Port (47746).

In the end we’ve TWO Sessions estalished, one for Executing Methods (172.9.1.1:46932), the other for the Notifications (172.9.1.1:47746)

</td>
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<tr>
<td><b>Notes</b></td>
<td></td>
</tr>
</table>

1.4 Umbrella System Configuration via TNMS TMF

There are plenty of TMF umbrella systems on the market possible to connect TNMS, also known as Northbound IF Clients (NBI Client's), the used TMF IF is standardized and well described. In the particular case of our Acceptance Test Manual (ATMN) an internal Coriant TMF umbrella system, named **TNMS Test Client (TTT)**, will be used for its simplicity (customization), it allow to drill down easily from parent to child in form of a graphical tree representation.

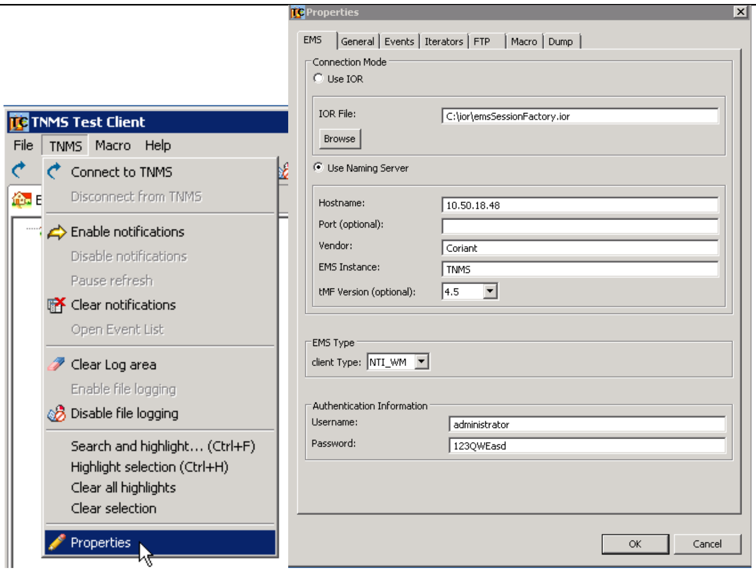
The connection between TNMS TMF IF and the umbrella system is possible in two ways:

- **Naming Service**
- **EMS session Factory IOR file**

1.4.1 Connection via Naming Service

Purpose:	Umbrella system configuration connected via Naming Service
Procedure:	Assuming the internal Coriant TMF umbrella system (TTT) as our NBI Client, configure the following parameters at the NMS configuration tab: **Select "Use Naming Server" and fill the required parameters:** - **Hostname**: IP of TNMS Server; - **Port (**optional): use the default **3528**; - **Vendor**: Coriant; - **EMS Instance**: TNMS; - **TMF Version (**Optional): 4.5; **EMS Type**: - **Client Type**: NTI_WM; **Authentication Information:** - **Username**: The user must be created on User Management of TNMS; - **Password**: The password of the user must be configured on User Management of TNMS;

Procedure:



Connection Mode

○ Use IOR

IOR File: C:\ior\emsSessionFactory.ior

● Use Naming Server

Hostname: 10.50.18.48

Port (optional):

Vendor: Coriant

EMS Instance: TNMS

tMF Version (optional): 4.5

EMS Type

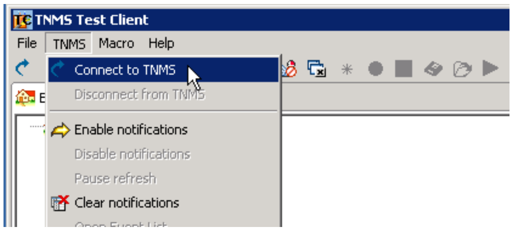
client Type: NTI_WM

Authentication Information

Username: administrator

Password: 123QWEasd

Having the above proper configured at our NBI Client (TTT) the connection can be established to TNMS TMF IF:



LOG output from TTT Tool:

```
[2017-10-02 12:24:11] Logging started!

[2017-10-02 12:24:41] Connecting to TNMS...

[2017-10-02 12:24:41] Properties file "C:\Users\gmpls\Desktop\TnmsTestClient\tmf.properties" loaded

[2017-10-02 12:24:41] Using Naming Service

[2017-10-02 12:24:42] vendor = Coriant

[2017-10-02 12:24:42] Object path = TMF_MTNM@Class|Coriant@Vendor|Coriant/TNMS@EmsInstance|4.5@Version|Coriant/TNMS@EmsSessionFactory_I

[2017-10-02 12:24:42] component[0] = TMF_MTNM@Class

[2017-10-02 12:24:42] component[1] = Coriant@Vendor

[2017-10-02 12:24:42] component[2] = Coriant/TNMS@EmsInstance

[2017-10-02 12:24:42] component[3] = 4.5@Version

[2017-10-02 12:24:42] component[4] = Coriant/TNMS@EmsSessionFactory_I
```

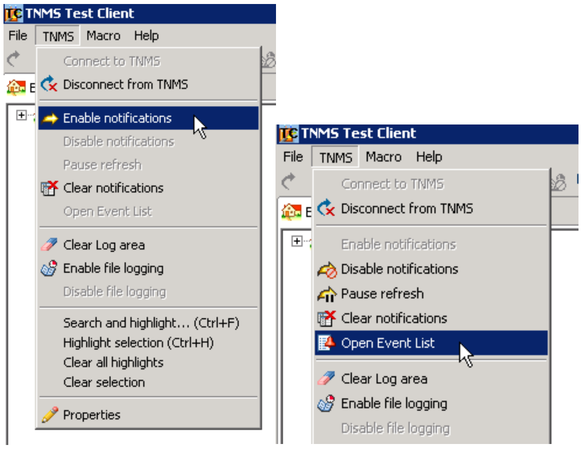
Procedure:

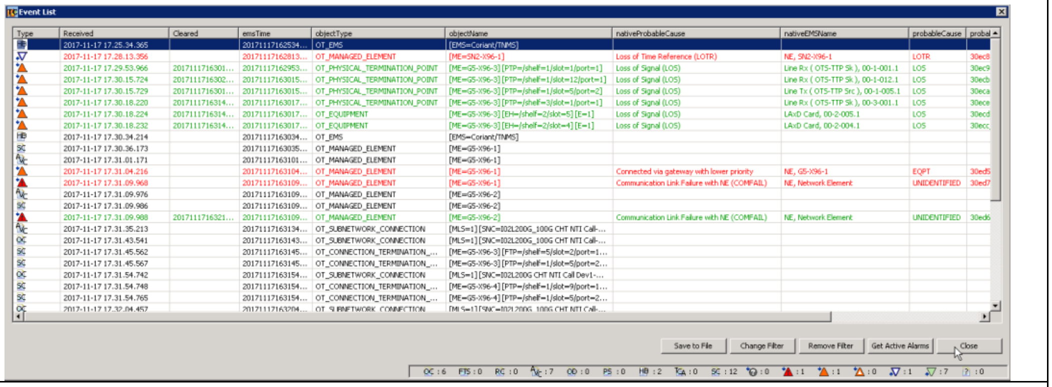
```
[2017-10-02 12:24:43] Activate POA manager...

[2017-10-02 12:24:43] Activate NMS session...

[2017-10-02 12:24:46] Connected! Time: 5.43 s
```

Moreover, and in order to collect **notifications/events** (spontaneously) from EMS System (TNMS), **the notifications need to be Enabled after having the TTT Tool connected to EMS system (TNMS);** there will be a “**Event List**” Window where such notifications/events will be displayed.





Type	Received	Cleared	emsTime	objectType	objectName	nativeProbableCause	nativeEMSName	probableCause	probal
HB	2017-11-17 17.25.34.365		20171117162534...	OT_EMS	[EMS=Coriant/TNMS]				
▽	2017-11-17 17.28.13.356		20171117162813...	OT_MANAGED_ELEMENT	[ME=SN2-X96-1]	Loss of Time Reference (LOTR)	NE, SN2-X96-1	LOTR	30ec8
▲	2017-11-17 17.29.53.966	2017111716301...	20171117162953...	OT_PHYSICAL_TERMINATION_POINT	[ME=G5-X96-3] [PTP=/shelf=1/slot=1/port=1]	Loss of Signal (LOS)	Line Rx (OTS-TTP Sk), 00-1-001.1	LOS	30ec9
▲	2017-11-17 17.30.15.724	2017111716302...	20171117163015...	OT_PHYSICAL_TERMINATION_POINT	[ME=G5-X96-3] [PTP=/shelf=1/slot=12/port=1]	Loss of Signal (LOS)	Line Rx (OTS-TTP Sk), 00-1-012.1	LOS	30ecb
▲	2017-11-17 17.30.15.729	2017111716301...	20171117163015...	OT_PHYSICAL_TERMINATION_POINT	[ME=G5-X96-3] [PTP=/shelf=1/slot=5/port=2]	Loss of Signal (LOS)	Line Tx (OTS-TTP Src), 00-1-005.1	LOS	30eca
▲	2017-11-17 17.30.18.220	2017111716314...	20171117163017...	OT_PHYSICAL_TERMINATION_POINT	[ME=G5-X96-3] [PTP=/shelf=3/slot=1/port=1]	Loss of Signal (LOS)	Line Rx (OTS-TTP Sk), 00-3-001.1	LOS	30ece
▲	2017-11-17 17.30.18.224	2017111716314...	20171117163017...	OT_EQUIPMENT	[ME=G5-X96-3] [EH=/shelf=2/slot=5] [E=1]	Loss of Signal (LOS)	LAxD Card, 00-2-005.1	LOS	30ecd
▲	2017-11-17 17.30.18.232	2017111716314...	20171117163017...	OT_EQUIPMENT	[ME=G5-X96-3] [EH=/shelf=2/slot=4] [E=1]	Loss of Signal (LOS)	LAxD Card, 00-2-004.1	LOS	30ecc
HB	2017-11-17 17.30.34.214		20171117163034...	OT_EMS	[EMS=Coriant/TNMS]				
SC	2017-11-17 17.30.36.173		20171117163035...	OT_MANAGED_ELEMENT	[ME=G5-X96-1]				
AVC	2017-11-17 17.31.01.171		20171117163101...	OT_MANAGED_ELEMENT	[ME=G5-X96-1]				
▲	2017-11-17 17.31.04.216		20171117163104...	OT_MANAGED_ELEMENT	[ME=G5-X96-1]	Connected via gateway with lower priority	NE, G5-X96-1	EQPT	30ed5
▲	2017-11-17 17.31.09.968		20171117163109...	OT_MANAGED_ELEMENT	[ME=G5-X96-1]	Communication Link Failure with NE (COMFAIL)	NE, Network Element	UNIDENTIFIED	30ed7
AVC	2017-11-17 17.31.09.976		20171117163109...	OT_MANAGED_ELEMENT	[ME=G5-X96-2]				
SC	2017-11-17 17.31.09.986		20171117163109...	OT_MANAGED_ELEMENT	[ME=G5-X96-2]				
▲	2017-11-17 17.31.09.988	2017111716321...	20171117163109...	OT_MANAGED_ELEMENT	[ME=G5-X96-2]	Communication Link Failure with NE (COMFAIL)	NE, Network Element	UNIDENTIFIED	30ed6
AVC	2017-11-17 17.31.35.213		20171117163134...	OT_SUBNETWORK_CONNECTION	[MLS=1] [SNC=I02L200G_100G CHT NTI Call-...				
OC	2017-11-17 17.31.43.541		20171117163143...	OT_SUBNETWORK_CONNECTION	[MLS=1] [SNC=I02L200G_100G CHT NTI Call-...				
SC	2017-11-17 17.31.45.562		20171117163145...	OT_CONNECTION_TERMINATION_...	[ME=G5-X96-3] [FTP=/shelf=5/slot=2/port=1...				
SC	2017-11-17 17.31.45.567		20171117163145...	OT_CONNECTION_TERMINATION_...	[ME=G5-X96-3] [PTP=/shelf=1/slot=5/port=2...				
OC	2017-11-17 17.31.54.742		20171117163154...	OT_SUBNETWORK_CONNECTION	[MLS=1] [SNC=I02L200G CHT NTI Call Dev1-...				
SC	2017-11-17 17.31.54.748		20171117163154...	OT_CONNECTION_TERMINATION_...	[ME=G5-X96-4] [PTP=/shelf=1/slot=9/port=1...				
SC	2017-11-17 17.31.54.765		20171117163154...	OT_CONNECTION_TERMINATION_...	[ME=G5-X96-4] [PTP=/shelf=1/slot=5/port=2...				
OC	2017-11-17 17.32.04.457		20171117163204...	OT_SUBNETWORK_CONNECTION	[MLS=1] [SNC=I02L200G_100G CHT NTI Call-...				

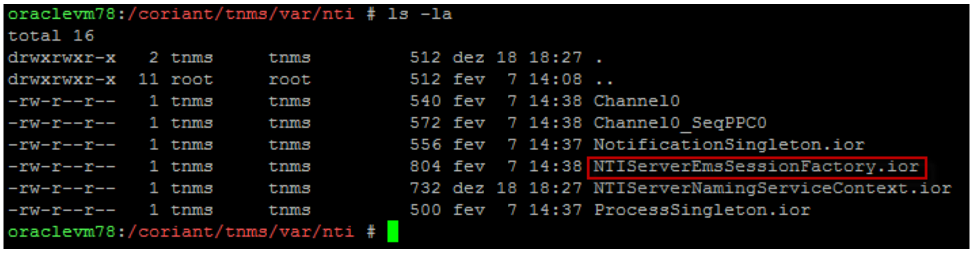
Notes:

1.4.2 Connection via EMS Session Factory IOR file

Purpose: EMS and Umbrella system configuration connected via Factory IOR file

Procedure: Assuming the internal Coriant TMF umbrella system (TTT) as our NBI Client, configure the following parameters at the NMS configuration tab:

Having EMS running (TNMS), copy the IOR file from EMS to the Umbrella System location (TTT):



```
oraclevm78:/coriant/tnms/var/nti # ls -la
total 16
drwxrwxr-x   2 tnms     tnms         512 dez 18 18:27 .
drwxrwxr-x  11 root     root         512 fev  7 14:08 ..
-rw-r--r--   1 tnms     tnms         540 fev  7 14:38 Channel0
-rw-r--r--   1 tnms     tnms         572 fev  7 14:38 Channel0_SeqPPC0
-rw-r--r--   1 tnms     tnms         556 fev  7 14:37 NotificationSingleton.ior
-rw-r--r--   1 tnms     tnms         804 fev  7 14:38 NTIServerEmsSessionFactory.ior
-rw-r--r--   1 tnms     tnms         732 dez 18 18:27 NTIServerNamingServiceContext.ior
-rw-r--r--   1 tnms     tnms         500 fev  7 14:37 ProcessSingleton.ior
oraclevm78:/coriant/tnms/var/nti #
```

/coriant/tnms/var/nti/**NTIServerEmsSessionFactory.ior =>** TTT folder local location

Select "Use IOR" and fill the required parameters:

- **Hostname**: IP of TNMS Server;
- **Port (**optional): use the default 3528;
- **Vendor**: Coriant;
- **EMS Instance**: TNMS;
- **TMF Version (**Optional): 4.5;

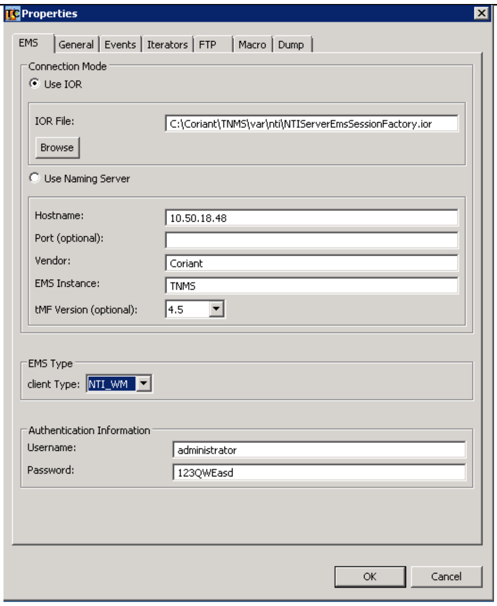
EMS Type:

- **Client Type**: NTI_WM;

Authentication Information:

- **Username**: The user must be created on User Management of TNMS;
- **Password**: The password of the user must be configured on User Management of TNMS;

Procedure:



Properties

EMS | General | Events | Iterators | FTP | Macro | Dump

Connection Mode

● Use IOR

IOR File: C:\Coriant\TNMS\var\nti\NTIServerEmsSessionFactory.ior

Browse

○ Use Naming Server

Hostname: 10.50.18.48

Port (optional):

Vendor: Coriant

EMS Instance: TNMS

tMF Version (optional): 4.5

EMS Type

client Type: NTI_WM

Authentication Information

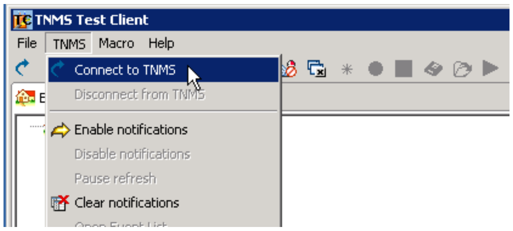
Username: administrator

Password: 123QWEasd

OK | Cancel

For every EMS restart (TNMS), the IOR file gets a new port (Dynamic port) and the operator needs again to copy it according with the above procedure, otherwise no connection will be possible between EMS and the umbrella system (TTT).

Having the above proper configured at our NBI Client (TTT) side the connection can be established to TNMS TMF IF:



LOG output from TTT Tool:

```
[2017-10-02 12:53:26] Logging started!

[2017-10-02 12:59:08] Connecting to TNMS...

[2017-10-02 12:59:08] Properties file
"C:\Users\gmpls\Desktop\TnmsTestClient\tmf.properties" loaded

[2017-10-02 12:59:08] Using IOR from file
C:\Coriant\TNMS\var\nti\NTIServerEmsSessionFactory.ior

[2017-10-02 12:59:08]
IOR:000000000000003F49444C3A6D746E6D2E746D666F72756D…
```

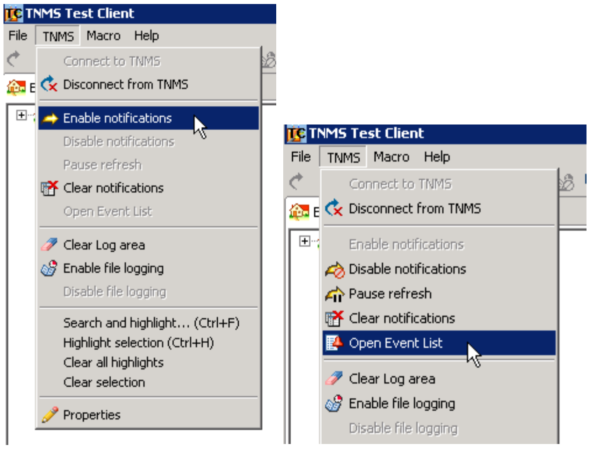
Procedure:

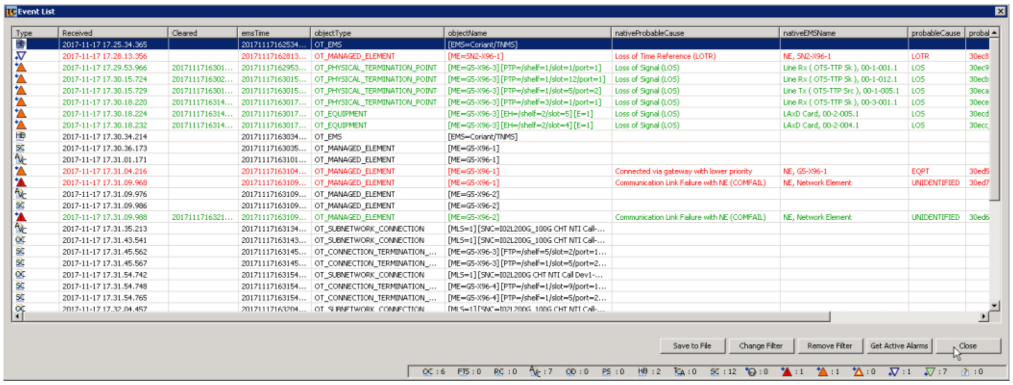
[2017-10-02 12:59:09] Activate POA manager...

[2017-10-02 12:59:09] Activate NMS session...

[2017-10-02 12:59:09] Connected! Time: 1.35 s

Moreover, and in order to collect **notifications/events** (spontaneously) from EMS System (TNMS), **the notifications need to be Enabled after having the TTT Tool connected to EMS system (TNMS);** there will be a “**Event List**” Window where such notifications/events will be displayed.

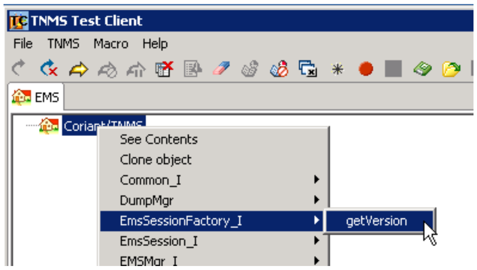




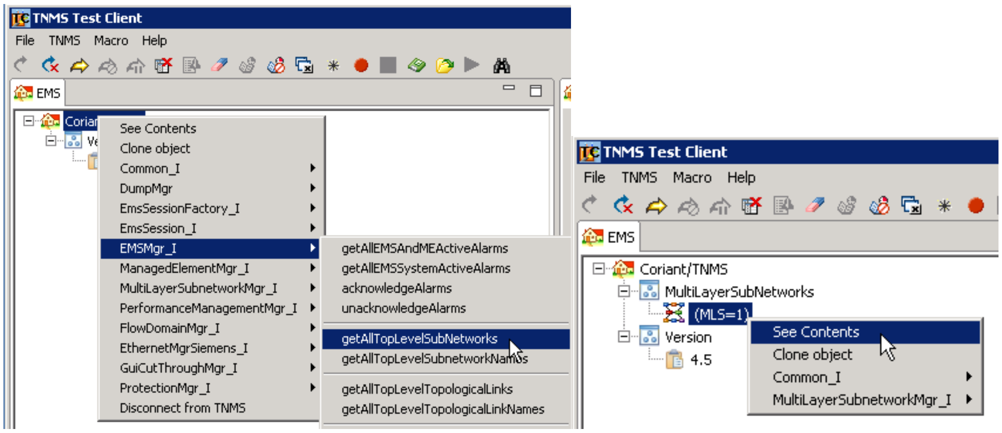
Type	Received	Cleared	emsTime	objectType	objectName	nativeProbableCause	nativeEMSName	probableCause	probal
HB	2017-11-17 17.25.34.365		20171117162534...	OT_EMS	[EMS=Coriant/TNMS]				
▽	2017-11-17 17.28.13.356		20171117162813...	OT_MANAGED_ELEMENT	[ME=SN2-X96-1]	Loss of Time Reference (LOTR)	NE, SN2-X96-1	LOTR	30ec8
▲	2017-11-17 17.29.53.966	2017111716301...	20171117162953...	OT_PHYSICAL_TERMINATION_POINT	[ME=G5-X96-3] [PTP=/shelf=1/slot=1/port=1]	Loss of Signal (LOS)	Line Rx (OTS-TTP Sk), 00-1-001.1	LOS	30ec9
▲	2017-11-17 17.30.15.724	2017111716302...	20171117163015...	OT_PHYSICAL_TERMINATION_POINT	[ME=G5-X96-3] [PTP=/shelf=1/slot=12/port=1]	Loss of Signal (LOS)	Line Rx (OTS-TTP Sk), 00-1-012.1	LOS	30ecb
▲	2017-11-17 17.30.15.729	2017111716301...	20171117163015...	OT_PHYSICAL_TERMINATION_POINT	[ME=G5-X96-3] [PTP=/shelf=1/slot=5/port=2]	Loss of Signal (LOS)	Line Tx (OTS-TTP Src), 00-1-005.1	LOS	30eca
▲	2017-11-17 17.30.18.220	2017111716314...	20171117163017...	OT_PHYSICAL_TERMINATION_POINT	[ME=G5-X96-3] [PTP=/shelf=3/slot=1/port=1]	Loss of Signal (LOS)	Line Rx (OTS-TTP Sk), 00-3-001.1	LOS	30ece
▲	2017-11-17 17.30.18.224	2017111716314...	20171117163017...	OT_EQUIPMENT	[ME=G5-X96-3] [EH=/shelf=2/slot=5] [E=1]	Loss of Signal (LOS)	LAxD Card, 00-2-005.1	LOS	30ecd
▲	2017-11-17 17.30.18.232	2017111716314...	20171117163017...	OT_EQUIPMENT	[ME=G5-X96-3] [EH=/shelf=2/slot=4] [E=1]	Loss of Signal (LOS)	LAxD Card, 00-2-004.1	LOS	30ecc
HB	2017-11-17 17.30.34.214		20171117163034...	OT_EMS	[EMS=Coriant/TNMS]				
SC	2017-11-17 17.30.36.173		20171117163035...	OT_MANAGED_ELEMENT	[ME=G5-X96-1]				
AVC	2017-11-17 17.31.01.171		20171117163101...	OT_MANAGED_ELEMENT	[ME=G5-X96-1]				
▲	2017-11-17 17.31.04.216		20171117163104...	OT_MANAGED_ELEMENT	[ME=G5-X96-1]	Connected via gateway with lower priority	NE, G5-X96-1	EQPT	30ed5
▲	2017-11-17 17.31.09.968		20171117163109...	OT_MANAGED_ELEMENT	[ME=G5-X96-1]	Communication Link Failure with NE (COMFAIL)	NE, Network Element	UNIDENTIFIED	30ed7
AVC	2017-11-17 17.31.09.976		20171117163109...	OT_MANAGED_ELEMENT	[ME=G5-X96-2]				
SC	2017-11-17 17.31.09.986		20171117163109...	OT_MANAGED_ELEMENT	[ME=G5-X96-2]				
▲	2017-11-17 17.31.09.988	2017111716321...	20171117163109...	OT_MANAGED_ELEMENT	[ME=G5-X96-2]	Communication Link Failure with NE (COMFAIL)	NE, Network Element	UNIDENTIFIED	30ed6
AVC	2017-11-17 17.31.35.213		20171117163134...	OT_SUBNETWORK_CONNECTION	[MLS=1] [SNC=I02L200G_100G CHT NTI Call-...				
OC	2017-11-17 17.31.43.541		20171117163143...	OT_SUBNETWORK_CONNECTION	[MLS=1] [SNC=I02L200G_100G CHT NTI Call-...				
SC	2017-11-17 17.31.45.562		20171117163145...	OT_CONNECTION_TERMINATION_...	[ME=G5-X96-3] [FTP=/shelf=5/slot=2/port=1...				
SC	2017-11-17 17.31.45.567		20171117163145...	OT_CONNECTION_TERMINATION_...	[ME=G5-X96-3] [PTP=/shelf=1/slot=5/port=2...				
OC	2017-11-17 17.31.54.742		20171117163154...	OT_SUBNETWORK_CONNECTION	[MLS=1] [SNC=I02L200G CHT NTI Call Dev1-...				
SC	2017-11-17 17.31.54.748		20171117163154...	OT_CONNECTION_TERMINATION_...	[ME=G5-X96-4] [PTP=/shelf=1/slot=9/port=1...				
SC	2017-11-17 17.31.54.765		20171117163154...	OT_CONNECTION_TERMINATION_...	[ME=G5-X96-4] [PTP=/shelf=1/slot=5/port=2...				
OC	2017-11-17 17.32.04.457		20171117163204...	OT_SUBNETWORK_CONNECTION	[MLS=1] [SNC=I02L200G_100G CHT NTI Call-...				

Notes:

1.5 Check used TMF Version

Purpose:	Check that the used TMF version is 4.5 (TMF 814 4.5)
Procedure:	At the umbrella system (NMS) execute the following method: ***EmsSessionFactory_I::getVersion***  TNMS Test Client File TNMS Macro Help EMS Coriant/TNMS See Contents Clone object Common_I DumpMgr EmsSessionFactory_I getVersion EmsSession_I EMSMgr_I
Notes:	

1.6 Check used Network Topology

Purpose:	Check that the used Network Topology is MESH
Procedure:	At the umbrella system (NMS) execute the following method: **EMSMgr_I::getAllTopLevelSubNetworks**  TNMS Test Client File TNMS Macro Help EMS Corian Ve See Contents Clone object Common_I DumpMgr EmsSessionFactory_I EmsSession_I EMSMgr_I ManagedElementMgr_I MultiLayerSubnetworkMgr_I PerformanceManagementMgr_I FlowDomainMgr_I EthernetMgrSiemens_I GuiCutThroughMgr_I ProtectionMgr_I Disconnect from TNMS getAllEMSAndMEActiveAlarms getAllEMSSystemActiveAlarms acknowledgeAlarms unacknowledgeAlarms getAllTopLevelSubNetworks getAllTopLevelSubnetworkNames getAllTopLevelTopologicalLinks getAllTopLevelTopologicalLinkNames TNMS Test Client File TNMS Macro Help EMS Coriant/TNMS MultiLayerSubNetworks (MLS=1) Version 4.5 See Contents Clone object Common_I MultiLayerSubnetworkMgr_I On top of **MLS=1** request the associated **Contents**.
Notes:	

1.7 Supported Managers and associated Capabilities

TMF Methods are requested to well defined Interfaces, which usually are aligned with the existing supported Managers and associated capabilities. In our EMS Domain the following Managers/Interfaces are supported:

- EMSMgr_I

- EquipmentInventoryMgr_I

- GuiCutThroughMgr_I

- MaintenanceMgr_I

- ManagedElementMgr_I

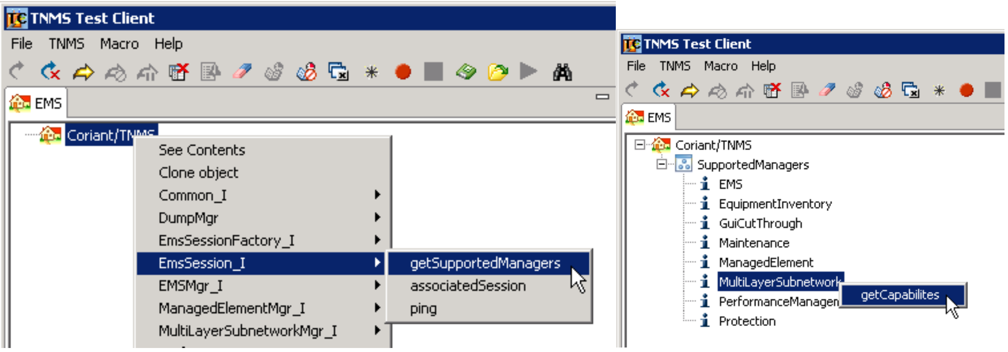
- MultiLayerSubnetworkMgr_I

- PerformanceManagementMgr_I

- ProtectionMgr_I

- ProtectionMgrProprietary_I

There is an additional interface, **Common_I**, which is part of all the displayed Managers since there are some common Methods as for e.g. setOwner, setUserLabel, setAdditinalInfo.

Purpose:	Check the supported Managers and associated Capabilities at Northbound TMF Interface (NTI)
Procedure:	At the umbrella system (NMS) execute the following method: ***EMSMgr_I::getSupportedManagers*** From the reported supported managers drill down on the associated capabilities.  TNMS Test Client File TNMS Macro Help EMS Coriant/TNMS See Contents Clone object Common_I DumpMgr EmsSessionFactory_I EmsSession_I EMSMgr_I ManagedElementMgr_I MultiLayerSubnetworkMgr_I getSupportedManagers associatedSession ping TNMS Test Client File TNMS Macro Help EMS Coriant/TNMS SupportedManagers EMS EquipmentInventory GuiCutThrough Maintenance ManagedElement MultiLayerSubnetwork PerformanceManagem Protection getCapabilites
Notes:	

2. EMSMgr_I Interface

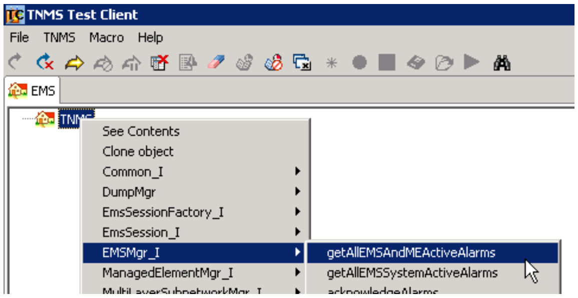
This chapter intents to cover all supported methods at the **EMSMgr_I** Interface. *Check the “Supported Managers and associated Capabilities” section for further details about what is currently implemented at TMF Interface.*

2.1 EMSMgr_I::acknowledgeAlarms

<table>
<tr>
<td><b>Purpose:</b></td>
<td>Check the <b>EMSMgr_I::acknowledgeAlarms</b> Method implementation based on the available Alarms</td>
</tr>
<tr>
<td><b>Procedure:</b></td>
<td>

Before requesting this Method available Alarms shall be present within EMS Domain and reported from NTI. Request the Method:

EMSMgr_I::getEMSAndMEActiveAlarms



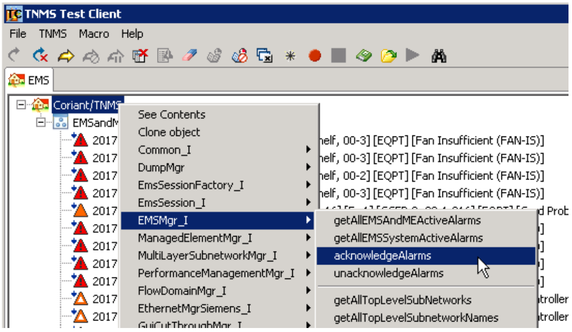
All active Alarms are available at the umbrella system (e.g. TTT Tool)

Request the Method:

EMSMgr_I::acknowledgeAlarms

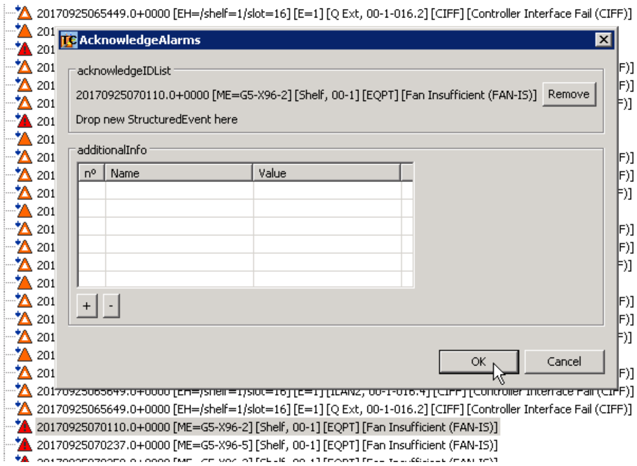
</td>
</tr>
</table>

Procedure:



Drag and Drop an available alarm inside of **“acknowledgeIDList”** and set the Method

additionalInfo *is not supported on the scope of this operation, any information passed on this parameter is discarded!*



```
20170925065449.0+0000 [EH=/shelf=1/slot=16] [E=1] [Q Ext, 00-1-016.2] [CIFF] [Controller Interface Fail (CIFF)]
20170925070110.0+0000 [ME=G5-X96-2] [Shelf, 00-1] [EQPT] [Fan Insufficient (FAN-IS)]
20170925065649.0+0000 [EH=/shelf=1/slot=16] [E=1] [Q Ext, 00-1-016.2] [CIFF] [Controller Interface Fail (CIFF)]
20170925070110.0+0000 [ME=G5-X96-2] [Shelf, 00-1] [EQPT] [Fan Insufficient (FAN-IS)]
20170925070237.0+0000 [ME=G5-X96-5] [Shelf, 00-1] [EQPT] [Fan Insufficient (FAN-IS)]
```

LOG output from TTT Tool:

[2017-10-03 12:43:32] EMSMgr_I.acknowledgeAlarms()

[2017-10-03 12:43:32] EMSMgr_I.acknowledgeAlarms() No values returned in 0.258 s

Notes:

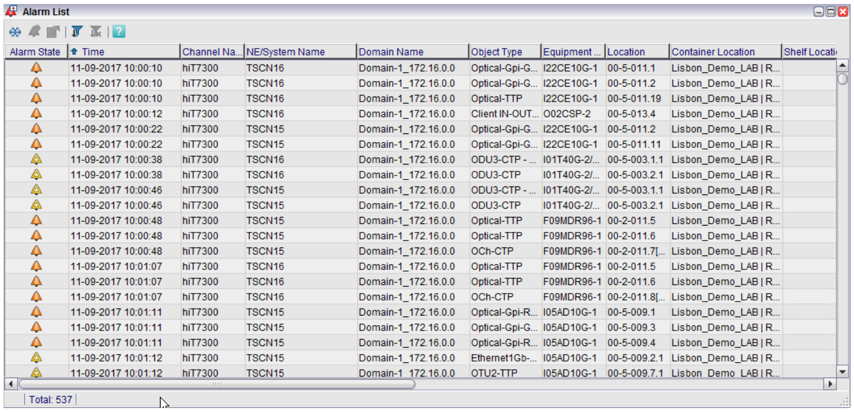
2.2 EMSMgr_I::getAllEMSAndMEActiveAlarms (ProbableCauseQualifier, Path Correlation)

Purpose:

Check the **EMSMgr_I::getAllEMSAndMEActiveAlarms** Method implementation based on the active available Alarms

Procedure:

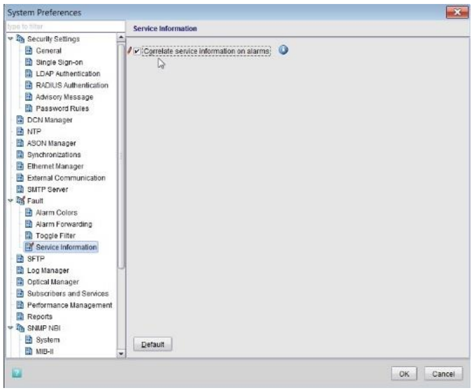
Before requesting this Method available Active Alarms shall be present within EMS and ME entities (EMS Domain). All possible alarms shall be reported from NTI interface, the EMS (Element Management System) is seen as TNMS system itself, ME (Management Elements) as the Network. *An Alarm solely related to ME is for e.g. Communication Link Failure with NE (COMFAIL).*



Alarm State	Time	Channel Na...	NE/System Name	Domain Name	Object Type	Equipment ...	Location	Container Location	Shelf Locati
▲	11-09-2017 10:00:10	hiT7300	TSCN16	Domain-1_172.16.0.0	Optical-Gpi-G...	I22CE10G-1	00-5-011.1	Lisbon_Demo_LAB | R...	
▲	11-09-2017 10:00:10	hiT7300	TSCN16	Domain-1_172.16.0.0	Optical-Gpi-G...	I22CE10G-1	00-5-011.2	Lisbon_Demo_LAB | R...	
▲	11-09-2017 10:00:10	hiT7300	TSCN16	Domain-1_172.16.0.0	Optical-TTP	I22CE10G-1	00-5-011.19	Lisbon_Demo_LAB | R...	
▲	11-09-2017 10:00:12	hiT7300	TSCN16	Domain-1_172.16.0.0	Client IN-OUT...	O02CSP-2	00-5-013.4	Lisbon_Demo_LAB | R...	
▲	11-09-2017 10:00:22	hiT7300	TSCN15	Domain-1_172.16.0.0	Optical-Gpi-G...	I22CE10G-1	00-5-011.2	Lisbon_Demo_LAB | R...	
▲	11-09-2017 10:00:22	hiT7300	TSCN15	Domain-1_172.16.0.0	Optical-Gpi-G...	I22CE10G-1	00-5-011.11	Lisbon_Demo_LAB | R...	
△	11-09-2017 10:00:38	hiT7300	TSCN16	Domain-1_172.16.0.0	ODU3-CTP - ...	I01T40G-2/...	00-5-003.1.1	Lisbon_Demo_LAB | R...	
△	11-09-2017 10:00:38	hiT7300	TSCN16	Domain-1_172.16.0.0	ODU3-CTP	I01T40G-2/...	00-5-003.2.1	Lisbon_Demo_LAB | R...	
△	11-09-2017 10:00:46	hiT7300	TSCN15	Domain-1_172.16.0.0	ODU3-CTP - ...	I01T40G-2/...	00-5-003.1.1	Lisbon_Demo_LAB | R...	
△	11-09-2017 10:00:46	hiT7300	TSCN15	Domain-1_172.16.0.0	ODU3-CTP	I01T40G-2/...	00-5-003.2.1	Lisbon_Demo_LAB | R...	
▲	11-09-2017 10:00:48	hiT7300	TSCN15	Domain-1_172.16.0.0	Optical-TTP	F09MDR96-1	00-2-011.5	Lisbon_Demo_LAB | R...	
▲	11-09-2017 10:00:48	hiT7300	TSCN15	Domain-1_172.16.0.0	Optical-TTP	F09MDR96-1	00-2-011.6	Lisbon_Demo_LAB | R...	
▲	11-09-2017 10:00:48	hiT7300	TSCN15	Domain-1_172.16.0.0	OCh-CTP	F09MDR96-1	00-2-011.7[...	Lisbon_Demo_LAB | R...	
▲	11-09-2017 10:01:07	hiT7300	TSCN16	Domain-1_172.16.0.0	Optical-TTP	F09MDR96-1	00-2-011.5	Lisbon_Demo_LAB | R...	
▲	11-09-2017 10:01:07	hiT7300	TSCN16	Domain-1_172.16.0.0	Optical-TTP	F09MDR96-1	00-2-011.6	Lisbon_Demo_LAB | R...	
▲	11-09-2017 10:01:07	hiT7300	TSCN16	Domain-1_172.16.0.0	OCh-CTP	F09MDR96-1	00-2-011.8[...	Lisbon_Demo_LAB | R...	
▲	11-09-2017 10:01:11	hiT7300	TSCN15	Domain-1_172.16.0.0	Optical-Gpi-R...	I05AD10G-1	00-5-009.1	Lisbon_Demo_LAB | R...	
▲	11-09-2017 10:01:11	hiT7300	TSCN15	Domain-1_172.16.0.0	Optical-Gpi-G...	I05AD10G-1	00-5-009.3	Lisbon_Demo_LAB | R...	
▲	11-09-2017 10:01:11	hiT7300	TSCN15	Domain-1_172.16.0.0	Optical-Gpi-R...	I05AD10G-1	00-5-009.4	Lisbon_Demo_LAB | R...	
△	11-09-2017 10:01:12	hiT7300	TSCN15	Domain-1_172.16.0.0	Ethernet1Gb-...	I05AD10G-1	00-5-009.2.1	Lisbon_Demo_LAB | R...	
△	11-09-2017 10:01:12	hiT7300	TSCN15	Domain-1_172.16.0.0	OTU2-TTP	I05AD10G-1	00-5-009.7.1	Lisbon_Demo_LAB | R...	

Total: 537

Every reported Alarm from NTI can have Service/Path correlation information, to enable this functionality the operator needs to activate "**Correlate Service Information on Alarms**" at System Preferences of TNMS.



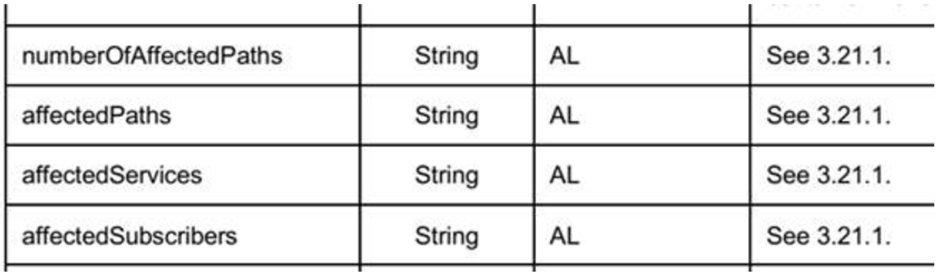
Service Information

☑ Correlate service information on alarms

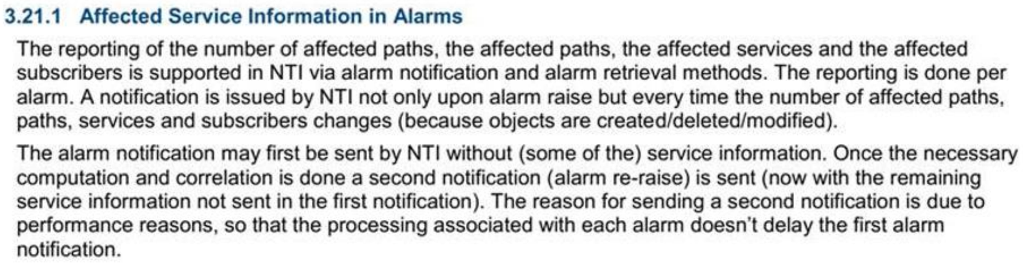
When changing this setting (above) TNMS Server services/processes shall be restarted by the operator.

Procedure:

Moreover, the following implementation/behavior is expected:



numberOfAffectedPaths	String	AL	See 3.21.1.
affectedPaths	String	AL	See 3.21.1.
affectedServices	String	AL	See 3.21.1.
affectedSubscribers	String	AL	See 3.21.1.

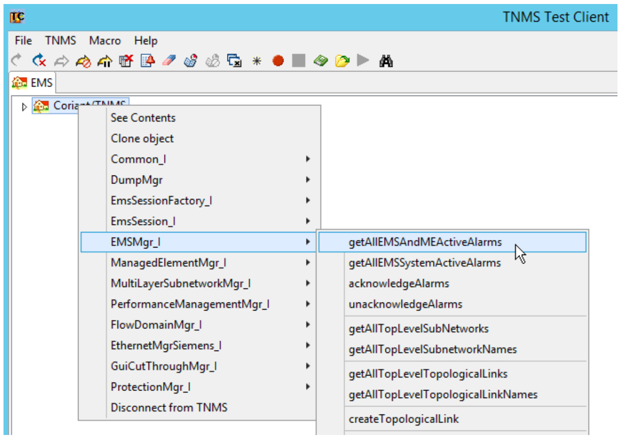


3.21.1 Affected Service Information in Alarms

The reporting of the number of affected paths, the affected paths, the affected services and the affected subscribers is supported in NTI via alarm notification and alarm retrieval methods. The reporting is done per alarm. A notification is issued by NTI not only upon alarm raise but every time the number of affected paths, paths, services and subscribers changes (because objects are created/deleted/modified).

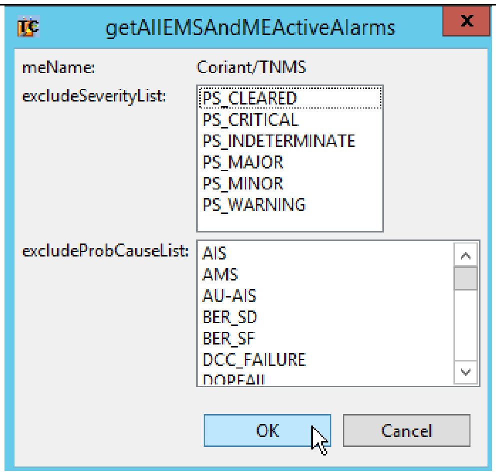
The alarm notification may first be sent by NTI without (some of the) service information. Once the necessary computation and correlation is done a second notification (alarm re-raise) is sent (now with the remaining service information not sent in the first notification). The reason for sending a second notification is due to performance reasons, so that the processing associated with each alarm doesn't delay the first alarm notification.

Request the Method: **EMSMgr_I::getAllEMSAndMEActiveAlarms**



There is the possibility to exclude alarms of being collected at Umbrella System based on Severity and Probable Causes. In our case, do not exclude any to have exactly the same number of alarms from EMS+ME (EMS Domain) collected at the Umbrella System (e.g. TTT Tool).

Procedure:



getAllEMSAndMEActiveAlarms

meName: Coriant/TNMS

excludeSeverityList: PS_CLEARED, PS_CRITICAL, PS_INDETERMINATE, PS_MAJOR, PS_MINOR, PS_WARNING

excludeProbCauseList: AIS, AMS, AU-AIS, BER_SD, BER_SF, DCC_FAILURE, DOPFAIL

LOG output from TTT Tool:

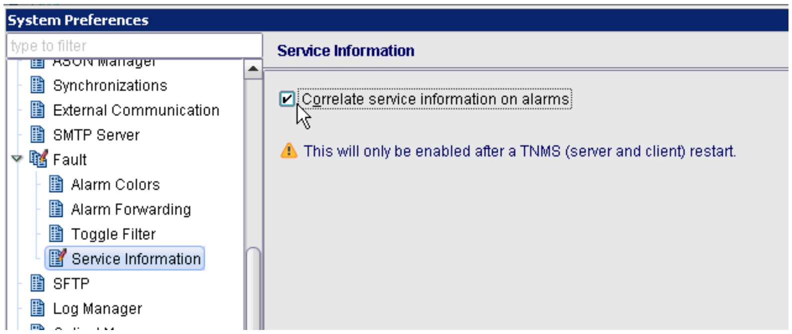
[2017-11-24 18:07:00] EMSMgr_I.getAllEMSAndMEActiveAlarms()

*[2017-11-24 18:07:03] EMSMgr_I.getAllEMSAndMEActiveAlarms() Time: 2.607 s Objects: **537** Average: 0.004 s*

If the **correlation of service information is Enabled on Alarms** (TNMS System Preferences), there will be additional information sent for every reported alarm to the NTI:

- Number of affected paths
- Affected paths
- Affected services
- Affected subscribers

When an Alarm is raised, NTI first sends the alarm without correlation information, if the Alarm is affecting Paths NTI re-sends the alarm with added correlation information.

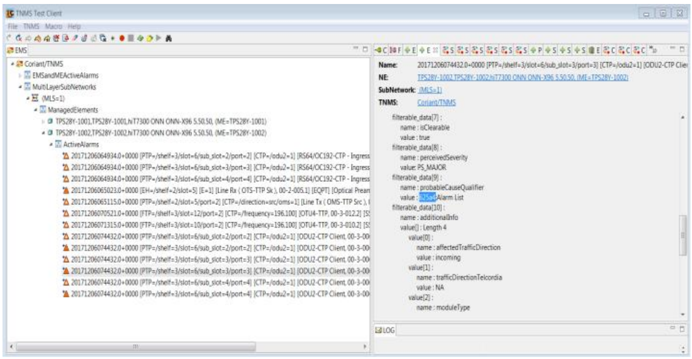
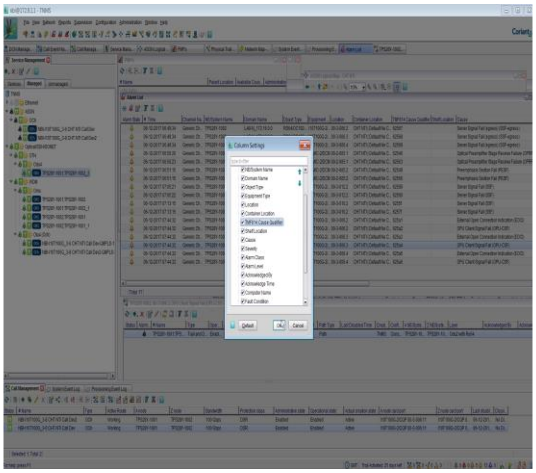
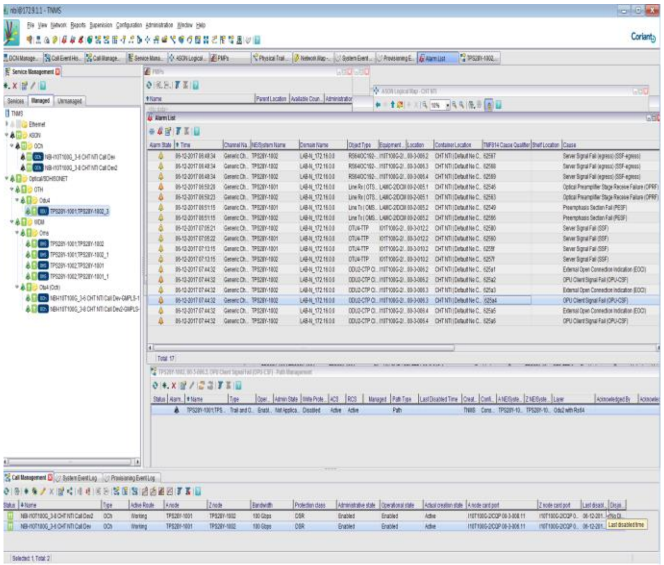


System Preferences

Service Information

☑ Correlate service information on alarms

⚠ This will only be enabled after a TNMS (server and client) restart.

Procedure:	Check that the **ProbableCauseQualifier** at TMF-IF, related to each reported Alarm, is found also at TNMS Alarm List:  TNMS Test Client Coriant/TNMS EMSandMEActiveAlarms MultiLayerSubNetworks (MLS=1) ManagedElements TPS28Y-1001,TPS28Y-1001,hiT7300 ONN ONN-X96 5.50.50, (ME=TPS28Y-1001) TPS28Y-1002,TPS28Y-1002,hiT7300 ONN ONN-X96 5.50.50, (ME=TPS28Y-1002) ActiveAlarms 20171206064934.0+0000 [PTP=/shelf=3/slot=6/sub_slot=2/port=2] [CTP=/odu2=1] [RS64/OC192-CTP - Ingress 20171206064934.0+0000 [PTP=/shelf=3/slot=6/sub_slot=3/port=3] [CTP=/odu2=1] [RS64/OC192-CTP - Ingress 20171206064934.0+0000 [PTP=/shelf=3/slot=6/sub_slot=4/port=4] [CTP=/odu2=1] [RS64/OC192-CTP - Ingress 20171206065023.0+0000 [EH=/shelf=2/slot=5] [E=1] [Line Rx (OTS-TTP Sk), 00-2-005.1] [EQPT] [Optical Pream 20171206065115.0+0000 [PTP=/shelf=2/slot=5/port=2] [CTP=/direction=src/oms=1] [Line Tx (OMS-TTP Src), (20171206070521.0+0000 [FTP=/shelf=3/slot=12/port=2] [CTP=/frequency=196.100] [OTU4-TTP, 00-3-012.2] [S 20171206071315.0+0000 [FTP=/shelf=3/slot=10/port=2] [CTP=/frequency=196.100] [OTU4-TTP, 00-3-010.2] [S 20171206074432.0+0000 [PTP=/shelf=3/slot=6/sub_slot=2/port=2] [CTP=/odu2=1] [ODU2-CTP Client, 00-3-00 20171206074432.0+0000 [PTP=/shelf=3/slot=6/sub_slot=2/port=2] [CTP=/odu2=1] [ODU2-CTP Client, 00-3-00 20171206074432.0+0000 [PTP=/shelf=3/slot=6/sub_slot=3/port=3] [CTP=/odu2=1] [ODU2-CTP Client, 00-3-00 20171206074432.0+0000 [PTP=/shelf=3/slot=6/sub_slot=3/port=3] [CTP=/odu2=1] [ODU2-CTP Client, 00-3-00 20171206074432.0+0000 [PTP=/shelf=3/slot=6/sub_slot=4/port=4] [CTP=/odu2=1] [ODU2-CTP Client, 00-3-00 20171206074432.0+0000 [PTP=/shelf=3/slot=6/sub_slot=4/port=4] [CTP=/odu2=1] [ODU2-CTP Client, 00-3-00 **Name:** 20171206074432.0+0000 [PTP=/shelf=3/slot=6/sub_slot=3/port=3] [CTP=/odu2=1] [ODU2-CTP Clie **NE:** TPS28Y-1002,TPS28Y-1002,hiT7300 ONN ONN-X96 5.50.50, (ME=TPS28Y-1002) **SubNetwork:** (MLS=1) **TNMS:** Coriant/TNMS filterable_data[7] : name : isClearable value : true filterable_data[8] : name : perceivedSeverity value: PS_MAJOR filterable_data[9] : name : probableCauseQualifier value : 625a4:Alarm List filterable_data[10] : name : additionalInfo value[] : Length 4 value[0] : name : affectedTrafficDirection value : incoming value[1] : name : trafficDirectionTelcordia value : NA value[2] : name : moduleType LOG   Alarm List Alarm State | Time | Channel Na... | NE/System Name | Domain Name | Object Type | Equipment... | Location | Container Location | TMF814 Cause Qualifier | Shelf Location | Cause 06-12-2017 06:48:34 | Generic Ch... | TPS28Y-1002 | LAB-N_172.16.0.0 | RS64/OC192-... | I10T100G-2/... | 00-3-006.2 | CHT NTI | Default Ne C... | 62587 | | Server Signal Fail (egress) (SSF-egress) 06-12-2017 06:48:34 | Generic Ch... | TPS28Y-1002 | LAB-N_172.16.0.0 | RS64/OC192-... | I10T100G-2/... | 00-3-006.3 | CHT NTI | Default Ne C... | 62588 | | Server Signal Fail (egress) (SSF-egress) 06-12-2017 06:48:34 | Generic Ch... | TPS28Y-1002 | LAB-N_172.16.0.0 | RS64/OC192-... | I10T100G-2/... | 00-3-006.4 | CHT NTI | Default Ne C... | 62589 | | Server Signal Fail (egress) (SSF-egress) 06-12-2017 06:50:28 | Generic Ch... | TPS28Y-1001 | LAB-N_172.16.0.0 | Line Rx | OTS... | LAMC-2/DCM 00-2-005.1 | CHT NTI | Default Ne C... | 62546 | | Optical Preamplifier Stage Receive Failure (OPRF) 06-12-2017 06:50:23 | Generic Ch... | TPS28Y-1002 | LAB-N_172.16.0.0 | Line Rx | OTS... | LAMC-2/DCM 00-2-005.1 | CHT NTI | Default Ne C... | 62563 | | Optical Preamplifier Stage Receive Failure (OPRF) 06-12-2017 06:51:15 | Generic Ch... | TPS28Y-1001 | LAB-N_172.16.0.0 | Line Tx | OMS... | LAMC-2/DCM 00-2-005.2 | CHT NTI | Default Ne C... | 62549 | | Preemphasis Section Fail (PESF) 06-12-2017 06:51:15 | Generic Ch... | TPS28Y-1002 | LAB-N_172.16.0.0 | Line Tx | OMS... | LAMC-2/DCM 00-2-005.2 | CHT NTI | Default Ne C... | 62566 | | Preemphasis Section Fail (PESF) 06-12-2017 07:05:21 | Generic Ch... | TPS28Y-1002 | LAB-N_172.16.0.0 | OTU4-TTP | I01T100G-2/... | 00-3-012.2 | CHT NTI | Default Ne C... | 62580 | | Server Signal Fail (SSF) 06-12-2017 07:05:22 | Generic Ch... | TPS28Y-1001 | LAB-N_172.16.0.0 | OTU4-TTP | I01T100G-2/... | 00-3-012.2 | CHT NTI | Default Ne C... | 62560 | | Server Signal Fail (SSF) 06-12-2017 07:13:15 | Generic Ch... | TPS28Y-1001 | LAB-N_172.16.0.0 | OTU4-TTP | I01T100G-2/... | 00-3-010.2 | CHT NTI | Default Ne C... | 6258f | | Server Signal Fail (SSF) 06-12-2017 07:13:15 | Generic Ch... | TPS28Y-1002 | LAB-N_172.16.0.0 | OTU4-TTP | I01T100G-2/... | 00-3-010.2 | CHT NTI | Default Ne C... | 6257f | | Server Signal Fail (SSF) 06-12-2017 07:44:32 | Generic Ch... | TPS28Y-1002 | LAB-N_172.16.0.0 | ODU2-CTP Cl... | I10T100G-2/... | 00-3-006.2 | CHT NTI | Default Ne C... | 625a1 | | External Open Connection Indication (EOCI) 06-12-2017 07:44:32 | Generic Ch... | TPS28Y-1002 | LAB-N_172.16.0.0 | ODU2-CTP Cl... | I10T100G-2/... | 00-3-006.2 | CHT NTI | Default Ne C... | 625a2 | | OPU Client Signal Fail (OPU-CSF) 06-12-2017 07:44:32 | Generic Ch... | TPS28Y-1002 | LAB-N_172.16.0.0 | ODU2-CTP Cl... | I10T100G-2/... | 00-3-006.3 | CHT NTI | Default Ne C... | 625a3 | | External Open Connection Indication (EOCI) 06-12-2017 07:44:32 | Generic Ch... | TPS28Y-1002 | LAB-N_172.16.0.0 | ODU2-CTP Cl... | I10T100G-2/... | 00-3-006.3 | CHT NTI | Default Ne C... | 625a4 | | OPU Client Signal Fail (OPU-CSF) 06-12-2017 07:44:32 | Generic Ch... | TPS28Y-1002 | LAB-N_172.16.0.0 | ODU2-CTP Cl... | I10T100G-2/... | 00-3-006.4 | CHT NTI | Default Ne C... | 625a5 | | External Open Connection Indication (EOCI) 06-12-2017 07:44:32 | Generic Cha... | TPS28Y-1002 | LAB-N_172.16.0.0 | ODU2-CTP Cl... | I10T100G-2/... | 00-3-006.4 | CHT NTI | Default Ne C... | 625a6 | | OPU Client Signal Fail (OPU-CSF) Total: 17
Notes:	

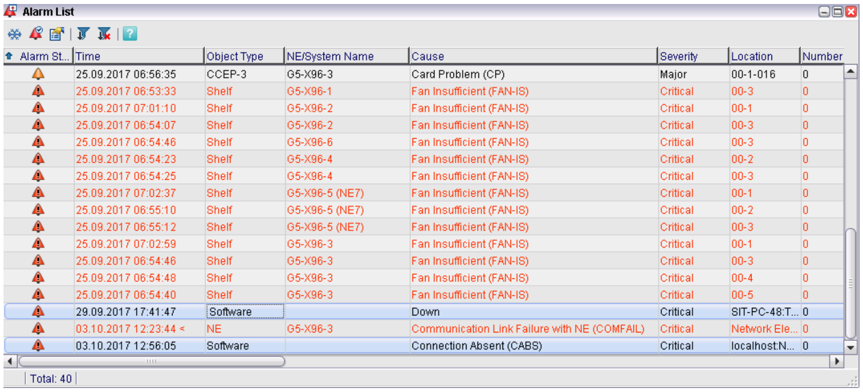
2.3 EMSMgr_I::getAllEMSSystemActiveAlarms

Purpose:

Check the **EMSMgr_I::getAllEMSSystemActiveAlarms** Method implementation based on the active available Alarms

Procedure:

Before requesting this Method available Active Alarms shall be present within EMS System since only those will be reported from NTI. The EMS (Element Management System) is seen as TNMS system itself, ME (Management Elements) as the Network. *An Alarm solely related to ME is for e.g. Communication Link Failure with NE (COMFAIL).*

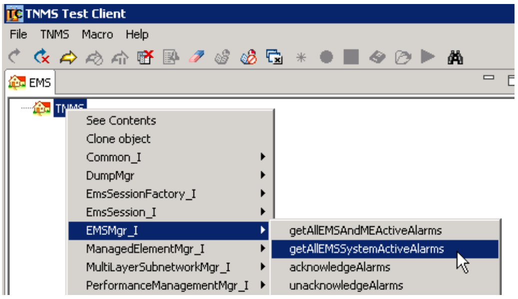


Alarm List

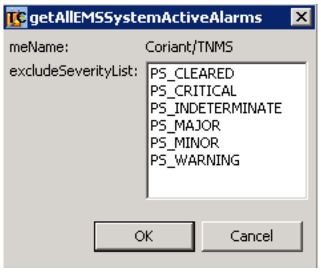
Alarm St...	Time	Object Type	NE/System Name	Cause	Severity	Location	Number
⚠	25.09.2017 06:56:35	CCEP-3	G5-X96-3	Card Problem (CP)	Major	00-1-016	0
⚠	25.09.2017 06:53:33	Shelf	G5-X96-1	Fan Insufficient (FAN-IS)	Critical	00-3	0
⚠	25.09.2017 07:01:10	Shelf	G5-X96-2	Fan Insufficient (FAN-IS)	Critical	00-1	0
⚠	25.09.2017 06:54:07	Shelf	G5-X96-2	Fan Insufficient (FAN-IS)	Critical	00-3	0
⚠	25.09.2017 06:54:46	Shelf	G5-X96-6	Fan Insufficient (FAN-IS)	Critical	00-3	0
⚠	25.09.2017 06:54:23	Shelf	G5-X96-4	Fan Insufficient (FAN-IS)	Critical	00-2	0
⚠	25.09.2017 06:54:25	Shelf	G5-X96-4	Fan Insufficient (FAN-IS)	Critical	00-3	0
⚠	25.09.2017 07:02:37	Shelf	G5-X96-5 (NE7)	Fan Insufficient (FAN-IS)	Critical	00-1	0
⚠	25.09.2017 06:55:10	Shelf	G5-X96-5 (NE7)	Fan Insufficient (FAN-IS)	Critical	00-2	0
⚠	25.09.2017 06:55:12	Shelf	G5-X96-5 (NE7)	Fan Insufficient (FAN-IS)	Critical	00-3	0
⚠	25.09.2017 07:02:59	Shelf	G5-X96-3	Fan Insufficient (FAN-IS)	Critical	00-1	0
⚠	25.09.2017 06:54:46	Shelf	G5-X96-3	Fan Insufficient (FAN-IS)	Critical	00-3	0
⚠	25.09.2017 06:54:48	Shelf	G5-X96-3	Fan Insufficient (FAN-IS)	Critical	00-4	0
⚠	25.09.2017 06:54:40	Shelf	G5-X96-3	Fan Insufficient (FAN-IS)	Critical	00-5	0
⚠	29.09.2017 17:41:47	Software		Down	Critical	SIT-PC-48:T...	0
⚠	03.10.2017 12:23:44 <	NE	G5-X96-3	Communication Link Failure with NE (COMFAIL)	Critical	Network Ele...	0
⚠	03.10.2017 12:56:05	Software		Connection Absent (CABS)	Critical	localhost:N...	0

Total: 40

Request the Method: **EMSMgr_I::getAllEMSSystemActiveAlarms**



There is the possibility to exclude alarms of being collected at Umbrella System based on Severity. In our case, do not exclude any to have exactly the same number of alarms from EMS System collected at the Umbrella System (e.g. TTT Tool).

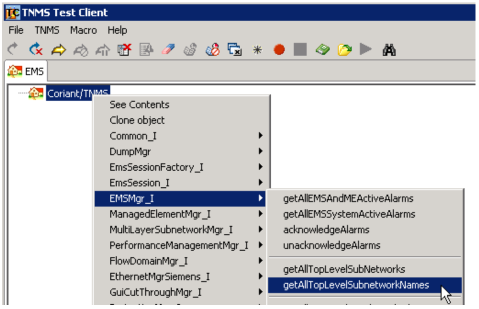
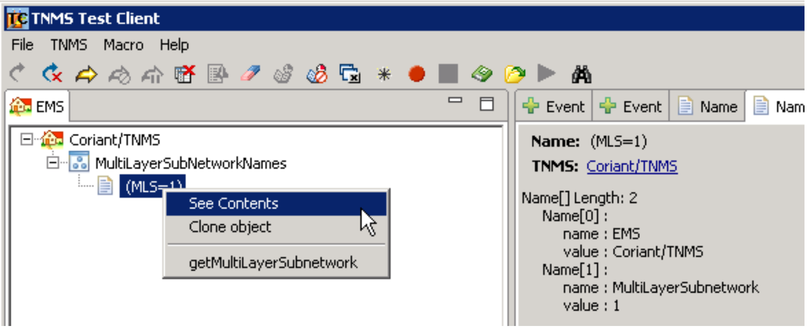


meName: Coriant/TNMS

excludeSeverityList:
PS_CLEARED
PS_CRITICAL
PS_INDETERMINATE
PS_MAJOR
PS_MINOR
PS_WARNING

Procedure:	**LOG output from TTT Tool:** *[2017-10-03 18:00:59] EMSMgr_I.getAllEMSSystemActiveAlarms()* *[2017-10-03 18:00:59] EMSMgr_I.getAllEMSSystemActiveAlarms() Time: 0.221 s Objects: 2 Average: 0.110 s*
Notes:	

2.4 EMSMgr_I::getAllTopLevelSubnetworkNames

Purpose:	Check the **EMSMgr_I::getAllTopLevelSubnetworksNames** Method implementation
Procedure:	For the target EMS Domain only exists a **single MLSN (MultiLayer Subnetwork)** for the whole TNMS management domain. Request the Method: **EMSMgr_I::getAllTopLevelSubnetworksNames**  TNMS Test Client File TNMS Macro Help EMS Coriant/TNMS See Contents Clone object Common_I DumpMgr EmsSessionFactory_I EmsSession_I EMSMgr_I ManagedElementMgr_I MultiLayerSubnetworkMgr_I PerformanceManagementMgr_I FlowDomainMgr_I EthernetMgrSiemens_I GuiCutThroughMgr_I getAllEMSAndMEActiveAlarms getAllEMSSystemActiveAlarms acknowledgeAlarms unacknowledgeAlarms getAllTopLevelSubNetworks getAllTopLevelSubnetworkNames
Procedure:	The NTI interface returns a single EMS Domain (**MLS=1**) and Name => **EMS=Coriant/TNMS**  TNMS Test Client File TNMS Macro Help EMS Event Event Name Nam Coriant/TNMS MultiLayerSubNetworkNames (MLS=1) See Contents Clone object getMultiLayerSubnetwork **Name:** (MLS=1) **TNMS:** Coriant/TNMS Name[] Length: 2 Name[0] : name : EMS value : Coriant/TNMS Name[1] : name : MultiLayerSubnetwork value : 1
Notes:	

2.5 EMSMgr_I::getAllTopLevelSubnetworks

Purpose:

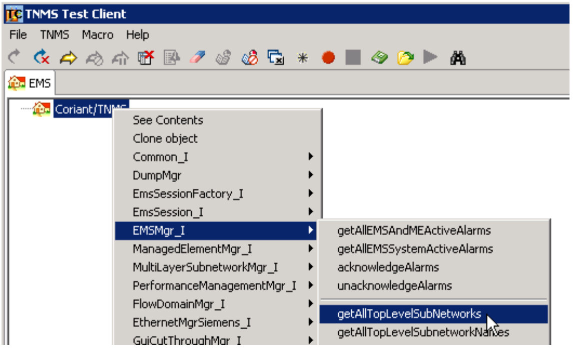
Check the **EMSMgr_I::getAllTopLevelSubnetworks** Method implementation

Procedure:

For the target EMS Domain only exists a **single MLSN (MultiLayer Subnetwork)** for the whole TNMS management domain.

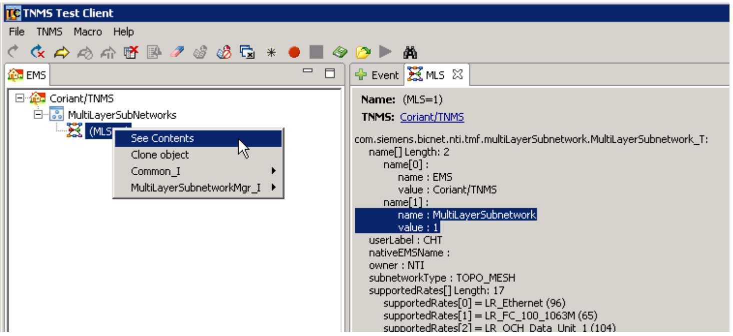
Request the Method:

EMSMgr_I::getAllTopLevelSubnetworks



Procedure:

The NTI interface returns a single EMS Domain (**MLS=1**) => **MultilayerSubnetwork=1**



Name: (MLS=1)
TNMS: Coriant/TNMS

```
com.siemens.bicnet.nti.tmf.multiLayerSubnetwork.MultiLayerSubnetwork_T:
    name[] Length: 2
        name[0] :
            name : EMS
            value : Coriant/TNMS
        name[1] :
            name : MultiLayerSubnetwork
            value : 1
    userLabel : CHT
    nativeEMSName :
    owner : NTI
    subnetworkType : TOPO_MESH
    supportedRates[] Length: 17
        supportedRates[0] = LR_Ethernet (96)
        supportedRates[1] = LR_FC_100_1063M (65)
        supportedRates[2] = LR_OCH_Data_Unit_1 (104)
```

Notes:

2.6 EMSMgr_I::getAllTopLevelTopologicalLinkNames

<table>
<tr><td><b>Purpose:</b></td><td>Check the <b>EMSMgr_I::getAllTopLevelTopologicalLinkNames</b> Method implementation</td></tr>
<tr><td><b>Procedure:</b></td><td>

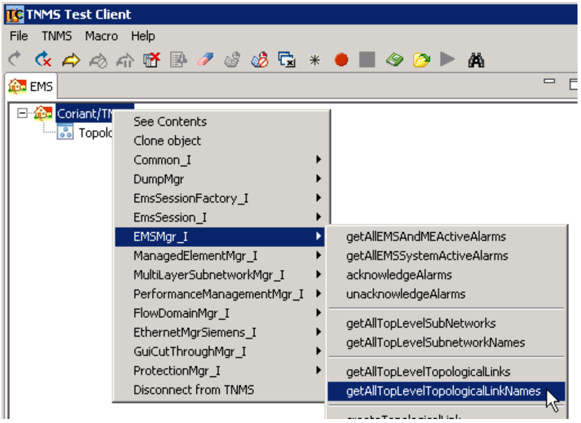
There exist a single MLSN (MultiLayer Subnetwork) for the whole TNMS management domain. Saying that, the following characterizes this topology:

- All MEs are contained in a single MLSN;

- **Each TL is an inner TL, there are no top-level TLs;**

Based on the above statements the request of the following Method shall return <**Empty**>

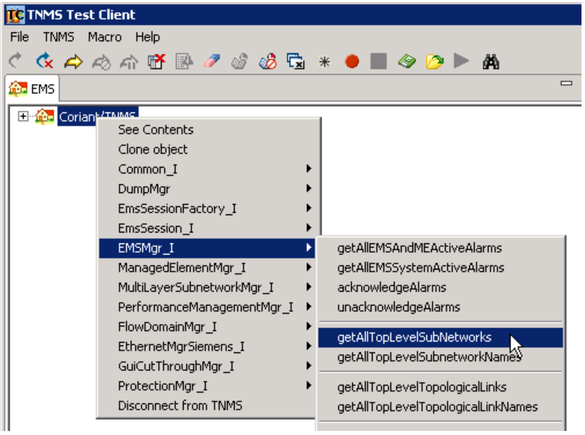
EMSMgr_I::getAllTopLevelTopologicalLinkNames



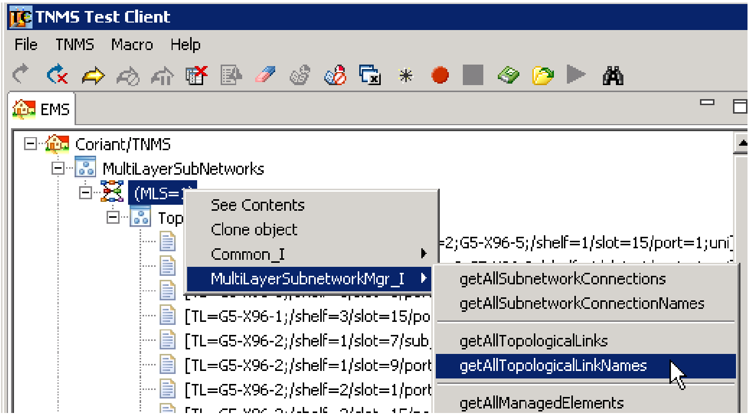
The ones needs to go inside of the single MLSN (MultiLayer Subnetwork) and from there request the getAllTopologicalLinkNames:

EMSMgr_I::getAllTopLevelSubnetworks

MultiLayerSubnetworkMgr_I::getAllTopologicalLinkNames



</td></tr>
</table>

Procedure:	
Notes:	

TNMS Test Client
File
TNMS
Macro
Help
EMS
Coriant/TNMS
MultiLayerSubNetworks
(MLS=1)
Top
=2;G5-X96-5;/shelf=1/slot=15/port=1;uni]
[TL=G5-X96-1;/shelf=3/slot=15/po
[TL=G5-X96-2;/shelf=1/slot=7/sub
[TL=G5-X96-2;/shelf=1/slot=9/port
[TL=G5-X96-2;/shelf=2/slot=1/port
See Contents
Clone object
Common_I
MultiLayerSubnetworkMgr_I
getAllSubnetworkConnections
getAllSubnetworkConnectionNames
getAllTopologicalLinks
getAllTopologicalLinkNames
getAllManagedElements

2.7 EMSMgr_I::getAllTopLevelTopologicalLinks

Purpose:

Check the **EMSMgr_I::getAllTopLevelTopologicalLinks** Method implementation

Procedure:

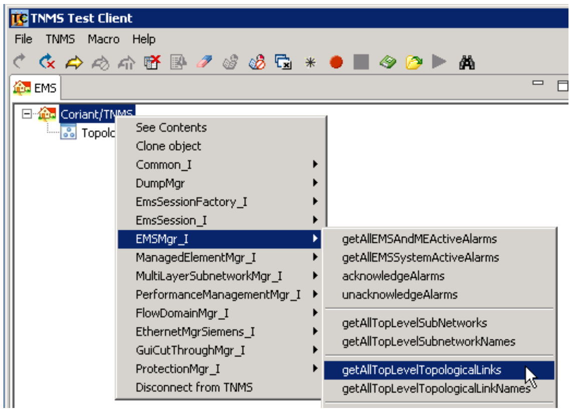
There exist a single MLSN (MultiLayer Subnetwork) for the whole TNMS management domain. Saying that, the following characterizes this topology:

- All MEs are contained in a single MLSN;

- Each TL is an inner TL, there are no top-level TLs;

Based on the above statements the request of the following Method shall return <**Empty**>

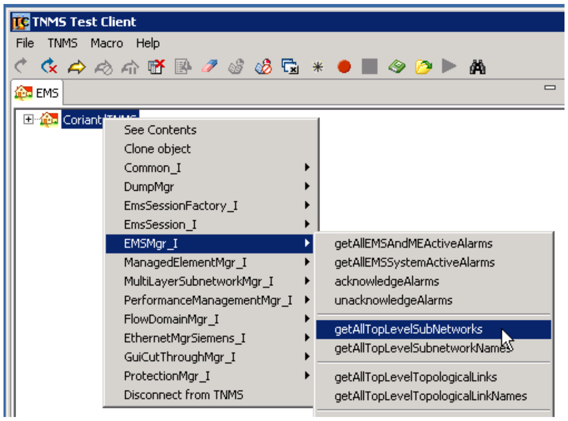
EMSMgr_I::getAllTopLevelTopologicalLinks

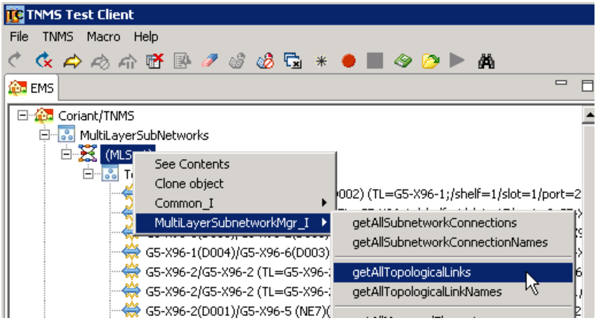


The ones needs to go inside of the single MLSN (MultiLayer Subnetwork) and from there request the getAllTopologicalLink:

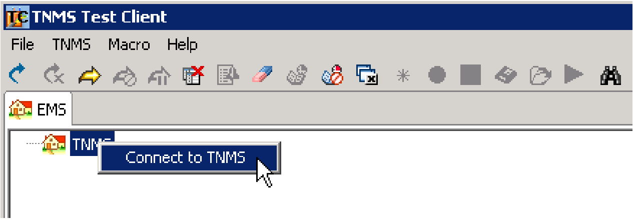
EMSMgr_I::getAllTopLevelSubnetworks

MultiLayerSubnetworkMgr_I::getAllTopologicalLinks



Procedure:	 TNMS Test Client File TNMS Macro Help EMS Coriant/TNMS MultiLayerSubNetworks (MLS See Contents Clone object Common_I MultiLayerSubnetworkMgr_I getAllSubnetworkConnections getAllSubnetworkConnectionNames getAllTopologicalLinks getAllTopologicalLinkNames 002) (TL=G5-X96-1;/shelf=1/slot=1/port=2 G5-X96-1(D004)/G5-X96-6(D003) G5-X96-2/G5-X96-2 (TL=G5-X96- G5-X96-2/G5-X96-2 (TL=G5-X96- G5-X96-2(D001)/G5-X96-5 (NE7)(
Notes:	

2.8 EMSMgr_I::getEMS

Purpose:	Check the **EMSMgr_I::getEMs** Method implementation
Procedure:	This specific capability is basically the session establishment between NMS, herein represented by TTT Tool, and EMS Domain which is our TNMS System thru the NTI IF. As stated in a previous section, this can be achieved in two possible ways, using the **Naming Service**, or **EMS session Factory IOR file**.  TNMS Test Client File TNMS Macro Help EMS TNMS Connect to TNMS ⇔ **EMSMgr_I::getEMs** **LOG output from TTT Tool:** [2017-10-04 12:11:47] Logging started! [2017-10-04 12:12:24] Connecting to TNMS... [2017-10-04 12:12:24] Properties file "C:\Users\gmpls\Desktop\TnmsTestClient\tmf.properties" loaded [2017-10-04 12:12:24] Using Naming Service [2017-10-04 12:12:24] vendor = Coriant [2017-10-04 12:12:24] Object path = TMF_MTNM@Class|Coriant@Vendor|Coriant/TNMS@EmsInstance|4.5@Version |Coriant/TNMS@EmsSessionFactory_I [2017-10-04 12:12:24] component[0] = TMF_MTNM@Class [2017-10-04 12:12:24] component[1] = Coriant@Vendor [2017-10-04 12:12:24] component[2] = Coriant/TNMS@EmsInstance [2017-10-04 12:12:24] component[3] = 4.5@Version [2017-10-04 12:12:24] component[4] = Coriant/TNMS@EmsSessionFactory_I **[2017-10-04 12:12:24] Activate POA manager...** **[2017-10-04 12:12:24] Activate NMS session...** [2017-10-04 12:12:25] Connected! Time: 1.03 s
Notes:	

2.9 EMSMgr_I::getTopLevelTopologicalLink

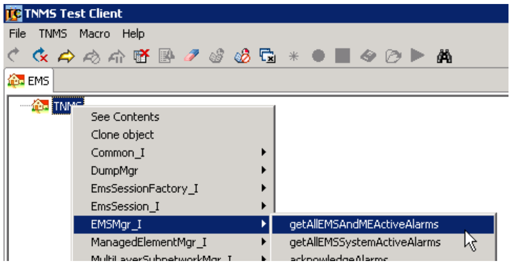
Purpose:	Check the **EMSMgr_I::getTopLevelTopologicalLinks** Method implementation
Procedure:	There exist a single MLSN (MultiLayer Subnetwork) for the whole TNMS management domain. Saying that, the following characterizes this topology: - All MEs are contained in a single MLSN; - **Each TL is an inner TL, there are no top-level TLs;** Based on the above statements the request of the following Method shall return <**Empty**> **EMSMgr_I::getTopLevelTopologicalLink** *In the used umbrella system (TTT tool) this Method was simply removed from the GUI since makes no sense in the context of our single MLSN.*
Notes:	

2.10 EMSMgr_I::unacknowledgeAlarms

<table>
<tr>
<td><b>Purpose:</b></td>
<td>Check the <b>EMSMgr_I::unacknowledgeAlarms</b> Method implementation based on the available Alarms</td>
</tr>
<tr>
<td><b>Procedure:</b></td>
<td>

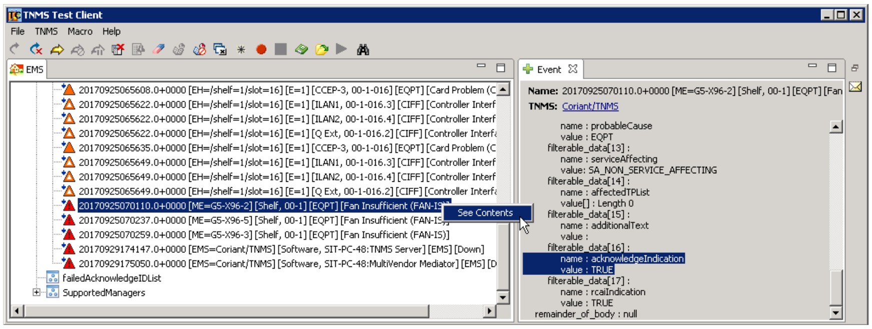
Before requesting this Method available Alarms shall be present within EMS Domain, at least one already **acknowledged** (see related testcase), and reported from NTI. Request the Method:

EMSMgr_I::getEMSAndMEActiveAlarms



All active Alarms are available at the umbrella system (e.g. TTT Tool)

At the **Contents** of the related Alarm (**acknowledged**) it is possible to see **acknowledgeIndication=TRUE**

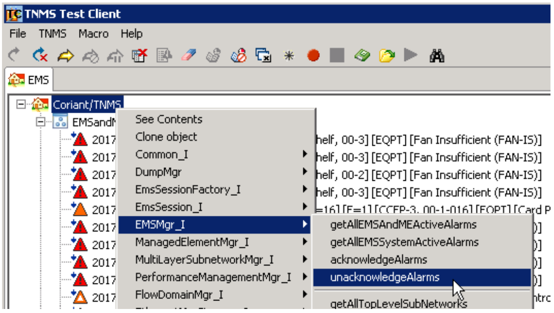


```
20170925065608.0+0000 [EH=/shelf=1/slot=16] [E=1] [CCEP-3, 00-1-016] [EQPT] [Card Problem (C
20170925065622.0+0000 [EH=/shelf=1/slot=16] [E=1] [ILAN1, 00-1-016.3] [CIFF] [Controller Interf
20170925065622.0+0000 [EH=/shelf=1/slot=16] [E=1] [ILAN2, 00-1-016.4] [CIFF] [Controller Interf
20170925065622.0+0000 [EH=/shelf=1/slot=16] [E=1] [Q Ext, 00-1-016.2] [CIFF] [Controller Interfa
20170925065635.0+0000 [EH=/shelf=1/slot=16] [E=1] [CCEP-3, 00-1-016] [EQPT] [Card Problem (C
20170925065649.0+0000 [EH=/shelf=1/slot=16] [E=1] [ILAN1, 00-1-016.3] [CIFF] [Controller Interf
20170925065649.0+0000 [EH=/shelf=1/slot=16] [E=1] [ILAN2, 00-1-016.4] [CIFF] [Controller Interf
20170925065649.0+0000 [EH=/shelf=1/slot=16] [E=1] [Q Ext, 00-1-016.2] [CIFF] [Controller Interfa
20170925070110.0+0000 [ME=G5-X96-2] [Shelf, 00-1] [EQPT] [Fan Insufficient (FAN-IS
20170925070237.0+0000 [ME=G5-X96-5] [Shelf, 00-1] [EQPT] [Fan Insufficient (FAN-IS)]
20170925070259.0+0000 [ME=G5-X96-3] [Shelf, 00-1] [EQPT] [Fan Insufficient (FAN-IS)]
20170929174147.0+0000 [EMS=Coriant/TNMS] [Software, SIT-PC-48:TNMS Server] [EMS] [Down]
20170929175050.0+0000 [EMS=Coriant/TNMS] [Software, SIT-PC-48:MultiVendor Mediator] [EMS] [D
failedAcknowledgeIDList
SupportedManagers
```

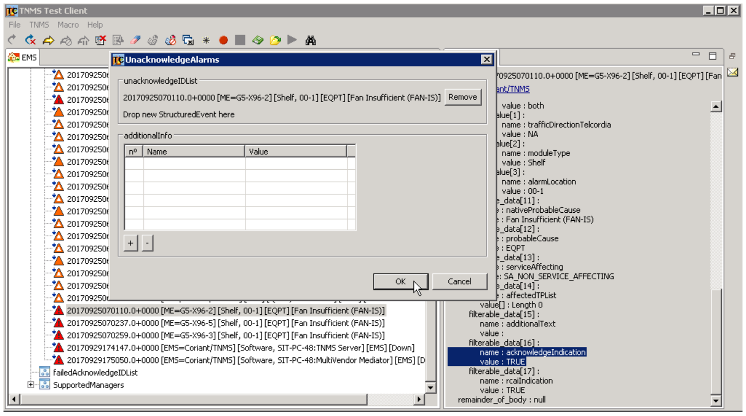
```
Name: 20170925070110.0+0000 [ME=G5-X96-2] [Shelf, 00-1] [EQPT] [Fan
TNMS: Coriant/TNMS

        name : probableCause
        value : EQPT
    filterable_data[13] :
        name : serviceAffecting
        value: SA_NON_SERVICE_AFFECTING
    filterable_data[14] :
        name : affectedTPList
        value[] : Length 0
    filterable_data[15] :
        name : additionalText
        value :
    filterable_data[16] :
        name : acknowledgeIndication
        value : TRUE
    filterable_data[17] :
        name : rcaiIndication
        value : TRUE
  remainder_of_body : null
```

Request the Method: **EMSMgr_I::unacknowledgeAlarms**



</td>
</tr>
</table>

Procedure:	Drag and Drop the Alarm (**acknowledged**) inside of **“UnacknowledgeIDList”** and set the Method ***additionalInfo** is not supported on the scope of this operation, any information passed on this parameter is discarded!*  TNMS Test Client UnacknowledgeAlarms unacknowledgeIDList 20170925070110.0+0000 [ME=G5-X96-2] [Shelf, 00-1] [EQPT] [Fan Insufficient (FAN-IS)] Remove Drop new StructuredEvent here additionalInfo nº | Name | Value OK Cancel 2017092506 2017092506 2017092506 2017092506 2017092506 2017092506 2017092506 2017092506 2017092506 2017092506 2017092506 2017092506 2017092506 2017092506 2017092506 2017092506 2017092506 2017092506 2017092506 20170925070110.0+0000 [ME=G5-X96-2] [Shelf, 00-1] [EQPT] [Fan Insufficient (FAN-IS)] 20170925070237.0+0000 [ME=G5-X96-5] [Shelf, 00-1] [EQPT] [Fan Insufficient (FAN-IS)] 20170925070259.0+0000 [ME=G5-X96-3] [Shelf, 00-1] [EQPT] [Fan Insufficient (FAN-IS)] 20170929174147.0+0000 [EMS=Coriant/TNMS] [Software, SIT-PC-48:TNMS Server] [EMS] [Down] 20170929175050.0+0000 [EMS=Coriant/TNMS] [Software, SIT-PC-48:MultiVendor Mediator] [EMS] [D failedAcknowledgeIDList SupportedManagers 70925070110.0+0000 [ME=G5-X96-2] [Shelf, 00-1] [EQPT] [Fan ant/TNMS value : both alue[1] : name : trafficDirectionTelcordia value : NA alue[2] : name : moduleType value : Shelf alue[3] : name : alarmLocation value : 00-1 e_data[11] : e : nativeProbableCause e : Fan Insufficient (FAN-IS) e_data[12] : e : probableCause e : EQPT e_data[13] : e : serviceAffecting e: SA_NON_SERVICE_AFFECTING e_data[14] : e : affectedTPList value[] : Length 0 filterable_data[15] : name : additionalText value : filterable_data[16] : name : acknowledgeIndication value : TRUE filterable_data[17] : name : rcaiIndication value : TRUE remainder_of_body : null **LOG output from TTT Tool:** *[2017-10-03 13:28:24] EMSMgr_I.unacknowledgeAlarms()* *[2017-10-03 13:28:24] EMSMgr_I.unacknowledgeAlarms() No values returned in 0.311 s*
Notes:	

2.11 EMSMgr_I::createTopologicalLink (Create IPCs)

Purpose:

Check the **EMSMgr_I::createTopologicalLink** Method implementation based on an existing Network (MEs)

Procedure:

There exist a single MLSN (MultiLayer Subnetwork) for the whole TNMS management domain. Saying that, the following characterizes this topology:

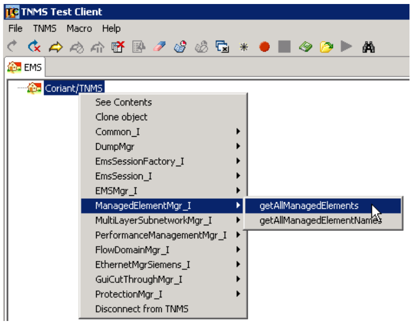
- All MEs are contained in a single MLSN;

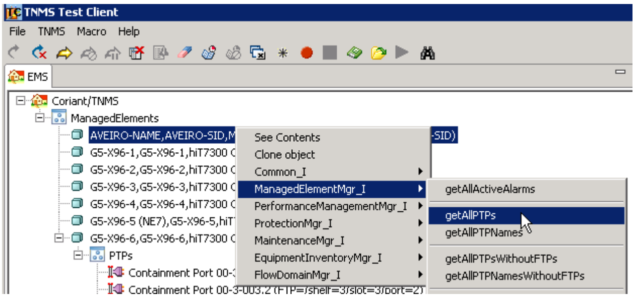
*- **Each TL is an inner TL, there are no top-level TLs;***

It means that, TopLevelSubnetworks shall be requested and only after the existing TLs.

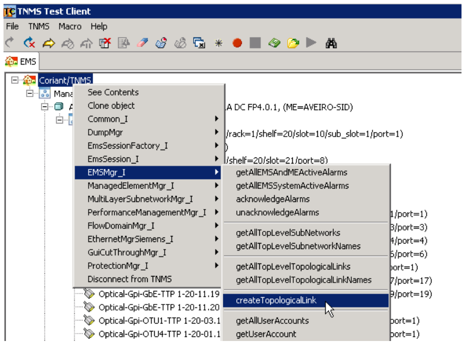
This Method allows the creation of Topological Links (TLs), also known in EMS System (TNMS) terminology as Physical Trails, or even Port Connections. ***For instance, the connection between O02CSP and Transponder card, to support the OCH Client Protection, requires a Topological Link.***

Before creating the required TL the following Methods shall be executed in order to have the appropriate the End Points available: **ManageElementMgr_I::getAllManageElements ; ManageElementMgr_I::getAllPTPs**

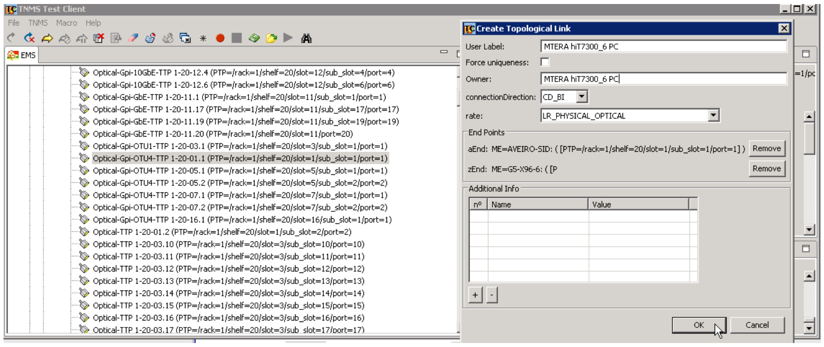




Based on the available PTPs (by dragging and dropping) request the Method: **EMSMgr_I::createTopologicalLink**


TNMS Test Client
File TNMS Macro Help
EMS
Coriant/TNMS
Mana
See Contents
Clone object
Common_I
DumpMgr
EmsSessionFactory_I
EmsSession_I
EMSMgr_I
ManagedElementMgr_I
MultiLayerSubnetworkMgr_I
PerformanceManagementMgr_I
FlowDomainMgr_I
EthernetMgrSiemens_I
GuiCutThroughMgr_I
ProtectionMgr_I
Disconnect from TNMS
Optical-Gpi-GbE-TTP 1-20-11.19
Optical-Gpi-GbE-TTP 1-20-11.20
Optical-Gpi-OTU1-TTP 1-20-03.1
Optical-Gpi-OTU4-TTP 1-20-01.1
A DC FP4.0.1, (ME=AVEIRO-SID)
/rack=1/shelf=20/slot=10/sub_slot=1/port=1)
/shelf=20/slot=21/port=8)
getAllEMSAndMEActiveAlarms
getAllEMSSystemActiveAlarms
acknowledgeAlarms
unacknowledgeAlarms
getAllTopLevelSubNetworks
getAllTopLevelSubnetworkNames
getAllTopLevelTopologicalLinks
getAllTopLevelTopologicalLinkNames
createTopologicalLink
getAllUserAccounts
getUserAccount
1/port=1)
3/port=3)
4/port=4)
5/port=6)
port=1)
7/port=17)
9/port=19)
port=1)
port=1)

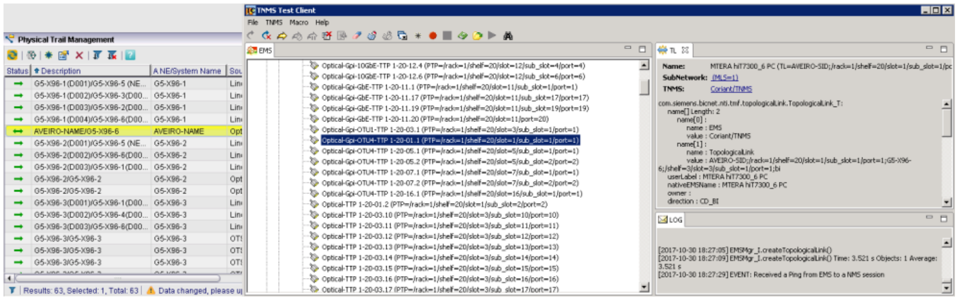
Procedure:



User Label: MTERA hiT7300_6 PC
Force uniqueness: □
Owner: MTERA hiT7300_6 PC
connectionDirection: CD_BI
rate: LR_PHYSICAL_OPTICAL
End Points
aEnd: ME=AVEIRO-SID: ([PTP=/rack=1/shelf=20/slot=1/sub_slot=1/port=1]) Remove
zEnd: ME=G5-X96-6: ([P Remove
Additional Info

nº	Name	Value

The new requested Topological Link is created from the Umbrella System (e.g. TTT Tool) to the EMS System (TNMS):



Name: MTERA hiT7300_6 PC (TL=AVEIRO-SID;/rack=1/shelf=20/slot=1/sub_slot=1/pc
SubNetwork: (MLS=1)
TNMS: Coriant/TNMS

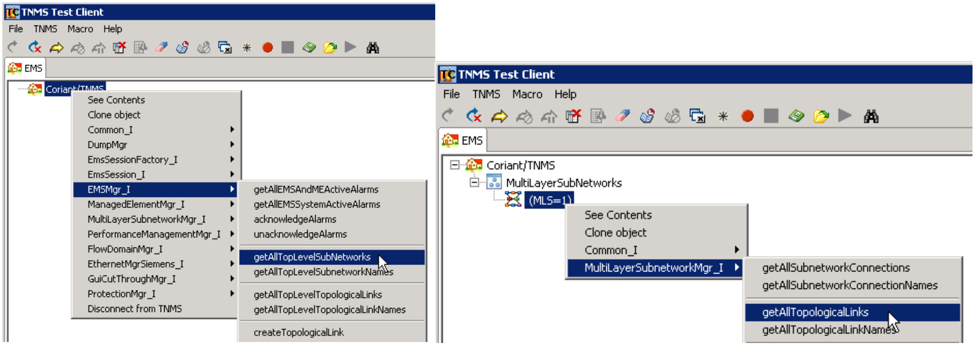
```
com.siemens.bicnet.nti.tmf.topologicalLink.TopologicalLink_T:
   name[] Length: 2
      name[0] :
         name : EMS
         value : Coriant/TNMS
      name[1] :
         name : TopologicalLink
         value : AVEIRO-SID;/rack=1/shelf=20/slot=1/sub_slot=1/port=1;G5-X96-
6;/shelf=3/slot=3/sub_slot=1/port=1;bi
   userLabel : MTERA hiT7300_6 PC
   nativeEMSName : MTERA hiT7300_6 PC
   owner :
   direction : CD_BI
```

```
[2017-10-30 18:27:05] EMSMgr_I.createTopologicalLink()
[2017-10-30 18:27:09] EMSMgr_I.createTopologicalLink() Time: 3.521 s Objects: 1 Average:
3.521 s
[2017-10-30 18:27:29] EVENT: Received a Ping from EMS to a NMS session
```

Request the following Methods to retrieve all Topological Links to the Umbrella System:

EMSMgr_I::getAllTopLevelSubnetworks

At MLS=1, MultiLayerSubnetworkMgr_I::getAllTopologicalLinks



All existing Topological Links (TLs) are reported from EMS System (TNMS) to the umbrella System.

In contradiction with SNCs where changing the **nativeEMSName** changes the Path name at EMS system (TNMS); **for TLs changing its name (description) via TMF is currently not supported.**

Notes:

setNativeEMSName not supported to rename the Physical Trail:
errorReason: Target object is not allowed for this operation.
exceptionType: EXCPT_UNABLE_TO_COMPLY

2.12 EMSMgr_I::deleteTopologicalLink (Delete IPCs)

Purpose:

Check the **EMSMgr_I::deleteTopologicalLink** Method implementation based on an existing Network (MEs)

Procedure:

There exist a single MLSN (MultiLayer Subnetwork) for the whole TNMS management domain. Saying that, the following characterizes this topology:

- All MEs are contained in a single MLSN;

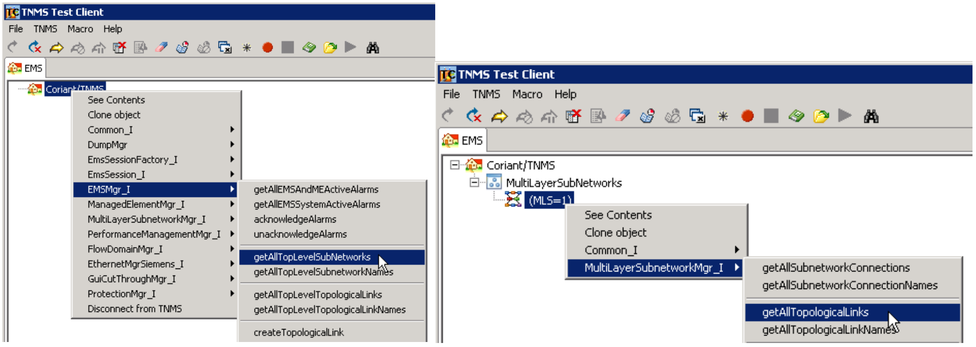
- ***Each TL is an inner TL, there are no top-level TLs;***

It means that, TopLevelSubnetworks shall be requested and only after the existing TLs.

This Method allows the deletion of Topological Links (TLs), also known in EMS System (TNMS) terminology as Physical Trails, or even Port Connections. Available Physical Trails shall be present within EMS Domain; request the following Methods to have them reported as Topological Links at the Umbrella System (e.g. TTT Tool):

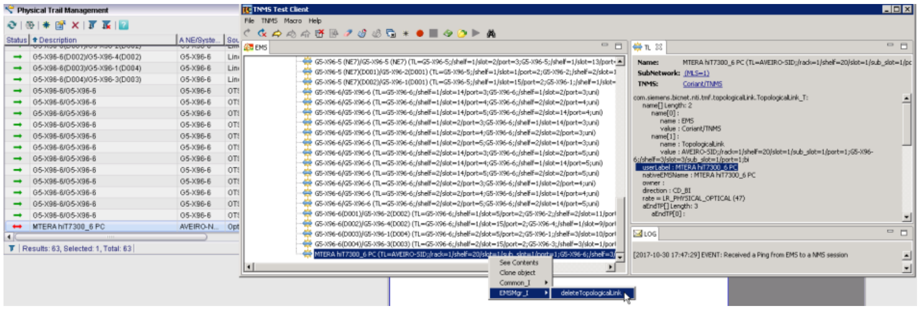
EMSMgr_I::getAllTopLevelSubnetworks

At MLS=1, MultiLayerSubnetworkMgr_I::getAllTopologicalLinks



All existing Topological Links (TLs) are reported from EMS System (TNMS) to the umbrella System (e.g. TTT Tool). Select one of them (*e.g. userLabel: MTERA hiT7300_6 PC*) and request the Method:

EMSMgr_I::deleteTopologicalLink



Status	Description	A NE/Syste...	Sou
➡	G5-X96-6(D002)/G5-X96-4(D002)	G5-X96-6	Lin
➡	G5-X96-6(D003)/G5-X96-1(D004)	G5-X96-6	Lin
➡	G5-X96-6(D004)/G5-X96-3(D003)	G5-X96-6	Lin
➡	G5-X96-6/G5-X96-6	G5-X96-6	OT
➡	G5-X96-6/G5-X96-6	G5-X96-6	OT
➡	G5-X96-6/G5-X96-6	G5-X96-6	OT
➡	G5-X96-6/G5-X96-6	G5-X96-6	OT
➡	G5-X96-6/G5-X96-6	G5-X96-6	OT
➡	G5-X96-6/G5-X96-6	G5-X96-6	OT
➡	G5-X96-6/G5-X96-6	G5-X96-6	OT
➡	G5-X96-6/G5-X96-6	G5-X96-6	OT
➡	G5-X96-6/G5-X96-6	G5-X96-6	OT
➡	G5-X96-6/G5-X96-6	G5-X96-6	OT
➡	G5-X96-6/G5-X96-6	G5-X96-6	OT
➡	G5-X96-6/G5-X96-6	G5-X96-6	OT
↔	MTERA hiT7300_6 PC	AVEIRO-N...	Opt

Results: 63, Selected: 1, Total: 63

```
G5-X96-5 (NE7)/G5-X96-5 (NE7) (TL=G5-X96-5;/shelf=1/slot=2/port=3;G5-X96-5;/shelf=1/slot=13/port
G5-X96-5 (NE7)(D001)/G5-X96-2(D001) (TL=G5-X96-5;/shelf=1/slot=1/port=2;G5-X96-2;/shelf=2/slot=1
G5-X96-5 (NE7)(D002)/G5-X96-1(D001) (TL=G5-X96-5;/shelf=1/slot=15/port=2;G5-X96-1;/shelf=1/slot=
G5-X96-6/G5-X96-6 (TL=G5-X96-6;/shelf=1/slot=14/port=3;G5-X96-6;/shelf=1/slot=2/port=3;uni)
G5-X96-6/G5-X96-6 (TL=G5-X96-6;/shelf=1/slot=14/port=4;G5-X96-6;/shelf=2/slot=2/port=4;uni)
G5-X96-6/G5-X96-6 (TL=G5-X96-6;/shelf=1/slot=14/port=5;G5-X96-6;/shelf=2/slot=14/port=4;uni)
G5-X96-6/G5-X96-6 (TL=G5-X96-6;/shelf=1/slot=2/port=3;G5-X96-6;/shelf=1/slot=14/port=3;uni)
G5-X96-6/G5-X96-6 (TL=G5-X96-6;/shelf=1/slot=2/port=4;G5-X96-6;/shelf=2/slot=2/port=3;uni)
G5-X96-6/G5-X96-6 (TL=G5-X96-6;/shelf=1/slot=2/port=5;G5-X96-6;/shelf=2/slot=14/port=3;uni)
G5-X96-6/G5-X96-6 (TL=G5-X96-6;/shelf=2/slot=14/port=3;G5-X96-6;/shelf=1/slot=2/port=5;uni)
G5-X96-6/G5-X96-6 (TL=G5-X96-6;/shelf=2/slot=14/port=4;G5-X96-6;/shelf=1/slot=14/port=5;uni)
G5-X96-6/G5-X96-6 (TL=G5-X96-6;/shelf=2/slot=14/port=5;G5-X96-6;/shelf=2/slot=2/port=5;uni)
G5-X96-6/G5-X96-6 (TL=G5-X96-6;/shelf=2/slot=2/port=3;G5-X96-6;/shelf=1/slot=2/port=4;uni)
G5-X96-6/G5-X96-6 (TL=G5-X96-6;/shelf=2/slot=2/port=4;G5-X96-6;/shelf=1/slot=14/port=4;uni)
G5-X96-6/G5-X96-6 (TL=G5-X96-6;/shelf=2/slot=2/port=5;G5-X96-6;/shelf=2/slot=14/port=5;uni)
G5-X96-6(D001)/G5-X96-2(D002) (TL=G5-X96-6;/shelf=1/slot=5/port=2;G5-X96-2;/shelf=2/slot=11/port
G5-X96-6(D002)/G5-X96-4(D002) (TL=G5-X96-6;/shelf=1/slot=15/port=2;G5-X96-4;/shelf=1/slot=9/port
G5-X96-6(D003)/G5-X96-1(D004) (TL=G5-X96-6;/shelf=2/slot=5/port=2;G5-X96-1;/shelf=3/slot=10/port
G5-X96-6(D004)/G5-X96-3(D003) (TL=G5-X96-6;/shelf=2/slot=15/port=2;G5-X96-3;/shelf=3/slot=1/port
MTERA hiT7300_6 PC (TL=AVEIRO-SID;/rack=1/shelf=20/slot=1/sub_slot=1/port=1;G5-X96-6;/shelf=3/
```

```
Name:         MTERA hiT7300_6 PC (TL=AVEIRO-SID;/rack=1/shelf=20/slot=1/sub_slot=1/pc
SubNetwork:   (MLS=1)
TNMS:         Coriant/TNMS

com.siemens.bicnet.nti.tmf.topologicalLink.TopologicalLink_T:
   name[] Length: 2
      name[0] :
         name : EMS
         value : Coriant/TNMS
      name[1] :
         name : TopologicalLink
         value : AVEIRO-SID;/rack=1/shelf=20/slot=1/sub_slot=1/port=1;G5-X96-
6;/shelf=3/slot=3/sub_slot=1/port=1;bi
   userLabel : MTERA hiT7300_6 PC
   nativeEMSName : MTERA hiT7300_6 PC
   owner :
   direction : CD_BI
   rate = LR_PHYSICAL_OPTICAL (47)
   aEndTP[] Length: 3
      aEndTP[0] :
```

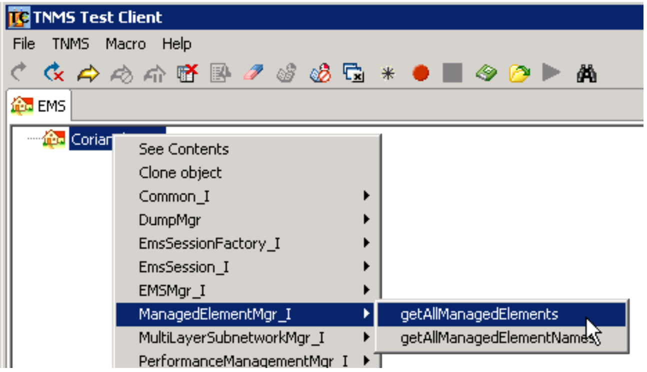
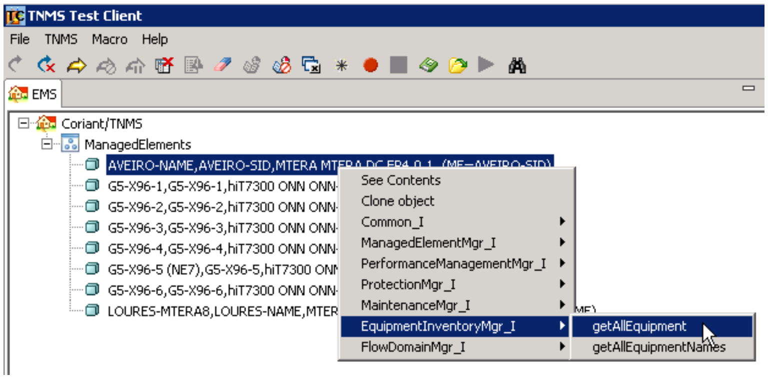
```
[2017-10-30 17:47:29] EVENT: Received a Ping from EMS to a NMS session
```

Notes:

3. EquipmentInventoryMgr_I Interface

> This chapter intents to cover all supported methods at the **EquipmentInventoryMgr_I** Interface. *Check the "Supported Managers and associated Capabilities" section for further details about what is currently implemented at TMF Interface.*

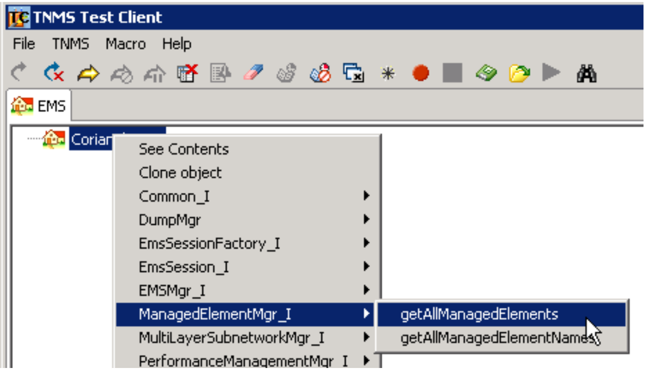
3.1 EquipmentInventoryMgr_I::getAllEquipment

Purpose:	Check the **EquipmentInventoryMgr_I::getAllEquipment** Method implementation based on an existing Network (MEs)
Procedure:	Before requesting this Method Management Elements (**MEs**) shall be available at the umbrella system; *at **ManageElementMgr_I** Interface execute the following method:* ***ManageElementMgr_I::getAllManagedElements***  TNMS Test Client File TNMS Macro Help EMS Corian See Contents Clone object Common_I DumpMgr EmsSessionFactory_I EmsSession_I EMSMgr_I ManagedElementMgr_I MultiLayerSubnetworkMgr_I PerformanceManagementMgr_I getAllManagedElements getAllManagedElementNames Having MEs available the Equipment Inventory can be retrieved per each one by requesting the Method: **EquipmentInventoryMgr_I::getAllEquipment**  TNMS Test Client File TNMS Macro Help EMS Coriant/TNMS ManagedElements AVEIRO-NAME,AVEIRO-SID,MTERA MTERA DC FP4.0.1 (ME=AVEIRO-SID) G5-X96-1,G5-X96-1,hiT7300 ONN ONN- G5-X96-2,G5-X96-2,hiT7300 ONN ONN- G5-X96-3,G5-X96-3,hiT7300 ONN ONN- G5-X96-4,G5-X96-4,hiT7300 ONN ONN- G5-X96-5 (NE7),G5-X96-5,hiT7300 ONN G5-X96-6,G5-X96-6,hiT7300 ONN ONN- LOURES-MTERA8,LOURES-NAME,MTER ME) See Contents Clone object Common_I ManagedElementMgr_I PerformanceManagementMgr_I ProtectionMgr_I MaintenanceMgr_I EquipmentInventoryMgr_I FlowDomainMgr_I getAllEquipment getAllEquipmentNames
Notes:	

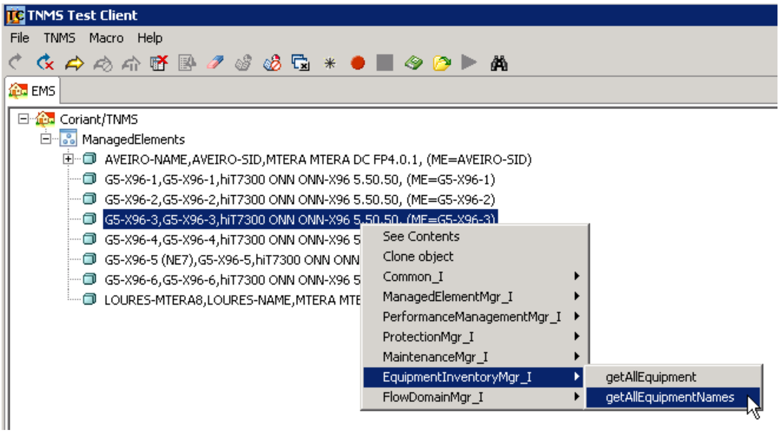
3.2 EquipmentInventoryMgr_I::getAllEquipmentNames

<table>
<tr><td><b>Purpose:</b></td><td>Check the <b>EquipmentInventoryMgr_I::getAllEquipmentNames</b> Method implementation based on an existing Network (MEs)</td></tr>
<tr><td><b>Procedure:</b></td><td>Before requesting this Method Management Elements (<b>MEs</b>) shall be available at the umbrella system; <i>at <b>ManageElementMgr_I</b> Interface execute the following method:</i>

<b><i>ManageElementMgr_I::getAllManagedElements</i></b>


</td></tr>
<tr><td><b>Procedure:</b></td><td>Having MEs available the Equipment Inventory can be retrieved per each one by requesting the Method:

<b>EquipmentInventoryMgr_I::getAllEquipmentNames</b>


TNMS Test Client
File
TNMS
Macro
Help
EMS
Coriant/TNMS
ManagedElements
AVEIRO-NAME,AVEIRO-SID,MTERA MTERA DC FP4.0.1, (ME=AVEIRO-SID)
G5-X96-1,G5-X96-1,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-1)
G5-X96-2,G5-X96-2,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-2)
G5-X96-3,G5-X96-3,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-3)
G5-X96-4,G5-X96-4,hiT7300 ONN ONN-X96 5
G5-X96-5 (NE7),G5-X96-5,hiT7300 ONN ONN
G5-X96-6,G5-X96-6,hiT7300 ONN ONN-X96 5
LOURES-MTERA8,LOURES-NAME,MTERA MTE
See Contents
Clone object
Common_I
ManagedElementMgr_I
PerformanceManagementMgr_I
ProtectionMgr_I
MaintenanceMgr_I
EquipmentInventoryMgr_I
FlowDomainMgr_I
getAllEquipment
getAllEquipmentNames

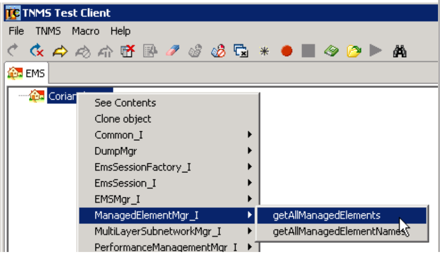
</td></tr>
<tr><td><b>Notes:</b></td><td></td></tr>
</table>

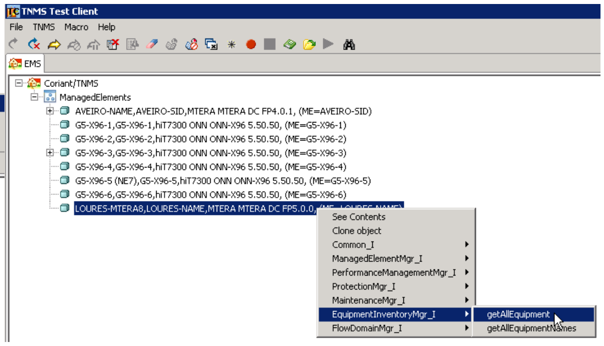
3.3 EquipmentInventoryMgr_I::getAllSupportedPTPNames

<table>
<tr><td><b>Purpose:</b></td><td>Check the <b>EquipmentInventoryMgr_I::getAllSupportedPTPNames</b> Method implementation based on existing Inventory</td></tr>
<tr><td><b>Procedure:</b></td><td>
Before requesting this Method Management Elements (<b>MEs</b>) and the related <b>Equipment Inventory (Cards and pluggables)</b> shall be available at the umbrella system; request the following Methods:

<b><i>ManageElementMgr_I::getAllManagedElements</i></b>

<b>EquipmentInventoryMgr_I::getAllEquipment</b>

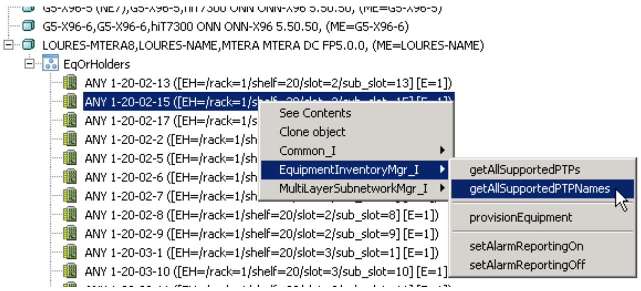




Coriant/TNMS
ManagedElements
AVEIRO-NAME,AVEIRO-SID,MTERA MTERA DC FP4.0.1, (ME=AVEIRO-SID)
G5-X96-1,G5-X96-1,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-1)
G5-X96-2,G5-X96-2,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-2)
G5-X96-3,G5-X96-3,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-3)
G5-X96-4,G5-X96-4,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-4)
G5-X96-5 (NE7),G5-X96-5,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-5)
G5-X96-6,G5-X96-6,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-6)
LOURES-MTERA8,LOURES-NAME,MTERA MTERA DC FP5.0.0,

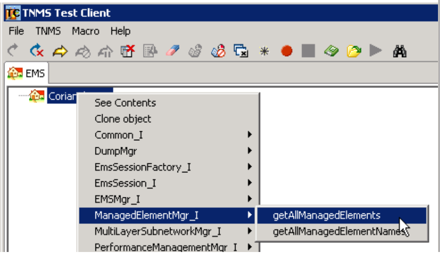
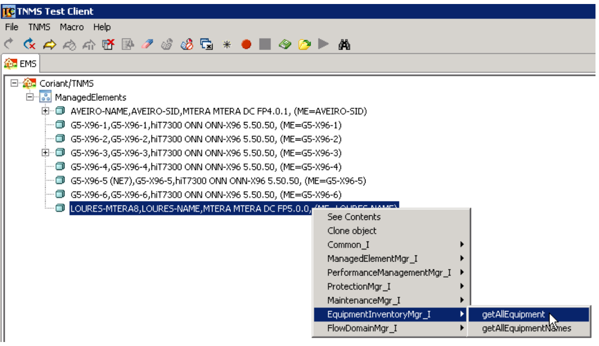
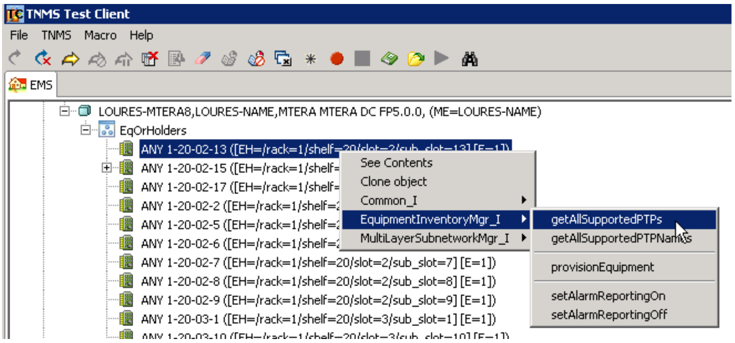
Having the Equipment Inventory available for a related ME the following Method can be retrieved:

<b>EquipmentInventoryMgr_I::getAllSupportedPTPNames</b>

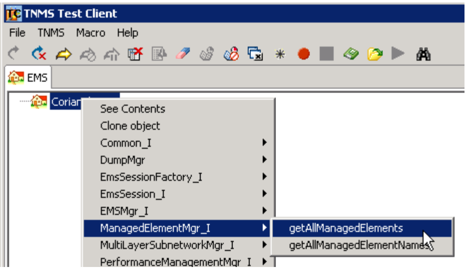
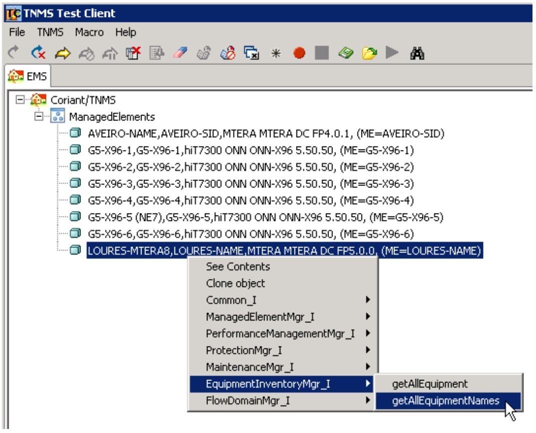
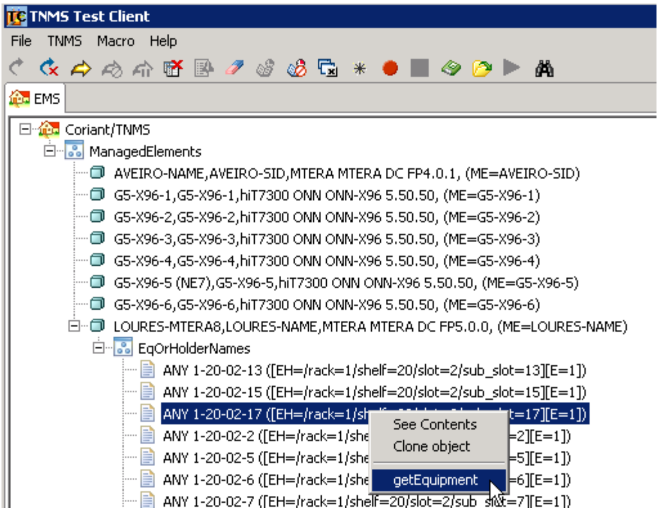


G5-X96-5 (NE7),G5-X96-5,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-5)
G5-X96-6,G5-X96-6,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-6)
LOURES-MTERA8,LOURES-NAME,MTERA MTERA DC FP5.0.0, (ME=LOURES-NAME)
EqOrHolders
ANY 1-20-02-13 ([EH=/rack=1/shelf=20/slot=2/sub_slot=13] [E=1])
ANY 1-20-02-15 ([EH=/rack=1/s
ANY 1-20-02-17 ([EH=/rack=1/s
ANY 1-20-02-2 ([EH=/rack=1/sh
ANY 1-20-02-5 ([EH=/rack=1/sh
ANY 1-20-02-6 ([EH=/rack=1/sh
ANY 1-20-02-7 ([EH=/rack=1/sh
ANY 1-20-02-8 ([EH=/rack=1/shelf=20/slot=2/sub_slot=8] [E=1])
ANY 1-20-02-9 ([EH=/rack=1/shelf=20/slot=2/sub_slot=9] [E=1])
ANY 1-20-03-1 ([EH=/rack=1/shelf=20/slot=3/sub_slot=1] [E=1])
ANY 1-20-03-10 ([EH=/rack=1/shelf=20/slot=3/sub_slot=10] [E=1]
</td></tr>
<tr><td><b>Notes:</b></td><td></td></tr>
</table>

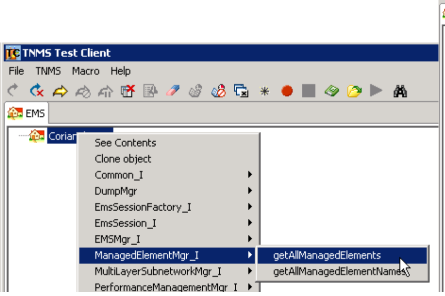
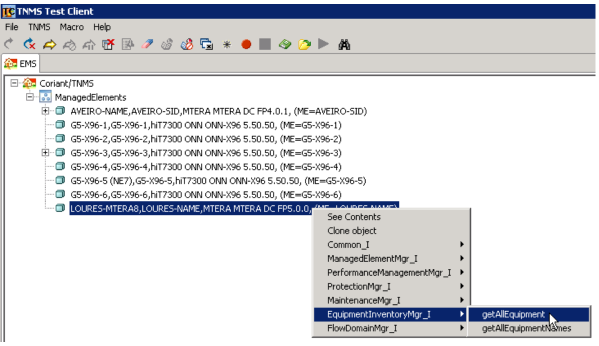
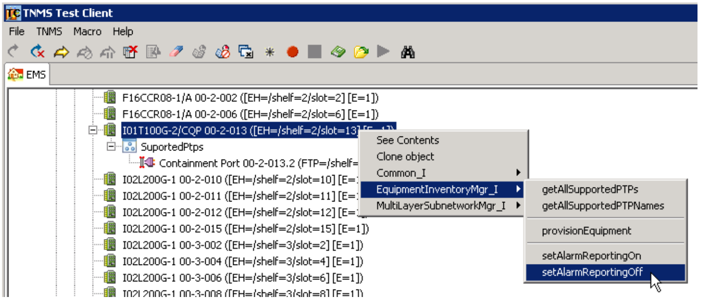
3.4 EquipmentInventoryMgr_I::getAllSupportedPTPs

Purpose:	Check the **EquipmentInventoryMgr_I::getAllSupportedPTPs** Method implementation based on existing Inventory
Procedure:	Before requesting this Method Management Elements (**MEs**) and the related **Equipment Inventory (Cards and pluggables)** shall be available at the umbrella system; request the following Methods: ***ManageElementMgr_I::getAllManagedElements*** **EquipmentInventoryMgr_I::getAllEquipment**  TNMS Test Client File TNMS Macro Help EMS Corian See Contents Clone object Common_I DumpMgr EmsSessionFactory_I EmsSession_I EMSMgr_I ManagedElementMgr_I MultiLayerSubnetworkMgr_I PerformanceManagementMgr_I getAllManagedElements getAllManagedElementNames TNMS Test Client File TNMS Macro Help EMS Coriant/TNMS ManagedElements AVEIRO-NAME,AVEIRO-SID,MTERA MTERA DC FP4.0.1, (ME=AVEIRO-SID) G5-X96-1,G5-X96-1,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-1) G5-X96-2,G5-X96-2,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-2) G5-X96-3,G5-X96-3,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-3) G5-X96-4,G5-X96-4,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-4) G5-X96-5 (NE7),G5-X96-5,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-5) G5-X96-6,G5-X96-6,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-6) LOURES-MTERA8,LOURES-NAME,MTERA MTERA DC FP5.0.0, See Contents Clone object Common_I ManagedElementMgr_I PerformanceManagementMgr_I ProtectionMgr_I MaintenanceMgr_I EquipmentInventoryMgr_I FlowDomainMgr_I getAllEquipment getAllEquipmentNames Having the Equipment Inventory available for a related ME the following Method can be retrieved:
Procedure:	**EquipmentInventoryMgr_I::getAllSupportedPTPs**  TNMS Test Client File TNMS Macro Help EMS LOURES-MTERA8,LOURES-NAME,MTERA MTERA DC FP5.0.0, (ME=LOURES-NAME) EqOrHolders ANY 1-20-02-13 ([EH=/rack=1/shelf=20/slot=2/sub_slot=13] [E=1]) ANY 1-20-02-15 ([EH=/rack=1/shelf= ANY 1-20-02-17 ([EH=/rack=1/shelf= ANY 1-20-02-2 ([EH=/rack=1/shelf= ANY 1-20-02-5 ([EH=/rack=1/shelf= ANY 1-20-02-6 ([EH=/rack=1/shelf= ANY 1-20-02-7 ([EH=/rack=1/shelf=20/slot=2/sub_slot=7] [E=1]) ANY 1-20-02-8 ([EH=/rack=1/shelf=20/slot=2/sub_slot=8] [E=1]) ANY 1-20-02-9 ([EH=/rack=1/shelf=20/slot=2/sub_slot=9] [E=1]) ANY 1-20-03-1 ([EH=/rack=1/shelf=20/slot=3/sub_slot=1] [E=1]) ANY 1-20-03-10 ([EH=/rack=1/shelf=20/slot=3/sub_slot=10] [E=1]) See Contents Clone object Common_I EquipmentInventoryMgr_I MultiLayerSubnetworkMgr_I getAllSupportedPTPs getAllSupportedPTPNames provisionEquipment setAlarmReportingOn setAlarmReportingOff
Notes:	

3.5 EquipmentInventoryMgr_I::getEquipment

Purpose:	Check the **EquipmentInventoryMgr_I::getEquipment** Method implementation based on existing Inventory
Procedure:	Before requesting this Method Management Elements (**MEs**) and the related **Equipment Inventory <u>Names</u> (Cards and pluggables Names)** shall be available at the umbrella system; request the following Methods: ***ManageElementMgr_I::getAllManagedElements*** **EquipmentInventoryMgr_I::getAllEquipmentNames**  TNMS Test Client File TNMS Macro Help EMS Corian See Contents Clone object Common_I DumpMgr EmsSessionFactory_I EmsSession_I EMSMgr_I ManagedElementMgr_I MultiLayerSubnetworkMgr_I PerformanceManagementMgr_I getAllManagedElements getAllManagedElementNames TNMS Test Client File TNMS Macro Help EMS See Contents Clone object Common_I ManagedElementMgr_I PerformanceManagementMgr_I ProtectionMgr_I MaintenanceMgr_I EquipmentInventoryMgr_I FlowDomainMgr_I getAllEquipment getAllEquipmentNamesCoriant/TNMS ManagedElements AVEIRO-NAME,AVEIRO-SID,MTERA MTERA DC FP4.0.1, (ME=AVEIRO-SID) G5-X96-1,G5-X96-1,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-1) G5-X96-2,G5-X96-2,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-2) G5-X96-3,G5-X96-3,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-3) G5-X96-4,G5-X96-4,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-4) G5-X96-5 (NE7),G5-X96-5,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-5) G5-X96-6,G5-X96-6,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-6) LOURES-MTERA8,LOURES-NAME,MTERA MTERA DC FP5.0.0, (ME=LOURES-NAME) Having the Equipment Names available for a related ME the following Method can be retrieved: **EquipmentInventoryMgr_I::getEquipment**  TNMS Test Client File TNMS Macro Help EMS See Contents Clone object getEquipmentCoriant/TNMS ManagedElements AVEIRO-NAME,AVEIRO-SID,MTERA MTERA DC FP4.0.1, (ME=AVEIRO-SID) G5-X96-1,G5-X96-1,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-1) G5-X96-2,G5-X96-2,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-2) G5-X96-3,G5-X96-3,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-3) G5-X96-4,G5-X96-4,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-4) G5-X96-5 (NE7),G5-X96-5,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-5) G5-X96-6,G5-X96-6,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-6) LOURES-MTERA8,LOURES-NAME,MTERA MTERA DC FP5.0.0, (ME=LOURES-NAME) EqOrHolderNames ANY 1-20-02-13 ([EH=/rack=1/shelf=20/slot=2/sub_slot=13][E=1]) ANY 1-20-02-15 ([EH=/rack=1/shelf=20/slot=2/sub_slot=15][E=1]) ANY 1-20-02-17 ([EH=/rack=1/sh t=17][E=1]) ANY 1-20-02-2 ([EH=/rack=1/she =2][E=1]) ANY 1-20-02-5 ([EH=/rack=1/she =5][E=1]) ANY 1-20-02-6 ([EH=/rack=1/she =6][E=1]) ANY 1-20-02-7 ([EH=/rack=1/shelf=20/slot=2/sub =7][E=1])
Notes:	

3.6 EquipmentInventoryMgr_I::setAlarmReportingOff

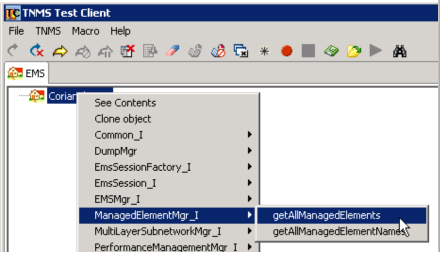
Purpose:	Check the EquipmentInventoryMgr_I::setAlarmReportingOff Method implementation based on existing **Cards/Ports**
Procedure:	Before requesting this Method Management Elements (**MEs**) and the related Equipment (Cards and Ports) shall be available at the umbrella system; request the following Methods: **ManageElementMgr_I::getAllManagedElements** **EquipmentInventoryMgr_I::getAllEquipment**  TNMS Test Client File TNMS Macro Help EMS Corian See Contents Clone object Common_I DumpMgr EmsSessionFactory_I EmsSession_I EMSMgr_I ManagedElementMgr_I MultiLayerSubnetworkMgr_I PerformanceManagementMgr_I getAllManagedElements getAllManagedElementNames  TNMS Test Client File TNMS Macro Help EMS Coriant/TNMS ManagedElements AVEIRO-NAME,AVEIRO-SID,MTERA MTERA DC FP4.0.1, (ME=AVEIRO-SID) G5-X96-1,G5-X96-1,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-1) G5-X96-2,G5-X96-2,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-2) G5-X96-3,G5-X96-3,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-3) G5-X96-4,G5-X96-4,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-4) G5-X96-5 (NE7),G5-X96-5,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-5) G5-X96-6,G5-X96-6,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-6) LOURES-MTERA8,LOURES-NAME,MTERA MTERA DC FP5.0.0, See Contents Clone object Common_I ManagedElementMgr_I PerformanceManagementMgr_I ProtectionMgr_I MaintenanceMgr_I EquipmentInventoryMgr_I FlowDomainMgr_I getAllEquipment getAllEquipmentNames Having the Equipment available (**Cards and Ports**) for a related ME the following Method can be retrieved:
Procedure:	**EquipmentInventoryMgr_I::setAlarmReportingOff**  TNMS Test Client File TNMS Macro Help EMS F16CCR08-1/A 00-2-002 ([EH=/shelf=2/slot=2] [E=1]) F16CCR08-1/A 00-2-006 ([EH=/shelf=2/slot=6] [E=1]) I01T100G-2/CQP 00-2-013 ([EH=/shelf=2/slot=13] SuportedPtps Containment Port 00-2-013.2 (FTP=/shelf= I02L200G-1 00-2-010 ([EH=/shelf=2/slot=10] [E= I02L200G-1 00-2-011 ([EH=/shelf=2/slot=11] [E= I02L200G-1 00-2-012 ([EH=/shelf=2/slot=12] [E= I02L200G-1 00-2-015 ([EH=/shelf=2/slot=15] [E=1]) I02L200G-1 00-3-002 ([EH=/shelf=3/slot=2] [E=1]) I02L200G-1 00-3-004 ([EH=/shelf=3/slot=4] [E=1]) I02L200G-1 00-3-006 ([EH=/shelf=3/slot=6] [E=1]) I02L200G-1 00-3-008 ([EH=/shelf=3/slot=8] [E=1]) See Contents Clone object Common_I EquipmentInventoryMgr_I MultiLayerSubnetworkMgr_I getAllSupportedPTPs getAllSupportedPTPNames provisionEquipment setAlarmReportingOn setAlarmReportingOff
Notes:	

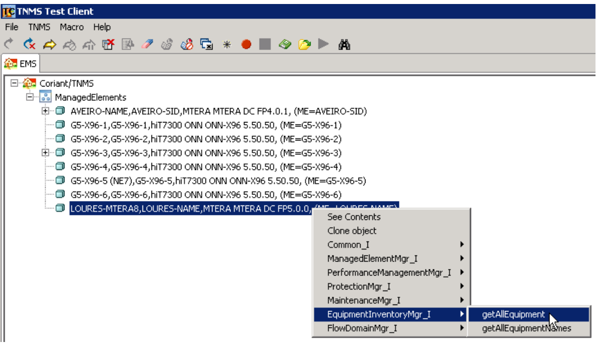
3.7 EquipmentInventoryMgr_I::setAlarmReportingOn

<table>
<tr><td><b>Purpose:</b></td><td>Check the EquipmentInventoryMgr_I::setAlarmReportingOn Method implementation based on existing <b>Cards/Ports</b></td></tr>
<tr><td><b>Procedure:</b></td><td>
Before requesting this Method Management Elements (<b>MEs</b>) and the related Equipment (Cards and Ports) shall be available at the umbrella system; request the following Methods:

<b>ManageElementMgr_I::getAllManagedElements</b>

<b>EquipmentInventoryMgr_I::getAllEquipment</b>

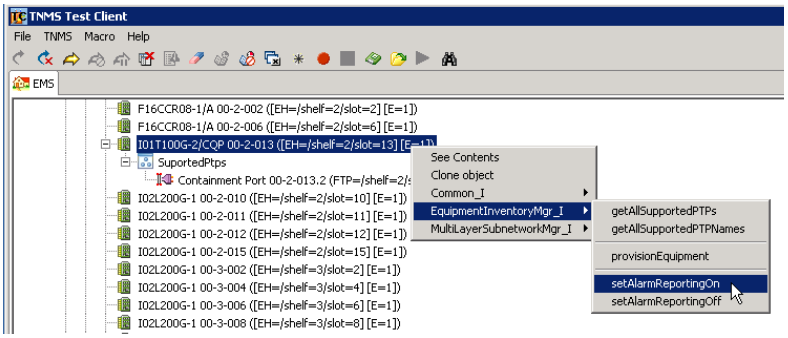




Coriant/TNMS
ManagedElements
AVEIRO-NAME,AVEIRO-SID,MTERA MTERA DC FP4.0.1, (ME=AVEIRO-SID)
G5-X96-1,G5-X96-1,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-1)
G5-X96-2,G5-X96-2,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-2)
G5-X96-3,G5-X96-3,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-3)
G5-X96-4,G5-X96-4,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-4)
G5-X96-5 (NE7),G5-X96-5,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-5)
G5-X96-6,G5-X96-6,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-6)
LOURES-MTERA8,LOURES-NAME,MTERA MTERA DC FP5.0.0,

Having the Equipment available (<b>Cards and Ports</b>) for a related ME the following Method can be retrieved:

<b>EquipmentInventoryMgr_I::setAlarmReportingOff</b>



F16CCR08-1/A 00-2-002 ([EH=/shelf=2/slot=2] [E=1])
F16CCR08-1/A 00-2-006 ([EH=/shelf=2/slot=6] [E=1])
I01T100G-2/CQP 00-2-013 ([EH=/shelf=2/slot=13] [E=1])
SuportedPtps
Containment Port 00-2-013.2 (FTP=/shelf=2/s
I02L200G-1 00-2-010 ([EH=/shelf=2/slot=10] [E=1])
I02L200G-1 00-2-011 ([EH=/shelf=2/slot=11] [E=1])
I02L200G-1 00-2-012 ([EH=/shelf=2/slot=12] [E=1])
I02L200G-1 00-2-015 ([EH=/shelf=2/slot=15] [E=1])
I02L200G-1 00-3-002 ([EH=/shelf=3/slot=2] [E=1])
I02L200G-1 00-3-004 ([EH=/shelf=3/slot=4] [E=1])
I02L200G-1 00-3-006 ([EH=/shelf=3/slot=6] [E=1])
I02L200G-1 00-3-008 ([EH=/shelf=3/slot=8] [E=1])
</td></tr>
<tr><td><b>Notes:</b></td><td></td></tr>
</table>

3.8 EquipmentInventoryMgr_I::provisionEquipment (Card Commissioning)

Purpose:

Check the **EquipmentInventoryMgr_I::provisionEquipment** Method implementation based on an existing Network (MEs)

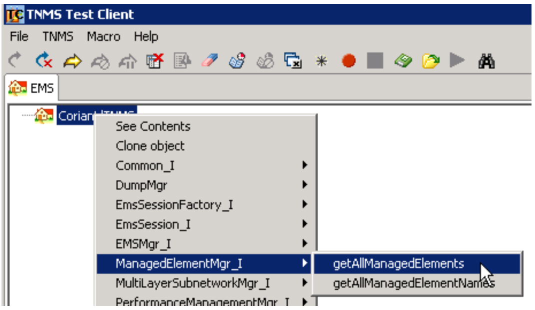
Procedure:

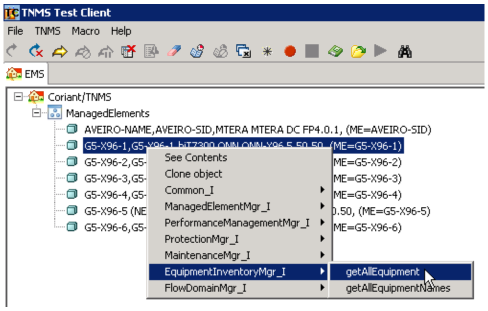
This Method allows the Provisioning of the **plannedActualCardType** value only; **it does not support creation of Equipment.**

Before Provisioning the **plannedActualCardType** value to an existing card the following Methods shall be executed in order to have all available Equipment:

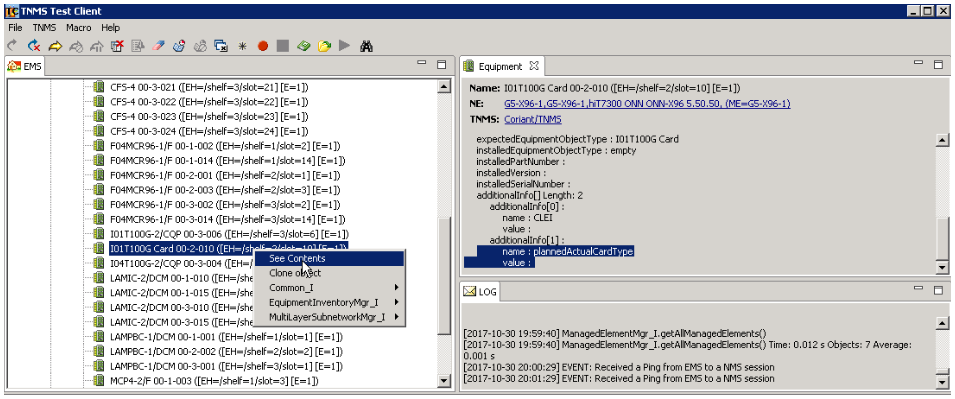
ManageElementMgr_I::getAllManageElements;

EquipmentInventoryMgr_I::getAllEquipment




TNMS Test Client
File
TNMS
Macro
Help
EMS
Coriant/TNMS
ManagedElements
AVEIRO-NAME,AVEIRO-SID,MTERA MTERA DC FP4.0.1, (ME=AVEIRO-SID)
G5-X96-1,G5-X96-1,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-1)
G5-X96-2,G5- ME=G5-X96-2)
G5-X96-3,G5- ME=G5-X96-3)
G5-X96-4,G5- ME=G5-X96-4)
G5-X96-5 (NE .50, (ME=G5-X96-5)
G5-X96-6,G5- ME=G5-X96-6)
See Contents
Clone object
Common_I
ManagedElementMgr_I
PerformanceManagementMgr_I
ProtectionMgr_I
MaintenanceMgr_I
EquipmentInventoryMgr_I
FlowDomainMgr_I
getAllEquipment
getAllEquipmentNames

For a selected existing card the **plannedActualCardType** value can be manipulated:


TNMS Test Client
File
TNMS
Macro
Help
EMS
CFS-4 00-3-021 ([EH=/shelf=3/slot=21] [E=1])
CFS-4 00-3-022 ([EH=/shelf=3/slot=22] [E=1])
CFS-4 00-3-023 ([EH=/shelf=3/slot=23] [E=1])
CFS-4 00-3-024 ([EH=/shelf=3/slot=24] [E=1])
F04MCR96-1/F 00-1-002 ([EH=/shelf=1/slot=2] [E=1])
F04MCR96-1/F 00-1-014 ([EH=/shelf=1/slot=14] [E=1])
F04MCR96-1/F 00-2-001 ([EH=/shelf=2/slot=1] [E=1])
F04MCR96-1/F 00-2-003 ([EH=/shelf=2/slot=3] [E=1])
F04MCR96-1/F 00-3-002 ([EH=/shelf=3/slot=2] [E=1])
F04MCR96-1/F 00-3-014 ([EH=/shelf=3/slot=14] [E=1])
I01T100G-2/CQP 00-3-006 ([EH=/shelf=3/slot=6] [E=1])
I01T100G Card 00-2-010 ([EH=/shelf=2/slot=10] [E=1])
I04T100G-2/CQP 00-3-004 ([EH=/
LAMIC-2/DCM 00-1-010 ([EH=/she
LAMIC-2/DCM 00-1-015 ([EH=/she
LAMIC-2/DCM 00-3-010 ([EH=/she
LAMIC-2/DCM 00-3-015 ([EH=/she
LAMPBC-1/DCM 00-1-001 ([EH=/shelf=1/slot=1] [E=1])
LAMPBC-1/DCM 00-2-002 ([EH=/shelf=2/slot=2] [E=1])
LAMPBC-1/DCM 00-3-001 ([EH=/shelf=3/slot=1] [E=1])
MCP4-2/F 00-1-003 ([EH=/shelf=1/slot=3] [E=1])
See Contents
Clone object
Common_I
EquipmentInventoryMgr_I
MultiLayerSubnetworkMgr_I
Equipment
LOG

Name: I01T100G Card 00-2-010 ([EH=/shelf=2/slot=10] [E=1])
NE: G5-X96-1,G5-X96-1,hiT7300 ONN ONN-X96 5.50.50, (ME=G5-X96-1)
TNMS: Coriant/TNMS

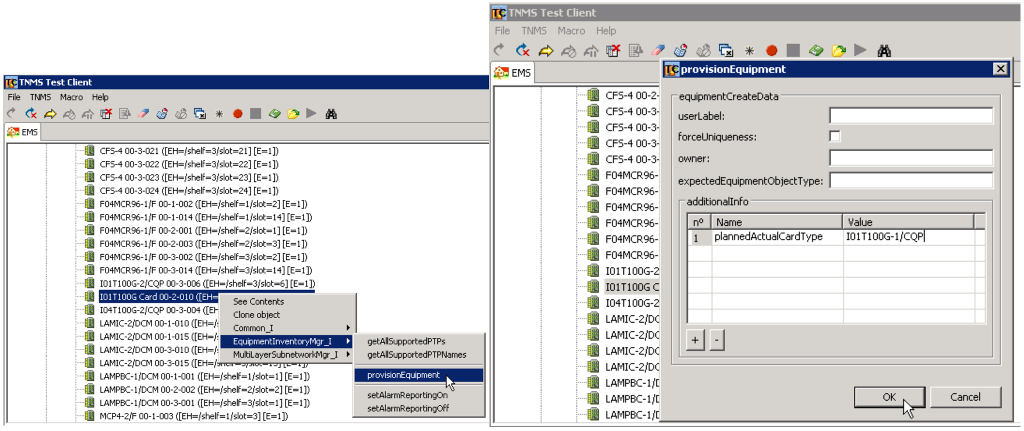
```
expectedEquipmentObjectType : I01T100G Card
installedEquipmentObjectType : empty
installedPartNumber :
installedVersion :
installedSerialNumber :
additionalInfo[] Length: 2
    additionalInfo[0] :
        name : CLEI
        value :
    additionalInfo[1] :
        name : plannedActualCardType
        value :
```

```
[2017-10-30 19:59:40] ManagedElementMgr_I.getAllManagedElements()
[2017-10-30 19:59:40] ManagedElementMgr_I.getAllManagedElements() Time: 0.012 s Objects: 7 Average:
0.001 s
[2017-10-30 20:00:29] EVENT: Received a Ping from EMS to a NMS session
[2017-10-30 20:01:29] EVENT: Received a Ping from EMS to a NMS session
```

Request the following Method:

EquipmentInventoryMgr_I::provisionEquipment

and set the desired **plannedActualCardType**

Procedure:	 TNMS Test Client File TNMS Macro Help EMS See Contents Clone object Common_I EquipmentInventoryMgr_I MultiLayerSubnetworkMgr_I getAllSupportedPTPs getAllSupportedPTPNames provisionEquipment setAlarmReportingOn setAlarmReportingOff OK Cancel CFS-4 00-3-021 ([EH=/shelf=3/slot=21] [E=1]) CFS-4 00-3-022 ([EH=/shelf=3/slot=22] [E=1]) CFS-4 00-3-023 ([EH=/shelf=3/slot=23] [E=1]) CFS-4 00-3-024 ([EH=/shelf=3/slot=24] [E=1]) F04MCR96-1/F 00-1-002 ([EH=/shelf=1/slot=2] [E=1]) F04MCR96-1/F 00-1-014 ([EH=/shelf=1/slot=14] [E=1]) F04MCR96-1/F 00-2-001 ([EH=/shelf=2/slot=1] [E=1]) F04MCR96-1/F 00-2-003 ([EH=/shelf=2/slot=3] [E=1]) F04MCR96-1/F 00-3-002 ([EH=/shelf=3/slot=2] [E=1]) F04MCR96-1/F 00-3-014 ([EH=/shelf=3/slot=14] [E=1]) I01T100G-2/CQP 00-3-006 ([EH=/shelf=3/slot=6] [E=1]) I01T100G Card 00-2-010 ([EH= I04T100G-2/CQP 00-3-004 ([EH LAMIC-2/DCM 00-1-010 ([EH=/ LAMIC-2/DCM 00-1-015 ([EH=/ LAMIC-2/DCM 00-3-010 ([EH=/ LAMIC-2/DCM 00-3-015 ([EH=/ LAMPBC-1/DCM 00-1-001 ([EH=/shelf=1/slot=1] [E=1]) LAMPBC-1/DCM 00-2-002 ([EH=/shelf=2/slot=2] [E=1]) LAMPBC-1/DCM 00-3-001 ([EH=/shelf=3/slot=1] [E=1]) MCP4-2/F 00-1-003 ([EH=/shelf=1/slot=3] [E=1]) provisionEquipment equipmentCreateData userLabel: forceUniqueness: □ owner: expectedEquipmentObjectType: additionalInfo nº | Name | Value 1 | plannedActualCardType | I01T100G-1/CQP Request again **EquipmentInventoryMgr_I::getAllEquipment** to have the latest equipment update to the Umbrella System (e.g. TTT Tool).
Notes:	

4. Abbreviations

	A
ACS	Actual Creation State
APS	Application Program System
ASON	Automatic Switched Optical Network
ASTN	Automatic Switched Transport Network
AVC	Attribute Value Change
	B
BCB	BiCNet Communication Bus
BiCNet	Best in Class Network Management
BCM	Boarder Crossing Mode
	C
CC	Cross Connection
CDT	Central Daylight Saving Time
CF	Common Function
CM	Configuration Management
CORBA	Common Object Request Broker Architecture
CR-LDP	Constraint Route – Label Distribution Protocol
CTP	Connection Termination Point
CSPF	Constrained Shortest Path First
CLEI	Common Language Equipment Identification
	D
DWDM	Dense Wavelength Division Multiplexing
DCN	Data Communication Network
	E
E2E	End-to-End
E-NNI	Exterior Node to Node Interface
EM/NE ObjM	Element Manager/Network Element Object Management
EML	Element Management Layer
EMS	Element Management System
ERO	Explicit Route Object
Eth	all Ethernet layers supported according TR0026304 Support of Ethernet Layers
	F
FA	Forwarding Adjacencies
FA-LSP	Forwarding Adjacencies LSP
FDN	Full Distinguished Name
FM	Fault Management
	G
GFP	Generic Framing Procedure
GFPC	GFP Channel
GMPLS	Generalized Multi-protocol Label Switching
GNE	Gateway Network Element
GTP	Group Termination Point
GTTP	Group Trail Termination Point
	I
ID	Identification
IDL	Interface Definition Language
IOR	Interoperable Object Reference
I-NNI	Internal Node to Node Interface
IS-IS	Intermediate System to Intermediate System
ITU-T	International Telecommunications Union

J	
JEE	Java Enterprise Edition
JMS	Java Messaging Service
L	
L2SC	Layer-2 Switch Capable
LCT	Local Craft Terminal (Software)
LDP	Label Distribution Protocol
LO-VC	Lower Order Virtual Container
LSA	Link State Advertisement
LSP	Label Switched Path
M	
MDB	Message Driven Bean
ME	Managed Element
MEMgr	Managed Element Manager
MLSN	MultiLayer Subnetwork
MLSNMgr	MultiLayer Subnetwork Manager
N	
NE	Network Element
NEC	Network Element Controller
NMS	Network Management system
NWL	Network Layer
O	
OADM	Optical Add/Drop Multiplexer
OC	Object Creation
OCP	Optical Channel Protection
OCR	Optical Channel Regenerator
OCU	Optical Channel Unit
OD	Object Deletion
ODU	Optical Data Unit
OLM	Optical Link Manager – Manages Services
OCH	Optical Channel
OD	Object Deletion
OLR	Optical Line Repeater
OMG	Object Management Group
OMS	Optical Multiplex Section
ORB	Object Request Broker
OTS	Optical Transmission Section
OTT	Optical Trail Termination
OTU	Optical Transport Unit
OIF	Optical Interworking Forum
OSPF-TE	OSPF Traffic Engineering extensions
OSPF	Open Shortest Path First
P	
PC	Permanent Connection
PGP	Protection Group
PM	Performance Management
PS	Protection Switching
PTP	Physical Termination Point
PDH	Plesiochronous Digital Hierarchy
PFL	Product Feature List
POJO	Plain Old Java Object

	R
RCS	*Required Creation State*
RDN	*Relative Distinguished Name*
RS	*Regenerator Section*
RFC	*Request For Changes*
RSVP	*Resource ReSerVation Protocol*
RMI	*Remote method invocation*
RSVP-TE	*RSVP Traffic Engineering extensions*
RDBMS	*Rational Database Management System*
	S
SC	*Switched Connection / State Change*
SDH	*Synchronous Digital Hierarchy*
SNC	*Sub-Network Connection*
SNCP	*Subnetwork Connection Protection*
SONET	*Synchronous Optical Network*
SPC	*Switched Permanent Connection*
SNCP	*SubNetwork Connection Protection*
SRLG	*Shared Risk Link Group*
SSIM	*SONET/SDH Information Modeling*
	T
TCOM	*TMF CORBA Manager*
TCA	*Threshold Crossing Alert*
TCOA	*TMF CORBA Agent*
TCOI	*TMF CORBA Interface*
TCOM	*TMF CORBA Manager*
TDM	*Time Division Multiplex*
TE	*Traffic Engineering*
TE-Link	*Traffic Engineering Link*
TL	*Topological Link*
TLV	*Type-Length-Value format*
TMF	*TeleManagement Forum*
TNA	*Telecommunication Network Assigned*
TNMS	*Telecommunication Network Management System*
TNMS-C	*Telecommunication Network Management System - Core*
TP	*Termination Point*
TPL	*Transmit Power Level*
TrD	*Traffic Descriptor*
TTP	*Trail Termination Point*
	U
UNI	*User Network Interface*
UNO	*Universal Object*
	V
VC4	*Virtual Container level 4*
VCAT	*Virtual Concatenation*
VLAN	*Virtual Local Access Network*
	W
WDM	*Wavelength Division Multiplexing*
	X
XC	*Cross Connection*