UNIFY Harmonize your enterprise

Formerly
Siemens Enterprise Communications

Openstage 15/20/40/60/80 Service Information - Trace Guide

We are now Unify.

Formerly known as Siemens Enterprise Communications, Unify continues to be one of the world's largest communications software and services firms.

This document references our previous company name; all other content is still valid and correct. For further information, please visit unify.com.

SIEMENS

Openstage 15/20/40/60/80

Service Information- Trace Guide

SEN VA DE QA 2

Ausgabe: 1.0
Datum: 12.07.2010
Author: Rene Koritsch
Responsible: Andre Bergmann
Status: Released

Herausgegeben von
Siemens Enterprise Communications GmbH & Co. KG is a Trademark Licensee of Siemens AG
Hofmannstraße 51
D-81359 München

Table of contents

1. Reason for this HowTo

Sometimes development is not able to pinpoint a problem with network traces only. It could happen that the message flow is correct but the phone behavior is not as it should be.

For those cases the phones are able to trace internal processes that show the development what is going wrong.

The steps for activating / reading out / deactivating those traces are mostly the same. With this HowTo in hands the requester must only define which traces he needs

2. Pre-Conditions

Ensure that the phone is configured with a working SNTP server to have the correct time available in the traces.

- If no SNTP server is available, ensure that the correct time is configured manually.

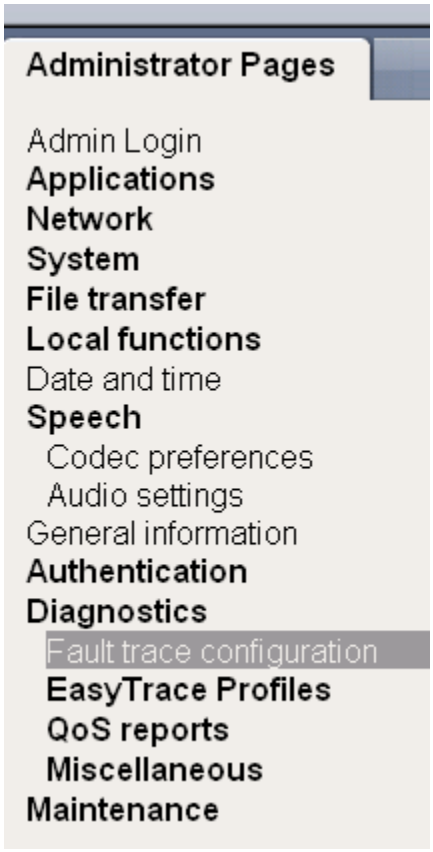
If it is asked to deliver the internal phone traces in combination with some other traces (e.g. Wireshark) it is necessary that the trace-pc has configured the same SNTP server as the phone.

- If no SNTP server is available, ensure that you've configured the same time on all tracing devices.

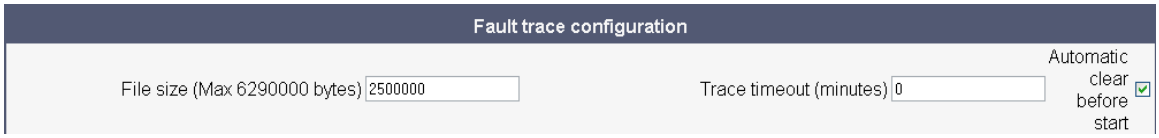
3. Phone traces

3.1 activate internal phone traces

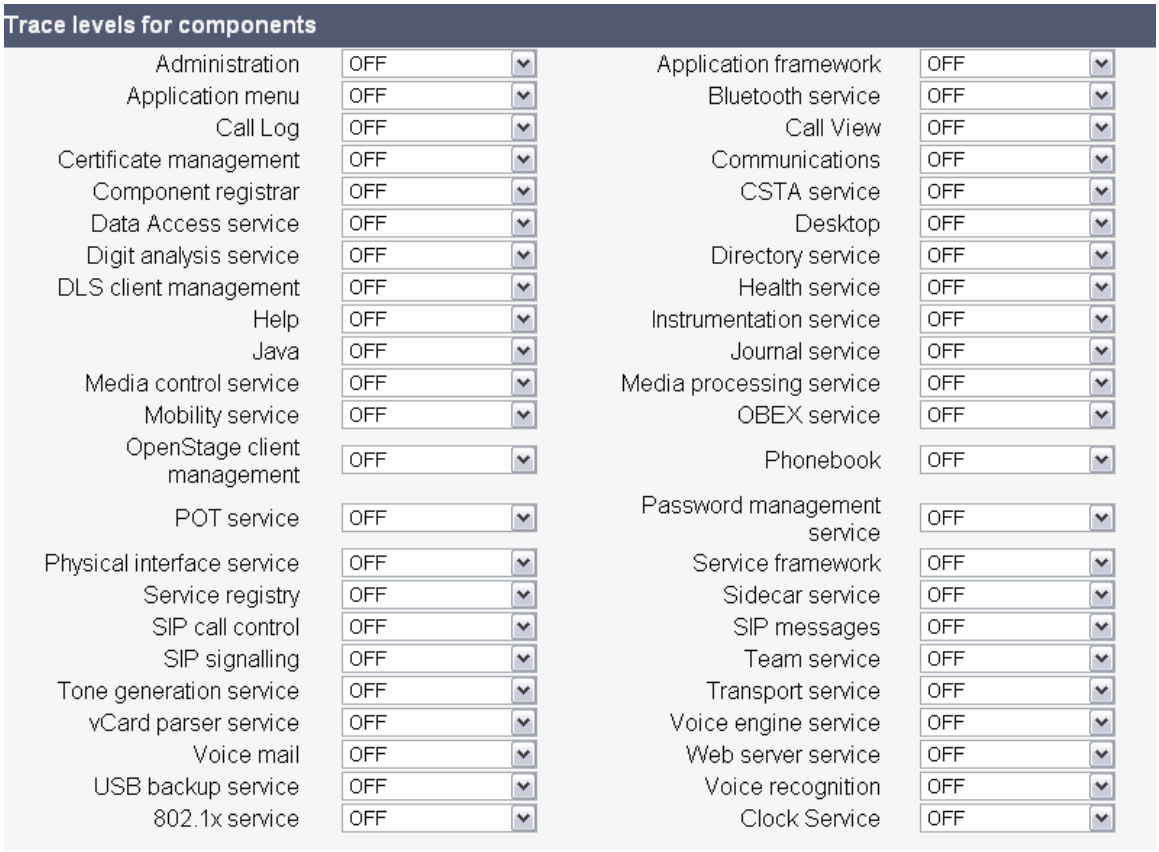
- Log-in to the WBM as administrator



- Select the **Fault trace configuration** menu



- Set the trace **timeout to 0** (disable trace timeout)
- Now you need to set the **file size** to
  - OS 15/20 : 500.000 bytes
  - OS 40 : 1500.000 bytes
  - OS 60/80 : 2500.000 bytes
- **activate** the checkbox for “Automatic clear before start”



- Choose / set the Trace level for components (**DEBUG**)
- Click the **Submit** Button

3.2 trace component description

Administration
This deals with the changing and setting of parameters within the phone database, from both the User and Admin menus

Application framework
All applications within the phone e.g. Call view, Call log or Phonebook are run within the application framework. It is responsible for the switching :between different applications and bringing them into and out of focus as appropriate.

Application Menu
This is where applications to be run on the phone can be started and stopped.

Bluetooth Service
This handles the Bluetooth interactions between external Bluetooth devices and the phone.

Call log
This deals with the Call log application which displays the call history of the phone.

Call view
This handles the representation of telephony calls on the phone screen.

Certificate management
This service handles the verification and exchange of certificates for security and verification purposes.

Communications
This is involved in the passing of call related information and signaling to and from the CSTA service.

Component registrar
This handles data relating to the type of phone e.g HFA/SIP Workpoint Hi/Workpoint Lo.

CSTA service
Any CSTA messages, are handled by this service. CSTA messages are used within the phone by all services as a common call progression and control :protocol.

Data Access service
This service allows other services to access the data held within the phone database.

Desktop
The desktop service is responsible for the shared parts of the phone display. Primarily these are the status bar at the top of the screen and the FPK :labels.

Digit Analysis service
This analyses and modifies digit streams which are sent and received by the phone e.g. canonical conversion.

Directory service
This performs a look up service for data in the phonebook, trying to match incoming and outgoing numbers with entries in the phonebook.

DLS Client management
Interactions with the Deployment and licencing server are handled by this service.

Health service
This monitors other parts of the phone for diagnostic purposes and provides a logging interface for the other services in the phone.

Help
The help function is handled by this service.

Instrumentation service
This is used by the Husim phone tester to exchange data with the phone for remote control, testing and monitoring purposes.

Java
Any Java applications run on the phone will be run in the Java sandbox controlled by the Java service.

Journal service
The Journal service is responsible for saving and retrieving call history information which is used by the Call log application.

Media control service
This service provides the control of media streams (voice, tones, ringing etc.) within the phone.

Media Processing service.
This is a layer of software between the media control service and the tone generation and voice engine services. It is also involved in switching of :audio devices such as the handset and loudspeaker.

Mobility service
This handles the mobility feature whereby users can log onto different phones and have them configured to their own profile.

OBEX service
This is involved with Bluetooth accesses to the phone

Openstage Client Management
This provides a means by which other services within the phone can interact with the database.

Phonebook
This is responsible for the phonebook application within the phone.

POT service
This service is supposed to take over control of basic telephony if the callview application fails.

Password management service
This is used to verify passwords used in the phone.

Physical interface service
This handles any interactions with the phone via the keypad, mode keys, fixed feature buttons, clickwheel and slider.

Service framework
This is the environment within which other phone services operate. It is involved in the starting and stopping of services.

Service registry
This keeps a record of all services which are currently running inside the phone

Sidecar service
This handles interactions between the phone and any attached sidecars.

SIP call control
This is contains the call model for the phone and is associated with telephony and call handling.

SIP Messages
This traces the SIP messages which are exchanged by the phone. **Activating the SIP messages trace requires a reboot of the device**

SIP signalling
This is involved in the creation and parsing of SIP messages and communicates directly with the SIP stack.

Team Service
This is primarily concerned with Keyset operation.

Tone generation
This service handles the generation of the tones and ringers on the phone
.
Transport service
The transport service provides the IP (LAN) interface between the phone and the outside world.

vCard parser service
This trace is for sending/recieving vCards via the Bluetooth interface.

Voice engine
This provides a switching mechanism for voice streams within the phone. It is also involved in QDC, Music on Hold and voice instrumentation.

Voice mail
This trace monitors the integrated Voice mail application of the phone.

Web Server service
This provides the web access to the phone.

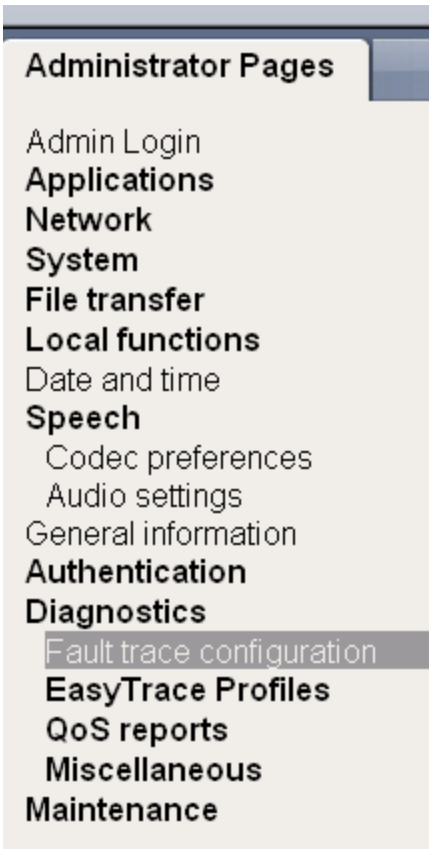
USB Backup service
This is for the backup/restore feature via USB devices.

Voice recognition
The Voice recognition service is for the voice dialling feature

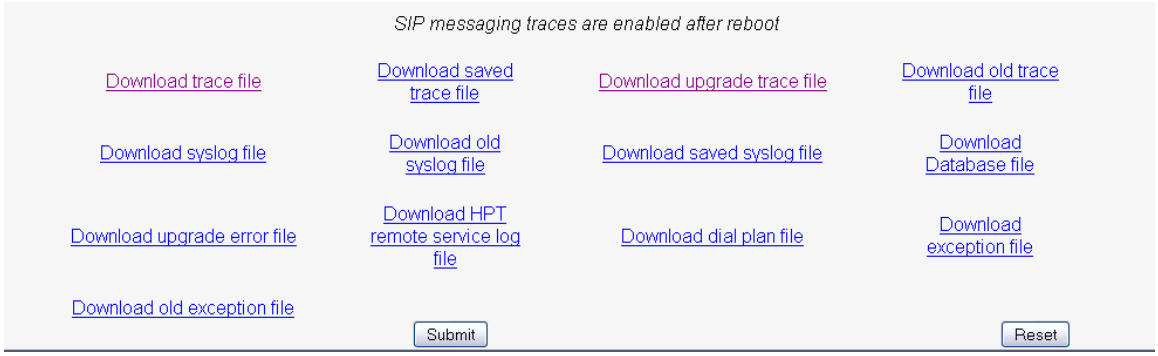
802.1x service
This is for port security (802.1x)

3.3 read out the internal phone traces

- Log-in to the WBM as administrator



- Select the **Fault trace configuration** menu



- now it is possible to download **13** different trace files

  - **trace file**
    The trace data according to the settings specified for the services.
  - **old trace file**
    The trace file is stored permanent memory. When the file has reached its size limit, it will be saved as old trace file, and the current exception file is emptied for future messages.
  - **saved trace file**
    Normally, the trace file is saved only in the phone RAM. When the phone restarts in a controlled manner, the trace file will be saved in permanent memory
  - **upgrade trace file**
    The trace log created during a software upgrade.
  - **upgrade error file**
    The error messages created during a software upgrade.
  - **exception file** *(Since V2R1)*
    If an exceptions occurs in a process running on the phone, a message is written to this file (this file is important to check the memory management)
  - **old exception file** *(Since V2R1)*
    The exception file is stored permanent memory. When the file has reached its size limit, it will be saved as old exception file, and the current exception file is emptied for future messages.
  - **syslog file**
    Contains system messages (eg. Dhcp requests,boot,network changes,ntpclient,kernel,LLDP)
  - **old syslog file**
    The syslog file is stored permanent memory. When the file has reached its size limit, it will be saved as old syslog file, and the current syslog file is emptied for future messages.
  - **saved syslog file**
    Normally, the trace file is saved only in the phone RAM. When the phone restarts in a controlled manner, the trace file will be saved in permanent memory
  - **Database file** *(Since V2R1)*
    Phone Database
  - **HPT remote service log**
    HTP message created during login/usage
  - **Dial plan** *(Since V2R0)*
    Dial plan configuration

Please note:

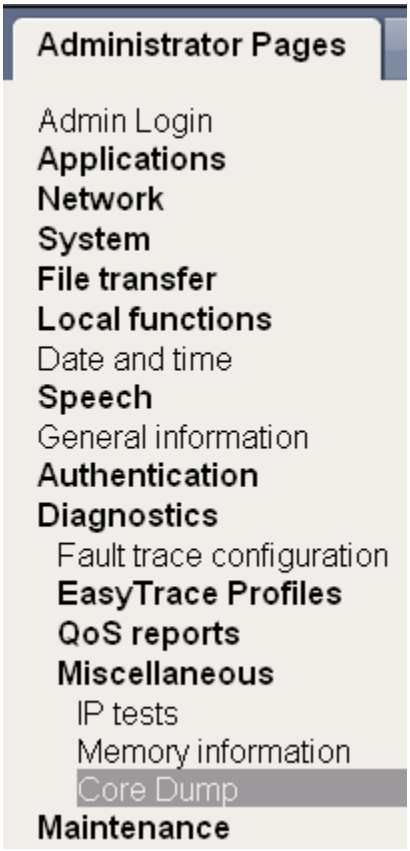
For normal diagnostic operations these traces should never be enabled (If logging is enabled for these components, the phone becomes very slow):

- **Service Framework**
- **Service Registry**
- **OpenStage client management**

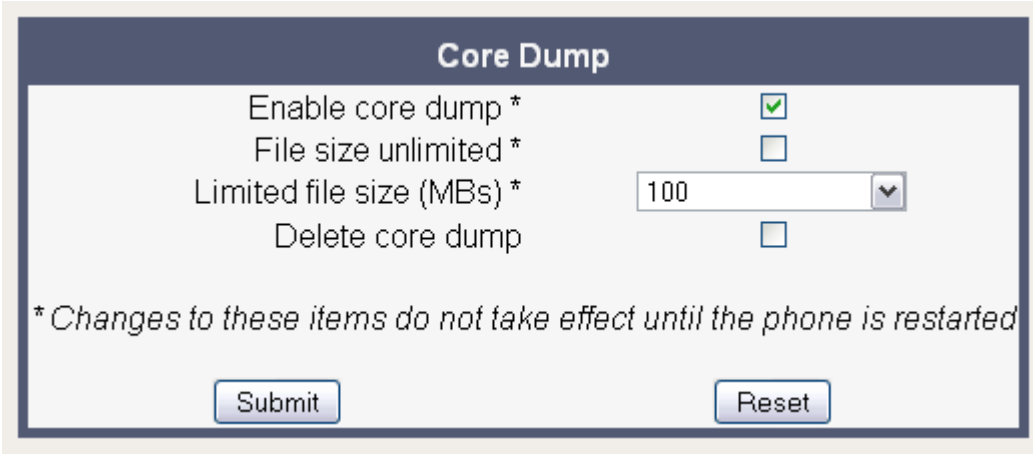
3.4 core dump

The core dump is important for us to see what is going wrong.
Normally the phone automatically generates a core dump if the phone crash's.
Note: since *V2R1* the core dump file size is always unlimited and not configurable.

- Log-in to the WBM as administrator



- Select the **Core Dump** menu



- **activate** the checkbox for “Enable core dump”
- **important**: you need to set the **Limited file size** (MBs) to:
  - OS 60/80 : 50MB
  - OS 40 : 10 MB
  - OS 20 : 1 MB

3.5 download phone Database (only SW Version <V2R1)

The phone Database is very important to analyze/check the configuration and help the development to reproduce the failure.

Note: since V2R1 you can download the Database file via WBM

What do you need:
- TFTP server
- SSH program

Step 1: **activate secure shell**

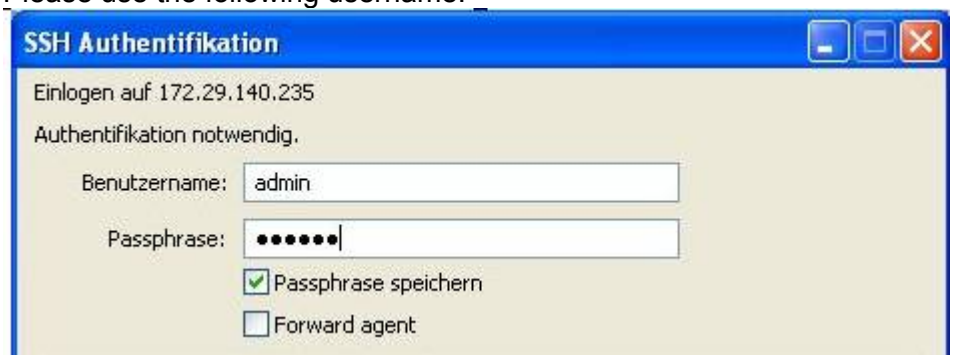
Admin --> Maintenance --> **Secure Shell**

Configure a individual session password

Step 2: start **TFTP Server**
Step 3: start a **SSH session** via SSH program

Example SSH program configuration:

Please use the following username: _



The password is your individual session password (see Step 1)

Step 4: **Upload phone.db**

```
$ cd /                                                    // change the root directory
$ ll                                                      // control the directory
drwxr-xr-x   25 500     admin         0 Jan  1  2000 .
drwxr-xr-x   25 500     admin         0 Jan  1  2000 ..
-rw-r--r--    1 500     admin         0 Jan  1  2000 .admin_created
-rw-r--r--    1 500     admin         0 Jan  1  2000 .init_enable_core
-rw-rw-r--    1 500     admin        22 Dec  4 16:31 OpenStageRootFileSystemImageVersion.txt
-rw-rw-r--    1 500     admin       111 Dec  4 16:31 OperaVersion.txt
drwxrwxr-x   16 500     admin         0 Dec  8 21:16 Opera_Deploy
drwxr-xr-x    2 500     admin         0 Oct 31  2008 Settings
drwxrwxr-x    2 500     admin         0 Dec  8 22:05 bin
drwxrwxr-x    2 500     admin         0 Dec  4 16:29 boot
-rw-------    1 500     admin    208896 Dec 18 11:44 core
drwxrwxrwx   20 500     admin         0 Dec  4 16:32 data
drwxr-xr-x    1 500     admin         0 Jan  1  1970 dev
-rw-r--r--    1 500     admin         0 Jan  1  2000 enableInterface
drwxrwxr-x   10 500     admin         0 Jan  5 10:11 etc
drwxrwxr-x    2 500     admin         0 Dec  8 22:05 firmware
-rw-rw-r--    1 500     admin         0 Dec  4 16:30 firstboot
drwxrwxr-x    3 500     admin         0 Jan 31  2008 home
drwxrwxr-x    3 500     admin         0 Dec  8 22:05 lib
drwxrwxr-x    2 500     admin         0 Dec  9 11:42 logs
drwxrwxr-x    3 500     admin         0 Jan 30  2006 mnt
dr-xr-xr-x  232 500     admin         0 Jan  1  2000 proc
drwxrwxr-x    2 500     admin         0 Dec  4 16:30 root
drwxrwxr-x    2 500     admin         0 Dec  8 22:05 sbin
drwxrwxr-x    3 500     admin         0 Jan 30  2006 share
drwxr-xr-x    2 500     admin         0 Oct 15 07:09 tempmount
drwxrwxrwt    7 500     admin       260 Jan  5 10:11 tmp
drwxrwxr-x    2 500     admin         0 Dec  8 22:05 tracing
drwxrwxr-x    8 500     admin         0 Jan  1  2000 usr
drwxrwxr-x    7 500     admin         0 Jan 31  2006 var
drwxrwxr-x    3 500     admin         0 Dec  4 16:31 vobs
$ cd data/database/                                       // change the database directory
$ ll                                                      // control the directory
drwxrwxr-x    2 500     admin         0 Jan  5 10:09 .
drwxrwxrwx   20 500     admin         0 Dec  4 16:32 ..
```

-rw-r--r-- 1 500 admin 2520 Dec 18 11:43 TraceConfLevel.conf
-rwxrwxrwx 1 500 admin 115712 Jan 5 10:09 **phone.db**

SHH commands to download/upload the phone database:

Transfer phone.db to the TFTP Server from Phone
tftp –p –l phone.db –r phoneXXX.db TFTP_IP.Addr.

Transfer phone.db to the phone from TFTP Server
tftp –g –l phone.db –r phoneXXX.db TFTP_IP.Addr.

3.5 Remote tracing

You can configure the phone to send real time traces to a remote trace server (syslog server). Remote logging is the best way to collect traces for high sporadically problems over a long timeframe.

You can activate this feature locally or via DLS

Locally : Admin -> Maintenance -> Remote trace
DLS: IP Devices -> IP Phone Configuration ->Diagnosis -> Remote Trace Settings

Note: If remote tracing is used, the trace messages sent to the remote syslog server are not encrypted.

3.6 example for trace settings

- good default trace configuration
  - ***SIP Messages***
  - ***SIP signaling***
  - ***Communications***
  - ***SIP call control***

- call proceeding singleline (call drops, failed transfer, group pickup, missing incoming call popup, CSTA application)
  - ***SIP Messages***
  - ***SIP signaling***
  - ***SIP call control***
  - ***Communications***
  - ***CSTA service***
  - ***Call view***

- call proceeding multiline (call drops, failed transfer, group pickup, missing incoming call popup, CSTA application)
  - ***SIP Messages***
  - ***SIP signaling***
  - ***SIP call control***

  - ***Communications***
  - ***CSTA service***
  - ***Call view***
  - ***Team Service***

- Mobility (problems during login/logoff)
  - ***SIP Messages***
  - ***SIP signaling***
  - ***SIP call control***
  - ***Mobility service***
  - ***Administration***
  - ***DLS Client management***

- DLS related issues (configuration change not possible, job expire)
  - ***DLS Client management***
  - ***Administration***

- Audio related issues (missing ringtone, internal tone)
  - ***Digit Analysis service***
  - ***Media control service***
  - ***Media Processing service.***
  - ***SIP signaling***
  - ***SIP Messages***
  - ***Tone generation***
  - ***Call view***
  - ***Wireshark (for speech path related issues)***

- Phonebook (name/number match)
  - ***SIP Messages***
  - ***SIP signaling***
  - ***SIP call control***
  - ***CSTA service***
  - ***Digit Analysis service***
  - ***Directory service***
  - ***Phonebook***

- Call log (wrong/missing call log entry´s)
  - ***SIP Messages***
  - ***SIP signaling***
  - ***SIP call control***
  - ***CSTA service***
  - ***Call log***
  - ***Communications***
  - ***Journal service***