ALE Application Partner Program
Inter-Working Report

Partner: **Ascom**

Application type: **IP-DECT Solution**

Application name: **IP-DECT**

Alcatel-Lucent Enterprise Platform:

OmniPCX Enterprise™

The product and release listed have been tested with the Alcatel-Lucent Enterprise Communication Platform and the release specified hereinafter. The tests concern only the inter-working between the AAPP member's product and the Alcatel-Lucent Enterprise Communication Platform. The inter-working report is valid until the AAPP member's product issues a new major release of such product (incorporating new features or functionality), or until ALE International issues a new major release of such Alcatel-Lucent Enterprise product (incorporating new features or functionalities), whichever first occurs.

Certification overview

Date of certification	May 2017

ALE International representative	Claire Dechristé
AAPP member representative	Gert Wallin/Matthew Williams

Alcatel-Lucent Enterprise Communication Platform	OmniPCX Enterprise
Alcatel-Lucent Enterprise Communication Platform release	R12.0 (m1.401.12.d)
AAPP member application release	R9 (9.1.11)
Application Category	DECT
	Mobility

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Reviewer(s): Rachid Himmi/Gert Wallin

Revision History

Edition 1: Initial version – *May 2017*

Test results

☐ Passed ☐ Refused ☐ Postponed

☑ Passed with restrictions

Refer to the section 4 for a summary of the test results.

IWR validity extension

None

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1 Introduction

This document is the result of the certification tests performed between the AAPP member's application and Alcatel-Lucent Enterprise's platform.

It certifies proper inter-working with the AAPP member's application.

Information contained in this document is believed to be accurate and reliable at the time of printing. However, due to ongoing product improvements and revisions, ALE International cannot guarantee accuracy of printed material after the date of certification nor can it accept responsibility for errors or omissions. Updates to this document can be viewed on:

- the Technical Support page of the Enterprise Business Portal (https://businessportal.alcatel-lucent.com) in the Application Partner Interworking Reports corner (restricted to Business Partners)

- the Application Partner portal (https://applicationpartner.alcatel-lucent.com) with free access.

Note 1: This interworking report does not cover mass provisioning and/or remote device management of the partner device.

Note 2: This interworking report does not cover specific DECT coverage and/or multi-base station and/or multi-site scenarios including roaming/handover.

2 Validity of the Interworking Report

This InterWorking report specifies the products and releases which have been certified.

This inter-working report is valid unless specified until the AAPP member issues a new major release of such product (incorporating new features or functionalities), or until ALE International issues a new major release of such Alcatel-Lucent Enterprise product (incorporating new features or functionalities), whichever first occurs.

A new release is identified as following:

- a "Major Release" is any x. enumerated release. Example Product 1.0 is a major product release.
- a "Minor Release" is any x.y enumerated release. Example Product 1.1 is a minor product release

The validity of the InterWorking report can be extended to upper major releases, if for example the interface didn't evolve, or to other products of the same family range. Please refer to the "IWR validity extension" chapter at the beginning of the report.

Note: *The InterWorking report becomes automatically obsolete when the mentioned product releases are end of life.*

3 Limits of Technical Support

For certified AAPP applications, Technical support will be provided within the scope of the features which have been certified in the InterWorking report. The scope is defined by the InterWorking report via the tests cases which have been performed, the conditions and the perimeter of the testing and identified limitations. All those details are documented in the IWR. The Business Partner must verify an InterWorking Report (see above "Validity of the InterWorking Report) is valid and that the deployment follows all recommendations and prerequisites described in the InterWorking Report.

The certification does not verify the functional achievement of the AAPP member's application as well as it does not cover load capacity checks, race conditions and generally speaking any real customer's site conditions.

Any possible issue will require first to be addressed and analysed by the AAPP member before being escalated to ALE International. Access to technical support by the Business Partner requires a valid ALE maintenance contract

For details on all cases (3rd party application certified or not, request outside the scope of this IWR, etc.), please refer to Appendix F "AAPP Escalation Process".

3.1 Case of additional Third party applications

In case at a customer site an additional third party application NOT provided by ALE International is included in the solution between the certified Alcatel-Lucent Enterprise and AAPP member products such as a Session Border Controller or a firewall for example, ALE International will consider that situation as to that where no IWR exists. ALE International will handle this situation accordingly (for more details, please refer to Appendix F "AAPP Escalation Process").

4 Summary of test results

4.1 Summary of main functions supported

Below, telephonic features for SEPLOS (SIP Extension) supported or not by ASCOM base station:

Bloc/overlap dialing	✓
Codec	✓
Set is free	✓
Set is busy	✓
DND	✓
Out of service	✓
Interception	✓
Forward	✓
Intrusion	✓
Camp on	✓
Secret identity	✓
Call rejection	✓
Call release	✓
Hold	✓
Broker call	✓
Conference	✓
Transfer	✓
Networking	✓
Display management	✓
Multi-line	✓
Manager / Assistant	✓
Voice Mail	✓
Attendant	✓
Prefixes support	✓
Suffixes support	✓
CPU redundancy support	x

4.2 Summary of problems

- OmniPCX Enterprise **spatial redundancy** (duplicate CS on different IP sub networks) is supported but CPU switchover is **not completely transparent** for the IP DECT users:
    - During a switchover the existing call is maintained, but in dialog SIP messages are sent to the old main call server. It is not possible to update an existing call. Dect sets use the IP address of its DNS cache until it registers on the new main call server. DNS answer TTL=0 is not taken into account.
    - A new call is not possible just after a switchover. Dect sets use the IP address of its DNS cache until it registers on the new main call server. The maximum failover timer would be a REGISTER expires (900 seconds) + a sip message timeout (32s).
    - Switches between call servers only occur after next “REGISTER”.

4.3 Summary of OXE limitations

- MWI are not sent by OXE when the SIP SUBSCRIBE is done with the OXE FQDN instead of the main CPU IP address. When OXE SIP Proxy FQDN is set into the SIP Proxy or Domain name parameters of IP-DECT base station, the message waiting indication (MWI) might not be sent. CROXE-4364 has been opened on Alcatel R&D’s side to track this problem.

- At the end of some transfer cases, RTP streams are not connected directly to the DECT base station. There is no RTP direct between the DECT handsets. Though the SIP devices are in the same IP domain, OXE adds the IP of the GD board as the IP connection info to transcode one leg in G711 and the other in G729. This is considered as normal because codec renegotiation is not handled after transfer for SEPLOS sets.

- G722.2 is not managed on OXE SIP extension devices. The codec is removed from the SDP list if it is proposed by the SIP set.

- The Ascom IP-DECT system transparently manages media establishment and redirection when users roam or hand-over between different base stations, including roaming between different sites. However from an OXE point of view, the users are still seen with the IP addresses of their Master base station. This may cause **Call Admission Control (CAC) and/or voice coding issues**, when IP domains with restricted coding or CAC are managed. See section 8.10 for details.

- DECT handsets cannot be part of a **parallel hunt** group.

- **Barge-in** to a SIP extension is not possible

- It is not possible to create **Assistant keys** on SIP set. Thus the Assistant features are limited. The SIP set **cannot be Manager Set**. Manager/Assistant features have only be tested on a local node.

4.4 Summary of ASCOM limitations

- A missed call is shown on DECT handset for some forward and twin set scenarios. However it is possible to switch off the display of the missed call popup by configuring the DECT handset parameter “show missed calls dialog window” to No. This is administered ideally from the Ascom Device Manager.

- Voicemail: DECT handset does not show the number of messages left in voicemail. It only takes the first line of the OXE SIP NOTIFY message into account.

- By default, the DECT handset only display 2 lines of 12 characters each. In some cases, the strings sent by OXE in SIP MESSAGE are not fully displayed, but are cut. There are 2 possible workarounds:
  - workaround on IPBS >supplement services> "external idle display" parameter : can be checked to remove the display of the display
  - workaround on OXE: sends NOTIFY instead of SIP MESSAGE in SIP Extension’s Classes of service

  NOTE: On most DECT handsets, display management layout can be modified to accommodate additional rows and characters. Please refer to the handset's configuration manual for more information.

- Initiation of a **three-party conference** is not possible from a DECT handset.

- SIP Keep Alive mechanism with SIP OPTIONS messages is not supported by ASCOM base station.

- “488 Not Acceptable here” messages are not managed correctly on DECT handsets. No warning on the screen, call is not stopped. IPDECT-2879 case has been created on ASCOM R&D side

4.5 Notes

- Refer to OmniPCX Enterprise release R12 notes for information on general limitations for SIP/SEPLOS devices on OmniPCX Enterprise.

- SIP TLS not supported natively by the OXE for SIP extensions.

4.6 System Limits

Ascom IPBS/IPBL:

- **Max 1000 users per IPBS** Master base station. (500 SIP/TLS otherwise).
  Multiple sites; Multiple masters:
- 2,047 IP-DECT base station radios per Pari master.
- 20,000 users/PARI master.
- 100 masters/mobility master.
- 100,000 users/mobility master.

OmniPCX Enterprise R10.1.1:

- **Max 5000 SIP users per node**.

4.7 Notes, remarks

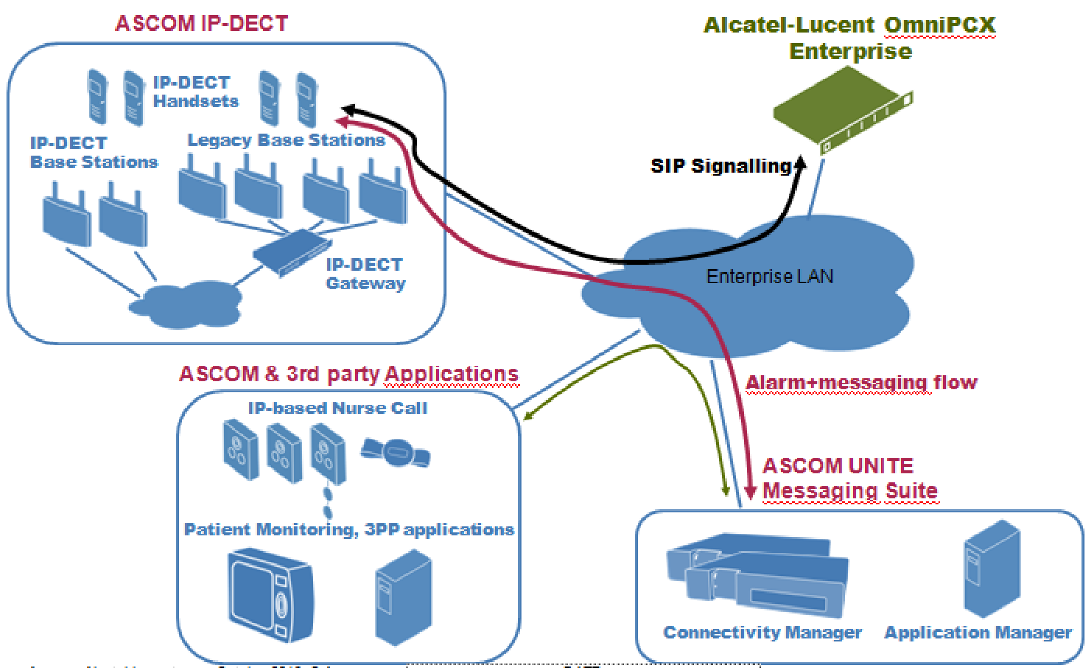
The interworking tests only cover the Ascom DECT base stations and handsets. Support for Alcatel-Lucent or other third party vendor DECT handsets has not been evaluated.

5 Application information

Application type:	DECT/IP Solution. Ascom DECT handsets and Ascom IP-DECT base stations linked to OXE via SIP/IP/Ethernet.
Application commercial name:	IP-DECT R9
Application version:	IPBS[9.1.11], Bootcode[9.1.11], Hardware[IPBS2]
Interface type:	SIP/IP/Ethernet

Brief application description:

The application consists of IP-DECT base stations and associated Ascom handsets. IP- DECT base stations are linked to OXE via SIP protocol. All telephony features as provided by SIP Endpoint Level of Service are available to the handsets. The Ascom & 3rd party applications and the Ascom Unite Messaging Suite complete the solution.



The Ascom IP-DECT access points which are supported by the solution are the following:

IPBS2

IPBS1 (DECT radio only)

The Ascom handsets which are supported by the solution are the following:

Ascom d81

Ascom d81ex

Ascom d62

Ascom d41

Ascom d43

Ascom d63

Important:

With the introduction of software version 9.1.x, Ascom IPBS1 has only radio functionality.

From the latest release notes:

Downgrade/Upgrade concerns

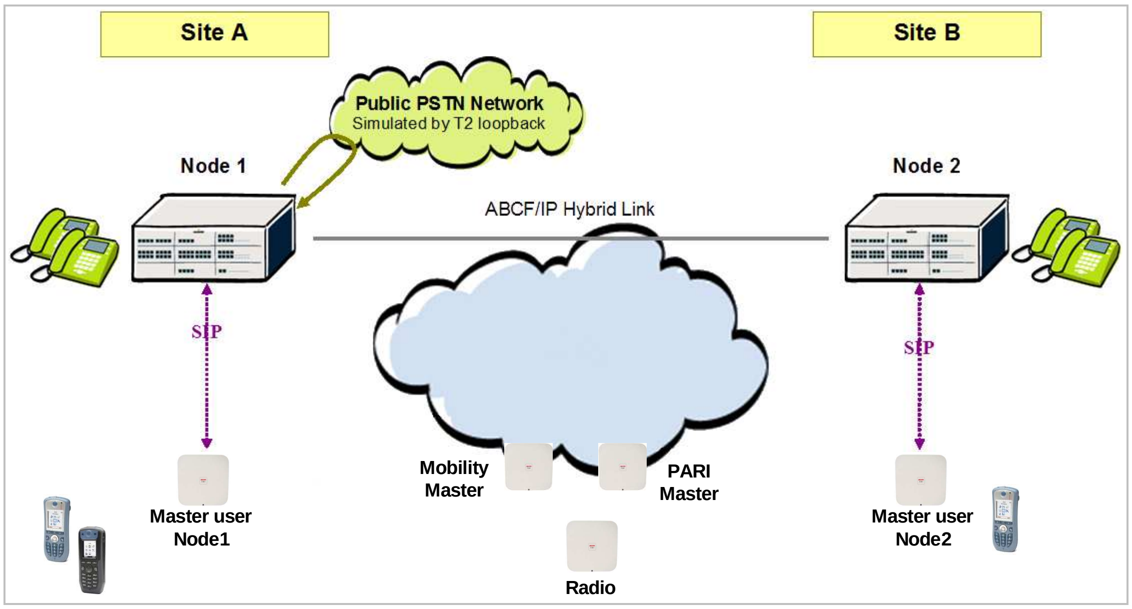
Background:
Due to lack of available flash space for new firmware/boot on IPBS1, we needed to remove reserved space for persistent data in order to make more space available.

Solution:
This means that the central software components are no longer supported on IPBS1. The IPBS1 is now only able to host the DECT Radio component. All IPBS1's in a system using any other functionality than DECT Radio component (i.e. Master, Mobility Master, Crypto Master, Kerberos server, Central Phonebook, Gateway) need to be replaced/swapped with IPBS2/IPVM/IPBL1 before upgrading to 9.1.X. If central software components are enabled on an IPBS1 there is a risk that there's already too little space in the flash to be able to upload the 9.1.X firmware. In that case a factory reset is needed to resolve the issue.

6 Tests environment

6.1 General architecture

The tests are performed on the Alcatel-Lucent TSS Applications International platform in the following environment:



Test System Architecture

6.2 Hardware configuration

6.2.1 **Alcatel-Lucent Enterprise Communication Platform**:

Node1 (node name: etesting1):

- Physical OXE CPU
- Spatial redundancy (Different IP subnetworks)
- One media gateway (common hardware):

```
Crystal 0 :

  +-----------------------------------------------------------------+
  | Cr | cpl| cpl type   | hw type   |  cpl  state  |  coupler ID     |
  |----|----|------------|-----------|--------------|-----------------|
  |  0 |  6 | App. Server|---------- |   IN SERVICE |   BAD PCMS CODE |
  |  0 | 10 | App. Server|---------- |  OUT OF SERV |   BAD PCMS CODE |
  +-----------------------------------------------------------------+

Crystal 1 :

  +-----------------------------------------------------------------+
  | Cr | cpl| cpl type   | hw type   |  cpl  state  |  coupler ID     |
  |----|----|------------|-----------|--------------|-----------------|
  |  1 |  0 |          GD|---------- |   IN SERVICE |   BAD PCMS CODE |
  |  1 |  1 |      MIX448|---------- | REG NOT INIT |   BAD PCMS CODE |
  |  1 |  3 |      PRA T2|---------- | REG NOT INIT |   BAD PCMS CODE |
  |  1 |  4 |      PRA T2|---------- |   IN SERVICE |   BAD PCMS CODE |
  |  1 |  5 |      PRA T2|---------- |   IN SERVICE |   BAD PCMS CODE |
  +-----------------------------------------------------------------+
```

Node2 (node name: etesting2):

- Virtualized OXE CPU
- Spatial redundancy (Different IP subnetworks)
- One media gateway (GD3):

```
Crystal 0 :

  +-----------------------------------------------------------------+
  | Cr | cpl| cpl type   | hw type   |  cpl  state  |  coupler ID     |
  |----|----|------------|-----------|--------------|-----------------|
  |  0 |  6 | App. Server|---------- |   IN SERVICE |   BAD PCMS CODE |
  |  0 | 10 | App. Server|---------- | REG NOT INIT |   BAD PCMS CODE |


Crystal 1 :

  +-----------------------------------------------------------------+
  | Cr | cpl| cpl type   | hw type   |  cpl  state  |  coupler ID     |
  |----|----|------------|-----------|--------------|-----------------|
  |  1 |  0 |          GD|---------- |   IN SERVICE |   BAD PCMS CODE |
  |  1 |  1 |   SLI 4 (Z)|---------- |   IN SERVICE |    NO PCMS CODE |
  |  1 |  2 |      PRA T2|---------- |   IN SERVICE |    NO PCMS CODE |
  |  1 |  3 |      MIX448|---------- |   IN SERVICE |   BAD PCMS CODE |
  |  1 |  4 |       UAI 4|---------- |   IN SERVICE |   BAD PCMS CODE |
  |  1 |  5 |      PRA T2|---------- |   IN SERVICE |    NO PCMS CODE |
  |  1 |  6 |          CS|---------- |      CS+4645 |   BAD PCMS CODE |
  |  1 |  7 |      PRA T2|---------- |   IN SERVICE |    NO PCMS CODE |
  |  1 |  8 |          CS|---------- |  CALL SERVER |    NO PCMS CODE |
  +-----------------------------------------------------------------+
```

6.2.2 **Ascom platform**:

- 1x Ascom IPBS2 base station : Mobility Master
- 1x Ascom IPBS2 base station : PARI Master
- 2x Ascom IPBS2 base station : Master User
- 1x Ascom IPBS2 base station : Radio
- 1x Ascom d62-Messenger DECT handset (release 4.3.6)
- 2x Ascom d63-Messenger DECT handset (release 2.0.8)
- 1x Ascom d41-Advanced DECT handset (release 4.3.6)
- 1x Ascom d43-Advanced DECT handset (release 2.0.8)
- 4x Ascom d81-Protector DECT handset (release 4.4.2)

6.3 Software configuration

6.3.1 Alcatel-Lucent Communication Platform:

Version: OmniPCX Enterprise R12.0 m1.403.12.d

Note: Handsets are declared as SIP extensions (SIP Endpoint Level of Service - SEPLOS). This means that all telephone features must be tested once by prefixes and once locally on the phone, if available.

6.3.2 Ascom platform:

Version: IPBS[9.1.11], Bootcode[9.1.11], Hardware[IPBS2]

7 Test Result Template

The results are presented as indicated in the example below:

Test Case Id	Test Case	N/A	OK	NOK	Comment
1	**Test case 1** • Action • Expected result	☐	☒	☐	
2	**Test case 2** • Action • Expected result	☐	☒	☐	The application waits for PBX timer or phone set hangs up
3	**Test case 3** • Action • Expected result	☒	☐	☐	Relevant only if the CTI interface is a direct CSTA link
4	**Test case 4** • Action • Expected result	☐	☐	☒	No indication, no error message
…	**…**	☐	☐	☐	

Test Case Id: a feature testing may comprise multiple steps depending on its complexity. Each step has to be completed successfully in order to conform to the test.
Test Case: describes the test case with the detail of the main steps to be executed the <u>and the expected result</u>
N/A: when checked, means the test case is not applicable in the scope of the application
OK: when checked, means the test case performs as expected
NOK: when checked, means the test case has failed. In that case, <u>describe in the field “Comment” the reason for the failure and the reference number of the issue either on ALE International side or on AAPP member side</u>
Comment: to be filled in with any relevant comment. Mandatory in case a test has failed especially the reference number of the issue.

8 Test Results

8.1 Connectivity and Setup

8.1.1 Test Objectives

These tests shall verify that the different components are properly connected and can communicate together (the external application and the Alcatel-Lucent Communication Platform are connected and the interface link is operational).

8.1.2 Test Results

Test	Action	Result	Comment
1	Provisioning *Expected result: users created*	OK	Tested via web interface on base stations. User declaration on Master base station.
2	DHCP registration (with OXE internal DHCP server) *Expected result: IPBS2 retrieves its IP address via OXE DHCP*	NA	Mirrored base stations are configured statically
3	NTP registration (with OXE internal NTP server and external NTP) *Expected result : correct date and time on DECT handset*	OK	Time and date is displayed on the handsets (d81 and d63).
4A	SIP registration, using OXE MAIN IP addresse(s) (without authentication) *Expected result : SIP account with DECT handset number registered*	OK	
4B	SIP registration, using DNS (without authentication) *Expected result : SIP account with DECT handset number registered*	OK	Both DNS A and DNS SRV requests are supported.
5	Support of “423 Interval Too Brief” (1) *Expected result : SIP registration is performed based on OXE min interval*	OK	See note (1)
6	SIP registration with authentication: Turn on SIP Digest authentication, specify realm on OXE, and specify user name and password on SIP client. *Expected result : SIP registration is authenticated*	OK	See note (2) See Note (3)

Notes:

(1) On the SIP client, specify a default registration period inferior to that of OXE SIP registrar. OXE will reject with error “**423 Interval Too Brief**”. Check that SIP set increases registration period accordingly.

(2) SIP user name and password are configured in IPBS>Administration>Users. It must match with OXE>SIP Authentication user name/password. If not matched, the set displays “**PBX Out of service**”.

On IPBS > DECT > Master > Domain: **etesting.xmlforum.com** (realm name configured on SIP > SIP Proxy)
On IPBS > DECT > Master > Register with Number: **TRUE**

(3) In the rest of the document, all the tests are done with SIP authentication set to SIP digest, as explained in OXE configuration section 10

8.2 Outgoing Calls

8.2.1 Test Objectives

The calls are generated to several users belonging to the same network.
Called party can be in different states: free, busy, out of service, do not disturb, etc.
Calls to data devices are refused.
Points to be checked: tones, voice during the conversation, display (on caller and called party), hang-up phase.

8.2.2 Test Results

Test	Action	Result	Comment
1	Call to a local user *Expected result : Ring back tone played, correct number displayed*	OK	The display on the handset is updated when the called user answers.
2	Call to a local user with overlap dialing. Dial a part of the number, wait and continue. *Expected result : local call is performed correctly*	NA	Not possible to do overlap dialing on DECT handsets d81 and d63
3	Call to a local user with overlap dialing, timeout. Dial a part of the number, wait and stop. *Expected result : the call is released automatically*	NA	Not possible to do overlap dialing on DECT handsets d81 and d63 No timeout (PBX controlled).
4	Call to a local user with overlap dialing, release. Dial a part of the number, wait and release the call. *Expected result : the call is correctly released*	NA	Not possible to do overlap dialing on DECT handsets d81 and d63
5	Call to local user with no answer. Check timeout. *Expected result : if available, the call is stopped after a timeout*	OK but	Handsets d81 and d63 keep on ringing. No timeout (PBX controlled).
6	Call to another SIP set *Expected result : Ring back tone played, correct number displayed*	OK	Tone played by OXE and display OK When call is answered, RTP flow doesn't transit through PBX anymore
7	Call to wrong number, SIP: "404 Not Found" *Expected result : The call is released, an error message is displayed on the handset*	OK	Display: "Vacant", short tones during 30 sec and then the phone hangs up.
8	Call rejected by call handling, SIP: "183 Progress/487 Request Terminated". *Expected result : The call is released after playing a voice guide*	OK	
9	Call to busy OXE user *Expected result : The call is released after playing a voice guide –*	OK	We hear busy tones, then call is released after 30s

10	Call to user in "Out of Service" state, SIP: "480 Temporarily Unavailable" *Expected result : The call is released automatically*	OK	Display: "Not reachable", short tones during 30 secs and the phone hung up.
11	Call to user in "Do not Disturb" state *Expected result : The call is released after playing a voice guide* *OXE prefix 42*	OK	OXE responds "183 Session Progress", reason header "Do not disturb".. Released tone is played. "Hung up" after 15 secs.
12	Call to local user, immediate forward (CFU). (SIP: "302 Moved Temporarily")(1) *Expected result : The call is started with the forward target, the display is updated on the handset with the forward target details*	OK	See note (1)
13	Call to local user, forward on no reply (CFNR). (1) *Expected result : The call is started with the forward target, the display is updated on the handset with the forward target details*	OK	See note (1)
14	Call to local user, forward on busy (CFB). (1) *Expected result : The call is started with the forward target, the display is updated on the handset with the forward target details*	OK	See note (1)
15	Call to a local user without proxy Authentication	OK	Note: in the rest of the document, SIP Digest authentication is activated
16	Call within same IP domain. SIP set in domain A (intra-domain=without compression). Call to OXE set in domain A (intra-domain=without compression). *Expected result : call is established using G711 codec*	OK	See note (2)
17	Call to another IP domain. SIP set in domain A (extra-domain=with compression). Call to OXE set in domain B (extra-domain=with compression). *Expected result : call is established using G729*	OK	See note (2)
18	Call to external *Expected result : public call is established, ring back tone is played on the handset*	OK	Ring back tone OK. Display the ISDN Trunk Name (PAI on 200 OK)
19	SIP session timer expiration: Check if call is maintained or released after the session timer has expired See note (3) *Expected result : call is running after the session expiration*	OK	Several hour calls have been tested OK

20	Set lock/unlock. Dial the padlock prefix (“45”). To unlock, dial padlock prefix (“45”) + personal password. *Expected result : dial other prefixes than unlock is not allowed*	OK	
21	Use of abbreviated numbers (Speed dialing) for both internal and external numbers. *Expected result : dial using abbreviated numbers is available*	OK	Softkey / hotkeys can be configured on phones **8 speed dialing prefix was correctly tested

Notes:
(1) For test cases with call to forwarded user: User is forwarded to another local user. Special case of forward to Voice Mail is tested in another section.

(2) For IP domain tests, the following setup is used:

```
              IP Domain

  domain type : IP_R-> IP_REMOTE   NIPR-> NO_IP_REMOTE

|  number |   0  |   1  |   2  |   3  |   5  |   6  |  10  |
|    type | NIPR | IP_R | IP_R | IP_R | IP_R | IP_R | IP_R |
| allowed | ffff | ffff | ffff | ffff | ffff | ffff | ffff |
|    used |    0 |    0 |    0 |    0 |    0 |    0 |    0 |

| RIP Intr| G711 | G711 | G711 | G711 | G729 | G711 | G711 |
| RIP Extr| G729 | G729 | G711 | G711 | G729 | G711 | G711 |
| IPP Intr| G711 | G711 | G711 | G711 | G729 | G711 | G711 |
| IPP Extr| G729 | G729 | G711 | G711 | G729 | G711 | G711 |
| G722 Int|  NO  |  YES |  NO  |  NO  |  NO  |  NO  |  NO  |
| G722 Ext|  NO  |  NO  |  NO  |  NO  |  NO  |  NO  |  NO  |
| UseOthCC|  YES |  YES |  YES |  YES |  YES |  YES |  YES |
| ProvidCC|  YES |  YES |  YES |  YES |  YES |  YES |  YES |

| cac over|    0 |    0 |    0 |    0 |    0 |    0 |    0 |
| comp alw|   47 |   20 |    0 |    0 |    0 |    0 |    0 |
| comp use|    0 |    0 |    0 |    0 |    0 |    0 |    0 |
| comp fre|   45 |   20 |    0 |    0 |    0 |    0 |    0 |
| comp out|    2 |    0 |    0 |    0 |    0 |    0 |    0 |
| comp ovr|    0 |    0 |    0 |    0 |    0 |    0 |    0 |
| Tand PDm|   -1 |   -1 |   -1 |   -1 |   -1 |   -1 |   -1 |
| Tand CAC|   -1 |   -1 |   -1 |   -1 |   -1 |   -1 |   -1 |
```

Partner SIP set is in domain 1.

Tested:
IPBS>DECT>System>Coder=G711A, non exclusive.
SIP domain 1 calls OXE domain 1: G.711, G.729, G.723 proposed, G.711 chosen. (OK)
SIP domain 1 calls OXE domain 0: G.711, G.729, G.723 proposed, G.729 chosen. (OK)

Warning: If G722.2 (AMR-WB) is proposed by ASCOM set, it is removed from the SDP list by OXE

When called, IPBS will choose the first (in order of appearance) coder in the received SDP list it can handle, independently of the preferred coder set in *IPBS>DECT>System>Coder* (and if *Exclusive* is not set).

When calling, IPBS sends preferred coder (*IPBS>DECT>System>Coder*) first in SDP list.
OXE chooses first codec that is acceptable, starting from proposed list.

(3) We used the following setting for the test:
OXE>SIP>SIP Gateway:

```
Session Timer : 180
Min Session Timer : 90
Session Timer Method + RE_INVITE
```

Then, wait more than 180 seconds to see if call is released.

8.3 Incoming Calls

8.3.1 Test Objectives

Calls will be generated using the numbers or the name of the SIP user.
SIP terminal will be called in different states: free, busy, out of service, forward …
The states are to be set by the appropriate system prefixes unless otherwise noted.
Points to be checked: tones, voice during the conversation, display (on caller and called party), hang-up phase.

Call waiting needs to be configured to have 2 lines on the handset.

8.3.2 Test Results

Test	Action	Result	Comment
1	Local /network/external call to free SIP terminal *Expected result : Ring back tone played, correct number displayed*	OK/OK	External calls: DECT handset uses another type of ring than for local calls
2	Local/network call to busy SIP terminal *Expected result : Call is disconnected*	OK/OK	486 Busy Here generated when we call a Busy DECT handset Short tones, “Hung up” after 5 secs.
3	Local/network call to unplugged SIP terminal *Expected result : Call is disconnected*	OK/OK	480 Temporarily not available 2 behaviors: - IP DECT has been switched off: REGISTER with expires 0 is sent “Out of service” is displayed on OXE phone and the call is disconnected - Battery has been removed: no REGISTER with expires 0 sent, OXE tries a few times to reach the phone, then hangs up.
4	Local/network call to SIP terminal in Do Not Disturb (DND) mode:		
4A	By local feature *Expected result : DND activated*	OK	486 Busy Here generated when we call a Busy ASCOM DECT Short tones, “Hung up” after 5 secs.
4B	By system feature (SEPLOS) (prefix “42”+ user password) *Expected result : DND activated*	OK	Message “Do Not Disturb” is displayed on DECT handset See Note (1)
5	Local/network/SIP call to SIP terminal in immediate forward (CFU) to local user:		
5A	By local feature *Expected result : call forwarded to forward target*	OK	
5B	By system feature (SEPLOS) (prefix “51”+number/”41”) *Expected result : call forwarded to forward target*	OK	Message “Immediate forward to extension number” is displayed on DECT handset See Note (1)

6	Local/network/SIP call to SIP terminal in immediate forward (CFU) to network number:		
6A	By local feature *Expected result : call forwarded to forward target*	OK	
6B	By system feature (SEPLOS) (prefix “51”+number/”41”) *Expected result : call forwarded to forward target*	OK	Message “Immediate forward to extension number” is displayed on DECT handset See Note (1)
7	Local/network/SIP call to SIP terminal in immediate forward (CFU) to another SIP user		
7A	By local feature *Expected result : call forwarded to forward target*	OK	
7B	By system feature (SEPLOS) (prefix “51”+number/”41”) *Expected result : call forwarded to forward target*	OK	Message “Immediate forward to extension number” is displayed on DECT handset See Note (1)
8	Local call to SIP terminal in “forward on busy” (CFB) state:		
8A	By local feature *Expected result : call forwarded to forward target*	OK	
8B	By system feature (SEPLOS) (prefix “52”+number/”41”) *Expected result : call forwarded to forward target*	OK	By default, a SIP extension user on OXE is configured with two lines. To reach the busy state on the DECT handset, you need to activate the Call waiting feature to present the second call on the handset Message “forward on busy to extension number” is displayed on DECT handset See Note (1)
9	Local call to SIP terminal in “forward on no reply” (CFNR)		
9A	By local feature *Expected result : call forwarded to forward target*	OK	
9B	By system feature (SEPLOS) (prefix “53”+number/”41”) *Expected result : call forwarded to forward target*	OK	Message “forward on no reply to extension number” is displayed on DECT handset See Note (1)
10	Call to busy user, Call waiting. (Camp-on) *Expected result : call waiting on the busy set*	OK	
11	External call to SIP terminal. *Expected result: external call back number is shown correctly.*	OK	
12	Identity secrecy/CLIR: Local call to SIP terminal. *Expected result :.caller id is not presented*	NA	Feature not available
13	Display: Call to free SIP terminal from user with a name containing non-ASCII characters. *Expected result : caller display is correct*	OK	Tested Ok for Latin-1 characters

14	Display: Call to free SIP terminal from user with a UTF-8 name containing non-ASCII characters. *Expected result : caller display is correct*	OK	Tested Ok for Latin-1 characters
15	SIP set is part of a sequential hunt group. Call to hunt group. Check call/release. *Expected result : call / release OK*	OK	
16	SIP set is part of a cyclic hunt group. Call to hunt group. *Expected result : call / release OK*	OK	
17	SIP set is part of a parallel hunt group. Call to hunt group. Check call/release. *Expected result : call / release OK*	NA	SEPLOS sets are multiline. Parallel hunt groups are not supported for multiline sets.
18	SIP set is declared as a twin set (tandem). Call to main set and see if twin set rings. Take call with twin set. *Expected result : answers call from the twin set is working, answers call on the deskphone stops ringing the handset*	OK	When calling twin set directly, name of main set is displayed on caller. Missed call is shown on DECT handset if the call is answered on main set. See Note (2)
18.2	Same as 18. Then transfer to main set. (hang up) *Expected result : call transferred to the deskphone*	OK	Ok, for both unattended and attended transfer. There is a incoming call also on the tandem set
19	Call Pick-up (Supervision): A call from OXE set to another OXE set is picked up from a SIP set by dialling the call pick-prefix (“55”+number of target set) *Expected result : call pick up on the ascom handset*	OK	
20	Call Pick-up (Supervision): A call from SIP set to another SIP set is picked up from a OXE set by dialling the call pick-prefix (“55”+number of target set) *Expected result : call pick up on the ascom handset*	OK	

Note (1): DECT handset can only display 2 lines of 12 characters each. In some cases, the strings sent by OXE in SIP MESSAGE are not fully displayed, but are cut.

There are 2 possible workarounds:

- workaround on IPBS >supplement services> "external idle display" parameter : can be checked to remove the display of the display
- workaround on OXE: sends NOTIFY instead of SIP MESSAGE in SIP Extension’s Classes of service

NOTE: On most DECT handsets, display management layout can be modified to accommodate additional rows and characters. Please refer to the handset's configuration manual for more information.

Note (2): It is possible to switch off the display of the missed call popup by configuring DECT handset parameter “show missed calls dialog window” to No. This is administered ideally from the Ascom Device Manager.

8.4 Features during Conversation

8.4.1 Test Objectives

Features during conversation between local user and SIP user must be checked.
Check that right tones are generated on the SIP phone.

"Call waiting" parameter must be enabled on IPBS to activate the multi line capability.

8.4.2 Test Results

Test	Action	Result	Comment
1	Hold and resume (both directions) (Check tones) *Expected result : place a call on hold, then resume it*	OK	Press R to put on hold, and press R again to resume.
2	Second call to another local user. Distant user is put on hold. *Expected result : second call established*	OK	Press R + second call number.
3	Broker request (toggle back and forth between both lines, local feature) *Expected result : audio switched between call 1 and call 2, display is correctly updated*	OK	R + "2" to switch between participants
4	Release first call. Keep second call. *Expected result : second call still established*	OK	R + "1" to finish the current call
5	Call park: - Call between SIP set and OXE set. - Put your call on hold. - New call: Dial the prefix for call parking ("402"+number). Now call can be hung up. Later call can be retrieved by calling prefix. *Expected result : call retreived*	OK	R + "402" + number.
6	Send/receive DTMF *Expected result : possibility to send DTMF*	OK	DTMF are sent as RFC2833. Need to have *IPBS>DECT>Master>Allow DTMF through RTP* **enabled**.
7	Three party conference initiated from OXE set (suffix "3"). Released by OXE set. *Expected result : conference established*	OK	
8	Three party conference initiated from SIP set (local feature). Released by SIP set. *Expected result : conference established*	NA	Feature not available.
9	Barge-in (Intrusion) to SIP set. The SIP set is in conversation with another set. A third set calls the SIP set and wants to barge-in. *Expected result : call intrusion established*	NA	Feature not available

10	Barge-in (Intrusion) from SIP set. The SIP set calls another set which is in conversation. Then press the barge-in suffix “4”. *Expected result : call intrusion established*	OK	
11	Call back on free or busy set from SIP set. The SIP set calls another set which is in conversation. Then press the call back suffix “5”. *Expected result : call back configured*	OK	
12	Busy Camp-on from SIP set. The SIP set calls another set which is in conversation. Then press the camp-on suffix “6”. *Expected result : hold music listen on handset during the camp on period*	OK	
13	Voice mail deposit from SIP set. The SIP set calls another set. Then press the message deposit suffix “8”. *Expected result : reach the user mailbox after dialing the prefix*	OK	
14	Meet-me conference: Participate in ongoing meet-me conference from SIP set (prefix “509”+number+code). Released by SIP set. *Expected result : reach the meet-me conference after dialing the prefix*	OK	

8.5 Call Transfer

8.5.1 Test Objectives

During the consultation call step, the transfer service can be requested and must be tested.
Several transfer services exist: Unattended Transfer, Semi-Attended Transfer and Attended Transfer.
Audio, tones and display must be checked.

We use the following scenario, terminology and notation:

There are three actors in a given transfer event:

- A – *Transferee* : the party being transferred to the Transfer Target.
- B – *Transferor* : the party doing the transfer.
- C – *Transfer Target* : the new party being introduced into a call with the Transferee.

There are three sorts of transfers in the SIP world:

- ***Unattended Transfer*** or *Basic Transfer*: The Transferor provides the Transfer Target's contact to the Transferee. The Transferee attempts to establish a session using that contact and reports the results of that attempt to the Transferor.
  Note: Unattended Transfer is not provided by for OXE set

- ***Semi-Attended Transfer*** or *Early Attended Transfer* or *Transfer on ringing*:
  1. A (Transferee) calls B (Transferor).
  2. B (Transferor) calls C (Transfer Target). A is on hold during this phase. C is in ringing state (does not pick up the call).
  3. B executes the transfer. B drops out of the communication. A is now in contact with C, in ringing state. When C picks up the call it is in conversation with A.

- ***Attended Transfer*** or *Consultative Transfer* or *Transfer in conversation*:
  1. A (Transferee) calls B (Transferor).
  2. B (Transferor) calls C (Transfer Target). A is on hold during this phase. C picks up the call and goes in conversation with B.
  3. B executes the transfer. B drops out of the communication. A is now in conversation with C.

8.5.2 Test Results

In the below table, *SIP* means a partner SIP set, *OXE* means a proprietary OXE (Z/UA/IP) set.

For each tests, we have verified that CLIP is correctly updated after the transfer.

Unattended Transfer (blind)
Unattended transfer procedure for Ascom handsets: RR + Phone number, then press hash or wait for the timeout.

Test	Action			Result	Comment
	A **Transferee**	B **Transferor**	C **Transfer Target**		
1	OXE/Ext. call	SIP	OXE/Ext. call	OK	
2	SIP	OXE	OXE/Ext. call	OK	
3	OXE/Ext. call	OXE	SIP	OK	
4	SIP	OXE	SIP	OK	
5	OXE/Ext. call	SIP	SIP	OK	See Note (2)
6	SIP	SIP	OXE/Ext. call	OK	See Note (2)
7	SIP	SIP	SIP	OK	See Note (2) Missed call is seen on the transfer target and must be acknowledged in call list to clear. See Note 1

Note (1): It is possible to switch off the display of the missed call popup by configuring DECT handset parameter “show missed calls dialog window” to No. This is ideally administered from Ascom Device Manager.

Note (2): At the end of some transfer cases, there is no RTP direct between the DECT handsets. Though the SIP devices are in the same IP domain, OXE adds the IP of the GD board as the IP connection info to transcode one leg in G711 and the other in G729. Codec renegotiation not managed by OXE for SEPLOS sets after transfer.

Semi-Attended Transfer (on Ringing)
Semi-Attended transfer procedure for Ascom handsets: Press “R” + destination number. Wait until ringing. Then hang up.

Test	Action			Result	Comment
	A **Transferee**	B **Transferor**	C **Transfer Target**		
1	SIP	OXE	OXE/Ext Call	OK	
2	OXE/Ext Call	SIP	OXE	OK	
3	OXE/Ext Call	OXE	SIP	OK	Missed call is seen on the transfer target and must be acknowledged. See Note (1)

4	OXE / Ext call	SIP	SIP	OK	
5	SIP	OXE	SIP	OK	Missed call is seen on the transferor and must be acknowledged. See Note (1)
6	SIP	SIP	OXE/Ext Call	OK	
7	SIP	SIP	SIP	OK	See Note (2)

Note (1): It is possible to switch off the display of the missed call popup by configuring DECT handset parameter “show missed calls dialog window” to No. This is ideally administered from Ascom Device Manager.

Note (2): At the end of some transfer cases, there is no RTP direct between the DECT handsets. Though the SIP devices are in the same IP domain, OXE adds the IP of the GD board as the IP connection info to transcode one leg in G711 and the other in G729. Codec renegotiation not managed by OXE for SEPLOS sets after transfer.

Attended Transfer (in Conversation)

Attended transfer procedure for Ascom handsets: Press “R” + destination number. Wait until destination number answers the call. Then hangup (System option No Transfer on Hangup = **disabled,** otherwise the end user should press R + 4 to transfer the call).

Test	Action			Result	Comment
	A **Transferee**	B **Transferor**	C **Transfer Target**		
1	OXE/Ext. call	SIP	OXE/Ext. call	OK	
2	SIP	OXE	OXE/Ext. call	OK	
3	OXE/Ext. call	OXE	SIP	OK	
4	SIP	OXE	SIP	OK	
5	OXE/Ext. call	SIP	SIP	OK	
6	SIP	SIP	OXE/Ext. call	OK	
7	SIP	SIP	SIP	OK	See Note (2)

8.6 Attendant

8.6.1 Test Objectives

An attendant console is defined on the system. Call going to and coming from the attendant console are tested.

Recommended configuration:
Attendants > Attendants sets > Tone presence: **TRUE**

8.6.2 Test Results

Test	Action	Result	Comment
1	Call to attendant (using attendant call prefix "**8") *Expected result : call established with the attendant station*	OK	
2	Call to attendant (using attendant call prefix "**8"), attendant transfers to OXE set / Ext Call, semi attended. *Expected result : call transferred from the attendant station*	OK/OK	Ext call: no name update on Dect handset after transfer
3	Call to attendant (using attendant call prefix "**8"), attendant transfers to OXE set / Ext Call, attended. *Expected result : call transferred from the attendant station*	OK/OK	
4	OXE set / Ext. calls to attendant (using attendant call prefix "**8"), attendant transfers to SIP set, attended. *Expected result : call transferred from the attendant station*	OK/OK	
5	Call to attendant (using attendant call prefix "**8"). Second incoming call while in conversation with attendant. *Expected result : second call refused*	OK_but	Second call is refused by OXE as expected. But on ASCOM set, the call is not rejected. "488 Not Acceptable here" sent but Dect handset does not show any warning on the screen, call not stopped IPDECT-2879 case has been created on ASCOM R&D side

8.7 Manager/Assistant

8.7.1 Test Objectives

Created Manager/Assistant configuration:
Manager set: IP Touch 4068
Assistant set: Ascom d81/d63
Created assistant call key.

8.7.2 Test Results

Test	Action	Result	Comment
1	From manager set(OXE), call assistant(SIP) via assistant call key *Expected result : manager set calls the assistant set via the attendant key*	OK	

Note: It is not possible to create Assistant keys on SIP set.
Thus the Assistant features are limited.
The SIP set cannot be Manager Set.

8.8 Voice Mail

8.8.1 Test Objectives

Voice Mail notification, consultation and password modification must be checked.
MWI (Message Waiting Indication) has to be checked.

8.8.2 Test Results

Test	Action	Result	Comment
1	A Voice Mail message for the SIP subscriber is generated. *Expected result : MWI is activated*	OK_but	OK if IP addresses are used in SIP proxy parameters. NOK if using OXE FQDN in SIP proxy or Domain name: NOTIFY is not sent by OXE.
2	Message consultation *Expected result : message consulted via ascom handset*	OK	See Note (1)
3	Message deletion *Expected result : message is deleted via ascom handset*	OK_but	OK if IP addresses are used in SIP proxy parameters. NOK if using OXE FQDN in SIP proxy or Domain name: NOTIFY is not sent by OXE. See Note (1)
4	Password modification *Expected result : user is able to change its password dialing a new password via DTMF*	OK	
5	SIP call to a OXE user forwarded to Voice Mail *Expected result : call is forwarded to voice mail*	OK	
6	OXE call to a SIP user forwarded to Voice Mail *Expected result : call is forwarded to voice mail*	OK_but	OK, but NOTIFY is not sent The forward works and the message is saved, but MWI is not sent if OXE fqdn is filled in the sip proxy or Domain name parameters of the Base station:

Note (1): DECT handset does not show the number of messages left in voicemail. It only takes the first line of the OXE SIP NOTIFY message into account.

8.9 Duplication and Robustness

8.9.1 Test Objectives

Check how the system will react in case of a CPU reboot, switchover or link failure etc.
The test system is configured with spatial redundancy (duplicate call servers on two different IP sub networks).

For each configuration, check:

- Can new outgoing calls be made immediately after switchover?
- Are incoming calls (from new MAIN CS) accepted immediately after switchover?
- Are existing calls maintained after switchover?
- Can existing calls be modified (transfer, hang-up, etc.) immediately after switchover?
- Check if a session that has been started before switchover is maintained after switchover, i.e. does the new MAIN CS send session updates and is this accepted by the client?

8.9.2 Test Results

Test	Action	Result	Comment
1	Spatial redundancy via alternate proxy method Define two SIP proxies: Primary = CS A (Proxy), Secondary = CS B (Alternate proxy method) (if no delegation). *Expected result: call keeps running. It possible to evolve a n existing call (place on hold, transfer) and to place a new call*	OK but	After a switchover, the next call can be established after the next registration period, up to 900 seconds. Before this registration, it is not possible to evolve an existing call (place on hold, transfer…) and to place a new call.
2	Spatial redundancy via DNS method Configure the FQDN on the proxy field only (if delegation) *Expected result: call keeps running. It possible to evolve a n existing call (place on hold, transfer) and to place a new call*	OK but	After a switchover, the next call can be established after the next registration period, up to 900 seconds. Before this registration, it is not possible to evolve an existing call (place on hold, transfer…) and to place/receive a new call.
3	Switchover to Passive Call Server (PCS). (IP link to main/stdby call servers down) *Expected result : It possible to place a new call after the activation of the PCS*	OK but	Switches between call servers only occur after “Register”. Before this registration, it is not possible to evolve an existing call (place on hold, transfer…) and to place/receive a new call.
4	SIP device reboot. Check that calls are possible as soon as device has come back to service. *Expected result : can establish a call as soon as the SIP phone is rebooted*	OK	
5	Temporary Link down with the PBX *Expected result : can establish a call as soon as the network link is re established*	OK	Display “PBX Out of service” or “Master out of service”

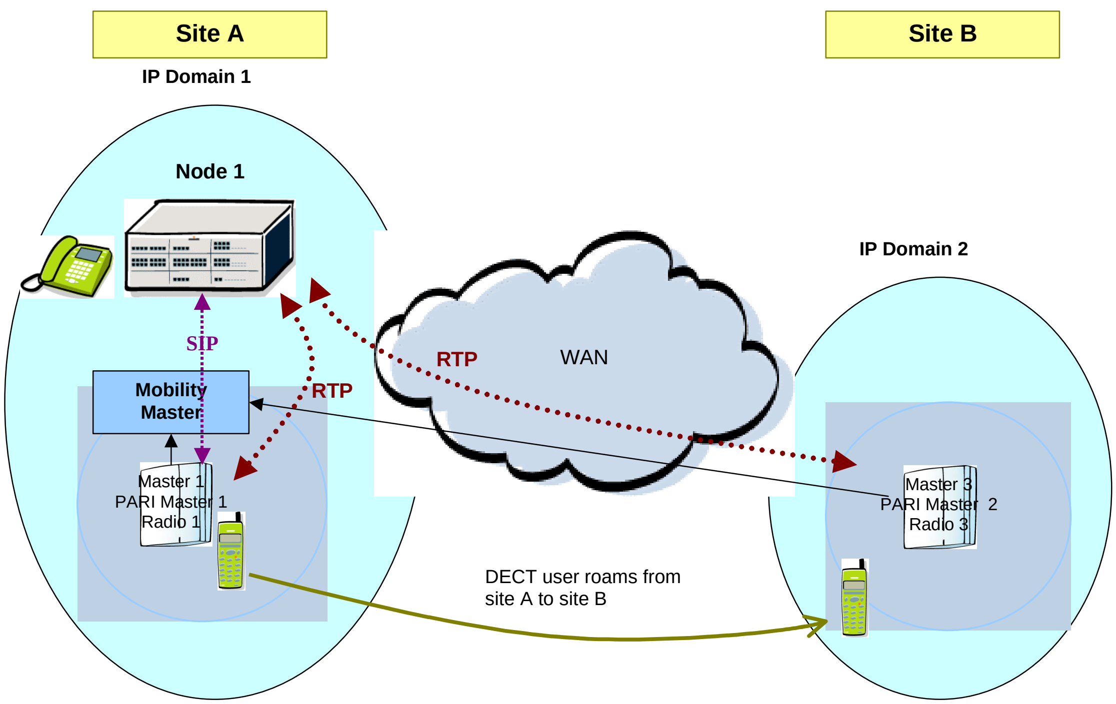
Notes:
In order to have acceptable switchover time the keep alive mechanism (SIP Options) can be used but this feature is unavailable on Ascom side. This is an Ascom limitation.

To reduce the unavailability duration, the registration timer must be reduced. In this section, it was set to 120s.
TTL=0 from DNS answer is not taken into account by ASCOM sets

8.10 DECT Multi-Master/Multi-Site

IPBS uses the following operation principle: SIP signaling is always performed by the Master IPBS where the user is declared. Media channels (RTP) are established to/from the base station where the handset is located. This means that IP addresses of signaling and media endpoints are different if handset is located on a base station different from its Master.
OXE uses the IP address of declared SIP extension (signaling address) to determine IP domain association and therefore CAC and codec choice.

Consider the following figure:
A DECT handset is declared on Site A, IPBS Master 1.
Signaling of this handset always goes to Node 1, coming from IPBS Master 1.
RTP will be established with Radio 1, which has the same IP address.
Correct CAC and coding algorithm can be applied.
If the handset moves to site B, signaling still goes from Master 1 to Node 1, but RTP will be established with Radio 3, with a different IP address.
As signaling address is used to check CAC/codec, user is still seen in IP domain 1 although RTP will be established to IP domain 2.=> Wrong CAC and codec will be applied!

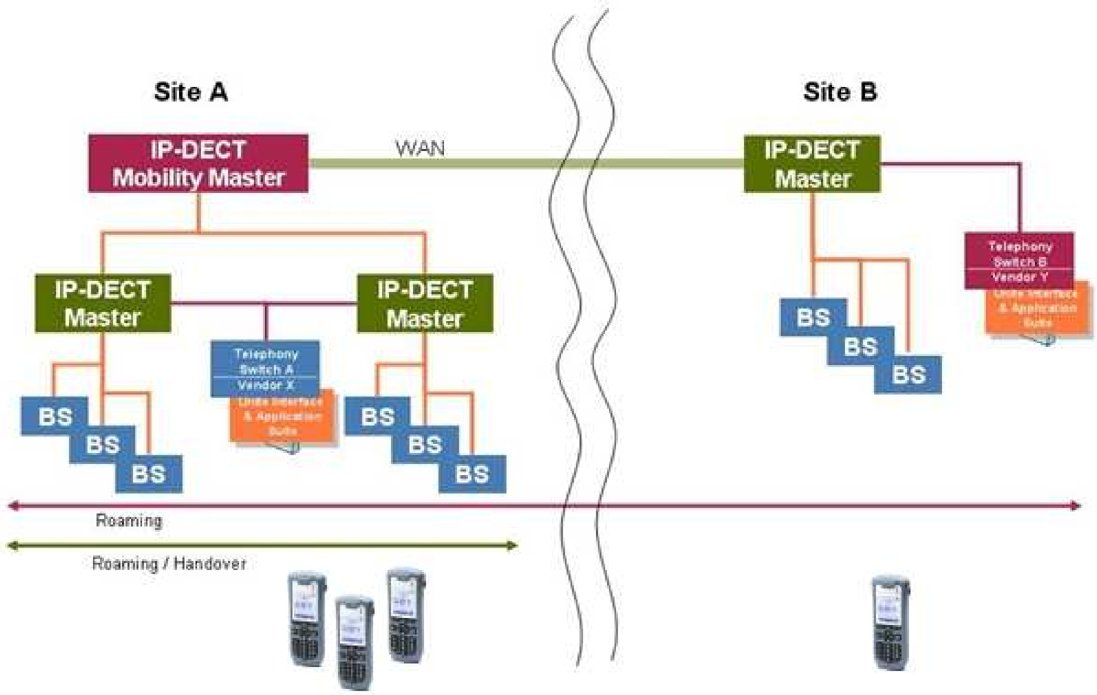


9 Appendix A: AAPP member's application description and configuration

The IP-DECT system from Ascom combines the VoIP world with traditional wireless DECT in an innovative package. One unique advantage is that you can have both packet data and high-quality voice connections on the same network and look forward to superb quality of service in addition to excellent messaging capabilities in a secure radio environment.

The multi-master concept enables a completely new principle on how to build large systems and gives the opportunity to balance the load between different IP-PBX's

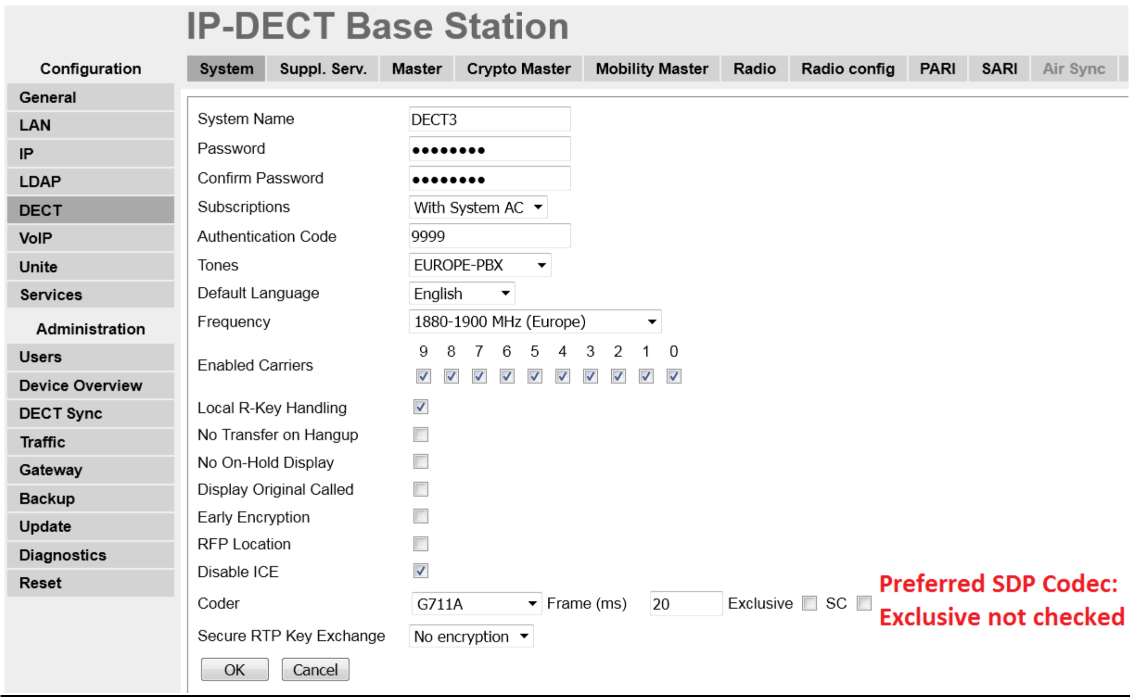
The picture below illustrates a typical multi-Master system:

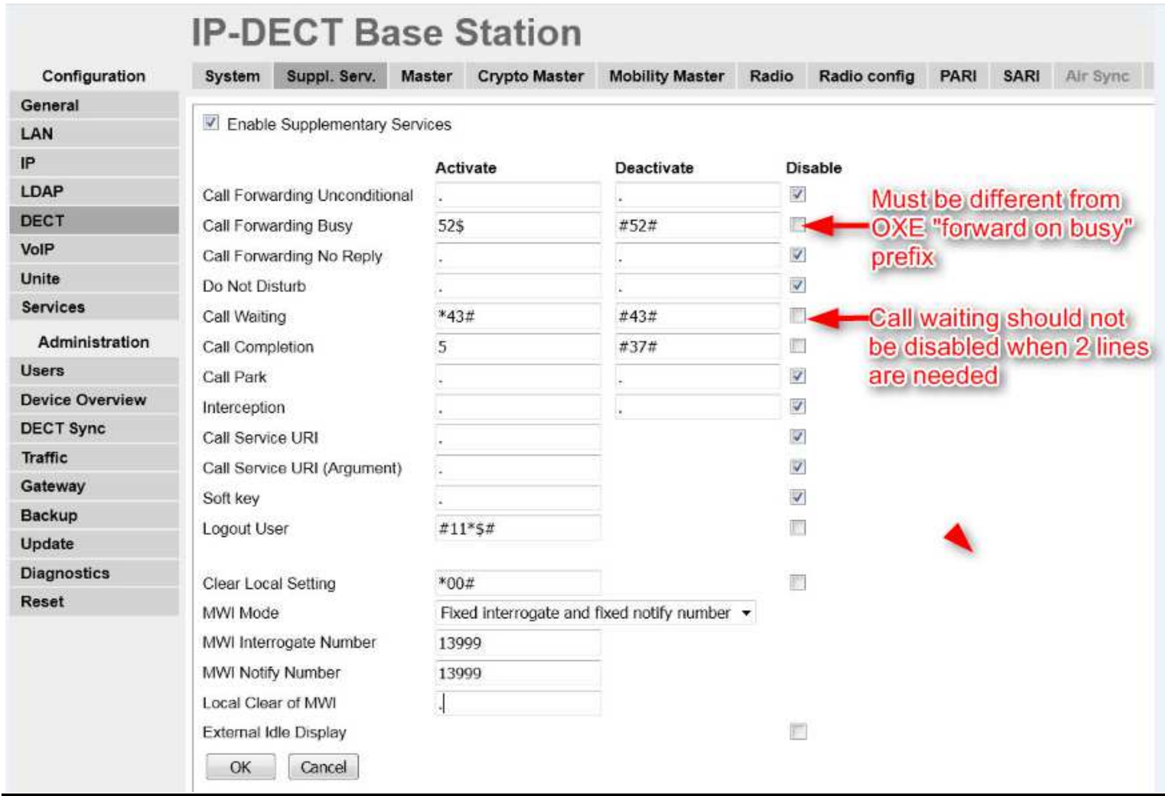


For configuration of the Ascom IP-DECT system, refer to Ascom "Installation and Operation Manual IP-DECT base station" documentation.

The following screenshots show only the specific configuration parameters needed for interworking with the OmniPCX Enterprise, and only if it differs from default configuration.

DECT system:



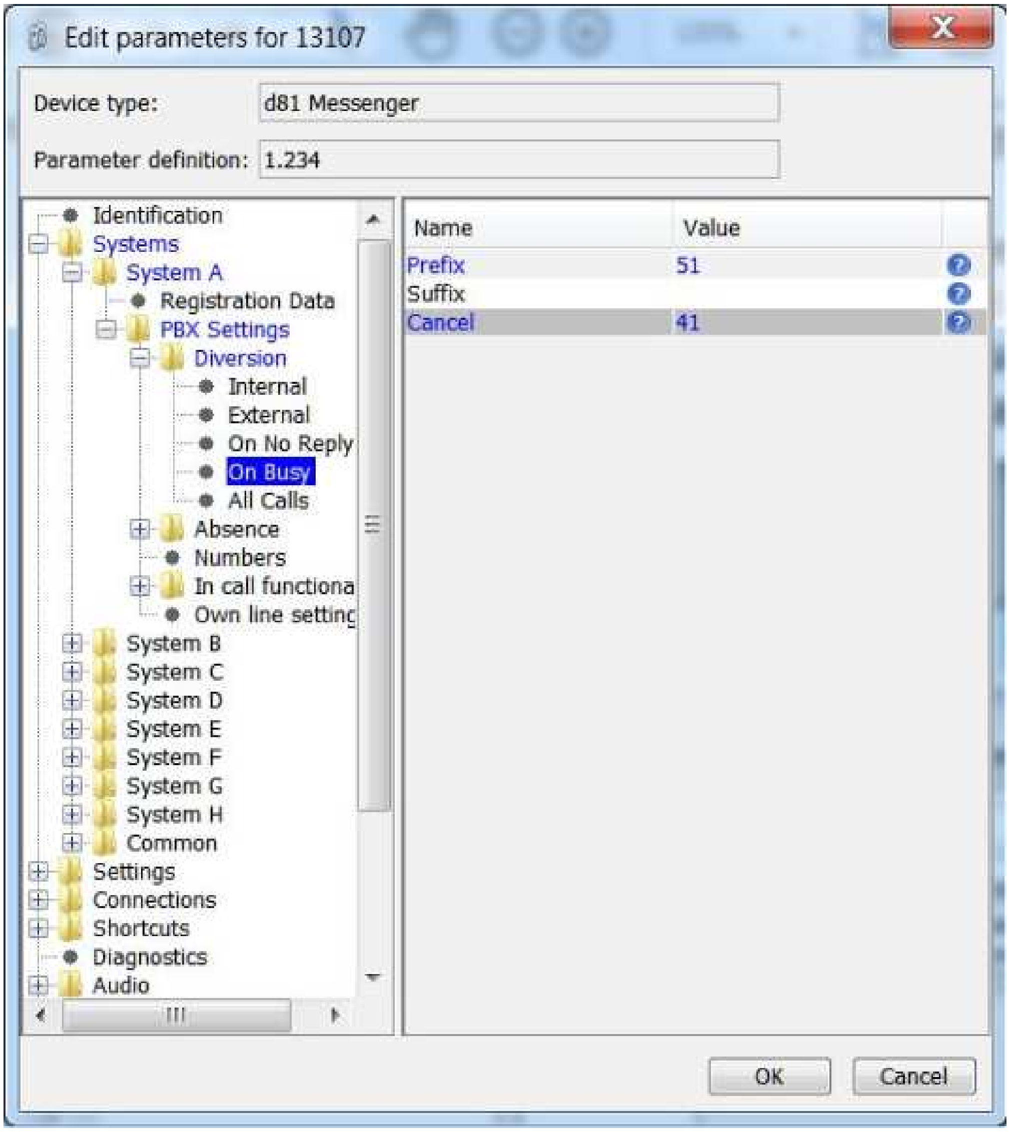


<u>DECT Supplementary services:</u>

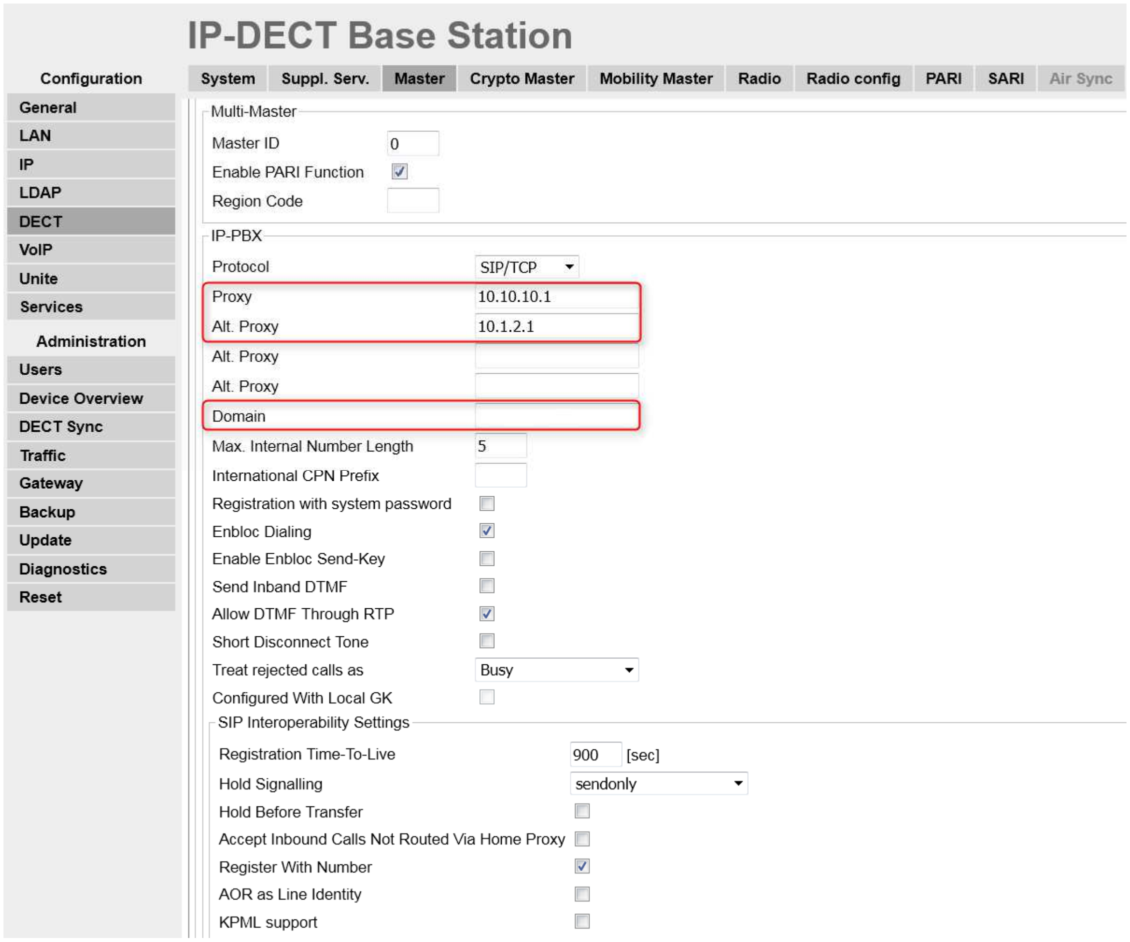
“MWI Interrogate Number” and MWI Notify Number” must be configured with OXE Voicemail number

OXE external SIP set is a multiline station with 2 lines configured. If call waiting feature is not activated on DECT handset, call forwarding on busy set should be configured on Ascom system and not on OXE system to transfer a second incoming call.

It is possible to unactive the dect system local feature, and use the OXE feature instead. For such configuration, direct access buttons can be configured on DECT handset. To do so, check the “disable” button on the associated local feature. OXE system CFU prefixes (activation/cancellation) have been activated in the following example:

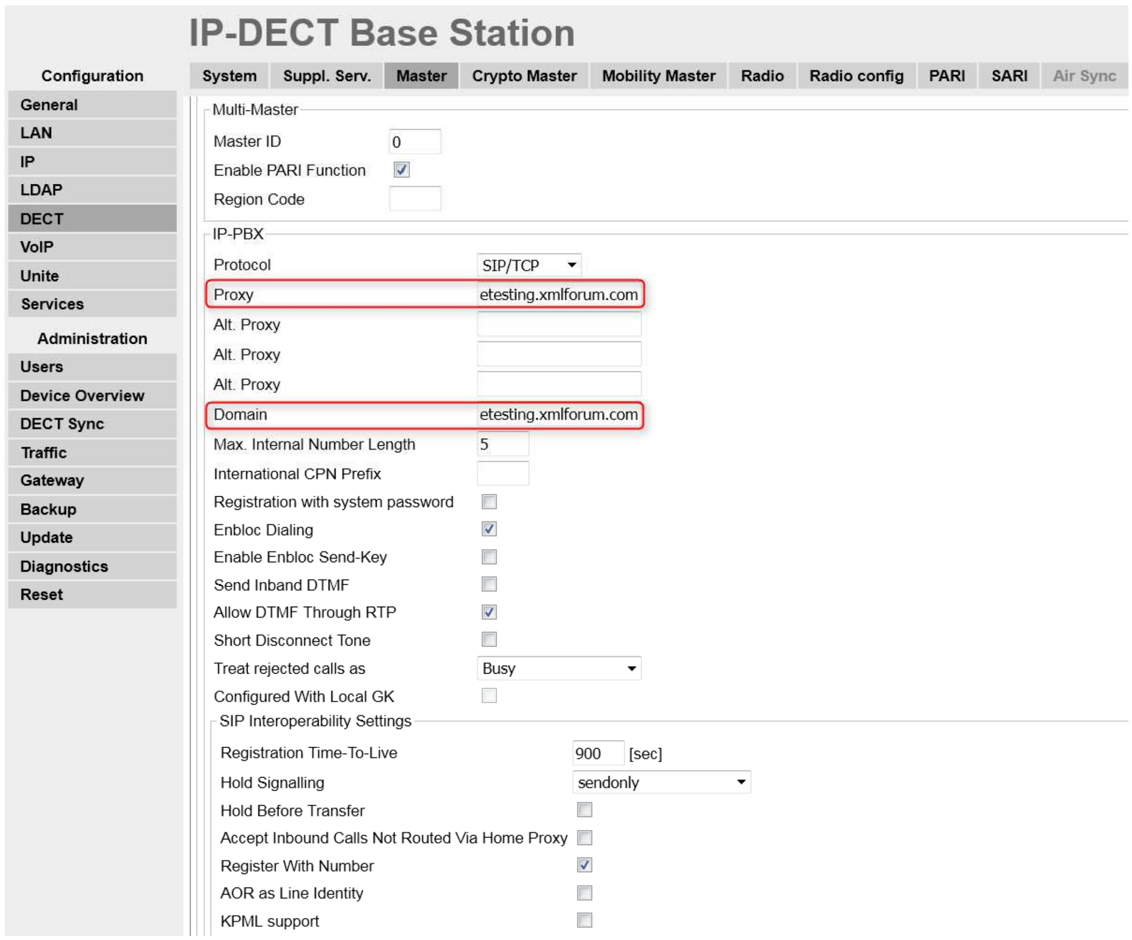

Edit parameters for 13107
Device type: d81 Messenger
Parameter definition: 1.234
Identification
Systems
System A
Registration Data
PBX Settings
Diversion
Internal
External
On No Reply
On Busy
All Calls
Absence
Numbers
In call functiona
Own line setting
System B
System C
System D
System E
System F
System G
System H
Common
Settings
Connections
Shortcuts
Diagnostics
Audio
Name
Value
Prefix
51
Suffix
Cancel
41
OK
Cancel

SIP configuration – alternate proxy configuration:



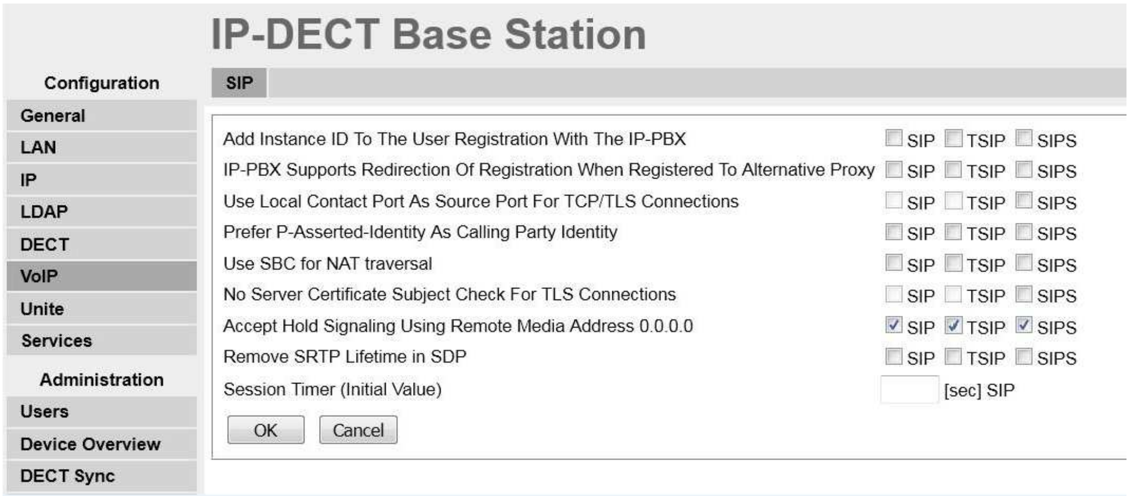
Remark: Do not put the OXE SIP Proxy FQDN into the Domain name, else the message waiting indication (MWI) might not be sent. Refer to CR number CROXE-4364 on OXE side.

SIP configuration – FQDN configuration:

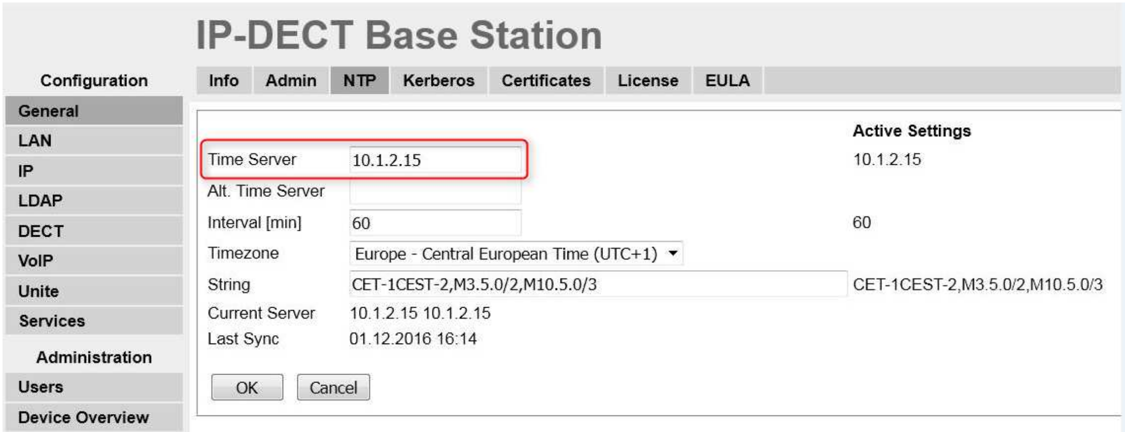


Remark: With this configuration, the message waiting indication (MWI) might not be sent: Refer to CR number CROXE-4364 on OXE side.

VOIP SIP Configuration:



NTP configuration:



10 Appendix B: Alcatel-Lucent Enterprise Communication Platform: configuration Requirements

List of prefixes and suffixes defined on OmniPCX TSS lab system. These prefixes can be entered in the call services menu (See appendixA>DECT Supplementary services) to be used by the end customer via a speed dial button on the dect set:

dir	mean
400	Set_In/Out_of_service
401	Recordable_Voice_Guides
402	Park_Call/Retrieve
403	Charging_meter_readout
404	Associated_Set_No_Modif
405	Password_modification
406	Redial_last_number
407	Night_service_answering
408	Contrast_programmation
409	Secret/Identity
41	Forward_cancellation
42	Do_not_disturb
43	Voice_Mail
44	Canc_auto_call_back_on_busy
45	PadLock
46	Consult_Call_back_list
470	Waiting_call_consultation
471	Business_account_code
472	Consult_Messages
473	Paging_call_answer
474	Language
480	Set_group_entry
481	Set_group_exit
482	Switch_off_Message_LED
483	Mask_Remote_Calling_Identity
484	Cancel_Remote_forward
485	Overfl_busy_to_assoc_set
486	Overf_busy/no_repl_assoc_set
487	Recording_Conversation
490	Ubiquity_Mobile_Programming
491:493	Ubiquity_Services_Pfx
495	Ubiquity_Assistant
500	Last_Caller_Call_back
501	Remote_forward
502	Overflow_on_associated_set
503	Cancel_Overfl_on_assoc_set
504	Protection_against_beeps
505	Substitution
506	Wake_up/appointment_remind
507	Cancel_Wake_up
508	Forward_cancel_by_destinat
509	Meet_me_Conference
51	Immediate_forward
52	Immediate_forward_on_busy
53	Forward_on_no_reply
54	Forward_on_busy_or_no_reply
55	Direct_call_pick_up
56	Group_call_pick_up
570	Voice_Mail_Deposit

```
|580          |Tone_test                          |
|581          |Personal_directory_Progr                   |
|582          |Personal_Directory_Use                     |
|583          |Force_type_identification_pfx              |
|584          |Suite_Wakeup                        |
|585          |Suite_Wakeup_Cancel                        |
|586          |Suite_Dont_Disturb                      |
|587          |Room_status_management                          |
|588          |Mini_bar                          |
|589          |Direct_Paging_Call                     |
|591          |Pabx_address_in_DPNSS                      |
|599          |Professional_trunk_seize                   |
|899          |Pabx_address_in_DPNSS                      |
|9           |Attendant_Call                        |
|*           |DTMF_End_to_End_Dialling                   |
|#           |Speed_call_to_associated_set               |
```

Handsets are declared as SEPLOS SIP users (SIP extension):

```
lqReview/Modify: Usersqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq
x
x            Node Number (reserved) : 3
x                  Directory Number : 13104
x
x                    Directory name : ascom
x              Directory First Name : 13104
x              UTF-8 Directory Name : ----------------------------
x        UTF-8 Directory First Name : ----------------------------
x                     Location Node : 3
x                     Shelf Address : 255
x                     Board Address : 255
x                 Equipment Address : 255
x                          Set Type + SIP extension
x                     Entity Number : 1
x                      Set Function + Default
x                      Profile Name : ---------------
x                      Key Profiles + None
x                 Domain Identifier : 0
x                       Language ID : 1
x
x                       Secret Code : ****
x                           Confirm : ****
x
x                Associated Set No. : 13104
x                    Cost Center ID : 255
x                  Cost Center Name : ----------
x                      Charging COS + Justified
x                Public Network COS : 2
x           External Forwarding COS : 255
x                Phone Features COS : 0
x                    Connection COS : 0
x                Hunt Group Dir No. : --------
x           ACD Group Directory No. : --------
x                 Pickup Group Name : ----------------
x               Reserved Time Slot + False
x               Voice Mail Dir.No. : 13999
x                   Voice Mail Type + 4645
x                Paging Trunk Group : 255
x                     Paging Beeper : ----
x              Tele-Marketing Agent + False
x
```

OXE SIP Gateway management:

```
lqReview/Modify: SIP Gatewayqqqqqqqqqqqqqqqqqqqqqqqqqqqqq
x
x             Node Number (reserved) : 101
x                Instance (reserved) : 1
x                Instance (reserved) : 1
x
x                     SIP Subnetwork : 5
x                    SIP Trunk Group : 1
x                         IP Address : 10.1.2.1
x                Machine name - Host : etesting
x              SIP Proxy Port Number : 5060
x         SIP Subscribe Min Duration : 1800
x         SIP Subscribe Max Duration : 86400
x                      Session Timer : 900
x                  Min Session Timer : 180
x               Session Timer Method + RE_INVITE
x              DNS local domain name : XmlForum.com
x                           DNS type + DNS A
x                SIP DNS1 IP Address : 10.1.2.15
x                SIP DNS2 IP Address : ------------------
x                         SDP in 18x + True
x                        Cac SIP-SIP + False
x   INFO method for remote extension + False
x      Dynamic Payload type for DTMF : 97
x        Overflow Licenses Threshold : 80
x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq
```

OXE SIP Proxy management:

```
lqReview/Modify: SIP Proxyqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq
x
x              Node Number (reserved) : 101
x                 Instance (reserved) : 1
x                 Instance (reserved) : 1
x
x               SIP initial time-out : 500
x                       SIP timer T2 : 4000
x                  Dns Timer overflow : 100000
x                           Timer TLS : 30
x                    Recursive search + False
x       Minimal authentication method + SIP Digest
x               Authentication realm : alcatel
x   Only authenticated incoming calls + False
x                    Framework Period : 3
x      Framework Nb Message By Period : 25
x         Framework Quarantine Period : 1800
x              TCP when long messages + True
x    Retransmission number for INVITE : 3
x          Degraded mode Time To Live : 1800
x               User Agent Identifier : %
x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq
```

OXE SIP Registrar management:

```
lqReview/Modify: SIP Registrarqqqqqqqqqqqqqqqqqqqqqqqqqk
x                                                     x
x              Node Number (reserved) : 101           x
x                 Instance (reserved) : 1             x
x                 Instance (reserved) : 1             x
x                                                     x
x             SIP Min Expiration Date : 90            x
x             SIP Max Expiration Date : 1800          x
x                                                     x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
```

SIP Extension’s Classes of service must be managed as below:

```
lqReview/Modify: Phone classes of serviceqqqqqqqqqqqqqk
x                                                      x
x             Node Number (reserved) : 101             x
x                Instance (reserved) : 1               x
x                          Phone COS : 0               x
x                                                      x
x                      Display UTF-8 + YES             x
x    Display call server information + YES             x
x                         Keep Alive + NO              x
x     Send NOTIFY instead of MESSAGE + YES             x
x         Tandem Call Identification + YES             x
x                                                      x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
```

Software locks:
177: Total number of SIP users (including SIP devices and extensions).
345: Number of SIP extensions users (SEPLOS).

Suffix Plan (Default):
1 - Broker Call
2 - Consultation Call
3 - Three-Party Conference
4 - Barge-in (Intrusion)
5 - Callback On Free Or Busy Set
6 - Busy Camp-on
7 - Paging Request
8 - Voice Mail Deposit
* - DTMF end-to-end dialing

11 Appendix C: AAPP member's escalation process

The following list of contacts can be used to escalate issues regarding the Ascom IP-DECT platform:

Company/Country	Technical Manager/ Service Manager	e-mail
Ascom CH	Juerg Schaffner	juerg.schaffner@ascom.com
Ascom NO	Håkon Storm	Hakon.Storm@ascom.com
Ascom, NL	Hans van Duijne	Hans.vanDuijne@ascom.com
Ascom, UK	Richard Turner	Richard.Turner@ascom.com
Ascom, US	Nathan Wilson	Nathan.Wilson@ascom.com
Ascom France, FR	Philippe Billet	Philippe.Billet@ascom.com
Ascom Danmark, DK	Frans Richter Christensen	Frans.RichterChristensen@ascom.com
Ascom Germany GmbH, DE	Herman Fueg	hermann.fueg@ascom.com
Ascom, BE	Peter Moens	Peter.moens@ascom.com
Ascom Austria, AT	Herman Fueg	hermann.fueg@ascom.com
Ascom Sverige, SE	Niclas Holmblad	Niclas.Holmblad@ascom.com
Ascom, IT	Tiziano Pigozzi	tiziano.pigozzi@ascom.com
International	Marko Savinainen	Marko.savinainen@ascom.com

12 Appendix D: AAPP program

12.1 Alcatel-Lucent Application Partner Program (AAPP)

The Application Partner Program is designed to support companies that develop communication applications for the enterprise market, based on Alcatel-Lucent Enterprise's product family.
The program provides tools and support for developing, verifying and promoting compliant third-party applications that complement Alcatel-Lucent Enterprise's product family. ALE International facilitates market access for compliant applications.

The Alcatel-Lucent Application Partner Program (AAPP) has two main objectives:

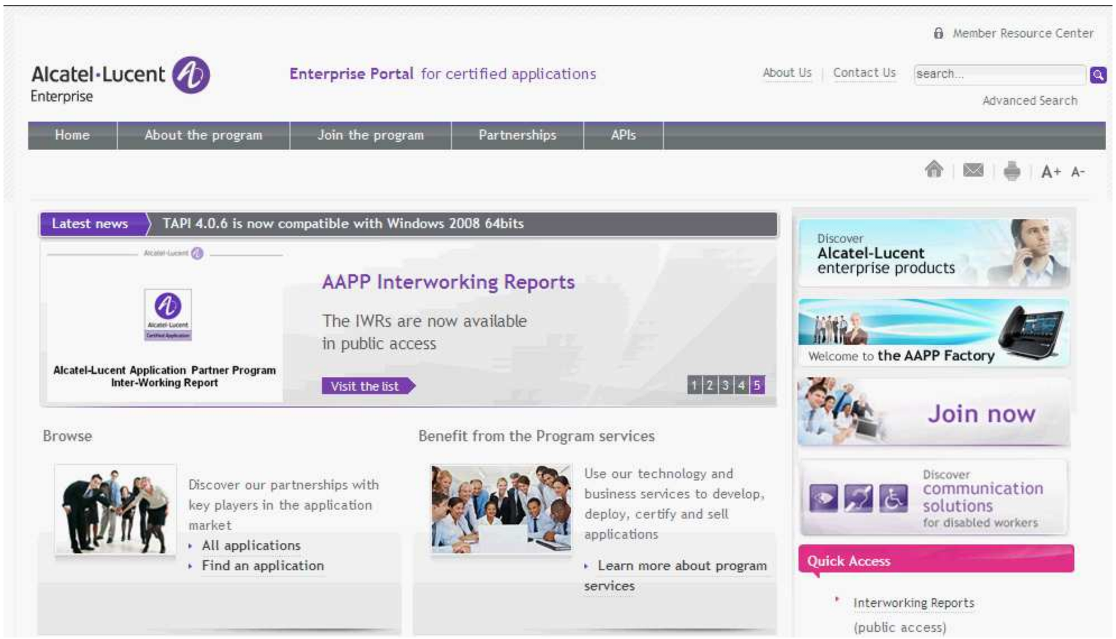
- **Provide easy interfacing for Alcatel-Lucent Enterprise communication products**: Alcatel-Lucent Enterprise's communication products for the enterprise market include infrastructure elements, platforms and software suites. To ensure easy integration, the AAPP provides a full array of standards-based application programming interfaces and fully-documented proprietary interfaces. Together, these enable third-party applications to benefit fully from the potential of Alcatel-Lucent Enterprise products.

- **Test and verify a comprehensive range of third-party applications**: to ensure proper inter-working, ALE International tests and verifies selected third-party applications that complement its portfolio. Successful candidates, which are labelled Alcatel-Lucent Enterprise Compliant Application, come from every area of voice and data communications.

The Alcatel-Lucent Application Partner Program covers a wide array of third-party applications/products designed for voice-centric and data-centric networks in the enterprise market, including terminals, communication applications, mobility, management, security, etc.

Web site

The Application Partner Portal is a website dedicated to the AAPP program and where the InterWorking Reports can be consulted. Its access is free at http://applicationpartner.alcatel-lucent.com



12.2 Enterprise.Alcatel-Lucent.com

You can access the Alcatel-Lucent Enterprise website at this URL: http://www.enterprise.alcatel-lucent.com/

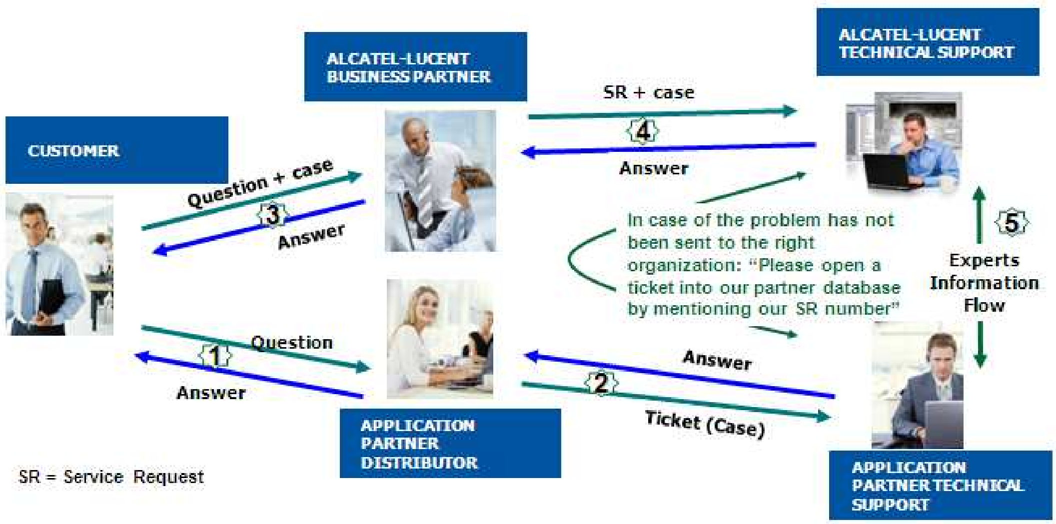
13 Appendix E: AAPP Escalation process

13.1 Introduction

The purpose of this appendix is to define the escalation process to be applied by the ALE International Business Partners when facing a problem with the solution certified in this document.

The principle is that ALE International Technical Support will be subject to the existence of a valid InterWorking Report within the limits defined in the chapter “Limits of the Technical support”.

In case technical support is granted, ALE International and the Application Partner, are engaged as following:



(*) The Application Partner Business Partner can be a Third-Party company or the ALE International Business Partner itself

13.2 Escalation in case of a valid Inter-Working Report

The InterWorking Report describes the test cases which have been performed, the conditions of the testing and the observed limitations.

This defines the scope of what has been certified.

If the issue is in the scope of the IWR, both parties, ALE International and the Application Partner, are engaged:

Case 1: the responsibility can be established 100% on ALE International side.
In that case, the problem must be escalated by the ALE Business Partner to the ALE International Support Center using the standard process: open a ticket (eService Request – eSR)

Case 2: the responsibility can be established 100% on Application Partner side.
In that case, the problem must be escalated directly to the Application Partner by opening a ticket through the Partner Hotline. In general, the process to be applied for the Application Partner is described in the IWR.

Case 3: the responsibility can not be established.
In that case the following process applies:

- The Application Partner shall be contacted first by the Business Partner (responsible for the application, see figure in previous page) for an analysis of the problem.

- The ALE International Business Partner will escalate the problem to the ALE International Support Center only if the Application Partner has demonstrated with traces a problem on the ALE International side or if the Application Partner (not the Business Partner) needs the involvement of ALE International

In that case**,** the ALE International Business Partner must provide the reference of the Case Number on the Application Partner side. The Application Partner must provide to ALE International the results of its investigations, traces, etc, related to this Case Number.

ALE International reserves the right to close the case opened on his side if the investigations made on the Application Partner side are insufficient or do not exist.

Note: Known problems or remarks mentioned in the IWR will not be taken into account.

For any issue reported by a Business Partner outside the scope of the IWR, ALE International offers the “On Demand Diagnostic” service where ALE International will provide 8 hours assistance against payment .

IMPORTANT NOTE 1: The possibility to configure the Alcatel-Lucent Enterprise PBX with ACTIS quotation tool in order to interwork with an external application is not
the guarantee of the availability and the support of the solution. The reference remains the existence of a valid InterWorking Report.

Please check the availability of the Inter-Working Report on the AAPP (URL: https://private.applicationpartner.alcatel-lucent.com) or Enterprise Business Portal (Url: Enterprise Business Portal) web sites.

IMPORTANT NOTE 2: Involvement of the ALE International Business Partner is mandatory, the access to the Alcatel-Lucent Enterprise platform (remote access, login/password) being the Business Partner responsibility.

13.3 Escalation in all other cases

For non-certified AAPP applications, no valid InterWorking Report is available and the integrator is expected to troubleshoot the issue. If the ALE Business Partner finds out the reported issue is maybe due to one of the Alcatel-Lucent Enterprise solutions, the ALE Business Partner opens a ticket with ALE International Support and shares all trouble shooting information and conclusions that shows a need for ALE International to analyze.

Access to technical support requires a valid ALE maintenance contract and the most recent maintenance software revision deployed on site. The resolution of those non-AAPP solutions cases is based on best effort and there is no commitment to fix or enhance the licensed Alcatel-Lucent Enterprise software.

For information, for non-certified AAPP applications and if the ALE Business Partner is not able to find out the issues, ALE International offers an “On Demand Diagnostic” service where assistance will be provided for a fee.

13.4 Technical support access

The ALE International **Support Center** is open 24 hours a day; 7 days a week:

- e-Support from the Application Partner Web site (if registered Alcatel-Lucent Application Partner): http://applicationpartner.alcatel-lucent.com
- e-Support from the ALE International Business Partners Web site (if registered Alcatel-Lucent Enterprise Business Partners): https://businessportal2.alcatel-lucent.com click under "Contact us" the *eService Request* link
- e-mail: Ebg_Global_Supportcenter@al-enterprise.com
- Fax number: +33(0)3 69 20 85 85
- Telephone numbers:

ALE International Business Partners Support Center for countries:

<table>
<tr><th>Country</th><th>Supported language</th><th>Toll free number</th></tr>
<tr><td>France</td><td rowspan="3">French</td><td rowspan="23">+800-00200100</td></tr>
<tr><td>Belgium</td></tr>
<tr><td>Luxembourg</td></tr>
<tr><td>Germany</td><td rowspan="3">German</td></tr>
<tr><td>Austria</td></tr>
<tr><td>Switzerland</td></tr>
<tr><td>United Kingdom</td><td rowspan="16">English</td></tr>
<tr><td>Italy</td></tr>
<tr><td>Australia</td></tr>
<tr><td>Denmark</td></tr>
<tr><td>Ireland</td></tr>
<tr><td>Netherlands</td></tr>
<tr><td>South Africa</td></tr>
<tr><td>Norway</td></tr>
<tr><td>Poland</td></tr>
<tr><td>Sweden</td></tr>
<tr><td>Czech Republic</td></tr>
<tr><td>Estonia</td></tr>
<tr><td>Finland</td></tr>
<tr><td>Greece</td></tr>
<tr><td>Slovakia</td></tr>
<tr><td>Portugal</td></tr>
<tr><td>Spain</td><td>Spanish</td></tr>
</table>

For other countries:

English answer:	+ 1 650 385 2193
French answer:	+ 1 650 385 2196
German answer:	+ 1 650 385 2197
Spanish answer:	+ 1 650 385 2198

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