Mitel Technical Configuration Notes – HO4679

March 25, 2022

Configure MiVoice Office 400 7.0 for use with Tetronik Digital Alarm and Communications Server (DAKS) using SIP and AXI/XML Interface

Description: This document provides a reference to Mitel Authorized Solutions providers for configuring the MIVO400 7.0 to connect to the Tetronik Digital Alarm and Communications Server (DAKS) using SIP and AXI/XML Interface.

Environment: MiVoice Office 400 7.0 (9237c1), RFP 43 and RFP 35 SIP-DECT 8.3SP2-HA16, Mitel 68XX Phone and Mitel 69XX Phone 6.1.0.146, SIP-DECT Phone 632v2 (Firmware-Version 7.4.5), 612d (Firmware-Version 7.3.2), 622d (Firmware-Version 7.3.2)

NOTICE

TRADEMARKS

Mitel Technical Configuration Notes – Configure MiVoice Office 400 7.0 for use with Tetronik Digital Alarm and Communications Server using SIP and AXI/XML Interface.

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Overview

This document provides a reference to Mitel Authorized Solutions providers for configuring the Mitel MiVO400 to connect to Tetronik Digital Alarm and Communications Server using SIP and AXI/XML Interface. The different devices can be configured in various configurations depending on your VoIP solution. This document covers a basic setup with required option setup.

Interop History

Version	Date	Reason
1	March 2022	Interop with MiVoice Office 400 7.0 for use with Tetronik Digital Alarm and Communications Server (DAKS) using SIP and AXI/XML Interface.

Interop Status

The Interop of Service Provider Tetronik Digital Alarm and Communications Server (DAKS) has been given a Certification status. This service provider or trunking device will be included in the Mitel Interoperability Reference Guide (IRG). The status Service Provider Tetronik Digital Alarm and Communications Server (DAKS) achieved is:

	The most common certification which means Service Provider Tetronik Digital Alarm and Communications Server (DAKS) has been tested and/or validated by the Mitel Third-Party Interop Team. Mitel Product Support will provide all necessary support related to the interop, but issues unique or specific to the 3rd party will be referred to the 3rd party as appropriate.

Software & Hardware Setup

This was the test setup to generate a basic call between Tetronik Digital Alarm and Communications Server (DAKS) using SIP and AXI/XML Interface and with MiVO400.

Note – Although this testing was performed on the below tested variants, the scope of this testing can be extended to other product variants that work with the same firmware. The list of components for which this testing can be considered applicable is given in the "Additional Applicable Variants" column of the following table –

Manufacturer	Tested Variants	Software Version	Additional Applicable Variants
Mitel	MiVoice Office 400	Release 7.0 (9237c1)	N/A
Mitel	69XX SIP and 68XX SIP	6.1.0.146	N/A
Mitel	IP- DECT- BS RFP 43 & 35	SIP-DECT 8.3 SP2-HA16	RFP 4X and RFP 3X
Mitel	DECT Handsets 632 v2 612d, 622d	7.4.5 7.3.2	600 DECT Phone Series
DAKS	DAKSpro300	Version 9.04c	DAKSpro200

Tested Features

This is an overview of the features tested during the Interop test cycle and not a detailed view of the test cases.

Feature	Feature Description	Issues
Send Text Message	Sending text messages and alarms with different priorities, differentiate priorities via text colors and/or ring tones.	☑
Offer Alternative Responses	Show a menu offering different response alternatives via menu keys or the dial pad	☑
Receive response on messages	Recognize answers and start escalation processes, if required	☑
Establish emergency conference	Call several users and start a conference for all users or for those, who answered the call	☑
DTMF	RFC-2833 (Out-of-band)	☑
Video	Making and receiving a call through DAKS with video capable devices.	N/A
TLS/SRTP	Making and Receiving Calls through Secure Mode	☑

☑ - No issues found ✗ - Issues found, cannot recommend to use ⚠ - Issues found **N/A** Not applicable

Device Limitations and Known Issues

This is a list of problems or unsupported features when Tetronik Digital Alarm and Communications Server is connected to the MIVO400.

Feature	Problem Description
Codec	G.729 & G722 is not supported by DAKS. **Recommendation:** G729 & G722 codecs are not supported. For more details contact Tetronik support.
Video Calls	Video calling not supported. **Recommendation**: Contact Tetronik to know more about the availability of video calling feature.
DTMF	In-Band & SIP-INFO DTMF methods currently not supported. **Recommendation:** Contact Mitel support for more details.
Locating and User monitoring	No locating, no user monitoring is currently supported by DAKS. **Recommendation**: Contact Tetronik to know more about the availability of this feature in upcoming releases.

Network Topology

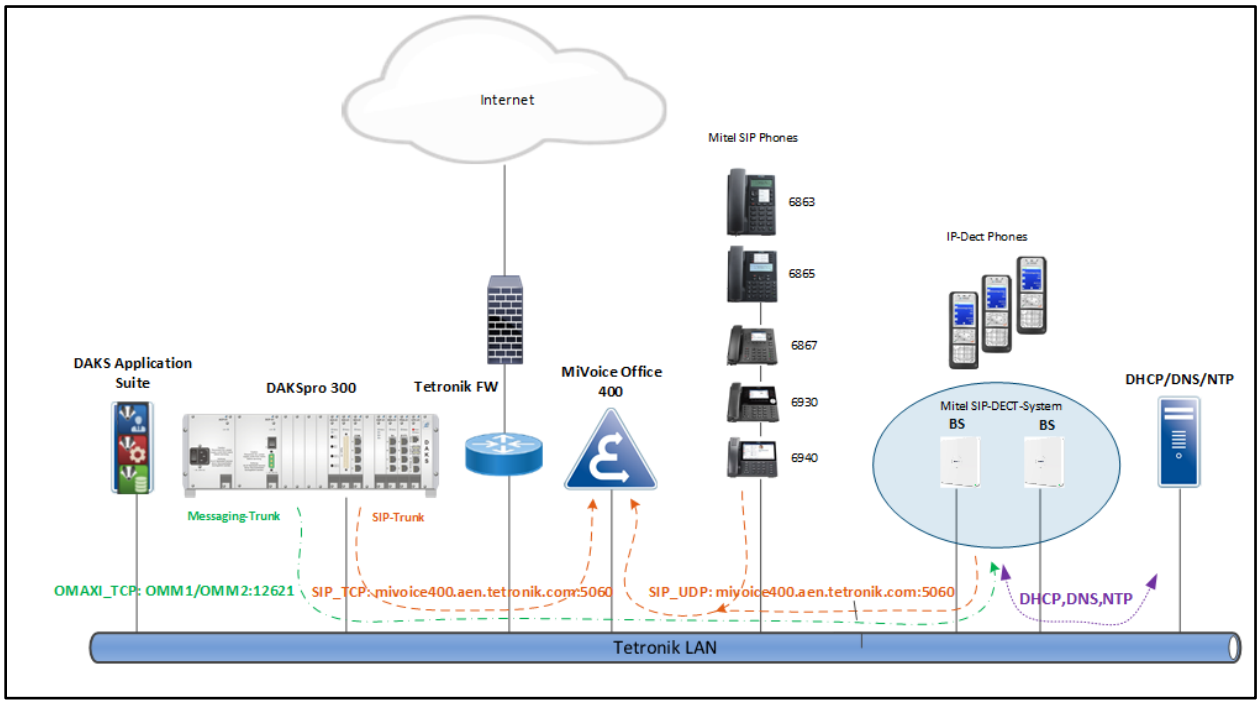


Figure 1 – Network Topology

Configuration Notes

This section is a description of how the SIP Interop was configured. These notes should give a guideline how a device can be configured in a customer environment and how Tetronik Digital Alarm and Communications Server programming was configured in our test environment.

Disclaimer: Although Mitel has attempted to setup the interop testing facility as closely as possible to a customer premise environment, implementation setup could be different onsite. YOU MUST EXERCISE YOUR OWN DUE DILIGENCE IN REVIEWING, planning, implementing, and testing a customer configuration.

MiVO400 SIP trunk configuration notes

The following steps show how to program a MiVO400 to interconnect with Tetronik Digital Alarm and Communications Server (DAKS).

Configuration Template

A configuration template can be found in the same Mitel Knowledge Management System (KMS) article as this document. The template is a Microsoft Excel spreadsheet (.XML format) **solely** consisting of the SIP Peer profile option settings used during Interop testing. All other forms should be programmed as indicated below. Importing the template can save you considerable configuration time and reduce the likelihood of data-entry errors. Refer to the MIVO400 documentation on how the Import functionality is used.

Network Requirements

- There must be adequate bandwidth to support the voice over IP. As a guide, the Ethernet bandwidth is approx 85 Kb/s per G.711 voice session and 29 Kb/s per G.729 voice session (assumes 20ms packetization). As an example, for 20 simultaneous SIP sessions, the Ethernet bandwidth consumption will be approx 1.7 Mb/s for G.711 and 0.6Mb/s. Almost all Enterprise LAN networks can support this level of traffic without any special engineering. Please refer to the MIVO400 Engineering guidelines for further information.
- For high quality voice, the network connectivity must support a voice-quality grade of service (packet loss <1%, jitter < 30ms, one-way delay < 80ms).

Assumptions for MIVO400 Programming

The SIP signaling connection uses TCP on Port 5060.

Licensing and Option Selection

Ensure that MiVoice Office 400 is equipped with enough SIP Access Channel licenses for the connection to Tetronik Digital Alarm and Communications Server (DAKS). Up to 30 SIP voice channels are available for each SIP provider. For each SIP voice channel, you need a SIP Access Channels license.
System overview – Licensing – Interfaces
Check whether the required licenses are available and have the status «enabled».
Note: ATAS Interface and ATASpro Interface license is not needed for Tetronik Digital Alarm and Communications Server (DAKS).

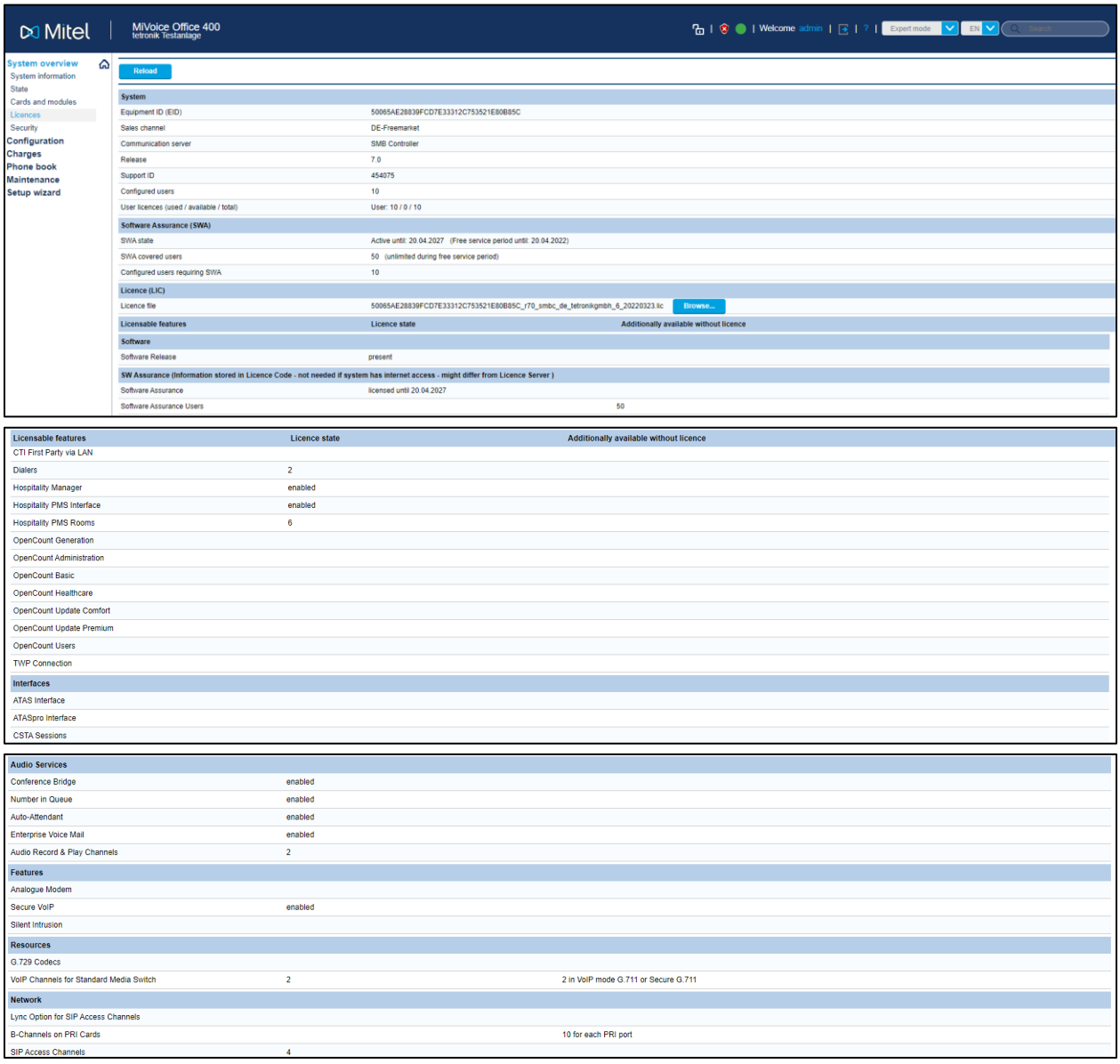
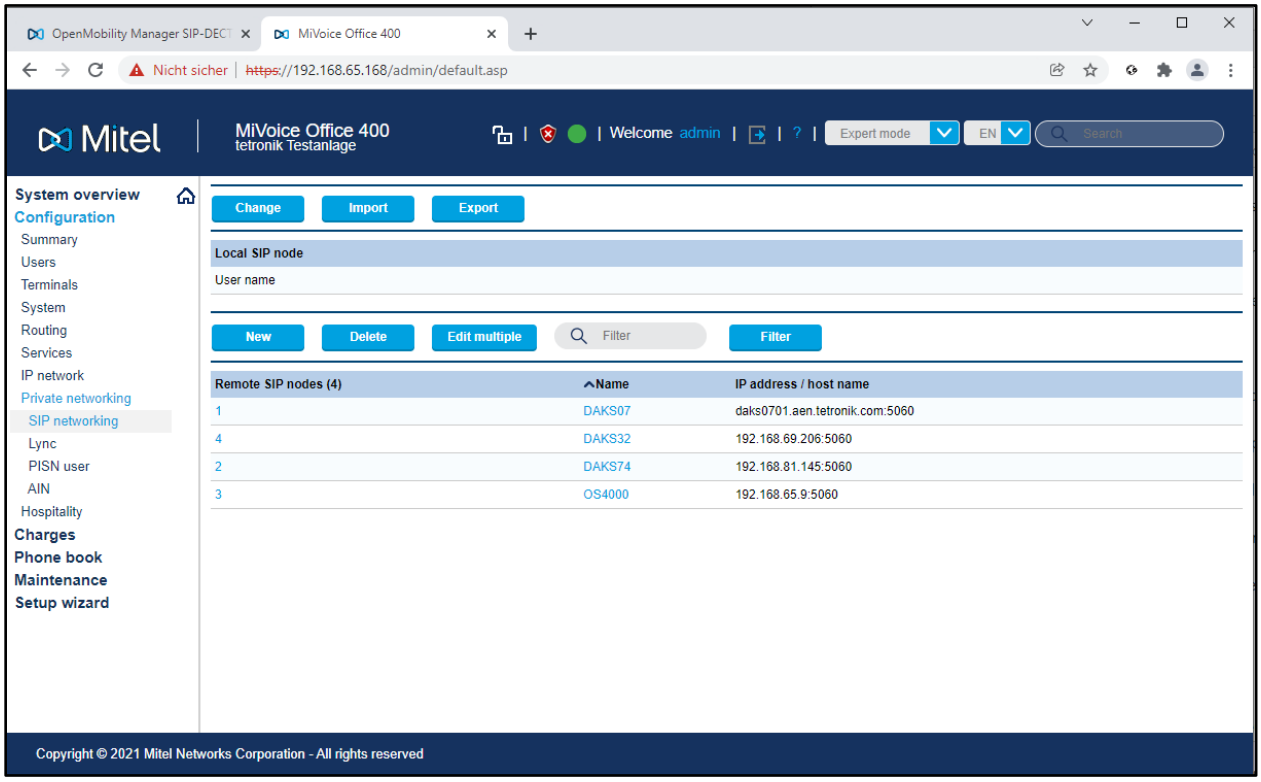
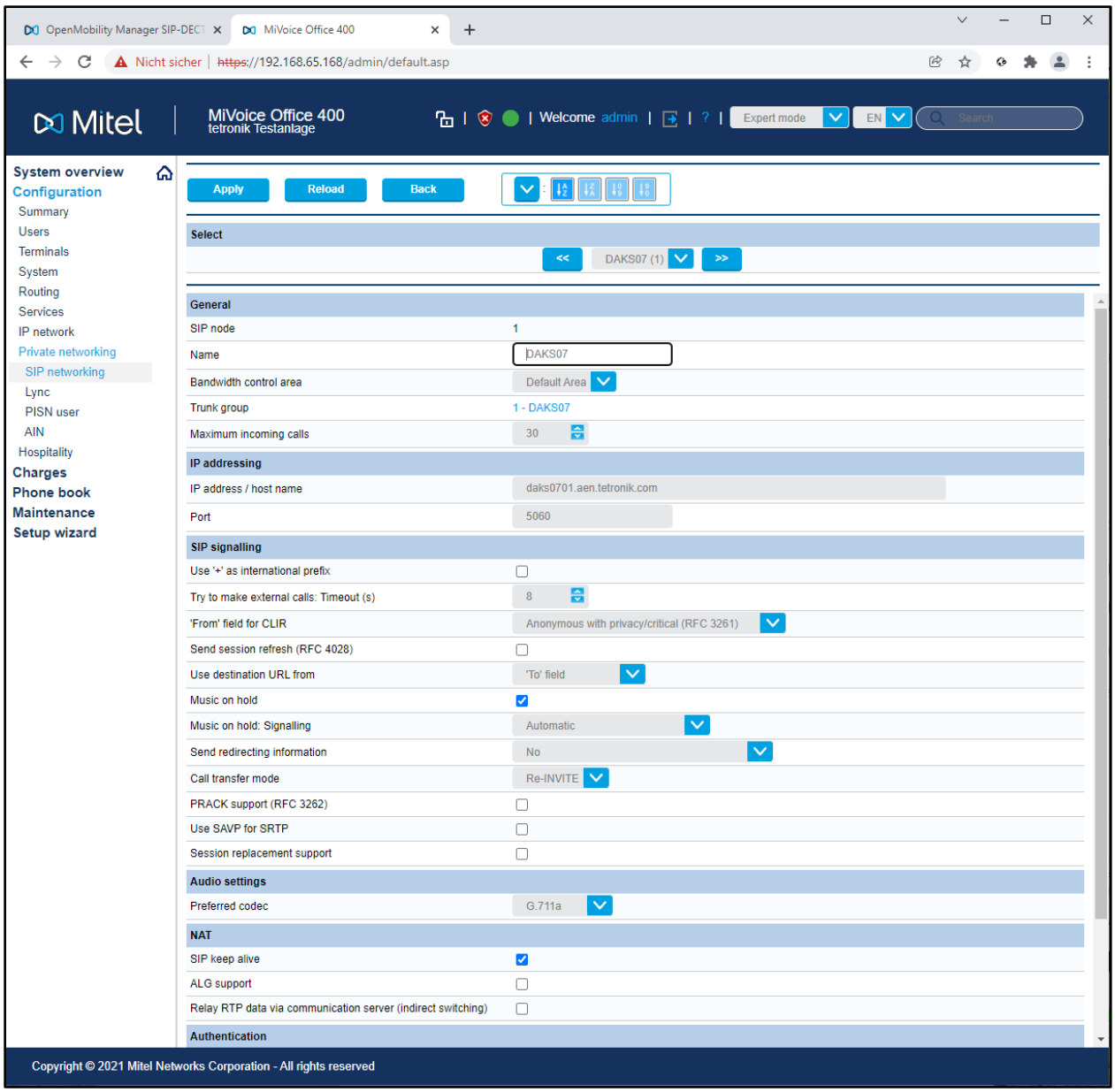


Figure 2 – Licensing

The tool that is needed to configure the DAKS Server at a MiVoice Office 400 system is the "MiVoice Office 400 Web Admin", which you will find abbreviated in this document as Web Admin.

This chapter shows you how to configure the MiVoice Office 400 to operate in combination with a DAKS-Server with the coupling realized via VoIP trunk.




OpenMobility Manager SIP-DECT
MiVoice Office 400
Nicht sicher | https://192.168.65.168/admin/default.asp
Mitel
MiVoice Office 400
tetronik Testanlage
Welcome admin
Expert mode
EN
Search
System overview
Configuration
Summary
Users
Terminals
System
Routing
Services
IP network
Private networking
SIP networking
Lync
PISN user
AIN
Hospitality
Charges
Phone book
Maintenance
Setup wizard
Apply
Reload
Back
Select
<<
DAKS07 (1)
>>
General
SIP node
1
Name
DAKS07
Bandwidth control area
Default Area
Trunk group
1 - DAKS07
Maximum incoming calls
30
IP addressing
IP address / host name
daks0701.aen.tetronik.com
Port
5060
SIP signalling
Use '+' as international prefix
Try to make external calls: Timeout (s)
8
'From' field for CLIR
Anonymous with privacy/critical (RFC 3261)
Send session refresh (RFC 4028)
Use destination URL from
'To' field
Music on hold
Music on hold: Signalling
Automatic
Send redirecting information
No
Call transfer mode
Re-INVITE
PRACK support (RFC 3262)
Use SAVP for SRTP
Session replacement support
Audio settings
Preferred codec
G.711a
NAT
SIP keep alive
ALG support
Relay RTP data via communication server (indirect switching)
Authentication
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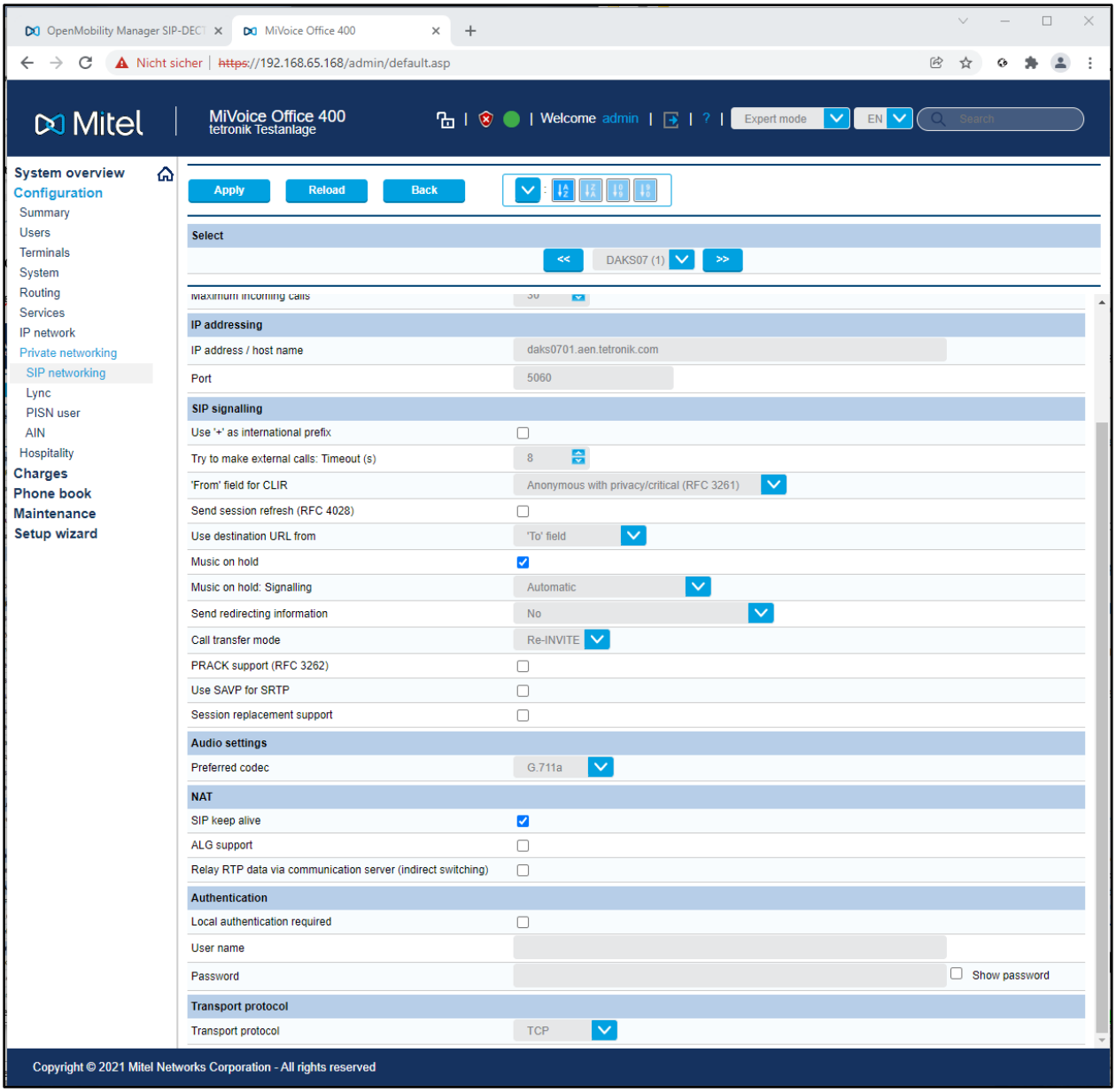
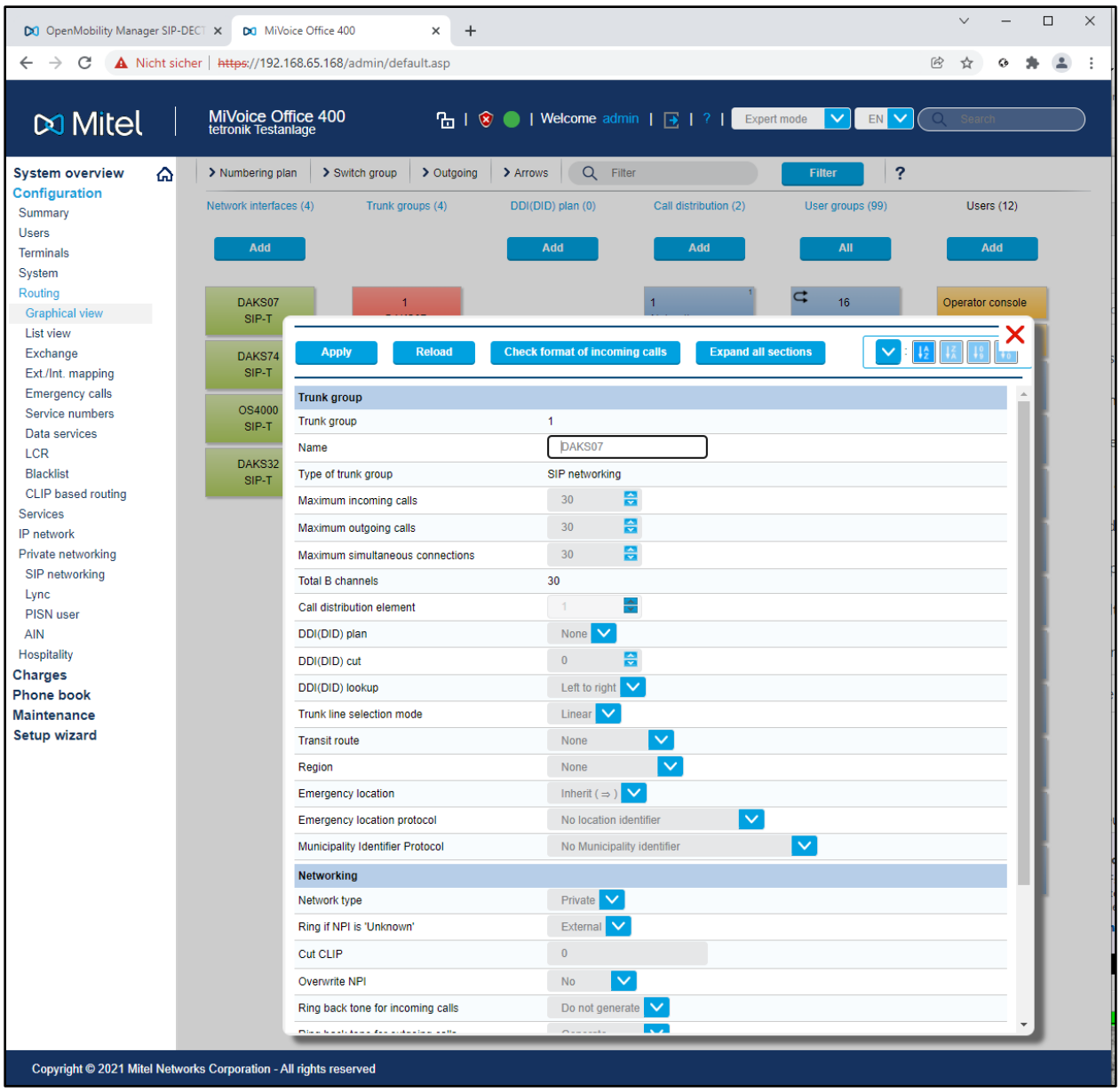


Figure 3 – SIP networking


OpenMobility Manager SIP-DECT
MiVoice Office 400
Nicht sicher
https://192.168.65.168/admin/default.asp
Mitel
MiVoice Office 400
tetronik Testanlage
Welcome admin
Expert mode
EN
Search
System overview
Configuration
Summary
Users
Terminals
System
Routing
Graphical view
List view
Exchange
Ext./Int. mapping
Emergency calls
Service numbers
Data services
LCR
Blacklist
CLIP based routing
Services
IP network
Private networking
SIP networking
Lync
PISN user
AIN
Hospitality
Charges
Phone book
Maintenance
Setup wizard
Numbering plan
Switch group
Outgoing
Arrows
Filter
Filter
Network interfaces (4)
Trunk groups (4)
DDI(DID) plan (0)
Call distribution (2)
User groups (99)
Users (12)
Add
Add
Add
All
Add
DAKS07 SIP-T
DAKS74 SIP-T
OS4000 SIP-T
DAKS32 SIP-T
Operator console
Apply
Reload
Check format of incoming calls
Expand all sections
Trunk group
Trunk group 1
Name DAKS07
Type of trunk group SIP networking
Maximum incoming calls 30
Maximum outgoing calls 30
Maximum simultaneous connections 30
Total B channels 30
Call distribution element 1
DDI(DID) plan None
DDI(DID) cut 0
DDI(DID) lookup Left to right
Trunk line selection mode Linear
Transit route None
Region None
Emergency location Inherit (⇒)
Emergency location protocol No location identifier
Municipality Identifier Protocol No Municipality identifier
Networking
Network type Private
Ring if NPI is 'Unknown' External
Cut CLIP 0
Overwrite NPI No
Ring back tone for incoming calls Do not generate
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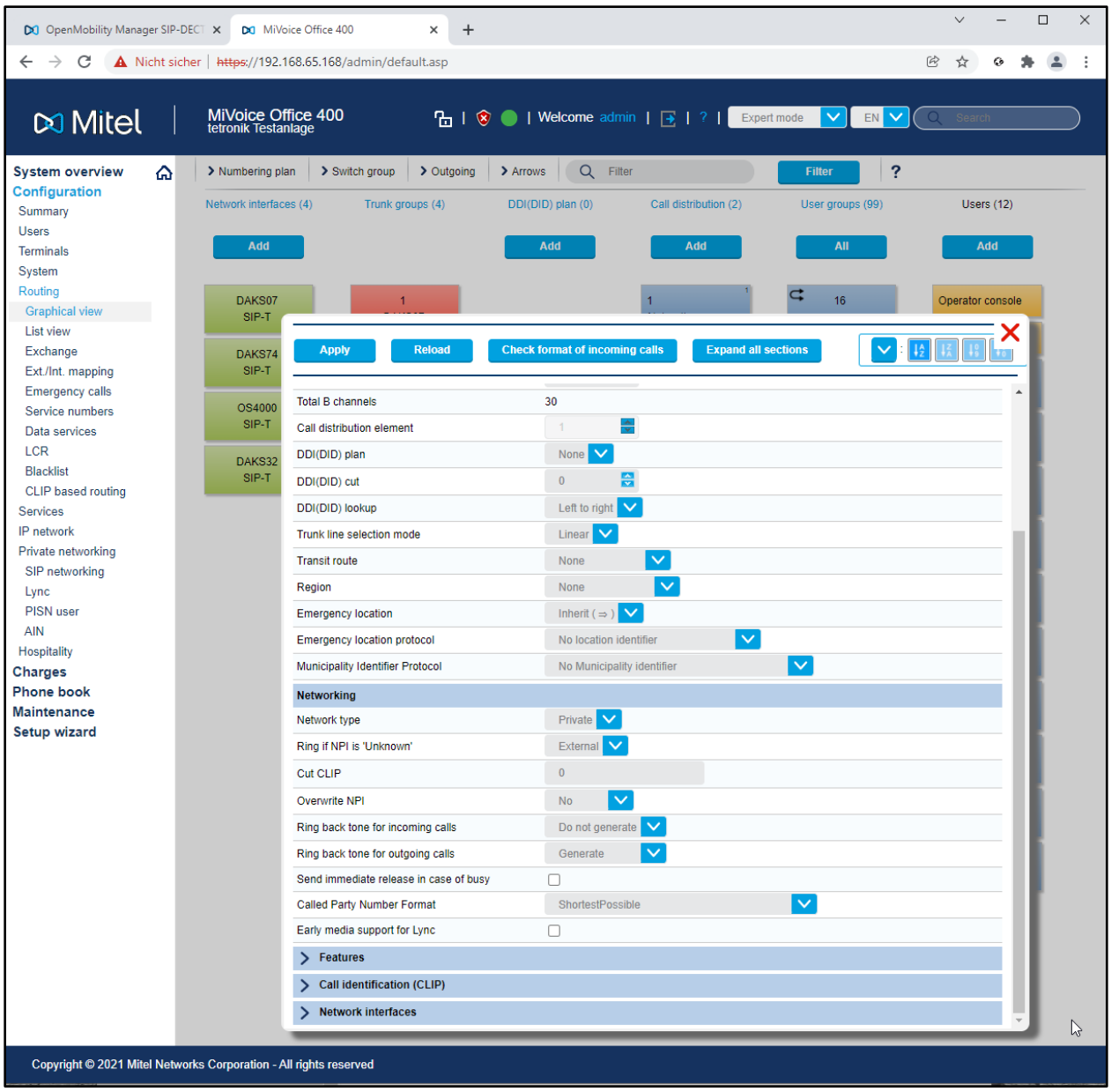


Figure 4 – Trunk group configuration

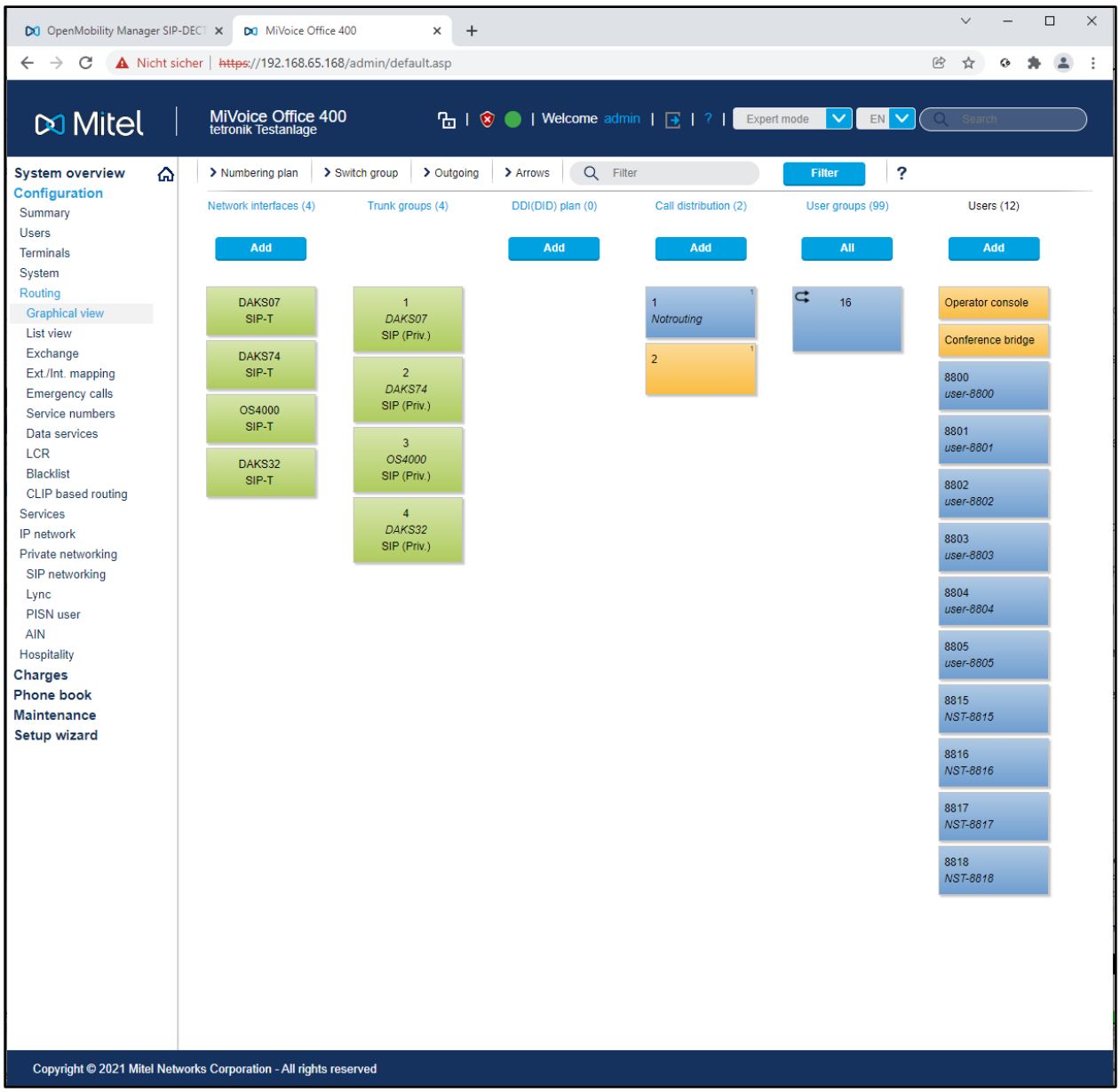
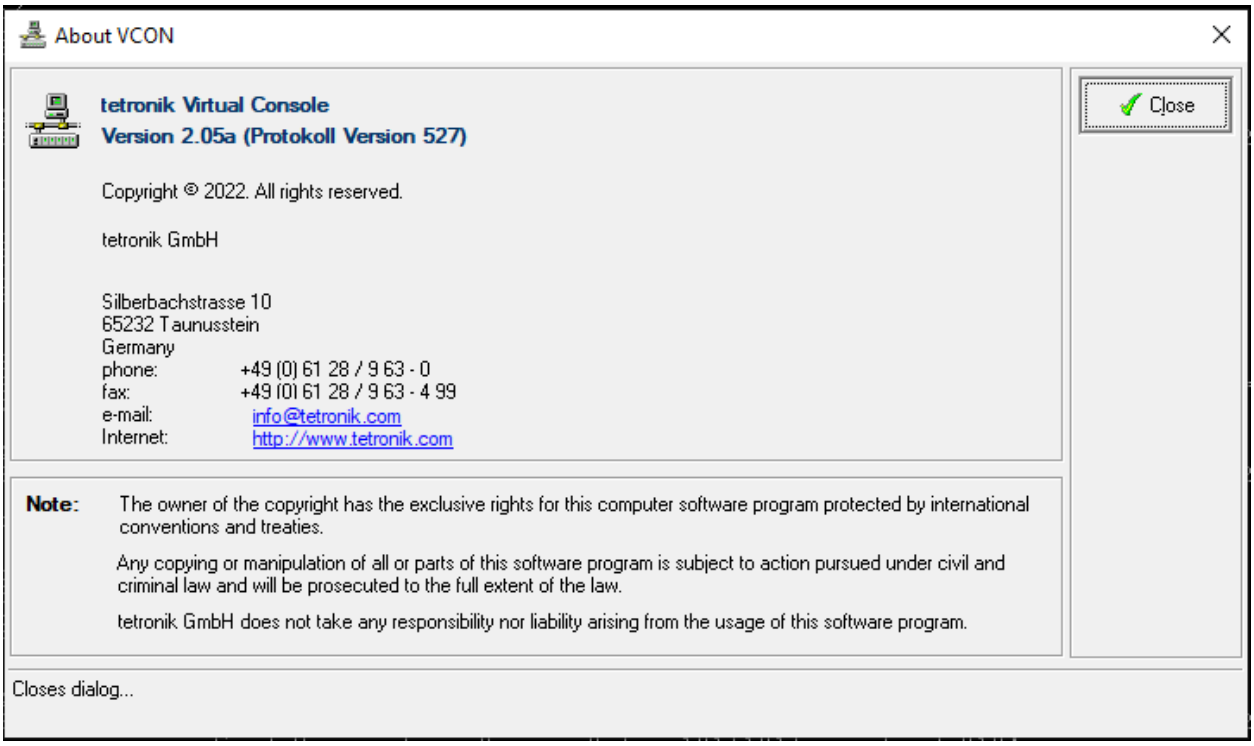


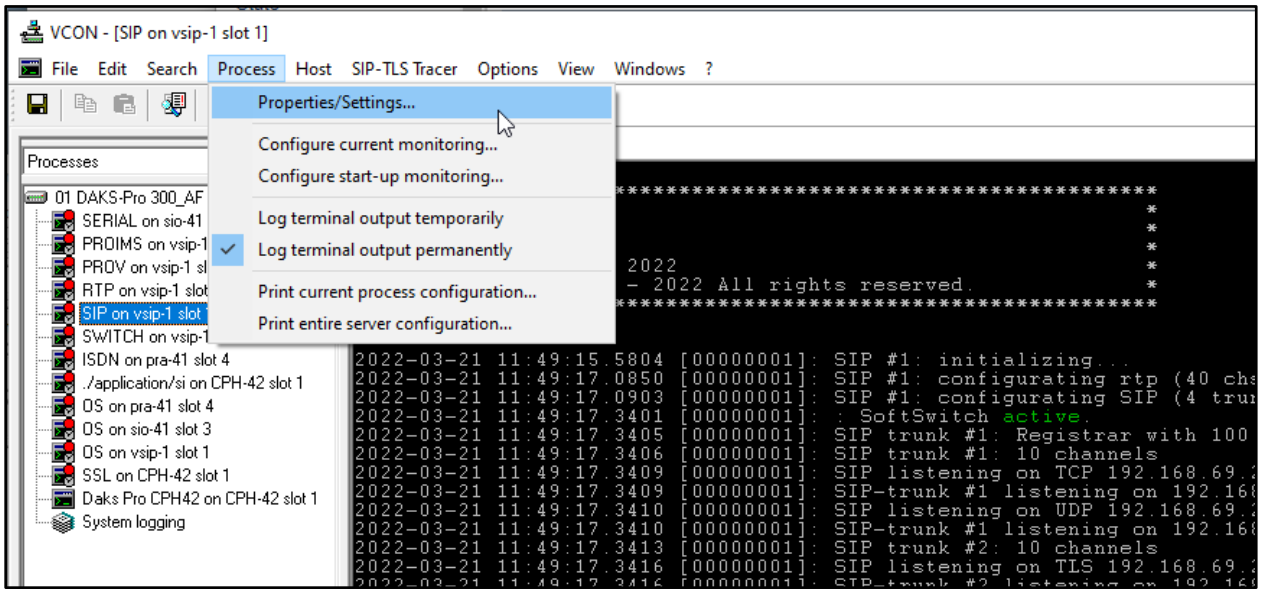
Figure 5 – Graphical view

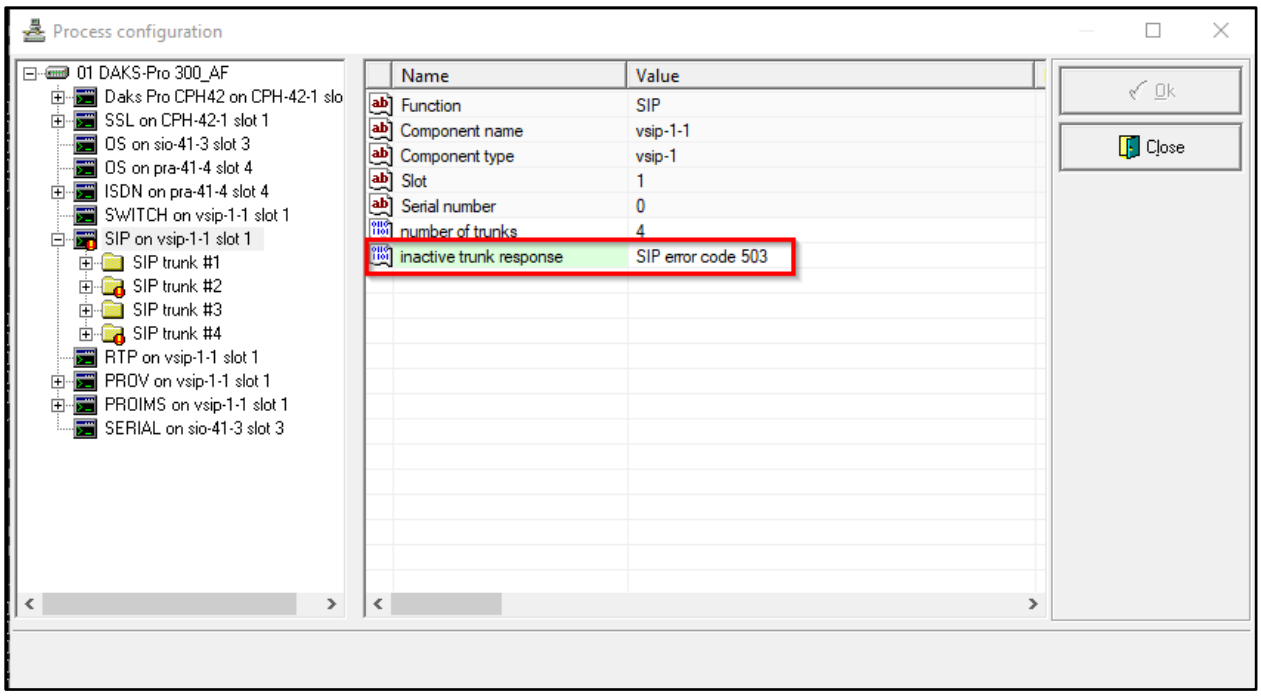
Configuration of the DAKS Server

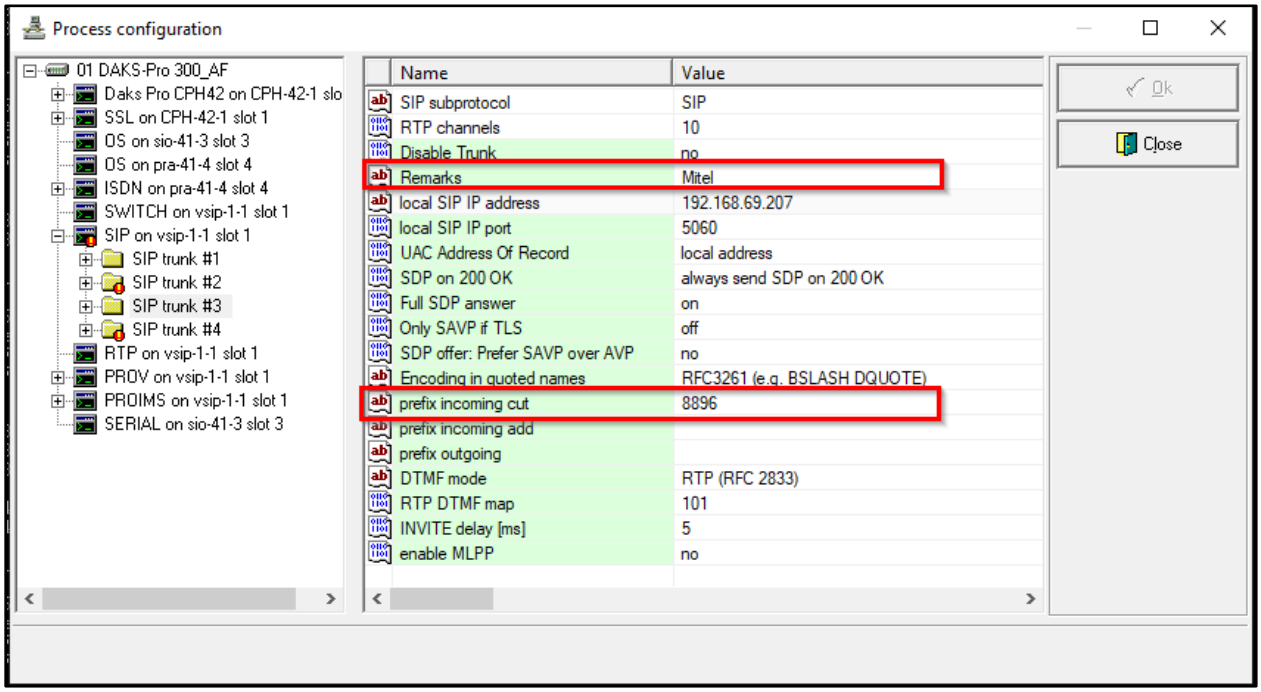
This chapter shows you how to configure the DAKS server to operate in combination with a MiVoice Office 400 with the coupling realized via sip-trunk.

The tool that is needed to configure the DAKS Server is the "tetronik Virtual Console", which you will find abbreviated in this document as VCON.






Process configuration
01 DAKS-Pro 300_AF
Daks Pro CPH42 on CPH-42-1 slo
SSL on CPH-42-1 slot 1
OS on sio-41-3 slot 3
OS on pra-41-4 slot 4
ISDN on pra-41-4 slot 4
SWITCH on vsip-1-1 slot 1
SIP on vsip-1-1 slot 1
SIP trunk #1
SIP trunk #2
SIP trunk #3
SIP trunk #4
RTP on vsip-1-1 slot 1
PROV on vsip-1-1 slot 1
PROIMS on vsip-1-1 slot 1
SERIAL on sio-41-3 slot 3
Name
Value
Function
SIP
Component name
vsip-1-1
Component type
vsip-1
Slot
1
Serial number
0
number of trunks
4
inactive trunk response
SIP error code 503
Ok
Close


Process configuration
01 DAKS-Pro 300_AF
Daks Pro CPH42 on CPH-42-1 slo
SSL on CPH-42-1 slot 1
OS on sio-41-3 slot 3
OS on pra-41-4 slot 4
ISDN on pra-41-4 slot 4
SWITCH on vsip-1-1 slot 1
SIP on vsip-1-1 slot 1
SIP trunk #1
SIP trunk #2
SIP trunk #3
SIP trunk #4
RTP on vsip-1-1 slot 1
PROV on vsip-1-1 slot 1
PROIMS on vsip-1-1 slot 1
SERIAL on sio-41-3 slot 3
Name
Value
SIP subprotocol
SIP
RTP channels
10
Disable Trunk
no
Remarks
Mitel
local SIP IP address
192.168.69.207
local SIP IP port
5060
UAC Address Of Record
local address
SDP on 200 OK
always send SDP on 200 OK
Full SDP answer
on
Only SAVP if TLS
off
SDP offer: Prefer SAVP over AVP
no
Encoding in quoted names
RFC3261 (e.g. BSLASH DQUOTE)
prefix incoming cut
8896
prefix incoming add
prefix outgoing
DTMF mode
RTP (RFC 2833)
RTP DTMF map
101
INVITE delay [ms]
5
enable MLPP
no
Ok
Close

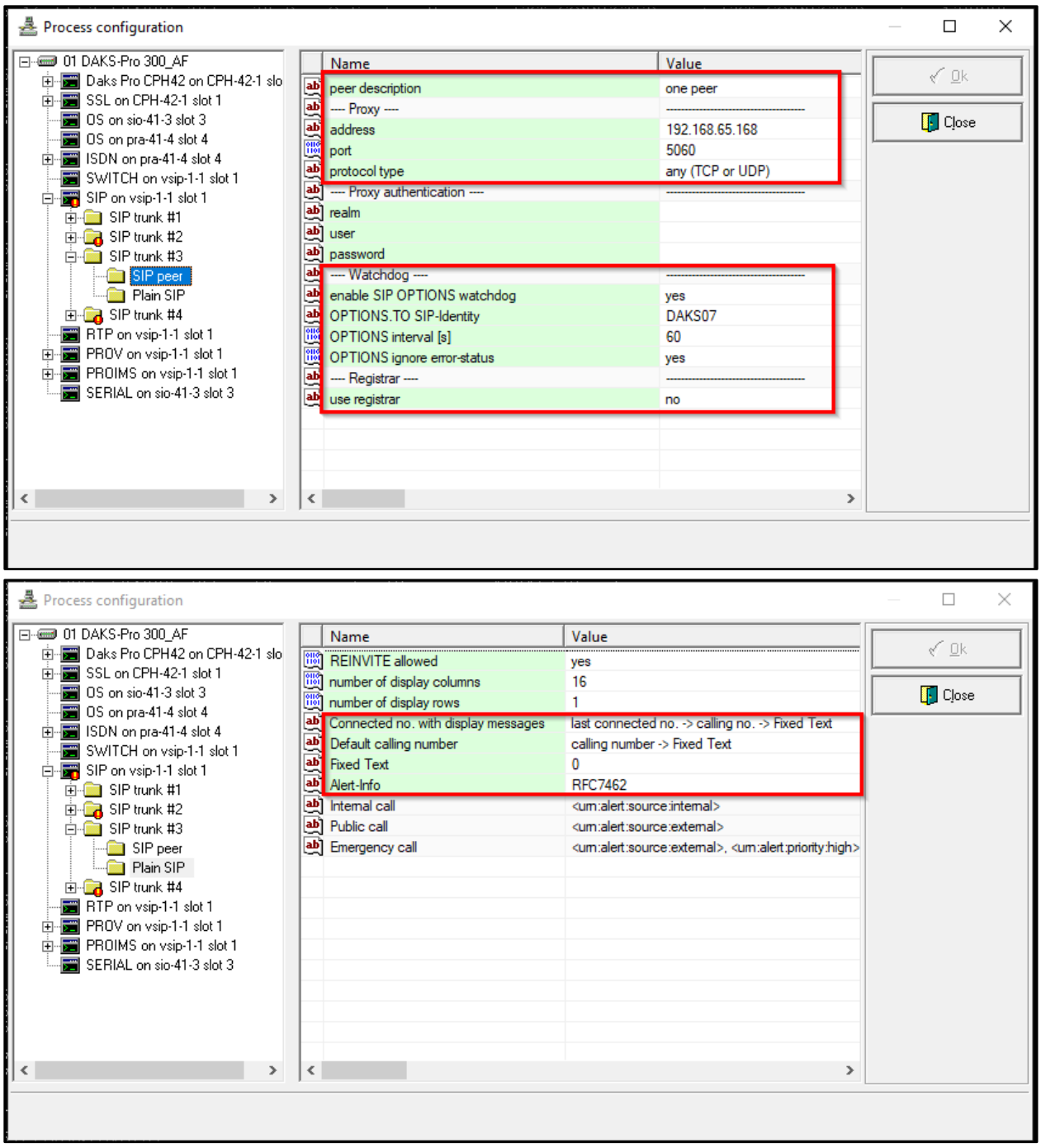


Figure 6 – DAKS Configurations

TLS Configurations details

Make sure that PBX has Secure VOIP license option enabled

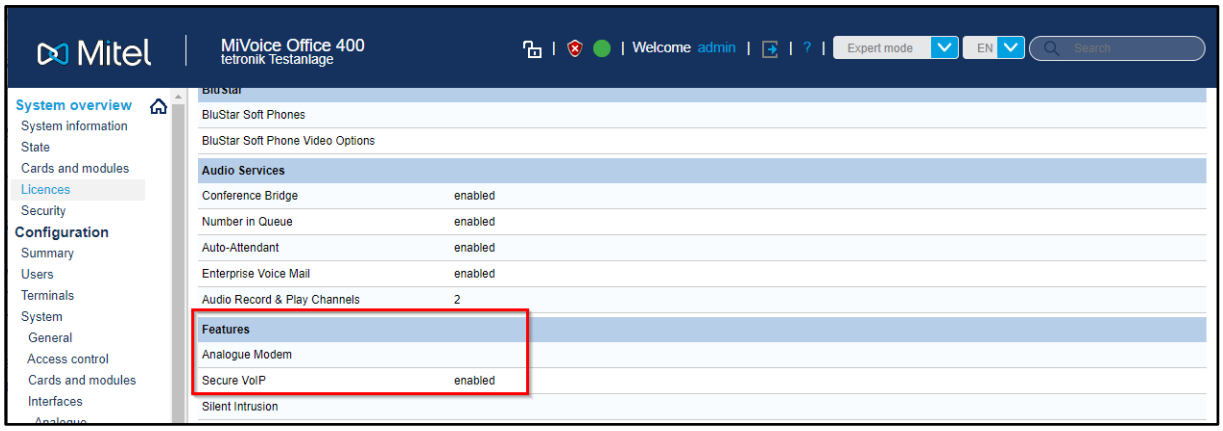
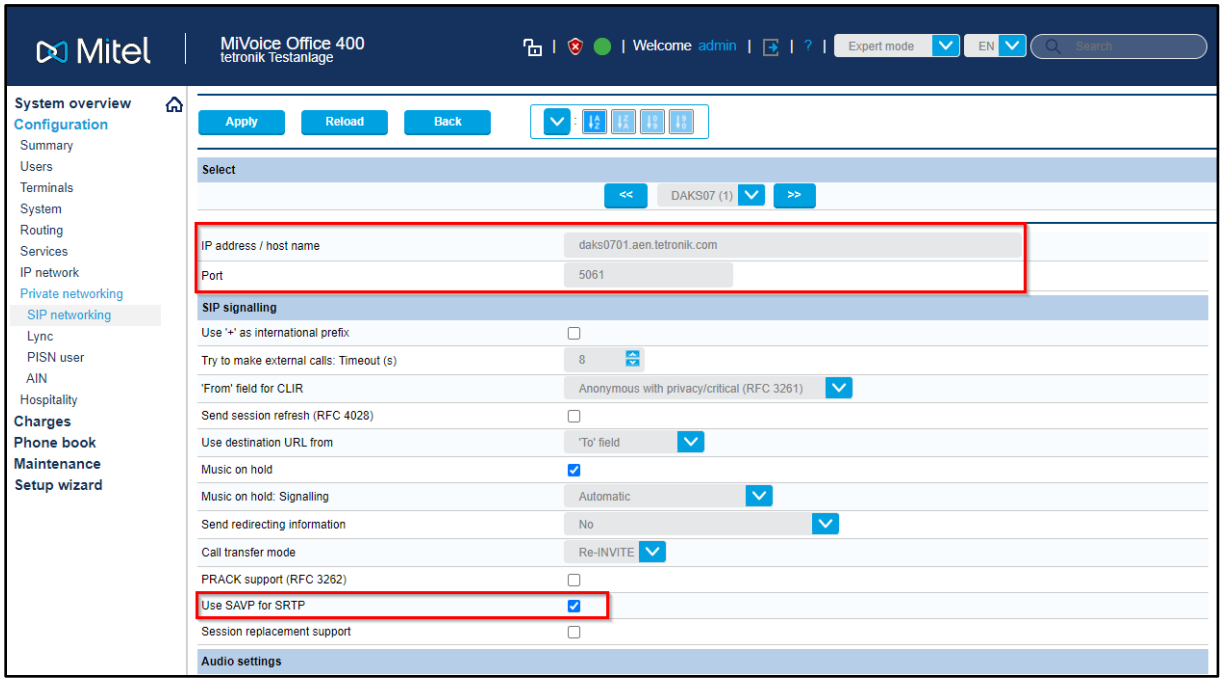


Figure 6 – TLS Licenses

Below are the required options to enable on PBX to setup TLS configurations.



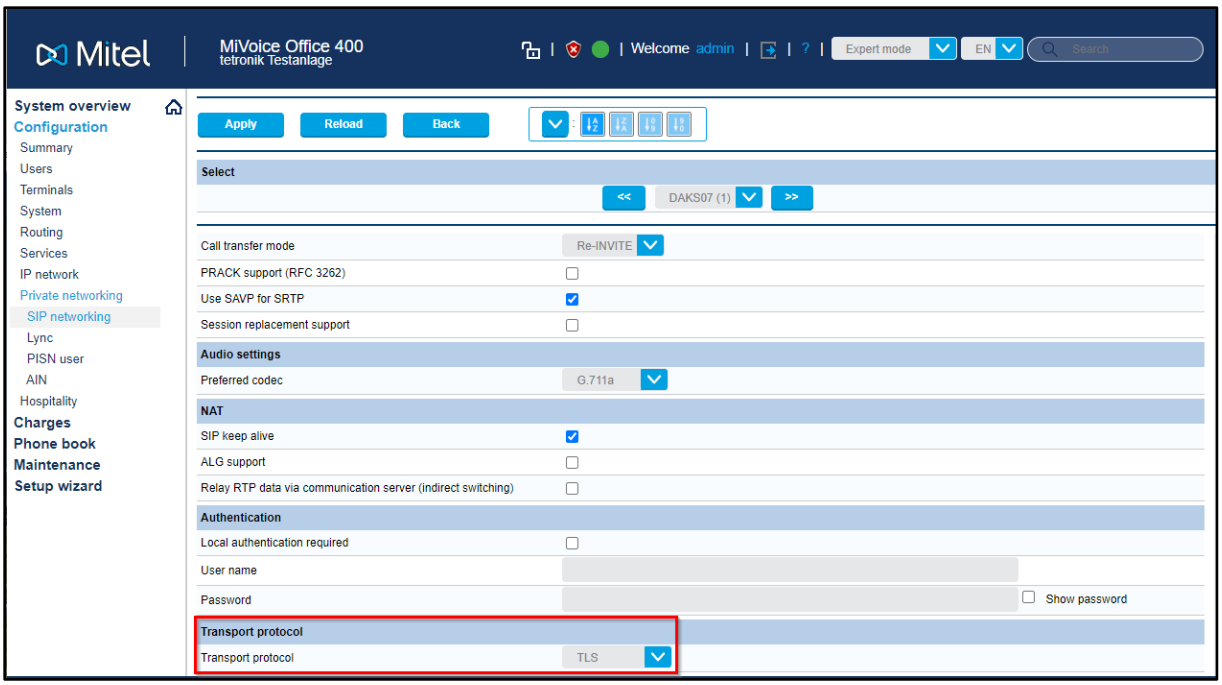


Figure 7 – Setup DAKS trunk with TLS

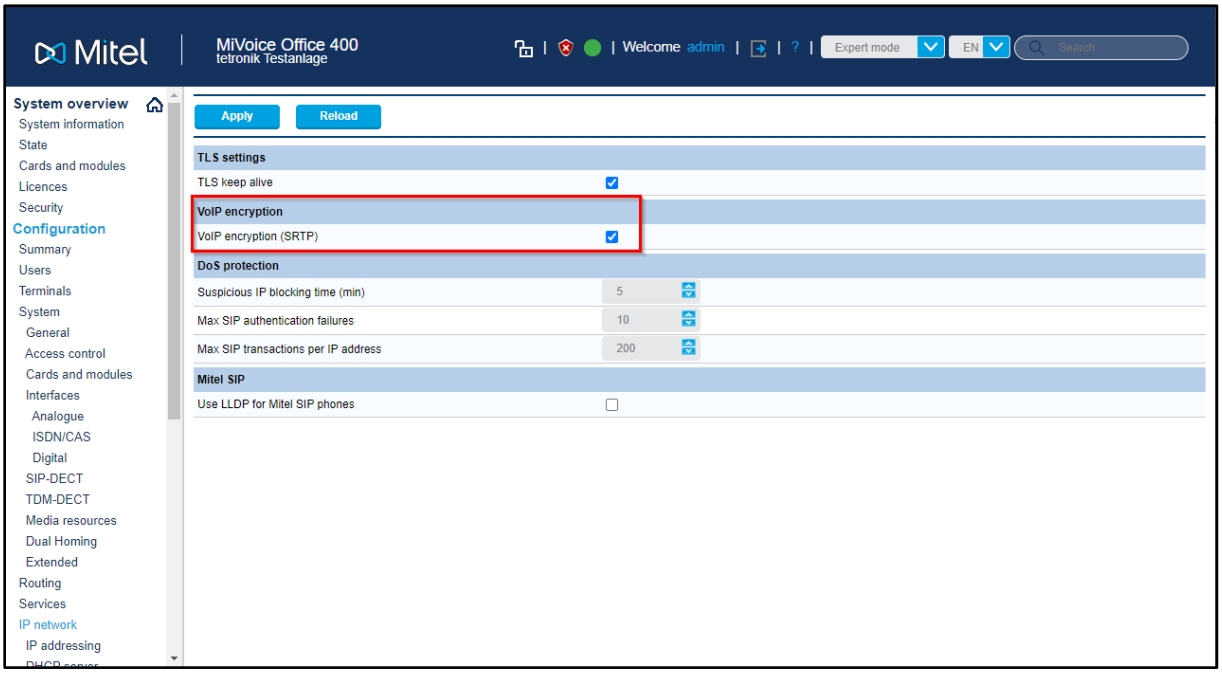


Figure 8 – Enable SRTP

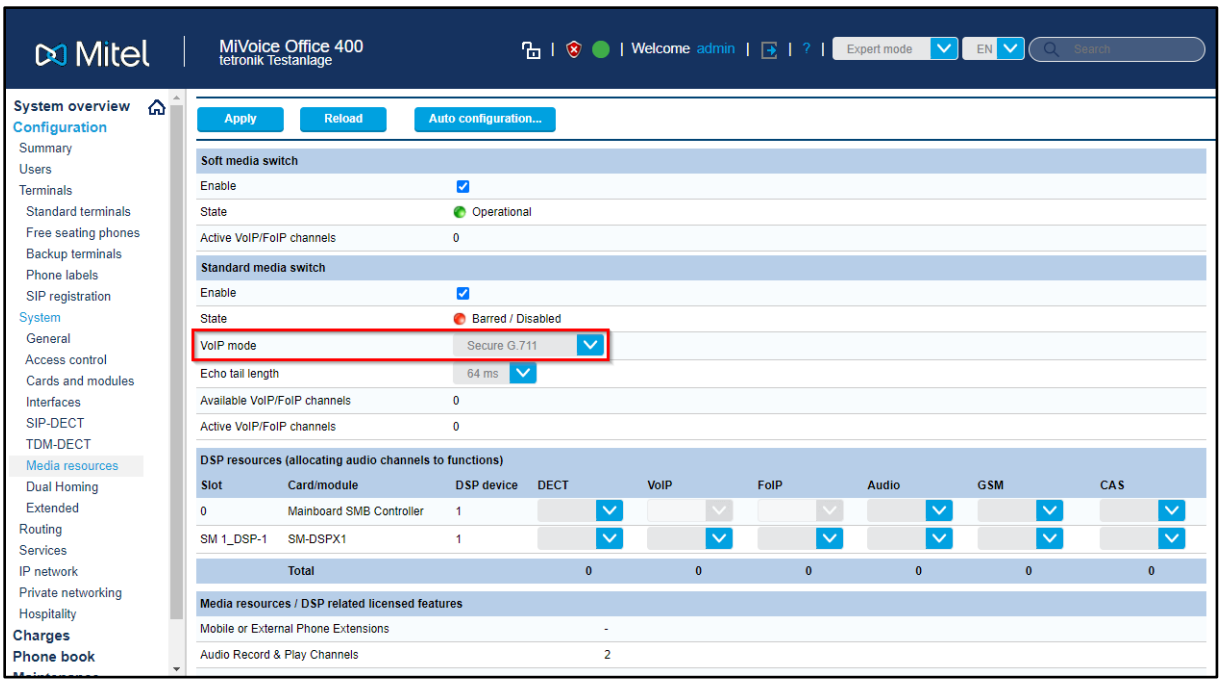


Figure 9 – Secure VOIP mode

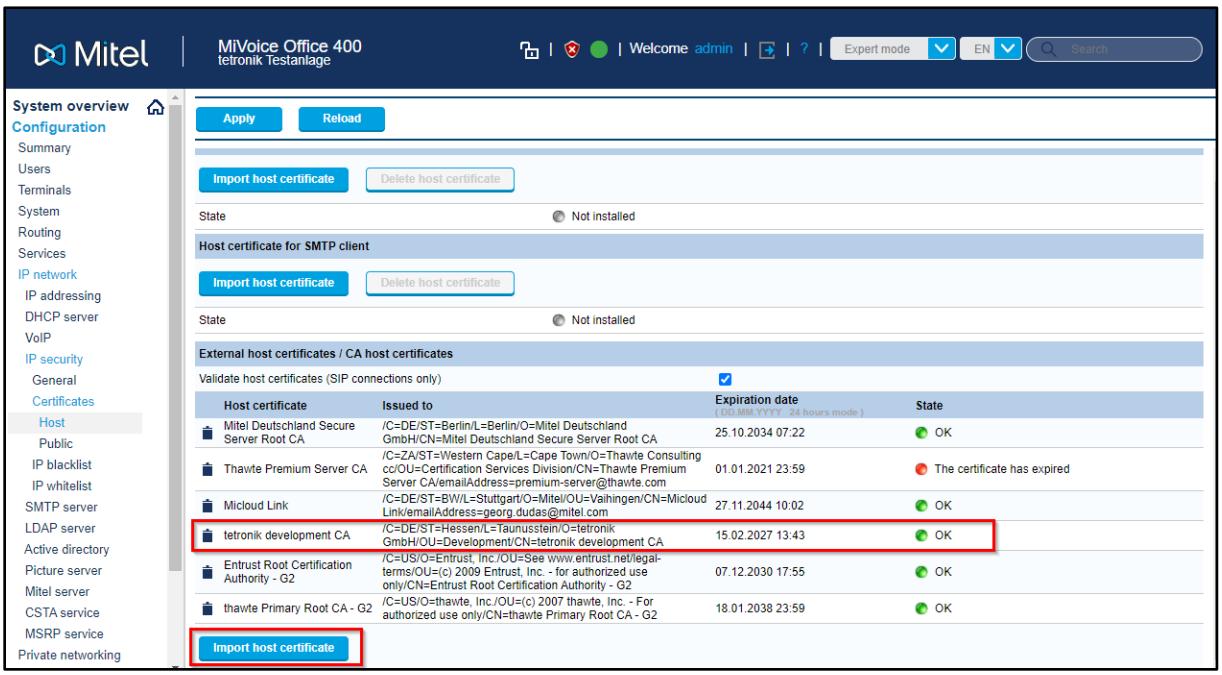


Figure 10 – Import DAKS root certificate

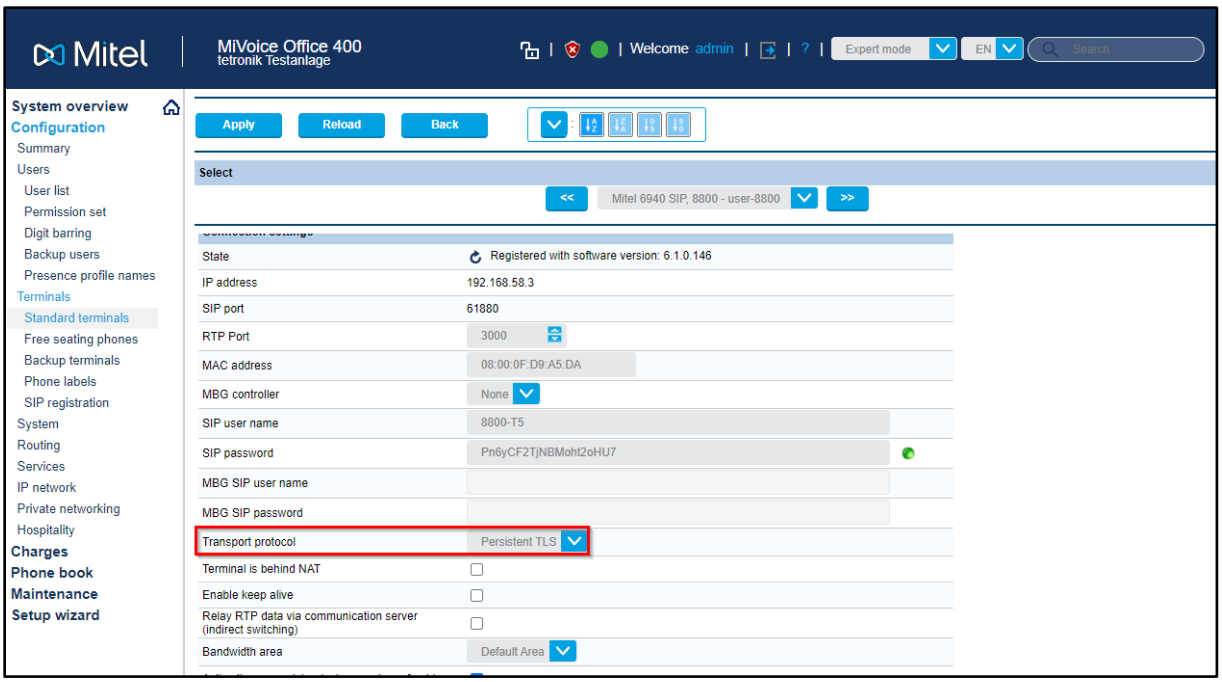
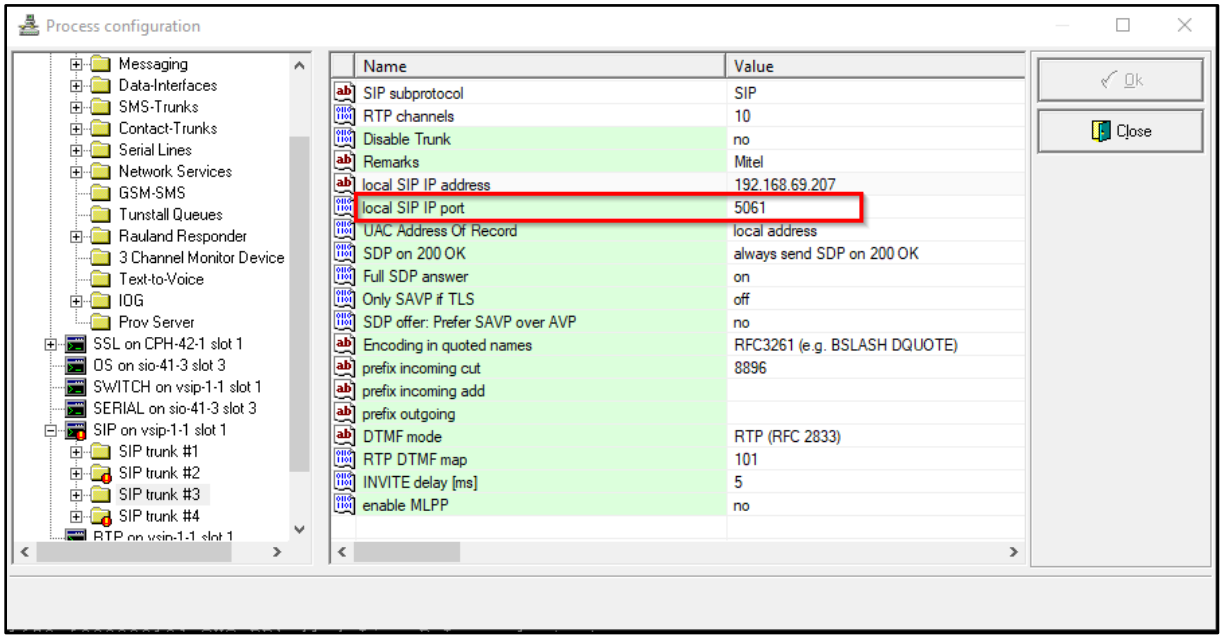


Figure 11 – Enable TLS for SIP terminal

DAKS trunk settings with TLS & MTLS



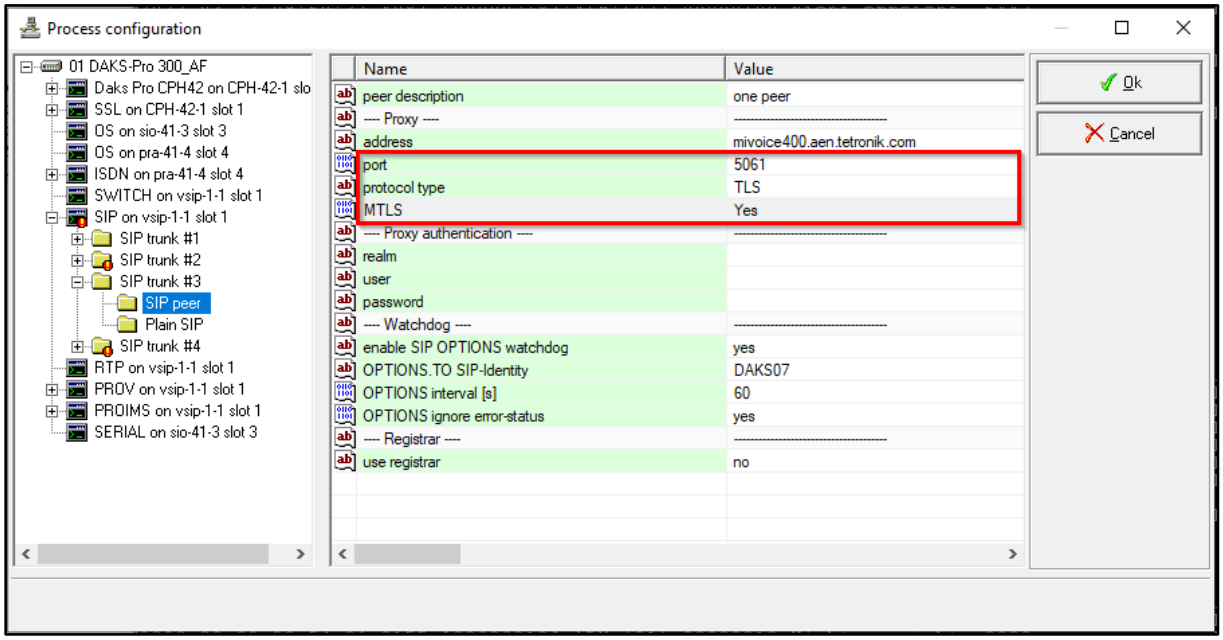


Figure 12 – DAKS TLS settings

Mitel OM-AXI Interface Configuration

Mitel SIP-DECT Configuration Notes

The following basic sections list how to program the Mitel SIP-DECT to interconnect with the MiVoice Connect. The configuration settings below are basic reference points only and should not be considered as comprehensive configuration instructions.

Basic System Configuration

This section describes basic system configuration items that are generally required for each Mitel SIP-DECT system to work with MiVoice Connect.

Before configuration, ensure that Mitel SIP-DECT solution is installed properly and is connected to a local area network (LAN). For installation instructions, see the SIP-DECT OM System Manual – Installation, Maintenance and Administration Guide **Error! Reference source not found.**.

Base Station Startup Configuration

Startup information for each RFP is provided by DHCP or by the OM Configurator. To use DHCP, specific vendor options must be configured on the DHCP Server for SIP-DECT. In this example, the OM Configurator is used to provide a static IP Configuration to the RFPs (RFP 48).

1. Connect RFP to your LAN and power up the units.
2. Open the OM Configurator and select your network interface via the General → Options Menu.
3. Click Scan to find the base stations connected to your LAN (enter username and password: omm/omm (default credentials).
4. Select a base station entry and then double click for configuration.
5. Enter the configuration parameters for the RFP and click OK when all configuration parameters are entered. For more detail, see the **SIP-DECT OM System Manual – Installation, Maintenance and Administration Guide** *Error! Reference source not found.***.**
6. Click Send Configuration to apply the configuration to the DECT base station. This would start up OMM on RFP.
7. To configure the next unit, select another base station entry from the table, set the appropriate parameters and confirm with OK.
8. Click Send Configuration.

NOTE: OM Configurator requires the Java Runtime Environment (JVE) version 1.7 or higher.

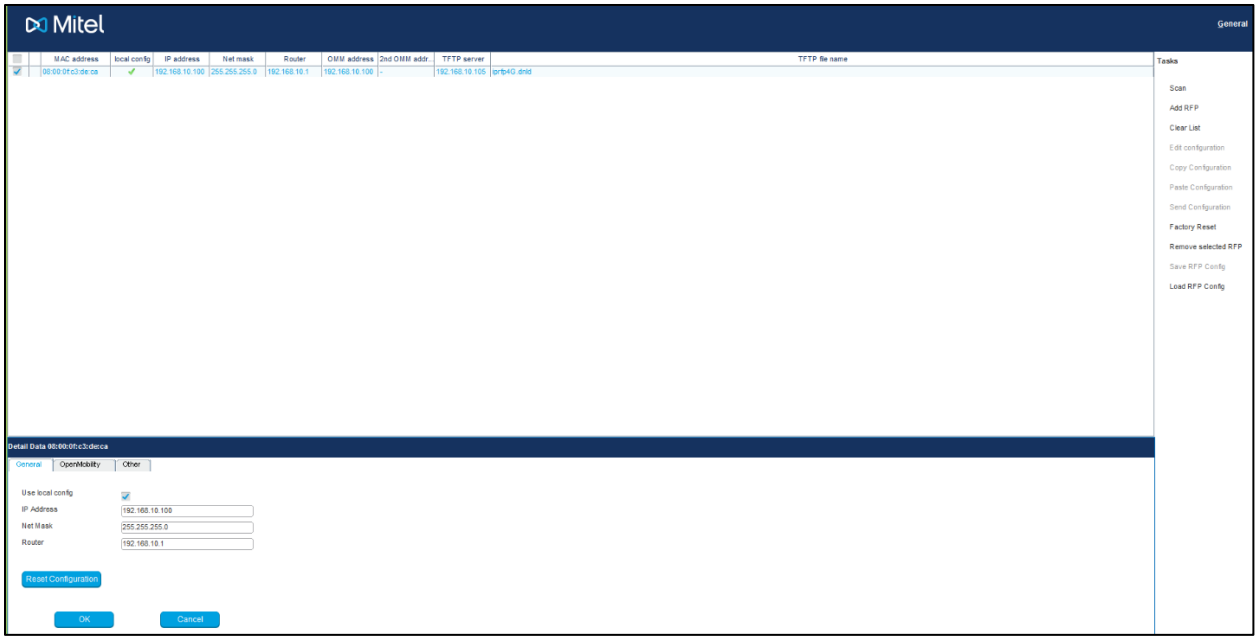


Figure 13 - OM Configurator – General Tab

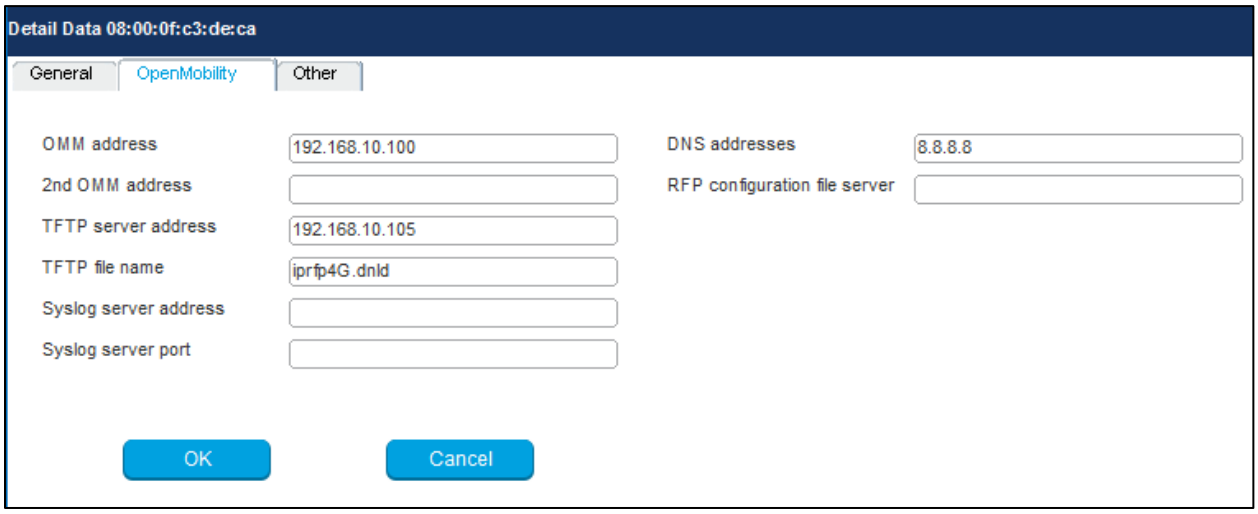


Figure 14 - OM Configurator – OpenMobility Tab

System Configuration

After OMM has started up, open a browser, and connect to **https://<RFP_IPAddress>.** Log in with the default OMM login credentials **(username: omm, password: omm).** The OMM forces password change that is applied to OM Configurator.

OMM Web service provides basic parameters to setup the system. For more detail configuration, use OM Management Portal (OMP), which can be downloaded from OMM. This standalone application supports detailed OMM configuration and monitoring. OMP requires JVE version 1.7 or higher to run.

Figure 15 – Login Web Page

System Settings

The OMM system settings menu provides the basic settings to operate the SIP-DECT system.

System name: Customer name.

Remote access: Allow SSH access.

Tone Scheme: Scheme to simulate call control tones (country-dependent).

PARK: The system needs a PARK code to operate. Use the Online PARK service to obtain a PARK code (five or more RFP systems).

Regulatory domain: DECT regulatory domain applicable to your local region.

DECT authentication code: Define as template for the subscription of new DECT phones.

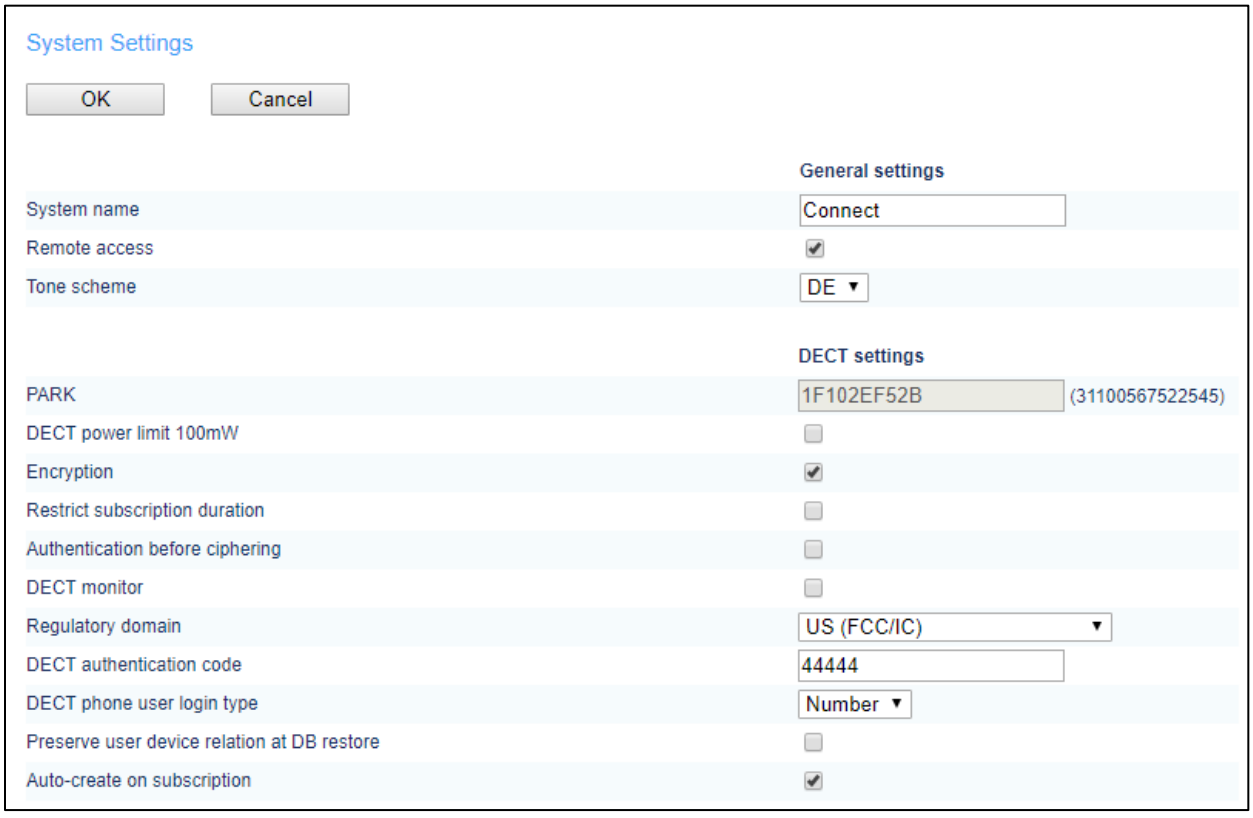


Figure 16 - OMM System Settings

SIP Settings

Configure the SIP connection to the call server (MiVoice Connect) to which the OMM has to connect in the OMM System → SIP menu. Ensure Advanced option is checked in the top bar for the long form to appear.

SIP settings are configured via OMM Web service or OMP. The default SIP signaling port for SIP-DECT is 5060/UDP. Change this if required by the SIP-Server.

The SIP user account authentication (SIP username, Auth, and password) is part of the DECT Phone configuration.

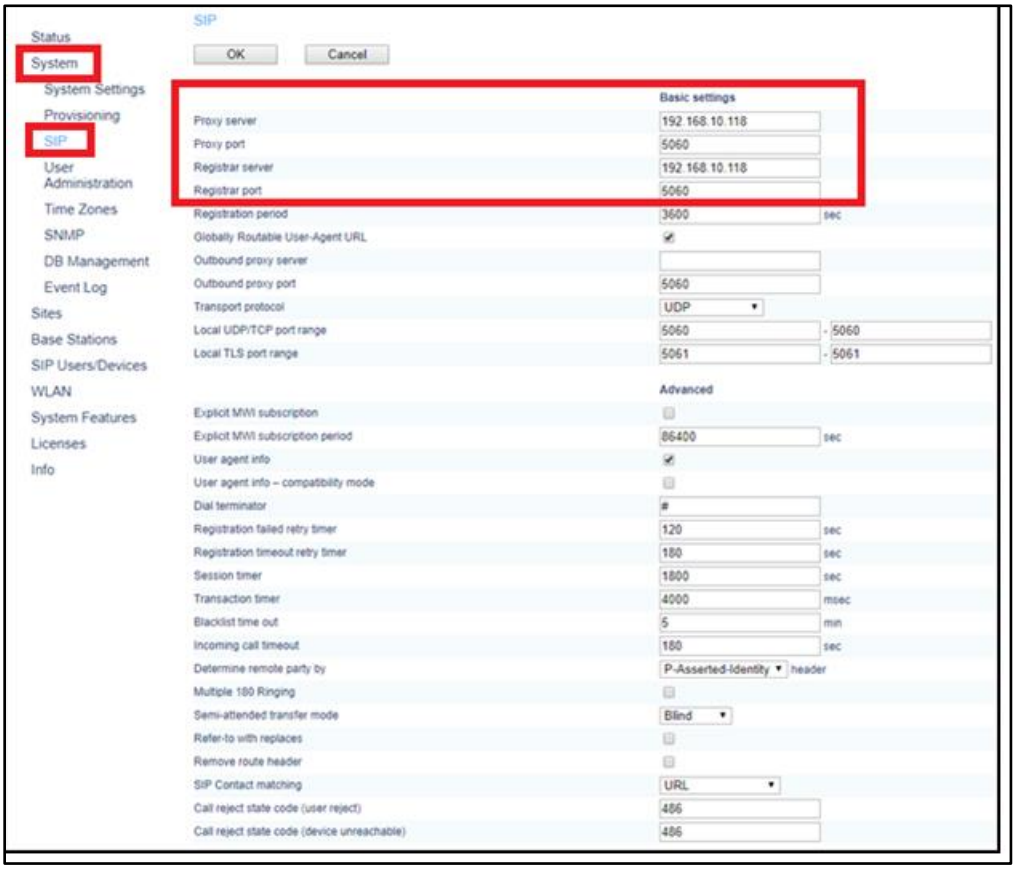


Figure 17 - SIP Basic Settings

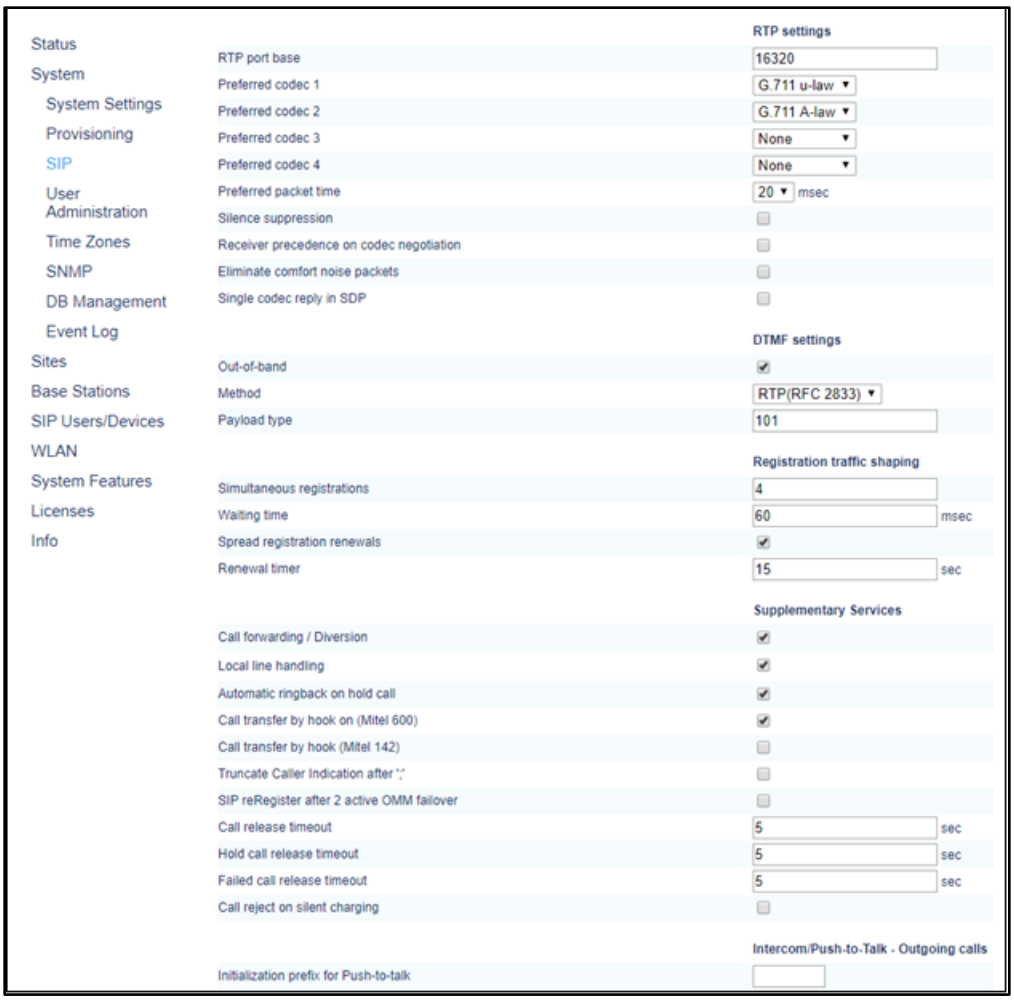


Figure 18 - SIP Advanced Settings

DECT Phones

SIP DECT allows multiple configuration and provisioning methods for DECT phones. A SIP ID (user/subscriber) must be configured for each DECT phone on the SIP call server. Provisioning a user on MiVoice Connect. When a subscriber registers with MiVoice Connect, it allows the calls to terminate to the subscriber's line.

To create a new DECT phone, click the new button on the OMM DECT phones page.

Display name: Extension Name.

Number: The Extension Number, for example, the terminal phone number.

IPEI: The handset hardware identifier.

DECT authentication code: Code for the handset subscription (44444). If this field is left empty, the system wide DECT authentication code is used.

Authentication username: The SIP username.

Password: SIP Extension password.

To edit the configuration of an existing DECT phone click on the pencil icon beside the DECT phones entry.

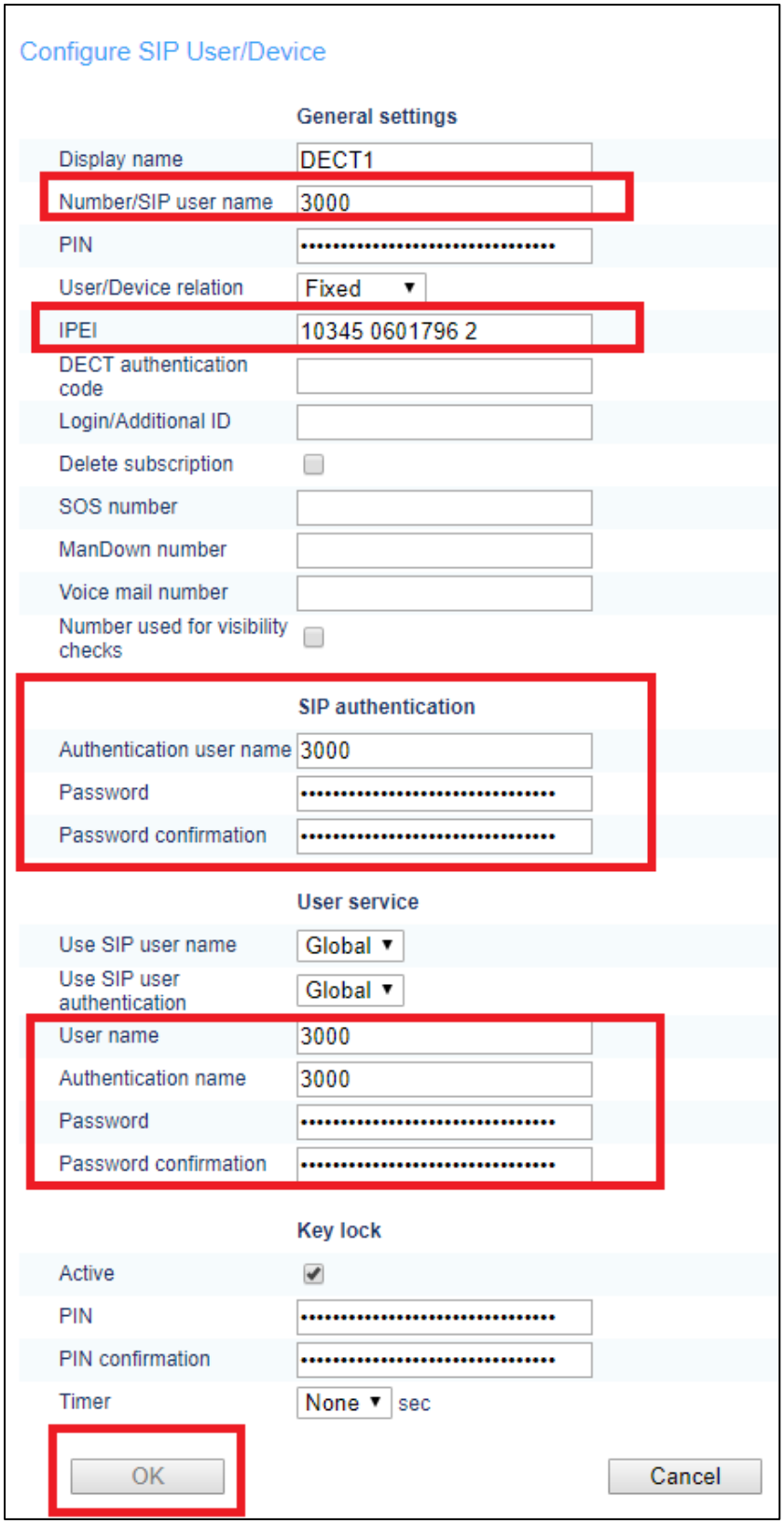


Figure 19 - New DECT Phone Creation via OMM Web Service

DECT Phone Device Subscription

To subscribe new DECT phones, subscriptions must be permitted by OMM. Go to OMM SIP Users/Devices page and select:

Select Subscription from drop down list with configured IPEI caption. This button enables subscription for the next 24 hours.

Start button and time interval parameter under the Wildcard subscription caption. This button enables wildcard subscription for the selected time. After expiry the subscription with configured IPEIs is still enabled for 24 hours.

Figure 20 - Subscription Permission via OMM Web Service

On the DECT phone device perform the following steps:

Press the softkey  to bring up the system menu. Navigate to the System → New system and click Ok to confirm.

Enter the authentication code in the Auth. Code field when prompted (for example, 44444).
Enter PARK.

Confirm with Ok.

An Information box is displayed with the message Subscription – Please wait. The subscription should finish shortly and display a success message. You can abort the subscription at any time by pressing the Esc softkey.

Figure 21 - SDC DECT Phone Device Subscription

For more information on the steps to follow when using subscription configured IPEI or a wildcard subscription, see the OM SIP-DECT System Manual – Installation, Administration, and Maintenance Guide **Error! Reference source not found.**.

Configuration details on MIVO400:

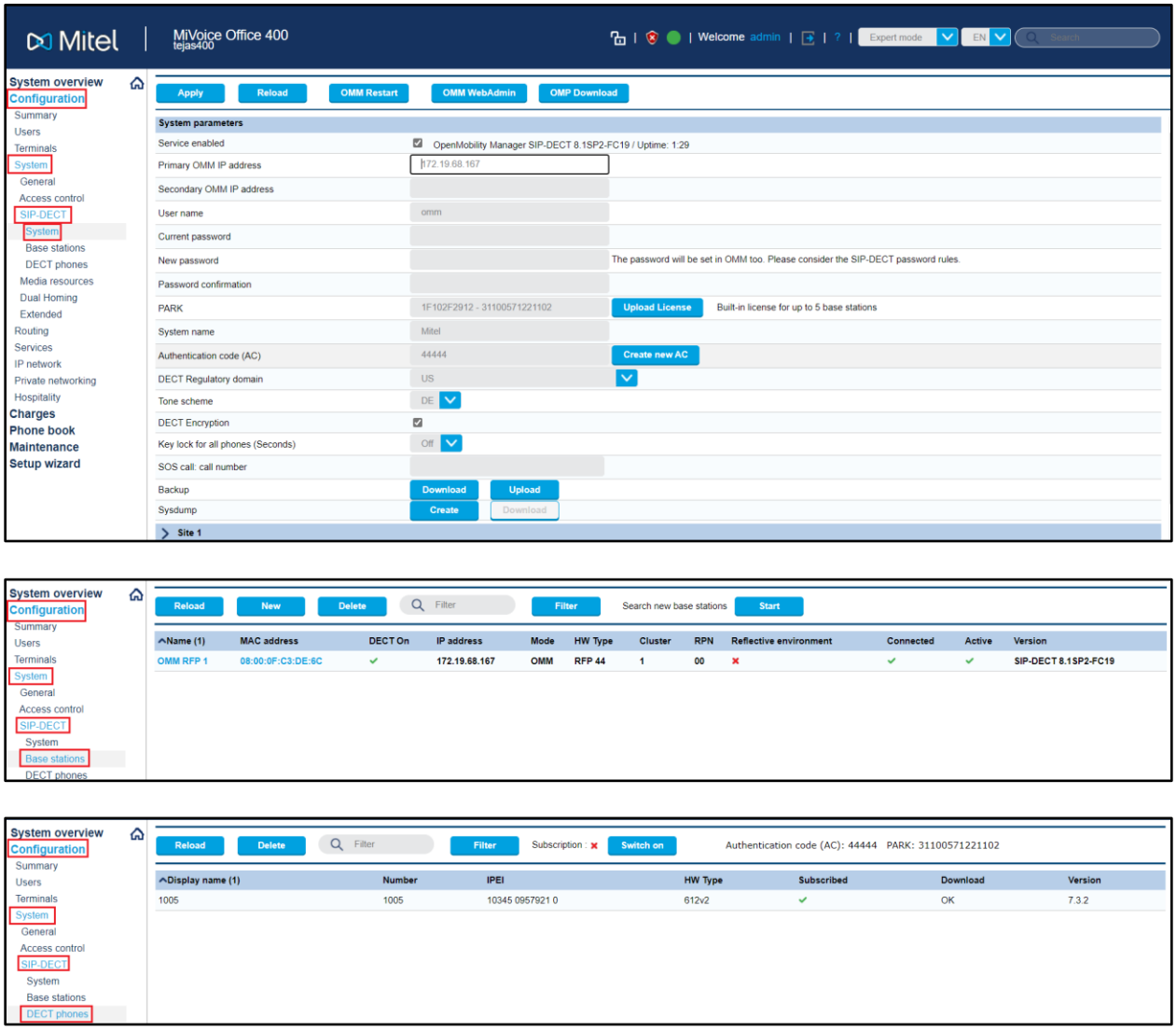
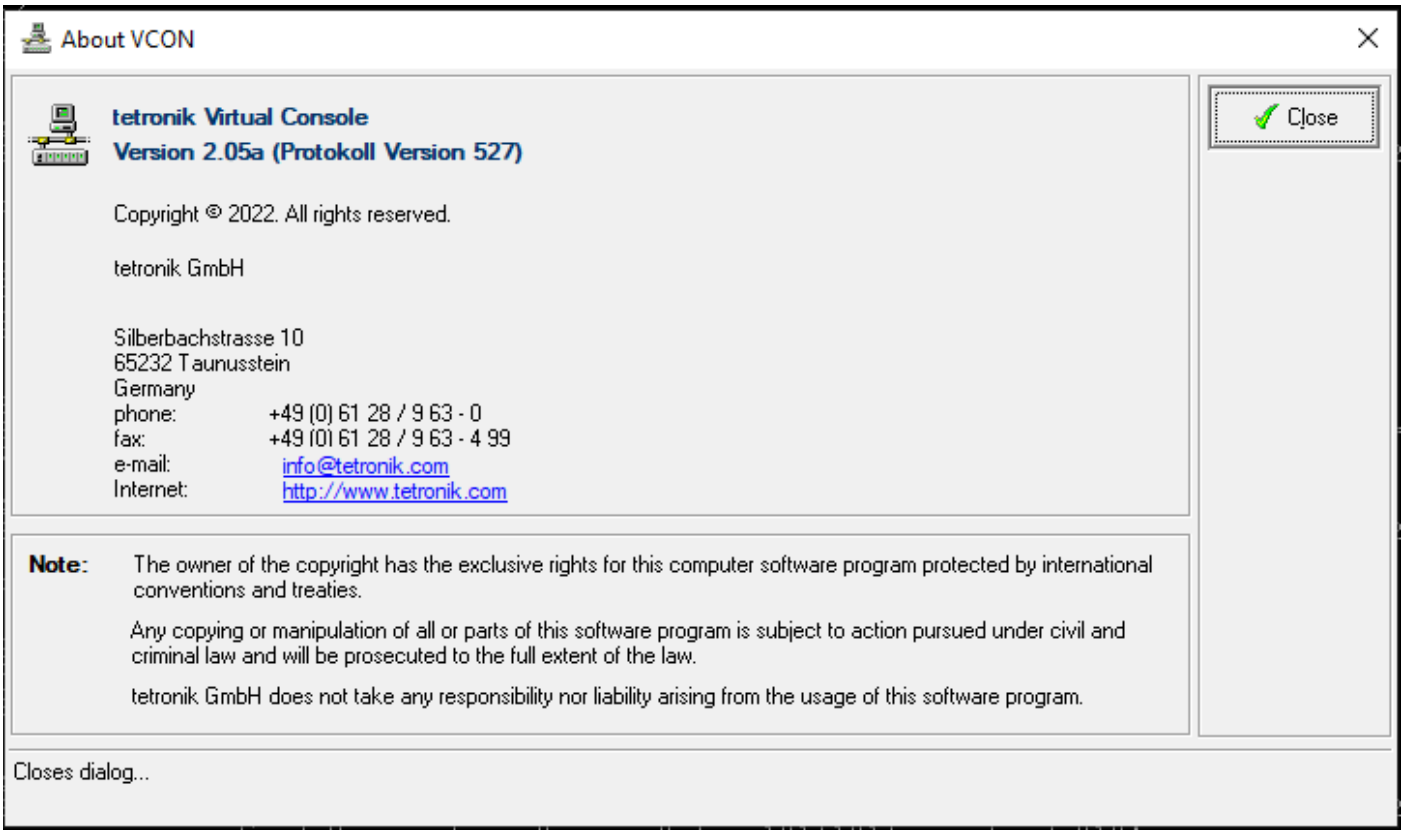


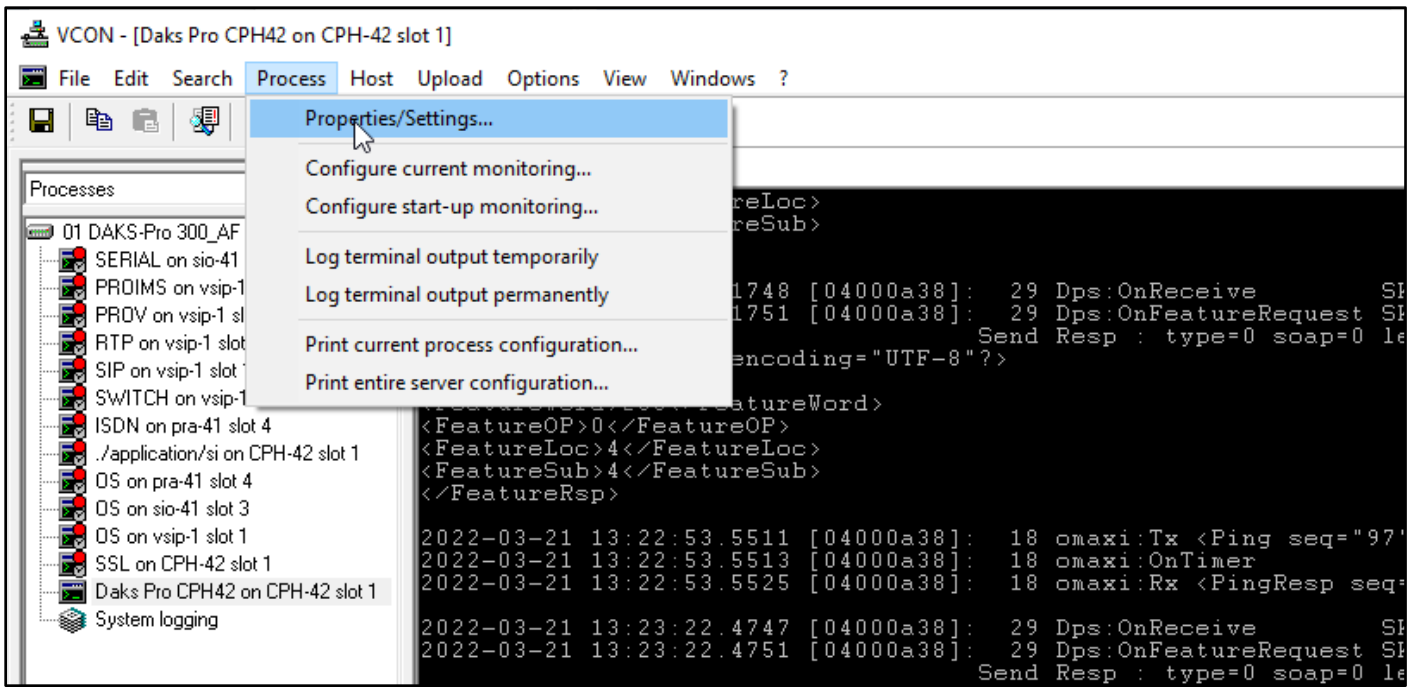
Figure 22 – SIP-DECT Configuration

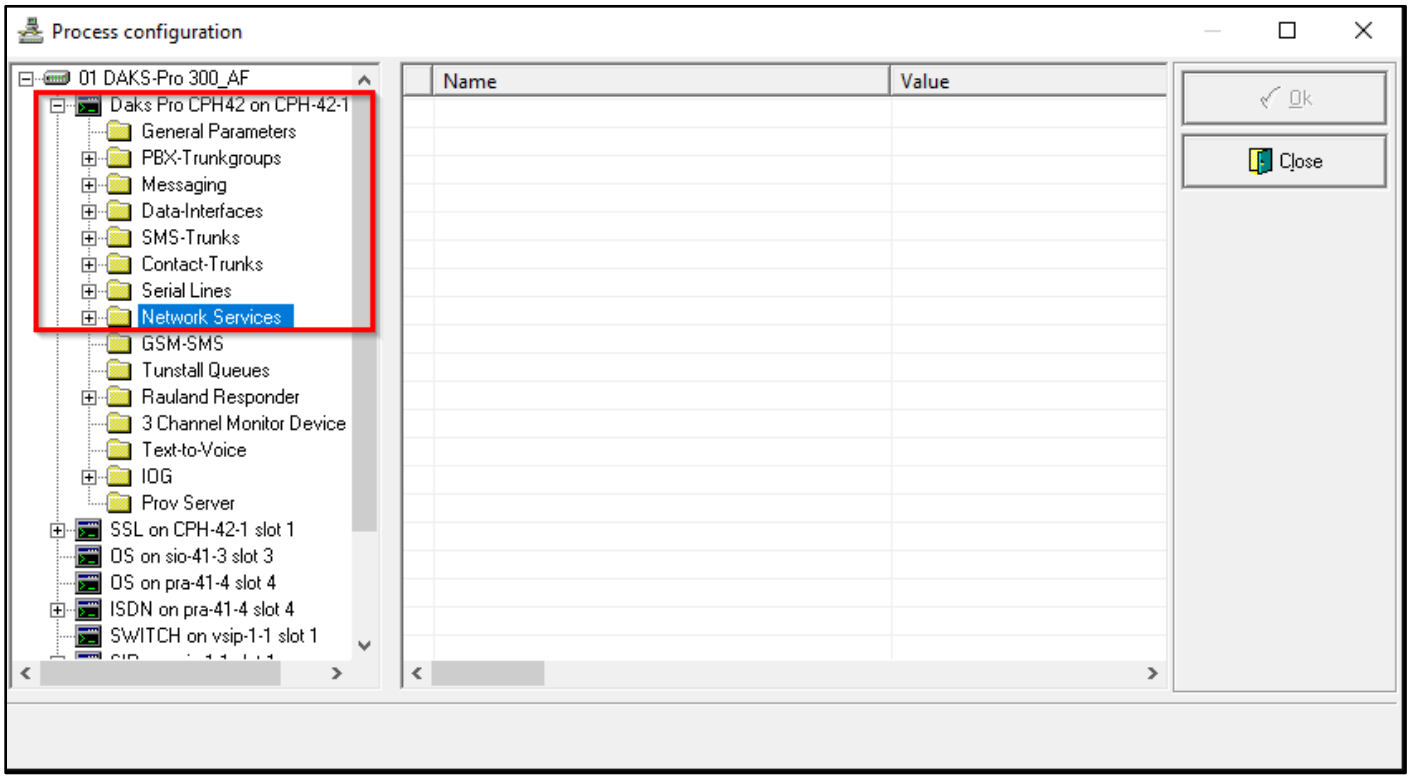
Tetronik Digital Alarm and Communications Server (DAKS) Configuration – OM AXI Interface

This chapter shows you how to configure the DAKS server to operate in combination with a MiVoice Office 400 with the coupling realized via om-axi messaging trunk.

The tool that is needed to configure the DAKS Server is the "tetronik Virtual Console", which you will find abbreviated in this document as VCON.




VCON - [Daks Pro CPH42 on CPH-42 slot 1]
File Edit Search Process Host Upload Options View Windows ?
Properties/Settings...
Configure current monitoring...
Configure start-up monitoring...
Log terminal output temporarily
Log terminal output permanently
Print current process configuration...
Print entire server configuration...
Processes
01 DAKS-Pro 300_AF
SERIAL on sio-41
PROIMS on vsip-1
PROV on vsip-1 sl
RTP on vsip-1 slot
SIP on vsip-1 slot
SWITCH on vsip-1
ISDN on pra-41 slot 4
./application/si on CPH-42 slot 1
OS on pra-41 slot 4
OS on sio-41 slot 3
OS on vsip-1 slot 1
SSL on CPH-42 slot 1
Daks Pro CPH42 on CPH-42 slot 1
System logging
<FeatureOP>0</FeatureOP>
<FeatureLoc>4</FeatureLoc>
<FeatureSub>4</FeatureSub>
</FeatureRsp>
2022-03-21 13:22:53.5511 [04000a38]: 18 omaxi:Tx <Ping seq="97
2022-03-21 13:22:53.5513 [04000a38]: 18 omaxi:OnTimer
2022-03-21 13:22:53.5525 [04000a38]: 18 omaxi:Rx <PingResp seq
2022-03-21 13:23:22.4747 [04000a38]: 29 Dps:OnReceive
2022-03-21 13:23:22.4751 [04000a38]: 29 Dps:OnFeatureRequest
Send Resp : type=0 soap=0


Process configuration
01 DAKS-Pro 300_AF
Daks Pro CPH42 on CPH-42-1
General Parameters
PBX-Trunkgroups
Messaging
Data-Interfaces
SMS-Trunks
Contact-Trunks
Serial Lines
Network Services
GSM-SMS
Tunstall Queues
Rauland Responder
3 Channel Monitor Device
Text-to-Voice
IOG
Prov Server
SSL on CPH-42-1 slot 1
OS on sio-41-3 slot 3
OS on pra-41-4 slot 4
ISDN on pra-41-4 slot 4
SWITCH on vsip-1-1 slot 1
Name
Value
Ok
Close

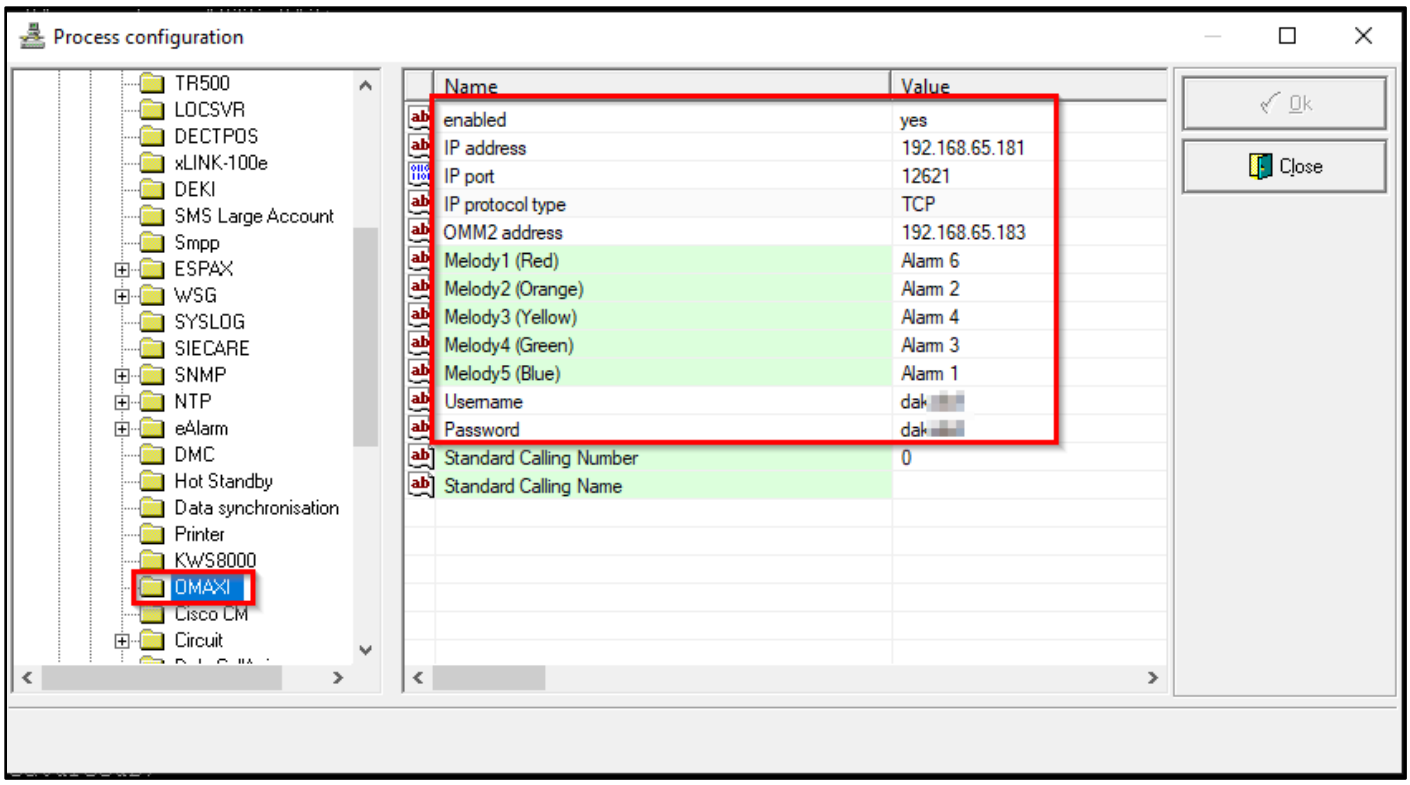


Figure 22 – OM-AXI-Trunk configuration

Glossary

MiVoice Office 400	MiVO400
MiVoice Border Gateway	MBG
MiCollab	MiCollab
Mitel Solutions Alliance	MSA
Knowledge Management System	KMS
Interoperability Reference Guide	IRG