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INTEROPERABILITY REPORT

Ascom i62

Innovaphone IP302, IP6000, IP810 and IP6010, firmware version 11r2

IP-PBX Integration (H323)

Ascom i62, Software version 5.5.0

Ascom, Gothenburg

June 2016



TABLE OF CONTENT:

INTRODUCTION	3
Ascom	3
Innovaphone	3
SITE INFORMATION	4
Test Topology	4
SUMMARY	5
Test overview	5
General conclusions	5
TEST RESULTS	6
Innovaphone IP-PBX Integration – Ascom i62	6
Known Issue(s)	6
Test Areas	7
Detailed test records	7
Miscellaneous	8
APPENDIX A: TEST CONFIGURATIONS	9
Innovaphone IP6000, 11r2	9
Ascom i62 configuration	16
DOCUMENT HISTORY	19

INTRODUCTION

This interoperability report describes test results and optimal configuration of Ascom i62 towards the Innovaphone IP-PBXs. The document should be used in conjunction with configuration guide(s) from Innovaphone and Ascom.

Ascom

Ascom Wireless Solutions (www.ascom.com/ws) is a leading provider of on-site wireless communications for key segments such as hospitals, manufacturing industries, retail and hotels. More than 75,000 systems are installed at major companies all over the world. The company offers a broad range of voice and professional messaging solutions, creating value for customers by supporting and optimizing their Mission-Critical processes. The solutions are based on VoWiFi, IP-DECT, DECT, Nurse Call and paging technologies, smartly integrated into existing enterprise systems. The company has subsidiaries in 19 countries and 1,600 employees worldwide. Founded in the 1950s and based in Gothenburg, Sweden, Ascom Wireless Solutions is part of the Ascom Group, listed on the Swiss Stock Exchange.

Innovaphone

Innovaphone develops pure IP telephone systems under the name of “innovaphone PBX“, uniting security and high availability with the flexibility and scalability of IP. The innovaphone PBX hardware comprises gateways and a series of IP telephones which are developed entirely in Germany and manufactured to a large extent in Europe. The entire product range is based on the unified hardware and software platform which is the core of the innovaphone product philosophy. The number of activated licenses can be determined as required which renders the solution suitable for companies of any size: from small companies over medium size companies with several branch offices to large enterprises. The innovaphone IP telephone systems are available exclusively through authorized distributors and resellers.

Innovaphone has been playing a decisive role in the development of IP telephony ever since the company was founded in 1997. Head office is located in Sindelfingen, South Germany. For further information, see the following URL: <http://www.innovaphone.com/>

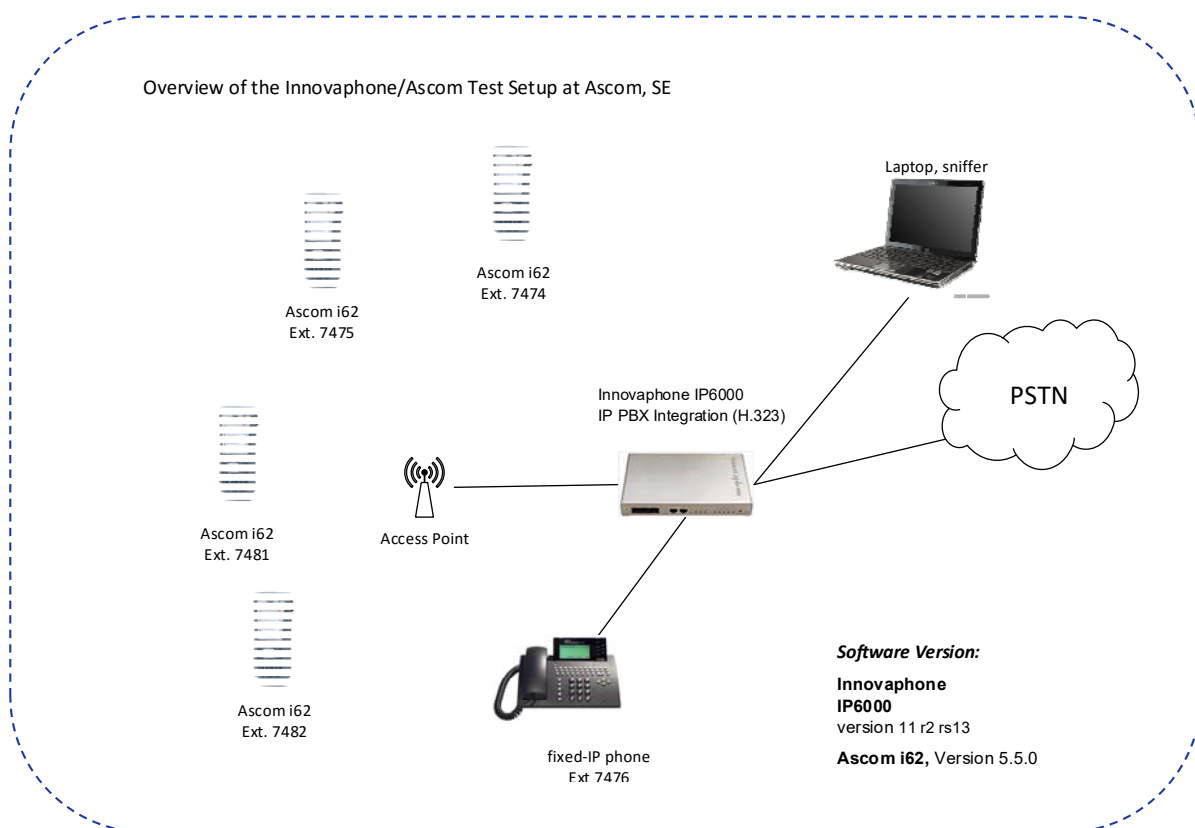
SITE INFORMATION

Test Site: Ascom HQ
Gothenburg
Sweden

Participant(s):

Johan Andrén (Ascom HQ, SE)

Test Topology



SUMMARY

Test overview

Test cases in nearly all areas with regard to Ascom i62 and Innovaphone IP-PBX passed successfully. Overall, the conclusion has to be that the H.323 integration of Ascom i62 with IP6000 is very good.

Queries about licensing should be directed to Innovaphone. Please also see “

APPENDIX A: TEST CONFIGURATIONS” for further details.

High Level Functionality	Result v.11 r2
Basic Call	OK
DTMF	OK
Hold, Retrieve, Enquiry and Brokering	OK
Attended Transfer	OK
Blind-transfer	OK
Semi-attended Transfer	Not Supported
Call Forward Unconditional	OK
Call Forward No Reply	OK
Call Forward Busy	OK
Call Waiting	OK
Message Waiting Indication	OK
Do Not Disturb	OK
Calling Line/Name Identification	OK
Connected Line/Name Identification	OK

General conclusions

Ascom interoperability verification produced good results towards Innovaphone IP6000 version 11 r2 with a few exceptions, refer to “*Known Issue(s)*” section on page 6.

Ascom i62 handsets were configured to register at the IP-PBX using endpoint numbers. The codec of choice for these tests was G.711A/20ms, while DTMF signaling was transmitted according RFC 2833. Parameter settings are elaborated upon in the “TEST RESULTS” section on page 6 for each platform respectively.

TEST RESULTS

Innovaphone IP-PBX Integration – Ascom i62

- Innovaphone IP-PBX version 11r2sr13
- Ascom i62, 5.5.0

Signaling Protocol:

- H.323

Innovaphone IP6000 (results also valid for 302, IP810 and IP6010):

- Settings are based on "Ascom VoIP Gateway: Installation and Operation Manual" (TD 92326GB), pp. 62-100

Ascom i62:

- Endpoint ID" and "Endpoint Number" corresponds to name and number in the user object
- Default H323 settings

Known Issue(s)

- Message "Call Failed" are shown in the display when using FAC (feature access codes) even if the function works fine. For example *21*number# for CFU will work but show Call failed in the display during activation/deactivation Handled in Jira WX-4043
- No timeout when i62 calls another i62 that does not answer both during basic call and call waiting active. This is a PBX issue and per design.
- Possible to divert call to "diverter", calling party hears busy. Considered as a minor issue and filed into the backlog.

Test Areas

Basic Call, DTMF:

- Good results overall

Basic Call, Portable Unavailable:

- Good results overall

Basic Call, Stability:

- Good results overall

Three-party Services:

- Good results overall

Call Diversion:

- Good results overall, except call failed message when using FAC and you can divert to diverter see known issue's for more information

Telephony Feature

- Good results overall, except there are no timeout when one i62 calls another i62 that doesn't answer. See know issue's for more information.

Detailed test records

Ascom i62 with Innovaphone v.11r2

Pass	72
Fail	3
NOT TESTED	15
See Comments	14
Total	104

Miscellaneous

Please refer to IP Telephony Services (IP-DECT/VoWiFi) available on the Ascom Extranet for detailed Information regarding each test case.

See URL (requires login):

<https://www.ascom-ws.com/AscomPartnerWeb/en/startpage/Sales-tools/Interoperability>

APPENDIX A: TEST CONFIGURATIONS

Innovaphone IP6000, 11r2

Please find the screen shots reflecting the management interface and some aspects of setting up the PBX application on the IP6000.

General -> info

10.30.32.76: IP6000

General Interfaces IP4 IP6 Services PBX Gateway Maintenance

Info Admin Compact-Flash License Kerberos Certificates

Version	11r2 sr13 IP6000[11.3543], Bootcode[113543], Hardware[106]
SerialNo	009033085523 (bd)
DRAM	128 MB
FLASH	16 MB
Coder	60 Channels of G.711,G.729,G.723
Conference	0 Channels
Fax	10 Channels
HDLC	2 Channels
Sync	PRI1-L1
Power Source	Ethernet
Power Off Loop	Disabled
Temperature	44.0° Celsius
SNTP Server	172.20.8.145
Time	07.06.2016 12:27
Uptime	0d 1h 13m 48s
Test Mode for	6:46hours

IP->Settings: DSCP markings used for signaling and RTP

10.30.32.76: IP6000

General Interfaces IP4 IP6 Services PBX Gateway Maintenance

General ETH0 ETH1 PPP NAT

Settings
Routing
ARP
STUN

TOS Priority - RTP Data 0xb8

TOS Priority - Signaling 0x68

First UDP-RTP Port Number of Ports First/Last 16384 / 32767

First UDP-NAT Port Number of Ports First/Last 0 / 0

- Local Networks -

Address	Mask
<input type="text"/>	<input type="text"/>

- Private Networks -

Address	Mask
<input type="text"/>	<input type="text"/>

OK Cancel

PBX->General: General Settings

10.30.32.76: IP6000

General Interfaces IP4 IP6 Services **PBX** Gateway Maintenance

Config Objects Registrations Calls SOAP myPBX Dyn-PBXs

General
Security
Filter
myPBX
Import
Export

PBX Mode: Master

System Name: PBX0 Use as Domain

PBX Name: Intop

Unknown Registrations: - With PBX Pwd only

Music On Hold URL:

External Music On Hold:

Response Timeout: 15

Dial Complete Timeout: 4

No of Regs w/o Pwd: 1

Recall Timeout: 20

Max Call Duration (h):

Group Default Visibility: Online Status Presence On the phone Presence note Calls Calls with Number

Presence with Alert:

Enable External Transfer:

No CLIR on internal calls:

RTP Proxy: - Except Addresses are identical or private

Generate CDRs:

Route Root-Node External Calls to: EXTERN For calls from local PBX only

Route PBX-Node External Calls to: EXTERN

Route Internal Calls to:

Escape Dialtone from:

Prefix for Intl/Ntl/Subscriber: 00 0 31

Tones: EUROPE-PBX

Log Calls:

Licenses

Name	Count	Usage	Local	Slaves
Port11	0	10	10	0
VoicemailUser11	0	1	1	0

OK Cancel

PBX->Objects: PBX objects added to PBX application

10.30.32.76: IP6000

General Interfaces IP4 IP6 Services **PBX** Gateway Maintenance

Config **Objects** Registrations Calls SOAP myPBX Dyn-PBXs

User new

show

- Intop

Long Name	Name	No	HW-ID	Node	PBX	Filter	Groups
Voicemail	Voicemail	4298	Voicemail	root	Intop		+
UC	UC	5555	5555	root	Intop		+
BC conf	innocnf		innocnf	root	Intop		CB*
Grupp 7479	Grupp 7479	7479	7479	root	Intop		FE*
EXTERN	EXTERN		EXTERN	root	Intop		+
conf voicemail B	conf voicemail B			root	Intop		CB
conf serverA	conf serverA	8888		root	Intop		+
DECT 8500	8500	8500	8500	root	Intop		+
i82 7482	7482	7482	7482	root	Intop		FE
i82 7481	7481	7481	7481	root	Intop		FE
DECT 7480	7480	7480	7480	root	Intop		+
DECT 7478	7478	7478	7478	root	Intop		+
DECT 7477	7477	7477	7477	root	Intop		+
Tel1 7476	7476	7476	7476	root	Intop		+
i82 7475	7475	7475	7475	root	Intop		FE
i82 7474	7474	7474	7474	root	Intop		+
Myco 7473	7473	7473	7473	root	Intop		+
Myco 7472	7472	7472	7472	root	Intop		+
Myco 7471	7471	7471	7471	root	Intop		+
Myco 7470	7470	7470	7470	root	Intop		+
DECT 8500	8500	8500	8500	root	Intop		+
TEL1 4000	4000	4000	TEL1	root	Intop		+
*333	*333	*333		root	Intop		+
feature codes				root	Intop		+
feature codes#announce		*82*		root	Intop		
feature codes#call_completion		*37*		root	Intop		
feature codes#cancel_cc		#37*		root	Intop		
feature codes#cfb_activate		*67*		root	Intop		
feature codes#cfb_deactivate		#67#		root	Intop		
feature codes#cfnr_activate		*61*		root	Intop		
feature codes#cfnr_deactivate		#61#		root	Intop		
feature codes#cfu_activate		*21*		root	Intop		
feature codes#cfu_deactivate		#21#		root	Intop		
feature codes#join_all_groups		*32#		root	Intop		
feature codes#join_group		*31*		root	Intop		
feature codes#leave_all_groups		#32#		root	Intop		
feature codes#leave_group		#31*		root	Intop		
feature codes#park		*16		root	Intop		
feature codes#park_to		*17		root	Intop		
feature codes#pickup_directed		*0*		root	Intop		
feature codes#pickup_group		*0#		root	Intop		
feature codes#set_presence		040		root	Intop		
feature codes#unpark		#16		root	Intop		
feature codes#unpark_from		#17		root	Intop		
feature codes#unset_presence		041		root	Intop		
Intop				root	Intop		+

PBX->Objects: Adding a new user object

Edit User - Google Chrome

10.30.32.76/PBX0/ADMIN/mod_cmd_login.xml?cmd=show&user-guid=dc3ad14c58dc55011df6

General User License DECT

Type: User

Description: i62 7474 Hide from LDAP

Long Name: i62 7474 Display Name: WH A4

Name: 7474 Number: 7474 Critical

E-Mail: 7474@;

Password: retype Password:

Node: root Local:

PBX: Intop

Send Number: URL:

Group Indications:

Config Template:

- Devices -

Hardware Id	Name	PBX	Pwd No	IP Filter	TLS only	No Mobility	Config	VOIP
7474		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OK Cancel Apply Delete Help

PBX->Objects: Adding a gateway object (“EXTERN”)

Gateway - Internet Explorer
 http://10.30.32.76/PBX0/ADMIN/mod_cmd_login.xml?cmd=show&user-guid=b4388902cedd550195f80090331e1c3b&loc=*&filter=*

General Gateway

Type: Gateway
 Description: Hide from LDAP
 Long Name: EXTERN Display Name:
 Name: EXTERN Number: Critical
 E-Mail: EXTERN
 Password: retype Password:
 Node: root Local:
 PBX: Intop Reject ext. Calls:
 Max Calls: Response Timeout:
 Hide Connected Endpoint
 UC
 Reporting
 Voicemail

- Devices

Hardware Id	Name	PBX Pwd	No IP Filter	TLS only	No Mobility	Config VOIP
EXTERN	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OK Cancel Apply Delete Help

Gateway->GK: Binding an interface to the gateway object (“EXTERN”)

10.30.32.76: IP6000

General Interfaces IP4 IP6 Services PBX **Gateway** Maintenance

General Interfaces SIP **GK** Routes CDR0 CDR1 Calls

Interface	CGPN-In	CDPN-In	CGPN-Out	CDPN-Out	Alias	Registration Product
GW1 to 166	+					10.30.32.166
GW2	+					
GW3	+					
GW4	+					
GW5	+					
GW6	+					
GW7	+					
GW8	+					
GW9	+					
GW10 EXTERN	+				EXTERN → 127.0.0.1	
GW11	+					
GW12	+					
GW13	+					
GW14	+					
GW15	+					
GW16	+					

Gateway->GK: Registering the gateway using H323

GW10 EXTERN - Internet Explorer
 http://10.30.32.76/RELAY0/mod_cmd.xml?cmd=xml-ifs&id=GW10&xsl=relay_edit_voip.xml

Name:

Disable:

Protocol:

Mode:

Address:

Address: (alternate)

Gatekeeper Identifier:

STUN Server:

Local Signaling Port:

Authorization

Password: Retype:

Alias List

Name	Number
<input type="text" value="EXTERN"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

Media Properties

General Coder Preference: Framesize [ms]: Silence Compression Exclusive

Local Network Coder: Framesize [ms]: Silence Compression

Enable T.38 Audio FAX support No DTMF Detection Enable PCM Media-Relay Video N

SRTP Cipher: SRTP Key Exchange:

Record to (URL):

H.323 Interop Tweaks

No Faststart No H.245 Tunneling

Suppress HLC Suppress FTY Suppress Subaddr

Buttons:

PBX->Registrations: Overview of PBX registrations

10.30.32.76: IP6000

General Interfaces IP4 IP6 Services **PBX** Gateway Maintenance

Config Objects **Registrations** Calls SOAP myPBX Dyn-PBXs

Address	Long Name	Name	No	Device	Product	Firmware	Video Collab	Uptime
127.0.0.1	H323	EXTERN	EXTERN	EXTERN	IP6000	11r2 sr13 [11.3543/113543/108]		0d 1h 42m 56s
10.30.34.55	H323	i82 7474	7474	7474 7474	Ascom i82	Ascom i82 5.5.0 (2016-03-29) release		0d 1h 42m 50s
10.30.34.56	H323	i82 7475	7475	7475 7475	Ascom i82	Ascom i82 5.5.0 (2016-03-29) release		0d 1h 42m 52s
10.30.34.52	H323	i82 7481	7481	7481 7481	Ascom i82	Ascom i82 5.5.0 (2016-03-29) release		0d 1h 42m 55s
10.30.34.53	H323	i82 7482	7482	7482 7482	Ascom i82	Ascom i82 5.5.0 (2016-03-29) release		0d 1h 42m 52s
10.30.34.42*	SIP	Myco 7470	7470	7470 7470	Ascom Myco	5.3.0 SIP Version 1.5.ge81ffe58 [12.0489]		0d 1h 42m 55s
10.30.34.15*	SIP	Myco 7471	7471	7471 7471	Ascom Myco	5.3.0 SIP Version 1.5.ge81ffe58 [12.0489]		0d 1h 42m 48s
10.30.34.44*	SIP	Myco 7472	7472	7472 7472	Ascom Myco	5.3.0 SIP Version 1.5.ge81ffe58 [12.0489]		0d 1h 42m 54s
10.30.34.12*	SIP	Myco 7473	7473	7473 7473	Ascom Myco	5.3.0 SIP Version 1.5.ge81ffe58 [12.0489]		0d 1h 42m 48s
10.30.32.213	H323	Tel1 7476	7476	7476 7476	innovaphone IP29	12r1 dvl [12.0495/120495/300]		0d 1h 42m 53s

Gateway->Routes: Routing of incoming and outgoing calls

10.30.32.76: IP6000

General Interfaces IP4 IP6 Services PBX Gateway Maintenance

General Interfaces SIP GK Routes CDR0 CDR1 Calls

From	To	Counter	CGPN	Maps
GW10:EXTERN	0 → PRI1:Tele2			
PRI1:Tele2	→ GW10:EXTERN			0

PBX->Registrations: Calling and called party number formats for incoming and outgoing calls

10.30.32.76: IP6000

General Interfaces IP4 IP6 Services PBX Gateway Maintenance

General Interfaces SIP GK Routes CDR0 CDR1 Calls

Interface	CGPN-In	CDPN-In	CGPN-Out	CDPN-Out	State	Alias	Registration
PRI1	Tele2	n→0	7471→7471		Up		
		i→00	7472→7472				
			7473→7473				
			7474→7474				
			7475→7475				
			7476→7476				
			7477→7477				
			7478→7478				
			7479→7479				
			7470→7470				
PRI2		+					
PRI3		+					
PRI4		+					
TEL		+					
TEST							
TONE							
HTTP							
ECHO							
SIG0		+					
SIG1		+					
FAX		+					
CONF		+					

Please refer to Innovaphone's documentation for further details about Innovaphone IP-PBX configuration and licensing.

Ascom i62 configuration

Ascom i62 WiFi network settings

Edit parameters for 7474

Device type:

Parameter definition:

Name	Value	
Network name	IntopJA	?
DHCP mode	On	?
802.11 protocol	802.11a/n	?
SSID	IntopJA	?
Security mode	WPA-PSK & WPA2-PSK	?
WPA-PSK passphrase	*****	?
Voice power save mode	U-APSD	?
802.11a/n channels	All	?
Advanced: 802.11 channels		?
World mode regulatory domain	World mode (802.11d)	?
Transmission power	Automatic	?
IP DSCP for voice	0x2E (46) - Expedited Forwarding	?
IP DSCP for signaling	0x1A (26) - Assured Forwarding 31	?
TSPEC Call Admission Control	Off	?
Transmit gratuitous ARP	No	?
Deauthenticate on roam	No	?
Roaming methodology	802.11 roaming	?
Maximum transfer unit	1400	?
Aruba 800 controller compability	No	?
Check IP connectivity after roaming	No	?

OK Cancel

VoIP parameter settings

Edit parameters for 7474

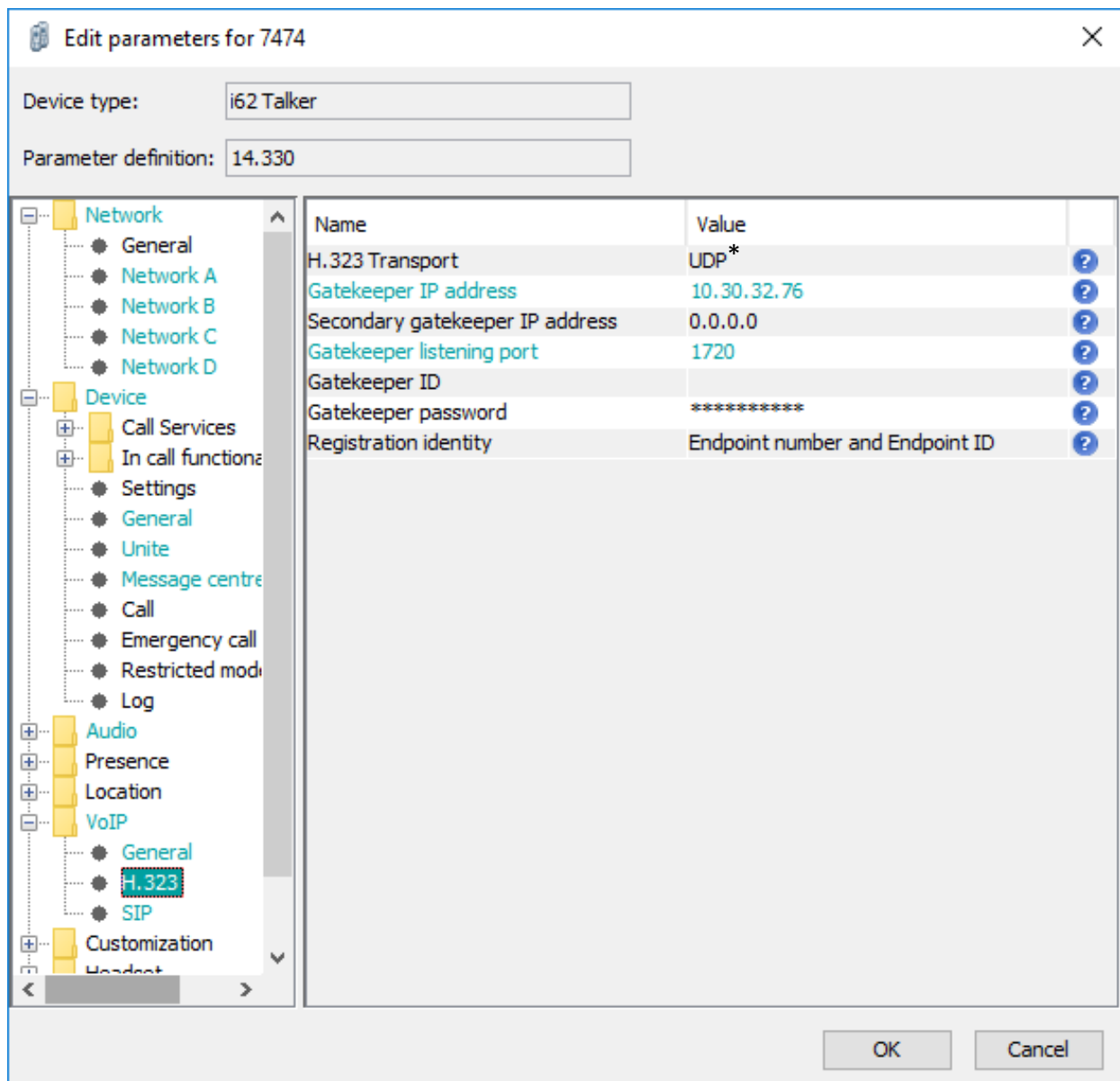
Device type:

Parameter definition:

Name	Value	
Replace Call Rejected with User Busy	No	?
VoIP protocol	H.323	?
Codec configuration	G.711 A-law	?
Codec packetization time configuration	20	?
Offer Secure RTP	No	?
Internal call number length	4	?
Endpoint number	7474	?
Endpoint ID	7474	?

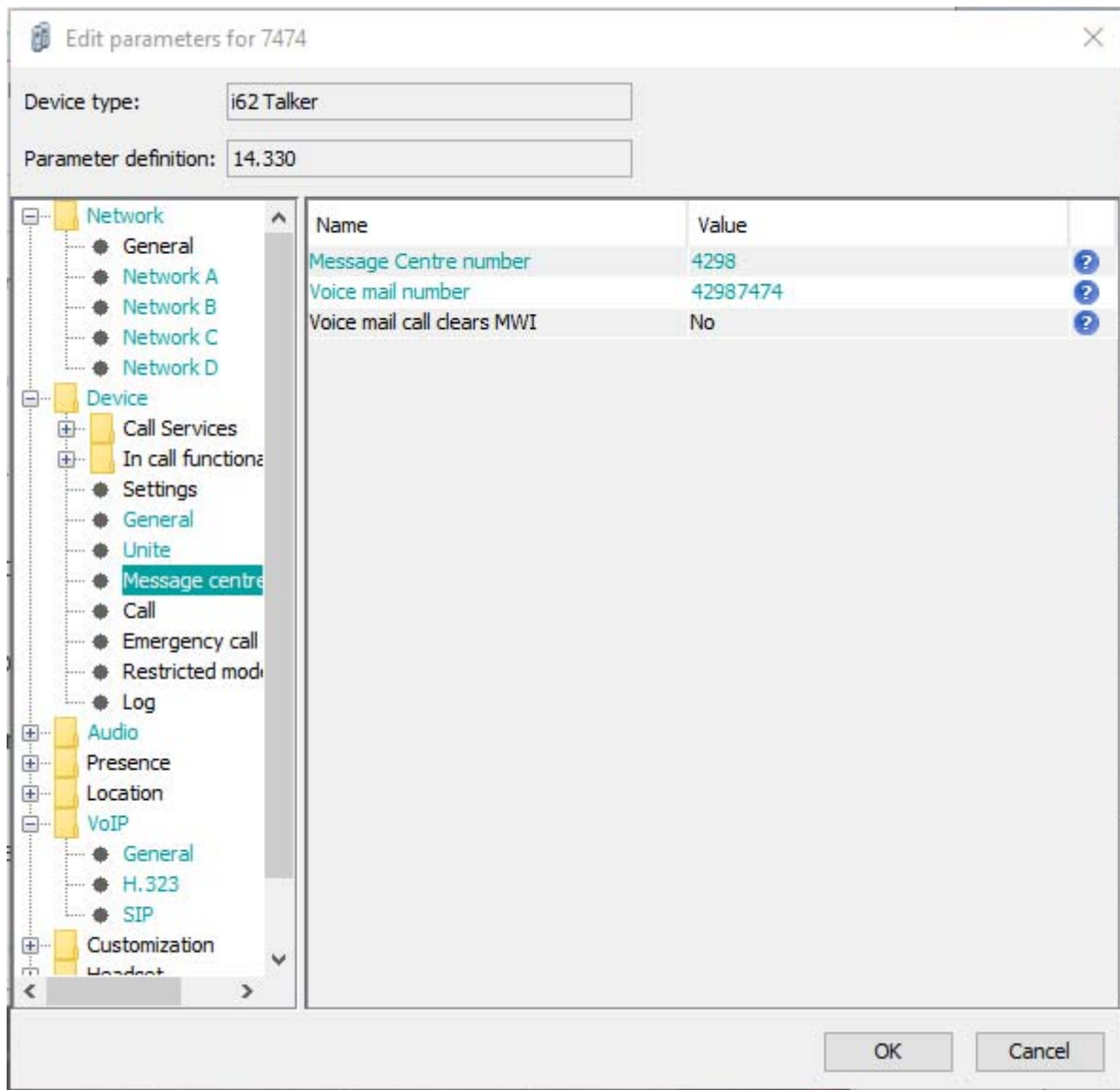
OK Cancel

H.323 settings



- H.323 Transport UDP are used for the RAS signaling. For the call control signaling TCP are used as long as TLS aren't configured.

Message Waiting Indication settings



DOCUMENT HISTORY

Rev	Date	Author	Description
PA1	2016-06-07	SEJAn	Draft version
RA	2016-06-20	SEJAN	Final version