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INTEROPERABILITY REPORT

Ascom i62

Innovaphone IP302, IP810 and IP6010, Firmware version 10

IP PBX Integration (H323)

Ascom i62, Software version 4.3.12

Ascom, Gothenburg

October 2013

TABLE OF CONTENT:

INTRODUCTION

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

Ascom

Ascom Wireless Solutions 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 and Nurse Call and paging technologies, smartly integrated into existing enterprise systems.

Founded in the 1950s and based in Göteborg, Sweden, Ascom Wireless Solutions is part of the Ascom Group and listed on the Swiss Stock Exchange. The company has subsidiaries in 10 countries and approximately 1,200 employees worldwide.
For further information, see the following URL: http://www.ascom.com/ws.

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 authorised 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.
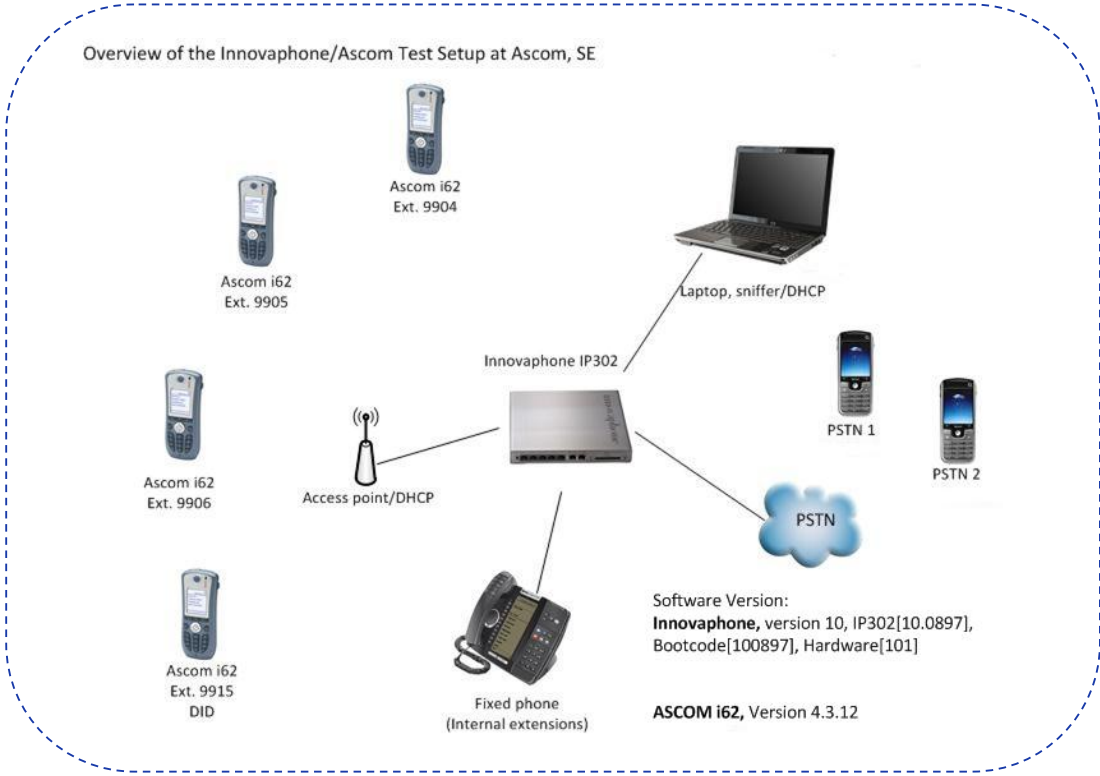For further information, see the following URL: http://www.innovaphone.com/

SITE INFORMATION

Test Site: Ascom HQ
               Gothenburg
               Sweden

Participant(s):

Raheleh Kamali (Ascom HQ, SE)
Peter Åstrand (Ascom HQ, SE)

Test Topology

Overview of the Innovaphone/Ascom Test Setup at Ascom, SE

Ascom i62
Ext. 9904

Ascom i62
Ext. 9905

Laptop, sniffer/DHCP

Innovaphone IP302

PSTN 1

PSTN 2

Ascom i62
Ext. 9906

Access point/DHCP

PSTN

Ascom i62
Ext. 9915
DID

Fixed phone
(Internal extensions)

Software Version:
Innovaphone, version 10, IP302[10.0897],
Bootcode[100897], Hardware[101]

ASCOM i62, Version 4.3.12

SUMMARY

Innovaphone, version 10

Test cases in nearly all areas with regard to Ascom i62 and Innovaphone IP PBX passed successfully. Overall, the conclusion has to be that H.323 integration towards IP302 is very good.

Queries about licensing should be directed to Innovaphone.
Please also see "*APPENDIX A: TEST CONFIGURATIONS*" for further details.

VoWiFi

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

a. Soft- or hot-key is optional (call diversions can also be configured via the GUI of the IP PBX)
b. See *Known Issue(s)* in page **7**

General Conclusion

Ascom interoperability verification produced good results towards Innovaphone IP302 version 10 with few exceptions; see **_Known Issue(s)_** in page **7.**

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 through RTP. One can say that, in comparison to SIP, H.323 requires little configuration besides the IP address of the H.323 gatekeeper and abovementioned settings. Parameter settings are elaborated upon in the "**TEST RESULTS**" section for respective platforms.

Ascom i62 can use a special configuration of a soft- or hot-key for the purpose of programming call diversion (CDIV) at the IP PBX. Practically all test cases regarding basic call, brokering/enquiry, transfer and CDIV passed with positive results. No issues were logged for follow-up at Ascom HQ.

TEST RESULTS

Innovaphone IP PBX Integration – VoWiFi

- Innovaphone IP PBX version 10
- Ascom i62, v 4.3.12

Signalling Protocol:

- H.323

Innovaphone IP302:

- Settings are based on " Ascom VoIP Gateway: Installation and Operation Manual" (TD 92326GB), pp. 62-100
- DSCP should be configured appropriately under IP -> Settings

Ascom i62:

- Endpoint ID" and "Endpoint Number" corresponds to name and number in the user object (Assigning password is optional, it works in both cases)
- Default H.323 settings except hot-key for call diversions
- Call waiting enabled

Known Issue(s)

- No timeout when i62 calls another i62 that does not answer (PBX issue, per design)
- Ascom i62 does not support post-dial (per design)
- Possible to divert call to "diverter", calling party hears busy (minor issue)
- There are two ongoing Intop issues related to Call pick up group (#23739) and Waiting Queue (# 23741).

Test Areas

Basic Call, DTMF: 94% pass (17/18)

- CNIP/CONP OK, requires IP PBX configuration
- DTMF OK
- Overlap sending (post-dial) not supported by Ascom i62
- i62 ignores i62 NOK (#5103.1), no timeout

Basic Call, Portable Unavailable: 100% pass (8/8)

- Good results overall

Procedure Mapping: 100% pass (2/2)

- Hot-key used in i62

Three-party Services: 90% pass (37/41)

- CNIP/CONP OK (updated after transfer)
- CLIP/COLP could not be verified properly for PSTN extensions
- Ignored CW on internal call does not give busy(#5125.3)

Call Diversion: 90% pass (9/10)

- Call diversion programmed through i62 hot-key
- Test case #5132.1 (Diversion to Diverter), it is possible to divert the phone to itself (Minor issue)

Telephony Feature: 100% pass (9/9)

- Limited testing due to lack of 3rd party competence
- Group calls tested with good results

Please keep in mind that metrics do NOT account for untested cases

APPENDIX A: TEST CONFIGURATIONS

Innovaphone IP302, version 10

Below one will find screen shots reflecting the management interface and some aspects of setting up the PBX application on the IP302.

General -> info

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

PBX->General: General Settings

IGWP01: innovaphone IP302

| 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	.	
Unknown Registrations	☐ - With PBX Pwd only ☐	
Music On Hold URL		
External Music On Hold		
Response Timeout	20	
Dial Complete Timeout	4	
No of Regs w/o Pwd.	10	
Recall Timeout	20	
Max Call Duration (h)	0	
Enable External Transfer	☑	
No CLIR on internal calls	☐	
RTP Proxy	☐	
Generate CDRs	☐	
Route Root-Node External Calls to	EXTERN	on Master or Slave with License Only
Route PBX-Node External Calls to	EXTERN	
Route Internal Calls to		
Escape Dialtone from		
Prefix for Intl/Ntl/Subscriber		
Log Calls	☑	

Licenses

Name	Count	Usage	Local	Slaves
Port9	100	4	4	0
Standby9	100	100	100	0
Voicemail9	100	100	100	0
Mobility9	100	0	0	0
Operator9	100	0	0	0
SoftwarePhones9	100	0	0	0

[OK] [Cancel]

PBX->Objects: PBX objects added to PBX application

IGWP01: innovaphone IP302

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

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

User ▾ new

show

• .

Long Name	Name «	No «	HW-ID «	Node «	PBX «	Filter «	Groups «	CF* «
DECT				root	.		+	+
DECT2				root	.		+	+
EXTERN	EXTERN		EXTERN	root	.	normal	+	+
FE	9990		9990 9990	root	.		FE*	+
Miratel 6202	6202		6202 6202	root	.		+	+
Miratel 6212	6212		6212 6212	root	.		+	+
Miratel 6213	6213		6213 6213	root	.		+	+
Miratel 6221	6221		6221 6221	root	.		+	+
Miratel 6222	6222		6222 6222	root	.		+	+
Miratel 6223	6223		6223 6223	root	.		+	+
Miratel 6231	6231		6231 6231	root	.		+	+
serak 9900	9900		9900 9900	root	.		+	+
serak 9901	9901		9901 9901	root	.		+	+
serak 9902	9902		9902 9902	root	.		+	+
serak 9903	9903		9903 9903	root	.		+	+
serak 9904	9904		9904 9904	root	.		+	cfu:9906
serak 9905	9905		9905 9905	root	.		FE*	+
serak 9906	9906		9906 9906	root	.		FE*	+
serak 9907	9907		9907 9907	root	.		FE*	+

PBX->Objects: Adding a new user object

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

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

Gateway->GK: Registering the gateway in H.323

PBX->Registrations: Overview of H.323 registrations

IGWP01: innovaphone IP302

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

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

Address	Long Name	Name	No	Device	Product	Firmware	Uptime
127.0.0.1	H323 EXTERN	EXTERN		EXTERN	innovaphone IP302:IGWP01	9.00 hotfix15 [9.061078/9061078/101]	9d 2h 50m 27s
10.11.24.151	SIP Test 24	9924	9924	9924	snom320	7.3.30	9d 2h 46m 37s
10.11.24.168	SIP Test 25	9925	9925	9925	PolycomSoundPointIP-SPIP_335-UA 3.2.1.0078		9d 2h 50m 20s
127.0.0.1	H323 Test 29	9929	9929	9929	innovaphone IP302:IGWP01	9.00 hotfix15 [9.061078/9061078/101]	9d 2h 50m 27s

Gateway->Routes: Routing of incoming and outgoing calls

IGWP01: innovaphone IP302

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

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

From		To	Counter	CGPN Maps
BRI1	03155 →	GW12:EXTERN i	→	
GW12:EXTERN	→	BRI1 i	→	PBX to EXTERN
TEL1:tel1	→	RAB1:tel1	→	
RAB1:tel1	→	TEL1:tel1	→	

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

IGWP01: innovaphone IP302

| 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
TEL1 tel1	+				Up	9929:9929 → 127.0.0.1	
TEL2	+				Up		
BRI1	n→0		9916→031559916		Up		
	i→00		9915→031559915				
TEST							
TONE							
HTTP							
ECHO							

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

Ascom i62

Network => <A|B|C|D>
- DHCP mode: Enable
- SSID: <ssid>
- Encryption: WPA-PSK & WPA2-PSK
- Voice Power Save Mode: U-APSD
- 802.11 b/g Channels: UNII1
- World Mode Regulatory Domain: ETSI
- IP DSCP for VOICE: 0x2E (46) – Expedited Forwarding
- IP DSCP for SIGNALLING: 0x1A (26) - Assured Forwarding 31

Device => General

- Time Zone: Central European Time (UTC+1)
- Shared Phone License: No

Audio => General
- Dialing Tones Pattern: <country>

VOIP => General
- VoIP Protocol:H.323
- Codec Configuration: G711A
- Codec Packetization Time Configuration: 20ms
- Internal call number length: 4
- Endpoint ID: <extension>

VoIP => H323
- Gatekeeper IP Address: <ip>
- Secondary Gatekeeper IP Address: <n/a>
- Gatekeeper Listening Port: 1720
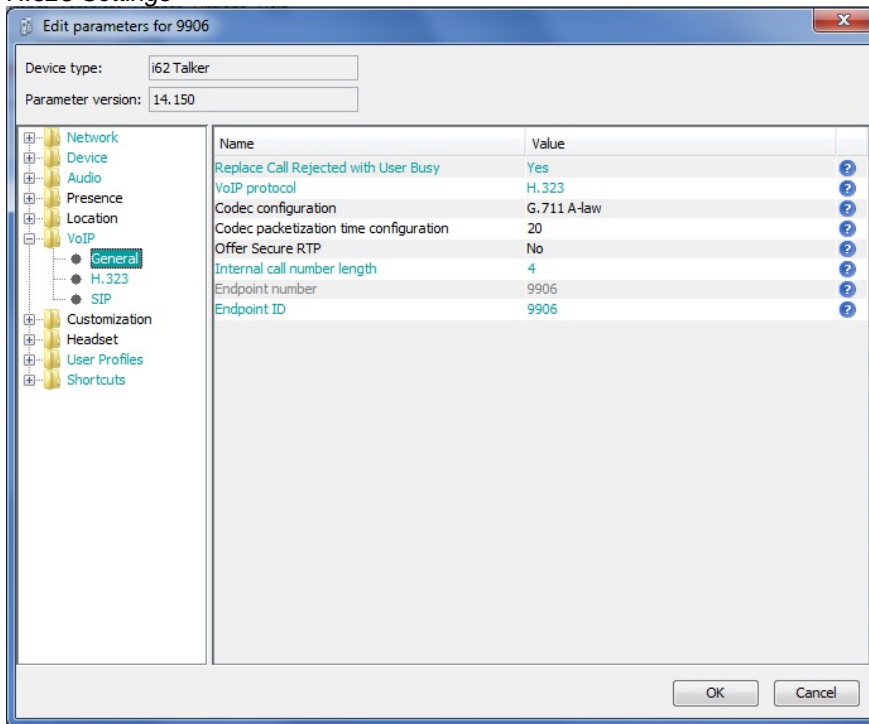- Gatekeeper ID: <n/a>
- Gatekeeper Password: <n/a>
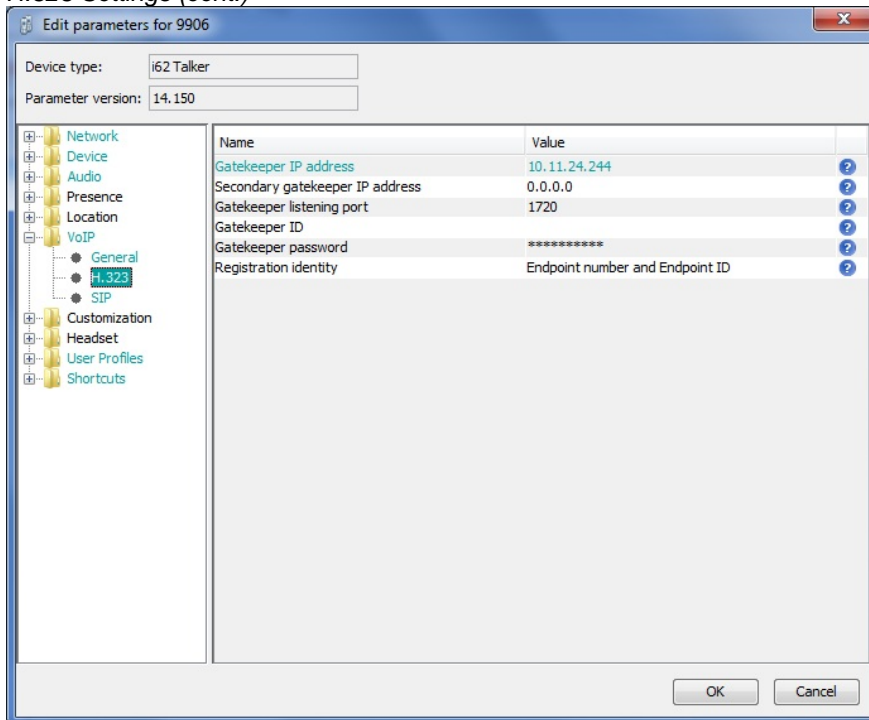
Shortcut => Hot Key 2
- Function: Call_Diversions

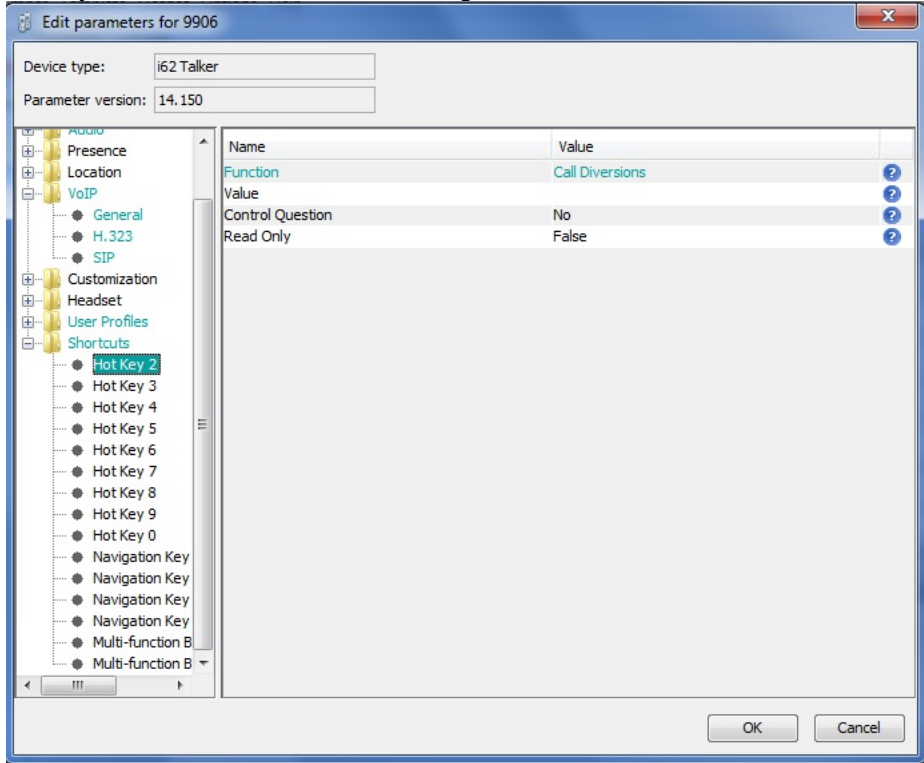< I62 Template file >

Other settings were left as their defaults.
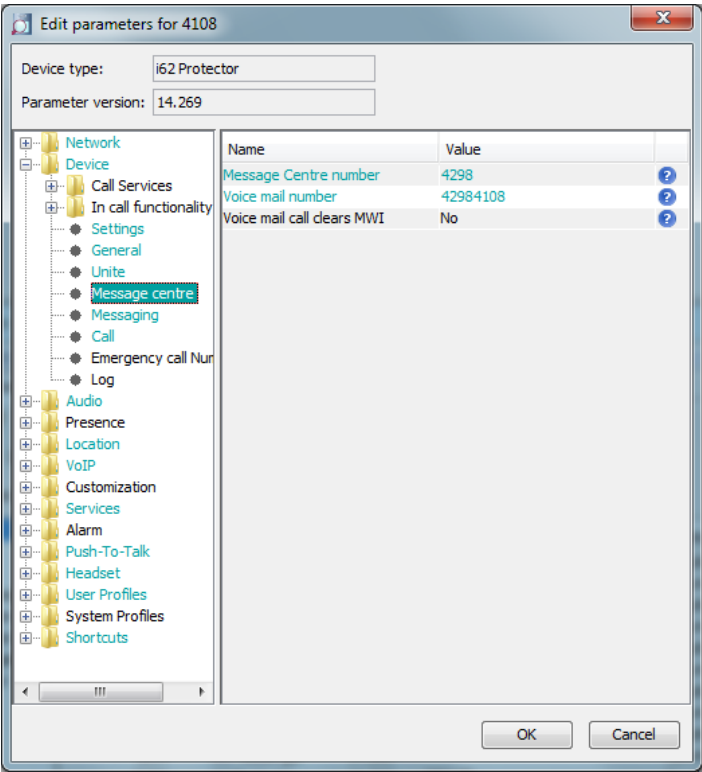
H.323 Settings

H.323 Settings (cont.)

Hot-key for Call Diversion/Call Forwarding

Please refer to *APPENDIX B*: DETAILED TEST RECORDS for more information regarding device configuration.

Voice Mail settings

APPENDIX B: DETAILED TEST RECORDS

Ascom i62

Pass	82
Fail	1
Comments	5
Untested	16
Total	104

Test
Record-Innovaphone

Miscellaneous

Please refer to the VoWIFI test specifications 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

Document History

Rev	Date	Author	Description
PA1	25.10.2013	SERAK	
PA2	12.12.2013	SEPAA	