



## **Avaya Solution & Interoperability Test Lab**

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# **Application Notes for the Interoperation of NovaLink NovaConf with Avaya Integral 5 easy - Issue 1.0**

### **Abstract**

These Application Notes describe the necessary configuration steps for the successful interoperation of the NovaLink NovaConf with the Avaya Integral 5 easy (I5).

NovaLink NovaConf is a proprietary conference solution which complements other applications from NovaLink.

An Avaya Integral 5 easy with current software version AR2.351GA was used as the hosting PBX for the NovaConf system.

Information in these Application Notes has been obtained through *DeveloperConnection* compliance testing and additional technical discussions. Testing was conducted via the *DeveloperConnection* Program at the Avaya Solution and Interoperability Test Lab.

# 1. Introduction

This document specifies the configurations and tests used to verify compatibility and interoperability between the NovaConf Server and the Avaya Integral 5 easy (I5). The NovaConf Server is a proprietary conference solution from NovaLink. With its scope of services it supplements NovaAlert and NovaMail. The NovaConf server initiates conferences among telephones attached to the Avaya Integral 5 easy via a Basic Rate Interface (BRI).

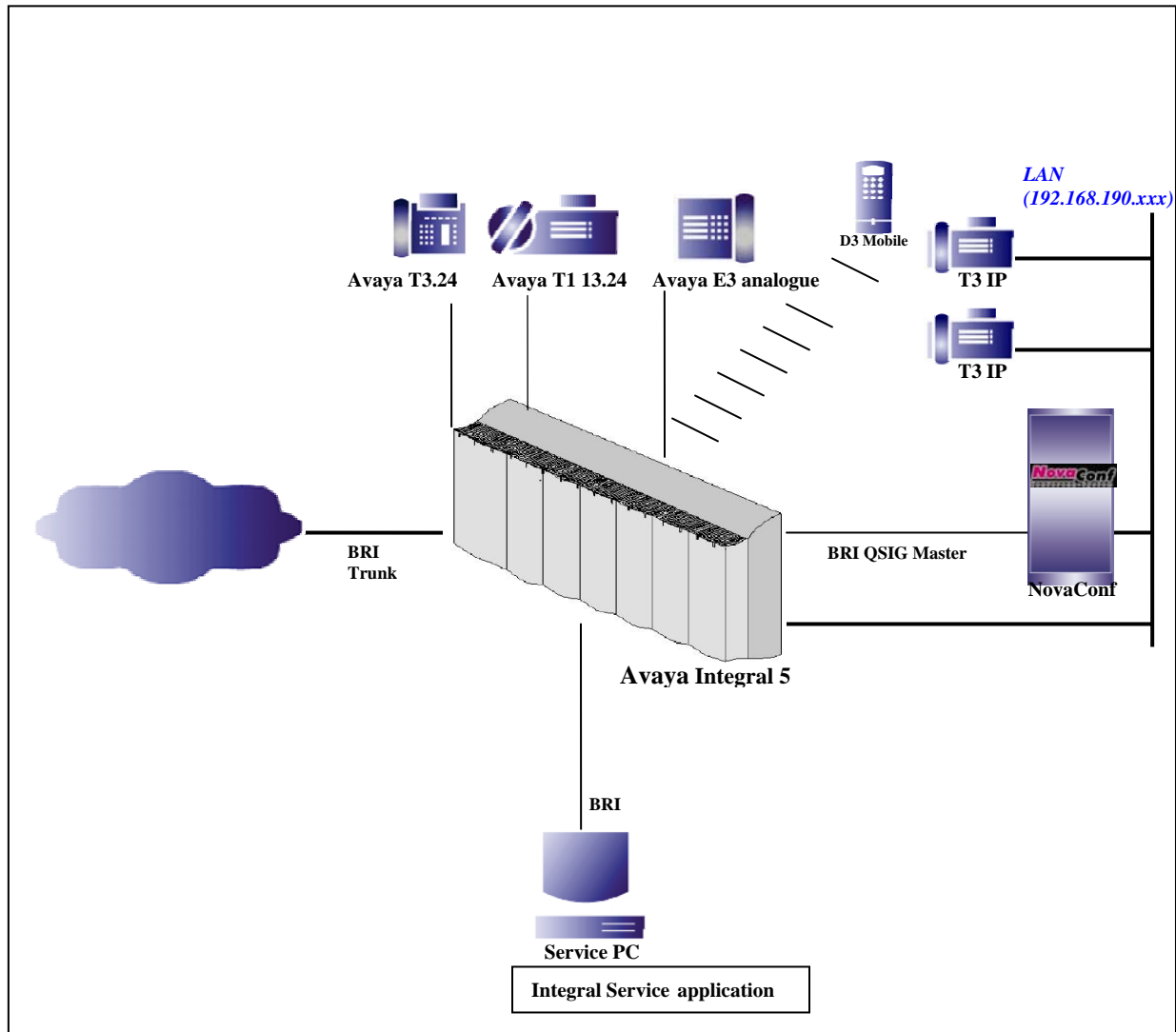
Various types of conferences can be configured, dependent on conference participants' needs:

"Incoming Conferences" allow users to dial in to conferences held at a specific time.

"Outgoing Conferences" can be configured to automatically call a pre-defined list of conference participants at a specific time.

Ad-hoc conferences can be created to meet an immediate need.

The figure below shows the interconnection of the NovaLink NovaConf system with the Avaya I5 easy.



**Figure 1: Avaya I5 with NovaLink NovaConf server**

## 2. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment	Software
Avaya™ Integral 5 easy	AR 2.351 D
Avaya™ T8S circuit pack	UR 2250 DE
Avaya™ S8D circuit pack	FR 2250XX
Avaya™ D3 mobile handset	10-45-61 EE 03-08
Avaya™ T3 IP phone	V212_0DE.h4i
Avaya™ Digital T3.24 phone	V2_01
Avaya™ E3 analogue phone	
Avaya™ Digital T1 13.24 phone	V01_16
Avaya™ Integral service application	V4.401D
Avaya™ AVM Fritz! USB Card for service access	V.2.1
Service PC Dell optiplex gx270	Microsoft Windows XP Professional SP2
Deutsche Telekom BRI ISDN trunk (point to point)	N/A
NovaLink NovaConf Server	V.7.5 SP1a
Gerdes Primux ISDN card 4xBRI	V3.6.4389

### 3. Configuration of the Avaya Integral 5 easy

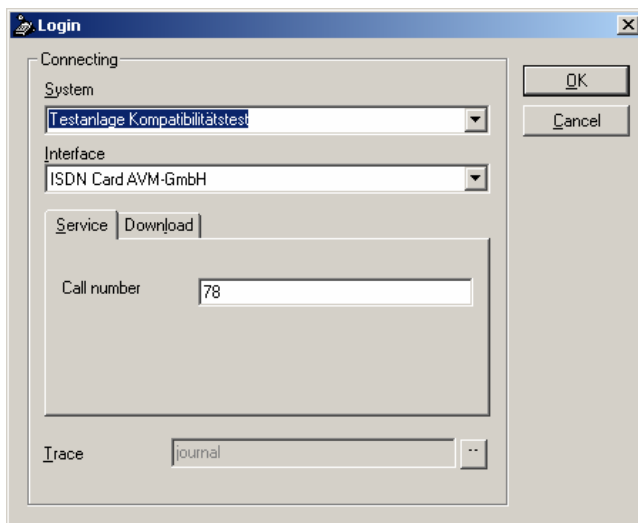
The configuration of the Avaya Integral 5 easy is done via the Integral service application (ISA) which is running on a Service PC connected to the system via the AVM fritz! card with a BRI. ISA is the basic service tool for administrating the Avaya I5 systems. It is an application running under Windows-2000 or Windows-XP operating system.

Necessary parameters to login:

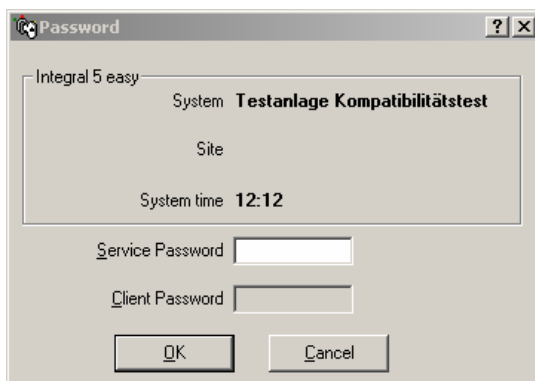
System: Arbitrary system name

Interface: ISDN Card AVM-GmbH

Default Service Call number: 78



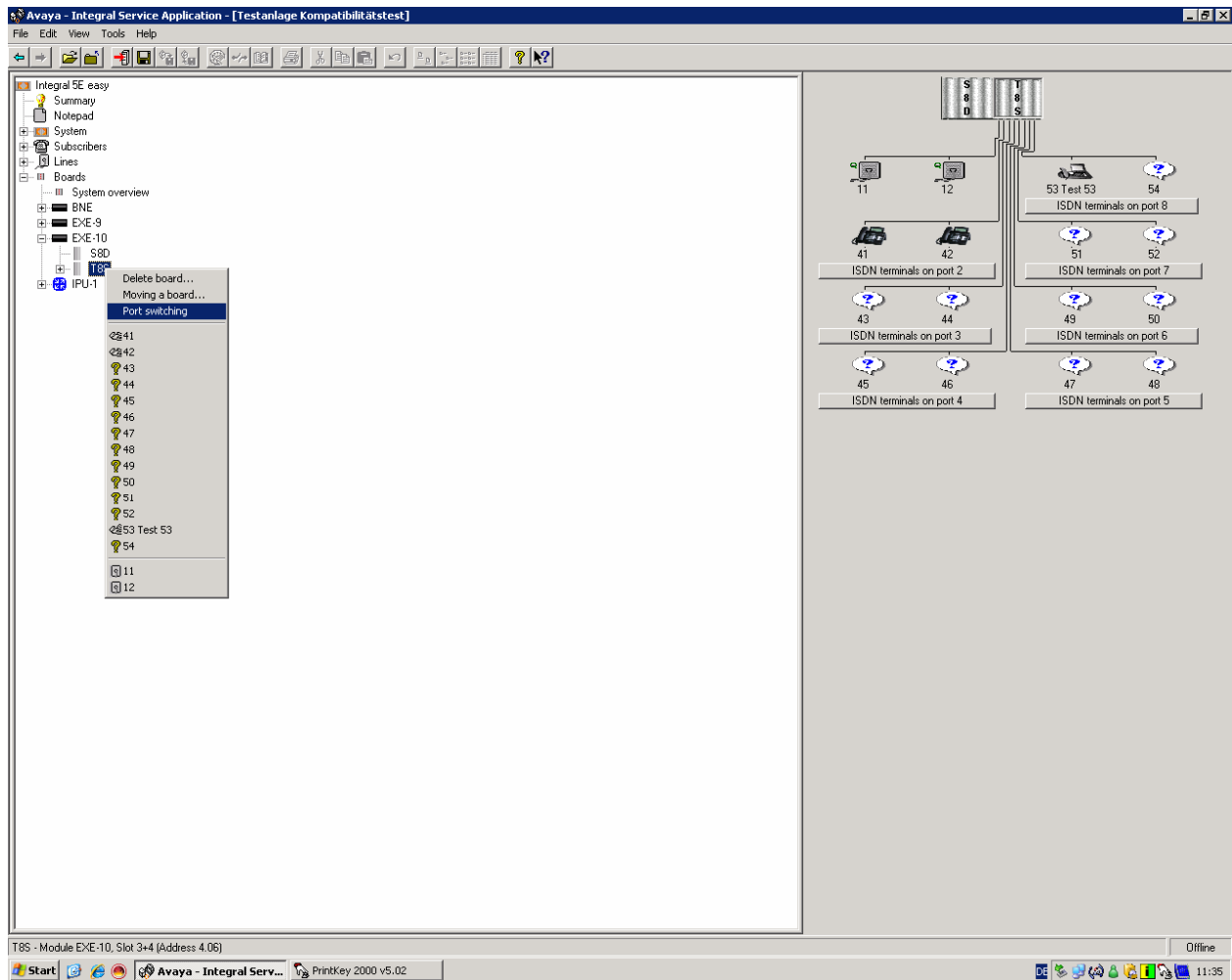
Service password: System time backwards



### 3.1. Configuration of the Avaya I5 BRI with QSIG

The port switching of the T8S circuit pack in which the default setting S0 has to be changed to QSIG can only be entered offline. Therefore, the entire configuration must be saved in a backup file. This backup file can then be changed by means of the Avaya integral service application as described below. Then the changed file must be restored into the Avaya I5.

In this case, the module concerned (T8S) was installed in the extension module 10 (EXE-10).



This screen shows the default Port configuration when Port switching was selected:

The 'Port configuration' dialog box displays the following settings:

- Board: T8S [4.06]
- rack: 4
- slot: 6
- Port 1: S0, subscribers/lines: [4.06.1] 11
- Port 2: S0, subscribers/lines: [4.06.2.1] 41
- Port 3: S0, subscribers/lines: [4.06.3.1] 43
- Port 4: S0, subscribers/lines: [4.06.4.1] 45
- ☒ Load default data to the port to be switched over

Buttons: OK, Cancel

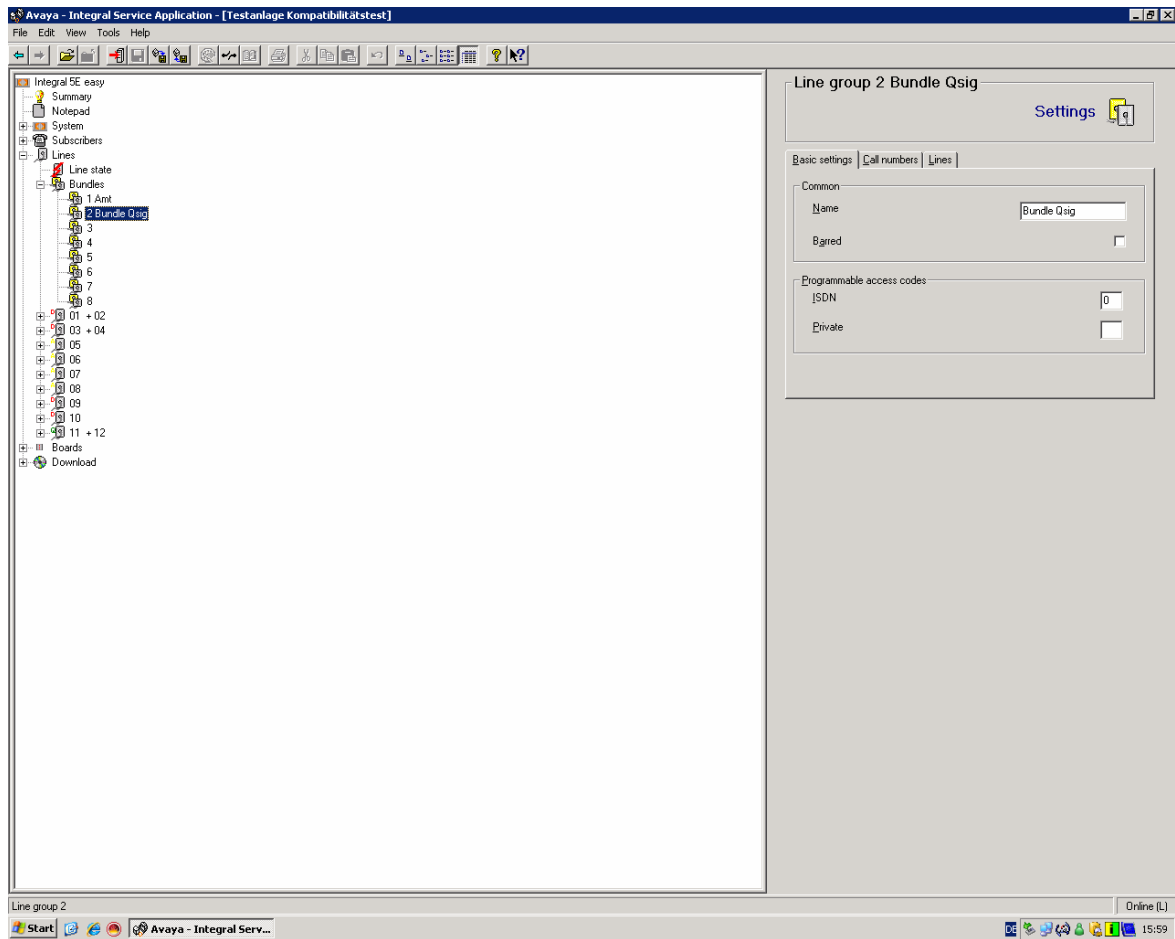
Changes of Port switching: Port one set to “QSIG cable connection (master)”:

The 'Port configuration' dialog box displays the following settings after modification:

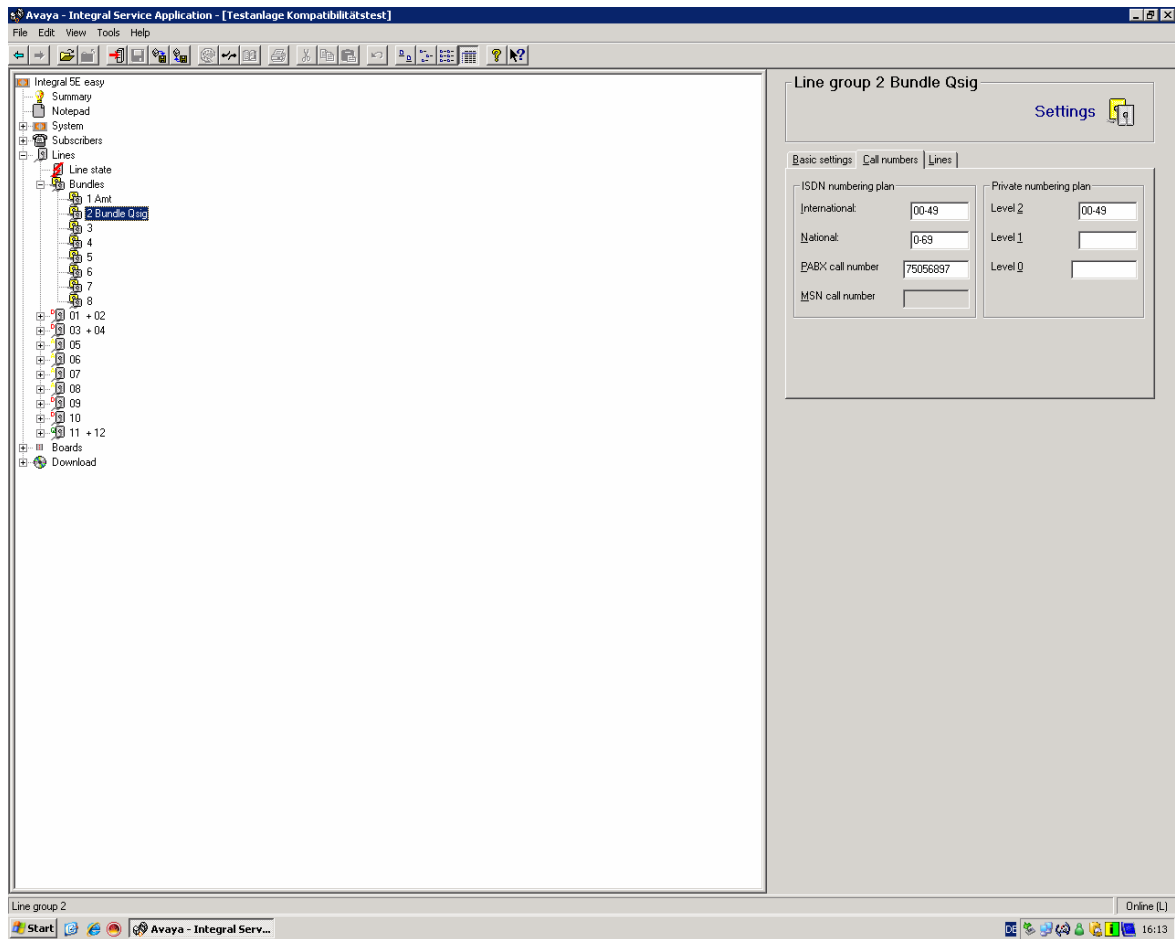
- Board: T8S [4.06]
- rack: 4
- slot: 6
- Port 1: QSIG cable connection (master), subscribers/lines: [4.06.1] 11
- Port 2: S0, subscribers/lines: [4.06.2.1] 41
- Port 3: S0, subscribers/lines: [4.06.3.1] 43
- Port 4: S0, subscribers/lines: [4.06.4.1] 45
- ☒ Load default data to the port to be switched over

Buttons: OK, Cancel

The bundle chosen is Bundle two. An arbitrary name for this bundle has to be entered under the Basic settings tab:

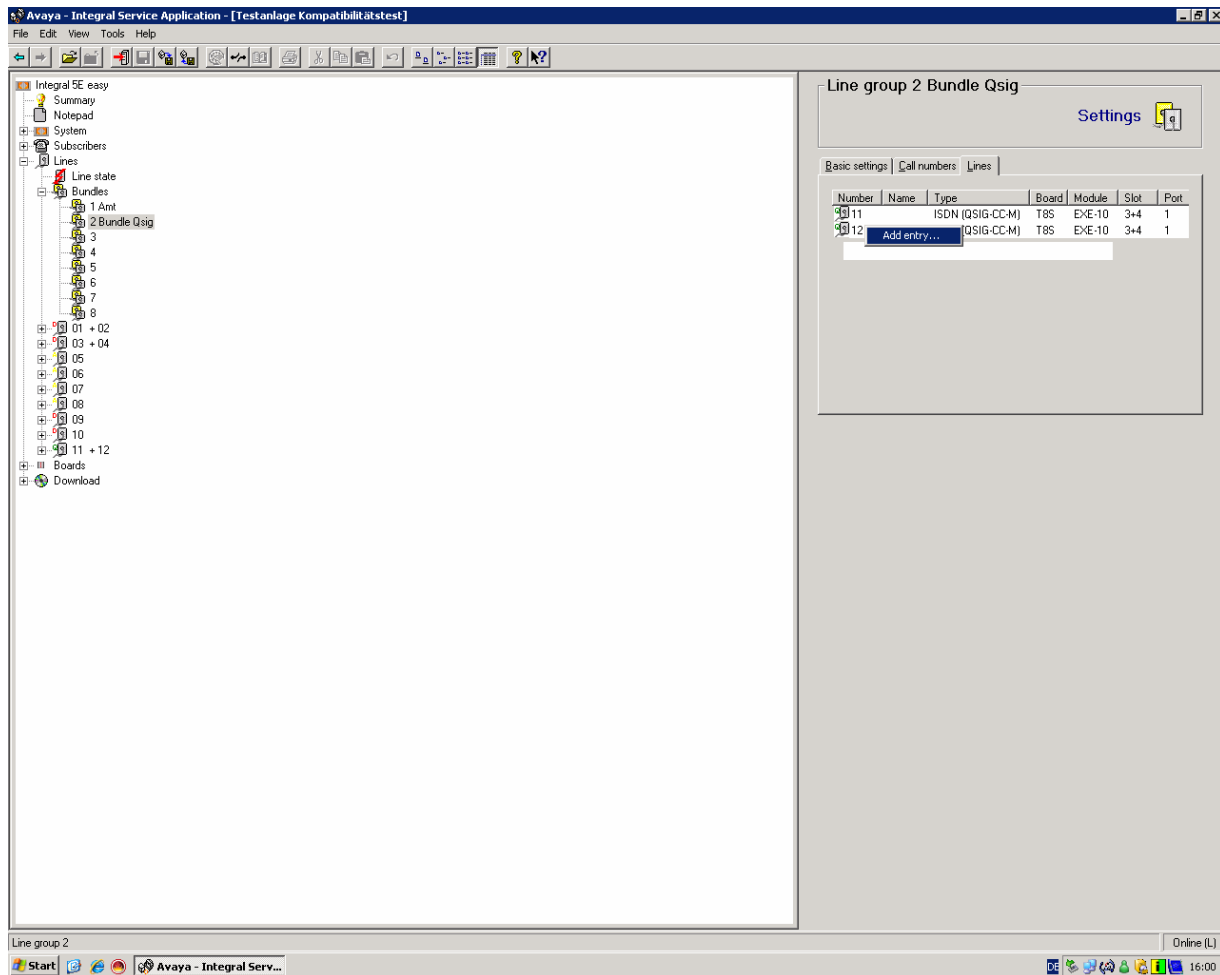


The proper values for international, national and PABX call number have to be entered under the call numbers tab:

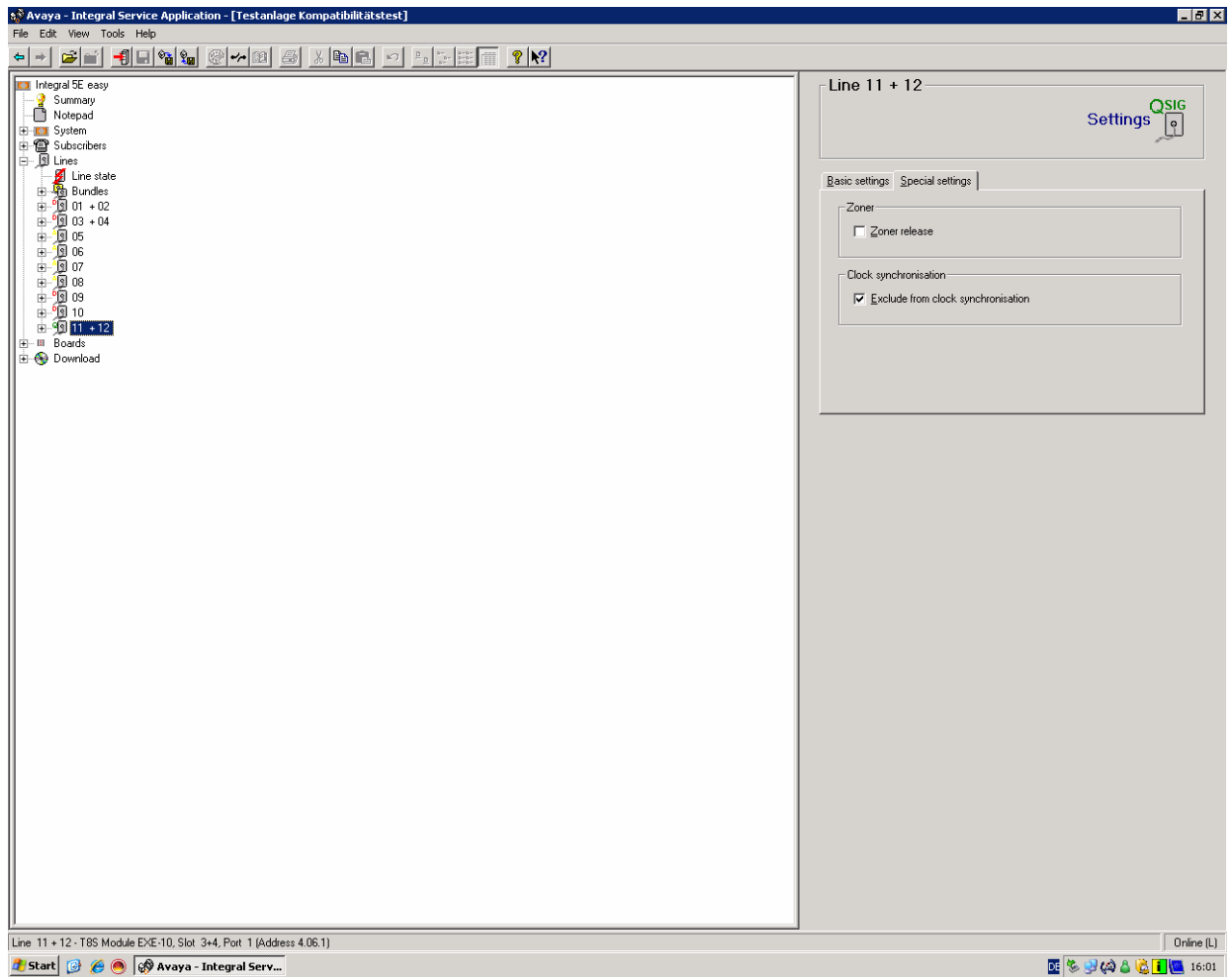


With port switching, two QSIG lines are created. Generally, each line must be assigned to a bundle. A mixture of different types of lines (e.g., QSIG, ISDN, etc.) within a bundle is not permitted. Therefore, these QSIG lines have to be assigned to their own bundle. The Avaya I5 easy offers 8 predefined bundles, one of which must be selected. The lines can then be seized according to their type by means of a standard function key. (e.g., \*012 specific for line 12 or \*102 for one of the lines within bundle 2).

The two QSIG lines are added to QSIG bundle two under the lines tab:



In the Special settings for the QSIG lines, “Exclude from clock synchronization” has to be set. QSIG lines are identified by means of a green QSIG symbol which appears above the line symbol.



The QSIG features for the lines are configured as shown in the screens below. Each screen shows the values used.

### Tab settings:

QSIG standard: *ISO/ETSI/EC MA(new)*

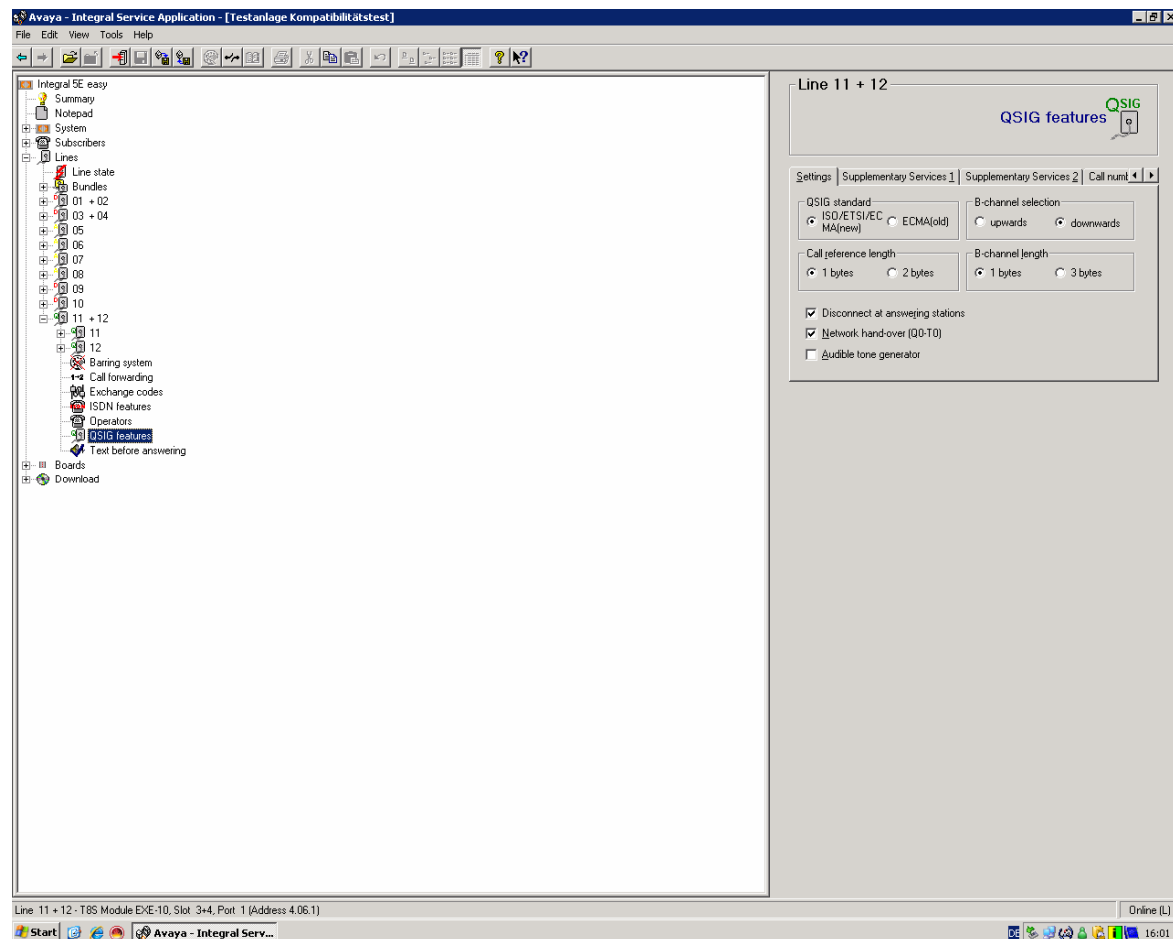
Call reference length: *1 byte* (The length of the call reference must be coordinated with the length of the external system's call reference)

Disconnect at answering station: (default enabled)

Network-hand-over (Q0-T0): (default enabled)

B-channel selection: downwards: (default *downwards*)

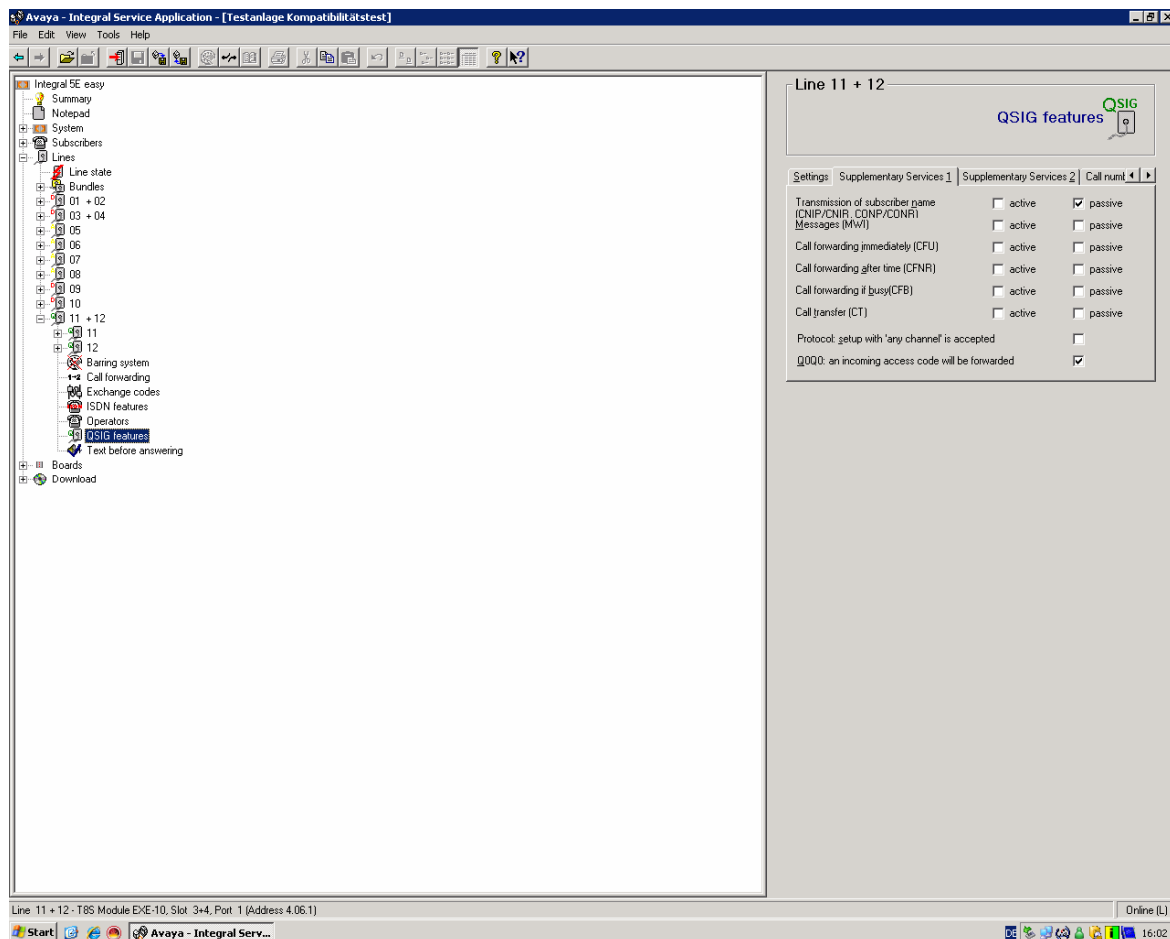
B-channel length: 1 byte (default *1 byte*)



## Tab Supplementary Services 1:

Transmission of subscriber name (CNIP/CNIR.CONP/CONR) Messages (MWI): *passive*  
=> the Avaya I5 easy displays supplied names.

QQQ0 an incoming access code will be forwarded: *enabled*  
=> the access code must be forwarded directly together with the call number and with the call number format unknown/unknown.

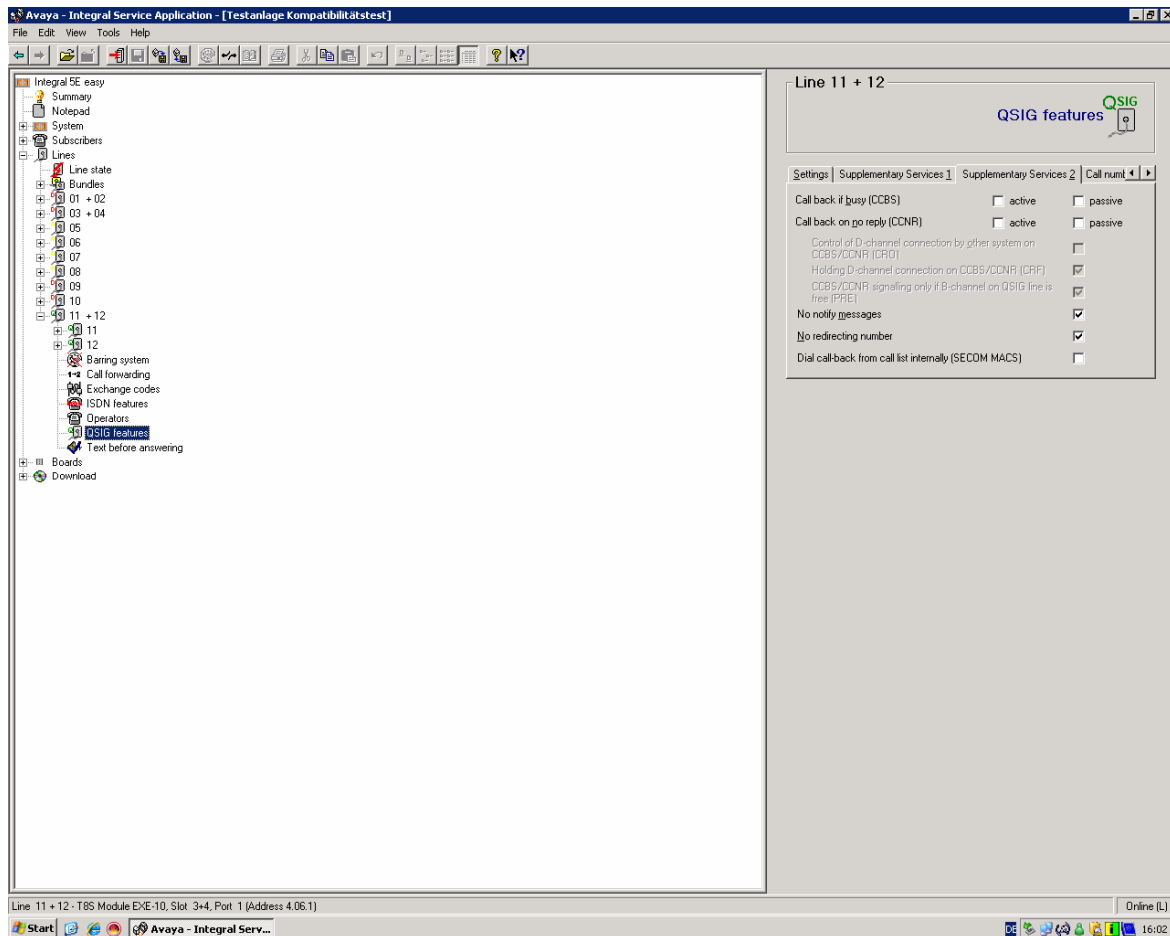


## Tab Supplementary Services 2:

No notify messages: *enabled (default)*

No redirecting number: *enabled*

=> in case of call forwarding no redirecting number will be sent, recommended by NovaLink.



## Call number format:

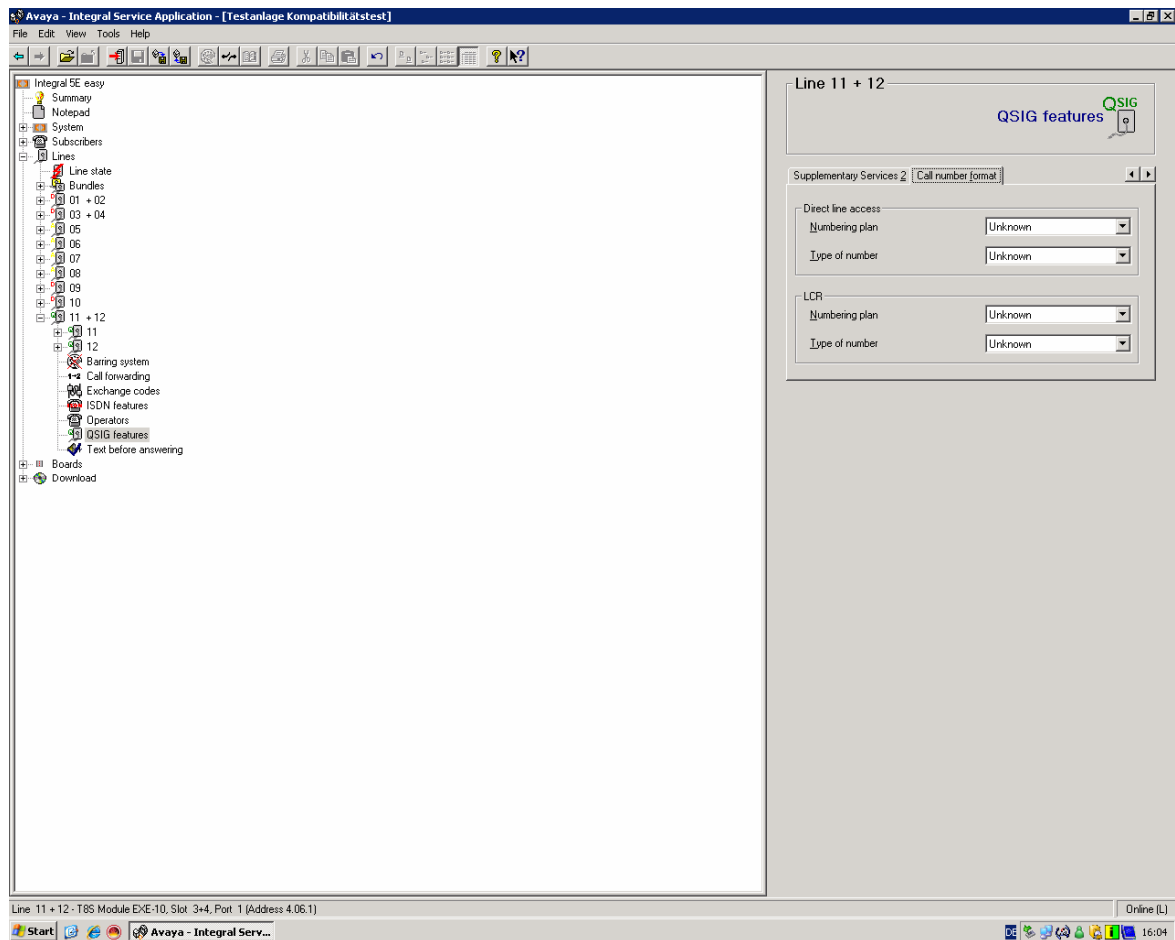
Direct line access

Numbering plan: default unknown

Type of number: default unknown

Numbering plan: default unknown

Type of number: default unknown



System call number > enter 99 as well (outgoing call number)



All configurations for NovaConf are saved in the NovaAlert.ini file. This file can also be altered by means of a text editor and restored.

16 of 27  
Novaconf 15

## 4.1. Configuration of the Gerdes PrimuX ISDN Card for BRI

The configuration of the Gerdes PrimuX ISDN Card is done together with the installation of the card:

D-Kanal-Protokoll: Europa/andere Länder, Euro-ISDN (ETSI-DSS1)

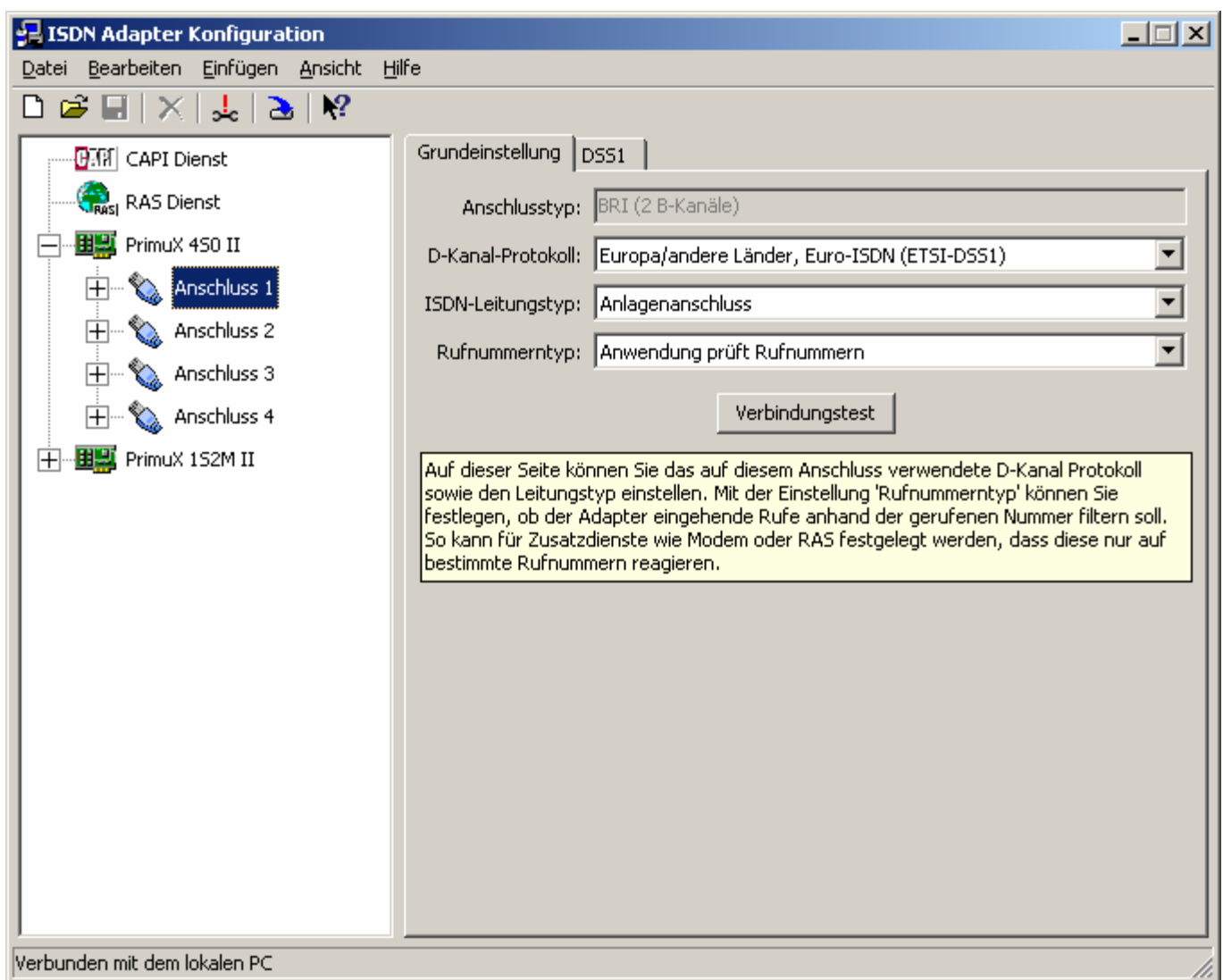
ISDN-Leitungstyp: Anlagenanschluss

Rufnummerntyp: Anwendung prüft Rufnummern

D-channel-protocol: Europe/other countries, Euro-ISDN (ETSI-DSS1)

Type of ISDN trunk: Trunk (point to point)

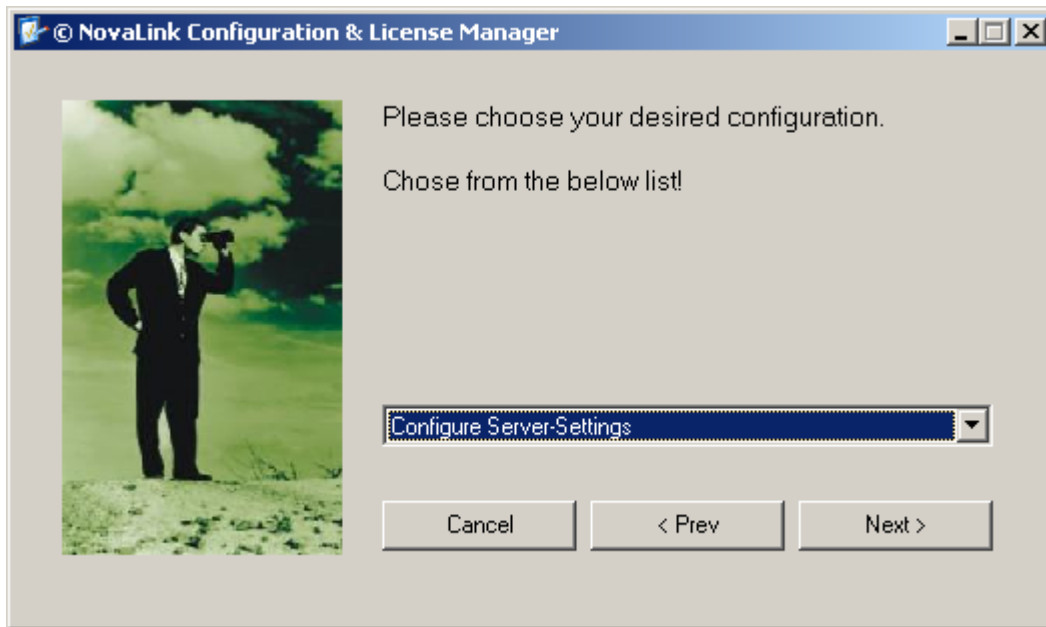
Type of number: Application checks call numbers



## 4.2. Configuration & License Manager for BRI QSIG configuration

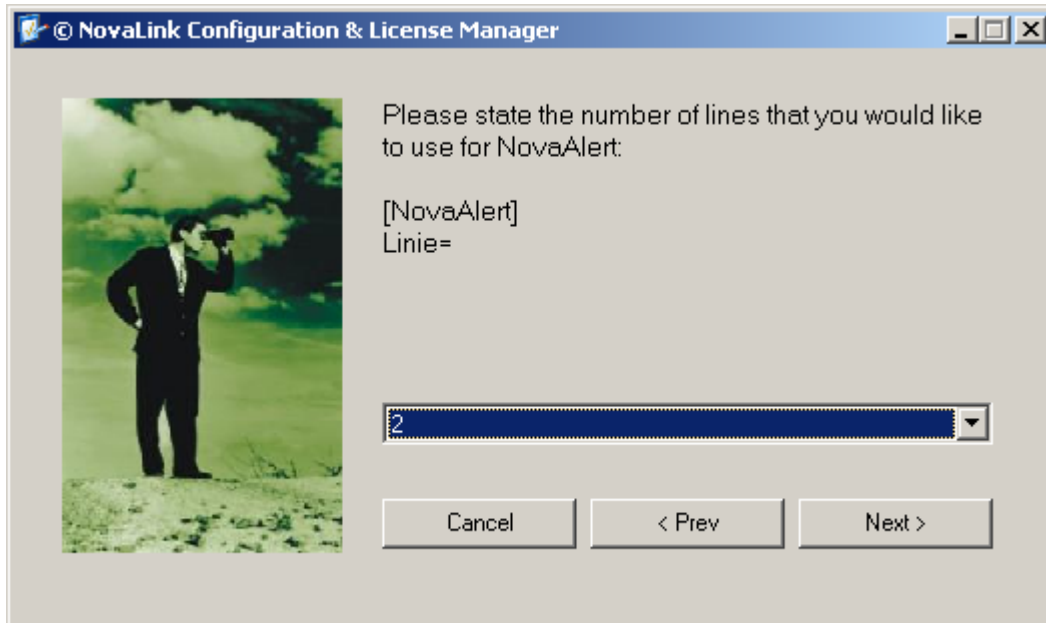
The following screens show the step by step configuration of the NovaConf server by means of the Configuration & License Manager.

Configure Server-Settings:



Linie=2

Two lines are used:



© NovaLink Configuration & License Manager

Please state the number of lines that you would like to use for NovaAlert:

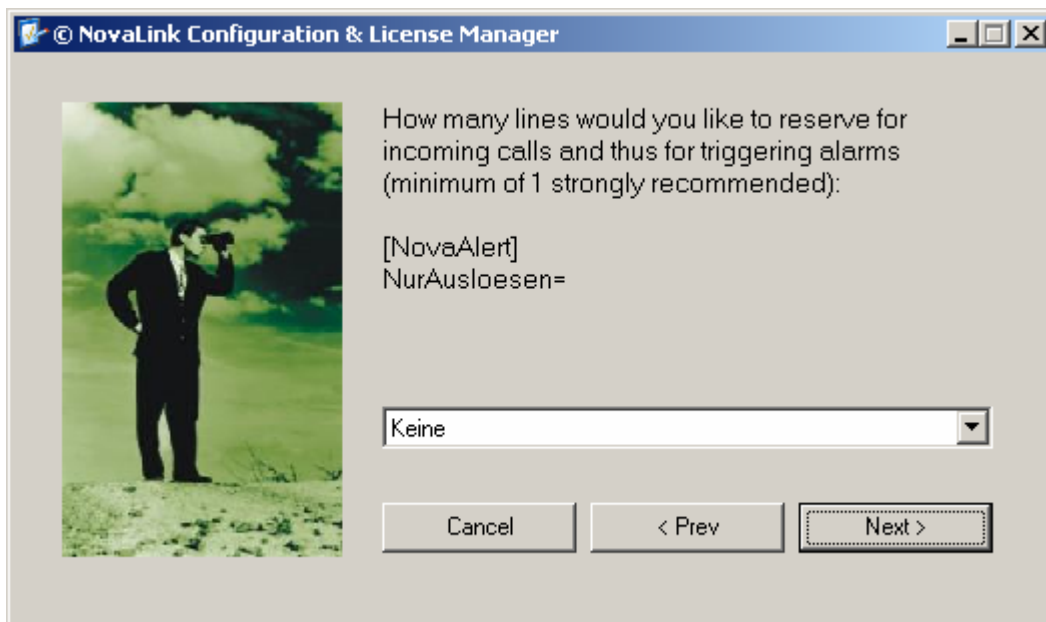
[NovaAlert]  
Linie=

2

Cancel < Prev Next >

Nur Ausloesen: Keine

Release only= None:



© NovaLink Configuration & License Manager

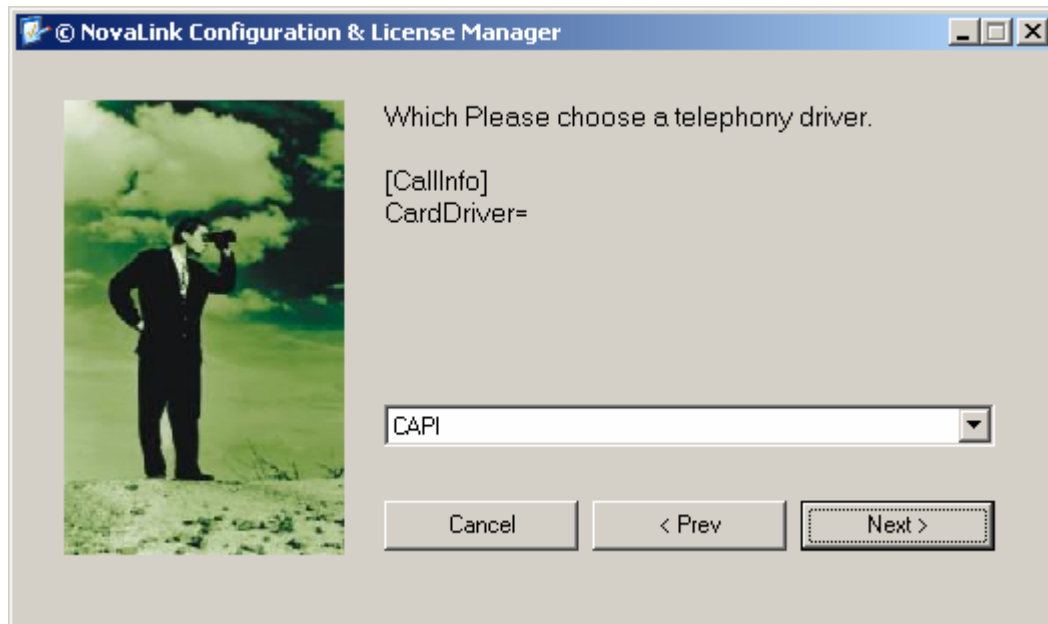
How many lines would you like to reserve for incoming calls and thus for triggering alarms (minimum of 1 strongly recommended):

[NovaAlert]  
NurAusloesen=

Keine

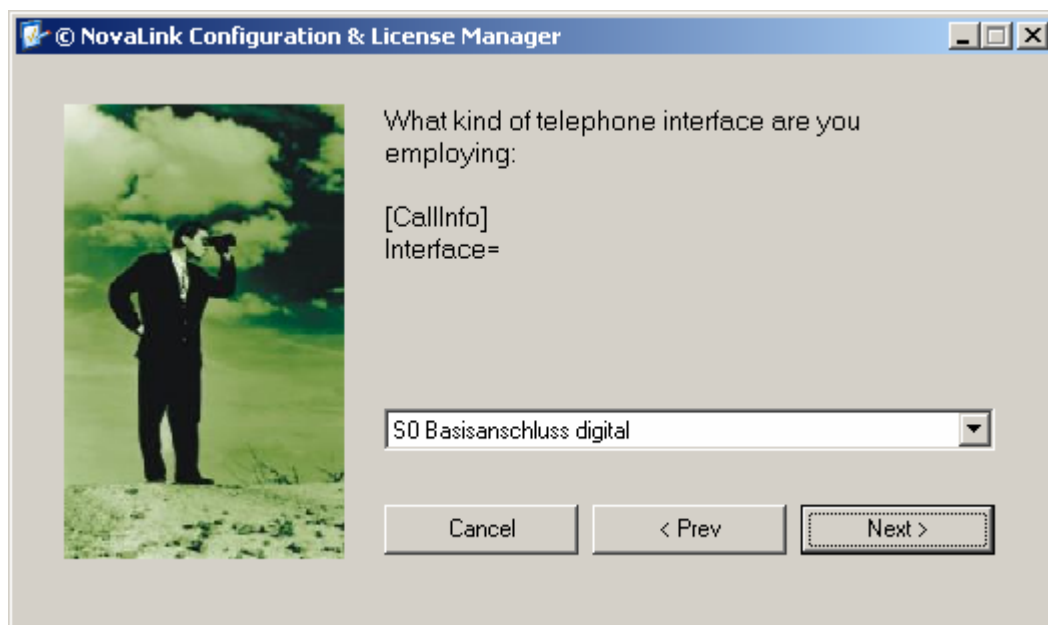
Cancel < Prev Next >

CardDriver= CAPI:



Interface= S0 Basisanschluss digital

Interface= BRI digital



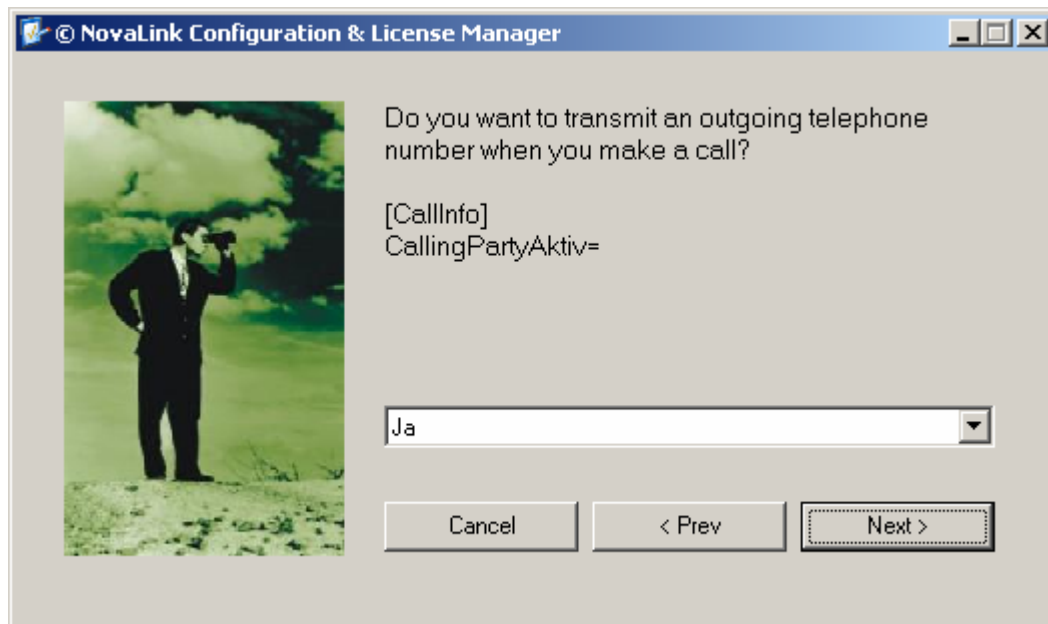
QSIGStandard= QSIG nach ISO

QSIGStandard= QSIG according to ISO (International Standardization Organization)

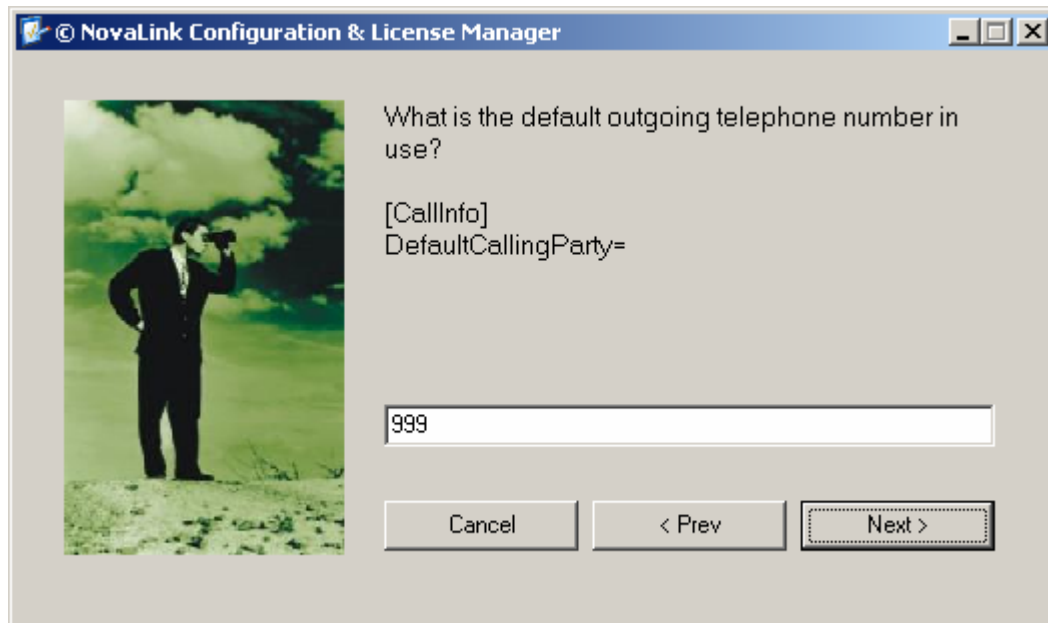


CallingPartyAktiv= Ja

CallingPartyActive= yes



DefaultCallingParty= 999:



© NovaLink Configuration & License Manager

What is the default outgoing telephone number in use?

[CallInfo]  
DefaultCallingParty=

999

Cancel < Prev Next >

CNIPAktiv= Ja

Calling name identification presentation active= yes



© NovaLink Configuration & License Manager

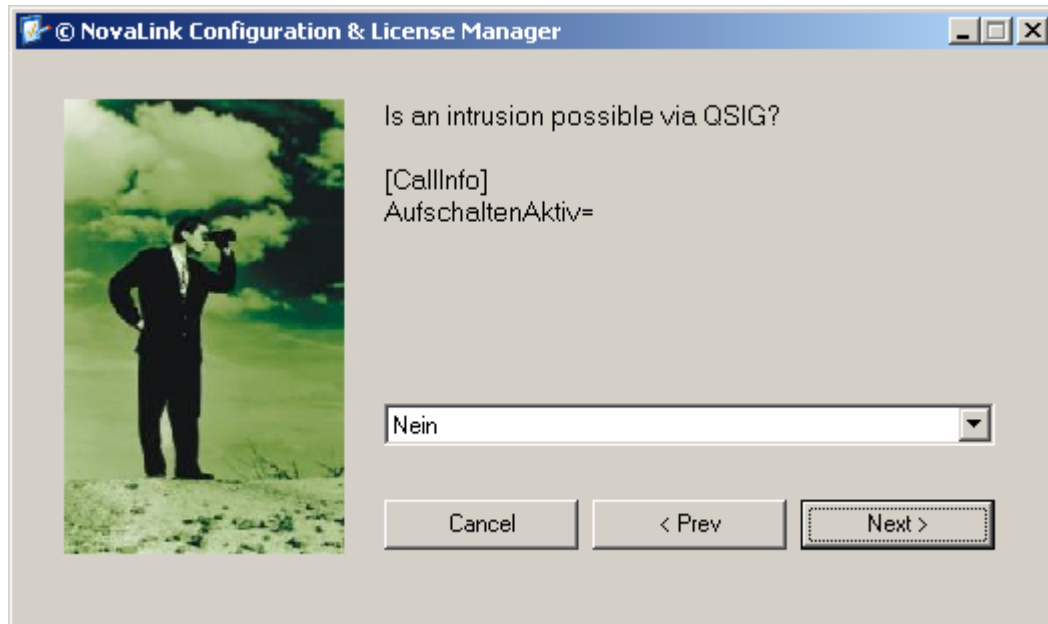
Can the CNIP service (caller's name display) be used via QSIG?

[CallInfo]  
CNIPAktiv=

Ja

Cancel < Prev Next >

AufschaltenAktiv= Nein  
Intrusion active= no



The screenshot shows a window titled "© NovaLink Configuration & License Manager". On the left is a small image of a man in a suit looking through binoculars. The main text area contains the question "Is an intrusion possible via QSIG?" followed by "[CallInfo]" and "AufschaltenAktiv=". Below this is a dropdown menu with "Nein" selected. At the bottom are three buttons: "Cancel", "< Prev", and "Next >".

FesterTeilRufnummer= +49 9073 9886 99:  
External Call number= +49 9073 9886 99:



The screenshot shows a window titled "© NovaLink Configuration & License Manager". On the left is a small image of a man in a suit looking through binoculars. The main text area contains the instruction "Please enter the fixed part of the external number from NovaConf." followed by "[NovaConf]" and "FesterTeilRufnummer=". Below this is a text input field containing "+49 9073 9886 99". At the bottom are three buttons: "Cancel", "< Prev", and "Next >".

### 4.3. Settings for NovaConf in the NovaAlert.ini (BRI)

All settings which have been made in the configuration & license Manager for NovaConf are included in the NovaAlert.ini file. The file with the configurations as described above is listed below:

[NovaAlert]	
NurAusloesen=0	'Line that is only used to set off an alert over the telephone
(supported no calls)	
Linie1=1	'Allocation of the lines logical=physical
Linie2=2	
[NovaConf]	
Rufnummer=999	'direct dial number for NovaConf
FesterTeilRufnummer=+49 9073 9886 99	'System call number (without direct dial number)
[CallInfo]	
CardDriver=2	'0=Auto-Detect, 1=Dialogic, 2=CAPI, 3=VoIP
Interface=3	'Line-Interface-type 1=analogue, 2=2 MBit primary digital, 3=BRI
basicinterface digital	
MinDigits=0	'Only for digital interfaces: standard=0 – specifies the number of
digits to be received..	
AufschaltenAktiv=0	'If 1 is programmed, digital intrusion is active (QSIG)
CallingPartyAktiv=1	'Only for digital interfaces: If 1 is programmed, sending an
outgoing call number is enabled (QSIG)	
DefaultCallingParty=999	'Only for digital interfaces: Call number is used, if no number is
registered (CallingPartyactive is 1)	
CNIPAktiv=1	'Only for digital interfaces: If 1 is programmed, sending an
displaytext for incoming calls is allowed (QSIG, Feature CNIP)	
QSIGStandard =2	'0=disable QSIG, 1=QSIG ETS/ECMA, 2=QSIG ISO, 3=User to
user signalling	

## **5. Interoperability Compliance Testing**

### **5.1. General Test Approach**

Testing included validation of correct operation of the functions as agreed with NovaLink such as:

Normal cases:

- Incoming / outgoing calls internal / external
- Receipt of DTMF tones during incoming / outgoing calls
- Voice Connection import of an announcement / playback of a announcement
- Incoming calls with overlap receiving

Supplementary services:

- Call transfer
- Call forwarding unconditional / on busy / on no reply / external
- Call with no answer - must be listed in the call log of the endpoint

Recovery treatment

- Reconnect after disconnect of the BRI cable between NovaConf and Integral 5
- Power down the NovaConf services, start it again wait for reconnect
- Power down the Integral 5, start it again and wait for reconnect

### **5.2. Test Results**

All test cases were executed and passed.

## 6. Verification Steps

To verify that the solution is properly configured, the following steps can be taken:

After establishing the physical connection between the NovaConf Server and Avaya I5 for the BRI the associated line must be accessible. This can be checked by dialing \*102 (refer to **Section 3.1, Screen 6**) at an Avaya I5 phone. Also, the initialization of the BRI (layer 1) can be observed on an ISDN monitor at the NovaConf server.

A test call to the NovaConf voice menu can be made by dialing the appropriate number (e.g., 999) after accessing the BRI.

## 7. Support

For technical support for the NovaLink NovaConf solution, please contact the technical support hotline of NovaLink:

- **Phone:** +41 52 762 6677
- **Email:** [helpdesk@novalink.ch](mailto:helpdesk@novalink.ch)

## 8. Conclusion

These Application Notes describe the configuration steps required for NovaLink NovaConf to successfully interoperate with an Avaya Integral 5 easy with software version AR 2.351 DE. Normal test cases, (e.g., basic call incoming /outgoing or receiving DTMF tones and overlap receiving) were validated. The available supplementary services and the error and recovery treatment of the solution were checked. The configuration described in these Application Notes has been compliance tested successfully.

## 9. Additional References

**Additional product information from Avaya:**

Integral 5: <http://www.avaya.co.uk/gcm/emea/en-us/products/offers/i5.htm>

**Additional product information from NovaLink:**

<http://www.novalink.ch/index.php?id=48>

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