Avaya Solution & Interoperability Test Lab

Application Notes for Configuring NovaLink NovaAlert SIP with Avaya IP Office – Issue 1.0

Abstract

These Application Notes describe the configuration for connecting the NovaLink NovaAlert alarm system to Avaya IP Office via a SIP link.

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

1. Introduction

The purpose of this document is to describe the configuration for connecting NovaLink NovaAlert with Avaya IP Office, including a description of the tests which were performed, and a summary of the test results.

The NovaLink NovaAlert is a PC-resident application which is used in a health care, hotel or industrial environment for alerting, messaging or information services. NovaLink NovaAlert can react to external alarm stimuli which indicate the existence of an emergency situation by informing affected persons of the situation.

Alarms can be triggered from various possible input sources including manual input via Web browser, serial interfaces, potential free contacts, SNMP, etc. “Direct” alarms can also be defined which allow alarms to be input and triggered via telephone calls. The alarm triggering described within these Application Notes is restricted to those methods which involve interaction with Avaya IP Office.

Once an alarm has been triggered, the configured medium (selected when the alarm was configured) is used to deliver the alarm. Possible delivery interfaces include phone calls (including conferences), E-Mail, Pager, SMS, Fax etc. Multiple recipients can be configured for an alarm, thus possibly creating multiple simultaneous telephone calls. These application notes only deal with those delivery methods which involve interaction with Avaya IP Office.

Alarms which are triggered via Avaya IP Office can include pre-recorded or ad hock voice messages, or can generate voice message via a text-to-speech mechanism. The calling party name can also be configured to contain a brief alarm message, so that alarm message will appear in the caller list of intended recipients who are unable to answer an alarm call.

NovaLink NovaAlert supports a wide range of interfaces for input and output, where telephony is the one most commonly used for alarming

NovaLink NovaAlert supports multiple interfaces to Avaya IP Office, including the SIP trunk described in these Application Notes

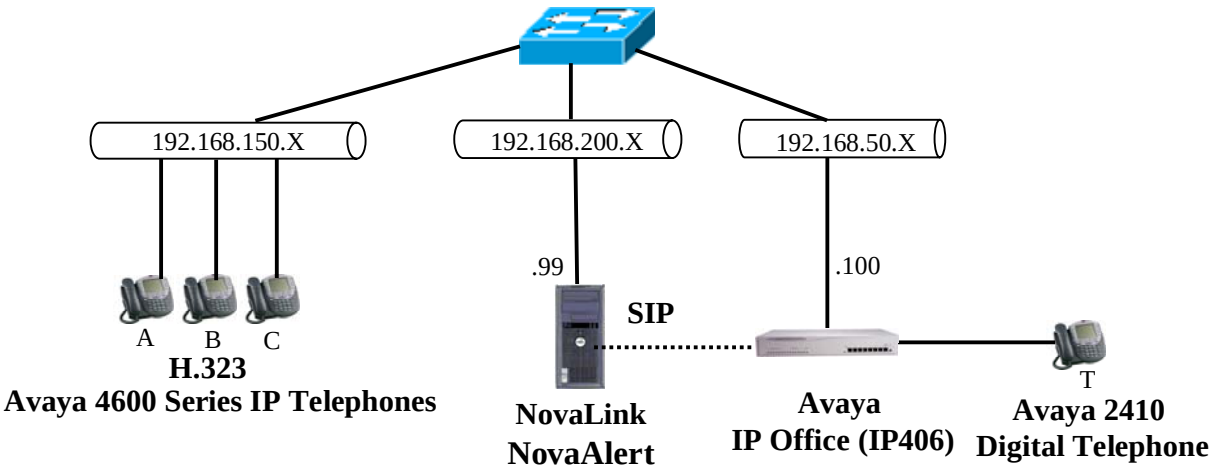

Figure 1: NovaLink NovaAlert Test Configuration

The function of each of the components in **Figure 1** is as follows:

- The NovaLink NovaAlert server is logically connected to the Avaya IP Office (IP406) via SIP trunk.
- Avaya Telephones are connected to Avaya IP Office (IP406) either directly via digital interface or via the IP network.
- The NovaLink NovaAlert server signals alarm events via calls to the Avaya Telephones using the communication capabilities of Avaya IP Office.

The following extensions are used for testing:

Extension	Designation
5000136	A
5000134	B
5000133	C
5000001	T
3000000	NovaLink NovaAlert via SIP

Table 1: Extensions Used for Testing

2. Equipment and Software Validated

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

Equipment	Software Version
Avaya IP Office (IP406)	4.0 (5)
Avaya 4600 series H.323 Telephones	2.8
Avaya 2410 Digital Telephones	5.0
NovaLink NovaAlert	7.5 SP 1A
Microsoft Windows Server 2003 SE	SP2

Table 2: Version Numbers of Equipment and Software

3. Configuration

3.1. Configure Avaya IP Office

The configuration and verification operations illustrated in this section were all performed using the Avaya IP Office Manager application. The information provided in this section describes the configuration of Avaya IP Office for this solution. For other information concerning installation, configuration, and provisioning please refer to the product documentation in reference [1].

The configuration operations describe in this section can be summarized as follows:

- Configure the dial plan and call routing required for the NovaLink NovaAlert configuration.
- Configure the SIP interface which is used to connect to the NovaLink NovaAlert server.
- Configure the telephone stations which are to be used for testing.

Note that the configuration diagrams in this section show those parameters which do not contain default values framed by red highlight marking.

The many of the descriptions contained within this section make reference to the “left frame” of the Avaya IP Office Manager application. This portion contains a list of the components which can be configured and are shown below:

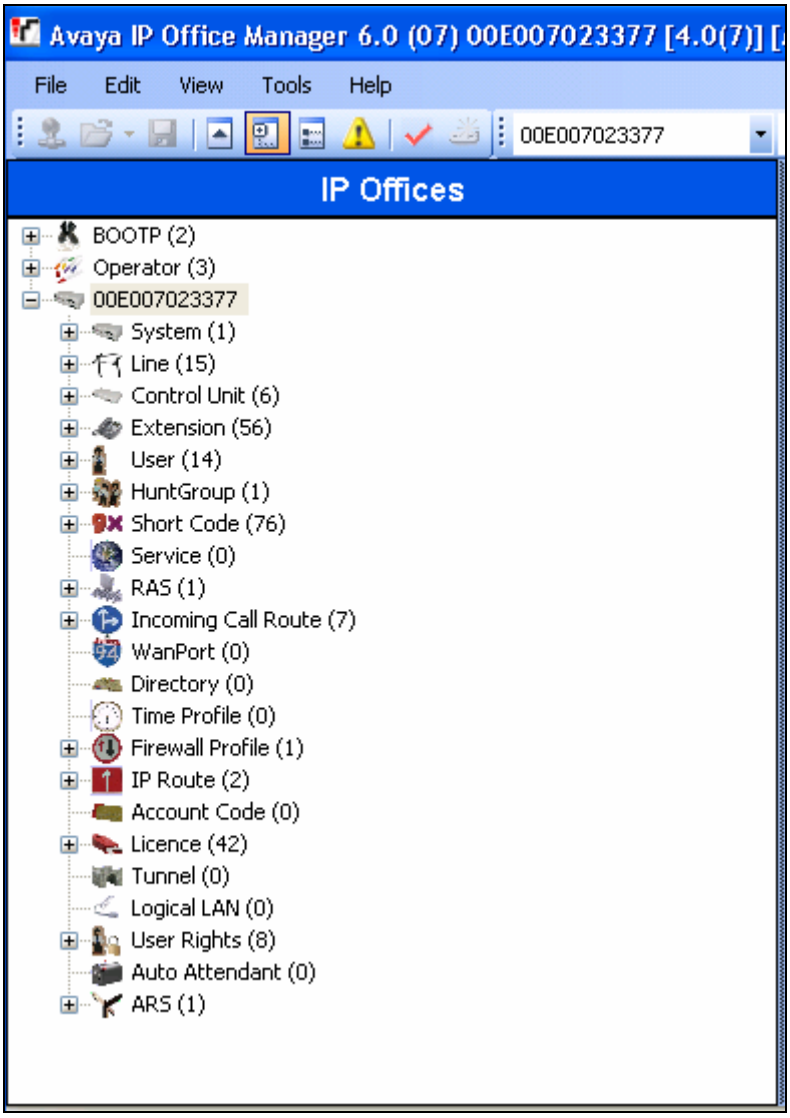

Figure 2: Avaya IP Office Manager Main Menu

3.1.1. Configure System Settings

Expand the “System” icon and select the Avaya IP Office system to configure and set the parameters as shown in **Table 3**.

Tab	Parameter	Usage
LAN1 / LAN Settings	IP Address	Enter the IP address which is to be assigned to Avaya IP Office.
	IP Mask	Enter the IP mask which is to be assigned to Avaya IP Office.
Telephony	Companding Law: Switch	Select the appropriate value for the region in which the system is located: ALAW for Europe.
	Companding Law: Line	Select the appropriate value for the region in which the system is located: ALAW for Europe.

Table 3: “System” Parameters

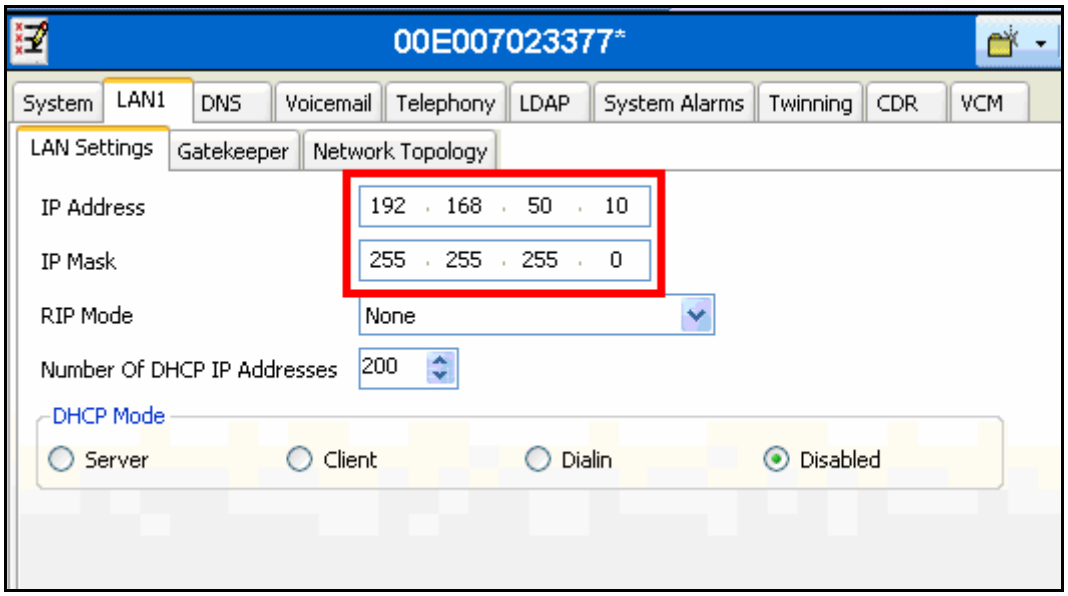

Figure 3: Avaya IP Office System Parameters: LAN1 / LAN Settings

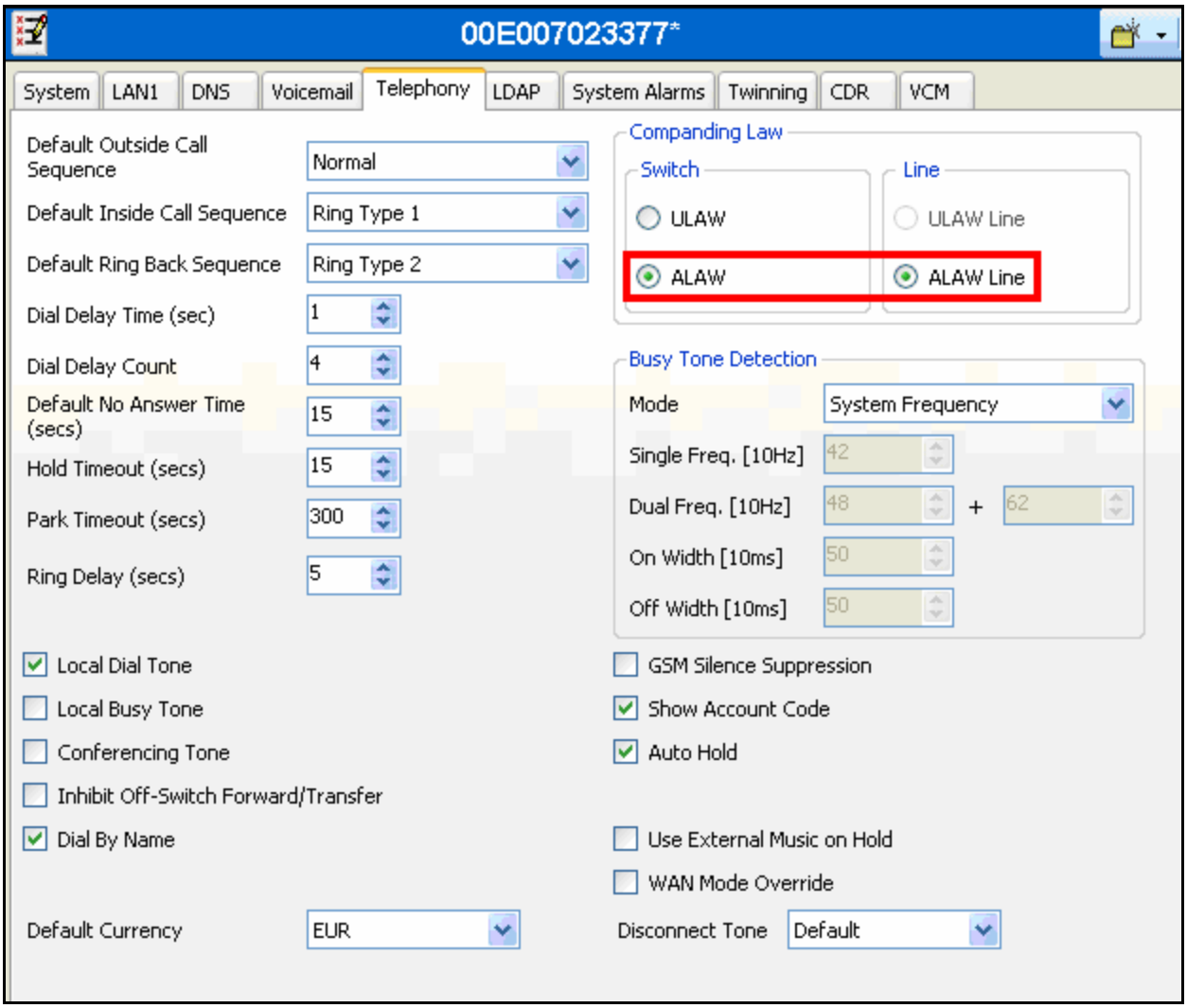

Figure 4: Avaya IP Office System Parameters: Telephony

3.1.2. Configure SIP Line to NovaLink NovaAlert

3.1.2.1 Configure SIP Line

Configure the SIP line which connects to Avaya IP Office to the NovaLink NovaAlert server, using the parameters shown in the following table.

Tab	Value	Usage
ITSP Domain Name	ITSP Domain Name	Enter the domain name configured for NovaLink NovaAlert.
	ITSP IP Address	Enter the IP address of the NovaLink NovaAlert server.
SIP URI	Incoming Group	Enter "1", the group number of the SIP line.
	Outgoing Group	Enter "1", the group number of the SIP line.

Table 4: SIP Line Parameters

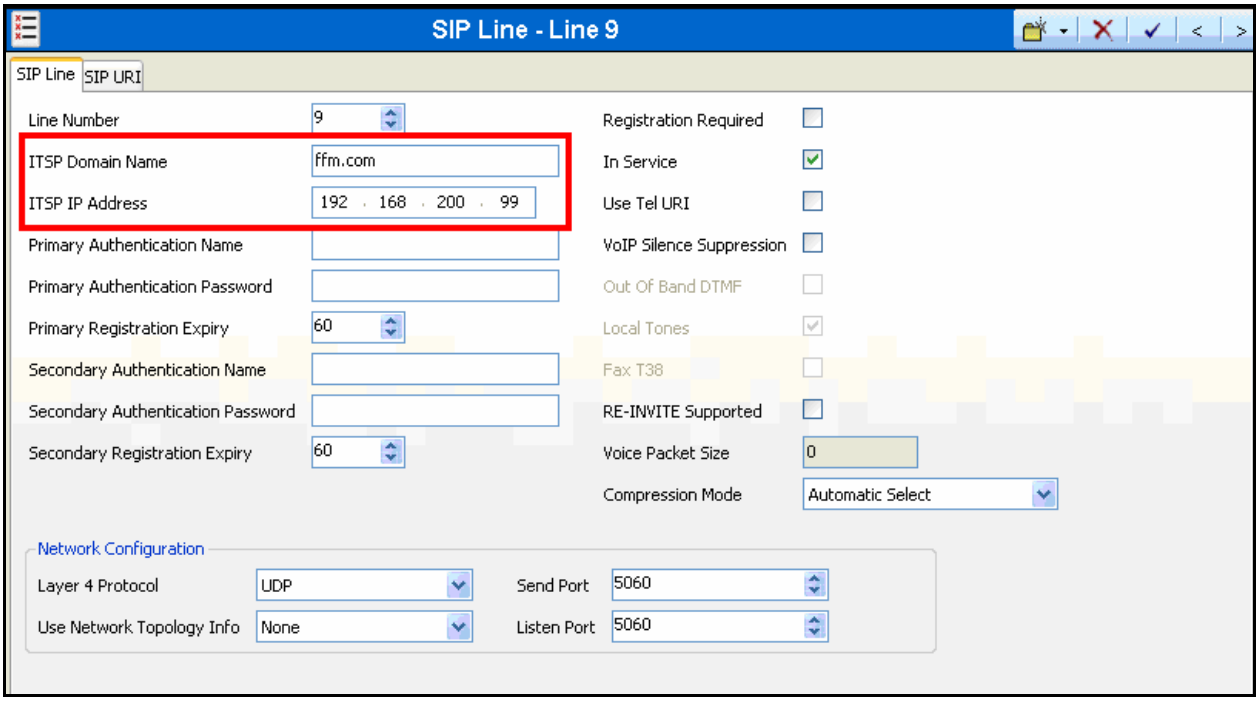

Figure 5: SIP Line Form

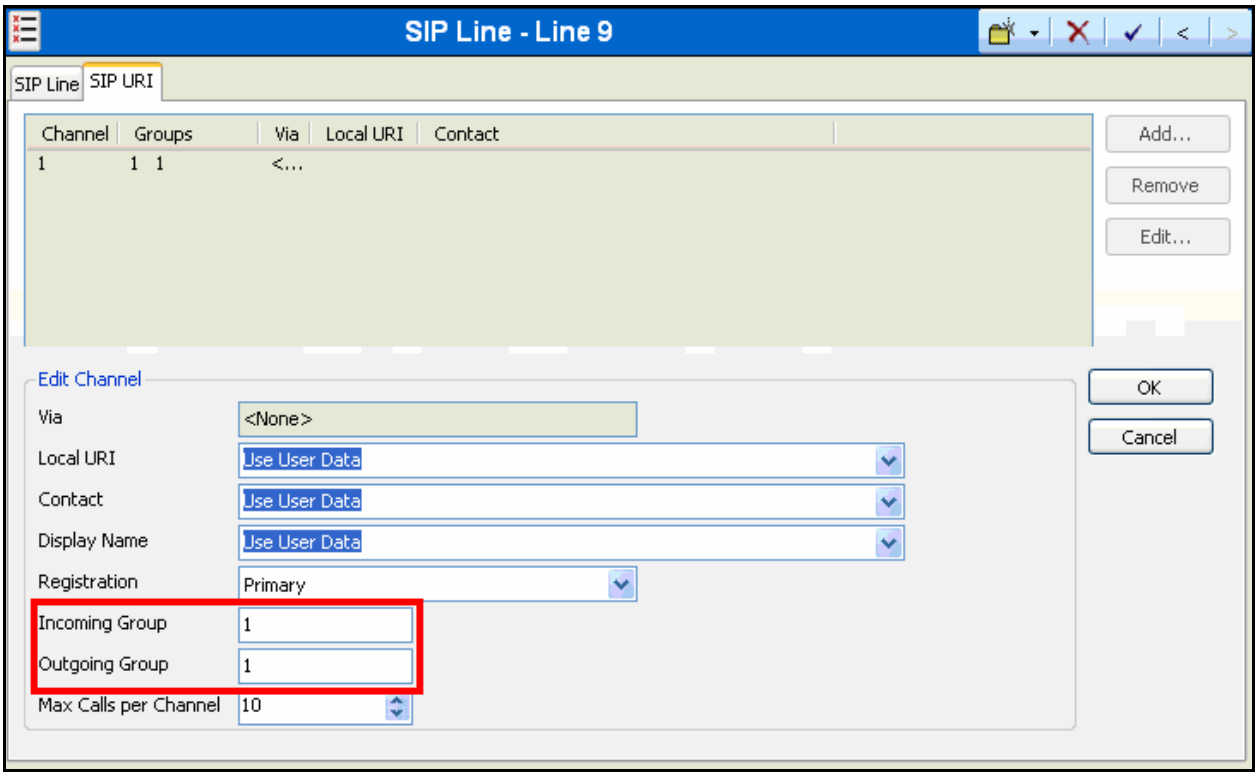

Figure 6: SIP URI Form

3.1.2.2 Configure Incoming Call Routes

Configure the Incoming Calls route for the SIP line which is connected to NovaLink NovaAlert.

Value	Usage
Line Group Id	Specify “1”, the group ID assigned to the SIP line.
Destination	Enter “.” to preserve the number.

Table 5: Extension Parameters

The screen below shows Incoming Call Route assignments for the SIP connection to Avaya IP Office.

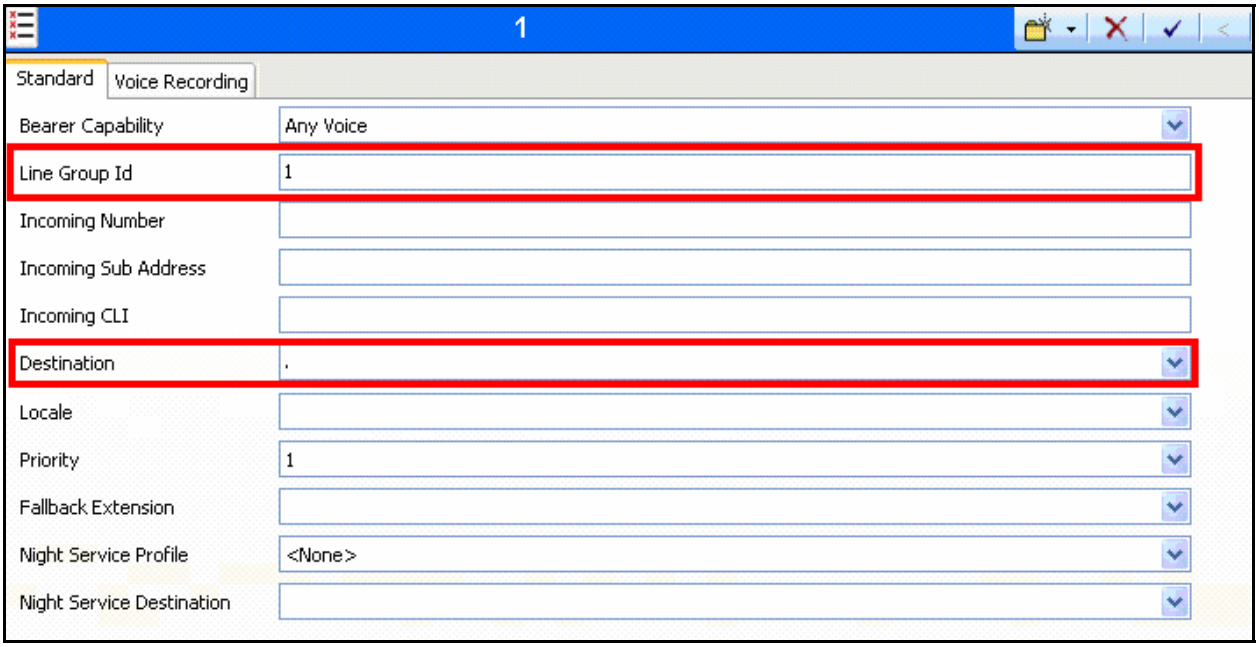

Figure 7: Short Codes: User Tab

3.1.3. Configure Avaya H.323 Telephone Extensions

Configure stations A-C by performing an “add” operation via the “Extensions” icon.

Tab	Parameter	Usage
Extn	Base Extension	Enter one of the extensions to be assigned to stations A-C.
VoIP	Compression Mode	Select G.711 ALAW 64K.
	Out Of Band DTMF	Check this box.
	Allow Direct Media Path	Check this box.

Table 6: Extension Parameters

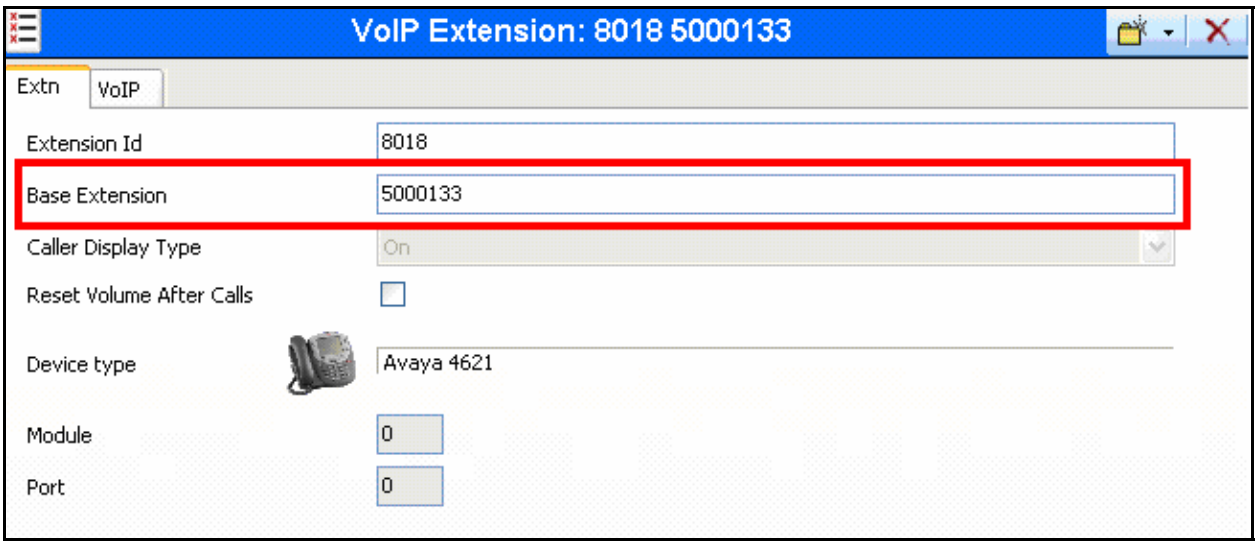

Figure 8: Extensions: Extn Tab

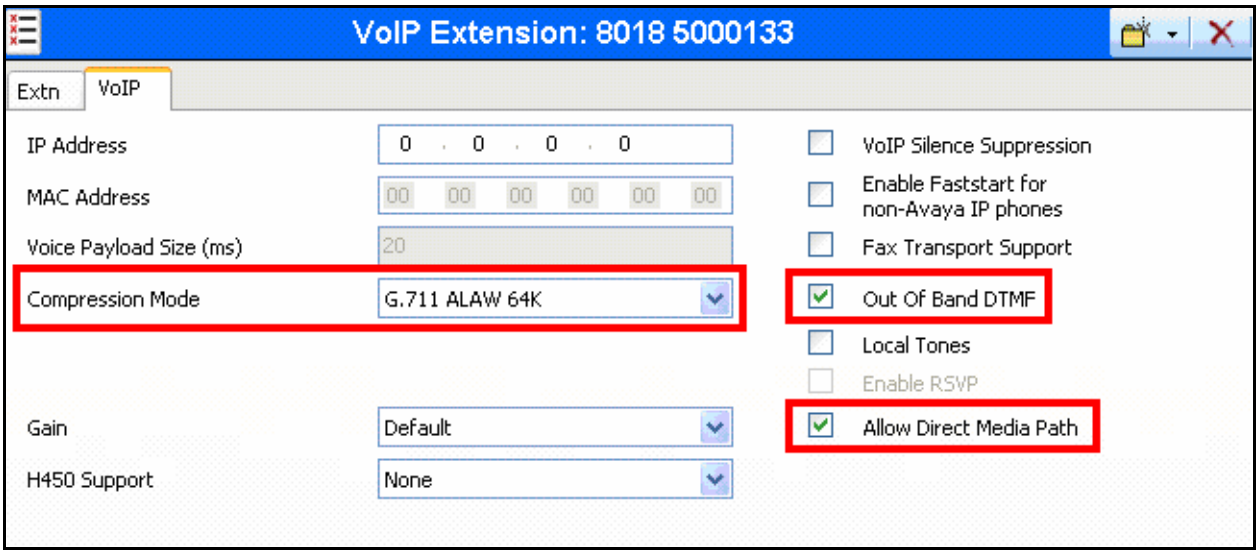

Figure 9: Extensions: VoIP Tab

3.1.4. Configure Avaya Digital Telephone Extensions

Configure station T by performing an "add" operation via the "Extensions" icon.

Tab	Parameter	Usage
Extn	Base Extension	Enter one of the extension to be assigned to station T.

Table 7: Extension Parameters

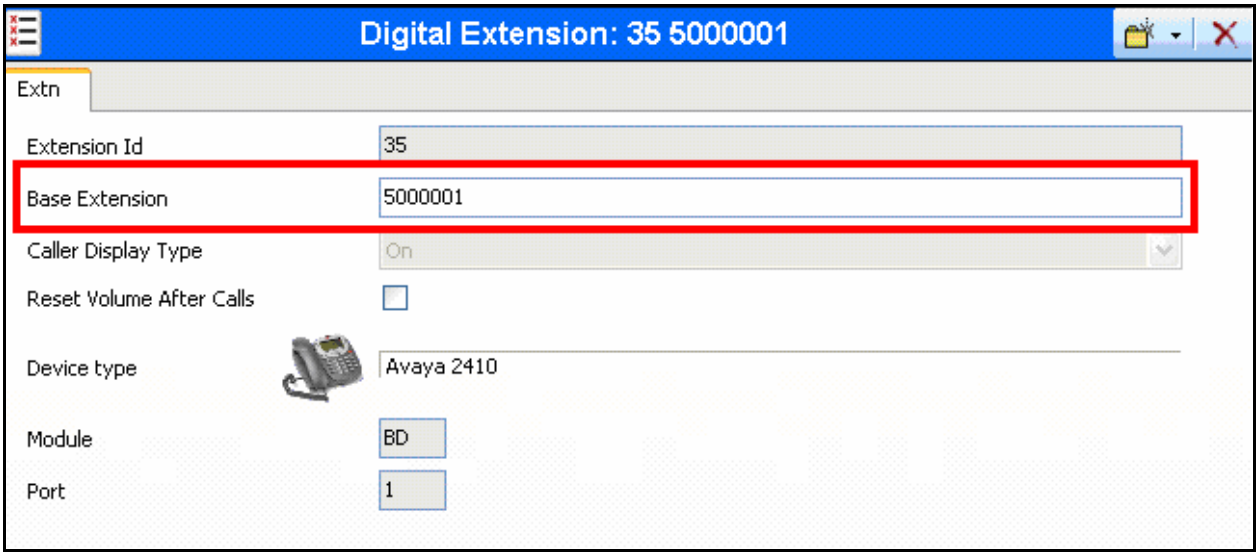

Figure 10: Extensions: Extn Tab

3.1.5. Configure Users

Configure users by performing an “add” operation via the “Users” icon for stations A-C and T.

Tab	Parameter	Usage
User	Name	Enter a name which identifies the user.
	Extension	Enter one of the extension A-C,T.
Telephony	Can Intrude	Check this box.
	Cannot be Intruded	Uncheck this box.
SIP	All parameters	Accept defaults.

Table 8: User Parameters

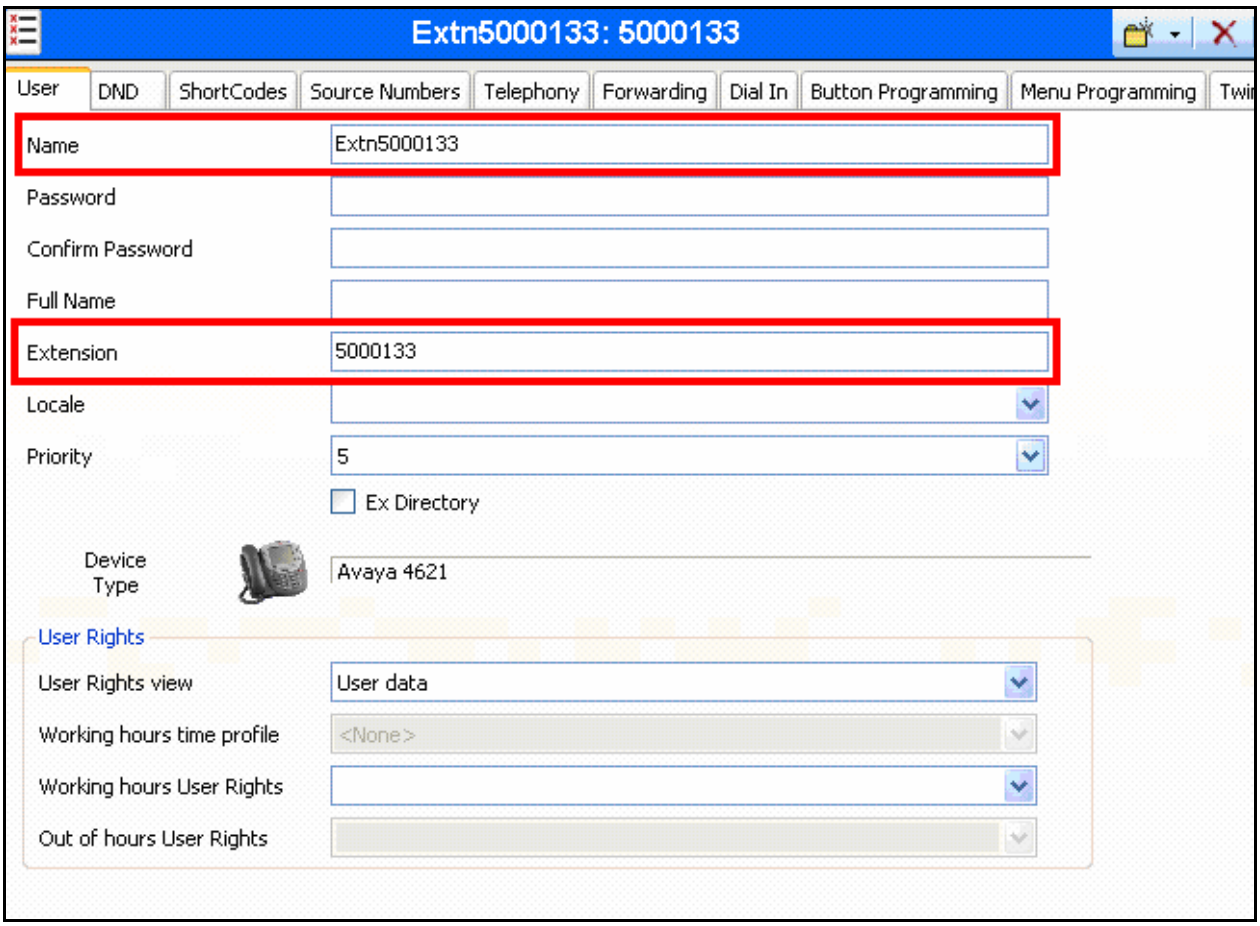

Figure 11: Users: User Tab

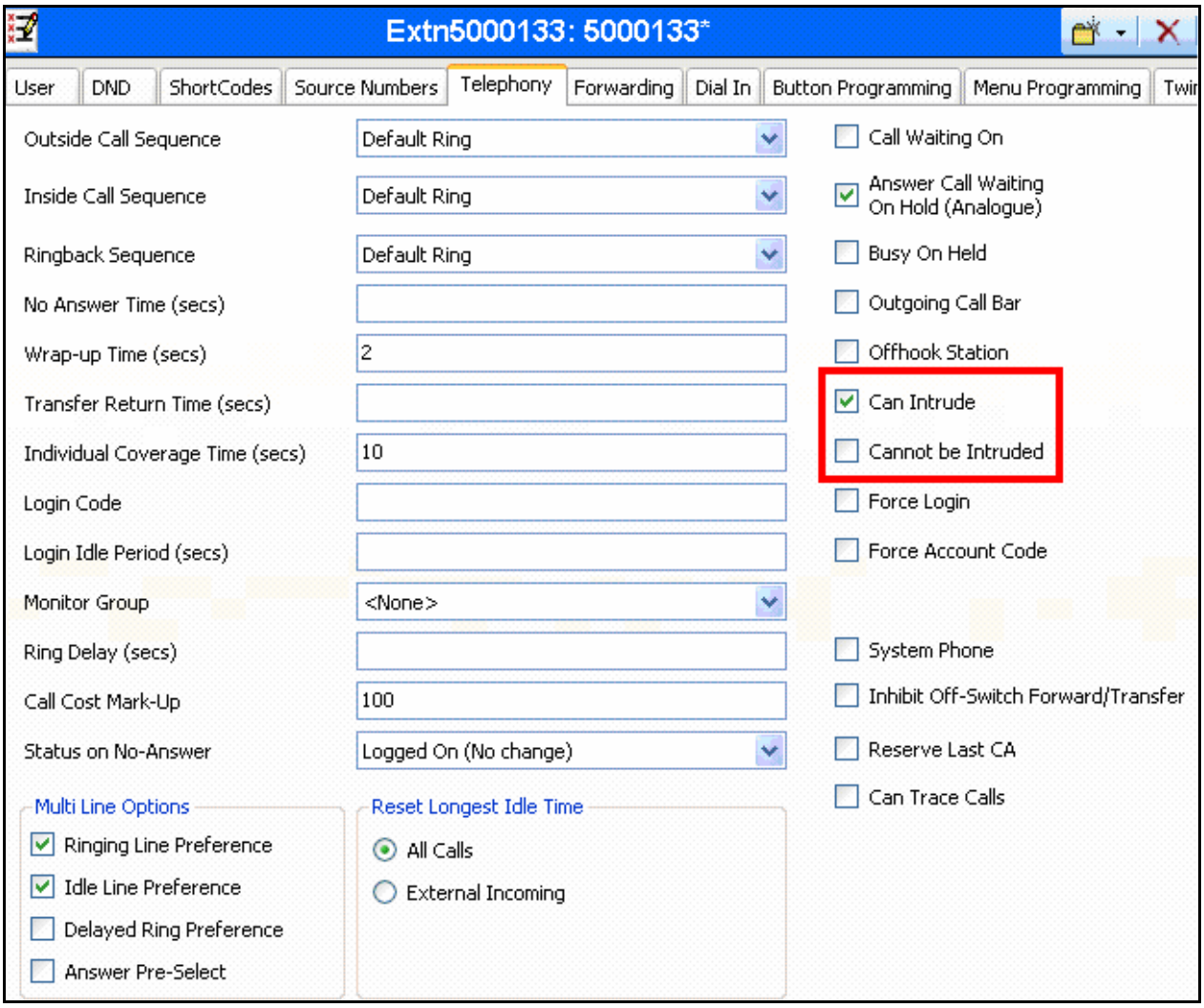

Figure 12: Users: Telephony Tab

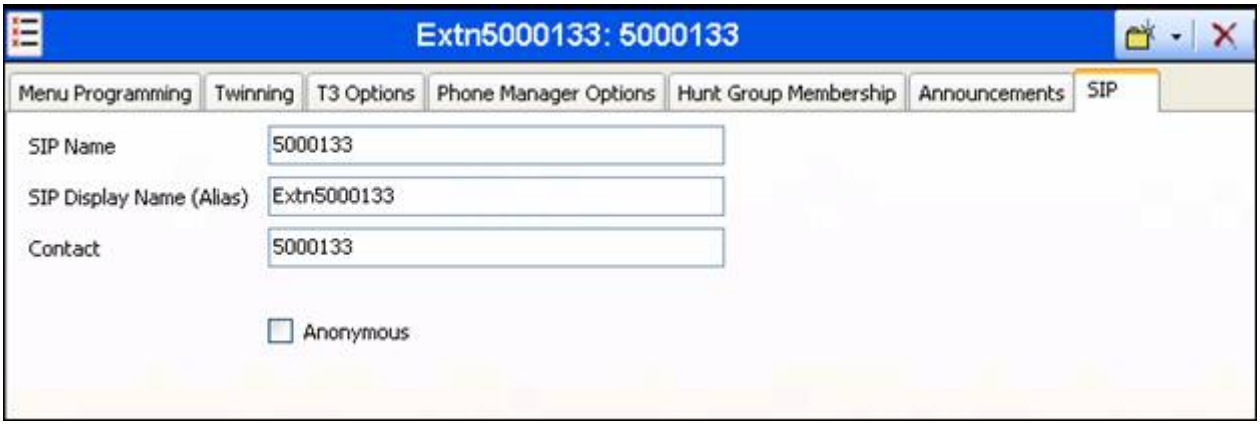

Figure 13: Users: SIP Tab

3.1.6. Configure Short Codes

3.1.6.1 Configure SIP Line Short Codes

Create a short code to access the SIP line to NovaLink NovaAlert.

Tab	Parameter	Usage
Short Code	Code	Enter “3XXXXXX”.
	Feature	Enter “Dial”.
	Telephone Number	Enter 3N”@ffm.com”.
	Line Group Id	Enter the group number assigned to the SIP line.

Table 9: User Parameters

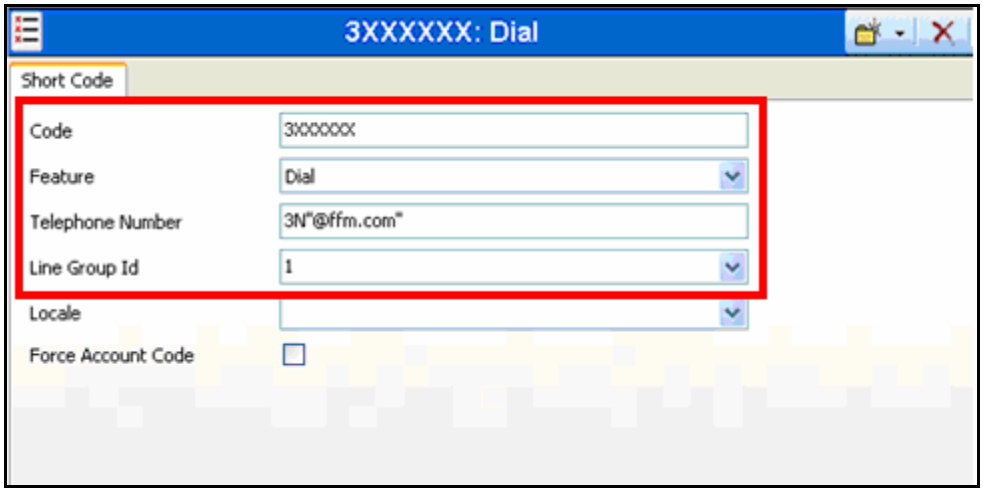

Figure 14: Short Codes: User Tab

3.1.6.2 Configure SIP Line Short Codes

Create a short code to be used to access NovaLink NovaAlert when the “call back” function is used from an Avaya Telephone which returns an unanswered call from its call log.

Tab	Parameter	Usage
Short Code	Code	Enter 3XXXXXX@ffm.com.
	Feature	Enter “Dial”.
	Telephone Number	Enter “.”.
	Line Group Id	Enter the group number assigned to the SIP line.

Table 10: User Parameters

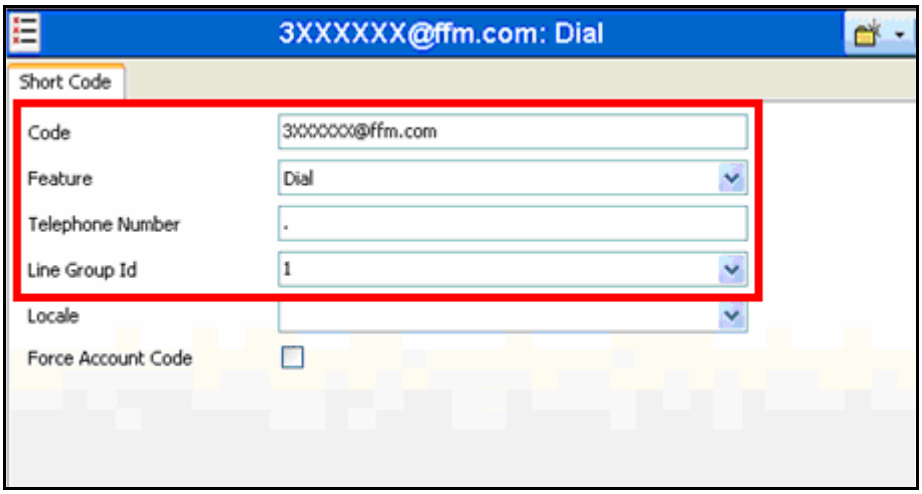

Figure 15: Short Codes: User Tab

3.2. Configure NovaLink NovaAlert

3.2.1. Configuration file NovaAlert.ini

The NovaAlert.ini configuration file is a "flat" ASCII file which can be edited with a text editor. This file is contained in the main installation directory on the NovaLink NovaAlert server (e.g. C:\Program Files\NovaAlert). Note the "DefaultCallingParty" and "DefaultCallingParty" parameters are necessarily assigned the same value, these parameters are used by different subcomponents within the NovaAlert server software.

Parameter	Usage
CardDriver	Set this value to "3" for to select the SIP driver.
DefaultCallingParty	This is the number to be used as the calling party number for calls which originate from NovaLink NovaAlert.
DriverPrev	Set this value to "3" for to select the SIP driver.
LocalUserName	This is the number to be used as the calling party number for calls which originate from NovaLink NovaAlert.
SIP_Gateway	This is the domain name used by IP Office, followed by the IP address of Avaya IP Office.

Table 11: Extension Parameters

The other parameters in this file should be configured with the default values which are shown.

```
[CallInfo]
CardDriver=3
DefaultCallingParty=3000000

[VoIP]
DriverPref=3
LocalUserName=3000000
SIP_Gateway=ffm.com,192.168.50.10
```

Figure 16: NovaAlert.ini Configuration File Content

3.2.2. Configure NovaLink NovaAlert Application

Start the "NovaAlert Web Client" application from the Windows "start" control.

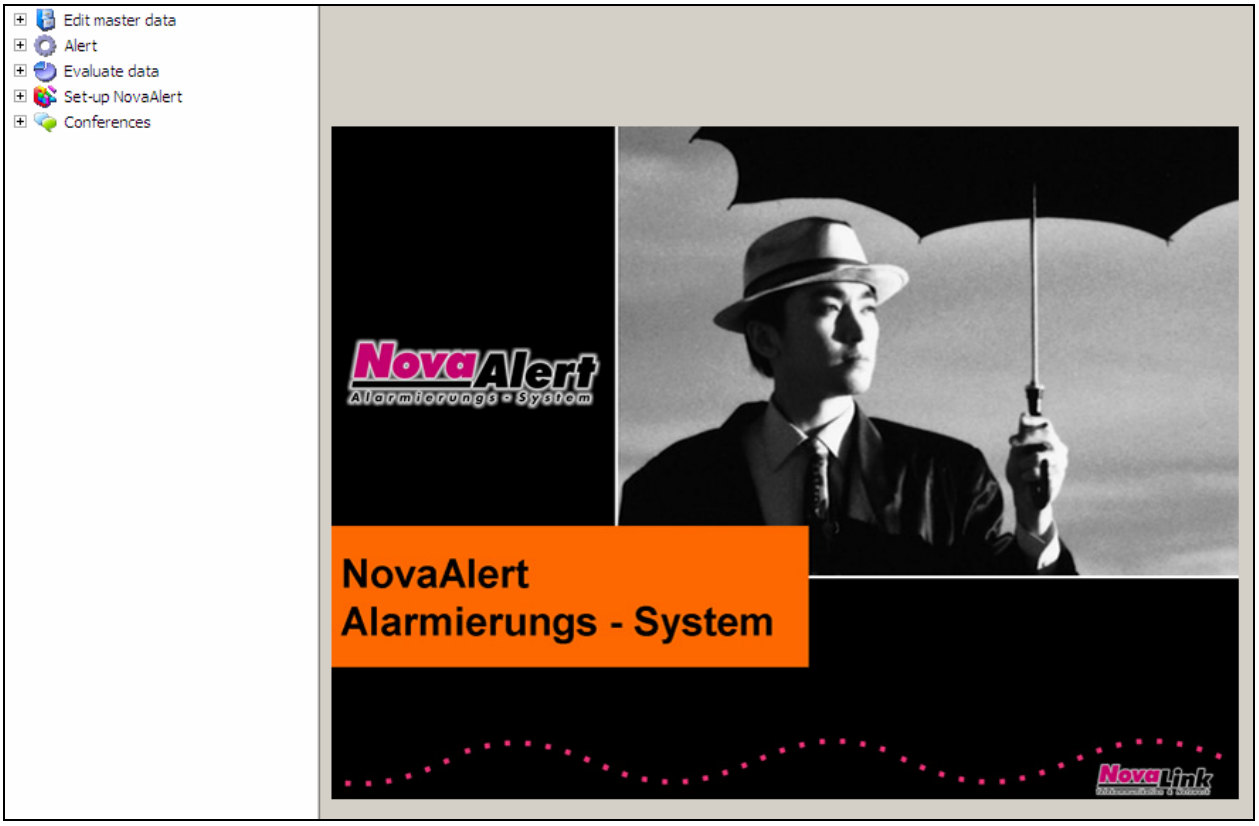

Figure 17: NovaLink NovaAlert Introductory Screen

3.2.3. Configure Users

Click the “User master data” icon from the left frame. When the “Person definitions” screen appears, click the “New person” button to display the “Edit person” dialog. In the “Personal details” tab, enter the name and a PIN code to be assigned to the user. This PIN code will be used by the user when an authorization sequence is required.

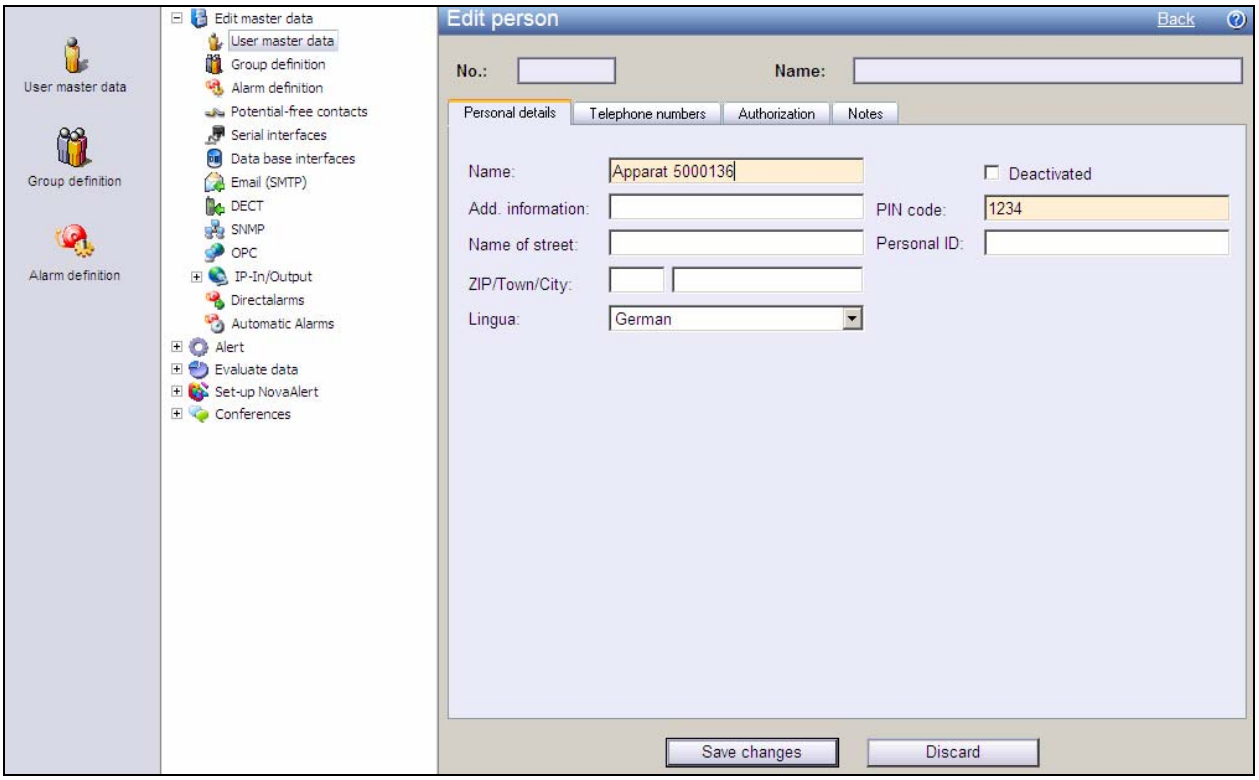

Figure 18: New Person Selection from NovaLink NovaAlert User Screen

Select the “Telephone numbers” tab, enter the telephone numbers to be assigned to the user, and click the “Save changes” button.

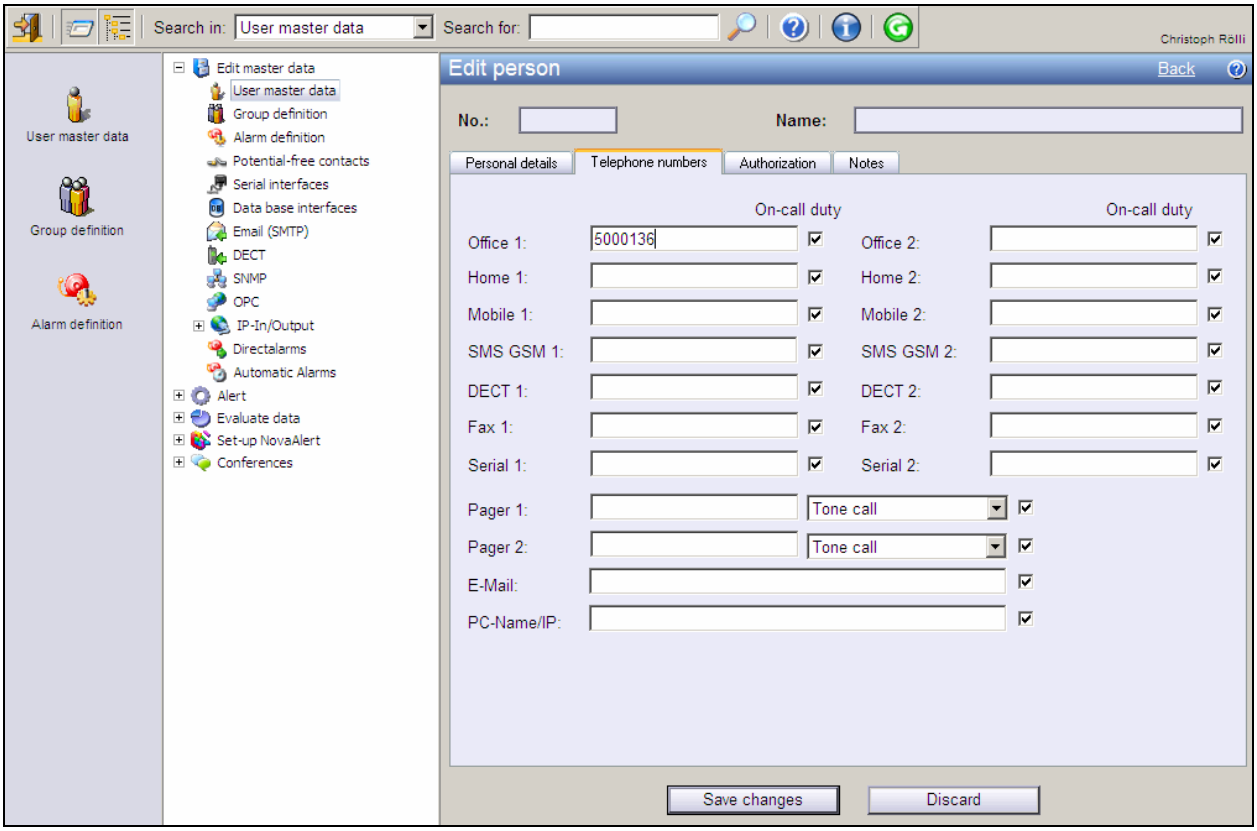

Figure 19: NovaLink NovaAlert Edit Personal Telephone Numbers Screen

Repeat this for the other extensions which are used for testing.

3.2.4. Configure Alarms

Select the “Alarm definition” icon in left frame of the display. When the “Alarm definition” screen appears, click the “New Alarm” button. Configure the “General” alarm definition tab with the information shown in the following table.

Parameter	Usage
Description	Enter a name to be assigned to the alarm.
Pin code for trigger	Enter the PIN code to be used for alarm recipient verification. Note that this PIN code is different from that described in **section 3.1.5**: this PIN value only applies to this alarm.
Priority	Select “Höchste Priorität” (highest priority) from the drop-down box.
Group call	Select “Group Call” from the drop-down box.
Nbr. Of pers. To be contac	Select “Alle” (all) from the drop-down box.
Based on person	Check this box.
Display on reports	Check this box.
Select contact group	Select the “Compile individual alert list” radio button.

Table 12: NovaLink NovaAlert General Alarm Configuration Parameters

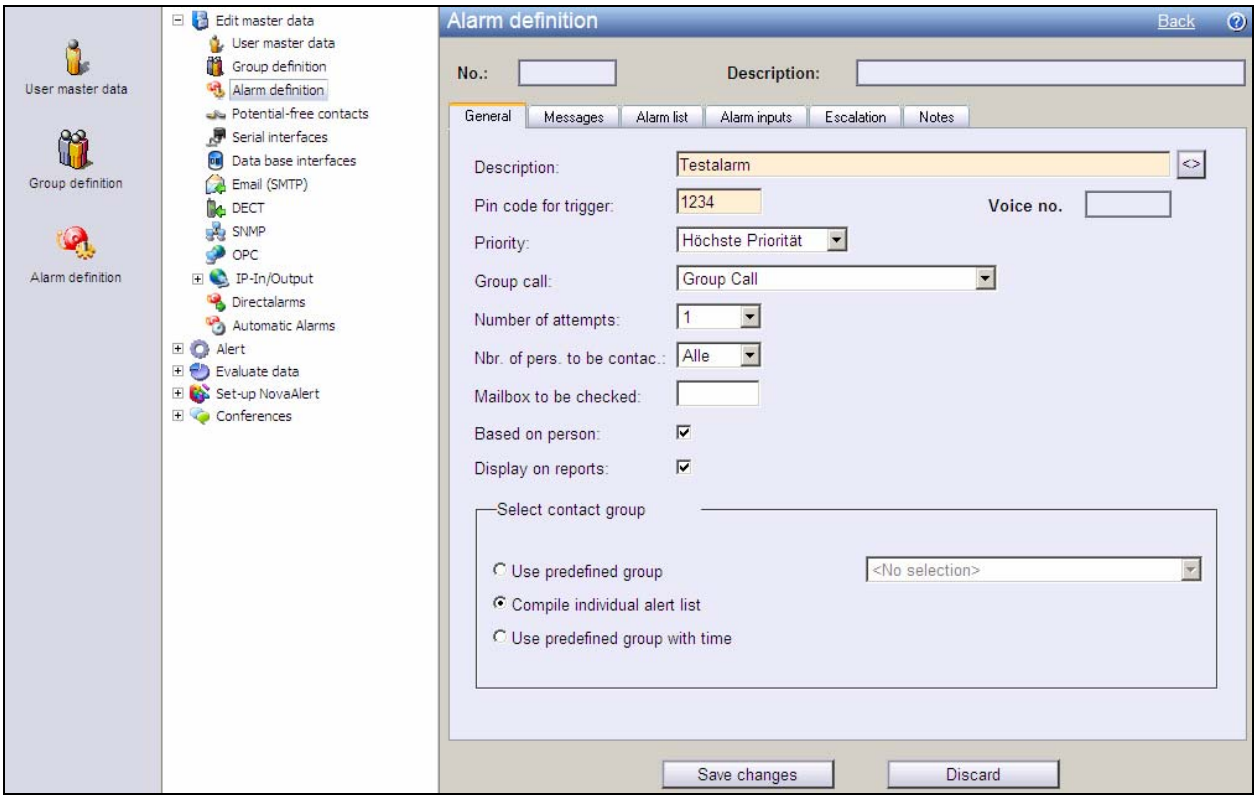

Figure 20: NovaLink NovaAlert New Alarm Definition Screen

Configure the “Messages” alarm definition tab with the information shown in the following table and click the “Save changes” button.

Parameter	Column	Usage
Phone display	Alarm messages	Enter the text message which is to be shown on the Avaya telephone display. The length of this message should not exceed the maximum calling party name text length which can be displayed by Avaya telephones, which is 15 characters for telephones used for these tests.
	Event text	Select “Yes” from the drop-down box.
	Call type	Select “Dauer” from the drop-down box.
	copy	Select this check box.
Phone TTS		Select the check box which is positioned to the left of the “Alarm messages” text box.
	Alarm messages	Enter the text message which is converted to speech and announced to the party receiving the alarm.
	Event text	Select “Yes” from the drop-down box.

Table 13: NovaLink NovaAlert Alarm Messages Configuration Parameters

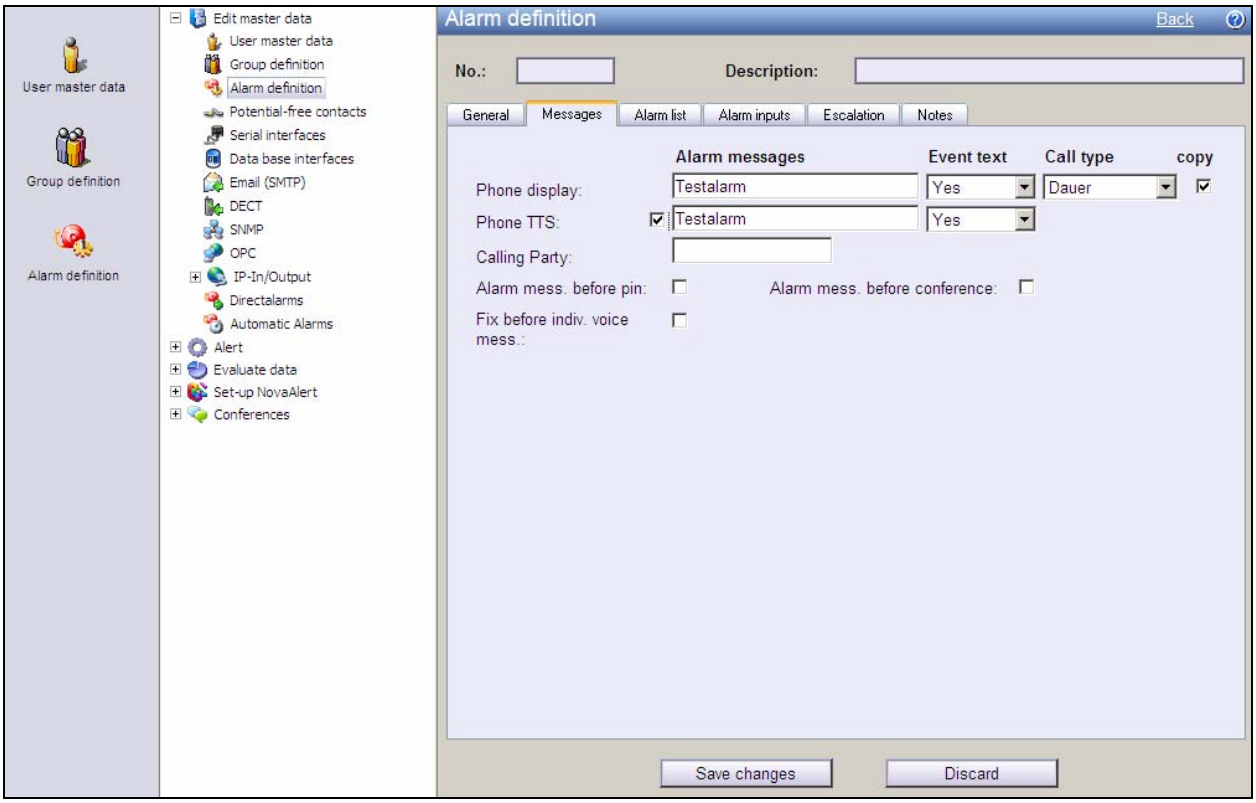

Figure 21: NovaLink NovaAlert Alarm Message Definition Screen

Configure the “Alarm List” alarm definition tab with the information shown in the following table and click the “Save changes” button.

Parameter	Usage
Person / IP output	Select the name of the recipient to which the alarm is to be sent from the upper drop-down box.
Tel. number	Select the recipient’s endpoint to which the alarm is to be sent from the lower drop-down box.

Table 14: NovaLink NovaAlert Alarm List Configuration Parameters

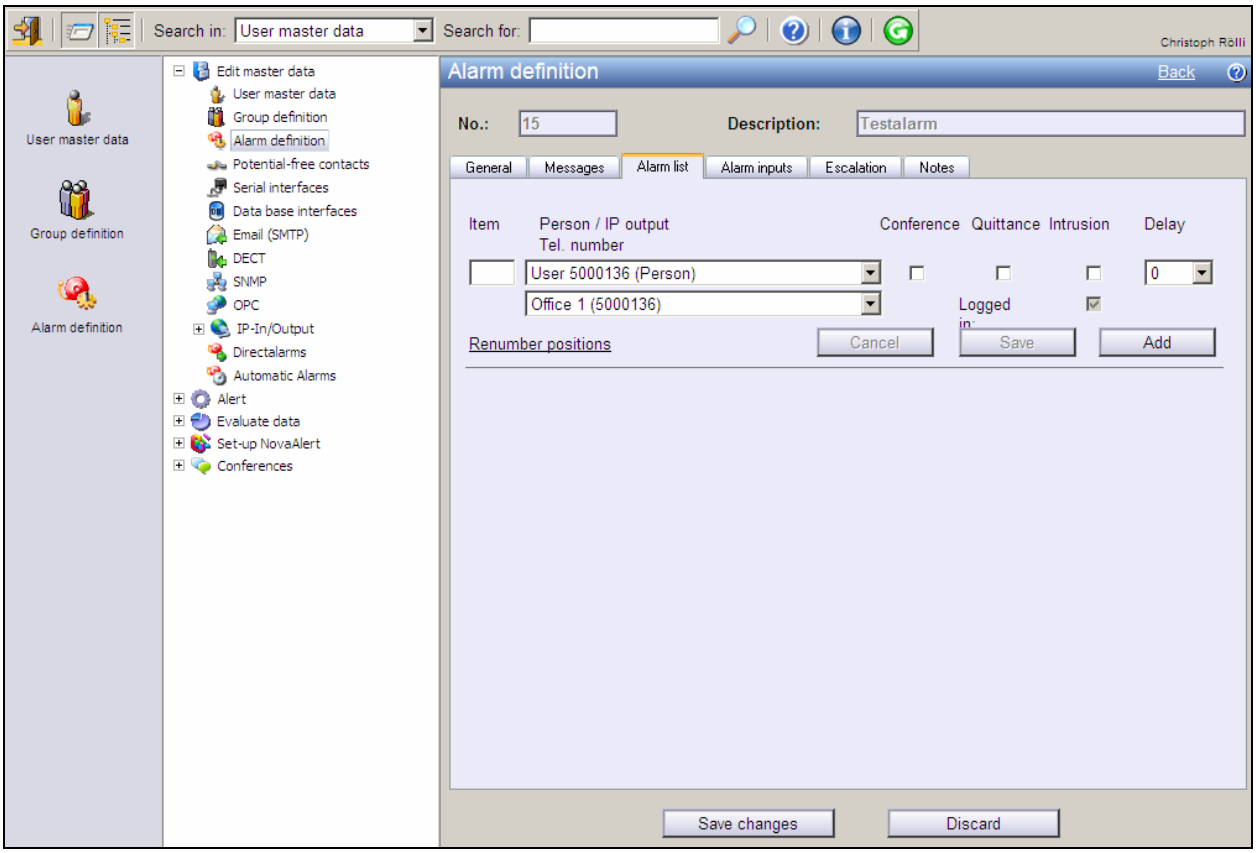

Figure 22: NovaLink NovaAlert Alarm List Configuration Screen

3.2.5. Configure Direct Alarms

The Direct Alarm function maps a specific Called Party Number to an alarm, so that when this number is dialed, the caller records a message (optional) and the alarm is triggered. The recorded message is played on the alarmed stations. Select the "Directalarms" icon in left frame of the display. When the "Direct alarm" screen appears, click the "New Alarm" button.

Configure the "General" alarm definition tab with the information shown in the following table, and click the "Save changes" button.

Parameter	Usage
Description	Enter a name to be assigned to the alarm.
Initiating call number	Enter the telephone number which is to be used by NovaLink NovaAlert to make the alarm call. For testing a number of 3111111 was used.
PIN Code	Enter a PIN code that needs to get input to trigger the alarm. Leave empty if none is required.
Alarm no.	Select one of the previously configured alarms from the drop-down box.
Alarm text	Input an alarm text to display on the alarmed stations (as Calling Party Name). Leave empty for the default alarm text.
Recording	Check this box to allow the recording of an alarm message per call.
Min. recording time	Enter the minimum recording time, in seconds.
Conference	Check this box to include the triggering (calling) party in an alarm conference with the alarmed stations.

Table 15: NovaLink NovaAlert General Direct Alarm Configuration Parameters

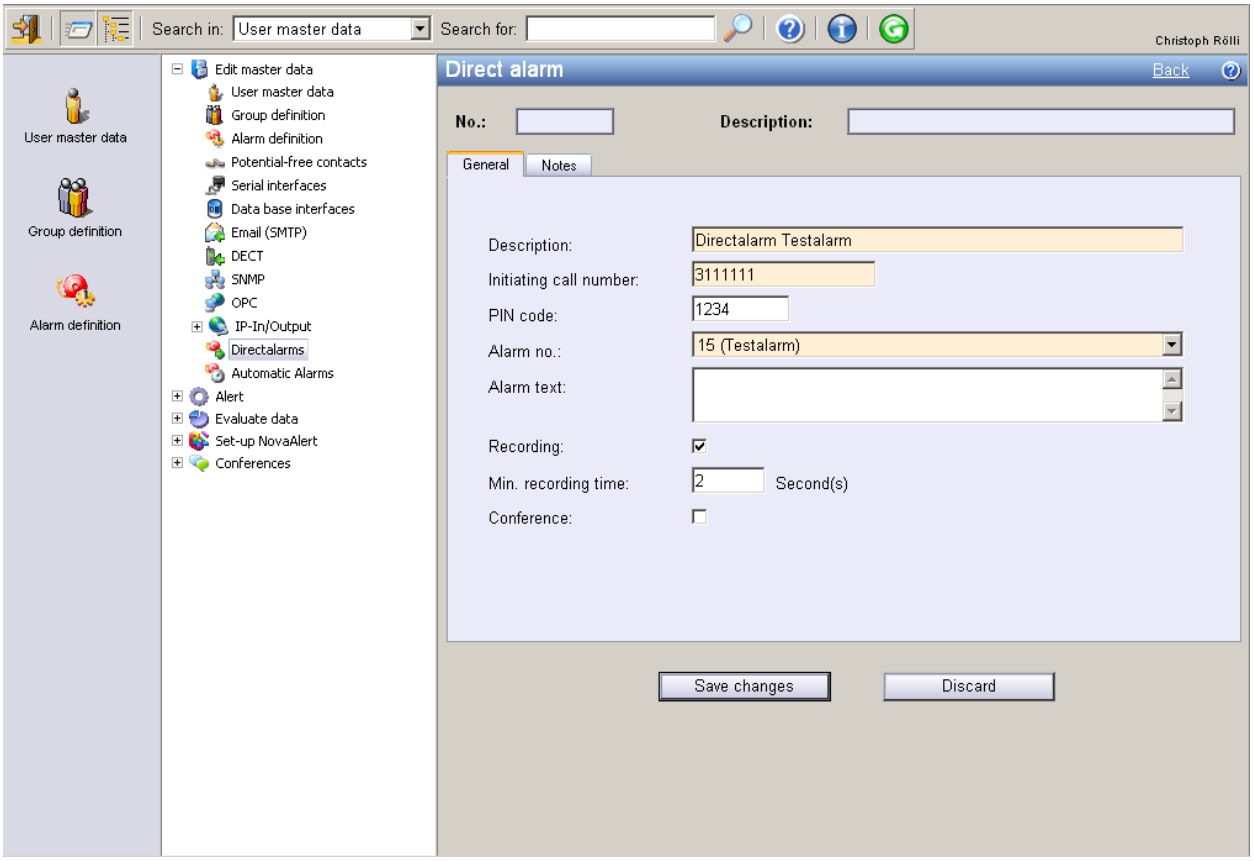

Figure 23: NovaLink NovaAlert Direct Alarm Configuration Screen

4. Interoperability Compliance Testing

The interoperability compliance tests included feature and serviceability testing.

The feature testing focused on testing use case scenarios which involve interaction between the NovaLink and Avaya products, including various sequences involving:

- Verification of the correct delivery of alarm voice messages.
- Verification of the correct display of alarm text messages.
- Verification of the ability of NovaLink NovaAlert to recognize DTMF tones.
- Verification of the ability of NovaLink NovaAlert to receive overlap number transmission.
- Verification of the ability of Avaya Telephones to correctly log unanswered alarms.

The serviceability testing focused on verifying that the NovaLink product components can recover from interruption to interface connections which can occur during routine maintenance activities. Each of these units was also tested for recovery from unexpected power interruption.

4.1. General Test Approach

The test method employed can be described as follows:

- The individual features of the NovaLink NovaAlert were tested by manually generating alarms from the NovaLink NovaAlert console and manually making calls from Avaya Telephones.
- NovaLink NovaAlert server robustness was tested by verifying its ability to recover from interruptions to its external connections via the LAN between the NovaLink NovaAlert and the network.
- Verifying the ability to recover from power interruptions to the NovaLink NovaAlert server further tested its robustness.

All testing was performed manually. The tests were all functional in nature, and no performance testing was done.

4.2. Test Results

The following problems were encountered during testing:

- It is not possible to interrupt existing calls to deliver alarm messages, as Avaya IP Office does not support this capability over trunks.
- It is not possible for NovaLink NovaAlert to detect that an Avaya 4600 series H.323 Telephone is disconnected, as this status is not reported to the caller by Avaya IP Office.

These issues did not prohibit the solution from passing Avaya compliance test requirements.

5. Verification Steps

The following steps can be performed to verify the basic operation of the various system components:

- Verify that Avaya IP Office and the NovaLink NovaAlert server can ping each other.
- Start the NovaLink NovaAlert Monitor from the Windows "Start" control, and verify that the "Line Status" control is green to indicate that the interface to the Avaya IP Office is operational.
- Verify that it is possible to navigate the NovaLink NovaAlert voice menu from each of the Avaya Telephones by calling the NovaLink NovaAlert extension, and entering key sequences in response to prompting requests from NovaLink NovaAlert.
- Verify the ability of Avaya Telephones to correctly log unanswered alarms by initiating an unanswered alarm call from NovaLink NovaAlert to each of the Avaya Telephones, verifying the name and number in the log of the telephone, and subsequently dialing the caller from the telephone log.

6. Support

Technical support from NovaLink can be obtained through the following:

NovaLink GmbH
Businesstower
Zuercherstrasse 310
8500 Frauenfeld
Switzerland
helpdesk@novalink.ch
Phone: +41 52 762 66 77
Fax: +41 52 762 66 99

7. Conclusion

These Application Notes described the configuration for connecting NovaLink NovaAlert with Avaya IP Office. The various features of the NovaLink NovaAlert which involve its telephone interface were tested. A detailed description of the configuration required for both the Avaya and the NovaLink equipment is documented within these Application Notes. NovaLink NovaAlert passed all of the tests performed, which included both functional and robustness tests.

8. Additional References

[1] *IP Office 4.0 Installation Manual*, February 2007, Issue 1, Document Number 15-601047.
[2] "IP Office 4.0 Manager: 01. Using Manager", Issue 19k (22nd January 2007)
[3] "IP Office 4.0 Manager: 02. Configuration Settings", Issue 19k (22nd January 2007), Document Number 39DHB0002UKAB
[4] "IP Office 4.0 Manager: 03. Short Codes", Issue 19k (22nd January 2007), Document Number 39DHB0002UKAC
[5] "IP Office 4.0 Manager: 04. Telephony Features", Issue 19k (22nd January 2007), Document Number 39DHB0002UKAD
[6] *NovaAlert 7.5 Manual*, May 2007

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.