Avaya Solution & Interoperability Test Lab

Application Notes for Pridis Connecsy with Avaya Communications Manager – Issue 1.0

Abstract

These Application Notes describe the compliance testing done with the Pridis Connecsy attendant console application and Avaya Communication Manager. Connecsy is a PC-based attendant console software application, which together with an Avaya IP telephone, allows an operator to receive and redirect calls using an easy-to-use graphical interface, as well as monitor the status of attached telephones. The tests documented by these Application Notes are of a functional nature, all of which passed correctly.

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

1. Introduction

Pridis Connecsy is a software application that serves as an attendant console. Together with an Avaya IP telephone, Connecsy allows an operator to receive and redirect incoming calls. Connecsy allows the operator to monitor the state of telephones controlled by Avaya Communication Manager, providing the ability to determine which telephones are engaged in a call. Connecsy also provides the ability to see which telephones have been forwarded to voicemail, thus allowing the operator to intelligently redirect calls to telephones that are not busy and have not been forwarded.

Connecsy has its own telephone extension, but uses a second Avaya IP telephone that serves as a conduit for bidirectional speech. Since this second telephone is dedicated to this purpose, it is unavailable for other uses while Connecsy in use.

Connecsy runs on a Microsoft Windows PC workstation, without the need of any special hardware. Connecsy does not require the assistance of a CTI adjunct.

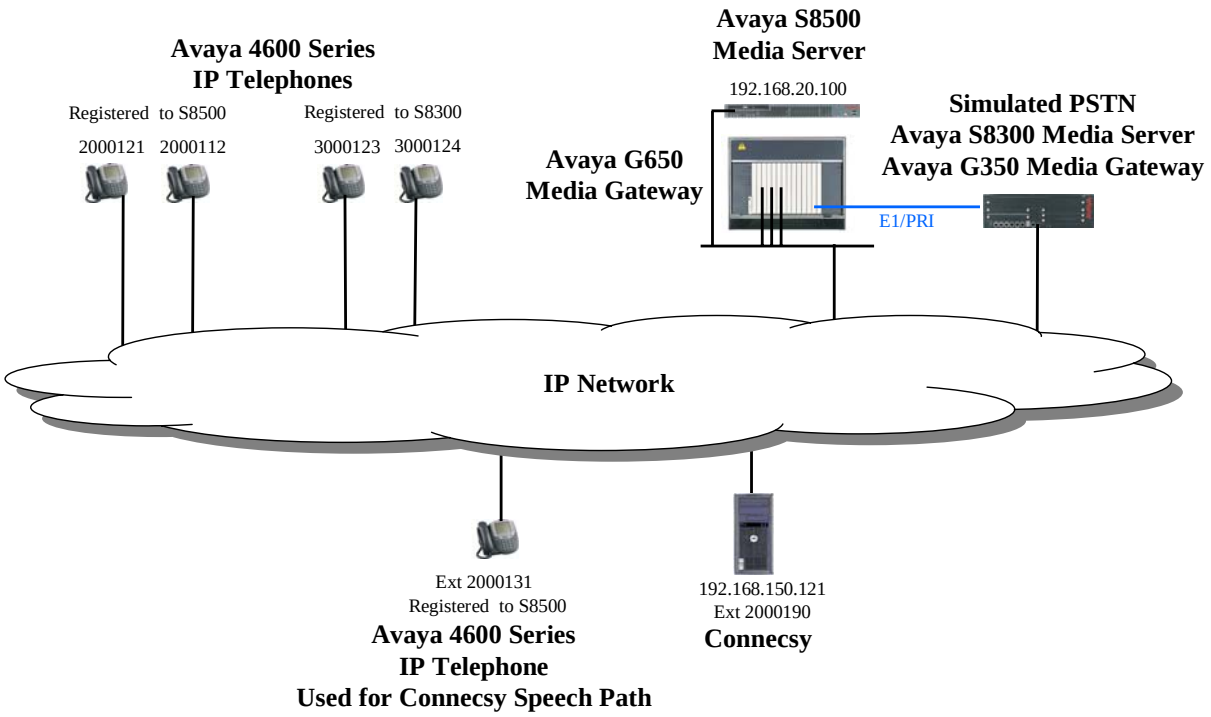


Figure 1: Connecsy Test Configuration

The Connecsy system in the above diagram acts as an attendant console. The telephone with extension 2000131 provides the speech path for Connecsy. The telephones with extensions 2000121 and 2000112 are locally controlled by the Avaya S8500 Media Server. The Avaya

S8300 Media Server is used to simulate the PSTN. Thus calls originating from extensions 3000123 and 3000124 appear to Connecsy as external calls.

2. Equipment and Software Validated

Component	Version
Avaya S8500 Media Server	Avaya Communication Manager R013x.01.0.628.6
Avaya G650 Media Gateway	-
Avaya TN2312BP IPSI board	HW11/FW030
Avaya TN799DP C-LAN board	HW01/FW017
Avaya TN2302AP IP Media board	HW20/FW110
Avaya C363T Converged Stackable Switch	4.3.12
Avaya 4620SW IP telephone (4)	2.3
Avaya 4621SW IP telephone (1)	2.3
Microsoft Windows XP Professional	SP-2
Pridis Connecsy Attendant Console Software	4.0

3. Configuration and Administration

The operator using Connecsy normally uses a headset attached to the telephone used to provide the speech path. However, the telephone handset was used instead of a headset, as there was no headset available for testing.

Note that screen shots within this document illustrating Avaya Communication Manager configuration operations were made using the System Access Terminal (SAT).

3.1. Configuration of Avaya Communication Manager on Avaya S8500 Media Server

The Avaya S8500 Media Server is configured to attach to the simulated PSTN via an E1/PRI link, with the S8500 acting as the "user" and the simulated PSTN acting as the "network".

A-Law codecs are used and German ring and dial tones are configured. The following screen shots show those configuration parameters that are particular to the Connecsy application.

3.1.1. Configure the "Night" Extension

Enter the extension defined for Connecsy (2000190) for the "night service" of the trunk group on which external calls are to be received, so that external calls will be routed to the attendant at night.

```
change trunk-group 2                                          Page   1 of  21
                              TRUNK GROUP

Group Number: 2                    Group Type: isdn          CDR Reports: y
  Group Name: S8300                       COR: 1     TN: 1        TAC: *03
   Direction: two-way        Outgoing Display? y     Carrier Medium: PRI/BRI
 Dial Access? y                Busy Threshold: 255   Night Service: 2000190
Queue Length: 0
Service Type: tie                   Auth Code? n            TestCall ITC: rest
                        Far End Test Line No:
TestCall BCC: 4
```

3.1.2. Configure the "Operator" Key

Configure a digit in the dial plan to be used to contact the attendant console from local stations. "9" is used here, but any digit consistent with other dial plan constraints can be used.

```
change dialplan analysis                                      Page   1 of  12
                           DIAL PLAN ANALYSIS TABLE
                                                    Percent Full:    1

      Dialed  Total  Call      Dialed  Total  Call      Dialed  Total  Call
      String  Length Type      String  Length Type      String  Length Type
        1       7    ext         *91     3    dac
        2       7    ext
        3       7    ext
        9       1    attd
        *1      2    dac
        *3      2    dac
```

3.1.3. Configure Attendant

Configure Connecsy as the attendant console, and select the extension ranges 20001XX and 20000XX as extension ranges to be displayed by the “hundreds” buttons on the attendant console. Each of these ranges is used by Connecsy to display the status of the stations in a Blinking Lamp Fields (BLF) window. The BLF parameters must be configured in the Connecsy “DXS/BLF INFORMATION” configuration described in the “Connecsy Configuration” section of this document.

```
add attendant 1                                          Page   1 of   4
                            ATTENDANT CONSOLE 1

         Type: 302              Name: Attendant 1
    Extension: 2000190         Group: 1                Auto Answer: none
 Console Type: principal          TN: 1                Data Module? n
         Port: S00051            COR: 1          Disp Client Redir? n
Security Code: 0910002           COS: 1           Display Language: english
                                                   H.320 Conversion? n

DIRECT TRUNK GROUP SELECT BUTTON ASSIGNMENTS (Trunk Access Codes)
    Local Remote           Local Remote             Local Remote
 1:                     5:                       9:
 2:                     6:                      10:
 3:                     7:                      11:
 4:                     8:                      12:

HUNDREDS SELECT BUTTON ASSIGNMENTS
 1: 20001     5:           9:           13:           17:
 2: 20000     6:          10:           14:           18:
 3:           7:          11:           15:           19:
 4:           8:          12:           16:           20:
```

Configure feature button usage for Connecsy. These settings correspond to the settings in the Connecsy “Feature Buttons” configuration screen.

```
add attendant 1                                          Page   3 of   4
                            ATTENDANT CONSOLE

FEATURE BUTTON ASSIGNMENTS

 1: split                               13: class-rstr
 2: don’t-split                         14: intrusion
 3: goto-cover                          15:
 4: override                            16:
 5: priorit                             17: serial-cal
 6: hold                                18: em-acc-att
 7: atd-qcalls                          19: forced-rel
 8: trk-id                              20: cw-ringoff
 9: cdr1-alrm                           21: in-ringoff
10: last-numb                           22: re-ringoff
11:                                     23: night-serv
12:                                     24: pos-busy
```

Configure display button usage for Connecsy.

```
add attendant 1                                        Page   4 of   4
                           ATTENDANT CONSOLE

DISPLAY BUTTON ASSIGNMENTS

 1: normal                                5: delete-msg
 2: inspect                               6: call-disp
 3: cov-msg-rt                            7: date-time
 4: next                                  8: timer
```

3.1.4. Configure Console

Connecsy uses the default console settings, with the exception of the "**Backup Alerting**" field, which should be set to "**n**".

```
change console-parameters                                 Page   1 of   4
                             CONSOLE PARAMETERS

         Attendant Group Name: OPERATOR
                         COS: 1                                  COR: 1
       Calls in Queue Warning: 5                    Attendant Lockout? y
        Ext Alert Port (TAAS):
                         CAS: none
                                                Night Service Act. Ext.:
                IAS (Branch)? n                 IAS Tie Trunk Group No.:
         IAS Att. Access Code:                    Alternate FRL Station:
              Backup Alerting? n          DID-LDN Only to LDN Night Ext? n
```

The console reminder timeouts and reminders should be set to be consistent with the requirements of the individual installation.

```
change console-parameters                                  Page   2 of   4
                             CONSOLE PARAMETERS

TIMING
  Time Reminder on Hold (sec): 30        Return Call Timeout (sec): 30
  Time in Queue Warning (sec):

  INCOMING CALL REMINDERS
      No Answer Timeout (sec):                          Alerting (sec):
                             Secondary Alert on Held Reminder Calls? y

ABBREVIATED DIALING
     List1:                  List2:                   List3:
             SAC Notification? y

                           COMMON SHARED EXTENSIONS
            Starting Extension:                  Count:
Busy Indicator for Call Parked on Analog Station Without Hardware? n
```

3.1.5. Verify System-Parameters Customer-Options

Connecsy testing was done with the "system-parameters customer-options" set as shown in the following screen shots from the SAT. Those items shown in **bold** indicate required values or minimum capacity requirements. Please contact an Avaya representative for further assistance.

The "**Maximum Concurrently Registered IP Stations"** parameter must be sufficiently large to accommodate IP stations to be attached.

The "**Maximum Concurrently Registered IP eCons**" parameter must be sufficiently large to accommodate the number of Connecsy stations to be attached.

```
display system-parameters customer-options                    Page   2 of  10
                               OPTIONAL FEATURES

IP PORT CAPACITIES                                          USED
                     Maximum Administered H.323 Trunks: 50    44
          Maximum Concurrently Registered IP Stations: 40    6
            Maximum Administered Remote Office Trunks: 800   0
Maximum Concurrently Registered Remote Office Stations: 2400  0
             Maximum Concurrently Registered IP eCons: 5     0
  Max Concur Registered Unauthenticated H.323 Stations: 0     0
                  Maximum Video Capable H.323 Stations: 0     0
                   Maximum Video Capable IP Softphones: 0     0
                       Maximum Administered SIP Trunks: 20    1

   Maximum Number of DS1 Boards with Echo Cancellation: 0     0
                            Maximum TN2501 VAL Boards: 1     0
                    Maximum G250/G350/G700 VAL Sources: 0     0
          Maximum TN2602 Boards with 80 VoIP Channels: 0     0
         Maximum TN2602 Boards with 320 VoIP Channels: 0     0
   Maximum Number of Expanded Meet-me Conference Ports: 0     0
```

The "**IP Stations**" parameter must be set to "**y**" so that IP stations can be attached. The "**ISDN-PRI**" parameter must be set to "**y**" to support the simulated PSTN link which was used for testing. It need not be set if no such link is required. The "**IP Attendant Consoles**" parameter must be set to "**y**" to accommodate the Connecsy IP attendant console.

```
display system-parameters customer-options                    Page   4 of  10
                               OPTIONAL FEATURES

   Emergency Access to Attendant? y                          IP Stations? y
            Enable 'dadmin' Login? y              Internet Protocol (IP) PNC? n
            Enhanced Conferencing? y                        ISDN Feature Plus? n
                  Enhanced EC500? y           ISDN Network Call Redirection? y
    Enterprise Survivable Server? n                          ISDN-BRI Trunks? y
       Enterprise Wide Licensing? n                                ISDN-PRI? y
              ESS Administration? n              Local Survivable Processor? n
         Extended Cvg/Fwd Admin? y                    Malicious Call Trace? n
     External Device Alarm Admin? n                Media Encryption Over IP? n
  Five Port Networks Max Per MCC? n    Mode Code for Centralized Voice Mail? n
               Flexible Billing? n
   Forced Entry of Account Codes? n                 Multifrequency Signaling? y
      Global Call Classification? n Multimedia Appl. Server Interface (MASI)? n
             Hospitality (Basic)? y         Multimedia Call Handling (Basic)? n
 Hospitality (G3V3 Enhancements)? n      Multimedia Call Handling (Enhanced)? n
                     IP Trunks? y
           IP Attendant Consoles? y
```

The "**IP eCons**" parameter must have a capacity to accommodate the number of Connecsy consoles.

```
display system-parameters customer-options                      Page   9 of  10
                     MAXIMUM IP REGISTRATIONS BY PRODUCT ID

Product ID  Rel. Limit          Used
IP_API_A       : 0              0
IP_API_B       : 0              0
IP_API_C       : 0              0
IP_Agent       : 1              0
IP_IR_A        : 0              0
IP_Phone       : 2400           6
IP_ROMax       : 2400           0
IP_Soft        : 2              0
IP_eCons       : 10             0
               : 0              0
```

3.1.6. Configure System-Parameters Features

Connecsy testing was done with the "system-parameters features" set as shown in the following screen shots from the SAT. Those items shown in **bold** indicate required values or minimum capacity requirements.

Set the "**Auto Hold**" parameter to "**y**" to make the auto hold capability available to Connecsy (and all other users on the system).

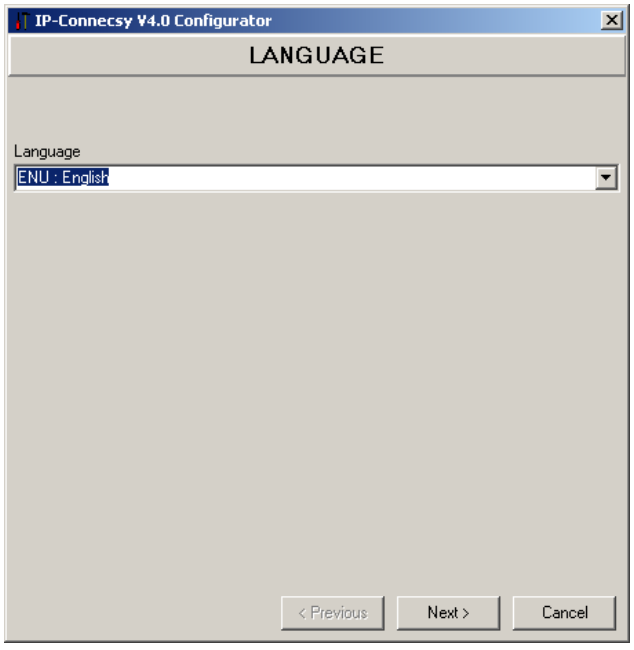
```
change system-parameters features                               Page   6 of  17
                        FEATURE-RELATED SYSTEM PARAMETERS
         Public Network Trunks on Conference Call: 5              Auto Start? n
    Conference Parties with Public Network Trunks: 6                Auto Hold? y
 Conference Parties without Public Network Trunks: 6           Attendant Tone? y
         Night Service Disconnect Timer (seconds): 180          Bridging Tone? n
                 Short Interdigit Timer (seconds): 3          Conference Tone? n
              Unanswered DID Call Timer (seconds):             Intrusion Tone? n
              Line Intercept Tone Timer (seconds): 30    Mode Code Interface? n
                 Long Hold Recall Timer (seconds): 0
                      Reset Shift Timer (seconds): 0
     Station Call Transfer Recall Timer (seconds): 0
                               DID Busy Treatment: tone

               Allow AAR/ARS Access from DID/DIOD? n
                 Allow ANI Restriction on AAR/ARS? n
      Use Trunk COR for Outgoing Trunk Disconnect? n
                  7405ND Numeric Terminal Display? n                  7434ND? n
DISTINCTIVE AUDIBLE ALERTING
             Internal: 1   External: 2   Priority: 3
                       Attendant Originated Calls: external
```

Set the "**Transfer Upon Hang-Up**" parameter to "**y**" so that the Connecsy user does not need to press the **Transfer** button a second time to transfer a call. Set the "**Abort Conference Upon Hang-Up**" parameter to "**n**" to prevent conference calls from being aborted when the Connecsy operator hangs up.

```
change system-parameters features                              Page   7 of  17
                      FEATURE-RELATED SYSTEM PARAMETERS

CONFERENCE/TRANSFER

               Abort Transfer? n                 No Dial Tone Conferencing? n
        Transfer Upon Hang-Up? y       Select Line Appearance Conferencing? n
Abort Conference Upon Hang-Up? n                                   Unhold? n
   No Hold Conference Timeout: 60

ANALOG BUSY AUTO CALLBACK
               Without Flash? n



AUDIX ONE-STEP RECORDING
                           Recording Delay Timer (msec): 500
Apply Ready Indication Tone To Which Parties In The Call? all
  Interval For Applying Periodic Alerting Tone (seconds): 15
```

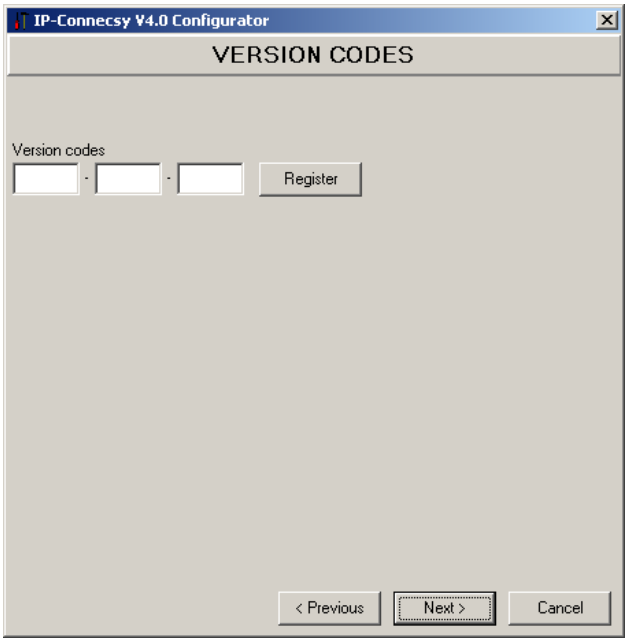
3.2. Connecsy Configuration

Install the Connecsy application software from the distribution media, accepting the defaults. Start the Connecsy Configuration program from the Windows "Start" menu. Select the desired language and click "Next".



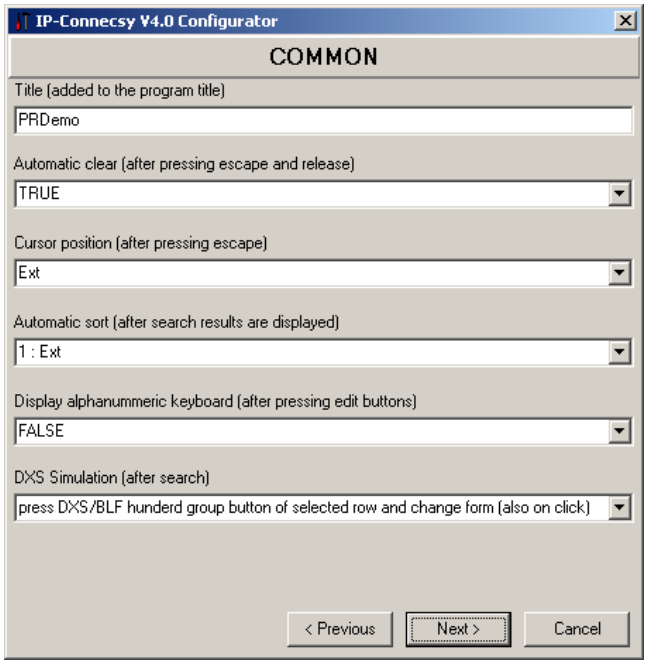
Use of Connecsy features is regulated by a “dongle” which must be attached to the serial port of the PC on which Connecsy is to be run. The product distribution includes a license card which contains the three “Version Codes” text string groups which can be programmed into the dongle by entering them into the fields in this screen and clicking the “Register” button. This process can be repeated as needed if new version codes corresponding to another feature set are required. This registration procedure needs to be performed only when the contents of the dongle need to be modified.

Click “Next” after completion of the registration process (or if no registration is required).



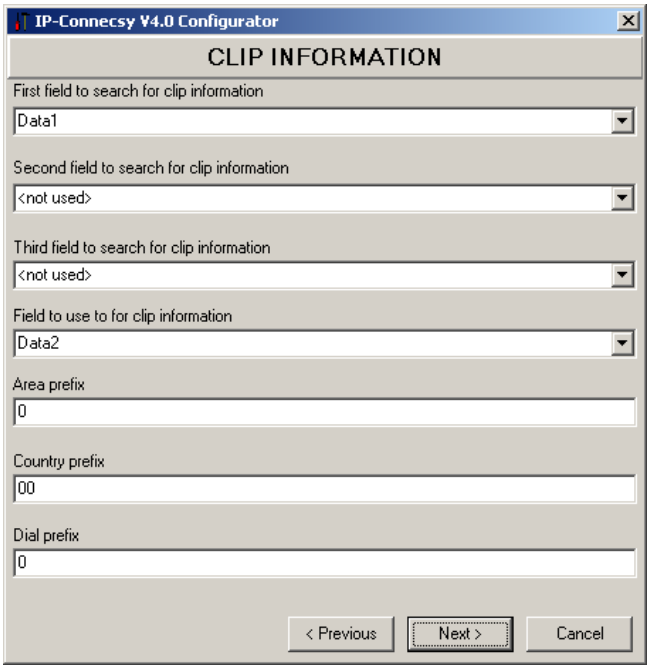
The fields of the “COMMON” configuration dialog should be set as described in the following table. After setting the parameters, click “Next”

Parameter	Usage
Title	The title to be used by the Connecsy application.
Automatic clear	This option provides an automatic clear of the search fields. After ‘CANCEL’ and ‘RELEASE’ the escape button will be automatically pressed. The search fields and the datasheet will be cleared. The cursor jumps into its start position set at the cursor position.
Cursor position	When the escape button is pressed, the edit fields are automatically cleared and the cursor position is located in the field selected with this option. There are names in the configurator, but the INI-file works with numbers. The fields are numbered of 0 to 11.
Automatic sort	This parameter enables automatic sorting after searching the database; the number is indicating the column that should be sorted.
Display alphanumeric keyboard	In case a touch-screen monitor is installed it could be useful to enable the following parameter (value TRUE or FALSE). When indicating TRUE the buttons next to the edit fields on the Connecsy main screen will cause the alphanumeric display to appear, otherwise the buttons will start a search action on the search-string present in the particular edit field.
DXS Simulation	This parameter should be set to “press DSX/BLF hundred group button of selected row and change from (also on click)”



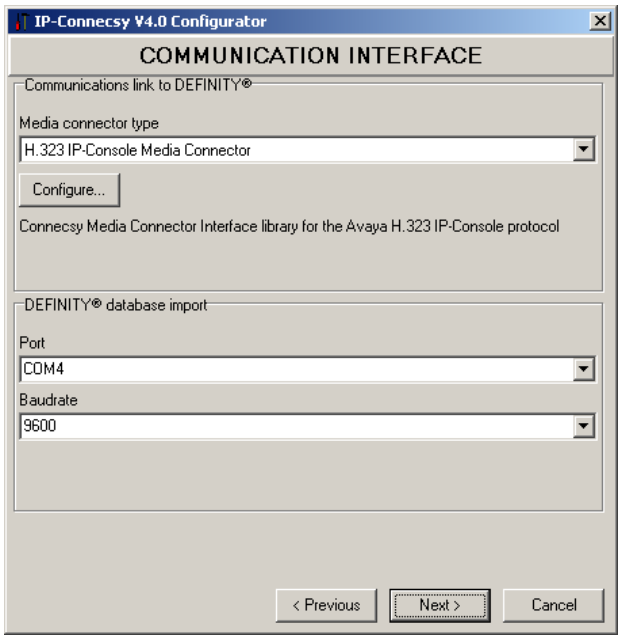
The fields of the “CLIP INFORMATION” configuration dialog should be set as described in the following table. After setting the parameters, click “Next”

Parameter	Usage
First search field	In case clip information is found, the datafield is copied into the clipinfo (line button); the datafield that should be used can be specified here (value between 0..11).
Second search field	Not used.
Third search field	Not used.
Area prefix	The clip info received from Avaya Communication Manager does not always contain the prefix strings. These three strings can be specified to assist in resolving the target of clip info, thereby increasing the chance of resolving a fully qualified telephone number.
Country prefix	
Dial prefix	



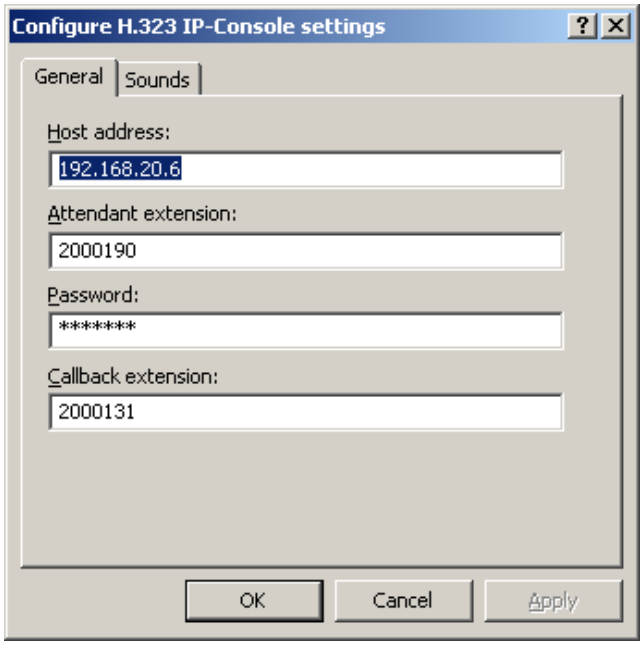
The fields of the “COMMUNICATION INTERFACE” configuration dialog should be set as described in the following table. Note that the serial interface referred to by the “Port” and “Baudrate” parameters was not used for compliance testing. After setting the parameters, click “Configure”, to configure the media connector to Communication Manager. After the media connector has been configured, click “Next”.

Parameter	Usage
Communication link	Must be set to: H.323 IP-Console media connector.
Port	Not used.
Baudrate	Not used.



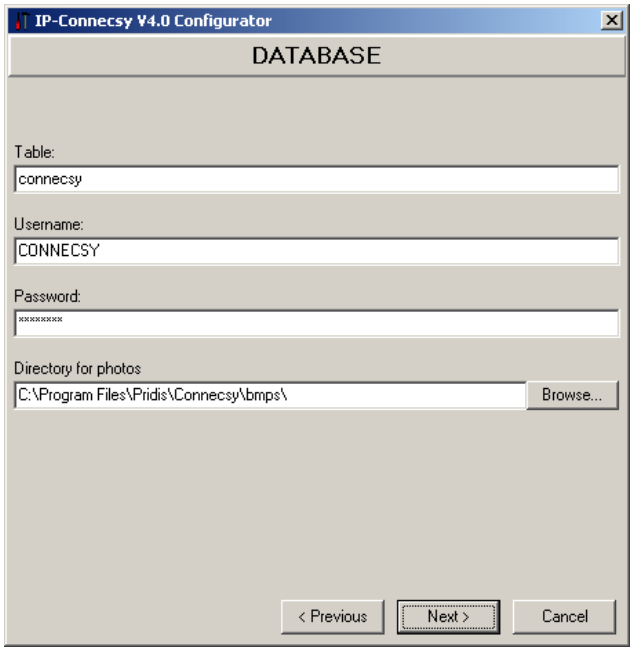
The fields of the “Communication Interface” configuration dialog should be set as described in the following table. Note that the serial interface referred to by the “Port” and “Baudrate” parameters was not used for conformance testing. After setting the parameters, click “Configure”, to configure the media connector to Communication Manager. After these values have been entered, click “OK”, which will return to the “Communication Interface” menu (see above).

Parameter	Usage
Host address	The address of the Avaya Communication Manager C-LAN interface.
Attendant extension	The extension which was configured in the Avaya Communication Manager “attendant” menu.
Password	The “Security Code” which was entered in the Avaya Communication Manager “attendant” menu.
Callback extension	The extension of the IP phone which is to be used to provided the attendant speech path.



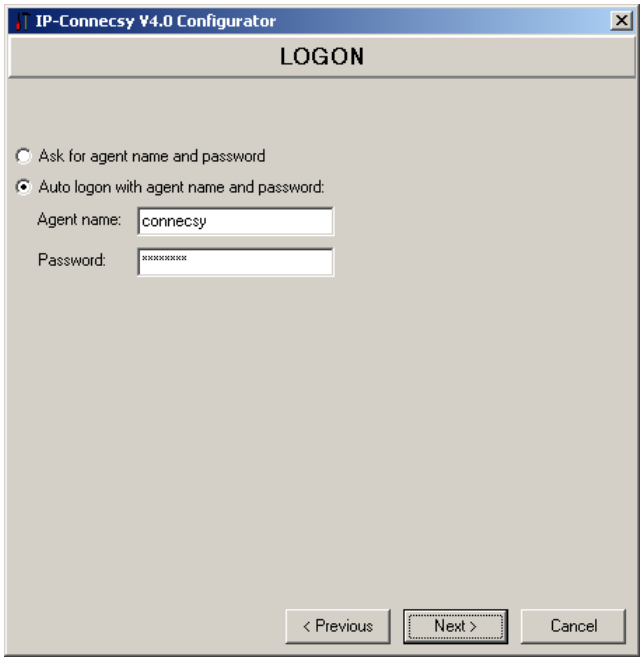
The fields of the “DATABASE” configuration dialog should be set as described in the following table. After setting the parameters, click “Next”. Note that the Connecsy caller photo ID feature was not used for compliance testing.

Parameter	Usage
Table	Enter “connecsy” in this field.
Username	Enter the user name to be used to access the “connecsy” database.
Password	Enter the password to be used to access the “connecsy” database.
Directory for photos	A directory on the Connecsy PC in which photos of people can be stored



The “LOGON” dialog allows an agent to be optionally logged in when Connecsy is started. The fields of the “Logon” configuration dialog should be set as described in the following table. After setting the parameters, click “Next”.

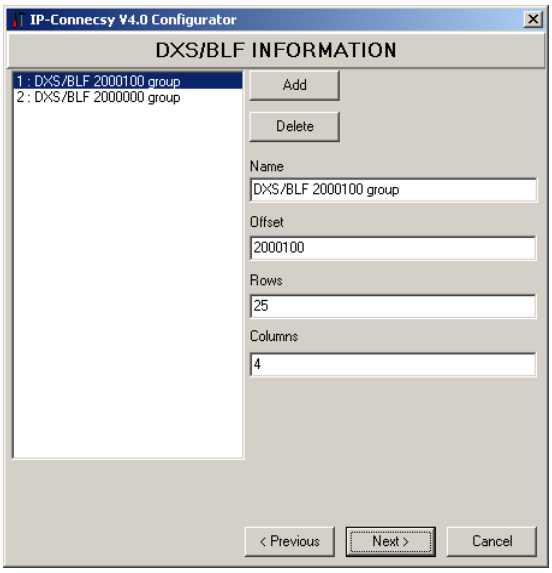
Parameter	Usage
Agent name	The name of the agent to be used to automatically log in to Connecsy.
Password	The password of the agent to be used to automatically log in to Connecsy.



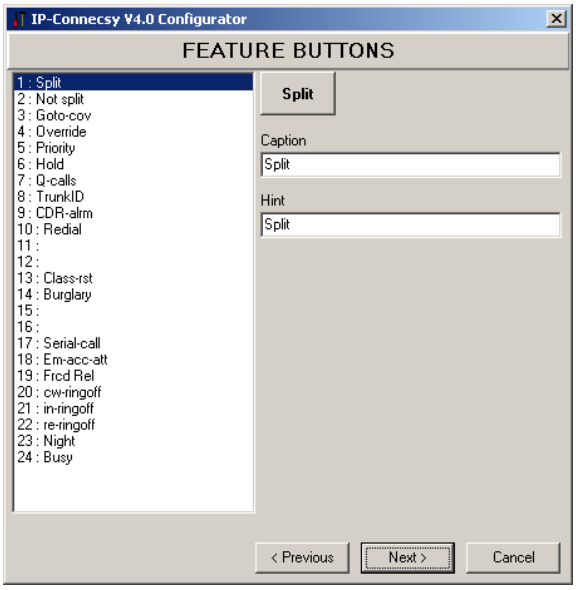
The Connecsy “DXS/BLF” feature allows multiple “Blinking Lamp Fields” (BLF) to be configured. Each BLF presents a compact status display of a subset of the telephones controlled by a Connecsy system. The fields of the “DXS/BLF” configuration dialog should be set as described in the following table. Note that a given BLF window will show the status of the number of stations equal to the number of rows multiplied by the number of columns. For each BLF range, there must be a corresponding entry in the “HUNDREDS SELECT BUTTON ASSIGNMENTS” section of the Avaya Communication Manager “attendant” form.

After setting the parameters, click “Next”.

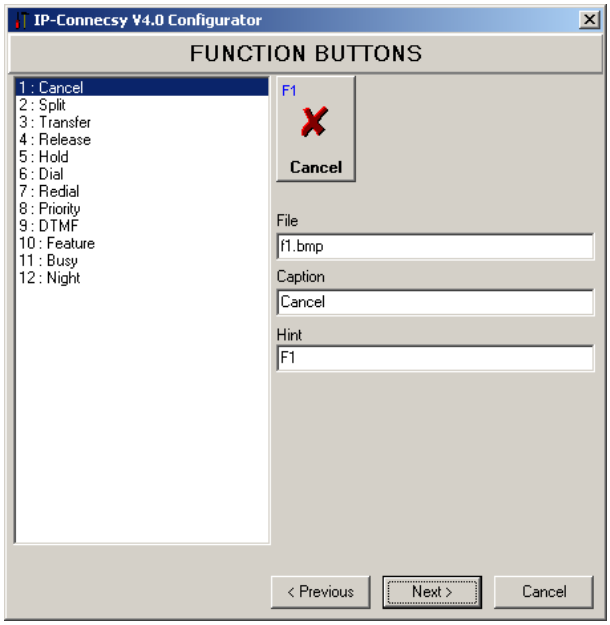
Parameter	Usage
Name	The name to be used in the heading of the BLF window.
Offset	The extension of the first station to be shown by a BLF window.
Rows	The number of rows in the BLF window.
Columns	The number of columns in the BLF window.



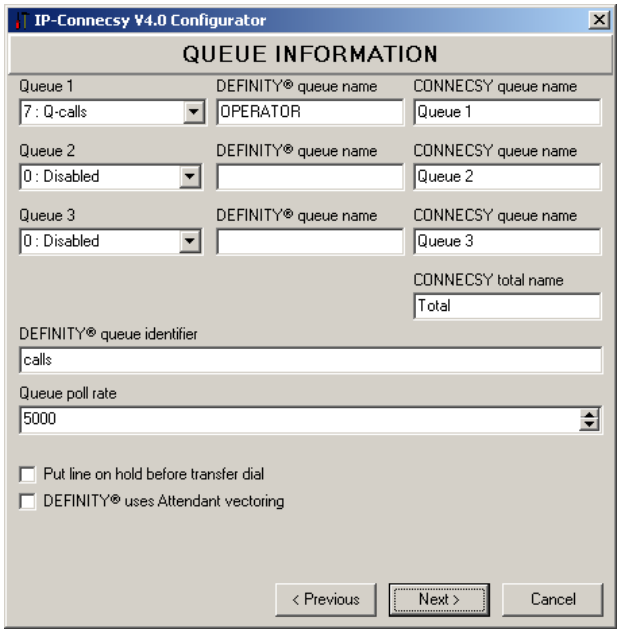
Configure the “FEATURE BUTTONS” as shown and click “Next”. These settings correspond to the “feature button assignments” settings on page 3 of the Avaya Communication Manager “add attendant” SAT form.



Configure the “FUNCTION BUTTONS” as shown below and click “Next”.

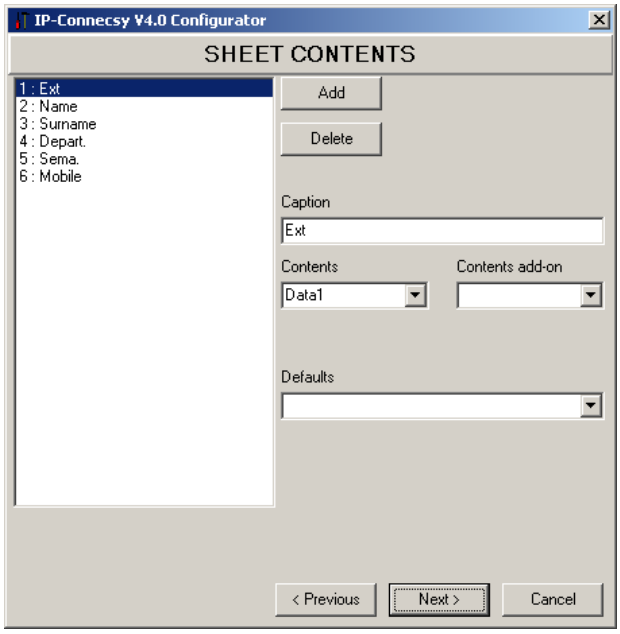


Enter the “QUEUE INFORMATION” as shown below, and click “Next”.

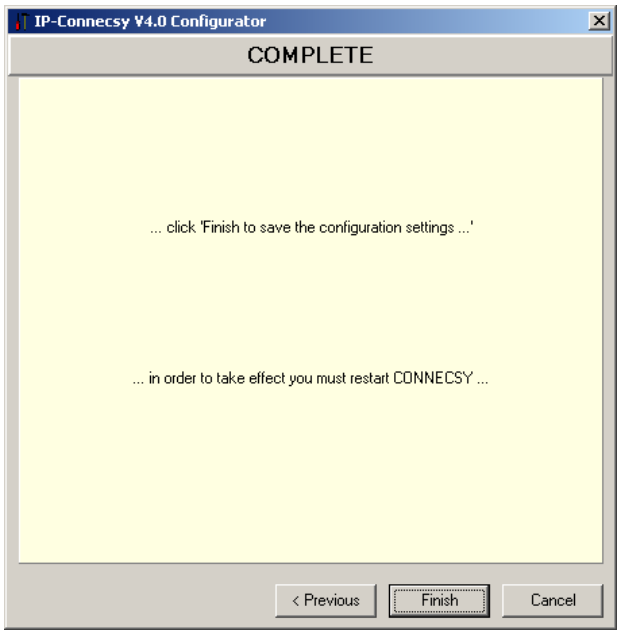


Configure the “SEARCH BUTTONS” as shown below and click “Next”.

Configure the “SHEET CONTENTS” as shown and click “Next”.



Click “Finish” to complete the configuration.



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4. Interoperability Compliance Testing

The objective of the compliance testing done on the Pridis Connecsy product was to verify interoperability with Avaya Communication Manager. This includes verifying that the essential Connecsy features function properly when used with Avaya Communication Manager, and that Avaya Communication Manager features are not hindered by the interaction with Connecsy. Furthermore, the robustness of Connecsy is to be verified.

4.1. General Test Approach

The test method employed can be described as follows:

- Connecsy was configured to act as an attendant console on an Avaya Communication Manager system.
- Avaya Communication Manager was configured to support various local IP telephones, one of which was allocated to provide the speech path for Connecsy.
- A simulated PSTN interface was attached to Avaya Communication Manager and equipped with telephones used to simulate external callers.
- The major Connecsy features and functions were verified using the above-mentioned local and external telephones, including making, receiving, and transferring calls, initiating conferences, switching between day/night operation, and displaying the status of calls.
- The robustness of Connecsy was tested by verifying its ability to recover from interruptions to its external connections.

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

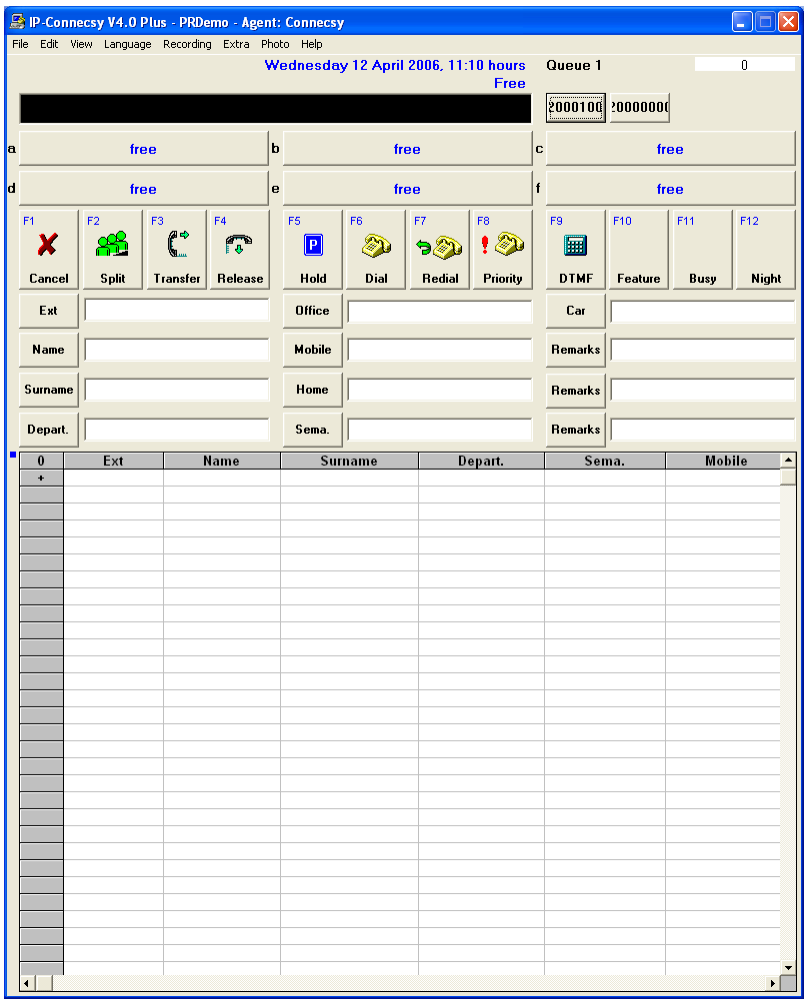
4.2. Test Results

All tests were performed successfully.

5. Verification Steps

There are various verification steps which can be performed to verify the correct operation of the system:

- Verify that Avaya Communication Manager and Connecsy can ping each other.
- Verify that the various telephones can call each other.
- Start the Connecsy application and verify that the console operation screen appears, as follows:



- Verify that Connecsy is capable of making and receiving calls.

6. Support

Support for Connecsy is available at:

Pridis B.V.
Computer Telephony Products
Ambachtsstraat 13 D
3861 RH Nijkerk
The Netherlands
Phone: +31 (0)33 4697086
e-mail: info@pridis.com
info: www.pridis.com

7. Conclusion

The following conclusions can be drawn from the compliance testing done on the Pridis Connecsy application:

- The major Connecsy functions interoperate with Avaya Communication Manager.
- Avaya Communication Manager operation is not hindered by interactions with Connecsy.
- Connecsy exhibits a robustness that enables it to recover from interruptions to its external interfaces that commonly occur during maintenance operations.

8. Additional References

1. "IP-CONNECSY V4.0 and CONNECSY PLUS Technical Manual", Version 4.0/Plus UK, June 2005
2. “Feature Description and Implementation for Avaya Communication Manager”, 555-245-205, Issue 3, June 2005

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 Developer*Connection* Program at devconnect@avaya.com.