

Avaya Solution & Interoperability Test Lab

Application Notes for Fluency Virtual Speech Agent with Avaya Voice Portal – Issue 1.0

Abstract

These Application Notes describe the configuration steps required to integrate the Fluency Virtual Speech Agent (VSA) suite with Avaya Voice Portal. The Fluency VSA suite contains a number of packaged applications that customers can use in their call centers to create the solutions they need. The Fluency VSA suite is also a platform for deploying IVR speech applications by automating routine routing and transactional processes. The pre-packaged applications are configurable and can either be deployed independently or together throughout the enterprise, depending on specific business requirements.

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

1. Introduction

These Application Notes describe the configuration steps required to integrate the Fluency Virtual Speech Agent (VSA) suite with Avaya Voice Portal. The Fluency VSA suite contains a number of packaged applications that customers can use in their call centers to create the solutions they need. The Fluency VSA suite is also a platform for deploying IVR speech applications by automating routine routing and transactional processes. The pre-packaged applications are configurable and can either be deployed independently or together throughout the enterprise, depending on specific business requirements.

The VSA Suite is underpinned by the *Management Console* that facilitates application configuration, system management and monitoring, logging and reporting, and data management.

Figure 1 illustrates the configuration used for testing. In this configuration, Voice Portal interfaces with Avaya Communication Manager via H.323 and an IBM Websphere Voice Server was used as the speech server. The application server hosts the Voice Portal VXML scripts.

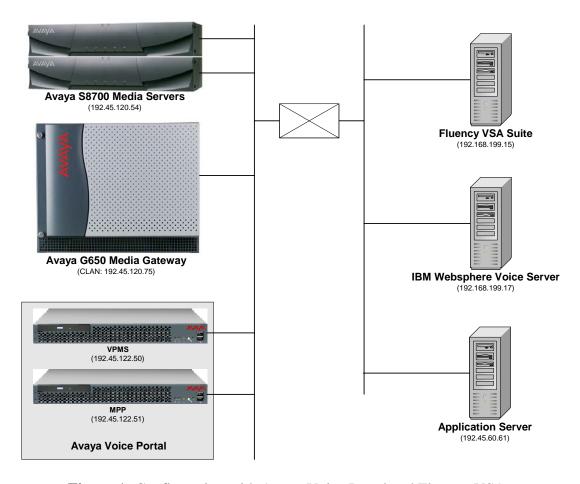


Figure 1: Configuration with Avaya Voice Portal and Fluency VSA

1.1. Equipment and Software Validated

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

Equipment	Software
Avaya Voice Portal	4.0.0.0.2901
Avaya S8700 Medias Servers with a G650 Media Gateway	Avaya Communication Manager 4.0 (R014x.00.0.730.5)
Fluency Virtual Speech Agent (VSA)	4.5 Build 15
IBM Websphere Voice Server	5.1.3 Windows Server 2003 English with - Websphere Voice Server Cumulative Fix Pack 3 and - iFix IC52120 - iFix IC53165 - iFix IC53418 - iFix IC53342
Application Server running on Windows Server 2003 with Internet Information Services (IIS) Enabled	N/A

2. Configure Avaya Communication Manager

This section describes the configuration of H.323 stations and the IP codec set for Voice Portal. This configuration also requires a C-LAN and Media Processor board for IP communication. This configuration is outside the scope of these application notes, but the reader may refer to [1] and [2] for additional information.

From the System Access Terminal (SAT), add an H.323 station for Voice Portal. A call to this station will be routed to Voice Portal which in turn will run the Fluency VSA application. In the station form, set the **Type** to 7434ND, provide a descriptive **Name**, set the **Security Code**, and set the **IP Softphone** field to 'y'.

add station 23802		1 of 6
	STATION	
Extension: 23802	Lock Messages? n	BCC: 0
Type: 7434ND	Security Code: XXXXX	TN: 1
Port: S00059	Coverage Path 1:	COR: 1
Name: VP 192.45.122.50	Coverage Path 2:	cos: 1
	Hunt-to Station:	
STATION OPTIONS		
	Time of Day Lock Table:	
Loss Group: 2	Personalized Ringing Pattern:	1
Data Module? n	Message Lamp Ext:	23802
Display Module? y		
Display Language: english	Coverage Module?	n
Survivable COR: internal	Media Complex Ext:	
Survivable Trunk Dest? y	IP SoftPhone?	У
	IP Video Softphone?	n

Figure 2: Station Form

In the IP codec set form associated with the IP network region of the H.323 station configured in **Figure 2**, set the **Audio Codec** field to one that is supported by the VSA application. In this configuration, *G.711A* was used.

```
change ip-codec-set 1
                                                              Page
                                                                     1 of
                         IP Codec Set
   Codec Set: 1
   Audio
              Silence
                                     Packet
                            Frames
   Codec
                Suppression Per Pkt Size(ms)
                              2
1: G.711A
                    n
                                       20
2:
3:
4:
```

Figure 3: IP Codec Set Form

3. Configure Avaya Voice Portal

This section covers the administration of Avaya Voice Portal. The following Voice Portal configuration steps will be covered:

- Configuring an H.323 VoIP connection
- Adding an MPP server
- Configuring the VoIP audio format (mu-law or a-law)
- Adding a speech server
- Adding applications
- Starting the MPP server

Avaya Voice Portal is configured via the Voice Portal Management System (VPMS) web interface. To access the web interface, enter http://<ip-addr>/VoicePortal as the URL in an internet browser, where <ip-addr> is the IP address of the VPMS. Log in using the Administrator user role. The screen shown in **Figure 4** is displayed.

Note: All of the screens in this section are shown after the Voice Portal had been configured. Don't forget to save the screen parameters as you configure Avaya Voice Portal.

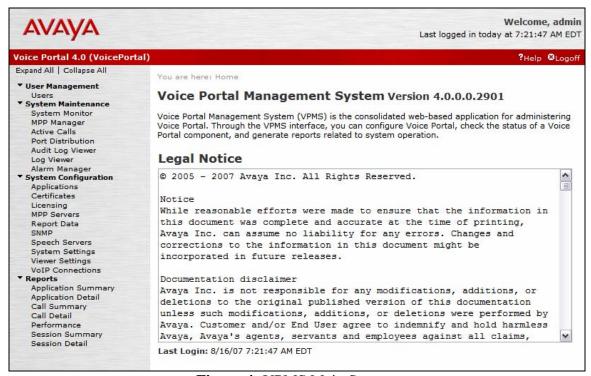


Figure 4: VPMS Main Screen

Configure the H.323 VoIP Connection. To configure an H.323 connection, navigate to the **VoIP Connections** page and then click on the **H.323** tab. In the H.323 tab shown in **Figure 5**, set the **Gatekeeper Address** to the IP address of the C-LAN in the G650 media gateway and the **Gatekeeper Port** to 1719. Next, configure the stations for Voice Portal, which map to the 7434ND stations configured in Avaya Communication Manager. In addition, set the **Password** for the stations and set the **Station Type** to *Inbound and Outbound*. In this configuration, only station 23802 mapped to the VSA application in Voice Portal.

AVAYA		Welcome, admin Last logged in today at 9:46:27 AM EST
Voice Portal 4.0 (VoicePorta	al)	?Help ⊗Logoff
Expand All Collapse All	You are here: Home > Syst	tem Configuration > VoIP Connections > Change H.323 Connection
▼ User Management Users ▼ System Maintenance System Monitor MPP Manager Active Calls Port Distribution Log Viewer Alarm Manager ▼ System Configuration Applications	Change H.323 C	onnection de configuration of an H.323 connection. devcon14 192.45.120.75
Certificates Licensing MPP Servers Report Data SNMP Speech Servers	Gatekeeper Port: Media Encryption: New Stations	1719 ③ Yes ○ No
System Settings Viewer Settings VoIP Connections * Reports Application Summary Application Detail Call Summary Call Detail Performance Session Summary Session Detail	Station: Password: Same Use se	d Outbound
	Configured Stations (M 23801 - 23808	for Maintenance, I for Inbound Only) Remove

Figure 5: H.323 Connection

Add an MPP Server. Add the MPP server by navigating to the **MPP Servers** screen from the left pane. In the MPP Server configuration page, specify a descriptive name and the **Host Address** of each MPP server. Also, specify the **Maximum Simultaneous Calls** supported by each MPP server. **Figure 6** shows the configuration for the first MPP server.

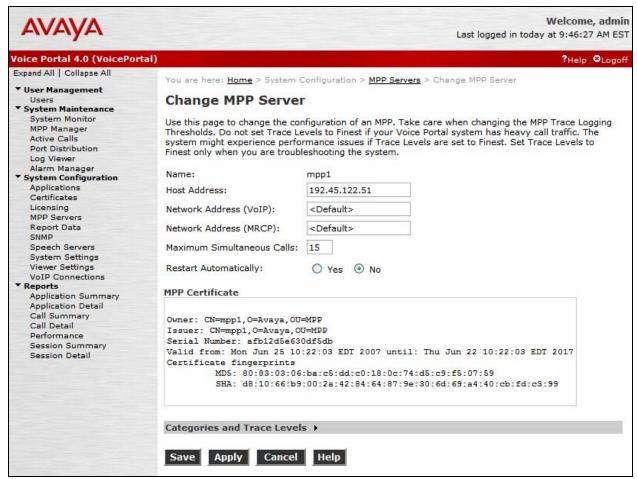


Figure 6: MPP Server

Configure the VoIP Audio Format. The **VoIP Audio Format** for the MPP server is configured in the **VoIP Settings** screen. The **MPP Native Format** field in **Figure 7** is set to *audio/x-alaw-basic* for alaw. The other fields may be left at default values.

AVAYA	Welcome, admin ⚠ Last logged in 12/7/07 at 10:45:29 AM EST		
Voice Portal 4.0 (VoicePor	tal) ?Help 🕹 Logoff		
Expand All Collapse All	You are here: Home > System Configuration > MPP Servers > VoIP Settings		
▼ User Management			
Users ▼ System Maintenance	VoIP Settings		
System Monitor	Voice over Internet Protocol (VoIP) is the process of sending voice data through a		
MPP Manager	network using one or more standard protocols such as H.323 and Real-time		
Active Calls	Transfer Protocol (RTP). Use this page to configure parameters that affect how		
Port Distribution Log Viewer	voice data is transferred through the network. Note that if you make any changes		
Alarm Manager	to this page, you must restart all MPPs.		
▼ System Configuration			
Applications	Experience of the second of th		
Certificates Licensing	Port Ranges		
MPP Servers	Low High		
Report Data SNMP	UDP: 30000 30999		
Speech Servers	TCP: 31000 31999		
System Settings Viewer Settings	A SAME AS THE PROPERTY OF THE		
VoIP Connections	MRCP: 32000 32999		
▼ Reports			
Application Summary	RTCP Monitor Settings		
Application Detail Call Summary			
Call Detail	Host Address:		
Performance	Port:		
Session Summary			
Session Detail			
	MPP Native Format: audio/x-alaw-basic QoS Parameters		
	VLAN Diffserv		
	H.323: 6 46		
	SIP: 46		
	RTSP: 6 46		
	Out of Service Threshold (% of VoIP Resources) Trigger Reset		
	Warn: 0		
	Error: 20 10		
	Fatal: 70 50		
	Save Apply Cancel Help		

Figure 7: VoIP Settings

Add an ASR Server. To configure the automatic speech recognition (ASR) server, click on **Speech Servers** in the left pane, select the **ASR** tab, and then click **Add. Figure 8** shows the screen after the ASR server has already been configured. Set the **Engine Type** to the appropriate value. In this configuration, an IBM Websphere ASR server was used so the engine type was set to *IBM WVS*. Set the **Network Address** field to the IP address of the speech server and select the desired **Languages** to be supported. The other fields were set to their default values.

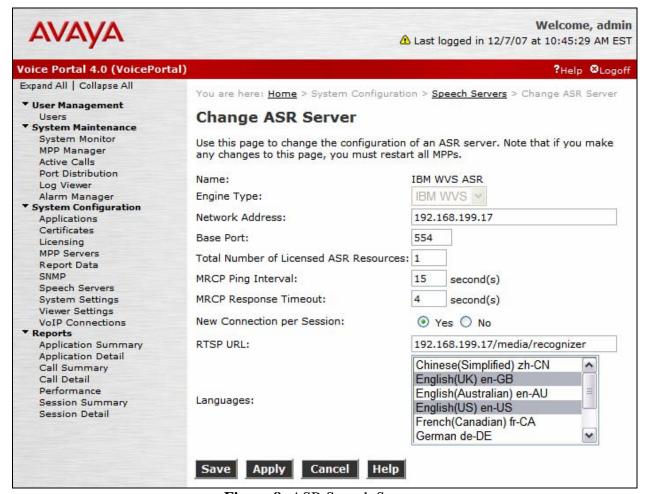


Figure 8: ASR Speech Server

Add a TTS Server. To configure the text-to-speech (TTS) server, click on **Speech Servers** in the left pane, select the **TTS** tab, and then click **Add**. **Figure 9** shows the screen after the TTS server has already been configured. Set the **Engine Type** to the appropriate value. In this configuration, an IBM Websphere TTS server was used so the engine type was set to *IBM WVS*. Set the **Network Address** field to the IP address of the speech server and select the desired **Languages** to be supported. The other fields were set to their default values.

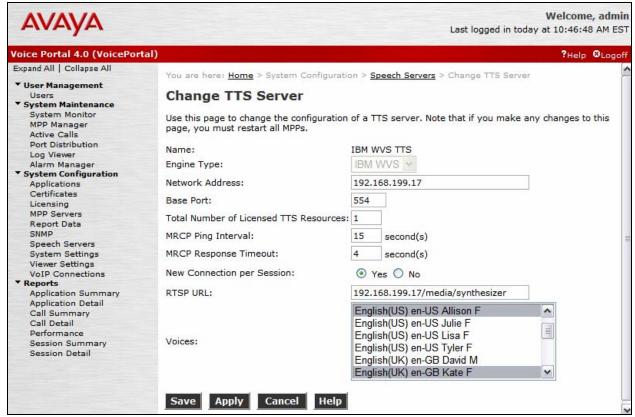


Figure 9: TTS Server

Add an Application. On the **Applications** page, add a Voice Portal application. Specify a **Name** for the application, set the **MIME Type** field to the appropriate value (e.g., VoiceXML), and set the **VoiceXML URL** field to point to a VoiceXML application on the Fluency VSA server. Next, specify the type of ASR and TTS servers to be used by the application and the called number that invokes the application. The **Applications** screen is shown in **Figure 10**.

Note: The Verify button may be clicked to verify connectivity between Voice Portal and Fluency VSA. If connectivity exists and the Fluency VSA server is running, a web-browser with the VoiceXML code will be displayed.

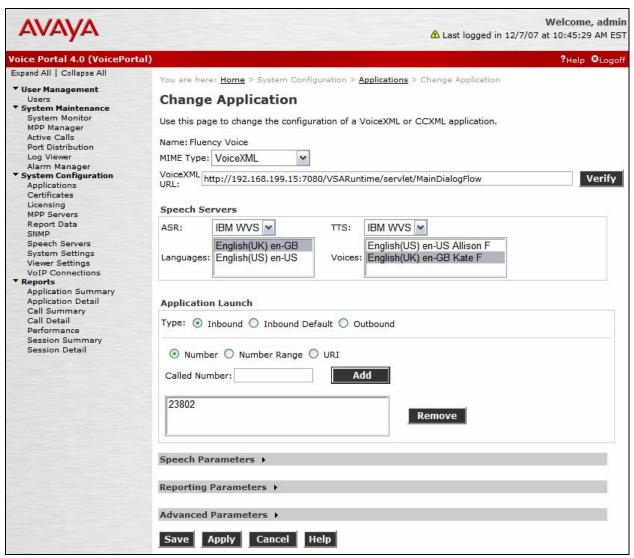


Figure 10: Applications

Start the MPP Server. Start the MPP server from the **MPP Manager** page shown in **Figure 11**. Select each MPP and then click the **Start** button. After the MPP is started, the **Mode** of the MPP should be *Online* and the **State** should be *Running*.

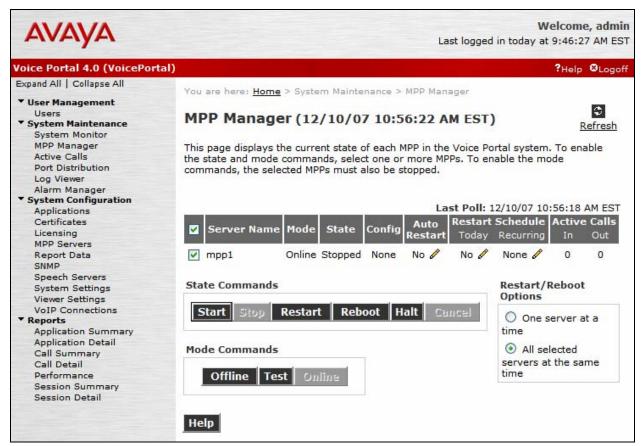


Figure 11: MPP Manager

4. Configure Fluency VSA

For detailed information on deploying VSA applications refer to the VSA documentation in the references section. The VSA Suite is underpinned by the *Management Console* that facilitates application configuration, system management and monitoring, logging and reporting, and data management.

To access the *Management Console*, open a web browser and specify the URL in the following format, replacing <hostname</pre> with the name of the host:

http://<hostname>:7080/VSAConsole/UserLogin.do

Next, specify the username and password in the **Login** page. After successfully logging in, the VSA Suite's Management Console will open as shown in **Figure 12**.

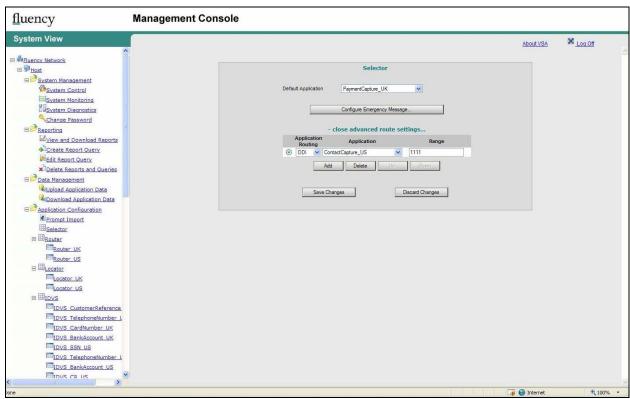


Figure 12: The VSA Suite's Management Console

Selector is the first application that the system runs when it receives a call. Selector is used to configure which application instances to run after answering calls.

A default application can be assigned for all calls to be routed to. Alternatively, *Selector* can be configured to route calls to different application instances based on:

- The number being dialed, called Direct Dealing Inward number (DDI)
- The number the caller is dealing from, called Calling Line Identifier (CLI)
- The port number of the calling application instance, called port number ranges

If both a default application and port-based routing are defined, port-based routing takes precedence. If DDI, CLI, or port-based routing is defined, *Selector* attempts to match the specified ranges for each route with the data received from the speech stack. If conflicts occur in the ranges defined for each application, then the first route that matches the range takes precedence.

4.1. Configure Selector

Either the default application or the advanced route settings, or both of them, need to be configured. The steps for configuring *Selector* are:

- **1.** Configure the default application.
- **2.** Configure the emergency message.
- **3.** Configure the advanced route settings.

To configure the default application

A default application for all calls to be routed to can be assigned as follows.

- 1. Click **Selector** in the left pane of the *Management Console*.
- 2. The **Selector** page appears in the right pane.



3. To assign a default application for all calls to be routed to, select the application from the **Default Application** list.

Note: Advanced route settings override the default application.

To configure the emergency message

- 1. On the Selector page, click Configure Emergency Message.
- 2. The Emergency Message configuration : Selector page appears.
- **3.** Do one of the following:
 - To have *Selector* play back an emergency message, for example, a promotional message, and continue running, select the **Emergency message enabled** check box, configure the prompt, and select **Continue with application** from the **Call routing after emergency message** list.
 - To have Selector play back an emergency message, for example, a service outage message, and then to run another application, select the Emergency message enabled check box, configure the prompt, and select the application from the Call routing after emergency message list.
- **4.** Configure the emergency message prompt as specified in the "To configure a single-part message prompt" section in the VSA Application Configuration Guide [6] [7].

Note: Clear the **Emergency message enabled** check box to prevent the configured emergency message from playing

- 5. Click **Ok** to return to the **Selector** page.
- 6. Click Save Changes.

To configure the advanced route settings

To configure routes to different application instances, based on the number being dialed (called DDI), the number the caller is dealing from (called CLI), or the port number of the calling application instance (called PORT).

- 1. On the **Selector** page, click the link to open advanced route settings. The **Application Routing**, **Application** and **Range** headings appear.
- 2. Click Add.
- 3. Select the appropriate calling type from the **Application Routing** list.
- **4.** Select the appropriate application instance from the **Application** list.
- **5.** Type the range of values in the **Range** field.
- **6.** To add more routes, click **Add** and configure as above.
- 7. To delete a route, select the route (indicated by a dot in the selection column) and click **Delete**.
- **8.** To change the order of the routes, select the route (indicated by a dot in the selection column) and click **Up** or **Down.**
- 9. Click Save Changes.

4.2. Editing Selector

Caution: Any changes made to *Selector* are effective on the live system as soon as **Save Changes** is clicked on the **Selector** page.

To edit an instance

- **1.** Click **Selector** in the left pane of the *Management Console*. The **Selector** page appears in the right pane.
- 2. Make the required edits and click **Save Changes**.

For detailed information, see "To configure the default application", "To configure the emergency message", and "To configure the advanced route settings" in the VSA Application Configuration Guide.

5. Interoperability Compliance Testing

This section describes the interoperability compliance testing used to verify applications created and deployed using the Fluency VSA Suite with Avaya Voice Portal. This section covers the general test approach and the test results.

5.1. General Test Approach

The interoperability compliance test included feature and serviceability testing. The feature testing focused on verifying the following:

- Placing calls to Avaya Voice Portal that ran IVR applications on the Fluency VSA platform.
- Exercising many of the pre-packaged Fluency VSA applications, including blind and supervised transfers, DTMF input, speech recognition and text-to-speech. An IBM Websphere Voice Server was used as the speech server.

The serviceability testing focused on verifying the ability of the Fluency VSA server to recover from adverse conditions, such as power failures and disconnecting cables to the IP network.

5.2. Test Results

All test cases passed. Avaya Voice Portal was successful in running applications developed and deployed on Fluency VSA.

6. Verification Steps

This section provides the verification steps that may be performed to verify that the Voice Portal can run IVR applications on the Fluency VSA server.

1. From the VPMS web interface, verify that the MPP servers are online and running in the **System Monitor** page shown in **Figure 13**.

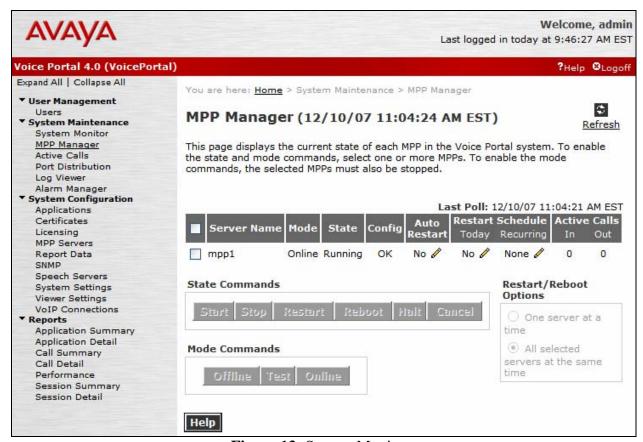


Figure 13: System Monitor

2. From the VPMS web interface, verify that the ports on the MPP server are in-service in the **Port Distribution** page shown in **Figure 14**.

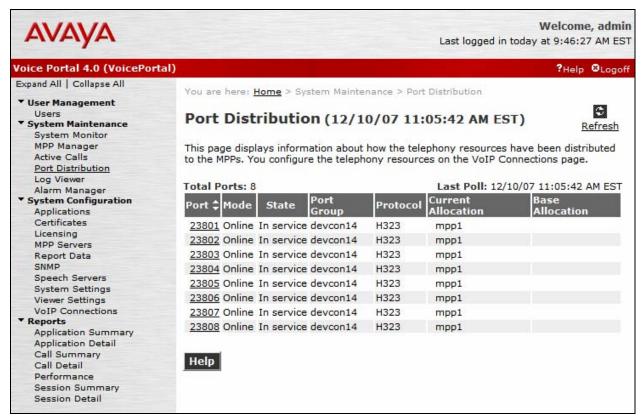


Figure 14: Port Distribution

3. Place a call to Voice Portal that runs a Fluency VSA application. Verify that the application answers the call and that the caller can input information via speech and DTMF. Transfer the call to another user and verify that the call is transferred successfully.

7. Support

To contact Fluency Voice by phone or access their website:

■ **Phone:** 020-7022-2460 (UK)

617-217-2775 (US)

■ Web: http://www.fluencyvoice.com

8. Conclusion

These Application Notes describe the configuration steps required to integrate the Fluency Virtual Speech Agent (VSA) suite with Avaya Voice Portal. All feature and serviceability test cases were completed successfully.

9. Additional References

This section references the product documentation that is relevant to these Application Notes.

- [1] *Administrator Guide for Avaya Communication Manager*, Document 03-300509, Issue 3.1, February 2007, available at http://support.avaya.com.
- [2] Feature Description and Implementation for Avaya Communication Manager, Document 555-245-205, Issue 5, February 2007, available at http://support.avaya.com.
- [3] Installing and Configuring Avaya Voice Portal 4.0, June 2007, available at http://support.avaya.com.
- [4] Administering Avaya Voice Portal 4.0, June 2007, available at http://support.avaya.com.
- [5] Virtual Speech Agent (VSA) Suite 4.4 Product Technical Specification, Version 1.0, September 28, 2007.
- [6] Virtual Speech Agent (VSA) Suite 4.4 US Application Configuration Guide, Version 1.2.
- [7] Virtual Speech Agent (VSA) Suite 4.4 UK Application Configuration Guide, Version 1.2.

©2008 Avaya Inc. All Rights Reserved.

Avaya and the Avaya Logo are trademarks of Avaya Inc. All trademarks identified by ® and TM are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners. The information provided in these Application Notes is subject to change without notice. The configurations, technical data, and recommendations provided in these Application Notes are believed to be accurate and dependable, but are presented without express or implied warranty. Users are responsible for their application of any products specified in these Application Notes.

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 Dev*Connect* Program at devconnect@avaya.com.