

Avaya Solution & Interoperability Test Lab

Application Notes for Anhui USTC iFlyTek InterReco with Avaya Aura® Experience Portal – Issue 1.0

Abstract

These Application Notes describe the configuration steps required to integrate Anhui USTC iFlyTek InterReco with Avaya Aura® Experience Portal. Anhui USTC iFlyTek uses the Media Resource Control Protocol (MRCP) version 2 for its Automatic Speech Recognition (ASR) features to interface with VoiceXML (VXML) applications running on the Avaya Aura® Experience Portal.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as the observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

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

These Application Notes describe the configuration steps required to integrate Anhui USTC iFlyTek InterReco with Avaya Aura® Experience Portal. iFlyTek uses the Media Resource Control Protocol (MRCP) version 2 for its Automatic Speech Recognition (ASR) features to interface with the VoiceXML (VXML) applications running on Avaya Aura® Experience Portal.

iFlyTek InterReco is a speech recognition software product that provides voice recognition and call key navigation capabilities for self-voice services.

2. General Test Approach and Test Results

The general test approach is to manually make calls from Communication Manager to the incoming number of Experience Portal applications which in turn launch the speech applications. The appropriate voice responses are observed. Session details are also checked from the Experience Portal for the correct behavior, and system monitor are checked for any abnormality.

Throughout these Application Notes, the terms "iFlyTek" and "InterReco" will be used interchangeably in these Application Notes.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing. The feature testing focused on placing calls to Media Processing Platform (MPP) server in the Experience Portal system. These calls are used to verify speech recognition with barge in, time-out, resources unavailable, as well as simultaneous calls.

The serviceability testing focused on verifying the ability of the iFlyTek speech solution to recover from adverse conditions, such as power failures and disconnecting cables to the IP network, Experience Portal system restarts, and Communication Manager restarts.

2.2. Test Results

All test cases are successfully completed with the following observations:

- 1. InterReco only support external grammar.
- 2. InterReco does not support DTMF recognition.

2.3. Support

For technical support on iFlyTek speech solutions, contact the iFlyTek support team at:

- Phone: +86-551-5331813
- Email: tts_support@iFlyTek.com

3. Reference Configuration

Figure 1 illustrates the test configuration used to verify the iFlyTek solution. iFlyTek InterReco runs on Linux. iFlyTek InterReco was installed on SUSE Server 11 with Service Pack 2. iFlyTek InterPhonic installed on Windows Server 2008 R2 with Service Pack was also setup for the TTS (Text-To-Speech) portion of the VoiceXML scripts during testing. VoiceXML scripts and VoiceXML applications were installed on a Microsoft Windows 2003 Server running Microsoft Internet Information Services (IIS) and accessed by Avaya Aura® Experience Portal. Avaya Aura® Experience Portal which comprise of Experience Portal Manager (EPM) and Media Processing Platform (MPP) are connected to Avaya Aura® Session Manager, Avaya Aura® System Manager and a duplex pair of Avaya Aura® Communication Manager; all running on VMware 5.x and a Avaya G430 Media Gateway. Avaya IP and Digital telephones were used to place SIP VoIP calls to Avaya Aura® Experience Portal, which would run the VoiceXML scripts and applications. The applications would then use iFlyTek InterReco for speech recognition.



Figure 1: Test Configuration

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4. Equipment and Software Validated

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

Equipment	Software		
Avera Auro Communication Managar	7.0 SP3		
Avaya Auras Communication Manager	(R017.0.0.2.0.441.22856)		
Avova Auro® System Managar	7.0.0.2		
Avaya Aura® System Manager	(7.0.0.16266)		
Avova Auro® Sossion Managar	7.0 SP1		
Avaya Aura Session Manager	(7.0.0.2.700102)		
Avaya Aura® Experience Portal			
EPM	7.0.2.0.317		
MPP	7.0.2.0.0303		
Avoya 4549CT DWD Ethernat Douting Switch	FW: 5.3.0.3		
Avaya 434601-P WK Elleniet Koulling Switch	SW: v5.6.1.052		
96x1 Series IP Deskphone (H.323)	6.6029		
96x1 Series IP Deskphone (SIP)	7.0.0.39		
94xx Series Digital Deskphone	FW 15		
InterPhonic running on Windows 2008 R2	IMS 3.7_r1068+TTS 6.5.0.7900		
InterReco running on SUSE 11 SP2	IMS 3.7_r1073+ISR60_r1031		

Note – The Avaya Aura® servers and iFlyTek servers used in the reference configuration and shown on the table were deployed on a virtualized environment. These Avaya components ran as virtual machines over VMware® (ESXi 5.X) platforms. Consult the installation documentation on the **References** section for more information.

5. Configure Avaya Communication Manager

The configuration of the SIP Trunks between Communication Manager and Session Manager, and the routing of calls to Experience Portal are assumed to be in place and will not be discussed here. This section provides the additional procedures to configure Communication Manager for the purpose of administering iFlyTek. The configuration is performed via the System Access Terminal (SAT).

Step	Description							
1. Enter the change ip-codec-set n command where n is a valid IP c the IP network region that is used by Experience Portal, typically assigned to the Session Manager SIP Trunk signaling group. Set A appropriate value supported by Avaya Experience Portal and Inter configuration, the G.711Mu codec was used.				a valid IP co l, typically th group. Set An tal and InterF	dec-set asso ne IP netwo udio Codeo Reco. In this	ociated rk regio e to an s	with n	
	change ip-codec-	-set 6				Page	l of	2
		IP	Codec Set					
	Codec Set: 6	6						
	Audio Codec 1: G.711MU 2: 3: 4: 5: 6:	Silence Suppression n	Frames Per Pkt 2	Packet Size(ms) 20				

6. Configure Avaya Aura® Experience Portal

The initial administration of Avaya Experience Portal and the configuration of the SIP VoIP Connection to Session Manager are assumed to be in place and will not be discussed here. This section covers the additional procedures of Avaya Experience Portal that is required for the purpose of administering iFlyTek. The following steps will be covered:

- Configuring the VoIP audio format
- Adding iFlyTek as a ASR server
- Adding applications

Step	Description		
1.	Avaya Experier interface, enter < ip-addr> is th role to display t	the Portal is configured via the EPM web interface https:// <ip-addr>/VoicePortal/ as the URL in e IP address of the EPM. Log in using an accoun- he main page.</ip-addr>	ace. To access the web an internet browser, where nt with the Administration
	Ανάγα		Wolcome, spadmin Last logged in today at 12:40/01 Att pgr
	Avaya Aura® Experience Po	rtal 7.0.2 (ExperiencePortal)	6 Home 7, Help O Logoff
	Boann All Collesse At Boann All Collesse At Glass Nanagement Advectory Advectory Advectory Southern Non-Neir Port Distribution System Maintenance Audot Log Weren Trace Viseer Log Viewer Audot Log Weren Trace Viseer Log Viewer Audot Log Weren Trace Viseer Log Viewer Audot Log Weren System Resource System Configuration Applications GMA Servers Visite Constations Speech Servers Visite Constations	You get Reservice Avaya Aura® Experience Portal Manager Avaya Aura® Experience Portal Manager (EPM) is the consolidated web-based application for adiry you can configure Experience Portal, check the status of an Experience Portal component, and get Installed Components Media Processing Platform Media Processing Media	ministering Experience Portal. Through the EPM interface exercise reports related to system operation. call from a PBX, it involves a VoiceXML (or ICCXML) my to process the call.
	Cones Security Certificates Usersing Standard Castern Scheduled Multi-Hedia Configuration Binaf SMS	© 2015 Aveys Inc. All Rights Reserved. Notice While reasonable efforts have been made to ensure that the information in this document is complete and accurate at the time of printing, Aveys absues no liability for any errors. Aveys reserves the right to make changes and corrections to the information in this	



Step	Description
	< Some lines removed for brevity >
	# THIS SECTION IS SPECIFIC TO EXDERIENCE 7 0
	# 1. ADD ANY NEW PROPERTIES FOR EXPERIENCE 7.0 TO ADDITIONS SECTION WITHIN 7.0
	SECTION.
	# 2. TO MODIFY A PRE-EXISTING PROPERTY, MOVE IT TO MODIFICATIONS SECTION WITHIN
	7.0 AND THEN MODIFY IT. # 3. TO DELETE A PRE-EXISTING PROPERTY. MOVE IT TO DELETIONS SECTION WITHIN 7.0
	AND THEN COMMENT IT OUT.

	#{{START:PROPERTIES:EXPERIENCEPORTAL_7.0:ADDITIONS
	# Specify any new properties for Experience Portal 7.0 here.
	iFlyTekMRCPLabels=MRCP V1, MRCP V2
	iFlyTekTransportLabels=TCP
	#}}END:PROPERTIES:EXPERIENCEPORTAL_7.0:ADDITIONS
	< remaining lines removed for brevity >

Step	Description
5.	Locate the languages.properties file found in /opt/Tomcat/apache-tomcat-
	6.0.43/webapps/VoicePortal/WEB-INF/classes/config. Edit the file by adding the
	fields and lines shown below to the appropriate section
	news and mes shown below to the appropriate section.
	#
	# Engine Type options displayed on the page
	#
	asrEngines <mark>tiFlyTek</mark> , IBM WVS, Loquendo, Nuance
	ttsEngines=1FlyTek,IBM WVS,Loquendo,Nuance
	asrEnginesAmsOnly=Nuance
	# Engine Type conversion from display to internal data in the databas
	iFlyTekASR=iFlyTek interreco
	iFlyTekTTS=iFlyTek Interphonic
	IBMWVSASR=ibm wvs
	IBMWVSTTS=1bm wvs
	NuanceASK=nuance osr
	LoguendoASR=loguendo
	LoquendoTTS=loquendo
	# Engine Type conversion from internal data in the database to display
	iFlyTekinterreco=iFlyTek
	iFlyTekInterphonic=iFlyTek
	IDMWVS=IBM WVS
	nuancequantum=Nuance
	loquendo=Loquendo
	# Languages
	< Some lines removed for brevity >
	< bome lines lemoved for bieviey >
	iFlyTekASRlanguages=zh-CN,en-US
	#
	# Language Delault
	# < Some lines removed for brevity >
	Come lines femoved for bieviey /
	iFlyTekASRlanguagesDefault=en-US
	# #
	# default base port #
	" < Some lines removed for brevity >
	iFlvTekBasePort=1554
	#
	# default New Connection per Session
	#
	< Some lines removed for brevity >
	i FlyTok Port-Yos
	#
	# default URL
	#
	< Some lines removed for brevity >

Step	Description
	iFlyTekRtspUrlAsr=/media/recognizer
	# # Grammar Type #
	<pre>~ Some lines removed for brevity ></pre>
	iflytekinterrecoGrammarType=sisr
	# # MRCP Protocol #
	< Some lines removed for brevity >
	iFlyTekMRCPValues=mrcpv1,mrcpv2 #
	# Transport #
	< Some lines removed for brevity >
	1FlyTekTransportValues=tcp
	< remaining lines removed for previty >
6.	Reboot the EPM server for the above changes to take effect.
7	To configure the Electric InterDeco, click System Configuration A Success Services
7.	Click the ASR tab and click Add.
	AVAYA Metcome, epadmin Last topged in Mar 11, 2018 at 108100 AM PST Avaya Avraily Experience Partal 2.0.2 (ExperiencePartal)
	Expand All Colleges All Expand = Dame * User Hanagement Speech Servers
	Users Logio Options * Real time Mositoring System Nanton Active Calls
	Per Dautionen Ada Tta
	Aude Log XMmer Mame Enable Feable Feable
	System Hansger System H
	System Recipied S
	Contract language Software Soft
	Aud Delete System Rackup System Rac
8.	Product Restriction Product Restrin Product Restrip
8.	In the Add ASR Server page, select iFlyTek as the Engine Type. This engine type option was added by modifying the languages.properties files in Steps 4 and 5. Specify the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the Name Select Yes to Enable, set Network Factor F
8.	In the Add ASR Server page, select iFlyTek as the Engine Type. This engine type option was added by modifying the languages.properties files in Steps 4 and 5. Specify the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the iFlyTek Server. Set the Base Port to 5060. The Total Number of Licensed ASR Resources should also be set to the number of licenses available on the iFlyTek Server.
8.	In the Add ASR Server page, select iFlyTek as the Engine Type. This engine type option was added by modifying the languages.properties files in Steps 4 and 5. Specify the Name, select Yes to Enable, set Network Address to the IP address or Full FQDN of the iFlyTek Server. Set the Base Port to 5060. The Total Number of Licensed ASR Resources should also be set to the number of licenses available on the iFlyTek Server. Select the Languages to use by highlighting them. In the MRCP section, set Protocol to MDCP V2.

Avaya Aura® Experience Po	rtal 7.0.2 (ExperiencePortal)	
▼ User Management Roles Users	You are here: <u>Home</u> > System Configuration Add ASR Server	n > <u>Speech Servers</u> > Add ASR Serve
 Real-time Monitoring System Monitor 	Use this page to configure Experience Port	al to communicate with a new ASR :
Active Calls Port Distribution	Name:	InterReco
 System Maintenance Audit Log Viewer 	Enable:	🖲 Yes 🔘 No
Trace Viewer	Engine Type:	iFlyTek 🔻
Alarm Manager	Network Address:	10.1.10.122
System Management EPM Manager	Base Port:	5060
MPP Manager	Total Number of Licensed ASR Resources:	10
System Backup	New Connection per Session:	Yes No
 System Configuration Applications 		Chinoso(Simplified) th Chino
EPM Servers		English(USA) en-US
SNMP	in the second seco	
Speech Servers	Languages:	
Zones		
 Security Certificates 		
Licensing	MRCP	
▼ Reports Standard	Ping Interval: 15 seconds	
Custom	Response Timeout: 4 seconds	
 Multi-Media Configuration 	Protocol: MRCP V2 +	
Email		
SMS	Transport Protocol: TCP -	
	Listener Port: 5060	
	Save Cancel Help	
To assign InterReco to	an Avaya Experience Portal appli	cation, click System
Configuration -> App	lications and then click Add on the	ne Applications page (not
shown) The Change A	phication page shown on the new	xt nage highlights the
configuration changes	This configuration agains the def	Coult Average Experience D
configuration changes.	This configuration assigns the def	aun Avaya Experience Po
test application deploye	d on the http server to the called r	number 10391. Specify the
Name, select Yes to En	able, set Type to VoiceXML for	the MIME and set Voice
IIRI to HTTP server a	ddress location of the VoiceXML	script Select iFlyTek for
	auress location of the volcement	script. Screet H iy i ck ibi

ep	Description		
	Avaya Aura® Experience Po	rtal 7.0.2 (ExperiencePortal)	
	Expand All Collapse All Vuser Management Roles Users Login Options Real-time Monitoring System Monitor Active Calls Port Distribution	You are here: <u>Homs</u> > System Configuration > <u>Applications</u> > Change Application Change Application Use this page to change the configuration of an application, • The information that you entered has been saved.	
	System Maintenance Audit Log Viewer Trace Viewer Log Viewer Alarm Manager System Management	Name: #LYTEK Test Enable: Yes No Type: VoiceXML +	
	EPM Manager MPD Manager Software Upgrade System Backup System Configuration Applications EPM Sarvers MPP Servers SNMD	Reserved SIP Calls: None. Ninimum Naximum Requested; URI Single Fail Over Load Salance	
	Speech Servers VoIP Connections Zones Security Certifactes Licensing Reports Standard Custom Scheduled Multi-Madia Configuration Email	VoiceXML URL: http://10.1.10.98/VXMLCN/intro1.vxml Verify Mutual Certificate Authentication: Yes No Basic Authentication: Yes No Speech Servers ASR: IFlyTek TTS: IFlyTek	
		Languages: English (USA) en US Languages: Chinese (Simplified) zh-CN Xionyu M Voices: Chinese (Simplified) zh-CN Xionyu M Application Launch Inbound © Inbound Default © Outbound	
		Number © Number Range © URI Called Number: Add Remove	
		Speech Parameters > Reporting Parameters > Advanced Parameters > Save: Apply Cancel Help	

7. Configure iFlyTek Server

The iFlyTek MRCP Server requires the iFlyTek InterReco products to be installed on the same server so as to provide the required ASR functionality. The relevant software was loaded by iFlyTek engineers which is not be detailed here. Refer to the Installation Manual for InterReco in the **Additional References** section. For load balancing, the optional iFlyTek MRCP Resource Management Server software is required. For this compliance testing, the load balancing feature was not tested.

Step	Description	
1.	. On the iFlyTek Server, edit the file mrs.cfg located in the /opt/ims3.7/cfg/ directory usin	
	VI editor.	
	In the [sip] section, check the following parameters for the SIP transport.	
	Transport_type = TCP	
	Port=5060	
	<pre>[sip] ## format: sip:mrm@host.domain:port, if not set, system will generate one. sip_uri = ## transport type used by SIP stack transport_type = TCP ## port used by SIP stack (1026~65534) port = 5060 ## now only support IPv4 ip_version = IPv4</pre>	
	<pre>## network interface used by SIP stack ip_interface =</pre>	

8. Verification Steps

This section provides the verification steps that may be performed to verify that Avaya Experience Portal can run VoiceXML applications that use the iFlyTek Server for ASR functionalities.

8.1. Verify Avaya Aura® Experience Portal

Step	Description			
1.	From the Experi Manager. On the and Config is O	ence Portal Manager web interfa- ne MPP Manager page, verify tha K .	ce, click System I t the MPP server	Management > MPP is Online, Running
	AVAYA			Welcome, epadmin Last logged in today at 12:02:35 AM PST
	Avays Auros Experience Po Espand All Colleges All Barand All Colleges All Users Login Options Real-time Heintburg System Monteo Adus Calls Prot Disbution System Handper Adus Calls Prot Disbution System Handper Adus Log Viewe Alarm Manager System Randper System Randper System Randper System Randper System Randper System Callguration BM Manager System Callguration System Call System Call System Call System Call System Call System Call System Callguration System Call System Call System Call System System Call System Call Constants Standard Call Call Standard Call Standard Call System System Call System System Call System Call	And 2.4.2 (ExperiencePortal) The reaching data = Determ Renegement > 800 Renegement MPP Manager (Mar 11, 2016 1:12:27 AM PST) This page displays the current state of each MPP in the Experience mable the mode commands, the selected MPPs must also be step Last Polle selected MPPs must also be step Last Polle selected MPPs must also be step Deline Running OK Tes = Row State Commands Note Commands Help	Portal system. To enable the state a and.	A Home ?-Help O Logoli Estivab

Step	Description	
2.	From the Experience Distribution (not sh Distribution Repor service.	e Portal Manager web interface, click Real-Time Monitoring > Port nown). Select the appropriate MPP server and click OK . On the Port t page, verify that the State of the ports of the MPP server is In
	Αναγα	
	Avaya Aura® Experience P Expand All Collapse All • User Management Roles Users Login Options • Real-time Monitoring System Monitor Active Calls Port Distribution • System Maintenance Audit Log Viewer Log Viewer Alarm Manager MPP Manager MPP Manager MPP Manager MPP Manager Software Upgrade System Backup • System Configuration	Vou are here: Home > Real-Time Monitoring > Part Distribution > Part Distribution Report Port Distribution Report (Mar 11, 2016 1:09:16 AM PST) This page displays information about how the telephony resources have been distributed to the MPPs. Y Connections page. Servers: aaep-mpp Total Ports: 100 Last Poll: Mar 11, 2016 1:09:14 AM PST Port Mode State Port Group Protocol Corrent Allocation Serve Allocation 100 Online Inservice MI Help
3.	Place a call to Avay iFlyTek Server for s the caller.	a Experience Portal that runs a VoiceXML script which uses the peech recognition. Verify that the application recognize the speech of

8.2. Verify iFlyTek Server

Make test calls to the Avaya Experience Portal to verify that the ASR is running and is able to recognize the speech of the caller.

9. Conclusion

These Application Notes describe the configuration steps required for Anhui USTC iFlyTek InterReco with Avaya Aura® Experience Portal. All feature and serviceability test cases were completed successfully with observations noted in **Section 2.2**.

10. Additional References

The following documents are available at <u>http://support.avaya.com</u>.

[1] Administering Avaya Aura® Experience Portal, Release 7.0.1, April 2015.

[2] Deploying Avaya Aura® Experience Portal in an Avaya Customer Experience Virtualized Environment, Release 7.0.1, November 2014.

[3] *Administering Avaya Aura*® *Communication Manager*, Release 7.0, Issue 1, August 2015, Document Number 03-300509.

[4] *Deploying Avaya Aura*® *Communication Manager in Virtualized Environment*, Release 7.0, Issue 1, August 2015.

[5] Administering Avaya Aura® Session Manager, Release 7.0, Issue 1, August 2015.

[6] Deploying Avaya Aura® Session Manager on VMware®, Release 7.0, Issue 1, August 2015.

The following documents can be obtained from iFlyTek:

[1] InterReco 6.0 & IMS 3.7 for Linux Installation Manual, Version 1.0

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