SIP ATA Interoperability Test Case

Document Revision

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Issue	Details	Date	Author
1.0	Initial Draft	26/4/2012	Rajesh Naidu
1.1	Added expected values for correct tones	03/05/2012	Rajesh Naidu
1.2	Removed Draft status	21/5/2012	P Ensor

1. Table of Contents

1 Scope and Purpose

1.1 Document Purpose

This document describes the test cases to validate the ATA to VSP interoperability

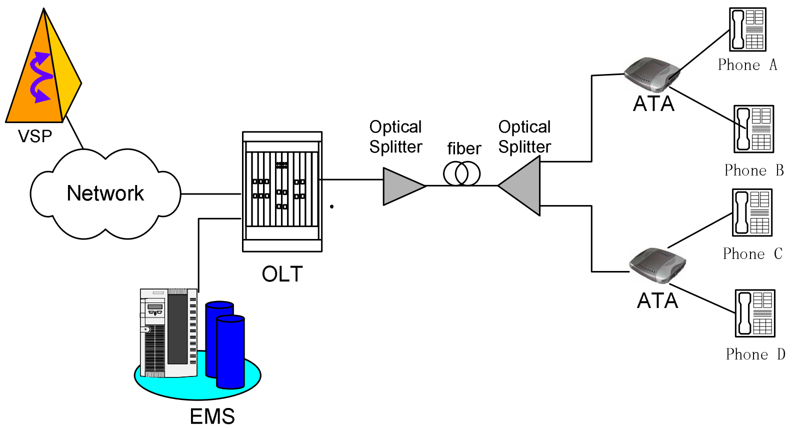
1.2 Scope

The present document specifies test cases to validate the interoperability between a VSP and ATA based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP) to enable an IP based telephony service.

2 Test Case

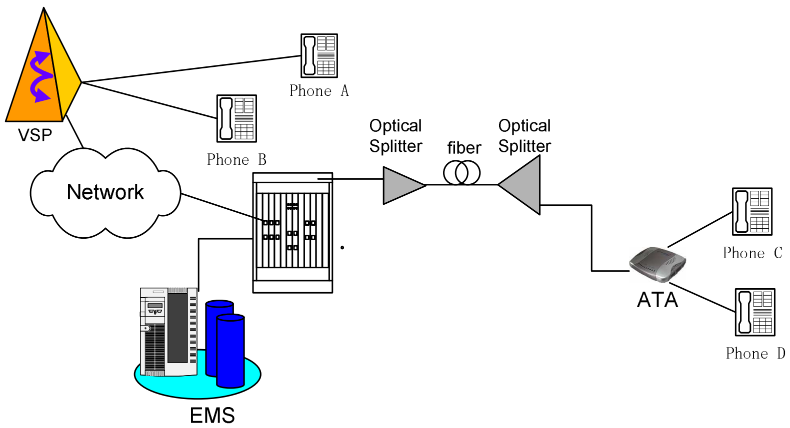
Basic Calling Services

2.1 SIP Registration（Two users under same ATA）

Purpose	To verify the registration and dial tone feature of the ATA
Test setup	 Figure 1
Prerequisite	1. Network is created as per the figure 1.

	2. Configure user A and B in the same ATA
Procedure	1. Verify that both phone A and phone B has the correct NZ dial tone.
Expected result	1. Both phones A and B has registered with the softswitch and correct NZ dial tone **(400 Hz continuous)** can be heard
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.2 Basic Call On-Net（ATA call the other ATA User ）

Purpose	To verify the on-net calling feature of the ATA
Test setup	 Figure 2
Prerequisite	1. Network is created as per figure 2 above 2. Make sure that the ATA works in the normal mode with correct

	dial tones.
Procedure	1. Phone C makes a outbound call to Phone D 2. Phone D receives local ring tone 3. Phone D answers the call 4. Capture the packets to verify local bridging is not happening
Expected result	1. ON-Net Call can be completed successfully. 2. The call is not bridged locally, the traffic goes upstream and back.
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.3 Basic Call Off-Net Inbound/outbound（Calling to and from mobile phone）

Purpose	To verify the off-net calling feature of the ATA
Test setup	Same as figure2
Prerequisite	1. Network is created as per figure 2 above. 、 2. Make sure that the ATA works in the normal mode with correct dial tones.
Procedure	1. Phone C makes a call to a local mobile number. 2. Verify that correct ring back tone is generated 3. Local mobile makes a call to Phone C 4. Verify that correct ringing cadence is received at Phone C.
Expected result	1. Outbound call is made successfully 2. Correct ring back tone is heard at Phone C 3. Inbound call is received successfully 4. Correct ring cadence**(400 Hz, modulated at 16 2/3 Hz, interrupted,400 ms on, 200 ms off,400 ms on, 2 sec.off, all repeated)**is played locally at phone C.

Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.4 Call Waiting (Hook flash)

Purpose	To verify the call waiting feature of the ATA
Test setup	Same as figure2
Prerequisite	1. Network is created as per figure 2 above 2. Make sure that the ATA works in the normal mode with correct dial tones
Procedure	1. Inbound call is made to phone C 2. Phone C goes off-hook and starts conversation 3. A 2nd inbound call is made to phone C 4. Phone C hears a call waiting tone 5. Phone C does a hookflash to answer the 2nd call 6. Phone C does a hook flash to get back to the 1st call 7. Verify that both the calls are terminated correctly
Expected result	1. Correct call waiting tone **(400 Hz interrupted,200 ms on, 3 sec. off,200 ms on, 3 sec. off,200 ms on, 3 sec. off,200 ms on, not repeated)** is heard on Phone C 2. Hook flash does the call swaps correctly 3. Both the calls terminate correctly。
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.5 Call Forwarding (CFNA/CFB/CFA)

Purpose	To verify the call forwarding feature of the ATA
Test setup	Same as figure2
Prerequisite	1. Network is created as per figure 2 above 2. Make sure that the ATA works in the normal mode with correct dial tones
Procedure	1. Phone C is configured for CFNA 2. An inbound call is made to Phone C 3. Phone C is configured for CFB 4. An inbound call is made to Phone C 5. Phone C is configured for CFA 6. An inbound call is made to Phone C
Expected result	1. Call Forward No Answer (CFNA) works normally。 2. Call Forward Busy (CFB) works normally 3. Call Forward All (CFA) works normally
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.6 Basic Call (Unobtainable Number)

Purpose	To verify the calling feature of the ATA
Test setup	Same as figure 1
Prerequisite	1. Network is created as per figure 1 above 2. Make sure that the ATA works in normal mode with correct dial tones
Procedure	1. Caller A makes a call to a number that is unobtainable 2. Observe the correct tone played by the ATA
Expected result	1. Correct tone**(400 Hz interrupted,75 ms on, 100 ms off,75 ms on, 100 ms off,75 ms on, 100 ms off,75 ms on, 400 ms off, all**

	repeated) is heard by the caller after dialling an unobtainable number
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.7 Basic Call (incomplete phone number)

Purpose	To verify the calling feature of the ATA
Test setup	Same as figure1
Prerequisite	1. Network is created as per figure 1 above 2. Make sure that the ATA works in normal mode with correct dial tones. .
Procedure	1. Caller A makes a call to an incomplete number.
Expected result	1. Unobtainable tone **(400 Hz interrupted,75 ms on, 100 ms off,75 ms on, 100 ms off,75 ms on, 100 ms off,75 ms on, 400 ms off, all repeated)** is heard by the caller after waiting for timeout
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.8 Basic Call (Callee Busy)

Purpose	To verify the calling feature of the ATA
Test setup	Same as figure2

Prerequisite	1. Network is created as figure 2 above. 2. Make sure that the ATA works in normal mode and with correct dial tones
Procedure	1. Phone B is talking with Phone C. At this time, Phone A calls Phone B.
Expected result	1. In step 1, Phone A can hear the busy (**400 Hz interrupted,500 ms on, 500 ms off, repeated**) tone.
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.9 DHCP function

Purpose	To verify the DHCP function of the ATA
Test setup	Same as figure1
Prerequisite	1. Follow the network diagram to set up the test system. 2. DHCP server works in the normal state 3. Enable the DHCP function on the vlan interface
Procedure	1. Configure the signaling IP and media IP user DHCP mode 2. Configure the SIP interface attribute use DHCP mode 3. User A calls user B
Expected result	1. In step 1,Check SIP interface ,can get signaling IP and media 2. In step 2, The ATA users can hear a dial tone **(400 Hz continuous)**.

	3. In step 3,The call between User A calls user B is normal
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.10 Fax (Transparent Transmission Mode)

Purpose	To verify the FoIP function in the G711 pass-through mode of the fax service
Test setup	Same as figure1
Prerequisite	1. Follow the network diagram to set up the test system. 2. Make sure that the ATA works in the normal state and user can hear the dial tone.
Procedure	1. Fax machine A calls fax machine B and transmits a fax. 2. Trace the message flow.
Expected result	1. In step 1, Fax transmits successfully. 2. In step 2, The packet capture proves that the medium stream is transmitted in the G.711coding scheme.
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.11 Fax (T38)

Purpose	To verify that the ATA supports T38 faxing function
Test setup	Same as figure1
Prerequisite	1. The devices are properly connected according to the network diagram. 2. The VSP and the ATA are in the normal state. 3. FAX A and FAX B connect to the two POTS ports A and B respectively.
Procedure	1. Configure fax parameter for T38 2. Call FAX B from FAX A for a fax transmitting/receiving test.
Expected result	1. In step 2, Trace the faxing call signaling, the coding/decoding mode is T38
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.12 Modem Service

Purpose	To verify the modem service supported by the ATA
Test setup	Same as figure1
Prerequisite	1. The devices are properly connected according to the network diagram.

	2. Make sure that the ATA works in the normal state and users can hear the correct dial tone
Procedure	1. Configure the modem service transmission mode as the transparent transmission mode. 2. Enable the automatic answering function on the called modem. Use the calling modem to call the called modem. 3. After the connection between the calling modem and the called is set up, transmit files between two PCs.
Expected result	1. In step 2, the calling modem can call the called modem successfully. 2. In step 3, the two PCs can transmit files to each other.
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.13 Basic Call (DTMF)

Purpose	To verify the capability of the ATA to support DTMF tones)
Test setup	Same as figure2
Prerequisite	1. The devices are properly connected according to the network diagram. 2. Make sure that the ATA works in the normal state and users can hear the correct dial tone
Procedure	**1.** Phone C makes an outbound call to an IVR number **0800 257 777 (IRD IVR system)** 2. Phone C presses different keys to navigate through the IVR

	system
Expected result	1. The Called IVR system recognises the DTMF tones sent by the ATA
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.14 Call Feature (Distinctive ringing)

Purpose	To verify the user distinctive ringing function by the ATA
Test setup	Same as figure2
Prerequisite	1. The devices are properly connected according to the network diagram. 2. Make sure that the ATA works in the normal state and the users can hear the correct dial tone
Procedure	1. Configure the user defined-ring ,map ring name to alert info 2. User A calls user B, VSP send INVITE to B with Alert-info:< http://127.0.0.1/ Bellcore-dr4>
Expected result	In step 2,User B can listen ring mode **(400 ms on, 800 ms off,400 ms on, 1400 ms off, and repeated)**Bellcore-DA4 cadence
Test result	
Pass/Fail	

Date/Signature	
Remarks	

2.15 Basic Call (Digitmap)

Purpose	To verify the digit configuration of the ATA
Test setup	Same as figure2
Prerequisite	1. The devices are properly connected according to the network diagram. 2. Make sure that the ATA works in the normal state and the users can hear the correct dial tones. 3. Make sure that the emergency services are notified that testing is being conducted.
Procedure	1. Make an out bound call to a local number. 2. Observe the delay 3. Make an outbound call to a national number 4. Observe the delay 5. Make an outbound call to emergency number 6. Observe the delay
Expected result	1. Invite message is sent straight away after the appropriate digits are punched in
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.16 Call feature (Caller Line Identification Presentation)

Purpose	To verify the function of presenting the calling line identification
Test setup	Same as figure1
Prerequisite	1. The devices are properly connected according to the network diagram. 2. The VSP and the ATA are in the normal state. 3. MG interface data and user data are configured at the VSP side. 4. The phone supports the Call ID.
Procedure	1. Configure the CLIP of phone A on the VSP. 2. Do not configure any new service of phone B on the VSP. 3. Phone B calls phone A.
Expected result	In step 3, the phone A displays the phone number of phone B.
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.17 Call feature (Caller Line Identification Restricted)

Purpose	To verify the function of the calling line identification restriction
Test setup	Same as figure1
Prerequisite	1. The devices are properly connected according to the network diagram.

	2. The VSP and the ATA are in the normal state. 3. MG interface data and user data are configured at the VSP side. 4. Phone A and Phone B support Call ID
Procedure	1. Configure the CLIP of phone A on the VSP. 2. Configure the function of the CLIR of phone B on the VSP, while other new services are not configured. 3. Phone B calls phone A.
Expected result	1. In step 3, the phone of phone A rings but cannot display the phone number of phone B. The calling line identification restriction is valid.
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.18 Call feature (MWI)

Purpose	To verify the function of Message waiting indication
Test setup	Same as figure1
Prerequisite	1. The devices are properly connected according to the network diagram. 2. The VSP and the ATA are in the normal state. 3. MG interface data and user data are configured at the VSP side. 4. Telephone support message waiting indication function

Procedure	1. Configure the waiting indication function services of phone A on the VSP. 2. Phone B leave message for phone A, Check phone A light state 3. Phone A listens to message, Check phone A light state
Expected result	In step 2, phone A has the message light turn on and stutter dial tone **(400 Hz interrupted,100 ms on, 100 ms off, repeated for 2.5 secs then continuous until it times out)** is heard when user picks up the phone In step 3 , the message light goes off and the stutter tone is cleared
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.19 Dual Homing（SIP）

Purpose	To verify the dual homing function(SIP) of the ATA
Test setup	Same as figure1
Prerequisite	1. Follow the network diagram to set up the test system. 2. Make sure that the ATA works in the normal state
Procedure	1. Configure two available proxies with proxy1 as the primary one and proxy2 as the secondary one. 2. Register the ATA with proxy1 successfully.

	3. Disconnect the ATA and proxy1. 4. The ATA transmits messages to proxy2 to register.
Expected result	1. In step 1, The ATA can register with proxy2 successfully.
Test result	
Pass/Fail	
Date/Signature	
Remarks	

2.20 Additional VSP Feature testing（SIP）

Purpose	To verify additional testing that the VSP requires such as short codes etc
Test setup	Same as figure1
Prerequisite	As required by the VSP
Procedure	As required by the VSP
Expected result	As required by the VSP
Test result	
Pass/Fail	
Date/Signature	
Remarks	

3 Annex (normative): Test Completion Sheet

This section currently records the summary status of test case completion for the document. More details are required in order to use this page as a sign-off of testing completion.

Test case	Complete	Pass/Fail	Comments

4 History

Document history		
<Version>	<Date>	<Milestone>