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Technical Specification

**Technical Committee for IMS Network Testing (INT);
Message Waiting Indication (MWI) using
IP Multimedia (IM) Core Network (CN) subsystem;
Part 2: Test Suite Structure and Test Purposes (TSS&TP)**



Reference

DTS/INT-00023-2

Keywords

MWI, SIP, testing, TSS&TP

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Foreword

This Technical Specification (TS) has been produced by IMS Network Testing (INT).

The present document is part 2 of a multi-part deliverable covering the test specification for Message Waiting Indication (MWI), as identified below:

- Part 1: "Protocol Implementation Conformance Statement (PICS)";
- Part 2: "Test Suite Structure and Test Purposes (TSS&TP)";**
- Part 3: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT)".

Introduction

The present document has been produced by ETSI Technical Committee IMS Network Testing (INT). To evaluate conformance of a particular implementation, it is necessary to have test purposes as a basis to perform conformance tests selected upon the answers requested in the PICS.

1 Scope

The present document specifies the Test Suite Structure and Test Purposes of the Message Waiting Indication (MWI) service, based on 3GPP stage three Protocol Description of the Message Waiting Indication (MWI) service, based on stage one and two of the ISDN MWI supplementary services.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are necessary for the application of the present document.

- [1] ETSI TS 124 406 (2008): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); TISPAN; PSTN/ISDN simulation services; Message Waiting Indication (MWI): Protocol specification (3GPP TS 24.406 Release 8)".
- [2] ETSI TS 102 891-1: "Technical Committee for IMS Network Testing (INT); Message Waiting Indication (MWI) using IP Multimedia (IM) Core Network (CN) subsystem; Part 1: Protocol Implementation Conformance Statement (PICS)".
- [3] IETF RFC 3842: "A Message Summary and Message Waiting Indication Event Package for the Session Initiation Protocol (SIP)".
- [4] IETF RFC 2543: "Session Initiation Protocol (SIP)-Specific Event Notification".
- [5] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

Not applicable.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 124 406 [1] and the following apply:

Implementation Under Test (IUT): Refer to ISO/IEC 9646-1 [5].

System Under Test (SUT): Refer to ISO/IEC 9646-1 [5].

test equipment: combination of equipment and procedures that can perform: the derivation of test cases, the selection of test cases, the parameterization of test cases, the execution of test cases; and the production of a conformance log

Test Purpose (TP): Refer to ISO/IEC 9646-1 [5].

User Equipment (UE): allows a user access to network services

NOTE: For the purpose of 3GPP specifications the interface between the UE and the network is the radio interface. A User Equipment can be subdivided into a number of domains, the domains being separated by reference points. Currently the User Equipment is subdivided into the UICC domain and the ME Domain. The ME Domain can further be subdivided into one or more Mobile Termination (MT) and Terminal Equipment (TE) components showing the connectivity between multiple functional groups.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TS 124 406 [1] and the following apply:

AS	Application Server
CDIV	Communication DIVersion services
CFB	Communication Forwarding Busy
CFU	Communication Forwarding Unconditional
ISC	IP Multimedia Subsystem Service Control
IUT	Implementation Under Test
MWI	Message Waiting Indication
NNI	Network - Network Interface
S-CSCF	Serving Call Session Control Function
SUT	System Under Test
TP	Test Purpose
TSS	Test Suite Structure

4 Test Suite Structure (TSS)

UserEquipment		MWI_U01_xxx
Network	ServingS-CSCF	OIP_N01_xxx
	AS_ServedUser	OIP_N03_xxx
Interaction	CallDiversionService	OIP_N04_xxx

4.1 Configuration

The scope of the present document is to test the signalling and procedural aspects of the stage 3 requirements as described in [1]. The stage 3 description respects the requirements to several network entities and also to requirements regarding to end devices. Therefore several interfaces (reference points) are addressed to satisfy the test of the different entities.

Therefore to test the appropriate entities the configurations below are applicable:

Testing of the Application Server. This entity is responsible to perform the service. Hence the ISC interface is the appropriate access point. Figure 1 points to this.

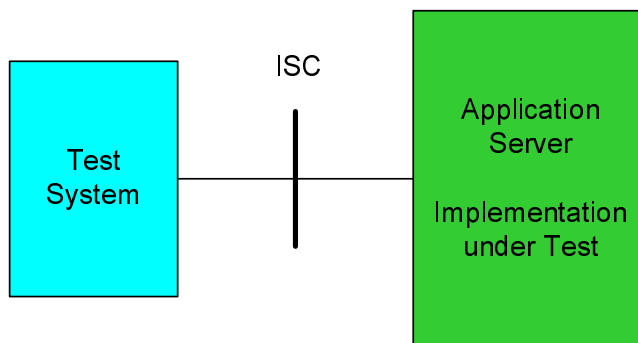


Figure 1: Applicable interface to test AS functionalities

If the ISC interface is not accessible it is also applicable to perform the test of the AS using any NNI (Mw, Mg, Mx) interface (consider figure 2). In case only the Gm interface is accessible this shall be used instead. In this case, be aware that the verification of several requirements is impeded.

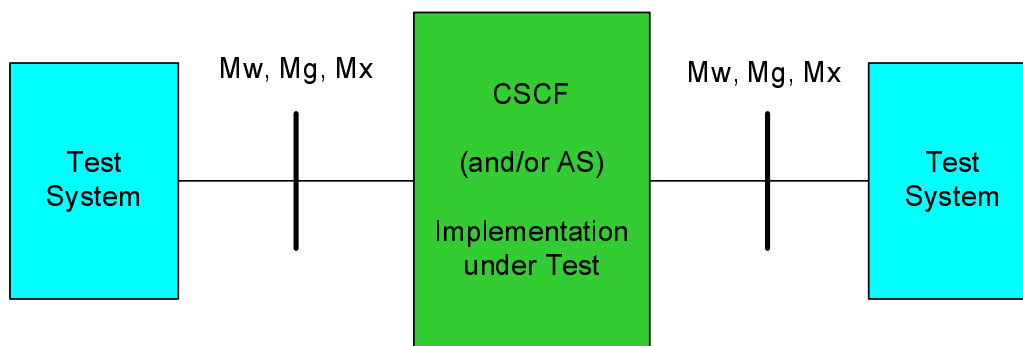


Figure 2: Applicable interfaces to test using the (generic) NNI interface

Figure 3 illustrates the usage of any NNI interface.

Testing of User Equipment. There are several requirements regarding to the end devices. Therefore a special configuration appears.

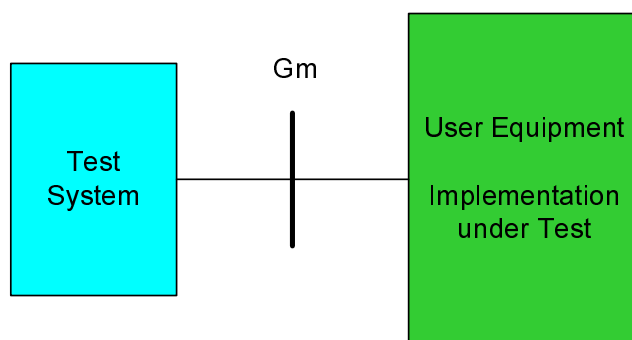


Figure 3: Applicable configuration to test the User Equipment

5 Test Purposes (TP)

5.1 Introduction

For each requirement in [1] a TP is defined.

5.1.1 TP naming convention

TPs are numbered, starting at 001, within each group. Groups are organized according to the TSS. Additional references are added to identify the actual test suite and whether it applies to the network or the user (see table 1).

Table 1: TP identifier naming convention scheme

Identifier: <ss>_<iut><group>_<nnn>			
<ss>	=	supplementary service:	e.g. "MWI"
<iut>	=	type of IUT:	U User - equipment N Network
<group>	=	group	2 digit field representing group reference according to TSS
<nnn>	=	3 digit sequential number	(001-999)

5.1.2 Test strategy

As the base standard TS 124 406 [1] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the PICS specification TS 102 891-1 [2]. The criteria applied include the following:

- whether or not a test case can be built from the TP is not considered.

5.1.3 Reference column "MWI reference"

The column "MWI reference" makes reference to TS 124 406 [1], except where explicitly stated otherwise.

5.2 Invocation and operation

5.2.1 Actions at the UE

TSS	TP	MWI reference	Selection expression
UserEquipment	MWI_U01_001	4.7.2.1	PICS 1.2/1
Test purpose: <i>Initial subscription for a public user identity using the public service identity</i>			
Ensure that the user equipment is able to subscribe to the MWI service. A SUBSCRIBE message is sent. The Request line contains the public service identity of the MWI service. The Event header is set to 'message-summary', the Expires header is set to a proper value, Accept header is set to 'application/simple-message-summary'.			
SIP header: SUBSCRIBE sip: public service identity @server SIP/2.0 Event: message-summary Expires: <a valid value> Accept: application/simple-message-summary			
Comments:			
User Equipment		Test Equipment	
	→	SUBSCRIBE	
	←	200 OK (SUBSCRIBE)	

TSS	TP	MWI reference	Selection expression
UserEquipment	MWI_U01_002	4.7.2.1	PICS 1.2/2
Test purpose: <i>Initial subscription for a public user identity using the public user identity</i>			
Ensure that the user equipment is able to subscribe to the MWI service. A SUBSCRIBE message is sent. The Request line contains the public user identity of the MWI service. The Event header is set to 'message-summary', the Expires header is set to a proper value, Accept header is set to 'application/simple-message-summary'.			
SIP header: SUBSCRIBE sip: public user identity @server SIP/2.0 Event: message-summary Expires: <a valid value> Accept: application/simple-message-summary			
Comments:			
User Equipment		→	Test Equipment
		←	SUBSCRIBE 200 OK (SUBSCRIBE)

TSS	TP	MWI reference	Selection expression
UserEquipment	MWI_U01_003	4.7.2.1	
Test purpose: <i>Re-Subscription before subscription is expired</i>			
Ensure that the user equipment is able to re-subscribe the current subscription before the subscription expires. A SUBSCRIBE message is sent. The Event header is set to 'message-summary', the Expires header is set to a proper value, Accept header is set to 'application/simple-message-summary'. The Call-ID is equal to the Call-ID of the initial subscription.			
SIP header: SUBSCRIBE Event: message-summary Expires: 500 Accept: application/simple-message-summary			
Comments:			
User Equipment		→	Test Equipment
		←	SUBSCRIBE 200 OK (SUBSCRIBE)
Before subscription expires			
		→	SUBSCRIBE
		←	200 OK (SUBSCRIBE)

TSS	TP	MWI reference	Selection expression																								
UserEquipment	MWI_U01_004	4.7.2.1																									
Test purpose: <i>Subscription after re-subscription fails</i>																											
Ensure that the user equipment is able to subscribe to the MWI service after a re-subscription failed. A SUBSCRIBE message is sent. The Event header is set to 'message-summary', the Expires header is set to a proper value, Accept header is set to 'application/simple-message-summary'.																											
SIP header: SUBSCRIBE 1 Event: message-summary Expires: 500 Accept: application/simple-message-summary SUBSCRIBE 2 Call-ID: <different from Call-ID of SUBSCRIBE 1> Event: message-summary Expires: 500 Accept: application/simple-message-summary																											
Comments: <table style="width: 100%; border: none;"> <thead> <tr> <th style="text-align: left;">User Equipment</th> <th style="width: 20%;"></th> <th style="text-align: right;">Test Equipment</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">→</td> <td>SUBSCRIBE</td> </tr> <tr> <td></td> <td style="text-align: center;">←</td> <td>200 OK (SUBSCRIBE)</td> </tr> <tr> <td colspan="3" style="text-align: center;">Before subscription expires</td> </tr> <tr> <td></td> <td style="text-align: center;">→</td> <td>SUBSCRIBE 1</td> </tr> <tr> <td></td> <td style="text-align: center;">←</td> <td>500</td> </tr> <tr> <td></td> <td style="text-align: center;">→</td> <td>SUBSCRIBE 2</td> </tr> <tr> <td></td> <td style="text-align: center;">←</td> <td>200 OK (SUBSCRIBE)</td> </tr> </tbody> </table>				User Equipment		Test Equipment		→	SUBSCRIBE		←	200 OK (SUBSCRIBE)	Before subscription expires				→	SUBSCRIBE 1		←	500		→	SUBSCRIBE 2		←	200 OK (SUBSCRIBE)
User Equipment		Test Equipment																									
	→	SUBSCRIBE																									
	←	200 OK (SUBSCRIBE)																									
Before subscription expires																											
	→	SUBSCRIBE 1																									
	←	500																									
	→	SUBSCRIBE 2																									
	←	200 OK (SUBSCRIBE)																									

TSS	TP	MWI reference	Selection expression																		
UserEquipment	MWI_U01_005	4.7.2.1																			
Test purpose: <i>Unsubscribe in case of logoff</i>																					
Ensure that the user equipment is able to unsubscribe the current subscription when the logoff procedure is in process. A SUBSCRIBE message is sent. The Event header is set to 'message-summary', the Expires header is set to a proper value, Accept header is set to 'application/simple-message-summary'. The Call-ID is equal to the Call-ID of the initial subscription. The Expires header is set to zero.																					
SIP header: SUBSCRIBE 1 Event: message-summary Expires: 0 Accept: application/simple-message-summary																					
Comments: <table style="width: 100%; border: none;"> <thead> <tr> <th style="text-align: left;">User Equipment</th> <th style="width: 20%;"></th> <th style="text-align: right;">Test Equipment</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">→</td> <td>SUBSCRIBE</td> </tr> <tr> <td></td> <td style="text-align: center;">←</td> <td>200 OK (SUBSCRIBE)</td> </tr> <tr> <td colspan="3" style="text-align: center;">Logoff in process</td> </tr> <tr> <td></td> <td style="text-align: center;">→</td> <td>SUBSCRIBE 1</td> </tr> <tr> <td></td> <td style="text-align: center;">←</td> <td>200 OK (SUBSCRIBE)</td> </tr> </tbody> </table>				User Equipment		Test Equipment		→	SUBSCRIBE		←	200 OK (SUBSCRIBE)	Logoff in process				→	SUBSCRIBE 1		←	200 OK (SUBSCRIBE)
User Equipment		Test Equipment																			
	→	SUBSCRIBE																			
	←	200 OK (SUBSCRIBE)																			
Logoff in process																					
	→	SUBSCRIBE 1																			
	←	200 OK (SUBSCRIBE)																			

TSS	TP	MWI reference	Selection expression															
UserEquipment	MWI_U01_006	4.7.2.1																
Test purpose: <i>Reception of status information after subscription</i>																		
Upon receipt of a valid NOTIFY request after subscription, the user equipment immediately renders the message status and summary information received in the MIME body to the end user.																		
SIP header: NOTIFY Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes Message-Account: sip:served_user@Server Voice-Message: 4/1 (2/0) Video-Message: 3/1 (1/0) Fax-Message: 2/1 (0/1)																		
Comments: <table style="width: 100%; border: none;"> <thead> <tr> <th style="text-align: left;">User Equipment</th> <th style="width: 20px;"></th> <th style="text-align: right;">Test Equipment</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">→</td> <td>SUBSCRIBE</td> </tr> <tr> <td></td> <td style="text-align: center;">←</td> <td>200 OK (SUBSCRIBE)</td> </tr> <tr> <td>Status information indicate to the user</td> <td style="text-align: center;">←</td> <td>NOTIFY</td> </tr> <tr> <td></td> <td style="text-align: center;">→</td> <td>200 OK (NOTIFY)</td> </tr> </tbody> </table>				User Equipment		Test Equipment		→	SUBSCRIBE		←	200 OK (SUBSCRIBE)	Status information indicate to the user	←	NOTIFY		→	200 OK (NOTIFY)
User Equipment		Test Equipment																
	→	SUBSCRIBE																
	←	200 OK (SUBSCRIBE)																
Status information indicate to the user	←	NOTIFY																
	→	200 OK (NOTIFY)																

TSS	TP	MWI reference	Selection expression																								
UserEquipment	MWI_U01_007	4.7.2.1																									
Test purpose: <i>Reception of status information after state change</i>																											
Upon receipt of a valid NOTIFY request to refresh the status of deposited messages, the user equipment immediately renders the message status and summary information received in the MIME body to the end user.																											
SIP header: NOTIFY 1 Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes Message-Account: sip:served_user@Server Voice-Message: 4/1 (2/0) Video-Message: 3/1 (1/0) Fax-Message: 2/1 (0/1)																											
NOTIFY 2 Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes Message-Account: sip:served_user@Server Voice-Message: 5/1 (2/0) Video-Message: 3/1 (1/0) Fax-Message: 2/1 (0/1)																											
Comments: <table style="width: 100%; border: none;"> <thead> <tr> <th style="text-align: left;">User Equipment</th> <th style="width: 20px;"></th> <th style="text-align: right;">Test Equipment</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">→</td> <td>SUBSCRIBE</td> </tr> <tr> <td></td> <td style="text-align: center;">←</td> <td>200 OK (SUBSCRIBE)</td> </tr> <tr> <td>Status information indicate to the user</td> <td style="text-align: center;">←</td> <td>NOTIFY 1</td> </tr> <tr> <td></td> <td style="text-align: center;">→</td> <td>200 OK (NOTIFY)</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">New voice message in the account</td> </tr> <tr> <td>Status information indicate to the user</td> <td style="text-align: center;">←</td> <td>NOTIFY 2</td> </tr> <tr> <td></td> <td style="text-align: center;">→</td> <td>200 OK (NOTIFY)</td> </tr> </tbody> </table>				User Equipment		Test Equipment		→	SUBSCRIBE		←	200 OK (SUBSCRIBE)	Status information indicate to the user	←	NOTIFY 1		→	200 OK (NOTIFY)			New voice message in the account	Status information indicate to the user	←	NOTIFY 2		→	200 OK (NOTIFY)
User Equipment		Test Equipment																									
	→	SUBSCRIBE																									
	←	200 OK (SUBSCRIBE)																									
Status information indicate to the user	←	NOTIFY 1																									
	→	200 OK (NOTIFY)																									
		New voice message in the account																									
Status information indicate to the user	←	NOTIFY 2																									
	→	200 OK (NOTIFY)																									

5.2.2 Actions at the serving S-CSCF

TSS	TP	MWI reference	Selection expression
Network/ServingS-CSCF	MWI_N01_001	4.7.2.3	
Test purpose: <i>Initial filter criteria to activate the message waiting indication service using the public service identity in the request line</i>			
This Initial Filter Criteria informs the originating S-CSCF to route the SUBSCRIBE request to the application server that provides MWI service addressed with the public service identity.			
SIP header: SUBSCRIBE sip:<MWI account>@home network SIP/2.0 Event: message-summary Expires: 7200 Accept: application/simple-message-summary			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
Mw		SUT	ISC
SUBSCRIBE	→		→ SUBSCRIBE
200 OK (SUBSCRIBE)	←		← 200 OK (SUBSCRIBE)
NOTIFY	←		← NOTIFY
200 OK (NOTIFY)	→		→ 200 OK (NOTIFY)

5.2.3 Actions at the AS

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_001	4.7.2.5 3.4 [3] 3.1.4.1 [4] 3.1.6.2 [4]	
Test purpose: <i>Subscription to the message waiting service, all relevant headers present</i>			
Verify that the SUBSCRIBE request will be accepted with following Subscribe-specific headers: Event, Expires and Accept. The 200 OK (SUBSCRIBE) contains the Expires header indicating the subscription duration for the MWI service. A NOTIFY is sent immediately the actual state of a message account. The From header tag and the Call-ID in the NOTIFY are equal to the values in the SUBSCRIBE.			
SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary NOTIFY			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC			SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY	←		
200 OK (NOTIFY)	→		

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_002	4.7.2.5 3.4 [3] 3.1.4.1 [4]	
Test purpose: <i>SUBSCRIBE request without Expires header</i>			
Verify that the SUBSCRIBE request will be accepted without an Expires header; Check that the 2xx response contains an Expires header. The default value for this subscription is equal to one hour.			
SIP header: SUBSCRIBE Event: message-summary Accept: application/simple-message-summary 200 OK (SUBSCRIBE) o: message-summary Expires: 3600 Accept: application/simple-message-summary			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC			SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY	←		
200 OK (NOTIFY)	→		

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_003	4.7.2.5 3.4 [3] 3.1.4.1 [4]	
Test purpose: <i>Subscription request with the minimum duration.</i>			
Verify that the SUBSCRIBE request will be accepted with a minimum duration period, e.g. 60 s.			
SIP header: SUBSCRIBE Event: message-summary Expires: 60 Accept: application/simple-message-summary			
Preconditions: An arrangement exists with the service provider to deliver state changes clause 3.4 of [3]			
Comments:			
ISC			SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY	←		
200 OK (NOTIFY)	→		

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_004	4.7.2.5 3.4 [3] 3.1.4.1 [4]	
Test purpose: <i>Subscription request with the minimum duration with a duration smaller than the network duration time</i> Verify that the SUBSCRIBE request will be rejected with a "423 Subscription Too Brief" response if the requested duration period is set too short, e.g. 10s; Check also that the "423" response contains a "Min-Expires" header field containing the min duration time for MWI.			
SIP header: SUBSCRIBE Event: message-summary Expires: 10 Accept: application/simple-message-summary 423 Subscription Too Brief Min-Expires: <a valid value>			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments: ISC			
SUBSCRIBE		→	SUT
423 Subscription Too Brief		←	

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_005	4.7.2.5 6.3 [4] 3.1.4.1 [4]	
Test purpose: Header in compact form Verify that the SUBSCRIBE request will be accepted with the relevant headers in the compact form.			
SIP header: SUBSCRIBE o: message-summary Expires: 7200 Accept: application/simple-message-summary			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments: ISC			
SUBSCRIBE		→	SUT
CASE A			
200 OK (SUBSCRIBE)		←	
CASE B			
202 Accepted		←	
NOTIFY		←	
200 OK (NOTIFY)		→	

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_006	4.7.2.5 3.1.6.1 [4]	
Test purpose: <i>Unknown event rejected</i>			
Verify that the SUBSCRIBE request will be rejected with a "489 Bad Event" response if the requested Event header is not understood, e.g. unknown; Check also that the "Allow-Events" header with value "message-summary" is included in the 489 response.			
SIP header: SUBSCRIBE Event: unknown-event Expires: 7200 489 Bad Event Allow-Events: message-summary,			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC SUBSCRIBE 489 Bad Event		→ ←	SUT

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_007	4.7.2.5 3.1.6.3 [4]	
Test purpose: <i>Authentication required</i>			
Verify that the SUBSCRIBE request will be authenticated always with a "401" response. The user is authorized by sending a REGISTER request. The subsequent SUBSCRIBE request contains the authorization information received in the 200 OK (REGISTER).			
SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC SUBSCRIBE 401 Unauthorized REGISTER 200 OK (REGISTER) SUBSCRIBE 200 OK (SUBSCRIBE) NOTIFY 200 OK (NOTIFY)		→ ← → ← → ← ← →	SUT

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_008	4.7.2.5 3.1.6.3 [4]	
Test purpose: Authentication fails Verify that the SUBSCRIBE request will be rejected with a "403 Forbidden" or "603 Decline" response if the subscriber is not authorized to subscribe to the MWI service.			
SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary			
Preconditions: No arrangement exists with the service provider to deliver state changes			
Comments: ISC			
SUBSCRIBE		→	SUT
CASE A			
403 Forbidden		←	
CASE B			
603 Decline		←	

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_009	4.7.2.5 3.1.4.3 [4]	
Test purpose: <i>The user is able to unsubscribe the service</i> Verify that the user is able to unsubscribe the MWI service by sending of a SUBSCRIBE method with Expires header of zero; Check that the 2xx response to the unsubscription contains also an Expires header of zero. A NOTIFY is sent.			
SIP header: SUBSCRIBE Event: message-summary Expires: 0 Accept: application/simple-message-summary 200 OK (SUBSCRIBE) Expires: 0 NOTIFY Event: message-summary Subscription-State: terminated(; reason=timeout)			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments: ISC			
SUBSCRIBE		→	SUT
200 OK (SUBSCRIBE)		←	
NOTIFY		←	
200 OK (NOTIFY)		→	

TSS	TP	MWI reference	Selection expression																																																
Network/AS_ServedUser	MWI_N03_010	4.7.2.5 3.1.4.2 [4]																																																	
<p>Test purpose: <i>Refresh of current subscription.</i></p> <p>Verify that at any time before a subscription expires the subscription will be successfully refreshed by sending of a SUBSCRIBE request on the same dialog as the existing subscription. The From header tag and the Call-ID in the SUBSCRIBE 1 are equal to the values in the SUBSCRIBE 2.</p>																																																			
<p>SIP header: SUBSCRIBE 1 Event: message-summary Expires: 7200 Accept: application/simple-message-summary SUBSCRIBE 2 Event: message-summary Expires: 7200 Accept: application/simple-message-summary</p>																																																			
<p>Preconditions: An arrangement exists with the service provider to deliver state changes</p>																																																			
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200 OK (SUBSCRIBE)	←																																																		
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202 Accepted	←																																																		
NOTIFY	←																																																		
200 OK (NOTIFY)	→																																																		

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_011	4.7.2.5 3.1.4.2 [4]	
Test purpose: <i>Unsuccessful refresh of subscription</i>			
Verify that after expiry of the subscription a SUBSCRIBE request on the same dialog as the actual expired subscription will be rejected with a "481" response. The From header tag and the Call-ID in the SUBSCRIBE 1 are equal to the values in the SUBSCRIBE 2.			
SIP header: SUBSCRIBE 1 Event: message-summary Expires: 7200 Accept: application/simple-message-summary SUBSCRIBE 2 Event: message-summary Expires: 7200 Accept: application/simple-message-summary			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC			SUT
SUBSCRIBE 1	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY	←		
200 OK (NOTIFY)	→		
		Subscription time expired	
SUBSCRIBE 2	→		
481 Call/Transaction Does Not Exist	←		

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_012	4.7.2.5 3.1.2 [4]	
Test purpose: <i>MWI subscription fails if no Event header is included</i>			
Verify that the SUBSCRIBE request will be rejected with a "489 Bad Event" response if the mandatory Event header is not included.			
SIP header: SUBSCRIBE Expires: 7200 Accept: application/simple-message-summary			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC			SUT
SUBSCRIBE	→		
489 Bad Event	←		

TSS Network/AS_ServedUser	TP MWI_N03_013	MWI reference 4.7.2.5	Selection expression																																																
Test purpose: Refresh of subscription in a new dialogue Verify that at any time before a subscription expires the subscription will be successfully refreshed by sending of a SUBSCRIBE request on a different dialog (different Call-Id and From-Tag) as the existing subscription. The From header tag and the Call-ID in the SUBSCRIBE 1 are unequal to the values in the SUBSCRIBE 2.																																																			
SIP header: SUBSCRIBE 1 Event: message-summary Expires: 7200 Accept: application/simple-message-summary SUBSCRIBE 2 Event: message-summary Expires: 7200 Accept: application/simple-message-summary																																																			
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TSS	TP	MWI reference	Selection expression																								
Network/AS_ServedUser	MWI_N03_014	4.7.2.5 3.1.6.2 [4] 3.2.2 [4]																									
<p>Test purpose: <i>NOTIFY request after initial subscription</i></p> <p>Verify that after a successfully subscription a NOTIFY message has been received immediately containing a "Subscription-State" header with the value "active" and an "expires" parameter which indicates the time remaining on the subscription. The From header tag and the Call-ID in the NOTIFY are equal to the values in the SUBSCRIBE. The NOTIFY includes:</p> <ul style="list-style-type: none"> • Event header set to message-summary • Subscription-State header set to active (optional) expires parameter set to the time remaining on the subscription • Content-Type header set to application/simple-message-summary <p>MIME body:</p> <ul style="list-style-type: none"> • Messages-Waiting: yes • Message-Account: identifying the served user (optional) • msg-summary-line(s) (optional) 																											
<p>SIP header: SUBSCRIBE</p> <p style="padding-left: 40px;">Event: message-summary Expires: 7200 Accept: application/simple-message-summary</p> <p>NOTIFY</p> <p style="padding-left: 40px;">Event: message-summary Subscription-State: active; expires= <a valid value> Content-Type: application/simple-message-summary Messages-Waiting: yes</p>																											
<p>Preconditions: An arrangement exists with the service provider to deliver state changes</p>																											
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SUBSCRIBE	→																										
CASE A																											
200 OK (SUBSCRIBE)	←																										
CASE B																											
202 Accepted	←																										
NOTIFY	←																										
200 OK (NOTIFY)	→																										

TSS	TP	MWI reference	Selection expression																																	
Network/AS_ServedUser	MWI_N03_015	4.7.2.5 3.1.6.4 [4]																																		
<p>Test purpose: <i>Subscription is not refreshed, termination by send a NOTIFY</i></p> <p>Verify that after a successfully subscription a NOTIFY message will be successfully retransmitted if no "200 OK" response has been received; Check that the subscription has been removed after the timeout condition (Timer F = non-INVITE transaction timeout; 64*T1) by sending a NOTIFY with the "Subscription-State" header set to the value "terminated" including a reasonable "reason" parameter, e.g. "deactivated". The From header tag and the Call-ID in the NOTIFY are equal to the values in the SUBSCRIBE.</p>																																				
<p>SIP header: SUBSCRIBE Event: message-summary Expires: 60 Accept: application/simple-message-summary NOTIFY 2 Event: message-summary Subscription-State: terminated(; reason=timeout)</p>																																				
<p>Preconditions: An arrangement exists with the service provider to deliver state changes</p>																																				
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ISC		SUT																																		
SUBSCRIBE	→																																			
CASE A																																				
200 OK (SUBSCRIBE)	←																																			
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202 Accepted	←																																			
NOTIFY 1	←																																			
200 OK (NOTIFY)	→																																			
	Subscription timeout																																			
NOTIFY 2	←																																			
200 OK (NOTIFY)	→																																			

TSS	TP	MWI reference	Selection expression																														
Network/AS_ServedUser	MWI_N03_016	4.7.2.5 3.2.2 [4]																															
<p>Test purpose: <i>Subscription terminates after 403 response to NOTIFY request</i></p> <p>Verify that a non-200 response (e. g. 403) after a received NOTIFY request will be considered the subscription failed; Check that no further NOTIFY responses will be received.</p>																																	
<p>SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary</p>																																	
<p>Preconditions: An arrangement exists with the service provider to deliver state changes</p>																																	
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ISC		SUT																															
SUBSCRIBE	→																																
CASE A																																	
200 OK (SUBSCRIBE)	←																																
CASE B																																	
202 Accepted	←																																
NOTIFY	←																																
403 Forbidden	→																																
	Action causes in a message summary state change																																
		No subsequent NOTIFY is sent																															

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_017	4.7.2.5 3.2.2 [4]	
Test purpose: <i>Subscription terminates after 481 response to NOTIFY request</i>			
Verify that a non-200 response (e. g. 481) after a received NOTIFY request will remove the corresponding subscription; Check that no further NOTIFY responses will be received.			
SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC			SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY	←		
481 Call/Transaction Does Not Exist	→		
Action causes in a message summary state change			No subsequent NOTIFY is sent

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_018	4.7.2.5 3.2.2 [4]	
Test purpose: <i>Subscription terminates after no response to NOTIFY request</i>			
Verify that after a successfully subscription a NOTIFY message will be successfully retransmitted if no "200 OK" response has been received (this results in intervals of 500ms, 1s, 2s, 4s, 4s, etc.);			
SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC			SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY	←		
NOTIFY	←		
NOTIFY	←		
NOTIFY	←		
Action causes in a message summary state change			No subsequent NOTIFY is sent

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_019	4.7.2.5 3.5 [3] 3.2 [4]	
Test purpose: <i>Voice message indicated in the NOTIFY request after initial subscription.</i>			
Verify that after a successfully subscription a NOTIFY message has been received a simple status line the body due to a voice message in the deposit.			
SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary NOTIFY Event: message-summary Subscription-State: active; expires= <a valid value> Content-Type: application/simple-message-summary Messages-Waiting: yes			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC SUBSCRIBE		→	SUT
CASE A 200 OK (SUBSCRIBE)		←	
CASE B 202 Accepted		←	
NOTIFY		←	
200 OK (NOTIFY)		→	

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_020	4.7.2.5 3.5 [3] 3.2 [4]	PICS 1.3/1
Test purpose: <i>Voice message indicated in the NOTIFY request after initial subscription msg-account present</i>			
Verify that after a successfully subscription a NOTIFY message has been received containing a "msg-account" line in the body due to a voice message in the deposit.			
SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary NOTIFY Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes Message-Account: sip:<URI of served MWI user>			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC SUBSCRIBE		→	SUT
CASE A 200 OK (SUBSCRIBE)		←	
CASE B 202 Accepted		←	
NOTIFY		←	
200 OK (NOTIFY)		→	

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_021	4.7.2.5 3.5 [3] 3.2 [4]	PICS 1.3/2
Test purpose: <i>Voice message indicated in the NOTIFY request after initial subscription msg-summary-line present</i>			
Verify that after a successfully subscription a NOTIFY message has been received containing a "msg-summary-line" line in the body due to a <i>Voice</i> message in the deposit.			
SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary NOTIFY Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes voice-message: <a valid value> / <a valid value> (<a valid value> / <a valid value>)			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments: The "new-urgentmsgs SLASH old-urgentmsgs" is optional			
ISC			SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY	←		
200 OK (NOTIFY)	→		

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N03_022	4.7.2.5 3.5 [3] 3.2 [4]	
Test purpose: <i>Fax message indicated in the NOTIFY request after initial subscription.</i>			
Verify that after a successfully subscription a NOTIFY message has been received a simple status line the body due to a <i>Fax</i> message in the deposit.			
SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary NOTIFY Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC			SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY	←		
200 OK (NOTIFY)	→		

TSS Network/AS_ServedUser	TP MWI_N03_023	MWI reference 4.7.2.5 3.5 [3] 3.2 [4]	Selection expression PICS 1.3/1
Test purpose: <i>Fax message indicated in the NOTIFY request after initial subscription msg-account present</i> Verify that after a successfully subscription a NOTIFY message has been received containing a "msg-account " line in the body due to a <i>Fax</i> message in the deposit.			
SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary NOTIFY Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes Message-Account: sip:<URI of served MWI user>			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC			SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY	←		
200 OK (NOTIFY)	→		

TSS Network/AS_ServedUser	TP MWI_N03_024	MWI reference 4.7.2.5 3.5 [3] 3.2 [4]	Selection expression PICS 1.3/2
Test purpose: <i>Fax message indicated in the NOTIFY request after initial subscription msg-summary-line present</i> Verify that after a successfully subscription a NOTIFY message has been received containing a "Voice-Message:" line in the body due to a <i>Fax</i> message in the deposit.			
SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary NOTIFY Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes fax-message: <a valid value> /<a valid value> (<a valid value> /<a valid value>)			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments: The "new-urgentmsgs SLASH old-urgentmsgs" is optional			
ISC			SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY	←		
200 OK (NOTIFY)	→		

TSS Network/AS_ServedUser	TP MWI_N03_025	MWI reference 4.7.2.5 3.5 [3] 3.2 [4]	Selection expression																																	
<p>Test purpose: <i>NOTIFY indicates state change due to Voice message after successful subscription</i></p> <p>Verify that after a successfully subscription a NOTIFY message has been received immediately; Afterwards verify that an additional NOTIFY request will be sent immediately when a change in the subscribed state occurs, e.g. a new voice message have been received at the Message account; a simple status line is present in the MIME body. The From header tag and the Call-ID in the NOTIFY 1 are equal to the values in the NOTIFY 2.</p>																																				
<p>SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary NOTIFY 1 Event: message-summary Subscription-State: active; expires=<a valid value> Content-Type: application/simple-message-summary NOTIFY 2 Event: message-summary Subscription-State: active; expires=<a valid value> Content-Type: application/simple-message-summary</p>																																				
<p>Preconditions: An arrangement exists with the service provider to deliver state changes</p>																																				
<p>Comments:</p> <table border="0"> <tr> <td>ISC</td> <td></td> <td style="text-align: right;">SUT</td> </tr> <tr> <td>SUBSCRIBE</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td>CASE A</td> <td></td> <td></td> </tr> <tr> <td>200 OK (SUBSCRIBE)</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>CASE B</td> <td></td> <td></td> </tr> <tr> <td>202 Accepted</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>NOTIFY 1</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>200 OK (NOTIFY)</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">Action causes in a message summary state change</td> <td></td> </tr> <tr> <td>NOTIFY 2</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>200 OK (NOTIFY)</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>				ISC		SUT	SUBSCRIBE	→		CASE A			200 OK (SUBSCRIBE)	←		CASE B			202 Accepted	←		NOTIFY 1	←		200 OK (NOTIFY)	→			Action causes in a message summary state change		NOTIFY 2	←		200 OK (NOTIFY)	→	
ISC		SUT																																		
SUBSCRIBE	→																																			
CASE A																																				
200 OK (SUBSCRIBE)	←																																			
CASE B																																				
202 Accepted	←																																			
NOTIFY 1	←																																			
200 OK (NOTIFY)	→																																			
	Action causes in a message summary state change																																			
NOTIFY 2	←																																			
200 OK (NOTIFY)	→																																			

TSS Network/AS_ServedUser	TP MWI_N03_026	MWI reference 4.7.2.5 3.5 [3] 3.2 [4]	Selection expression PICS 1.3/1
<p>Test purpose: <i>NOTIFY indicates state change due to Voice message after successful subscription msg-account line is present</i></p> <p>Verify that after a successfully subscription a NOTIFY message has been received immediately; Afterwards verify that an additional NOTIFY request will be sent immediately when a change in the subscribed state occurs, e.g. a new voice message have been received at the Message account; a msg-account line is present in the MIME body. The From header tag and the Call-ID in the NOTIFY 1 are equal to the values in the NOTIFY 2.</p>			
<p>SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary NOTIFY 1 Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes Message-Account: sip:<URI of served MWI user> NOTIFY 2 Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes Message-Account: sip:<URI of served MWI user></p>			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC			SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY 1	←		
200 OK (NOTIFY)	→		
		Action causes in a message summary state change	
NOTIFY 2	←		
200 OK (NOTIFY)	→		

TSS Network/AS_ServedUser	TP MWI_N03_027	MWI reference 4.7.2.5 3.5 [3] 3.2 [4]	Selection expression PICS 1.3/2																																	
<p>Test purpose: <i>NOTIFY indicates state change due to Voice message after successful subscription msg-summary-line is present</i></p> <p>Verify that after a successfully subscription a NOTIFY message has been received immediately; Afterwards verify that an additional NOTIFY request will be sent immediately when a change in the subscribed state occurs, e.g. a new voice message have been received at the Message account; a msg-summary-line is present in the MIME body. The From header tag and the Call-ID in the NOTIFY 1 are equal to the values in the NOTIFY 2. The "newmsgs" attribute is incremented by one.</p>																																				
<p>SIP header: SUBSCRIBE</p> <p style="padding-left: 40px;">Event: message-summary Expires: 7200 Accept: application/simple-message-summary</p> <p>NOTIFY 1</p> <p style="padding-left: 40px;">Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes voice-message: <a valid value>/<a valid value></p> <p>NOTIFY 2</p> <p style="padding-left: 40px;">Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes voice-message: <a valid value> + 1/<a valid value></p>																																				
<p>Preconditions: An arrangement exists with the service provider to deliver state changes</p>																																				
<p>Comments:</p>																																				
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 50%;">ISC</th> <th style="width: 10%;"></th> <th style="text-align: right; width: 40%;">SUT</th> </tr> </thead> <tbody> <tr> <td>SUBSCRIBE</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td>CASE A</td> <td></td> <td></td> </tr> <tr> <td>200 OK (SUBSCRIBE)</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>CASE B</td> <td></td> <td></td> </tr> <tr> <td>202 Accepted</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>NOTIFY 1</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>200 OK (NOTIFY)</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td colspan="3" style="text-align: center;">Action causes in a message summary state change</td> </tr> <tr> <td>NOTIFY 2</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>200 OK (NOTIFY)</td> <td style="text-align: center;">→</td> <td></td> </tr> </tbody> </table>				ISC		SUT	SUBSCRIBE	→		CASE A			200 OK (SUBSCRIBE)	←		CASE B			202 Accepted	←		NOTIFY 1	←		200 OK (NOTIFY)	→		Action causes in a message summary state change			NOTIFY 2	←		200 OK (NOTIFY)	→	
ISC		SUT																																		
SUBSCRIBE	→																																			
CASE A																																				
200 OK (SUBSCRIBE)	←																																			
CASE B																																				
202 Accepted	←																																			
NOTIFY 1	←																																			
200 OK (NOTIFY)	→																																			
Action causes in a message summary state change																																				
NOTIFY 2	←																																			
200 OK (NOTIFY)	→																																			

TSS Network/AS_ServedUser	TP MWI_N03_028	MWI reference 4.7.2.5 3.5 [3] 3.2 [4]	Selection expression PICS 1.3/3
<p>Test purpose: <i>NOTIFY indicates state change due to Voice message after successful subscription opt-msg-headers are present</i></p> <p>Verify that after a successfully subscription a NOTIFY message has been received immediately; Afterwards verify that an additional NOTIFY request will be sent immediately when a change in the subscribed state occurs, e.g. a new voice message have been received at the Message account. The subsequent NOTIFY contains message headers, which further describe newly added message(s). The From header tag and the Call-ID in the NOTIFY 1 are equal to the values in the NOTIFY 2.</p>			
<p>SIP header: SUBSCRIBE</p> <p style="padding-left: 40px;">Event: message-summary Expires: 7200 Accept: application/simple-message-summary</p> <p>NOTIFY 1</p> <p style="padding-left: 40px;">Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes</p> <p>NOTIFY 2</p> <p style="padding-left: 40px;">Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes</p> <p style="padding-left: 40px;">To: <user1_public1@home1.net> From: <user3_public1@home1.net> Message-ID: <a valid value>> Message-Context: voice-message</p>			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC			SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY 1	←		
200 OK (NOTIFY)	→		
	Action causes in a message summary state change		
NOTIFY 2	←		
200 OK (NOTIFY)	→		

TSS Network/AS_ServedUser	TP MWI_N03_029	MWI reference 4.7.2.5 3.5 [3] 3.2 [4]	Selection expression																																	
<p>Test purpose: <i>NOTIFY indicates state change due to Fax message after successful subscription</i></p> <p>Verify that after a successfully subscription a NOTIFY message has been received immediately; Afterwards verify that an additional NOTIFY request will be sent immediately when a change in the subscribed state occurs, e.g. a new fax message have been received at the Message account; a simple status line is present in the MIME body. The From header tag and the Call-ID in the NOTIFY 1 are equal to the values in the NOTIFY 2.</p>																																				
<p>SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary NOTIFY 1 Event: message-summary Subscription-State: active; expires= <a valid value> Content-Type: application/simple-message-summary Messages-Waiting: yes NOTIFY 2 Event: message-summary Subscription-State: active; expires= <a valid value> Content-Type: application/simple-message-summary Messages-Waiting: yes</p>																																				
<p>Preconditions: An arrangement exists with the service provider to deliver state changes</p>																																				
<p>Comments:</p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">ISC</th> <th></th> <th style="text-align: right;">SUT</th> </tr> </thead> <tbody> <tr> <td>SUBSCRIBE</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td>CASE A</td> <td></td> <td></td> </tr> <tr> <td>200 OK (SUBSCRIBE)</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>CASE B</td> <td></td> <td></td> </tr> <tr> <td>202 Accepted</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>NOTIFY 1</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>200 OK (NOTIFY)</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">Action causes in a message summary state change</td> <td></td> </tr> <tr> <td>NOTIFY 2</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>200 OK (NOTIFY)</td> <td style="text-align: center;">→</td> <td></td> </tr> </tbody> </table>				ISC		SUT	SUBSCRIBE	→		CASE A			200 OK (SUBSCRIBE)	←		CASE B			202 Accepted	←		NOTIFY 1	←		200 OK (NOTIFY)	→			Action causes in a message summary state change		NOTIFY 2	←		200 OK (NOTIFY)	→	
ISC		SUT																																		
SUBSCRIBE	→																																			
CASE A																																				
200 OK (SUBSCRIBE)	←																																			
CASE B																																				
202 Accepted	←																																			
NOTIFY 1	←																																			
200 OK (NOTIFY)	→																																			
	Action causes in a message summary state change																																			
NOTIFY 2	←																																			
200 OK (NOTIFY)	→																																			

TSS Network/AS_ServedUser	TP MWI_N03_030	MWI reference 4.7.2.5 3.5 [3] 3.2 [4]	Selection expression PICS 1.3/1
<p>Test purpose: <i>NOTIFY indicates state change due to Fax message after successful subscription; msg-account line is present</i></p> <p>Verify that after a successfully subscription a NOTIFY message has been received immediately; Afterwards verify that an additional NOTIFY request will be sent immediately when a change in the subscribed state occurs, e.g. a new fax message have been received at the Message account; a msg-account line is present in the MIME body. The From header tag and the Call-ID in the NOTIFY 1 are equal to the values in the NOTIFY 2.</p>			
<p>SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary NOTIFY 1 Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes Message-Account: sip:<URI of served MWI user> NOTIFY 2 Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes Message-Account: sip:<URI of served MWI user></p>			
Preconditions: An arrangement exists with the service provider to deliver state changes			
Comments:			
ISC			SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY 1	←		
200 OK (NOTIFY)	→		
		Action causes in a message summary state change	
NOTIFY 2	←		
200 OK (NOTIFY)	→		

TSS Network/AS_ServedUser	TP MWI_N03_031	MWI reference 4.7.2.5 3.5 [3] 3.2 [4]	Selection expression PICS 1.3/2																																	
<p>Test purpose: <i>NOTIFY indicates state change due to Fax message after successful subscription; msg-summary-line is present</i></p> <p>Verify that after a successfully subscription a NOTIFY message has been received immediately; Afterwards verify that an additional NOTIFY request will be sent immediately when a change in the subscribed state occurs, e.g. a new fax message have been received at the Message account; a msg-summary-line is present in the MIME body. The From header tag and the Call-ID in the NOTIFY 1 are equal to the values in the NOTIFY 2. The "newmsgs" attribute is incremented by one.</p>																																				
<p>SIP header: SUBSCRIBE</p> <p style="padding-left: 40px;">Event: message-summary Expires: 7200 Accept: application/simple-message-summary</p> <p>NOTIFY 1</p> <p style="padding-left: 40px;">Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes fax-message: <a valid value>/<a valid value></p> <p>NOTIFY 2</p> <p style="padding-left: 40px;">Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes fax-message: <a valid value> + 1/<a valid value></p>																																				
<p>Preconditions: An arrangement exists with the service provider to deliver state changes</p>																																				
<p>Comments:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">ISC</td> <td style="width: 20%;"></td> <td style="width: 30%; text-align: right;">SUT</td> </tr> <tr> <td>SUBSCRIBE</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td>CASE A</td> <td></td> <td></td> </tr> <tr> <td>200 OK (SUBSCRIBE)</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>CASE B</td> <td></td> <td></td> </tr> <tr> <td>202 Accepted</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>NOTIFY 1</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>200 OK (NOTIFY)</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">Action causes in a message summary state change</td> <td></td> </tr> <tr> <td>NOTIFY 2</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>200 OK (NOTIFY)</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>				ISC		SUT	SUBSCRIBE	→		CASE A			200 OK (SUBSCRIBE)	←		CASE B			202 Accepted	←		NOTIFY 1	←		200 OK (NOTIFY)	→			Action causes in a message summary state change		NOTIFY 2	←		200 OK (NOTIFY)	→	
ISC		SUT																																		
SUBSCRIBE	→																																			
CASE A																																				
200 OK (SUBSCRIBE)	←																																			
CASE B																																				
202 Accepted	←																																			
NOTIFY 1	←																																			
200 OK (NOTIFY)	→																																			
	Action causes in a message summary state change																																			
NOTIFY 2	←																																			
200 OK (NOTIFY)	→																																			

TSS Network/AS_ServedUser	TP MWI_N03_032	MWI reference 4.7.2.5 3.5 [3] 3.2 [4]	Selection expression PICS 1.3/3																																	
<p>Test purpose: <i>NOTIFY indicates state change due to Fax message after successful subscription; opt-msg-headers are present</i></p> <p>Verify that after a successfully subscription a NOTIFY message has been received immediately; Afterwards verify that an additional NOTIFY request will be sent immediately when a change in the subscribed state occurs, e.g. a new Fax message have been received at the Message account. The subsequent NOTIFY contains message headers, which further describe newly added message(s).</p>																																				
<p>SIP header: SUBSCRIBE Event: message-summary Expires: 7200 Accept: application/simple-message-summary NOTIFY 1 Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes NOTIFY 2 Event: message-summary Subscription-State: active Content-Type: application/simple-message-summary Messages-Waiting: yes To: <user1_public1@home1.net> From: <user3_public1@home1.net> Message-ID: <a valid value> Message-Context: fax-message</p>																																				
<p>Preconditions: An arrangement exists with the service provider to deliver state changes</p>																																				
<p>Comments:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">ISC</td> <td style="width: 10%;"></td> <td style="width: 30%; text-align: right;">SUT</td> </tr> <tr> <td>SUBSCRIBE</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td>CASE A</td> <td></td> <td></td> </tr> <tr> <td>200 OK (SUBSCRIBE)</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>CASE B</td> <td></td> <td></td> </tr> <tr> <td>202 Accepted</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>NOTIFY 1</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>200 OK (NOTIFY)</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">Action causes in a message summary state change</td> <td></td> </tr> <tr> <td>NOTIFY 2</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>200 OK (NOTIFY)</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>				ISC		SUT	SUBSCRIBE	→		CASE A			200 OK (SUBSCRIBE)	←		CASE B			202 Accepted	←		NOTIFY 1	←		200 OK (NOTIFY)	→			Action causes in a message summary state change		NOTIFY 2	←		200 OK (NOTIFY)	→	
ISC		SUT																																		
SUBSCRIBE	→																																			
CASE A																																				
200 OK (SUBSCRIBE)	←																																			
CASE B																																				
202 Accepted	←																																			
NOTIFY 1	←																																			
200 OK (NOTIFY)	→																																			
	Action causes in a message summary state change																																			
NOTIFY 2	←																																			
200 OK (NOTIFY)	→																																			

5.3 Interaction with other services

5.3.1 Communication DIVersion services (CDIV)

5.3.1.1 Communication Forwarding Unconditional (CFU)

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N04_001	4.9.7.1	
Test purpose: <i>Call forwarding unconditional is ignored in case of a NOTIFY due to subscription</i>			
Verify that after a successfully subscription a NOTIFY message is not forwarded unconditional. The NOTIFY request is forwarded to the served users current location.			
SIP header:			
Preconditions: An arrangement exists with the service provider to deliver state changes, CFU is activated.			
Comments:			
ISC	CFU is already activated		SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY	←		
200 OK (NOTIFY)	→		

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N04_002	4.9.7.1]	
Test purpose: <i>Call forwarding unconditional is ignored in case of a NOTIFY due to state change</i>			
Verify that after a successfully subscription a NOTIFY message indicating a state change is not forwarded unconditional. The NOTIFY request is forwarded to the served users current location.			
SIP header:			
Preconditions: An arrangement exists with the service provider to deliver state changes, CFU is activated.			
Comments:			
ISC	CFU is already activated		SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY	←		
200 OK (NOTIFY)	→		
	Action causes in a message summary state change		
NOTIFY	←		
200 OK (NOTIFY)	→		

5.3.1.2 Communication Forwarding Busy (CFB)

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N04_003	4.9.7.2	
Test purpose: <i>Call forwarding busy is ignored in case of a NOTIFY due to subscription</i>			
Verify that after a successfully subscription a NOTIFY message is not forwarded network determined user busy. The NOTIFY request is forwarded to the served users current location.			
SIP header:			
Preconditions: An arrangement exists with the service provider to deliver state changes, CFB is activated.			
Comments:			
ISC	CFB is already activated		SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY 2	←		
200 OK (NOTIFY)	→		

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N04_004	4.9.7.2	
Test purpose: <i>Call forwarding busy is ignored in case of a NOTIFY due to state change</i>			
Verify that after a successfully subscription a NOTIFY message indicating a state change is not forwarded network determined user busy. The NOTIFY request is forwarded to the served users current location.			
SIP header:			
Preconditions: An arrangement exists with the service provider to deliver state changes, CFB is activated.			
Comments:			
ISC	CFB is already activated		SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY	←		
200 OK (NOTIFY)	→		
	Action causes in a message summary state change		
NOTIFY 2	←		
200 OK (NOTIFY)	→		

5.3.1.3 Communication Deflection (CD)

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N04_005	4.9.7.5	
Test purpose: <i>Communication deflection is ignored in case of a NOTIFY due to subscription</i>			
Verify that after a successfully subscription a NOTIFY message is forwarded to the served users current location. The AS shall ignore the redirection information received from the UE and process a 3xx response as a 480 Temporarily Unavailable response.			
SIP header:			
Preconditions: An arrangement exists with the service provider to deliver state changes, CD is activated.			
Comments:			
ISC	CD is already activated		SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY 2	←		
302 Moved Temporarily	→		

TSS	TP	MWI reference	Selection expression
Network/AS_ServedUser	MWI_N04_006	4.9.7.5	
Test purpose: <i>Communication deflection is ignored in case of a NOTIFY due to state change</i>			
Verify that after a successfully subscription a NOTIFY message indicating a state change is forwarded to the served users current location. The AS shall ignore the redirection information received from the UE and process a 3xx response as a 480 Temporarily Unavailable response.			
SIP header:			
Preconditions: An arrangement exists with the service provider to deliver state changes, CD is activated.			
Comments:			
ISC	CD is already activated		SUT
SUBSCRIBE	→		
CASE A			
200 OK (SUBSCRIBE)	←		
CASE B			
202 Accepted	←		
NOTIFY	←		
200 OK (NOTIFY)	→		
	Action causes in a message summary state change		
NOTIFY 2	←		
302 Moved Temporarily	→		

Annex A (informative): Bibliography

ISO/IEC 9646-3: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".

History

Document history		
V3.1.1	July 2010	Publication