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Communications Access for Land Mobiles (CALM);
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Part 2: Test Suite Structure and Test Purposes (TSS&TP)

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Intelligent Transport System (ITS).

The present document is part 2 of a multi-part deliverable covering "Test Suite Structure and Test Purposes" (TSS&TP) specifications for ITS station management protocols as identified below:

Part 1: "Protocol Implementation Conformance Statement (PICS) specification";

Part 2: "Test Suite Structure and Test Purposes (TSS&TP)";

Part 3: "Abstract Test Suite (ATS) and partial PIXIT proforma".

1 Scope

The present document provides the test suite structure and test purpose specification for the ISO protocols specified in ISO/DIS 24102 [1], [2] in compliance with the relevant requirements, and in accordance with the relevant guidance given in EG 202 798 [i.1].

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] ISO/DIS 24102-4: "Intelligent transport systems -- Communications access for land mobiles (CALM) -- ITS station management -- Part 4: Station-internal management communications".

NOTE: Available at http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=61565.

[2] ISO/DIS 24102-5: "Intelligent transport systems -- Communications access for land mobiles (CALM) -- ITS station management -- Part 5: Fast service advertisement protocol (FSAP)".

NOTE: Available at http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=61566.

[3] ETSI TS 102 797-1: "Intelligent Transport Systems (ITS); Communications Access for Land Mobiles (CALM); Test specifications for ITS station management (ISO 24102); Part 1: Protocol Implementation Conformance Statement (PICS) specification".

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.

[i.1] ETSI EG 202 798: "Intelligent Transport Systems (ITS); Testing; Framework for conformance and interoperability testing".

[i.2] ISO/DIS 24102-1: "Intelligent transport systems -- Communications access for land mobiles (CALM) -- ITS station management -- Part 1: Local management".

[i.3] ISO/DIS 24102-3: "Intelligent transport systems -- Communications access for land mobiles (CALM) -- ITS station management -- Part 3: Service access points".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in [1], [2], [i.1] and [i.3] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in [1], [2], [i.1] and [i.3] apply.

4 Test suite structure

4.1 Test architecture

In general, the conformance test system architecture as illustrated in the ITS testing framework [i.1] applies. Such SUTs which support the "Inter-ITS-SCU-Communications Protocol" (IICP) [1] may benefit from the conformance test system architecture illustrated in figure 1, where the access to the IUT from top, i.e. in general via the "Upper tester application", is performed via remote access to the management SAPs applying IICP.

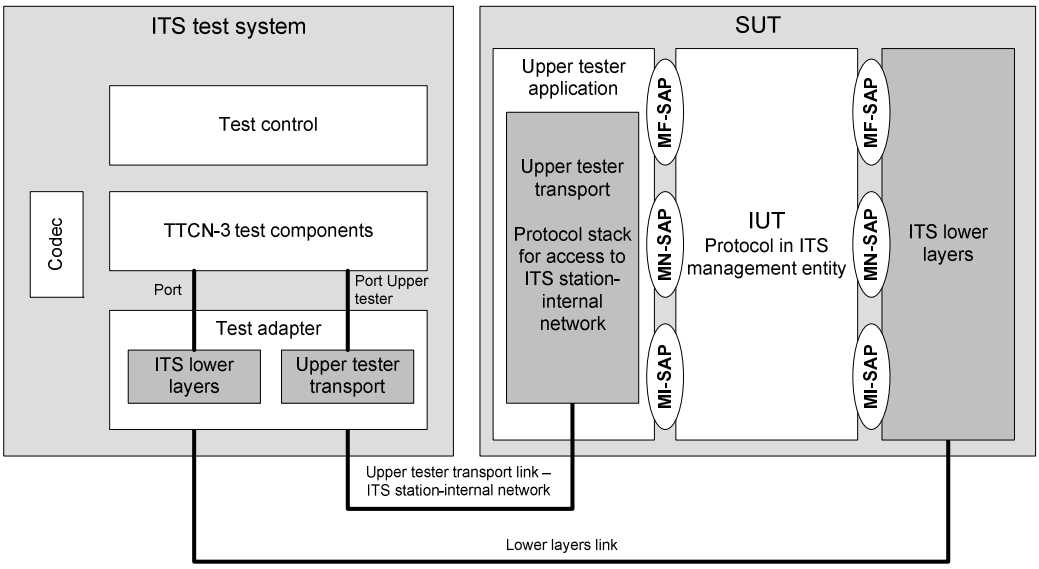

Figure 1: Conformance test system architecture for SUTs compliant with [1]

Testing a protocol which resides inside the ITS management entity does not follow strictly the illustrations given in the ITS testing framework [i.1]. Nevertheless the principles outlined there apply also. The essential difference is, that the access from the "upper tester application" and form the "ITS lower layers" to the IUT is via the management SAPs.

In general, the upper tester application [i.1] allows to access anyone of the three management SAPs of the IUT, i.e. MI-SAP, MN-SAP and MF-SAP. The ITS test system uses the remote management commands specified in [1].

Note that for testing of FSAP and IICP, the ITS lower layers connect to the IUT via MF-SAP only.

5 TP basics

5.1 TP definition conventions

The TP definition is built according to the guidelines provided in the ITS testing framework [i.1], applying a formalized language with pre-defined keywords for the behaviour description.

5.2 TP identifier naming conventions

The identifier of the TP is built according to tables 1, 2, 3 and 4 as recommended in the ITS testing framework [i.1].

Table 1: TP naming convention for station-internal management protocols

TP/<root>/<gr>/<sgr>/<x>/<nn>		
<root> = root	INTM	Other management protocols
<gr> = group		
<sgr> = sub- group		
<x> = type of testing	BV	Valid Behaviour tests
	BI	Invalid Syntax or Behaviour Tests
<nn> = sequential number		01 to 99

NOTE 1: The present document does not contain TPs related to table 1, which will be provided in a future version.

Table 2: TP naming convention for remote station management protocols

TP/<root>/<gr>/<sgr>/<x>/<nn>		
<root> = root	EXTM	Other management protocols
<gr> = group		
<sgr> = sub- group		
<x> = type of testing	BV	Valid Behaviour tests
	BI	Invalid Syntax or Behaviour Tests
<nn> = sequential number		01 to 99

NOTE 2: The present document does not contain TPs related to table 2, which will be provided in a future version.

Table 3: TP naming convention for Inter-ITS-SCU communication protocol (IICP)

TP/<root>/<gr>/<x>/<nn>		
<root> = root	IICP	Inter-ITS-SCU communication Protocol
<gr> = group	MGM	Management
	COM	Communication
<x> = type of testing	BV	Valid Behaviour tests
	BI	Invalid Syntax or Behaviour Tests
<nn> = sequential number		01 to 99

TPs for the IICP are specified in clause 8.

Table 4: TP naming convention for FSAP

TP/<root>/<gr>/<sgr>/<x>/<nn>		
<root> = root	FSAP	Fast Service Advertisement Protocol
<gr> = group	SP	Service provider
	SU	Service user
<sgr> = sub-group	HR	Combined ITS-S host and ITS-S router
	HO	ITS-S host only
	RO	ITS-S router only
<x> = type of testing	BV	Valid Behaviour tests
	BI	Invalid Syntax or Behaviour Tests
<nn> = sequential number		01 to 99

TPs for FSAP are specified in clause 9.

5.3 Rules for behaviour description

The description of the TP is built according to the guidelines provided in the ITS testing framework [i.1].

5.4 Sources of TP definitions

All TPs are specified according to [1],[2].

5.5 TP proforma

[i.1] proposes a TP proforma which is used in the present document. The fields of this proforma as used in the present document are explained in table 5.

Table 5: TP proforma field description

TP Header	
TP ID	The TP ID is a unique identifier according to the TP naming conventions in tables 1, 2, 3 and 4.
Test objective	Short description of test purpose objective according to the requirements from the base standard.
Reference	The reference indicates the clauses of the reference standard specifications in which the conformance requirement is expressed.
PICS selection	Reference to the PICS statement involved for selection of the TP. Contains a Boolean expression. May contain PICS acronyms specified in table. This section is only used in case an optional or conditional behaviour needs to be selected. Mandatory behaviour is not identified here.
TP Behaviour	
Initial conditions (optional)	The initial conditions define in which initial state the IUT has to be to apply the actual TP. In the corresponding "Test Case" (TC), when the execution of the initial condition does not succeed, it leads to the assignment of an Inconclusive verdict.
Expected behaviour (TP body)	Definition of the events, which are parts of the TP objective, and the IUT are expected to perform in order to conform to the base specification. In the corresponding TC," Pass" or "Fail" verdicts can be assigned there.

5.6 PICS mnemonics

The PICS mnemonics presented in table 6 are used in the TP proforma.

Table 6: PICS mnemonics for FSAP

Mnemonic	PICS item
PICS_FSAP_ROLE_SP	[3] D.1/1
PICS_FSAP_ROLE_SU	[3] D.1/2
PICS_SIP_W_CTX	[3] D.3/1
PICS_SIP_N_CTX	[3] D.3/2
PICS_ROLE_RONLY	[3] D.5/1
PICS_ROLE_HONLY	[3] D.5/2
PICS_ROLE_RH	[3] D.5/3
PICS_ITS_S_INW	[3] D.6/1

Table 7: PICS mnemonics for IICP

Mnemonic	PICS item
PICS_ROLE_HONLY	[3] C.1/1
PICS_ROLE_RONLY	[3] C.1/2
PICS_ROLE_RH	[3] C.1/3
PICS_IICP_MGM	[3] C.8/1

6 TPs for local station management protocols

NOTE: The present document does not contain TPs related to local management of an ITS station specified in [i.2], as such TPs are not covered by the scope of ETSI STF 422, which developed the present document. These TPs will be defined in a future version.

7 TPs for remote station management protocols

NOTE: The present document does not contain TPs related to remote management of an ITS station. These TPs will be defined in the future.

8 TPs for IICP

8.1 Management

8.1.1 Valid behaviour tests

TP Id	IICP/MGM/BV/01
Test objective	Generation of ITS-SCUalive message after power on - no other ITS-SCU in the SUT
Reference	9.1, 9.2
PICS Selection	PICS_IICP_MGM
Initial conditions	

with {
the IUT having no knowledge about other ITS-SCUs in the SUT
}	

Expected behaviour	

evaluate whether {
when {
the IUT starting
}
then {
the IUT generates an ITS-SCUalive (new) message with DestinationITS-SCU-ID=65535 and with SourceITS-SCU-ID equal to the own ITS-SCU ID, indicating its IST-SCUtype, and forwards this with MF-COMMAND IICrequestTX to the IICA
}
}	

TP Id	IICP/MGM/BV/02
Test objective	Reception of ITS-SCUalive (new) message with no address conflict
Reference	9.1, 9.2
PICS Selection	PICS_IICP_MGM
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an ITS-SCUalive (new) message without address conflict
}
then {
the IUT shall acknowledge this with ErrorStatus = 0 using MF-COMMAND IICresponseTX
}
}	

TP Id	IICP/MGM/BV/03
Test objective	Reception of ITS-SCUalive (new) message with address conflict
Reference	9.1, 9.2
PICS Selection	PICS_IICP_MGM
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an ITS-SCUalive (new) message with address conflict, i.e. from an ITS-SCU having the same ITS-SCU-ID
}
then {
the IUT shall acknowledge this with ErrorStatus = 2 using MF-COMMAND IICresponseTX for transmission to all ITS-SCUs
}
}	

TP Id	IICP/MGM/BV/04
Test objective	Reception of ITS-SCUalive (alive) message with no address conflict
Reference	9.1, 9.3
PICS Selection	PICS_IICP_MGM
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an ITS-SCUalive (alive) message without address conflict
}
then {
the IUT does not show any visible reaction
}
}	

TP Id	IICP/MGM/BV/05
Test objective	Periodic transmission of ITS-SCUalive (alive) message
Reference	9.1, 9.3
PICS Selection	PICS_IICP_MGM
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having transmitted an ITS-SCUalive (alive) message with DestinationITS-SCU-ID=65535 and with SourceITS-SCU-ID equal to its own ITS-SCU ID, which does not result in an address conflict
}
then {
the IUT transmits the next ITS-SCUalive (alive) message after the time span given in parameter Talive.
}
}	

TP Id	IICP/MGM/BV/06
Test objective	Transmission of ITS-SCUalive (delete) message
Reference	9.1, 9.4
PICS Selection	PICS_IICP_MGM
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT wants to shut down and stop operation
}
then {
the IUT transmits an ITS-SCUalive (delete) message with DestinationITS-SCU-ID=65535 and with SourceITS-SCU-ID equal to its own ITS-SCU ID using MF-COMMAND IICrequestTX
}
}	

8.1.2 Invalid behaviour tests

TP Id	IICP/MGM/BI/01
Test objective	Reception of ITS-SCUalive (alive) message with address conflict
Reference	9.1, 9.3
PICS Selection	PICS_IICP_MGM
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an ITS-SCUalive (alive) message with address conflict , i.e. from an ITS-SCU having the same ITS-SCU-ID
}
then {
the IUT shall acknowledge this with ErrorStatus = 2 using MF-COMMAND IICresponseTX for transmission to all ITS-SCUs,
the IUT shall delete its own ITS-SCU-ID and shall register newly by sending an ITS-SCU (new) message indicating a new ITS-SCU-ID with MF-COMMAND IICrequestTX to the IICA for transmission to all ITS-SCUs
}
}	

TP Id	IICP/MGM/BI/02
Test objective	Reception of ITS-SCUalive message with unknown AliveMessage
Reference	9
PICS Selection	PICS_IICP_MGM
Initial conditions	

with {
the IUT having own ITS-SCU-ID
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an ITS-SCUalive message with unknown AliveMessage
}
then {
the IUT acknowledges the message with ErrorStatus 3
}
}	

TP Id	IICP/MGM/BI/03
Test objective	Reception of ITS-SCUalive message with unknown ITS-SCU type
Reference	9
PICS Selection	PICS_IICP_MGM
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an ITS-SCUalive message with unknown ITS-SCU type
}
then {
the IUT acknowledges the message with ErrorStatus 4
}
}	

8.2 Communications

8.2.1 Valid behaviour tests

TP Id	IICP/COM/BV/01
Test objective	Transmission of IIC-Request VCI-info to all types of ITS-SCUs
Reference	8.2.1, B.2.3
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received the request to send an VCI-info request message to all ITS-SCUs
}
then {
the IUT generates an VCI-info request message with DestinationITS-SCU-ID=65535 and with SourceITS-SCU-ID equal to its own ITS-SCU-ID, and forwards this with MF-COMMAND IICrequestTX to the IICA for transmission to all ITS-SCUs
}
}	

TP Id	IICP/COM/BV/02
Test objective	Transmission of IIC-Request VCI-info to ITS-SCUs with ITS-S router role
Reference	8.2.1, B.2.3
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received the request to send an VCI-info request message to all ITS-SCUs
}
then {
the IUT generates an VCI-info request message with DestinationITS-SCU-ID=2 and with SourceITS-SCU-ID equal to its own ITS-SCU-ID, and forwards this with MF-COMMAND IICrequestTX to the IICA for transmission to all ITS-SCUs
}
}	

TP Id	IICP/COM/BV/03
Test objective	Transmission of VCI-info response message
Reference	B.2.3, 8.3.1
PICS Selection	PICS_ROLE_RH OR PICS_ROLE_RONLY
Initial conditions	

with {
the IUT having its own ITS-SCU ID, and having at least one CI to connect to another ITS-S
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an VCI-info request message
}
then {
the IUT prepares the VCI-info response message with DestinationITS-SCU-ID="private address from the ITS-SCU which generated the request" and with SourceITS-SCU-ID equal to its own ITS-SCU-ID, and forwards this with MF-COMMAND IICresponseTX to the IICA
}
}	

TP Id	IICP/COM/BV/04
Test objective	Transmission of IIC-Request VCI-update to all types of ITS-SCUs
Reference	8.2.1, B.2.3
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT wants to provide an update of its own VCI information to all ITS-SCUs
}
then {
the IUT generates an VCI-update message with DestinationITS-SCU-ID=65535 and with SourceITS-SCU-ID equal to its own ITS-SCU-ID, and forwards this with MF-COMMAND IICrequestTX to the IICA for transmission to all ITS-SCUs
}
}	

TP Id	IICP/COM/BV/05
Test objective	Reception of VCI-update request message
Reference	B.2.3, 8.3.1
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU ID
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an VCI-update request message
}
then {
the IUT does not show any visible reaction
}
}	

TP Id	IICP/COM/BV/06
Test objective	Transmission of IIC-Request MF-rcmd to a specific ITS-SCU
Reference	8.2.1, B.2.5
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID "own" allocated and knows the private ITS-SCU-ID "other" of another ITS-SCU
}	

Expected behaviour	

evaluate whether {
when {
the ITS-S management requests remote access to the MF-SAP in another ITS-SCU
}
then {
the IUT generates an MF-rcmd request message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICrequestTX to the IICA
}
}	

TP Id	IICP/COM/BV/07
Test objective	Transmission of IIC-Request MN-rcmd to a specific ITS-SCU
Reference	8.2.1, B.2.5
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID "own" allocated and knows the private ITS-SCU-ID "other" of another ITS-SCU
}	

Expected behaviour	

evaluate whether {
when {
the ITS-S management requests remote access to the MN-SAP in another ITS-SCU
}
then {
the IUT generates an MN-rcmd message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICrequestTX to the IICA
}
}	

TP Id	IICP/COM/BV/08
Test objective	Transmission of IIC-Request MI-rcmd to a specific ITS-SCU
Reference	8.2.1, B.2.5
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID "own" allocated and knows the private ITS-SCU-ID "other" of another ITS-SCU
}	

Expected behaviour	

evaluate whether {
when {
the ITS-S management requests remote access to the MI-SAP in another ITS-SCU
}
then {
the IUT generates an MI-rcmd message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICrequestTX to the IICA
}
}	

TP Id	IICP/COM/BV/09
Test objective	Transmission of IIC-Request MI-rget to a specific ITS-SCU
Reference	8.2.1, B.2.5
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID "own" allocated and knows the private ITS-SCU-ID "other" of another ITS-SCU
}	

Expected behaviour	

evaluate whether {
when {
the ITS-S management requests remote access to the MI-SAP in another ITS-SCU in order to get the value of an I-Parameter
}
then {
the IUT generates an MI-rget message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICrequestTX to the IICA
}
}	

TP Id	IICP/COM/BV/10
Test objective	Transmission of IIC-Request MI-rset to a specific ITS-SCU
Reference	8.2.1, B.2.5
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID "own" allocated and knows the private ITS-SCU-ID "other" of another ITS-SCU
}	

Expected behaviour	

evaluate whether {
when {
the ITS-S management requests remote access to the MI-SAP in another ITS-SCU in order to set the value of an I-Parameter
}
then {
the IUT generates an MI-rset message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICrequestTX to the IICA
}
}	

TP Id	IICP/COM/BV/11
Test objective	Transmission of MF-rcmd response message
Reference	B.2.3, 8.3.1, 8.2.2
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU ID "own" allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an MF-rcmd request message from an ITS-SCU with ITS-SCU-ID="other" which requires a response
}
then {
the IUT generates an MF-rcmd response message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICresponseTX to the IICA
}
}	

TP Id	IICP/COM/BV/12
Test objective	Transmission of MN-rcmd response message
Reference	B.2.3, 8.3.1, 8.2.2
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU ID "own"
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an MN-rcmd request message from an ITS-SCU with ITS-SCU-ID="other" which requires a response
}
then {
the IUT generates an MN-rcmd response message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICresponseTX to the IICA
}
}	

TP Id	IICP/COM/BV/13
Test objective	Transmission of MI-rcmd response message
Reference	B.2.3, 8.3.1, 8.2.2
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU ID "own"
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an MI-rcmd request message from an ITS-SCU with ITS-SCU-ID="other" which requires a response
}
then {
the IUT generates an MI-rcmd response message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICresponseTX to the IICA
}
}	

TP Id	IICP/COM/BV/14
Test objective	Transmission of MI-rget response message
Reference	B.2.3, 8.3.1, 8.2.2
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU ID "own"
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an MI-rget request message from an ITS-SCU with ITS-SCU-ID="other" which constitutes an authorized get request
}
then {
the IUT generates an MI-rget response message providing the requested value with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICresponseTX to the IICA
}
}	

TP Id	IICP/COM/BV/15
Test objective	Transmission of MI-rset response message
Reference	B.2.3, 8.3.1, 8.2.2
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU ID "own"
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an MI-rset request message from an ITS-SCU with ITS-SCU-ID="other" which constitutes an unauthorized set request
}
then {
the IUT generates an MI-rset response message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", indicating the proper error code, and forwards this with MF-COMMAND IICresponseTX to the IICA
}
}	

TP Id	IICP/COM/BV/16
Test objective	Transmission of IIC-Request MF-rreq to a specific ITS-SCU
Reference	8.2.1, B.2.5
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID "own" allocated and knows the private ITS-SCU-ID "other" of another ITS-SCU
}	

Expected behaviour	

evaluate whether {
when {
ITS-S management entity is used by ITS-S facilities layer to request access to a remote management
}
then {
the IUT generates an MF-rreq message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICrequestTX to the IICA
}
}	

TP Id	IICP/COM/BV/17
Test objective	Transmission of IIC-Request MN-rreq to a specific ITS-SCU
Reference	8.2.1, B.2.5
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID "own" allocated and knows the private ITS-SCU-ID "other" of another ITS-SCU
}	

Expected behaviour	

evaluate whether {
when {
ITS-S management entity is used by ITS-S networking&transport layer to request access to a remote management
}
then {
the IUT generates an MN-rreq message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICrequestTX to the IICA
}
}	

TP Id	IICP/COM/BV/18
Test objective	Transmission of IIC-Request MI-rreq to a specific ITS-SCU
Reference	8.2.1, B.2.5
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID "own" allocated and knows the private ITS-SCU-ID "other" of another ITS-SCU
}	

Expected behaviour	

evaluate whether {
when {
ITS-S management entity is used by ITS-S access layer to request access to a remote management
}
then {
the IUT generates an MI-rreq message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICrequestTX to the IICA
}
}	

TP Id	IICP/COM/BV/19
Test objective	Transmission of MF-rreq response message
Reference	B.2.3, 8.3.1, 8.2.2
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU ID "own"
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an MF-rreq request message from an ITS-SCU with ITS-SCU-ID="other" which requires a response
}
then {
the IUT generates an MF-rreq response message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICresponseTX to the IICA
}
}	

TP Id	IICP/COM/BV/20
Test objective	Transmission of MN-rreq response message
Reference	B.2.3, 8.3.1, 8.2.2
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU ID "own"
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an MN-rreq request message from an ITS-SCU with ITS-SCU-ID="other" which requires a response
}
then {
the IUT generates an MN-rreq response message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICresponseTX to the IICA
}
}	

TP Id	IICP/COM/BV/21
Test objective	Transmission of MI-rreq response message
Reference	B.2.3, 8.3.1, 8.2.2
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU ID "own"
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an MI-rreq request message from an ITS-SCU with ITS-SCU-ID="other" which requires a response
}
then {
the IUT generates an MI-rreq response message with DestinationITS-SCU-ID="other" and with SourceITS-SCU-ID "own", and forwards this with MF-COMMAND IICresponseTX to the IICA
}
}	

TP Id	IICP/COM/BV/22
Test objective	Reception of an ICC-Request message with invalid DestinationITS-SCU-ID=1
Reference	8.3.1
PICS Selection	PICS_ROLE_RONLY
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an ICC-Request message with invalid DestinationITS-SCU-ID=1 (ITS-S host)
}
then {
the IUT deletes the received message
}
}	

TP Id	IICP/COM/BV/23
Test objective	Reception of an ICC-Request message with invalid DestinationITS-SCU-ID=2
Reference	8.3.1
PICS Selection	PICS_ROLE_HONLY
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an ICC-Request message with invalid DestinationITS-SCU-ID=2 (ITS-S router)
}
then {
the IUT deletes the received message
}
}	

8.2.2 Invalid behaviour tests

TP Id	IICP/COM/BI/01
Test objective	Reception of an ICC-Request message with invalid DestinationITS-SCU-ID (reserved)
Reference	8.3.1
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an ICC-Request message with invalid DestinationITS-SCU-ID (reserved)
}
then {
the IUT deletes the received message
}
}	

TP Id	IICP/COM/BI/02
Test objective	Reception of an ICC-Response message with invalid DestinationITS-SCU-ID=1
Reference	8.3.2
PICS Selection	PICS_ROLE_RONLY
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an ICC-Response message with invalid DestinationITS-SCU-ID=1 (ITS-S host)
}
then {
the IUT deletes the received message
}
}	

TP Id	IICP/COM/BI/03
Test objective	Reception of an ICC-Response message with invalid DestinationITS-SCU-ID=2
Reference	8.3.2
PICS Selection	PICS_ROLE_HONLY
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an ICC-Response message with invalid DestinationITS-SCU-ID=2 (ITS-S router)
}
then {
the IUT deletes the received message
}
}	

TP Id	IICP/COM/BI/04
Test objective	Reception of an ICC-Response message with invalid DestinationITS-SCU-ID (reserved)
Reference	8.3.2
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an ICC-Response message with invalid DestinationITS-SCU-ID (reserved)
}
then {
the IUT deletes the received message
}
}	

TP Id	IICP/COM/BI/05
Test objective	Reception of an ICC-Request message with odd "PDU-Counter" value
Reference	8.3.1
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an IIC-Request message with odd "PDU-Counter" value
}
then {
the IUT deletes the received message
}
}	

TP Id	IICP/COM/BI/06
Test objective	Reception of an ICC-Response message with even "PDU-Counter" value
Reference	8.3.1
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an IIC-Response message with even "PDU-Counter" value
}
then {
the IUT deletes the received message
}
}	

TP Id	IICP/COM/BI/07
Test objective	Reception of an ICC-Response message with "PDU-Counter" not indicating a previous ICC-Request message
Reference	8.3.1
PICS Selection	
Initial conditions	

with {
the IUT having its own ITS-SCU-ID allocated, the ITU not awaiting an IIC-Response message
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a privately addressed IIC-Response message with odd "PDU-Counter" value
}
then {
the IUT deletes the received message
}
}	

9 TPs for FSAP

9.1 Service provider

9.1.1 Combined ITS-S host and ITS-S router

9.1.1.1 Valid behaviour tests

TP Id	FSAP/SP/HR/BV/01
Test objective	Registration of ITS-S application for message distribution only (no session phase) with request of specific access technology
Reference	8.2.1, 8.2.4, 8.2.5
PICS Selection	PICS_FSAP_ROLE_SP AND PICS_ROLE_RH
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT knowing the requested access technology
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a GCregServer registration request for an ITS-S application including a required access technology and non-IP communications
}
then {
the IUT periodically sends out SAM via the requested access technology with the requested repetition rate, not inviting for a reply
}
}	

TP Id	FSAP/SP/HR/BV/02
Test objective	Registration of ITS-S application for message distribution only (no session phase) with no request of specific access technology
Reference	8.2.1, 8.2.4, 8.2.5
PICS Selection	PICS_FSAP_ROLE_SP AND PICS_ROLE_RH
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT knowing a suitable access technology
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a GCregServer registration request for an ITS-S application requiring non-IP communications, not requiring a specific access technology
}
then {
the IUT periodically sends out SAM via a suited access technology selected by the CI selection manager with the requested repetition rate, not inviting for a reply
}
}	

TP Id	FSAP/SP/HR/BV/03
Test objective	Registration of ITS-S application with need for a session, with no request of specific access technology, and without request to change communication channel for session phase
Reference	8.2.1, 8.2.4, 8.2.5
PICS Selection	PICS_FSAP_ROLE_SP AND PICS_ROLE_RH
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT knowing a suitable access technology
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a GCregServer registration request for an ITS-S application requiring non-IP communications in the session phase, but not requiring a change of communication channel
}
then {
the IUT periodically sends out SAM via a suited access technology selected by the CI selection manager with the requested repetition rate, inviting for a reply
}
}	

TP Id	FSAP/SP/HR/BV/04
Test objective	Registration of ITS-S application with need for a session, with no request of specific access technology, and with request to change communication channel for session phase
Reference	8.2.1, 8.2.4, 8.2.5
PICS Selection	PICS_FSAP_ROLE_SP AND PICS_ROLE_RH
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT knowing a suitable access technology
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a GCregServer registration request for an ITS-S application requiring non-IP communications, and requiring change of communication channel in the session phase
}
then {
the IUT periodically sends out SAM via a suited access technology selected by the CI selection manager with the requested repetition rate, inviting for a reply, requesting a change of channel
}
}	

TP Id	FSAP/SP/HR/BV/05
Test objective	Finalization of SIP upon reception of CTX for non-IP session
Reference	8.2.6, 8.4
PICS Selection	PICS_FSAP_ROLE_SP AND PICS_ROLE_RH AND PICS_SIP_W_CTX
Initial conditions	

with {
the IUT sending out periodically SAMs for one ITS-S application with non-IP based sessions
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a CTX with MF-REQUEST CTXrxNot as proper reply to a SAM
}
then {
the IUT forwards the CTX to the proper application using MF-Command GCctx
}
}	

9.1.1.2 Invalid behaviour tests

TP Id	FSAP/SP/HR/BI/01
Test objective	Registration of ITS-S application for message distribution only (no session phase) with request of specific but not available access technology
Reference	8.2.1, 8.2.4, 8.2.5
PICS Selection	PICS_FSAP_ROLE_SP AND PICS_ROLE_RH
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT not knowing the requested access technology,
the IUT knowing another access technology suited for FSAP
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a GCregServer registration request for an ITS-S application for the purpose of message distribution
}
then {
the IUT does not send out periodically SAMs via the existent access technology
}
}	

TP Id	FSAP/SP/HR/BI/02
Test objective	Registration of ITS-S application with need for a session, with no request of specific access technology, with now suitable access technology known, and without request to change communication channel for session phase
Reference	8.2.1, 8.2.4, 8.2.5
PICS Selection	PICS_FSAP_ROLE_SP AND PICS_ROLE_RH
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT not knowing a suitable access technology
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a GCregServer registration request for an ITS-S application offering a session phase
}
then {
the IUT does not send out periodically SAMs
}
}	

9.1.2 ITS-S host only

9.1.2.1 Valid behaviour tests

TP Id	FSAP/SP/HO/BV/01
Test objective	Registration of ITS-S application for message distribution only (no session phase) with request of specific access technology available in an ITS-S router unit
Reference	8.2.1, 8.2.4, 8.2.5, 8.5
PICS Selection	PICS_FSAP_ROLE_SP AND (PICS_ROLE_HONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW))
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT knowing about availability of the requested access technology in an ITS-S router
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a GCregServer registration request for an ITS-S application including a required access technology
}
then {
the IUT forwards this request to the proper ITS-S router ITS-SCU applying IICP
}
}	

TP Id	FSAP/SP/HO/BV/02
Test objective	Registration of ITS-S application for message distribution only (no session phase) with no request of specific access technology
Reference	8.2.1, 8.2.4, 8.2.5, 8.5
PICS Selection	PICS_FSAP_ROLE_SP AND (PICS_ROLE_HONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW))
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT knowing about availability of a suitable access technology in an ITS-S router
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a GCregServer registration request for an ITS-S application
}
then {
the IUT forwards this request to the proper ITS-S router ITS-SCU applying IICP
}
}	

TP Id	FSAP/SP/HO/BV/03
Test objective	Registration of ITS-S application with need for a session, with no request of specific access technology, and without request to change communication channel for session phase
Reference	8.2.1, 8.2.4, 8.2.5, 8.5
PICS Selection	PICS_FSAP_ROLE_SP AND (PICS_ROLE_HONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW))
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT knowing about availability of a suitable access technology in an ITS-S router
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a GCregServer registration request for an ITS-S application requiring non-IP communications in the session phase, but no change of communication channel
}
then {
the IUT forwards this request to the proper ITS-S router ITS-SCU applying IICP
}
}	

TP Id	FSAP/SP/HO/BV/04
Test objective	Registration of ITS-S application with need for a session, with no request of specific access technology, and with request to change communication channel for session phase
Reference	8.2.1, 8.2.4, 8.2.5
PICS Selection	PICS_FSAP_ROLE_SP AND (PICS_ROLE_HONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW))
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT knowing about availability of a suitable access technology in an ITS-S router
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a GCregServer registration request for an ITS-S application requiring non-IP communications, and requiring change of communication channel in the session phase
}
then {
the IUT forwards this request to the proper ITS-S router ITS-SCU applying IICP
}
}	

TP Id	FSAP/SP/HO/BV/05
Test objective	Finalization of SIP upon reception of CTX for non-IP session
Reference	8.2.6, 8.4, 8.5
PICS Selection	PICS_FSAP_ROLE_SP AND (PICS_ROLE_HONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW)) AND PICS_SIP_W_CTX
Initial conditions	

with {
the IUT awaiting reception of CTX messages
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a CTX with MF-rreq(CTXrxNot) as proper reply to a SAM
}
then {
the IUT notifes the ITS-S application using MF-COMMAND GCctx.
}
}	

9.1.2.2 Invalid behaviour tests

TP Id	FSAP/SP/HO/BI/01
Test objective	Registration of ITS-S application for message distribution only (no session phase) with request of specific but not available access technology
Reference	8.2.1, 8.2.4, 8.2.5, 8.5
PICS Selection	PICS_FSAP_ROLE_SP AND (PICS_ROLE_HONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW))
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT not knowing about existence of the requested access technology,
the IUT knowing about availability of a suitable access technology in an ITS-S router
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a GCregServer registration request for an ITS-S application for the purpose of message distribution
}
then {
the IUT dows not forward this request to the proper ITS-S router ITS-SCU applying IICP
}
}	

TP Id	FSAP/SP/HO/BI/02
Test objective	Registration of ITS-S application with need for a session, with no request of specific access technology, with no suitable access technology being available, and without request to change communication channel for session phase
Reference	8.2.1, 8.2.4, 8.2.5, 8.5
PICS Selection	PICS_FSAP_ROLE_SP AND (PICS_ROLE_HONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW))
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT not knowing about availability of a suitable access technology
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a GCregServer registration request for an ITS-S application offering a session phase
}
then {
the IUT dows not forward this request to the proper ITS-S router ITS-SCU applying Inter-ITS-SCU communications
}
}	

9.1.3 ITS-S router only

9.1.3.1 Valid behaviour tests

TP Id	FSAP/SP/RO/BV/01
Test objective	Registration of ITS-S application for message distribution only (no session phase) with request of specific access technology
Reference	8.2.1, 8.2.4, 8.2.5, 8.5
PICS Selection	PICS_FSAP_ROLE_SP AND (PICS_ROLE_RONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW))
Initial conditions	

with {
the IUT having not registered any ITS-S application for SAM transmission,
the IUT knowing the requested access technology
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an MF-rreq(GCregServer) registration request for an ITS-S application including a required access technology and non-IP communications
}
then {
the IUT periodically sends out SAM via the requested access technology with the requested repetition rate, not inviting for a reply
}
}	

TP Id	FSAP/SP/RO/BV/02
Test objective	Registration of ITS-S application for message distribution only (no session phase) with no request of specific access technology
Reference	8.2.1, 8.2.4, 8.2.5, 8.5
PICS Selection	PICS_FSAP_ROLE_SP AND (PICS_ROLE_RONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW))
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT knowing a suitable access technology
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an MF-rreq(GCregServer) registration request for an ITS-S application requiring non-IP communications
}
then {
the IUT periodically sends out SAM via a suited access technology selected by the CI selection manager with the requested repetition rate, not inviting for a reply
}
}	

TP Id	FSAP/SP/RO/BV/03
Test objective	Registration of ITS-S application with need for a session, with no request of specific access technology, and without request to change communication channel for session phase
Reference	8.2.1, 8.2.4, 8.2.5, 8.5
PICS Selection	PICS_FSAP_ROLE_SP AND (PICS_ROLE_RONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW))
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT knowing a suitable access technology
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an MF-rreq(GCregServer) registration request for an ITS-S application requiring non-IP communications
}
then {
the IUT periodically sends out SAM via a suited access technology selected by the CI selection manager with the requested repetition rate, inviting for a reply
}
}	

TP Id	FSAP/SP/RO/BV/04
Test objective	Registration of ITS-S application with need for a session, with no request of specific access technology, and with request to change communication channel for session phase
Reference	8.2.1, 8.2.4, 8.2.5, 8.5
PICS Selection	PICS_FSAP_ROLE_SP AND (PICS_ROLE_RONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW))
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT knowing a suitable access technology
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an MF-rreq(GCregServer) registration request for an ITS-S application requiring non-IP communications, and requiring change of communication channel in the session phase
}
then {
the IUT periodically sends out SAM via a suited access technology selected by the CI selection manager with the requested repetition rate, inviting for a reply, requesting a change of channel
}
}	

TP Id	FSAP/SP/RO/BV/05
Test objective	Finalization of SIP upon reception of CTX for non-IP session
Reference	8.2.6, 8.4, 8.5
PICS Selection	PICS_FSAP_ROLE_SP AND (PICS_ROLE_RONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW)) AND PICS_SIP_W_CTX
Initial conditions	

with {
the IUT sending out periodically SAMs for one ITS-S application with non-IP based sessions
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a CTX as proper reply to a SAM
}
then {
the IUT forwards the notification of CTX reception to the proper ITS-S host applying IICP
}
}	

9.1.3.2 Invalid behaviour tests

TP Id	FSAP/SP/RO/BI/01
Test objective	Registration of ITS-S application for message distribution only (no session phase) with request of specific but not available access technology
Reference	8.2.1, 8.2.4, 8.2.5, 8.5
PICS Selection	PICS_FSAP_ROLE_SP AND (PICS_ROLE_RONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW))
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT not knowing the requested access technology,
the IUT knowing another access technology suited for FSAP
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an MF-rreq(GCregServer) registration request for an ITS-S application for the purpose of message distribution
}
then {
the IUT does not send out periodically SAMs via the known access technology
}
}	

TP Id	FSAP/SP/RO/BI/02
Test objective	Registration of ITS-S application with need for a session, with no request of specific access technology, with no suitable access technology being available, and without request to change communication channel for session phase
Reference	8.2.1, 8.2.4, 8.2.5, 8.5
PICS Selection	PICS_FSAP_ROLE_SP AND (PICS_ROLE_RONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW))
Initial conditions	

with {
the IUT having not registered any ITS-S application for service announcement,
the IUT not knowing a suitable access technology
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received an MF-rreq(GCregServer) registration request for an ITS-S application offering a session phase
}
then {
the IUT does not send out periodically SAMs
}
}	

9.2 Service user

9.2.1 Combined ITS-S host and ITS-S router

9.2.1.1 Valid behaviour tests

TP Id	FSAP/SU/HR/BV/01
Test objective	Reception of SAM for message distribution only (no session phase)
Reference	8.3.1, 8.3.4
PICS Selection	PICS_FSAP_ROLE_SU AND PICS_ROLE_RH
Initial conditions	

with {
the IUT having received GCregClient, and having properly registered any ITS-S application without a session
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a SAM containing the expected ITS-AID
}
then {
the IUT forwards the related message to the ITS-S application using GCsam
}
}	

TP Id	FSAP/SU/HR/BV/02
Test objective	Reception of SAM with need for a session, without request to change communication channel for session phase, with need to send CTX
Reference	8.3.1, 8.3.4
PICS Selection	PICS_FSAP_ROLE_SU AND PICS_ROLE_RH AND PICS_SIP_W_CTX
Initial conditions	

with {
the IUT having received GCregClient, and having properly registered any ITS-S application with session initialisation using CTX
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a SAM containing the expected ITS-AID
}
then {
the IUT forwards the related message to the ITS-S application using GCsamctx, which is acknowledged providing a port number for the session
the IUT sends the requested CTX containing the port number received in the acknowledgement
}
}	

TP Id	FSAP/SU/HR/BV/03
Test objective	Reception of SAM with need for a session, with request to change communication channel for session phase, with need to send CTX
Reference	8.3.1, 8.3.4
PICS Selection	PICS_FSAP_ROLE_SU AND PICS_ROLE_RH AND PICS_SIP_W_CTX
Initial conditions	

with {
the IUT having received GCregClient, and having properly registered any ITS-S application with session initialisation using CTX
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a SAM containing the expected ITS-AID
}
then {
the IUT forwards the related message to the ITS-S application using GCsamctx, which is acknowledged providing a port number for the session
the IUT sends the requested CTX in the new channel containing the port number received in the acknowledgement
}
}	

NOTE: This requires to have two channels available in the ITS lower layer transport.	

TP Id	FSAP/SU/HR/BV/04
Test objective	Reception of SAM of no interest (no match with a registered ITS-AID)
Reference	8.3.1, 8.3.4
PICS Selection	PICS_FSAP_ROLE_SU AND PICS_ROLE_RH
Initial conditions	

with {
the IUT having registered ITS applications, but not the one offered in the SAM
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a SAM containing an unwanted ITS-AID
}
then {
the IUT discards the SAM without further actions
}
}	

TP Id	FSAP/SU/HR/BV/05
Test objective	Reception of SAM with need for a session, with request to change communication channel for session phase, with the requested channel being unknown
Reference	8.3.1, 8.3.4
PICS Selection	PICS_FSAP_ROLE_SU AND PICS_ROLE_RH
Initial conditions	

with {
the IUT having received GCregClient, and having properly registered any ITS-S application
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a SAM containing the expected ITS-AID with a request to change to an unknown channel
}
then {
the IUT discards the SAM without further actions
}
}	

9.2.1.2 Invalid behaviour tests

None.

9.2.2 ITS-S host only

9.2.2.1 Valid behaviour tests

TP Id	FSAP/SU/HO/BV/01
Test objective	Reception of SAM with need for a session with need to send CTX
Reference	8.3.1, 8.3.4, 8.5
PICS Selection	PICS_FSAP_ROLE_SU AND (PICS_ROLE_HONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW)) AND PICS_SIP_W_CTX
Initial conditions	

with {
the IUT having received GCregClient, and having properly registered any ITS-S application with session initialisation using CTX
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a SAM from the ITS-S router via IICP containing the expected ITS-AID
}
then {
the IUT notifies reception of the SAM to the ITS-S application, which is acknowledged with a port number.
the IUT sends the requested CTX to the ITS-S router applying IICP containing the port number received in the acknowledgement
}
}	

TP Id	FSAP/SU/HO/BV/02
Test objective	Reception of SAM with need for a session with need to send CTX with need to change communication channel
Reference	8.3.1, 8.3.4, 8.5
PICS Selection	PICS_FSAP_ROLE_SU AND (PICS_ROLE_HONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW)) AND PICS_SIP_W_CTX
Initial conditions	

with {
the IUT having received GCregClient, and having properly registered any ITS-S application with session initialisation using CTX
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a SAM from the ITS-S router via IICP containing the expected ITS-AID
}
then {
the IUT notifies reception of the SAM to the ITS-S application, which is acknowledged with a port number.
the IUT sends the requested CTX to the ITS-S router applying IICP containing the port number received in the acknowledgement
}
}	

9.2.2.2 Invalid behaviour tests

None.

9.2.3 ITS-S router only

9.2.3.1 Valid behaviour tests

TP Id	FSAP/SU/RO/BV/01
Test objective	Reception of SAM for message distribution only (no session phase)
Reference	8.3.1, 8.3.4, 8.5
PICS Selection	PICS_FSAP_ROLE_SU AND (PICS_ROLE_RONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW))
Initial conditions	

with {
the IUT having received GCregClient, and having properly registered any ITS-S application without a session
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a SAM containing the expected ITS-AID
}
then {
the IUT forwards the related message to the ITS-S application using MF-rcmd(GCsam)
}
}	

TP Id	FSAP/SU/RO/BV/02
Test objective	Reception of SAM with need for a session with need to send CTX
Reference	8.3.1, 8.3.4, 8.5
PICS Selection	PICS_FSAP_ROLE_SU AND (PICS_ROLE_RONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW)) AND PICS_SIP_W_CTX
Initial conditions	

with {
the IUT having received GCregClient, and having properly registered any ITS-S application with session initialisation using CTX
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a SAM containing the expected ITS-AID
}
then {
the IUT forwards the related message to the ITS-S application using GCsamctx via Inter-ITS-SCU communications
}
}	

TP Id	FSAP/SU/RO/BV/03
Test objective	Reception of SAM with need for a session with need to send CTX with need to change communication channel
Reference	8.3.1, 8.3.4, 8.5
PICS Selection	PICS_FSAP_ROLE_SU AND (PICS_ROLE_RONLY OR (PICS_ROLE_RH AND PICS_ITS_S_INW)) AND PICS_SIP_W_CTX
Initial conditions	

with {
the IUT having received GCregClient, and having properly registered any ITS-S application with session initialisation using CTX
}	

Expected behaviour	

evaluate whether {
when {
the IUT having received a SAM containing the expected ITS-AID
}
then {
the IUT forwards the related message to the ITS-S application using GCsamctx via Inter-ITS-SCU communications
}
}	

9.2.3.2 Invalid behaviour tests

None.

History

Document history		
V1.1.1	August 2012	Publication