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Part 1: Protocol Implementation Conformance Statement (PICS),
Test Suite Structure and Test Purposes (TSS & TP)

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Contents

Intellectual Property Rights 4
Foreword 4
Modal verbs terminology 4
1 Scope 5
2 References 5
2.1 Normative references 5
2.2 Informative references 6
3 Definition of terms, symbols and abbreviations 6
3.1 Terms 6
3.2 Symbols 6
3.3 Abbreviations 6
4 Protocol Implementation Conformance Statement (PICS) 7
4.1 Introduction 7
4.2 Entities 7
4.3 LIS features 7
4.4 ESRP features 8
4.5 ECRF features 8
4.6 PSAP features 8
4.7 Mnemonics for PICS reference 8
5 Test Configurations 9
5.1 LIS Test Configurations 9
5.1.1 CFG_LIS_01 9
5.2 ESRP Test Configurations 10
5.2.1 CFG_ESRP_01 10
5.3 ECRF Test Configurations 10
5.3.1 CFG_ECRF_01 10
5.4 PSAP Test Configurations 10
5.4.1 CFG_PSAP_01 10
6 Test Suite Structure (TSS) 11
6.1 Structure for NG112 tests 11
6.2 Test groups 11
6.2.1 Root 11
6.2.2 Test group 11
6.2.3 Test sub-group 11
6.2.4 Categories 11
7 Test Purposes (TP) 11
7.1 Introduction 11
7.1.1 TP definition conventions 11
7.1.2 TP Identifier naming conventions 12
7.1.3 Rules for the behaviour description 12
7.1.4 Pre-defined initial conditions 13
7.1.4.1 ESRP initial conditions 13
7.1.5 Sources of TP definitions 15
7.1.6 Mnemonics for PICS reference 15
7.2 Test purposes 15
7.2.1 LIS 15
7.2.2 ESRP 23
7.2.3 ECRF 28
7.2.4 PSAP 40
History 44

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Foreword

This Technical Specification (TS) has been produced by ETSI Special Committee Emergency Communications (EMTEL).

The present document is part 1 of a multi-part deliverable covering Conformance test specifications for Geonetworking ITS-G5 as identified below:

Part 1: **"Protocol Implementation Conformance Statement (PICS), Test Suite Structure and Test Purposes (TSS & TP)";**

Part 2: "Abstract Test Suite (ATS) and Protocol Implementation eXtra Information for Testing (PIXIT)".

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

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1 Scope

The present document provides the Protocol Implementation Conformance Statement (PICS) and Test Suite Structure and Test Purposes (TSS & TP) for core elements for network independent access to emergency services (NG112) as defined in standards listed in clause 2.1 of the present document.

2 References

2.1 Normative 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 referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at https://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.

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

[1] ETSI TS 103 479 (V1.1.1): "Emergency Communications (EMTEL); Core elements for network independent access to emergency services"..

[2] IETF RFC 5985: "HTTP-Enabled Location Delivery (HELD)".

NOTE: Available at https://tools.ietf.org/html/rfc5985.

[3] IETF RFC 6753: "A Location Dereference Protocol Using HTTP-Enabled Location Delivery (HELD)".

NOTE: Available at https://tools.ietf.org/html/rfc6753.

[4] IETF RFC 5222: "LoST: A Location-to-Service Translation Protocol".

NOTE: Available at https://tools.ietf.org/html/rfc5222.

[5] IETF RFC 3261: "SIP: Session Initiation Protocol".

NOTE: Available at https://tools.ietf.org/html/rfc3261.

[6] IETF RFC 5301: "A Uniform Resource Name (URN) for Emergency and Other Well-Known Services".

NOTE: Available at https://tools.ietf.org/html/rfc5031.

[7] IETF RFC 5491: "GEOPRIV Presence Information Data Format Location Object (PIDF-LO) Usage Clarification, Considerations, and Recommendations".

NOTE: Available at https://tools.ietf.org/html/rfc5491.

[8] IETF RFC 5808: "Requirements for a Location-by-Reference Mechanism".

NOTE: Available at https://tools.ietf.org/html/rfc5808.

2.2 Informative 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 referenced document (including any amendments) applies.

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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] ISO/IEC 9646-1 (1994): "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 1: General concepts".

[i.2] ISO/IEC 9646-7 (1995): "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 7: Implementation Conformance Statements".

3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in ISO/IEC 9646-1 [i.1] and ISO/IEC 9646-7 [i.2] apply.

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ATS	Abstract Test Suite
BV	Valid Behaviour
ECRF	Emergency Call. Routing FunctionESRP Emergency Service Routing Proxy
IUT	Implementation Under Test
LIS	Location Information Server
LTD	Long Term Definition
PICS	Protocol Implementation Conformance Statement
PIDF	Presence Information Data Format
PSAP	Public Safety Answer Point
SDP	Session Description Protocol
SIP	Session Initiation Protocol
TCP	Transmission Control Protocol
TP	Test Purposes
TS	Test Suite
TSS	Test Suite Structure
UDP	User Datagram Protocol
URI	Uniform Resource Identifier
URN	Universal Resource Name

4 Protocol Implementation Conformance Statement (PICS)

4.1 Introduction

The purpose of a PICS is to identify those standardized functions which an IUT shall support, those which are optional and those which are conditional on the presence of other functions. It helps to identify which functions an IUT will support when performing conformance testing. It is possible that with different choices in an ICS proforma, several different sets of TPs will be necessary.

In the following clauses assessments are made on whether requirements, features, components and other capabilities are required according to a referenced standard and in order to achieve compliance. This assessment provides the following options:

m mandatory - the capability is required to be supported.

o optional - the capability may, or may not, be supported.

c.i conditional - the requirement on the capability ("m", "o", "x" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying a unique conditional status expression which is defined immediately following the table.

n/a not applicable - in the given context, it is not possible to use the capability.

x prohibited (excluded) - there is a requirement not to use this capability in the given context.

o.i qualified optional - for mutually exclusive or selectable options from a set: "i" is an integer which identifies a unique group of related optional items and the logic of their selection which is defined immediately following the table.

4.2 Entities

Table 1: Entities

Item	Name of field	Reference	Status	Support
1	LIS	ETSI TS 103 479 [1], clause 5.5	o.1	
2	ESRP	ETSI TS 103 479 [1], clause 5.2	o.1	
3	ECRF	ETSI TS 103 479 [1], clause 5.3	o.1	
4	PSAP	ETSI TS 103 479 [1], clause 5.4	o.1	
o.1: At least one of the items shall be supported				

4.3 LIS features

Table 2: LIS features

Prerequisite: Table 1/1				
Item	**Name of field**	**Reference**	**Status**	**Support**
1	HTTP Post request handling	IETF RFC 5985 [2], clause 8	m	
2	HTTP Get request handling	IETF RFC 5985 [2], clause 8	m	
3	Location retrieval via HELD	ETSI TS 103 479 [1], clause 6.5	m	
4	Does the IUT support POINT	IETF RFC 5985 [2], clause 6.2 IETF RFC 5491 [7], clause 5.2.1	m	
5	Does the IUT support Circle	IETF RFC 5985 [2], clause 6.2 IETF RFC 5491 [7], clause 5.2.3	m	
6	Does the IUT support Civic Address	IETF RFC 5985 [2], clause 6.2 IETF RFC 5491 [7], clause 3.2	m	

4.4 ESRP features

Table 3: ESRP features

Prerequisite: Table 1/2				
Item	**Name of field**	**Reference**	**Status**	**Support**
1	ESRP service	ETSI TS 103 479 [1], clause 5.2	m	

4.5 ECRF features

Table 4: ECRF features

Prerequisite: Table 1/3				
Item	**Name of field**	**Reference**	**Status**	**Support**
1	HTTP Post request handling	IETF RFC 5222 [4], clause 14	m	
2	LOST service	ETSI TS 103 479 [1], clause 6.4	m	
3	Does the IUT support POINT	IETF RFC 5222 [4], clause 12.2 IETF RFC 5491 [7], clause 5.2.1	m	
4	Does the IUT support Circle	IETF RFC 5222 [4], clause 12.2 IETF RFC 5491 [7], clause 5.2.3	m	
5	Does the IUT support Civic Address	IETF RFC 5222 [4], clause 8.2 IETF RFC 5491 [7], clause 3.2	m	

4.6 PSAP features

Table 5: PSAP features

Prerequisite: Table 1/4				
Item	**Name of field**	**Reference**	**Status**	**Support**
1	PSAP service	ETSI TS 103 479 [1], clause 5.4	m	
2	UDP handling	ETSI TS 103 479 [1], clause 6.1.1	o.1	
3	TCP handling	ETSI TS 103 479 [1], clause 6.1.1	o.1	
o.1: At least one of the items shall be supported				

4.7 Mnemonics for PICS reference

To avoid an update of all related documents when the PICS document is changed, the table below introduces mnemonic names and the correspondence with the PICS item number.

Table 6: Mnemonics for PICS reference

Mnemonic	PICS item
PICS_HTTP_POST_REQUEST	Table 2/1
PICS_HTTP_GET_REQUEST	Table 2/2
PICS_LOCATION_HELD	Table 2/3
PICS_SERVICE_ESRP	Table 3/1
PICS_HTTP_POST_REQUEST	Table 4/1
PICS_SERVICE_LOST	Table 4/2
PICS_LIS_URI	Table 2/1
PICS_ECRF_URI	Table 2/1
PICS_ECRF_REQUEST_URIs	Table 2/1
PICS_H_QRY_GEO1	Table 2/4
PICS_H_QRY_GEO2	Table 2/5
PICS_H_QRY_GEO3	Table 2/6
PICS_H_QRY_GEO4	Table 2/6
PICS_H_QRY_CIV1	Table 2/6
PICS_H_QRY_CIV3	Table 2/6
PICS_H_QRY_STR1	Table 2/3
PICS_H_QRY_ERR1	Table 2/3
PICS_H_QRY_ERR2	Table 2/3
PICS_H_DER_TOK1	Table 2/3
PICS_H_GET_ERR1	Table 2/1
PICS_L_FIS_GEO1	Table 4/3
PICS_L_FIS_GEO2	Table 4/4
PICS_L_FIS_SBV1	Table 4/1
PICS_L_LST_GEO1	Table 4/3
PICS_L_LST_ALL1	Table 4/1
PICS_L_FIS_ERR1	Table 4/1
PICS_L_FIS_ERR1	Table 4/1
PICS_E_SIP_URN1	Table 4/1, Table 4/1
PICS_E_SIP_URN2	Table 4/1, Table 4/1
PICS_E_SIP_URN3	Table 4/1, Table 4/1
PICS_M_SIP_URN1	Table 4/1, Table 4/1
PICS_E_SIP_HDR1	Table 4/1, Table 4/1
PICS_E_SIP_OPT1	Table 4/1, Table 4/1
PICS_E_SIP_BUS1	Table 4/1, Table 4/1

5 Test Configurations

5.1 LIS Test Configurations

5.1.1 CFG_LIS_01

Figure 1: CFG_LIS_01

5.2 ESRP Test Configurations

5.2.1 CFG_ESRP_01

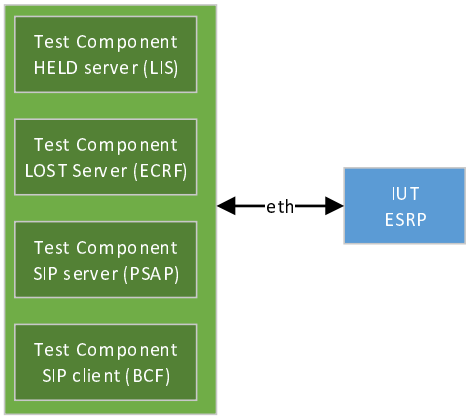

Figure 2: CFG_ESRP_01

5.3 ECRF Test Configurations

5.3.1 CFG_ECRF_01

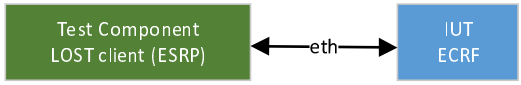

Figure 3: CFG_ECRF_01

5.4 PSAP Test Configurations

5.4.1 CFG_PSAP_01

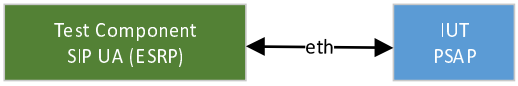

Figure 4: CFG_PSAP_01

6 Test Suite Structure (TSS)

6.1 Structure for NG112 tests

Table 1 shows the NG112 Test Suite Structure (TSS) including its subgroups defined for conformance testing.

Table 7: TSS for NG112

Root	Group	Sub-group	Category
LIS, ESRP. ECRF. PSAP	Protocol	HTTP	Valid
		SIP	Valid
	Protocol operation	GET	Valid
		PUT	Valid
		POST	Valid
		INVITE	Valid

The test suite is structured as a tree with the root defined as LIS, ESRP, ECRF or PSAP. The tree is of rank 3 with the first rank a Group, the second a sub-group and the third a category.

6.2 Test groups

6.2.1 Root

The root identifies the entities to be tested.

6.2.2 Test group

This level contains the protocols and protocol operations.

6.2.3 Test sub-group

This level identifies the sub categories of each Group.

6.2.4 Categories

This level contains the standard conformance test categories: behaviour for valid, invalid, inopportune events and timers.

7 Test Purposes (TP)

7.1 Introduction

7.1.1 TP definition conventions

The TPs are defined by the rules shown in table 8.

Table 8: TP definition rules

TP Header	
TP ID	The TP ID is a unique identifier. It shall be specified according to the TP naming conventions defined in the above clause.
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.
Config Id	The Config Id references the GeoNetworking configuration selected for this TP.
PICS Selection	Reference to the PICS statement involved for selection of the TP. Contains a Boolean expression.
TP Behaviour	
Initial conditions	The initial conditions define in which initial state the IUT has to be to apply the actual TP. In the corresponding Test Case, 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 Test Case, Pass or Fail verdicts can be assigned there.

7.1.2 TP Identifier naming conventions

The identifier of the TP is built according to table 9.

Table 9: TP naming convention

Identifier:	**TP_<root>_<gr>_<sgr>_<x>_<nn>**	
	<root> = root	LIS
		ESRP
		ECRF
		PSAP
	<gr> = group	HTTP
		SIP
	<sgr> =sub-group	GET
		PUT
		POST
		INVITE
	<x> = type of testing	BV
	<nn> = sequential number	

7.1.3 Rules for the behaviour description

In the TP the following wordings are used:

- "receives": for packets coming from the network to the IUT
- "sends": for packets sent by the IUT to the network
- "forwards": forwards the previously received message to the next hop
- "generates": for internal event generation
- "isRequestedToSend": an upper layer requests the IUT to send a packet
- "havingLocationMappingFor": IUT is provisioned with the relevant location data
- "havingReturnedLocationUriFor": IUT returned a locationURI for the relevant location data after a HELD request
- "isConfiguredWith": IUT is configured to use a specific service/paramater set
- "isReachableWith": the IUT is reachable via the specified URI

- "isNotReachable": the PSAP is not reachable
- "havingServiceBoundaryFor": IUT is provisioned with the relevant service boundary
- "serviceMappingFor": IUT is provisioned with the relevant service mapping
- "receivedInitialInviteRequestAndSentLostQueryToEcrf" (for more detail see INIT_CON_1)
- "receivedInitialInviteRequestWithoutLocationAndSentHeldRequestToLisFor" (for more detail see INIT_CON_2)
- "receivedInitialInviteRequestWithLocationReferenceAndSentGetRequestToLisFor" (for more detail see INIT_CON_3)
- "sendsLostQueryToEcrfFor": IUT sends a LoST request to the LIs with the given LOCATION (for more detail see INIT_CON_4)
- "receivesHeldResponseWith": IUT receives a HELD response with the give LOCATION (for more detail see INIT_CON_5)
- "receivesLostResponseWith": IUT receives a LoST response with the give URN (for more detail see INIT_CON_6)
- "receivesLocationResponseWith": IUT receives a Location response with the give LOCATION (for more detail see INIT_CON_7)
- "acceptingIncomingCalls": IUT ready to receive incoming calls
- "establishesIncomingCall": The IUT establishes the incoming call (for more detail see INIT_CON_8)
- "inAnActiveIncomingCall": An incoming call is established (for more detail see INIT_CON_9)

7.1.4 Pre-defined initial conditions

7.1.4.1 ESRP initial conditions

INIT_CON_1

```
the IUT entity receives a TCP SIP_INVITE containing
    Request_URI indicating value SERVICE_URN_1,
    Content_Type indicating value "multipart/mixed",
    body containing
        SDP_AND_PIDF_MULTIPART
and the IUT entity sends a POST containing
 Content_type indicating value "application/lost+xml;charset=utf-8",
    body containing
        xmlMessage containing
            version indicating value "1.0",
            element "findService" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                element "location" containing
                    element "Point" inNamespace "http://www.opengis.net/gml" containing
                        attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                        element "pos" indicating value LOCATION_1
                element "service" indicating value SERVICE_URN_1
    to the ECRF entity
```

INIT_CON_2

```
the IUT entity receives a UDP SIP_INVITE containing
    Request_URI indicating value SERVICE_URN_1,
    Content_Type indicating value "application/sdp",
    P-Asserted-Identity indicating value tel:DEVICE_NUMBER,
    body containing
        SDP
and the IUT entity sends a POST containing
 Content_type indicating value "application/lost+xml;charset=utf-8",
    body containing
        xmlMessage containing
          version indicating value "1.0",
```

```
          element "locationRequest" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
          element "locationType" indicating value "geodetic" containing
            attribute "exact" indicating value "true"
          element "device" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" containing
            element "uri" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" indicating value
               DEVICE_NUMBER
    to the LIS entity
```

INIT_CON_3

```
the IUT entity receives a UDP SIP_INVITE containing
    Request_URI indicating value SERVICE_URN_1,
    Content_Type indicating value "application/sdp",
    Geolocation indicating value LOCATION_URI
    body containing
        SDP
and the IUT entity sends a GET to the LOCATION_URI
```

INIT_CON_4

```
the IUT entity sends a POST containing
    Content_type indicating value "application/lost+xml;charset=utf-8",
    body containing
        xmlMessage containing
            version indicating value "1.0",
            element "findService" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                element "location" containing
                    element "Point" inNamespace "http://www.opengis.net/gml" containing
                        attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                        element "pos" indicating value LOCATION
                element "service" indicating value SERVICE_URN_1
to the ECRF entity
```

INIT_CON_5

```
the IUT entity receives a httpResponse containing
    Status_Code indicating value "200 OK",
      version indicating value "1.0",
      Content_type indicating value "application/held+xml;charset=utf-8",
      body containing
        xmlMessage containing
          version indicating value "1.0",
          element "locationResponse" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
          element "presence" inNamespace "urn:ietf:params:xml:ns:pidf" containing
            attribute "entity" indicating value valid "pres:" uri,
            element "tuple" containing
              attribute "id",
              element "status" containing
                element "geopriv" inNamespace "urn:ietf:params:xml:ns:pidf:geopriv10" containing
                  element "location-info" containing
                  element "Point" inNamespace "http://www.opengis.net/gml" containing
                    attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                    element "pos" indicating value LOCATION
   from the LIS entity
```

INIT_CON_6

```
the IUT entity receives a httpResponse containing
    Status_Code indicating value "200 OK",
    version indicating value "1.0",
    Content_type indicating value "application/lost+xml;charset=utf-8",
    body containing
        xmlMessage containing
            version indicating value "1.0",
            element "findServiceResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                element "mapping" containing
                    attribute "source",
                    attribute "sourceId",
                    attribute "lastUpdated",
                    attribute "expires",
                    element "service" indicating value SERVICE_URN_1,
                    element "uri" indicating value [TARGET_URI]
                element "locationUsed"
    from the ECRF entity
```

INIT_CON_7

```
the IUT entity receives a httpResponse containing
  Status_Code indicating value "200 OK",
  version indicating value "1.0",
  Content_type indicating value "application/pidf+xml;charset=utf-8",
  body containing
    xmlMessage containing
    version indicating value "1.0",
    element "presence" inNamespace "urn:ietf:params:xml:ns:pidf" containing
      attribute "entity" indicating value valid "pres:" uri,
      element "tuple" containing
        attribute "id",
        element "status" containing
          element "geopriv" inNamespace "urn:ietf:params:xml:ns:pidf:geopriv10" containing
            element "location-info" containing
              element "Point" inNamespace "http://www.opengis.net/gml" containing
                attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                element "pos" indicating value LOCATION
    from the LIS entity
```

INIT_CON_8

```
THEN IUT sends TRYING (optional)
THEN IUT sends RINGING (optional)
THEN IUT sends OK
THEN IUT receives ACK
```

INIT_CON_9

```
WHEN the IUT entity receives a TCP SIP_INVITE containing
  Request_URI indicating value "urn:service:sos.police",
  Content_Type indicating value "multipart/mixed",
  body containing
    SDP_AND_PIDF_MULTIPART
THEN the IUT sends TRYING (optional)
THEN the IUT sends RINGING (optional)
THEN the IUT sends OK
THEN the IUT receives ACK
```

7.1.5 Sources of TP definitions

All TPs have been specified according to the referenced standards in clause 2.1.

7.1.6 Mnemonics for PICS reference

The present document makes use of PICS mnemonics defined in Table 6.

7.2 Test purposes

7.2.1 LIS

TP Id	TP_LIS_HTTP_POST_BV_01
Test Objective	IUT successfully responds with a Point when it receives a HTTP POST location request without location type
Reference	ETSI TS 103 479 [1], clause 5.5 IETF RFC 5985 [2]
Config Id	CFG_LIS_01
PICS Selection	PICS_H_QRY_GEO1

Initial Conditions

with {
the IUT havingLocationMappingFor the DEVICE_NUMBER_POINT containing
"point" containing
"position" indicating value POINT_POS
}

Expected Behaviour

ensure that {
when {
the IUT receives a POST containing
Uri indicating value "/location",
Host,
not Accept,
Content_type indicating value "application/held+xml;charset=utf-8",
body containing
xmlMessage containing
version indicating value "1.0",
element "locationRequest" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
element "device" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" containing
element "uri" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" indicating value
DEVICE_NUMBER_POINT
}
then {
the IUT sends a httpResponse containing
Status_Code indicating value "200 OK",
version indicating value "1.0",
Content_type indicating value "application/held+xml;charset=utf-8",
body containing
xmlMessage containing
version indicating value "1.0",
element "locationResponse" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
element "presence" inNamespace "urn:ietf:params:xml:ns:pidf" containing
attribute "" indicating value valid "pres:" uri,
element "tuple" containing
attribute "id",
element "status" containing
element "geopriv" inNamespace "urn:ietf:params:xml:ns:pidf:geopriv10" containing
element "location-info" containing
element "Point" inNamespace "http://www.opengis.net/gml" containing
attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
element "pos" indicating value POINT_POS
}
}

TP Id	TP_LIS_HTTP_POST_BV_02
Test Objective	IUT successfully responds with a Circle when it receives a HTTP POST location request without location type
Reference	ETSI TS 103 479 [1], clause 5.5IETF RFC 5985 [2]
Config Id	CFG_LIS_01
PICS Selection	PICS_H_QRY_GEO2
Initial Conditions	

with {
the IUT havingLocationMappingFor the DEVICE_NUMBER_CIRCLE containing
"circle" containing
"position" indicating value CIRCLE_POS,
"radius" indicating value CIRCLE_RADIUS
}	

Expected Behaviour

ensure that {
  when {
  the IUT receives a POST containing
  Uri indicating value "/location",
  Host,
  not Accept,
  Content_type indicating value "application/held+xml;charset=utf-8",
  body containing
  xmlMessage containing
  version indicating value "1.0",
  element "locationRequest" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
  element "device" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" containing
  element "uri" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" indicating value
  DEVICE_NUMBER_CIRCLE
  }
  then {
  the IUT sends a httpResponse containing
  Status_Code indicating value "200 OK",
  version indicating value "1.0",
  Content_type indicating value "application/held+xml;charset=utf-8",
  body containing
  xmlMessage containing
  version indicating value "1.0",
  element "locationResponse" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
  element "presence" inNamespace "urn:ietf:params:xml:ns:pidf" containing
  attribute "" indicating value valid "pres:" uri,
  element "tuple" containing
  attribute "id",
  element "status" containing
  element "geopriv" inNamespace "urn:ietf:params:xml:ns:pidf:geopriv10" containing
  element "location-info" containing
  element "Circle" inNamespace "http://www.opengis.net/pidflo/1.0" containing
  attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
  element "pos" inNamespace "http://www.opengis.net/gml" indicating value
  CIRCLE_POS,
  element "radius" indicating value CIRCLE_RADIUS containing
  attribute "uom" indicating value "urn:ogc:def:uom:EPSG::9001"
  }
}

TP Id	TP_LIS_HTTP_POST_BV_03
Test Objective	IUT successfully responds with a reference when it receives a HTTP POST location request with location type locationURI and exact attribute
Reference	ETSI TS 103 479 [1], clause 5.5 IETF RFC 5985 [2]
Config Id	CFG_LIS_01
PICS Selection	PICS_H_QRY_GEO4
Initial Conditions	

with {
  the IUT havingLocationMappingFor the DEVICE_NUMBER_CIRCLE containing
  "circle" containing
  "position" indicating value CIRCLE_POS,
  "radius" indicating value CIRCLE_RADIUS
}	

Expected Behaviour	

ensure that {
  when {
  the IUT receives a POST containing
  Uri indicating value "/location",
  Host,
  not Accept,
  Content_type indicating value "application/held+xml;charset=utf-8",
  body containing
  xmlMessage containing
  version indicating value "1.0",
  element "locationRequest" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing	

```
                element "locationType" indicating value "locationURI" containing
                    attribute "exact" indicating value "true"
                element "device" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" containing
                    element "uri" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" indicating value
                        DEVICE_NUMBER_CIRCLE
    }
    then {
        the IUT sends a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/held+xml;charset=utf-8",
            body containing
                xmlMessage containing
                    version indicating value "1.0",
                    element "locationResponse" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
                        element "locationUriSet" containing
                            attribute "expires",
                            element "locationURI" indicating value valid urn
    }
}
```

TP Id	TP_LIS_HTTP_POST_BV_04
Test Objective	IUT successfully responds with a reference and geodetic location when it receives a HTTP POST location request with location types locationURI and geodetic and exact attribute
Reference	ETSI TS 103 479 [1], clause 5.5 IETF RFC 5985 [2]
Config Id	CFG_LIS_01
PICS Selection	PICS_H_QRY_STR1 and PICS_H_QRY_GEO2 and PICS_H_QRY_GEO4
Initial Conditions	

```
with {
        the IUT havingLocationMappingFor the DEVICE_NUMBER_CIRCLE containing
            "circle" containing
              "position" indicating value CIRCLE_POS,
              "radius"    indicating value CIRCLE_RADIUS
}
```

Expected Behaviour

```
ensure that {
    when {
        the IUT receives a POST containing
            Uri indicating value "/location",
            Host,
            not Accept,
            Content_type indicating value "application/held+xml;charset=utf-8",
            body containing
                xmlMessage containing
                    version indicating value "1.0",
                    element "locationRequest" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
                        element "locationType" indicating value "locationURI geodetic" containing
                            attribute "exact" indicating value "true"
                        element "device" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" containing
                            element "uri" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" indicating value
                                DEVICE_NUMBER_CIRCLE
    }
    then {
        the IUT sends a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/held+xml;charset=utf-8",
            body containing
                xmlMessage containing
                    version indicating value "1.0",
                    element "locationResponse" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
                        element "locationUriSet" containing
                            attribute "expires",
                            element "locationURI" indicating value valid urn
                    element "presence" inNamespace "urn:ietf:params:xml:ns:pidf" containing
                        attribute "" indicating value valid "pres:" uri,
```

```
                element "tuple" containing
                    attribute "id",
                    element "status" containing
                        element "geopriv" inNamespace "urn:ietf:params:xml:ns:pidf:geopriv10" containing
                            element "location-info" containing
                                element "Circle" inNamespace "http://www.opengis.net/pidflo/1.0" containing
                                    attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                                    element "pos" inNamespace "http://www.opengis.net/gml" indicating value
                                        CIRCLE_POS,
                                    element "radius" indicating value CIRCLE_RADIUS containing
                                        attribute "uom" indicating value "urn:ogc:def:uom:EPSG::9001"
    }
}
```

TP Id	TP_LIS_HTTP_POST_BV_05
Test Objective	IUT successfully responds with an error response when it receives a HTTP POST location request for an unknown device
Reference	ETSI TS 103 479 [1], clause 5.5 IETF RFC 5985 [2]
Config Id	CFG_LIS_01
PICS Selection	PICS_H_QRY_ERR1
Initial Conditions	

```
with {
        the IUT not havingLocationMappingFor the UNKNOWN_DEVICE_NUMBER
}
```

Expected Behaviour

```
ensure that {
    when {
        the IUT receives a POST containing
            Uri indicating value "/location",
            Host,
            not Accept,
            Content_type indicating value "application/held+xml;charset=utf-8",
            body containing
                xmlMessage containing
                    version indicating value "1.0",
                    element "locationRequest" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
                        element "device" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" containing
                            element "uri" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" indicating value
                                UNKNOWN_DEVICE_NUMBER
    }
    then {
        the IUT sends a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/held+xml;charset=utf-8",
            body containing
                xmlMessage containing
                    version indicating value "1.0",
                    element "error" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
                        attribute "code" indicating value "locationUnknown"
    }
}
```

TP Id	TP_LIS_HTTP_POST_BV_06
Test Objective	IUT successfully responds with a CIVIC address when it receives a HTTP POST location request without location type
Reference	ETSI TS 103 479 [1], clause 5.5 IETF RFC 5985 [2]
Config Id	CFG_LIS_01
PICS Selection	PICS_H_QRY_CIV1
Initial Conditions	

```
with {
        the IUT havingLocationMappingFor the DEVICE_NUMBER_CIVIC containing
            CIVIC_ADDRESS
}
```

Expected Behaviour

```
ensure that {
   when {
         the IUT receives a POST containing
            Uri indicating value "/location",
            Host,
            not Accept,
            Content_type indicating value "application/held+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "locationRequest" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
                     element "device" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" containing
                        element "uri" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" indicating value
                           DEVICE_NUMBER_CIVIC
   }
   then {
         the IUT sends a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/held+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "locationResponse" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
                     element "presence" inNamespace "urn:ietf:params:xml:ns:pidf" containing
                        attribute "" indicating value valid "pres:" uri,
                        element "tuple" containing
                           attribute "id",
                           element "status" containing
                              element "geopriv" inNamespace "urn:ietf:params:xml:ns:pidf:geopriv10" containing
                                 element "location-info" containing
                                    element "civicAddress" inNamespace "urn:ietf:params:xml:ns:pidf:geopriv10:civicAddr"
                                       containing
                                          element "country" indicating value "AU",
                                       element "A1" indicating value "NSW",
                                       element "A3" indicating value "Wollongong",
                                       element "A4" indicating value "Gwynneville",
                                       element "STS" indicating value "Northfield Avenue",
                                       element "LMK" indicating value "University of Wollongong",
                                       element "FLR" indicating value "2",
                                       element "NAM" indicating value "Andrew Corporation",
                                       element "PC" indicating value "2500",
                                       element "BLD" indicating value "39",
                                       element "SEAT" indicating value "WS-183",
                                       element "POBOX" indicating value "U40"
   }
}
```

TP Id	TP_LIS_HTTP_POST_BV_07
Test Objective	IUT successfully responds with an error response when it receives a HTTP POST location request with an unmatched location type
Reference	ETSI TS 103 479 [1], clause 5.5 IETF RFC 5985 [2]
Config Id	CFG_LIS_01
PICS Selection	PICS_H_QRY_ERR2
Initial Conditions	

with {
the IUT havingLocationMappingFor the DEVICE_NUMBER_POINT containing
"point" containing
"position" indicating value POINT_POS
}	

Expected Behaviour	

ensure that {
when {
the IUT receives a POST containing
Uri indicating value "/location",
Host,
not Accept,
Content_type indicating value "application/held+xml;charset=utf-8",
body containing
xmlMessage containing
version indicating value "1.0",
element "locationRequest" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
element "locationType" indicating value "civic" containing
attribute "exact" indicating value "true";
element "device" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" containing
element "uri" inNamespace "urn:ietf:params:xml:ns:geopriv:held:id" indicating value
DEVICE_NUMBER_POINT
}
then {
the IUT sends a httpResponse containing
Status_Code indicating value "200 OK",
version indicating value "1.0",
Content_type indicating value "application/held+xml;charset=utf-8",
body containing
xmlMessage containing
version indicating value "1.0",
element "error" inNamespace "urn:ietf:params:xml:ns:geopriv:held" containing
attribute "code" indicating value "cannotProvideLiType"
}
}	

TP Id	TP_LIS_HTTP_GET_BV_01
Test Objective	IUT successfully returns the location when a locationURI is dereferenced
Reference	ETSI TS 103 479 [1], clause 5.5 IETF RFC 5985 [2] IETF RFC 6753 [3] IETF RFC 5808 [8]
Config Id	CFG_LIS_01
PICS Selection	PICS_H_DER_TOK1
Initial Conditions	

with {
the IUT havingLocationMappingFor the DEVICE_NUMBER_CIRCLE containing
"circle" containing
"position" indicating value CIRCLE_POS,
"radius" indicating value CIRCLE_RADIUS
and the IUT havingReturnedLocationUriFor the DEVICE_NUMBER_CIRCLE containing
element "locationURI" indicating value LOCATION_URI
}	

Expected Behaviour

```
ensure that {
   when {
         the IUT receives a GET containing
            Uri indicating value LOCATION_URI
   }
   then {
         the IUT sends a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/pidf+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "presence" inNamespace "urn:ietf:params:xml:ns:pidf" containing
                     attribute "" indicating value valid "pres:" uri,
                     element "tuple" containing
                        attribute "id",
                        element "status" containing
                           element "geopriv" inNamespace "urn:ietf:params:xml:ns:pidf:geopriv10" containing
                              element "location-info" containing
                                 element "Circle" inNamespace "http://www.opengis.net/pidflo/1.0" containing
                                    attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                                    element "pos" inNamespace "http://www.opengis.net/gml" indicating value
                                          CIRCLE_POS,
                                    element "radius" indicating value CIRCLE_RADIUS containing
                                       attribute "uom" indicating value "urn:ogc:def:uom:EPSG::9001"
   }
}
```

TP Id	TP_LIS_HTTP_GET_BV_02
Test Objective	IUT returns HTTP error 404 if it does not support HTTP GET method
Reference	ETSI TS 103 479 [1], clause 5.5 IETF RFC 5985 [2] IETF RFC 6753 [3]
Config Id	CFG_LIS_01
PICS Selection	PICS_H_GET_ERR1

Initial Conditions

```
with {
    the IUT havingLocationMappingFor the DEVICE_NUMBER_CIRCLE containing
      "circle" containing
         "position" indicating value CIRCLE_POS,
         "radius"    indicating value CIRCLE_RADIUS
    and the IUT havingReturnedLocationUriFor the DEVICE_NUMBER_CIRCLE containing
      element "locationURI" indicating value LOCATION_URI
}
```

Expected Behaviour

```
ensure that {
   when {
         the IUT receives a GET containing
            Uri indicating value LOCATION_URI
   }
   then {
         the IUT sends a httpResponse containing
            Status_Code indicating value "404 not found",
            version indicating value "1.0",
            Content_type indicating value "application/pidf+xml;charset=utf-8"
   }
}
```

7.2.2 ESRP

TP Id	TP_ESRP_SIP_INVITE_BV_01
Test Objective	IUT successfully forwards an incoming SIP INVITE to the correct downstream element, based on the ECRF response
Reference	ETSI TS 103 479 [1], clause 5.2 IETF RFC 5222 [4]
Config Id	CFG_ESRP_01
PICS Selection	E_SIP_URN1 and L_FIS_GEO1

Initial Conditions

```
with {
   the IUT isConfiguredWith the ECRF
   and the PSAP isReachableWith the SIP_URI_1
   and the IUT receivedInitialInviteRequestAndSentLostQueryToEcrf
}
```

Expected Behaviour

```
ensure that {
   when {
         the IUT receives a TCP SIP_INVITE containing
            Request_URI indicating value SERVICE_URN_1,
            Content_Type indicating value "multipart/mixed",
            body containing
               SDP_AND_PIDF_MULTIPART
          and the IUT sends a POST containing
          Content_type indicating value "application/lost+xml;charset=utf-8",
            body containingreceivedInitialInviteRequestWithLocationReferenceAndSentGetRequestToLisFor
               xmlMessage containing
                  version indicating value "1.0",
                  element "findService" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "location" containing
                        element "Point" inNamespace "http://www.opengis.net/gml" containing
                           attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                           element "pos" indicating value LOCATION_1
                     element "service" indicating value SERVICE_URN_1
             to the ECRF
             and the IUT receives a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "findServiceResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "mapping" containing
                        attribute "source",
                        attribute "sourceId",
                        attribute "lastUpdated",
                        attribute "expires",
                        element "service" indicating value SERVICE_URN_1,
                        element "uri" indicating value SIP_URI_1
                     element "locationUsed"
           from the ECRF
   }
   then {
         the IUT forwards a SIP_INVITE containing
            Request_URI indicating value SERVICE_URN_1,
            Content_Type indicating value "multipart/mixed",
            Route_Header indicating value SIP_URI_1
            body containing
               SDP_AND_PIDF_MULTIPART
          to the PSAP
   }
}
```

TP Id	TP_ESRP_SIP_INVITE_BV_02
Test Objective	IUT adds Incident-ID and Call-ID INFO headers
Reference	ETSI TS 103 479 [1], clause 5.2 IETF RFC 5222 [4]
Config Id	CFG_ESRP_01
PICS Selection	E_SIP_URN1 and L_FIS_GEO1 and E_SIP_HDR1
Initial Conditions	

with {
the IUT isConfiguredWith the ECRF
and the PSAP isReachableWith the SIP_URI_1
and the IUT receivedInitialInviteRequestAndSentLostQueryToEcrf
}	

Expected Behaviour	

ensure that {
when {
the IUT receivesLostResponseWith the SIP_URI_1 from the ECRF
}
then {
the IUT forwards the SIP_INVITE containing
Request_URI indicating value SERVICE_URN_1,
Content_Type indicating value "multipart/mixed",
Route indicating value SIP_URI_1,
Call_Info containing
uri indicating value valid "Incident Tracking Identifier",
purpose "EES-IncidentId"
Call_Info containing
uri indicating value valid "Call Identifier",
purpose "EES-CallId"
body containing
SDP_AND_PIDF_MULTIPART
to the PSAP
}
}	

TP Id	TP_ESRP_SIP_INVITE_BV_03
Test Objective	IUT uses HELD request to query location when INVITE does not contain the location
Reference	ETSI TS 103 479 [1], clause 5.2 IETF RFC 5985 [2] IETF RFC 5222 [4]
Config Id	CFG_ESRP_01
PICS Selection	E_SIP_URN3 and H_QRY_GEO1 and L_FIS_GEO1
Initial Conditions	

with {
the IUT isConfiguredWith the ECRF
and the IUT isConfiguredWith the LIS
and the PSAP isReachableWith the SIP_URI_1
and the IUT receivedInitialInviteRequestWithoutLocationAndSentHeldRequestToLisFor the DEVICE_NUMBER
and the IUT receivesHeldResponseWith the LOCATION_1 from the LIS
and the IUT sendsLostQueryToEcrfFor the LOCATION_1 to the ECRF
}	

Expected Behaviour

ensure that {
when {
the IUT receivesLostResponseWith the SIP_URI_1 from the ECRF
}
then {
the IUT forwards the SIP_INVITE containing
Request_URI indicating value SERVICE_URN_1,
Content_Type indicating value "multipart/mixed",
Route indicating value SIP_URI_1,
Call_Info containing
uri indicating value valid "Incident Tracking Identifier",
purpose "EES-IncidentId"
Call_Info containing
uri indicating value valid "Call Identifier",
purpose "EES-CallId"
body containing
SDP_AND_PIDF_MULTIPART
to the PSAP
}
}

TP Id	TP_ESRP_SIP_INVITE_BV_04
Test Objective	IUT uses HELD request to query location when INVITE contains location by reference
Reference	ETSI TS 103 479 [1], clause 5.2 IETF RFC 6753 [3] IETF RFC 5222 [4]
Config Id	CFG_ESRP_01
PICS Selection	E_SIP_URN2 and H_DER_TOK1 and L_FIS_GEO1
Initial Conditions	

with {
the IUT isConfiguredWith the ECRF
and the IUT isConfiguredWith the LIS
and the PSAP isReachableWith the SIP_URI_1
and the IUT receivedInitialInviteRequestWithLocationReferenceAndSentGetRequestToLisFor the DEVICE_NUMBER
and the IUT receivesLocationResponseWith the LOCATION_1 from the LIS
and the IUT sendsLostQueryToEcrfFor the LOCATION_1 to the ECRF
}	

Expected Behaviour	

ensure that {
when {
the IUT receivesLostResponseWith the SIP_URI_1 from the ECRF
}
then {
the IUT forwards the SIP_INVITE containing
Request_URI indicating value SERVICE_URN_1,
Content_Type indicating value "multipart/mixed",
Route indicating value SIP_URI_1,
Call_Info containing
uri indicating value valid "Incident Tracking Identifier",
purpose "EES-IncidentId"
Call_Info containing
uri indicating value valid "Call Identifier",
purpose "EES-CallId"
body containing
SDP_AND_PIDF_MULTIPART
to the PSAP
}
}	

TP Id	TP_ESRP_SIP_INVITE_BV_05
Test Objective	IUT responds to OPTIONS requests
Reference	ETSI TS 103 479 [1], clause 5.2 IETF RFC 3261 [5]
Config Id	CFG_ESRP_01
PICS Selection	S_SIP_OPT1
Initial Conditions	

with {
the IUT isConfiguredWith the ECRF
and the PSAP isReachableWith the SIP_URI_1
}	

Expected Behaviour	

ensure that {
when {
the IUT receives a SIP_OPTIONS
}
then {
the IUT sends a SIP_RESPONSE containing
Status_Code indicating value "200 OK"
}
}	

TP Id	TP_ESRP_SIP_INVITE_BV_06
Test Objective	IUT successfully forwards an incoming SIP MESSAGE to the correct downstream element, based on the ECRF response
Reference	ETSI TS 103 479 [1], clause 5.2 IETF RFC 5222 [4]
Config Id	CFG_ESRP_01
PICS Selection	M_SIP_URN1 and L_FIS_GEO1
Initial Conditions	

with {
the IUT isConfiguredWith the ECRF
and the PSAP isReachableWith the SIP_URI_1
and the IUT receivedInitialInviteRequestAndSentLostQueryToEcrf
}	

Expected Behaviour	

ensure that {
when {
the IUT receives a TCP SIP_MESSAGE containing
Request_URI indicating value SERVICE_URN_1,
Content_Type indicating value "application/pidf+xml",
body containing
PIDF
and the IUT sends a POST containing
Content_type indicating value "application/lost+xml;charset=utf-8",
body containingreceivedInitialInviteRequestWithLocationReferenceAndSentGetRequestToLisFor
xmlMessage containing
version indicating value "1.0",
element "findService" inNamespace "urn:ietf:params:xml:ns:lost1" containing
element "location" containing
element "Point" inNamespace "http://www.opengis.net/gml" containing
attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
element "pos" indicating value LOCATION_1
element "service" indicating value SERVICE_URN_1
to the ECRF
and the IUT receives a httpResponse containing
Status_Code indicating value "200 OK",
version indicating value "1.0",
Content_type indicating value "application/lost+xml;charset=utf-8",
body containing
xmlMessage containing
version indicating value "1.0",
element "findServiceResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
element "mapping" containing
attribute "source",
attribute "sourceId",
attribute "lastUpdated",	

```
                    attribute "expires",
                    element "service" indicating value SERVICE_URN_1,
                    element "uri" indicating value SIP_URI_1
                element "locationUsed"
        from the ECRF
  }
  then {
      the IUT forwards a SIP_MESSAGE containing
        Request_URI indicating value SERVICE_URN_1,
        Content_Type indicating value "application/pidf+xml",
        Route_Header indicating value SIP_URI_1
        body containing
          PIDF
       to the PSAP
  }
}
```

TP Id	TP_ESRP_SIP_INVITE_BV_07
Test Objective	IUT responds BUSY for an incoming SIP INVITE when downstream element is not reachable
Reference	ETSI TS 103 479 [1], clause 5.2 IETF RFC 5222 [4] IETF RFC 3261 [5]
Config Id	CFG_ESRP_01
PICS Selection	E_SIP_URN1 and S_SIP_BUS1

Initial Conditions

```
with {
  the IUT isConfiguredWith the ECRF
  and the PSAP isNotReachable
  and the IUT receivedInitialInviteRequestAndSentLostQueryToEcrf
}
```

Expected Behaviour

```
ensure that {
  when {
      the IUT receives a TCP SIP_INVITE containing
        Request_URI indicating value SERVICE_URN_1,
        Content_Type indicating value "application/pidf+xml",
        body containing
          PIDF
       and the IUT sends a POST containing
       Content_type indicating value "application/lost+xml;charset=utf-8",
        body containingreceivedInitialInviteRequestWithLocationReferenceAndSentGetRequestToLisFor
          xmlMessage containing
            version indicating value "1.0",
            element "findService" inNamespace "urn:ietf:params:xml:ns:lost1" containing
              element "location" containing
                element "Point" inNamespace "http://www.opengis.net/gml" containing
                  attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                  element "pos" indicating value LOCATION_1
              element "service" indicating value SERVICE_URN_1
         to the ECRF
        and the IUT receives a httpResponse containing
        Status_Code indicating value "200 OK",
        version indicating value "1.0",
        Content_type indicating value "application/lost+xml;charset=utf-8",
        body containing
          xmlMessage containing
            version indicating value "1.0",
            element "findServiceResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
              element "mapping" containing
                attribute "source",
                attribute "sourceId",
                attribute "lastUpdated",
                attribute "expires",
                element "service" indicating value SERVICE_URN_1,
                element "uri" indicating value SIP_URI_1
              element "locationUsed"
        from the ECRF
```

```
   }
   then {
         the IUT sends a SIP_RESPONSE containing
           Status_Code indicating value "486 BUSY HERE"
   }
}
```

7.2.3 ECRF

TP Id	TP_ECRF_HTTP_POST_BV_01
Test Objective	IUT successfully responds with a service URI for a Point in the service boundary
Reference	ETSI TS 103 479 [1], clause 5.3 IETF RFC 5222 [4]
Config Id	CFG_ECRF_01
PICS Selection	L_FIS_GEO1

Initial Conditions

```
with {
   the IUT havingServiceBoundaryFor the E_POLICE_SERVICE_BOUNDARY containing
      serviceMappingFor E_POLICE_SERVICE_URN containing
         URI indicating value E_POLICE_SIP_URI
   and the IUT havingServiceBoundaryFor the V_POLICE_SERVICE_BOUNDARY containing
      serviceMappingFor V_POLICE_SERVICE_URN containing
         URI indicating value V_POLICE_SIP_URI
}
```

Expected Behaviour

```
ensure that {
   when {
         the IUT receives a POST containing
            Uri indicating value "/service",
            Host,
            not Accept,
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "findService" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "location" containing
                        attribute "profile" indicating value "geodetic-2d",
                        attribute "id" indicating value LOCATION_ID,
                        element "Point" inNamespace "http://www.opengis.net/gml" containing
                           attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                           element "pos" indicating value POINT_IN_E_POLICE_SERVICE_BOUNDARY
                     element "service" indicating value E_POLICE_SERVICE_URN
   }
   then {
         the IUT sends a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "findServiceResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "mapping" containing
                        attribute "source",
                        attribute "sourceId",
                        attribute "lastUpdated",
                        attribute "expires",
                        element "service" indicating value E_POLICE_SERVICE_URN,
                        element "uri" indicating value E_POLICE_SIP_URI
                     element "path" containing
                       element via containing attribute "source"
                     element "locationUsed" containing
                       attribute "id" indicating value LOCATION_ID
   }
}
```

TP Id	TP_ECRF_HTTP_POST_BV_02
Test Objective	IUT successfully responds with a service URI for a Circle in the service boundary
Reference	ETSI TS 103 479 [1], clause 5.3 IETF RFC 5222 [4]
Config Id	CFG_ECRF_01
PICS Selection	L_FIS_GEO2

Initial Conditions

```
with {
        the IUT havingServiceBoundaryFor the E_POLICE_SERVICE_BOUNDARY containing
     serviceMappingFor E_POLICE_SERVICE_URN containing
        URI indicating value E_POLICE_SIP_URI
  and the IUT havingServiceBoundaryFor the V_POLICE_SERVICE_BOUNDARY containing
     serviceMappingFor V_POLICE_SERVICE_URN containing
        URI indicating value V_POLICE_SIP_URI
}
```

Expected Behaviour

```
ensure that {
  when {
        the IUT receives a POST containing
           Uri indicating value "/service",
           Host,
           not Accept,
           Content_type indicating value "application/lost+xml;charset=utf-8",
           body containing
              xmlMessage containing
                 version indicating value "1.0",
                 element "findService" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                    element "location" containing
                       attribute "profile" indicating value "geodetic-2d",
                       attribute "id" indicating value LOCATION_ID,
                       element "Circle" inNamespace "http://www.opengis.net/pidflo/1.0" containing
                          attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                          element "pos" inNamespace "http://www.opengis.net/gml" indicating value
                             CIRCLE_IN_V_POLICE_SERVICE_BOUNDARY_POS,
                          element "radius" indicating value CIRCLE_IN_V_POLICE_SERVICE_BOUNDARY_RADIUS
                          containing
                             attribute "uom" indicating value "urn:ogc:def:uom:EPSG::9001"
                    element "service" indicating value V_POLICE_SERVICE_URN
  }
  then {
        the IUT sends a httpResponse containing
           Status_Code indicating value "200 OK",
           version indicating value "1.0",
           Content_type indicating value "application/lost+xml;charset=utf-8",
           body containing
              xmlMessage containing
                 version indicating value "1.0",
                 element "findServiceResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                    element "mapping" containing
                       attribute "source",
                       attribute "sourceId",
                       attribute "lastUpdated",
                       attribute "expires",
                       element "service" indicating value V_POLICE_SERVICE_URN,
                       element "uri" indicating value V_POLICE_SIP_URI
                    element "path" containing
                      element via containing attribute "source"
                    element "locationUsed" containing
                      attribute "id" indicating value LOCATION_ID
  }
}
```

TP Id	TP_ECRF_HTTP_POST_BV_03
Test Objective	IUT successfully responds with an error response for an unknown Service URN in the service boundary
Reference	ETSI TS 103 479 [1], clause 5.3 IETF RFC 5222 [4]
Config Id	CFG_ECRF_01
PICS Selection	L_FIS_ERR1

Initial Conditions

```
with {
        the IUT havingServiceBoundaryFor the E_POLICE_SERVICE_BOUNDARY containing
      serviceMappingFor E_POLICE_SERVICE_URN containing
        URI indicating value E_POLICE_SIP_URI
   and the IUT havingServiceBoundaryFor the V_FIRE_SERVICE_BOUNDARY containing
      serviceMappingFor V_POLICE_SERVICE_URN containing
        URI indicating value V_POLICE_SIP_UR
}
```

Expected Behaviour

```
ensure that {
   when {
        the IUT receives a POST containing
           Uri indicating value "/service",
           Host,
           not Accept,
           Content_type indicating value "application/lost+xml;charset=utf-8",
           body containing
              xmlMessage containing
                 version indicating value "1.0",
                 element "findService" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                    element "location" containing
                       attribute "profile" indicating value "geodetic-2d",
                       attribute "id" indicating value LOCATION_ID,
                       element "Point" inNamespace "http://www.opengis.net/gml" containing
                          attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                          element "pos" indicating value POINT_IN_E_POLICE_SERVICE_BOUNDARY
                    element "service" indicating value V_FIRE_SERVICE_URN
   }
   then {
        the IUT sends a httpResponse containing
           Status_Code indicating value "200 OK",
           version indicating value "1.0",
           Content_type indicating value "application/lost+xml;charset=utf-8",
           body containing
              xmlMessage containing
                 version indicating value "1.0",
                 element "errors" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                    element "serviceNotImplemented"
   }
}
```

TP Id	TP_ECRF_HTTP_POST_BV_04
Test Objective	IUT successfully responds with an error response for an unrecognized location profile
Reference	ETSI TS 103 479 [1], clause 5.3 IETF RFC 5222 [4]
Config Id	CFG_ECRF_01
PICS Selection	L_FIS_ERR2

Initial Conditions

```
with {
        the IUT havingServiceBoundaryFor the E_POLICE_SERVICE_BOUNDARY containing
      serviceMappingFor E_POLICE_SERVICE_URN containing
        URI indicating value E_POLICE_SIP_URI
   and the IUT havingServiceBoundaryFor the V_FIRE_SERVICE_BOUNDARY containing
      serviceMappingFor V_FIRE_SERVICE_URN containing
        URI indicating value V_FIRE_SIP_URI
}
```

Expected Behaviour

```
ensure that {
   when {
         the IUT receives a POST containing
            Uri indicating value "/service",
            Host,
            not Accept,
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "findService" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "location" containing
                        attribute "profile" indicating value "someUnknownProfile",
                        attribute "id" indicating value LOCATION_ID,
                        element "Point" inNamespace "http://www.opengis.net/gml" containing
                           attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                           element "pos" indicating value POINT_IN_E_POLICE_SERVICE_BOUNDARY
                     element "service" indicating value V_FIRE_SERVICE_URN
   }
   then {
         the IUT sends a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "errors" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "locationProfileUnrecognized"
   }
}
```

TP Id	TP_ECRF_HTTP_POST_BV_05
Test Objective	IUT successfully responds with service boundary by value if requested
Reference	ETSI TS 103 479 [1], clause 5.3 IETF RFC 5222 [4]
Config Id	CFG_ECRF_01
PICS Selection	L_FIS_GEO1 and L_FIS_SBV1

Initial Conditions

```
with {
         the IUT havingServiceBoundaryFor the E_POLICE_SERVICE_BOUNDARY containing
      serviceMappingFor E_POLICE_SERVICE_URN containing
         URI indicating value E_POLICE_SIP_URI
}
```

Expected Behaviour

```
ensure that {
   when {
         the IUT receives a POST containing
            Uri indicating value "/service",
            Host,
            not Accept,
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "findService" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     attribute "serviceBoundary" indicating value "value"
                     element "location" containing
                        attribute "profile" indicating value "geodetic-2d",
                        attribute "id" indicating value LOCATION_ID,
                        element "Point" inNamespace "http://www.opengis.net/gml" containing
                           attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                           element "pos" indicating value POINT_IN_E_POLICE_SERVICE_BOUNDARY
                     element "service" indicating value E_POLICE_SERVICE_URN
   }
   then {
```

```
        the IUT sends a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
                xmlMessage containing
                    version indicating value "1.0",
                    element "findServiceResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                        element "mapping" containing
                            attribute "source",
                            attribute "sourceId",
                            attribute "lastUpdated",
                            attribute "expires",
                            element "service" indicating value E_POLICE_SERVICE_URN,
                            element "<serviceBoundary" containing
                                attribute "profile" indicating value "geodetic-2d",
                                element "Polygon" inNamespace "http://www.opengis.net/gml" containing
                                    attribute "srsName" indicating value "urn:ogc:def::crs:EPSG::4326",
                                    element "exterior" containing
                                        element "LinearRing" containing
                                            element "posList" indicating value E_POLICE_SERVICE_BOUNDARY_POS_LIST
                            element "uri" indicating value E_POLICE_SIP_URI
                        element "path" containing
                          element via containing attribute "source"
                        element "locationUsed" containing
                          attribute "id" indicating value LOCATION_ID
        or the IUT sends a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
                xmlMessage containing
                    version indicating value "1.0",
                    element "findServiceResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                        element "mapping" containing
                            attribute "source",
                            attribute "sourceId",
                            attribute "lastUpdated",
                            attribute "expires",
                            element "service" indicating value V_FIRE_SERVICE_URN,
                            element "<serviceBoundary" containing
                                attribute "profile" indicating value "geodetic-2d",
                                element "Polygon" inNamespace "http://www.opengis.net/gml" containing
                                    attribute "srsName" indicating value "urn:ogc:def::crs:EPSG::4326",
                                    element "exterior" containing
                                        element "LinearRing" containing
                                            element "pos" indicating value E_POLICE_SERVICE_BOUNDARY_POS_LIST_0,
                                            element "pos" indicating value E_POLICE_SERVICE_BOUNDARY_POS_LIST_1,
                                            element "pos" indicating value E_POLICE_SERVICE_BOUNDARY_POS_LIST_2,
                                            element "pos" indicating value E_POLICE_SERVICE_BOUNDARY_POS_LIST_3,
                                            element "pos" indicating value E_POLICE_SERVICE_BOUNDARY_POS_LIST_4
                            element "uri" indicating value V_FIRE_SIP_URI
                        element "locationUsed" containing
                          attribute "id" indicating value LOCATION_ID
    }
}
```

TP Id	TP_ECRF_HTTP_POST_BV_06
Test Objective	IUT successfully responds with a service URI for a Circle that intersects the service boundary
Reference	ETSI TS 103 479 [1], clause 5.3 IETF RFC 5222 [4]
Config Id	CFG_ECRF_01
PICS Selection	L_FIS_GEO2

Initial Conditions

```
with {
   the IUT havingServiceBoundaryFor the E_POLICE_SERVICE_BOUNDARY containing
      serviceMappingFor E_POLICE_SERVICE_URN containing
         URI indicating value E_POLICE_SIP_URI
   and the IUT havingServiceBoundaryFor the V_FIRE_SERVICE_BOUNDARY containing
      serviceMappingFor V_FIRE_SERVICE_URN containing
         URI indicating value V_FIRE_SIP_URI
}
```

Expected Behaviour

```
ensure that {
   when {
         the IUT receives a POST containing
            Uri indicating value "/service",
            Host,
            not Accept,
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "findService" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "location" containing
                        attribute "profile" indicating value "geodetic-2d",
                        attribute "id" indicating value LOCATION_ID,
                        element "Circle" inNamespace "http://www.opengis.net/pidflo/1.0" containing
                           attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                           element "pos" inNamespace "http://www.opengis.net/gml" indicating value
                                CIRCLE_INTERSECTING_V_FIRE_SERVICE_BOUNDARY_POS,
                           element "radius" indicating value
                                 CIRCLE_INTERSECTING_V_FIRE_SERVICE_BOUNDARY_RADIUS containing
                                    attribute "uom" indicating value "urn:ogc:def:uom:EPSG::9001"
                     element "service" indicating value V_FIRE_SERVICE_URN
   }
   then {
         the IUT sends a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "findServiceResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "mapping" containing
                        attribute "source",
                        attribute "sourceId",
                        attribute "lastUpdated",
                        attribute "expires",
                        element "service" indicating value V_FIRE_SERVICE_URN,
                        element "uri" indicating value V_FIRE_SIP_URI
                     element "path" containing
                       element via containing attribute "source"
                     element "locationUsed" containing
                       attribute "id" indicating value LOCATION_ID
   }
}
```

TP Id	TP_ECRF_HTTP_POST_BV_07
Test Objective	IUT successfully responds with a service URI for a Circle that intersects multiple service boundaries
Reference	ETSI TS 103 479 [1], clause 5.3 IETF RFC 5222 [4]
Config Id	CFG_ECRF_01
PICS Selection	L_FIS_GEO2

Initial Conditions

```
with {
   the IUT havingServiceBoundaryFor the V_FIRE_SERVICE_BOUNDARY containing
      serviceMappingFor V_FIRE_SERVICE_URN containing
         URI indicating value V_FIRE_SIP_URI
   and the IUT havingServiceBoundaryFor the H_FIRE_SERVICE_BOUNDARY containing
      serviceMappingFor H_FIRE_SERVICE_URN containing
         URI indicating value H_FIRE_SIP_URI
}
```

Expected Behaviour

```
ensure that {
   when {
         the IUT receives a POST containing
            Uri indicating value "/service",
            Host,
            not Accept,
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "findService" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "location" containing
                        attribute "profile" indicating value "geodetic-2d",
                        attribute "id" indicating value LOCATION_ID,
                        element "Circle" inNamespace "http://www.opengis.net/pidflo/1.0" containing
                           attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                           element "pos" inNamespace "http://www.opengis.net/gml" indicating value
CIRCLE_INTERSECTING_V_FIRE_SERVICE_BOUNDARY_AND_H_FIRE_SERVICE_BOUNDARY_POS,
                           element "radius" indicating value
CIRCLE_INTERSECTING_V_FIRE_SERVICE_BOUNDARY_AND_H_FIRE_SERVICE_BOUNDARY_RADIUS
containing
                              attribute "uom" indicating value "urn:ogc:def:uom:EPSG::9001"
                     element "service" indicating value V_FIRE_SERVICE_URN
   }
   then {
         the IUT sends a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "findServiceResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "mapping" containing
                        attribute "source",
                        attribute "sourceId",
                        attribute "lastUpdated",
                        attribute "expires",
                        element "service" indicating value V_FIRE_SERVICE_URN,
                        element "uri" indicating value V_FIRE_SIP_URI
                     element "path" containing
                       element via containing attribute "source"
                     element "locationUsed" containing
                       attribute "id" indicating value LOCATION_ID
   }
}
```

TP Id	TP_ECRF_HTTP_POST_BV_08
Test Objective	IUT successfully responds with a service URI for a Circle in the service boundary with multiple services
Reference	ETSI TS 103 479 [1], clause 5.3 IETF RFC 5222 [4]
Config Id	CFG_ECRF_01
PICS Selection	L_FIS_GEO2

Initial Conditions

```
with {
   the IUT havingServiceBoundaryFor the V_POLICE_SERVICE_BOUNDARY containing
      serviceMappingFor V_POLICE_SERVICE_URN containing
         URI indicating value V_POLICE_SIP_URI
   and the IUT havingServiceBoundaryFor the V_FIRE_SERVICE_BOUNDARY containing
      serviceMappingFor V_FIRE_SERVICE_URN containing
         URI indicating value V_FIRE_SIP_URI
}
```

Expected Behaviour

```
ensure that {
   when {
         the IUT receives a POST containing
            Uri indicating value "/service",
            Host,
            not Accept,
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "findService" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "location" containing
                        attribute "profile" indicating value "geodetic-2d",
                        attribute "id" indicating value LOCATION_ID,
                        element "Circle" inNamespace "http://www.opengis.net/pidflo/1.0" containing
                           attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                           element "pos" inNamespace "http://www.opengis.net/gml" indicating value
                              CIRCLE_IN_V_FIRE_SERVICE_BOUNDARY_POS,
                           element "radius" indicating value CIRCLE_IN_V_FIRE_SERVICE_BOUNDARY_RADIUS
                           containing
                              attribute "uom" indicating value "urn:ogc:def:uom:EPSG::9001"
                     element "service" indicating value V_FIRE_SERVICE_URN
   }
   then {
         the IUT sends a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "findServiceResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "mapping" containing
                        attribute "source",
                        attribute "sourceId",
                        attribute "lastUpdated",
                        attribute "expires",
                        element "service" indicating value V_FIRE_SERVICE_URN,
                        element "uri" indicating value V_FIRE_SIP_URI
                     element "path" containing
                       element via containing attribute "source"
                     element "locationUsed" containing
                       attribute "id" indicating value LOCATION_ID
   }
}
```

TP Id	TP_ECRF_HTTP_POST_BV_09
Test Objective	IUT successfully responds with configured service types for a ListServices request
Reference	ETSI TS 103 479 [1], clause 5.3 IETF RFC 5222 [4]
Config Id	CFG_ECRF_01
PICS Selection	L_LST_ALL1

Initial Conditions

```
with {
   the IUT havingServiceBoundaryFor the E_POLICE_SERVICE_BOUNDARY containing
      serviceMappingFor E_POLICE_SERVICE_URN containing
         URI indicating value E_POLICE_SIP_URI
   and the IUT havingServiceBoundaryFor the V_FIRE_SERVICE_BOUNDARY containing
      serviceMappingFor V_FIRE_SERVICE_URN containing
         URI indicating value V_FIRE_SIP_URI
   and the IUT havingServiceBoundaryFor the N_AMBULANCE_SERVICE_BOUNDARY containing
      serviceMappingFor N_AMBULANCE_SERVICE_URN containing
         URI indicating value N_AMBULANCE_SIP_URI
   and the IUT havingServiceBoundaryFor the A_SOS_SERVICE_BOUNDARY containing
     serviceMappingFor A_SOS_SERVICE_URN containing
      URI indicating value A_SOS_SIP_URI
}
```

Expected Behaviour

```
ensure that {
   when {
         the IUT receives a POST containing
            Uri indicating value "/service",
            Host,
            not Accept,
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "listServices" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "service" indicating value "urn:service:sos"
   }
   then {
         the IUT sends a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "listServicesResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "serviceList" indicating value "urn:servce:sos urn:service:sos.fire urn:service:sos.police
                        urn:service:sos.ambulance",
                     element "path" containing
                       element via containing attribute "source"
   }
}
```

TP Id	TP_ECRF_HTTP_POST_BV_10
Test Objective	IUT successfully responds with configured service types for a ListServicesByLocation request
Reference	ETSI TS 103 479 [1], clause 5.3 IETF RFC 5222 [4]
Config Id	CFG_ECRF_01
PICS Selection	L_LST_GEO1

Initial Conditions

```
with {
   the IUT havingServiceBoundaryFor the E_POLICE_SERVICE_BOUNDARY containing
      serviceMappingFor E_POLICE_SERVICE_URN containing
         URI indicating value E_POLICE_SIP_URI
   and the IUT havingServiceBoundaryFor the V_FIRE_SERVICE_BOUNDARY containing
      serviceMappingFor V_FIRE_SERVICE_URN containing
         URI indicating value V_FIRE_SIP_URI
}
```

Expected Behaviour

```
ensure that {
   when {
         the IUT receives a POST containing
            Uri indicating value "/service",
            Host,
            not Accept,
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "listServicesByLocation" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "location" containing
                        attribute "profile" indicating value "geodetic-2d",
                        attribute "id" indicating value LOCATION_ID,
                        element "Point" inNamespace "http://www.opengis.net/gml" containing
                           attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
                           element "pos" indicating value POINT_IN_E_POLICE_SERVICE_BOUNDARY
                     element "service" indicating value "urn:service:sos"
   }
   then {
         the IUT sends a httpResponse containing
            Status_Code indicating value "200 OK",
            version indicating value "1.0",
            Content_type indicating value "application/lost+xml;charset=utf-8",
            body containing
               xmlMessage containing
                  version indicating value "1.0",
                  element "listServicesByLocationResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                     element "serviceList" indicating value "urn:service:sos.police",
                     element "path" containing
                       element via containing attribute "source"
                     element "locationUsed" containing
                       attribute "id" indicating value LOCATION_ID
   }
}
```

TP Id	TP_ECRF_HTTP_POST_BV_11
Test Objective	IUT successfully responds with configured service types for a ListServices request without service element
Reference	ETSI TS 103 479 [1], clause 5.3 IETF RFC 5222 [4]
Config Id	CFG_ECRF_01
PICS Selection	L_LST_ALL1

Initial Conditions

```
with {
        the IUT havingServiceBoundaryFor the E_POLICE_SERVICE_BOUNDARY containing
      serviceMappingFor E_POLICE_SERVICE_URN containing
        URI indicating value E_POLICE_SIP_URI
   and the IUT havingServiceBoundaryFor the V_FIRE_SERVICE_BOUNDARY containing
      serviceMappingFor V_FIRE_SERVICE_URN containing
        URI indicating value V_FIRE_SIP_URI
   and the IUT havingServiceBoundaryFor the N_AMBULANCE_SERVICE_BOUNDARY containing
      serviceMappingFor N_AMBULANCE_SERVICE_URN containing
        URI indicating value N_AMBULANCE_SIP_URI
   and the IUT havingServiceBoundaryFor the A_SOS_SERVICE_BOUNDARY containing
     serviceMappingFor A_SOS_SERVICE_URN containing
      URI indicating value A_SOS_SIP_URI
}
```

Expected Behaviour

```
ensure that {
   when {
        the IUT receives a POST containing
           Uri indicating value "/service",
           Host,
           not Accept,
           Content_type indicating value "application/lost+xml;charset=utf-8",
           body containing
              xmlMessage containing
                 version indicating value "1.0",
                 element "listServices" inNamespace "urn:ietf:params:xml:ns:lost1"
   }
   then {
        the IUT sends a httpResponse containing
           Status_Code indicating value "200 OK",
           version indicating value "1.0",
           Content_type indicating value "application/lost+xml;charset=utf-8",
           body containing
              xmlMessage containing
                 version indicating value "1.0",
                 element "listServicesResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
                    element "serviceList" indicating value "urn:servce:sos urn:service:sos.fire urn:service:sos.police
                       urn:service:sos.ambulance",
                    element "path" containing
                      element via containing attribute "source"
   }
}
```

TP Id	TP_ECRF_HTTP_POST_BV_12
Test Objective	IUT successfully responds with configured service types for a ListServicesByLocation request without service element
Reference	ETSI TS 103 479 [1], clause 5.3 IETF RFC 5222 [4]
Config Id	CFG_ECRF_01
PICS Selection	L_LST_GEO1
Initial Conditions	

with {
the IUT havingServiceBoundaryFor the E_POLICE_SERVICE_BOUNDARY containing
serviceMappingFor E_POLICE_SERVICE_URN containing
URI indicating value E_POLICE_SIP_URI
and the IUT havingServiceBoundaryFor the V_FIRE_SERVICE_BOUNDARY containing
serviceMappingFor V_FIRE_SERVICE_URN containing
URI indicating value V_FIRE_SIP_URI
}	

Expected Behaviour	

ensure that {
when {
the IUT receives a POST containing
Uri indicating value "/service",
Host,
not Accept,
Content_type indicating value "application/lost+xml;charset=utf-8",
body containing
xmlMessage containing
version indicating value "1.0",
element "listServicesByLocation" inNamespace "urn:ietf:params:xml:ns:lost1" containing
element "location" containing
attribute "profile" indicating value "geodetic-2d",
attribute "id" indicating value LOCATION_ID,
element "Point" inNamespace "http://www.opengis.net/gml" containing
attribute "srsName" indicating value "urn:ogc:def:crs:EPSG::4326",
element "pos" indicating value POINT_IN_E_POLICE_SERVICE_BOUNDARY
}
then {
the IUT sends a httpResponse containing
Status_Code indicating value "200 OK",
version indicating value "1.0",
Content_type indicating value "application/lost+xml;charset=utf-8",
body containing
xmlMessage containing
version indicating value "1.0",
element "listServicesByLocationResponse" inNamespace "urn:ietf:params:xml:ns:lost1" containing
element "serviceList" indicating value "urn:service:sos.police",
element "path" containing
element via containing attribute "source"
element "locationUsed" containing
attribute "id" indicating value LOCATION_ID
}
}	

7.2.4 PSAP

TP Id	TP_PSAP_SIP_INVITE_BV_01
Test Objective	IUT successfully handles SIP INVITE with service urn and ULAW via UDP
Reference	ETSI TS 103 479 [1], clause 5.4 IETF RFC 3261 [5] IETF RFC 5301 [6]
Config Id	CFG_PSAP_01
PICS Selection	S_SIP_UDP1 and E_SIP_URN3 and B_SDP_ULA1
Initial Conditions	

with {
the IUT acceptingIncomingCalls
}	

Expected Behaviour	

ensure that {
when {
the IUT receives a UDP SIP_INVITE containing
Request_URI indicating value "urn:service:sos.police",
Content_Type indicating value "application/sdp",
body containing
SDP_ULAW
}
then {
the IUT establishesIncomingCall
}
}	

TP Id	TP_PSAP_SIP_INVITE_BV_02
Test Objective	IUT successfully handles SIP INVITE with service urn and ALAW via UDP
Reference	ETSI TS 103 479 [1], clause 5.4 IETF RFC 3261 [5] IETF RFC 5301 [6]
Config Id	CFG_PSAP_01
PICS Selection	S_SIP_UDP1 and E_SIP_URN3 and B_SDP_ALA1
Initial Conditions	

with {
the IUT acceptingIncomingCalls
}	

Expected Behaviour	

ensure that {
when {
the IUT receives a UDP SIP_INVITE containing
Request_URI indicating value "urn:service:sos.police",
Content_Type indicating value "application/sdp",
body containing
SDP_ALAW
}
then {
the IUT establishesIncomingCall
}
}	

TP Id	TP_PSAP_SIP_INVITE_BV_03
Test Objective	IUT successfully handles SIP INVITE with service urn via TCP
Reference	ETSI TS 103 479 [1], clause 5.4 IETF RFC 3261 [5] IETF RFC 5301 [6]
Config Id	CFG_PSAP_01
PICS Selection	S_SIP_TCP1 and E_SIP_URN3 and B_SDP_ULA1
Initial Conditions	

with {
the IUT acceptingIncomingCalls
}	

Expected Behaviour	

ensure that {
when {
the IUT receives a TCP SIP_INVITE containing
Request_URI indicating value "urn:service:sos.police",
Content_Type indicating value "application/sdp",
body containing
SDP_ULAW
}
then {
the IUT establishesIncomingCall
}
}	

TP Id	TP_PSAP_SIP_INVITE_BV_04
Test Objective	IUT successfully handles SIP INVITE with SDP and PIDF-LO content
Reference	ETSI TS 103 479 [1], clause 5.4 IETF RFC 3261 [5] IETF RFC 5301 [6]
Config Id	CFG_PSAP_01
PICS Selection	S_SIP_TCP1 and E_SIP_URN1 and B_SDP_ULA1
Initial Conditions	

with {
the IUT acceptingIncomingCalls
}	

Expected Behaviour	

ensure that {
when {
the IUT receives a TCP SIP_INVITE containing
Request_URI indicating value "urn:service:sos.police",
Content_Type indicating value "multipart/mixed",
body containing
SDP_AND_PIDF_MULTIPART
}
then {
the IUT establishesIncomingCall
}
}	

TP Id	TP_PSAP_SIP_INVITE_BV_05
Test Objective	IUT successfully handles SIP INVITE without service URN
Reference	ETSI TS 103 479 [1], clause 5.4 IETF RFC 3261 [5]
Config Id	CFG_PSAP_01
PICS Selection	S_SIP_UDP1 and A_SIP_BSC1 and B_SDP_ULA1
Initial Conditions	

with {
the IUT acceptingIncomingCalls
}	

Expected Behaviour	

ensure that {
when {
the IUT receives a UDP SIP_INVITE containing
Request_URI indicating value "sip:psap@city.com",
Content_Type indicating value "application/sdp",
body containing
SDP_ULAW
}
then {
the IUT establishesIncomingCall
}
}	

TP Id	TP_PSAP_SIP_INVITE_BV_06
Test Objective	IUT successfully handles an incoming SIP BYE
Reference	ETSI TS 103 479 [1], clause 5.4 IETF RFC 3261 [5] IETF RFC 5301 [6]
Config Id	CFG_PSAP_01
PICS Selection	S_SIP_TCP1 and E_SIP_URN1 and B_SDP_ULA1
Initial Conditions	

with {
the IUT inAnActiveIncomingCall
}	

Expected Behaviour	

ensure that {
when {
the IUT receives a SIP_BYE
}
then {
the IUT sends a SIP_OK
}
}	

TP Id	TP_PSAP_SIP_INVITE_BV_07
Test Objective	IUT successfully handles an incoming SIP MESSAGE
Reference	ETSI TS 103 479 [1], clause 5.4 IETF RFC 3261 [5]
Config Id	CFG_PSAP_01
PICS Selection	M_SIP_URN1
Initial Conditions	

with {
the IUT acceptingIncomingCalls
}	

Expected Behaviour	

ensure that {
when {
the IUT receives a SIP_MESSAGE
}
then {
the IUT sends a SIP_OK
}
}	

TP Id	TP_PSAP_SIP_INVITE_BV_08
Test Objective	IUT successfully handles an incoming SIP OPTIONS
Reference	ETSI TS 103 479 [1], clause 5.4 IETF RFC 3261 [5]
Config Id	CFG_PSAP_01
PICS Selection	S_SIP_OPT1
Initial Conditions	

with {
the IUT acceptingIncomingCalls
}	

Expected Behaviour	

ensure that {
when {
the IUT receives a SIP_OPTIONS
}
then {
the IUT sends a SIP_OK
}
}	

History

Document history		
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