



Enabler Test Specification for SUPL V2.0

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Open Mobile Alliance
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1. Scope

This document describes in detail available test cases for SUPL V2.0, OMA-ERP-SUPL-V2_0.

[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)

The test cases are split in two categories, conformance and interoperability test cases.

The conformance test cases are aimed to verify the adherence to normative requirements described in the technical specifications.

The interoperability test cases are aimed to verify that implementations of the specifications work satisfactory.

If either conformance or interoperability tests do not exist at the creation of the test specification this part should be marked not available.

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3. Terminology and Conventions

3.1 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope”, are normative, unless they are explicitly indicated to be informative.

The following numbering scheme is used:

xxx-y.z-con-number where:

| | |
|--------|---|
| xxx | Name of enabler, e.g. MMS or Browsing |
| y.z | Version of enabler release, e.g. 1.2 or 1.2.1 |
| 'con' | Indicating this test is a conformance test case |
| number | Leap number for the test case |

Or

xxx-y.z-int-number where:

| | |
|--------|--|
| xxx | Name of enabler, e.g. MMS or Browsing |
| y.z | Version of enabler release, e.g. 1.2 or 1.2.1 |
| 'int' | Indicating this test is a interoperability test case |
| number | Leap number for the test case |

3.2 Definitions

| | |
|--|---|
| MLS application | An application which requests and consumes the location information |
| Network Initiated SUPL Services | Network Initiated SUPL Services are services which originate from within the SUPL network as opposed to the SET. For these services, the SUPL Agent resides in the Network. |
| Non-Proxy Mode | The SPC system will have direct communication with the SET. |
| Proxy Mode | The SPC system will not have direct communication with the SET. In this environment the SLC system will act as a proxy between the SET and the SPC. |
| SET Initiated SUPL Services | SET Initiated SUPL Services are services which originate from the SET. For these services, the SUPL Agent resides within the SET. |
| SUPL Agent | Service access point which accesses the network resources to obtain location information. |
| SUPL Enabled Terminal (SET) | A device that is capable of communicating with a SUPL network. Examples of this could be a UE in UMTS, a MS in GSM or IS-95, or a PC over an IP-based transport. |
| SUPL Location Centre (SLC) | Coordinates the operations of SUPL in the network and interacts with the SUPL Enabled Terminal (SET) over User Plane bearer. |
| SUPL Location Platform (SLP) | Entity responsible for SUPL Service Management and Position Determination. SLP contains the SLC and SPC Functions. |
| SUPL Positioning Centre (SPC) | Entity in the SUPL network responsible for all messages and procedures required for position calculation and for the delivery of assistance data. |

3.3 Abbreviations

| | |
|--------------|-------------------------------------|
| ACA | Alternative Client authentication |
| AFLT | Advanced Forward Link Trilateration |
| A-GPS | Assisted GPS |
| B-TID | Bootstrap Transaction Identifier |
| CI | Cell Identity (3GPP) |
| ECID | Enhanced Cell ID |

| | |
|----------------|--|
| EOTD | Enhanced Observed Time Difference |
| E-SLP | Emergency SLP |
| FFS | For Further Study |
| FQDN | Fully Qualified Domain Name |
| GANSS | Galileo and Additional Navigation Satellite Systems |
| GBA | Generic Bootstrap Architecture |
| GLONASS | GLObal'naya NAVigatsionnaya Sputnikovaya Sistema (Engl.: Global Navigation Satellite System) |
| GNSS | Global Navigation Satellite System |
| GPS | Global Positioning System |
| H-SLP | Home SLP |
| IMSI | International Mobile Subscriber Identity |
| IP | Internet Protocol |
| LAC | Location Area Code (3GPP) |
| LCS | Location Services |
| LPP | LTE Positioning Protocol |
| MAC | Message Authentication Code |
| MCC | Mobile Country Code (3GPP) |
| MLP | Mobile Location Protocol |
| MLS | Mobile Location Services |
| MNC | Mobile Network Code (3GPP) |
| MSID | Mobile Station Identifier |
| NMR | Network Measurement Report |
| OMA | Open Mobile Alliance |
| OTDOA | Observed Time Difference of Arrival |
| PAP | WAP Push Access Protocol |
| PPG | Push Proxy Gateway |
| PSK | Pre-shared Key |
| QoP | Quality of Position |
| QZSS | Quasi-Zenith Satellite System |
| RLP | Roaming Location Protocol |
| RRC | Radio Resource Control |
| RRLP | Radio Resource LCS Protocol |
| R-SLP | Requesting SLP |
| SET | SUPL Enabled Terminal |
| SIM | Subscriber Identity Module |
| SIP | Session Initiation Protocol |
| SLC | SUPL Location Centre |
| SLIA | Standard Location Immediate Answer |
| SLIR | Standard Location Immediate Request |
| SLP | SUPL Location Platform |
| SMLC | Serving Mobile Location Centre |
| SMS | Short Message Service |
| SMSC | Short Message Service Centre |

| | |
|--------------|---|
| SPC | SUPL Positioning Centre |
| SPCF | SUPL Position Calculation Function |
| SPF | SUPL Privacy Function |
| SRLIA | Standard Roaming Location Immediate Answer |
| SRLIR | Standard Roaming Location Immediate Request |
| TBD | To Be Developed |
| TLS | Transport Layer Security |
| UE | User Equipment |
| ULP | Userplane Location Protocol |
| URI | Uniform Resource Identifier |
| URL | Uniform Resource Locator |
| V-SLP | Visited SLP |
| V-SPC | Visited SPC |
| WAP | Wireless Application Protocol |

4. Introduction

The purpose of this document is to provide test cases for SUPL Enabler Release 2.0.

The implementation of some features is optional for the Clients and/or the Servers in the SUPL Enabler. The tests associated with these optional features are marked as "(Includes Optional Features)" in the test specification.

4.1 Running Test Cases

Some Test Cases are made up of multiple Tests (e.g. Test 1, Test 2,). These Tests are independent of each other and are only grouped together for convenience. These Tests may or may not all be relevant to a particular SET or SLP and applicabilities are given separately for each Test.

These Tests may be referred to by adding "-1", or "-2" etc. after the Test number, e.g. SUPL-2.0.con-008-1, SUPL-2.0.con-008-2 etc.

Some Test Cases are made up of multiple Cases (e.g. Case 1, Case 2,). These Cases are all part of the one Test Case and should all be run as part of the Test Case. In particular, to pass the complete Test Case the SET or SLP must pass every Case.

4.2 Applicability of Client Conformance Test Cases

The Client Conformance test cases in section 5 contain test cases for both mandatory and optional features in a client implementation. In order to assist in the selection of the necessary Client Conformance test cases in the case of a client that has implemented a number of optional features, appendix B lists all the possible optional features in the client in the form of an ICS (Implementation Conformance Specification) table and it provides a mapping from the optional client applicabilities (ICS) to the applicable test cases from section 5. It also provides an IXIT (protocol Implementation eXtra Information) table to note any extra information necessary to run the test cases.

4.3 Acceptable Position Estimates

Many Test Cases in this document require that a Location Session completes successfully; it is assumed that for a Test Case to complete successfully it will produce an acceptable Position Estimate. In addition some Test Cases in this document specifically require that a Location Session produces an acceptable Position Estimate.

The OMA does not specify any requirements for the accuracy of a Position Estimate in order for it to be judged as being acceptable, therefore finally this must be left to the judgment and experience of those running the tests. However some guidance is given below which may be used if deemed useful.

The figures given below are based on expected accuracies of Position Estimates from various sources in the industry, with an additional allowance for the fact that no requirements are specified by the OMA.

In all cases ideal test conditions are assumed with strong, noise free, signals. For A-GNSS and GNSS testing, these test conditions should be similar to an "outdoor" or "clear view of sky" environment; for other testing, these test conditions should be similar to an urban or city environment. Otherwise, the accuracy figures mentioned below may not hold and under less than ideal conditions they should be relaxed further.

| Positioning Method used in Location Session | Acceptable accuracy of Position Estimate |
|---|--|
| A-GNSS | +/- 100m |
| Autonomous GNSS | +/- 100m |
| AFLT | +/- 250m |
| Cell ID | +/- 5km |
| Enhanced Cell / sector | +/- 1km |
| EOTD | +/- 250m |

| | |
|-------|---------|
| OTDOA | +/-250m |
|-------|---------|

Table 1: Acceptable accuracies of Position Estimates

4.3 A-GNSS Assistance Data

Many Conformance Test Cases in this document require that an A-GNSS Location Session is run. Normally this will take place under laboratory conditions using a simulated GNSS constellation and suitable Assistance Data for that simulation. The OMA does not specify the GNSS constellation or Assistance Data to be used under these circumstances, however suitable scenarios and associated Assistance Data is specified by 3GPP and 3GPP2 for similar testing. The details can be found in the following documents:

- For testing using RRLP protocol: [3GPP TS 51.010]
- For testing using RRC protocol: [3GPP TS 34.123]
- For testing using TIA-801 protocol: [3GPP2 TIA-916]
- For testing using LPP: [3GPP TS 36.xxx]

4.4 OTDOA Assistance Data

Some Conformance Test Cases in this document require that an OTDOA Location Session is run. OMA does not specify the scenario or Assistance Data to be used under these circumstances, however suitable scenarios and associated Assistance Data is specified by 3GPP for similar testing. The details can be found in [3GPP TS 36.xxx].

5. SUPL Client Conformance Test Cases

This table lists test cases for features in SUPL 2.0 that have not changed since SUPL 1.0. Therefore the same test cases have been re-used from [SUPL 1.0 ETS], except that the formatting of the Test Procedure has been modified in accordance with the format used in this document, the Specification References and SCRs have been updated for SUPL 2.0 and, clearly, SUPL 2.0 protocol (Version numbers etc.) will be used when the Test Cases are run.

| SUPL 1.0 Test Case | Equivalent SUPL 2.0 Test Case |
|---|---|
| SUPL-1.0-con-002 - Correct Session ID | SUPL-2.0-con-004 - Correct Session ID |
| SUPL-1.0-con-003 - Invalid SET Session ID. | SUPL-2.0-con-005 - Invalid SET Session ID |
| SUPL-1.0-con-004 - Missing or invalid SLP Session ID | SUPL-2.0-con-006 - Missing or invalid SLP Session ID |
| SUPL-1.0-con-010 - WAP Push and, or MT SMS support | SUPL-2.0-con-000 - SUPL INIT delivery – Test 1: OMA Push, Test 2: MT SMS |
| SUPL-1.0-con-013 - Incorrect WAP Push message content | SUPL-2.0-con-001 - Incorrect OMA Push message content |
| SUPL-1.0-con-014 - Incorrect MT SMS message content | SUPL-2.0-con-002 - Incorrect MT SMS message content |
| SUPL-1.0-con-023 - Alternative H-SLP Addresses | SUPL-2.0-con-007 - Alternative H-SLP Addresses |
| SUPL-1.0-con-024 - Optional Ciphering Suite | SUPL-2.0-con-008 - Optional Ciphering Suites – Test 1 TSL_RSA_WITH_3DES_EDE_CBC_SHA |
| SUPL-1.0-con-270 - No notification & no verification | SUPL-2.0-con-020 - No notification & no verification |
| SUPL-1.0-con-271 - Notification only | SUPL-2.0-con-021 - Notification only |
| SUPL-1.0-con-272 - Notification and verification (Allowed on no answer). User accepts | SUPL-2.0-con-022 - Notification and verification. Case 1 Allowed on no answer. User accepts. (See note) |
| SUPL-1.0-con-273 - Notification and verification (Allowed on no answer). User rejects | SUPL-2.0-con-022 - Notification and verification. Case 2 - Allowed on no answer. User rejects. (See note) |
| SUPL-1.0-con-274 - Notification and verification (Allowed on no answer). No response | SUPL-2.0-con-022 - Notification and verification. Case 3 - Allowed on no answer. No response. (See note) |
| SUPL-1.0-con-275 - Notification and verification (Denied on no answer). User accepts | SUPL-2.0-con-022 - Notification and verification. Case 4 - Denied on no answer. User accepts. (See note) |
| SUPL-1.0-con-276 - Notification and verification (Denied on no answer). User rejects | SUPL-2.0-con-022 - Notification and verification. Case 5 - Denied on no answer. User rejects. (See note) |
| SUPL-1.0-con-277 - Notification and verification (Denied on no answer). No response | SUPL-2.0-con-022 - Notification and verification. Case 6 - Denied on no answer. No response. (See note) |
| SUPL-1.0-con-278 - Privacy override | SUPL-2.0-con-023 - Privacy override (See note) |
| SUPL-1.0-con-279 - Requestor ID and Client Name | SUPL-2.0-con-024 - Requestor ID and Client Name (See note) |
| SUPL-1.0-con-030-1 - Common Positioning method | SUPL-2.0-con-030 - Positioning method – Test 1 A-GPS SET assisted |
| SUPL-1.0-con-030-2 - Common Positioning method | SUPL-2.0-con-030 - Positioning method – Test 2 A-GPS SET based |
| SUPL-1.0-con-030-3 - Common Positioning method | SUPL-2.0-con-030 - Positioning method – Test 3 Autonomous GPS |
| SUPL-1.0-con-030-6 - Common Positioning method | SUPL-2.0-con-030 - Positioning method – Test 5 Cell ID |
| SUPL-1.0-con-031-3 – Preferred or fallback Positioning method | SUPL-2.0-con-030 - Positioning method – Test 11 A-GPS Preferred methods |
| SUPL-1.0-con-033-1 - No Position. Test 1: Basic functionality | SUPL-2.0-con-031 - No Position |
| SUPL-1.0-con-062 - Unexpected data value. | To be written |
| SUPL-1.0-con-063 - Unexpected message | To be written |
| SUPL-1.0-con-066 - Timeout UT2 - non Cell ID | SUPL-2.0-con-070 - Timeout UT2 – Test 1 |

| | |
|--|---|
| SUPL-1.0-con-067 - Timeout UT2 - Cell ID. | SUPL-2.0-con-070 - Timeout UT2 – Test 3 |
| SUPL-1.0-con-068 - Timeout UT3 | SUPL-2.0-con-071 - Timeout UT3 – Test 1 |
| SUPL-1.0-con-102 - Correct Session ID. | SUPL-2.0-con-100 - Correct Session ID. |
| SUPL-1.0-con-103 - Invalid SET Session ID. | SUPL-2.0-con-101 - Invalid SET Session ID. |
| SUPL-1.0-con-104 - Invalid SLP Session ID. | SUPL-2.0-con-102 – Invalid SLP Session ID. |
| SUPL-1.0-con-130-1 - Common Positioning method (non Cell ID methods) | SUPL-2.0-con-110 - Positioning method – Test 1 A-GPS SET assisted |
| SUPL-1.0-con-130-2 - Common Positioning method (non Cell ID methods) | SUPL-2.0-con-110 - Positioning method – Test 2 A-GPS SET based |
| SUPL-1.0-con-130-3 - Common Positioning method (non Cell ID methods) | SUPL-2.0-con-110 - Positioning method – Test 3 Autonomous GPS |
| SUPL-1.0-con-131-2 - Common Positioning method (Cell ID methods) | SUPL-2.0-con-110 - Positioning method – Test 5 Cell ID |
| SUPL-1.0-con-381 - Previous position stored in SLP meets QoP | To be written |
| SUPL-1.0-con-165 - Timeout UT1 | SUPL-2.0-con-140 - Timeout UT1 |
| SUPL-1.0-con-166 - Timeout UT2 - non Cell ID | SUPL-2.0-con-141 - Timeout UT2 |
| SUPL-1.0-con-168 - Timeout UT3 | SUPL-2.0-con-142 - Timeout UT3 |

Note: The Pass-Criteria has been modified slightly for consistency

5.1 Client Conformance: Network Initiated

The Test Cases in this section are applicable for SETs that support any Network Initiated call flows. This particular applicability is not specified in the individual test cases. For definitive applicabilities of test cases see Appendix B.

5.1.1 Common Part of ULP Message, Basic Functionality and Cross Version Compatibility

5.1.1.1 SUPL-2.0-con-000 - SUPL INIT delivery [Includes optional features].

| | |
|--------------------------------|--|
| Test Case Id | SUPL-2.0-con-000 |
| Test Object | Client |
| Test Case Description | To test SET correctly supports SUPL INIT delivery using OMA Push and, if supported, MT SMS and, or SIP Push |
| Specification Reference | ULP TS 8 |
| SCR Reference | ULP-PIN-C-004-M, ULP-PIN-C-005-M, ULP-PIN-C-006-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="text-align: center;">Test 2: ics_MT_SMS Test 3: ics_SIP_Push Test 4: ics_UDP</p> <p>Note that it is assumed that the SET supports GSM/WCDMA/TD-SCDMA/LTE and therefore support of OMA Push is mandatory and support of other methods is optional.</p> |

| | |
|-----------------------|--|
| Test Procedure | <p>Test 1: OMA Push Test 2: MT SMS [Includes optional features] Test 3: SIP Push [Includes optional features] Test 4: UDP [Includes optional features]</p> <ol style="list-style-type: none"> 1. Start a NI Location Session 2. Send SUPL INIT using: <ul style="list-style-type: none"> <input type="checkbox"/> Test 1: OMA Push Access Protocol with: <ul style="list-style-type: none"> o Case 1: <ul style="list-style-type: none"> ▪ content type set to 0X03020312 ▪ x-application-id-field set to 0X90 o Case 2: <ul style="list-style-type: none"> ▪ content type set to application/vnd.omaloc-supl-init ▪ x-application-id-field set to x-oma-application:ulp.ua. <input type="checkbox"/> Test 2: MT SMS <input type="checkbox"/> Test 3: SIP Push <input type="checkbox"/> Test 4: UDP 3. Ensure the Location Session completes successfully. |
| Pass-Criteria | <p>Test 1, Case 1, Case 2, Test 2, Test 3 and Test 4:</p> <ol style="list-style-type: none"> 1. At step 3 in each case and in each test the Location Session shall complete successfully. |

5.1.1.2 SUPL-2.0-con-001 - Incorrect OMA Push message content

| | |
|--------------------------------|---|
| Test Case Id | SUPL-2.0-con-001 |
| Test Object | Client |
| Test Case Description | To test SET correctly rejects incorrect OMA Push message content |
| Specification Reference | ULP TS 8 |
| SCR Reference | ULP-PIN-C-004-M |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability:</p> <p style="padding-left: 40px;">Note that it is assumed that the SET supports GSM/WCDMA/TD-SCDMA/LTE and therefore support of OMA Push is mandatory</p> |

| | |
|-----------------------|--|
| Test Procedure | <ol style="list-style-type: none"> 1. Start a NI Location Session 2. Send SUPL INIT using: <ul style="list-style-type: none"> □ OMA Push Access Protocol with: <ul style="list-style-type: none"> ○ Case 1: <ul style="list-style-type: none"> ▪ content type set to some other value than 0X03020312 ▪ x-application-id-field set to 0X90 ○ Case 2: <ul style="list-style-type: none"> ▪ content type set to 0X03020312 ▪ x-application-id-field set to some other value than 0X90 ○ Case 3: <ul style="list-style-type: none"> ▪ content type set to some other value than application/vnd.omaloc-supl-init ▪ x-application-id-field set to x-oma-application:ulp.ua. ○ Case 4: <ul style="list-style-type: none"> ▪ content type set to application/vnd.omaloc-supl-init ▪ x-application-id-field set to some other value than ulp.ua. 3. The SET does not respond. |
| Pass-Criteria | 1. At step 3 in each case the SET shall not respond |

5.1.1.3 SUPL-2.0-con-002 - Incorrect MT SMS message content [Includes optional features].

| | |
|--------------------------------|---|
| Test Case Id | SUPL-2.0-con-002 |
| Test Object | Client |
| Test Case Description | To test SET correctly rejects incorrect MT SMS message content |
| Specification Reference | ULP TS 8 |
| SCR Reference | ULP-PIN-C-005-M |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="text-align: center;">ics_MT_SMS</p> <p>Note that it is assumed that the SET supports GSM/WCDMA/TD-SCDMA/LTE and therefore support of MT SMS is optional.</p> |
| Test Procedure | <ol style="list-style-type: none"> 1. Start a NI Location Session 2. Send SUPL INIT using: <ul style="list-style-type: none"> □ MT SMS with: <ul style="list-style-type: none"> ▪ The port number set to some other value than oma-ulp 7275/ udp OMA User Plane Location Protocol 3. The SET does not respond. |

| | |
|----------------------|--|
| Pass-Criteria | 1. At step 3 the SET shall not respond |
|----------------------|--|

5.1.1.4 SUPL-2.0-con-003 - Incorrect SIP Push message content [Includes optional features].

| | |
|--------------------------------|--|
| Test Case Id | SUPL-2.0-con-003 |
| Test Object | Client |
| Test Case Description | To test SET correctly rejects incorrect SIP Push message content |
| Specification Reference | ULP TS 8 |
| SCR Reference | ULP-PIN-C-006-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: ics_SIP_Push |
| Test Procedure | 1. Start a NI Location Session 2. Send SUPL INIT using: <ul style="list-style-type: none"> <input type="checkbox"/> SIP Push with: <ul style="list-style-type: none"> o Case 1: <ul style="list-style-type: none"> ▪ Application Resource Identifier in Accept-Contact header set to some other value than ulp.ua o Case 2: <ul style="list-style-type: none"> ▪ Content-Type header set to some other value than application/vnd.omaloc-supl-init 3. The SET does not respond. |
| Pass-Criteria | 1. At step 3 in both cases the SET shall not respond |

5.1.1.5 SUPL-2.0-con-004 - Correct Session ID

| | |
|--------------------------------|---|
| Test Case Id | SUPL-2.0-con-004 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions Session ID |
| Specification Reference | ULP TS 9, 10 |
| SCR Reference | |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: |
| Test Procedure | 1. Case 1, Case 2 and Case 3: Start a NI Location Session 2. Send SUPL INIT with: <ul style="list-style-type: none"> <input type="checkbox"/> SLP Session ID set to a valid value with: |

| | |
|----------------------|---|
| | <ul style="list-style-type: none"> ○ SLP ID using the Parameter type: <ul style="list-style-type: none"> ▪ Case 1: IPAddress, IPv4 ▪ Case 2: IPAddress, IPv6 ▪ Case 3: FQDN <p>3. The SET sends SUPL POS INIT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Correct full Session ID <p>4. The Location Session completes successfully</p> |
| Pass-Criteria | <p>1. At step 3 in each case the SET shall respond with SUPL POS INIT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Correct full Session ID |

5.1.1.6 SUPL-2.0-con-005 - Invalid SET Session ID

| | |
|--------------------------------|--|
| Test Case Id | SUPL-2.0-con-005 |
| Test Object | Client |
| Test Case Description | To test SET correctly rejects an invalid SET Session ID |
| Specification Reference | ULP TS 9, 10 |
| SCR Reference | |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> |
| Test Procedure | <ol style="list-style-type: none"> 1. Case 1: Start a NI Location Session 2. Send SUPL INIT with: <ul style="list-style-type: none"> <input type="checkbox"/> Session ID with: <ul style="list-style-type: none"> ○ A plausible SET Session ID 3. The SET sends SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> The invalid Session ID in the SUPL END Common Part <input type="checkbox"/> Status Code set to invalidSessionID 4. Between Cases, in order to return to a “known state” for the next Case, the Conformance Test Tool ends the Location Session and releases the secure IP connection. 5. Case 2 and Case 3: Start a NI Location Session 6. Send SUPL INIT with: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method set to: <ul style="list-style-type: none"> ○ Any method supported by the SET that requires a SUPL POS session (e.g. A-GPS SET Assisted) 7. The SET sends SUPL POS INIT 8. Send SUPL POS with: <ul style="list-style-type: none"> <input type="checkbox"/> Case 2: In SET Session ID set: <ul style="list-style-type: none"> ○ Session ID to an invalid value (i.e. set Session ID to a different value from that received from the SET) <input type="checkbox"/> Case 3: In SET Session ID set: <ul style="list-style-type: none"> ○ SET ID to an invalid value (i.e. set SET ID to a different value or a different parameter type from |

| | |
|----------------------|--|
| | <p>that received from the SET)</p> <p>9. The SET responds with SUPL END with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The invalid Session ID in the SUPL END Common Part <input type="checkbox"/> Status Code set to invalidSessionID. <p>Note that between Cases, in order to return to a “known state” for the next Case, the Conformance Test Tool ends the Location Session and releases the secure IP connection.</p> |
| Pass-Criteria | <p>1. At step 3, and at step 9 in both cases, the SET shall respond with SUPL END with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The invalid Session ID in the SUPL END Common Part <input type="checkbox"/> Status Code set to invalidSessionID. |

5.1.1.7 SUPL-2.0-con-006 - Missing or invalid SLP Session ID

| | |
|--------------------------------|---|
| Test Case Id | SUPL-2.0-con-006 |
| Test Object | Client |
| Test Case Description | To test SET correctly rejects a missing or invalid SLP Session ID |
| Specification Reference | UPL TS 9, 10 |
| SCR Reference | |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> |
| Test Procedure | <p>1. Case 1: Start a NI Location Session</p> <p>2. Send SUPL INIT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Session ID with: <ul style="list-style-type: none"> o No SLP Session ID <p>3. The SET sends SUPL END with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The invalid Session ID (i.e. an empty Session ID) in the SUPL END Common Part <input type="checkbox"/> Status Code set to invalidSessionID <p>4. Between Cases, in order to return to a “known state” for the next Case, the Conformance Test Tool ends the Location Session and releases the secure IP connection.</p> <p>5. Case 2 and Case 3: Start a NI Location Session</p> <p>6. Send SUPL INIT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method set to: <ul style="list-style-type: none"> o Any method supported by the SET that requires a SUPL POS session (e.g. A-GPS SET Assisted) <p>7. The SET sends SUPL POS INIT</p> <p>8. Send SUPL POS with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 2: In SLP Session ID set: <ul style="list-style-type: none"> o Session ID to an invalid value (i.e. set Session ID to a different value from that used in the SUPL INIT message) |

| | |
|----------------------|---|
| | <ul style="list-style-type: none"> <input type="checkbox"/> Case 3: In SLP Session ID set: <ul style="list-style-type: none"> <input type="checkbox"/> SLP ID to an invalid value (i.e. set SET ID to a different value or a different parameter type from that used in the SUPL INIT message) <p>9. The SET responds with SUPL END with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The invalid Session ID in the SUPL END Common Part <input type="checkbox"/> Status Code set to invalidSessionID. <p>Note that between Cases, in order to return to a “known state” for the next Case, the Conformance Test Tool ends the Location Session and releases the secure IP connection.</p> |
| Pass-Criteria | <p>1. At step 3, and at step 9 in both cases, the SET shall respond with SUPL END with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The invalid Session ID in the SUPL END Common Part <input type="checkbox"/> Status Code set to invalidSessionID. |

5.1.1.8 SUPL-2.0-con-009 - Basic SUPL INIT protection [Includes optional features]

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| Test Case Id | SUPL-2.0-con-009 |
| Test Object | Client |
| Test Case Description | To test SET correctly supports Basic SUPL INIT protection |
| Specification Reference | ULP TS 6, 9 |
| SCR Reference | ULP-PRO-C-004-O, ULP-PRO-C-037-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="padding-left: 40px;">ics_PSK_TLS</p> |
| Test Procedure | <p>Run all Cases.</p> <p>Case 1: Correct support.</p> <p>Case 2: Correct discard procedure – incorrect Protection Level</p> <p>Case 3: Correct discard procedure – incorrect Key Identity</p> <p>Case 4: Correct discard procedure – incorrect Basic Replay Counter</p> <p>Case 1:</p> <ol style="list-style-type: none"> 1. Clear any SUPL_INIT_ROOT_KEY from the Conformance Test Tool 2. Start a normal NI Location Session 3. In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to Enhanced Cell / sector <input type="checkbox"/> Protection Level set: <ul style="list-style-type: none"> ▪ Level to Null Protection 4. The SET connects to the H-SLP. At the TLS level it indicates support for PSK-TLS with GBA |

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| | <p>5. The SET sends SUPL POS INIT over a secure connection using PSK-TLS</p> <p>6. Send SUPL END</p> <p>7. Release the secure IP connection</p> <p>8. Start a normal NI Location Session</p> <p>9. In SUPL INIT set:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to Enhanced Cell / sector <input type="checkbox"/> Protection Level set: <ul style="list-style-type: none"> ▪ Level to Basic Protection ▪ Basic Protection Parameters to suitable values <p>10. The SET connects to the H-SLP over a secure connection using PSK-TLS with GBA</p> <p>11. The SET sends SUPL POS INIT</p> <p>12. Send SUPL END</p> <p>13. Release the secure IP connection</p> <p>Case 2, Case 3, Case 4.</p> <p>14. Run Case 1</p> <p>15. Start a normal NI Location Session</p> <p>16. In SUPL INIT set:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to Enhanced Cell / sector <input type="checkbox"/> Case 2: Protection Level set: <ul style="list-style-type: none"> ▪ Level to Null Protection ▪ Basic Protection Parameters to suitable values <input type="checkbox"/> Case 3, Case 4: Protection Level set: <ul style="list-style-type: none"> ▪ Level to Basic Protection ▪ Case 3: Basic Protection Parameters: <ul style="list-style-type: none"> • Key Identifier set to an incorrect value (not equal to the current B-TID) • Basic Replay Counter and Basic MAC set to suitable values ▪ Case 4: Basic Protection Parameters: <ul style="list-style-type: none"> • Key Identifier and Basic MAC set to suitable values • Basic Replay Counter set to a value of 0 (the value that has already been used in step 10) <p>17. The SET does not respond (SUPL INIT is discarded)</p> <p>18. Repeat step 15 through step 17 for the remaining Cases</p> |
| <p>Pass-Criteria</p> | <p>All Cases:</p> <ol style="list-style-type: none"> 1. At step 11 the SET shall send SUPL POS INIT 2. At step 12 the session shall end successfully <p>Case 2, Case 3, Case 4:</p> <ol style="list-style-type: none"> 3. At step 17 the SET shall not respond |

5.1.1.9 SUPL-2.0-con-010 - Compatible Versions

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| Test Case Id | SUPL-2.0-con-010 |
| Test Object | Client |
| Test Case Description | To test SET correctly accepts compatible Version numbers in SUPL messages |
| Specification Reference | ULP TS 7,9,10 |
| SCR Reference | ULP-PRO-C-007-O, ULP-PRO-C-008-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="text-align: right;">Test 4: ics_support_SUPLV1.0</p> |
| Test Procedure | <p>Test 1: Support for higher versions of SUPL 2.X.X</p> <p>Test 2: Support for lower versions of SUPL 2.X.X.</p> <p>Test 3: Correct support with SLP supporting SUPL V3.0 and V2.0</p> <p>Test 4: Correct support with SLP supporting SUPL V1.0 only. SUPL V1.0 supported by SET [Includes optional features]</p> <p>Test 1: Support for higher versions of SUPL 2.X.X</p> <ol style="list-style-type: none"> 1. Start a NI Location Session 2. In the Common Part of all messages set: <ul style="list-style-type: none"> <input type="checkbox"/> Version to: <ul style="list-style-type: none"> <input type="radio"/> Maj set to 2 <input type="radio"/> Min set to a higher number than that supported by the SET <input type="radio"/> Serv ind set to a higher number than that supported by the SET 3. In SUPL INIT: <ul style="list-style-type: none"> <input type="checkbox"/> Do not use Minimum Major version 4. The SET sends SUPL POS INIT (proxy mode) or SUPL AUTH REQ (non-proxy mode) with: <ul style="list-style-type: none"> <input type="checkbox"/> In the Common Part, Version set to: <ul style="list-style-type: none"> <input type="radio"/> Maj set to 2 <input type="radio"/> Min set to 0 or correct version supported by the SET <input type="radio"/> Serv ind set to 0 or correct version supported by the SET 5. The Location Session completes successfully. <p>Test 2: Support for lower versions of SUPL 2.X.X. Only applicable if there exists SUPL V2.X where X>0</p> <ol style="list-style-type: none"> 6. Repeat Test 1, with following change at step 2: <p>In the Common Part of all messages set:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Version to: <ul style="list-style-type: none"> <input type="radio"/> Maj set to 2 <input type="radio"/> Min set to a lower number than the maximum |

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| | <p>supported by the SET</p> <ul style="list-style-type: none">○ Serv ind set to a lower number than the maximum supported by the SET <p>Test 3: Correct support with SLP supporting SUPL V3.0 and V2.0</p> <p>7. Start a NI Location Session</p> <p>8. In the Common Part of all messages set:</p> <ul style="list-style-type: none">□ Version to:<ul style="list-style-type: none">○ Maj set to 3○ Min set to 0○ Serv ind set to 0 <p>9. In SUPL INIT set:</p> <ul style="list-style-type: none">□ Positioning Method to any method supported by the SET that requires a SUPL POS session□ Minimum Major version to 2 <p>10. The SET sends SUPL POS INIT (proxy mode) or SUPL AUTH REQ (non-proxy mode) with:</p> <ul style="list-style-type: none">□ In the Common Part, Version set to:<ul style="list-style-type: none">○ Maj set to 2○ Min set to 0 or correct version supported by the SET○ Serv ind set to 0 or correct version supported by the SET <p>11. The Location Session completes successfully using SUPL 2.0 protocol.</p> <p>Test 4: Correct support with SLP supporting SUPL V1.0 only. SUPL V1.0 supported by SET [Includes optional features]</p> <p>12. Start a NI Location Session</p> <p>13. In the Common Part of all messages set:</p> <ul style="list-style-type: none">□ Version to:<ul style="list-style-type: none">○ Maj set to 1○ Min set to 0○ Serv ind set to 0 <p>14. In SUPL INIT set:</p> <ul style="list-style-type: none">□ Positioning Method to any method supported by the SET that requires the use of SUPL POS <p>15. The SET sends SUPL POS INIT (proxy mode) or SUPL AUTH REQ (non-proxy mode) with:</p> <ul style="list-style-type: none">□ In the Common Part, Version set to:<ul style="list-style-type: none">○ Maj set to 1○ Min set to 0 or correct version supported by the SET○ Serv ind set to 0 or correct version supported by the SET <p>16. The Location Session completes successfully using SUPL 1.0 protocol.</p> |
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| Pass-Criteria | <p>Test 1 and 2:</p> <p>1. At step 4 the SET shall respond with SUPL POS INIT (proxy mode) or SUPL AUTH REQ (non-proxy mode) with Version set to:</p> <ul style="list-style-type: none"> ○ Maj set to 2 ○ Min set to 0 or correct version supported by the SET ○ Serv ind set to 0 or correct version supported by the SET <p>Test 3:</p> <p>2. At step 10 the SET shall respond with SUPL POS INIT (proxy mode) or SUPL AUTH REQ (non-proxy mode) with Version set to:</p> <ul style="list-style-type: none"> ○ Maj set to 2 ○ Min set to 0 or correct version supported by the SET ○ Serv ind set to 0 or correct version supported by the SET <p>3. At step 11 the Location Session shall complete successfully using SUPL 2.0 protocol.</p> <p>Test 4:</p> <p>4. At step 15 the SET shall respond with SUPL POS INIT (proxy mode) or SUPL AUTH REQ (non-proxy mode) with Version set to:</p> <ul style="list-style-type: none"> ○ Maj set to 1 ○ Min set to 0 or correct version supported by the SET ○ Serv ind set to 0 or correct version supported by the SET <p>5. At step 16 the Location Session shall complete successfully using SUPL 1.0 protocol</p> |
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5.1.1.10 SUPL-2.0-con-011 - Unsupported Versions.

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| Test Case Id | SUPL-2.0-con-011 |
| Test Object | Client |
| Test Case Description | To test SET correctly rejects unsupported Version number in SUPL messages |
| Specification Reference | ULP TS 7,9,10 |
| SCR Reference | ULP-PRO-C-007-O, ULP-PRO-C-008-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="text-align: right;">Test 2: NOT ics_support_SUPLV1.0</p> |

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| <p>Test Procedure</p> | <p>Test 1: Higher Version not supported</p> <p>Test 2: Lower Version not supported. SUPL V1.0 not supported by SET [Includes optional features]</p> <p>Test 1: Higher Version not supported</p> <ol style="list-style-type: none"> 1. Start a NI Location Session 2. In the Common Part of all messages set: <ul style="list-style-type: none"> <input type="checkbox"/> Version to: <ul style="list-style-type: none"> o Maj set to a higher value than that supported by the SET o Min set to 0 o Serv ind set to 0 3. In SUPL INIT <ul style="list-style-type: none"> o Do not use Minimum Major version 4. The SET sends SUPL END with: <ul style="list-style-type: none"> o Status Code set to versionNotSupported o A correctly calculated Ver parameter. 5. The Location Session ends and the SET releases the secure IP connection. <p>Test 2: Lower Version not supported. SUPL V1.0 not supported by SET [Includes optional features]</p> <ol style="list-style-type: none"> 6. Start a NI Location Session 7. In the Common Part of all messages set: <ul style="list-style-type: none"> <input type="checkbox"/> Version to: <ul style="list-style-type: none"> o Maj set to 1 o Min set to 0 o Serv ind set to 0 8. The SET responds with SUPL END with: <ul style="list-style-type: none"> o Status Code set to versionNotSupported o A correctly calculated Ver parameter. 9. The Location Session ends and the SET releases the secure IP connection |
| <p>Pass-Criteria</p> | <p>Test 1 and 2:</p> <ol style="list-style-type: none"> 1. At step 4 and 9 the SET shall respond with SUPL END with: <ul style="list-style-type: none"> o Status Code set to versionNotSupported o A correctly calculated Ver parameter. 2. At step 5 and 9 the SET shall release the secure IP connection. |

5.1.1.11 SUPL-2.0-con-012 - Incorrect UDP message content [Includes optional features].

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| <p>Test Case Id</p> | <p>SUPL-2.0-con-012</p> |
| <p>Test Object</p> | <p>Client</p> |
| <p>Test Case Description</p> | <p>To test SET correctly rejects incorrect UDP message content</p> |
| <p>Specification Reference</p> | <p>ULP TS 8</p> |
| <p>SCR Reference</p> | <p>ULP-PIN-C-007-O</p> |

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| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: IP address of SET is known Applicability: <ul style="list-style-type: none"> • ics_UDP |
| Test Procedure | <ol style="list-style-type: none"> 1. Start a NI Location Session 2. Send SUPL INIT using: <ul style="list-style-type: none"> <input type="checkbox"/> UDP with: <ul style="list-style-type: none"> ▪ The port number set to some other value than oma-ulp 7275/ udp OMA User Plane Location Protocol 3. The SET does not respond. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 3 the SET shall not respond |

5.1.2 Notification and verification

5.1.2.1 SUPL-2.0-con-020 - No notification & no verification

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| Test Case Id | SUPL-2.0-con-020 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions No notification & no verification |
| Specification Reference | ULP TS 5.1 |
| SCR Reference | ULP-PRO-C-024-M |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: |
| Test Procedure | Repeat Test Procedure for the following Cases: Case 1: Notification not set Case 2: Notification set to No notification & no verification. <ol style="list-style-type: none"> 1. Start a NI Location Session 2. In SUPL INIT: <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: Do not set Notification <input type="checkbox"/> Case 2: Set Notification to No notification & no verification. <input type="checkbox"/> In both cases do not set Notification Mode 3. The SET sends SUPL POS INIT 4. The Location Session completes successfully. 5. There is no indication or notification of the Location Session to the User on the SET |

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| Pass-Criteria | Case 1 and Case 2: 1. At step 4 the Location Session shall complete successfully 2. At step 5 there shall be no indication or notification of the Location Session to the User on the SET |
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5.1.2.2 SUPL-2.0-con-021 - Notification only

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| Test Case Id | SUPL-2.0-con-021 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions Notification only |
| Specification Reference | ULP TS 5.1 |
| SCR Reference | ULP-PRO-C-024-M |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: |
| Test Procedure | 1. Start a NI Location Session 2. In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Notification to Notification only <input type="checkbox"/> Do not set Encoding type <input type="checkbox"/> Do not set RequestorID <input type="checkbox"/> Do not set ClientName <input type="checkbox"/> Do not set Notification Mode 3. The SET sends SUPL POS INIT 4. The Location Session completes successfully. 5. There is some form of indication or notification of the Location Session to the User on the SET |
| Pass-Criteria | 1. At step 4 the Location Session shall complete successfully 2. At step 5 there shall be some form of notification of the Location Session to the User on the SET. |

5.1.2.3 SUPL-2.0-con-022 - Notification and verification

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| Test Case Id | SUPL-2.0-con-022 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions Notification and verification |
| Specification Reference | ULP TS 5.1 |
| SCR Reference | ULP-PRO-C-024-M |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: ixit_verification_timeout |

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| Test Procedure | <p>Repeat Test Procedure for the following Cases:</p> <p>Case 1: Notification and verification: Allowed on no answer. User accepts. Case 2: Notification and verification: Allowed on no answer. User denies. Case 3: Notification and verification: Allowed on no answer. No response. Case 4: Notification and verification: Denied on no answer. User accepts. Case 5: Notification and verification: Denied on no answer. User denies. Case 6: Notification and verification: Denied on no answer. No response.</p> <ol style="list-style-type: none"> 1. Start a NI Location Session 2. In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Notification to: <ul style="list-style-type: none"> <input type="checkbox"/> Cases 1 to 3: Notification and verification (Allowed on no answer) <input type="checkbox"/> Cases 4 to 6: Notification and verification (Denied on no answer) <input type="checkbox"/> Do not set Encoding type <input type="checkbox"/> Do not set RequestorID <input type="checkbox"/> Do not set ClientName <input type="checkbox"/> Do not set Notification Mode 3. The SET sends SUPL POS INIT 4. There is a Location attempt prompt on the SET <p>Cases 1 and 4: User accepts.</p> <ol style="list-style-type: none"> 5. The user accepts the Location attempt prompt before the internal SET timer expires (value is dependant on ixit_verification_timeout) 6. The Location Session completes successfully. <p>Cases 2 and 5: User rejects.</p> <ol style="list-style-type: none"> 7. The user rejects the Location attempt prompt before the internal SET timer expires (value is dependant on ixit_verification_timeout) 8. The SET sends SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code set to consentDeniedByUser <input type="checkbox"/> A correctly calculated Ver parameter. 9. The Location Session ends and the SET releases the secure IP connection. <p>Case 3: No response.</p> <ol style="list-style-type: none"> 10. The user performs no action to the Location attempt prompt and the internal SET timer expires (value is dependant on ixit_verification_timeout) 11. The Location Session completes successfully. <p>Case 6. No response.</p> <ol style="list-style-type: none"> 12. The user performs no action to the Location attempt prompt and the internal SET timer expires (value is dependant on ixit_verification_timeout) 13. The SET sends SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code set to consentDeniedByUser <input type="checkbox"/> A correctly calculated Ver parameter. 14. The Location Session ends and the SET releases the secure IP connection. |
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| Pass-Criteria | <p>All Cases:</p> <ol style="list-style-type: none"> 1. At step 4 there shall be a Location attempt prompt on the SET <p>Case 1, Case 4:</p> <ol style="list-style-type: none"> 2. At step 6 the Location Session shall complete successfully <p>Case 3:</p> <ol style="list-style-type: none"> 3. At step 11 the Location Session shall complete successfully <p>Case 2, Case 5:</p> <ol style="list-style-type: none"> 4. At step 8 the SET shall respond with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code set to consentDeniedByUser <input type="checkbox"/> A correctly calculated Ver parameter. 5. At step 9 the SET shall release the secure IP connection. <p>Case 6:</p> <ol style="list-style-type: none"> 6. At step 13 the SET shall respond with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code set to consentDeniedByUser <input type="checkbox"/> A correctly calculated Ver parameter. 7. At step 14 the SET shall release the secure IP connection. |
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5.1.2.4 SUPL-2.0-con-023 - Privacy override

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| Test Case Id | SUPL-2.0-con-023 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions Privacy override |
| Specification Reference | ULP TS 5.1 |
| SCR Reference | ULP-PRO-C-024-M |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> |
| Test Procedure | <ol style="list-style-type: none"> 1. Start a NI Location Session 2. In SUPL INIT: <ul style="list-style-type: none"> <input type="checkbox"/> Set Notification to Privacy override <input type="checkbox"/> Do not set Notification Mode 3. The SET sends SUPL POS INIT 4. The Location Session completes successfully. 5. There is no indication or notification of the Location Session to the User on the SET. There shall be no trace of the Location Session in log files etc. on the SET. |

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| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 4 the Location Session shall complete successfully 2. At step 5 there shall be no indication or notification of the Location Session to the User on the SET 3. At step 5 there shall be no record or indication of the Location Session in any SET log files or other debug information (implementation specific) |
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5.1.2.5 SUPL-2.0-con-024 - Requestor ID and Client Name

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| Test Case Id | SUPL-2.0-con-024 |
| Test Object | Client |
| Test Case Description | To test SET correctly displays or uses Requestor ID and Client Name |
| Specification Reference | ULP TS 5.1 |
| SCR Reference | ULP-PRO-C-024-M |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: |
| Test Procedure | Repeat Test Procedure for the following Cases: Case 1: Encoding type ucs2 Case 2: Encoding type gsm-default Case 3: Encoding type UTF-8 <ol style="list-style-type: none"> 1. Start a NI Location Session 2. In SUPL INIT: <ul style="list-style-type: none"> <input type="checkbox"/> Set Notification to Notification only <input type="checkbox"/> Set Encoding type to: <ul style="list-style-type: none"> o Case 1: ucs2 o Case 2: gsm-default o Case 3: UTF-8 <input type="checkbox"/> Set RequestorType to the first value in the table below <input type="checkbox"/> Set RequestorID to some suitable string, with the string being the maximum possible length up to 50 Octets <input type="checkbox"/> Set ClientName to the first value in the table below <input type="checkbox"/> Set ClientName to some suitable string, with the string being the maximum possible length up to 50 Octets <input type="checkbox"/> Do not set Notification Mode 3. The SET sends SUPL POS INIT 4. The SET displays or uses the Requestor ID and the Client Name set in step 2 5. The Location Session completes successfully. 6. Repeat step 1 to step 5 with: <ul style="list-style-type: none"> <input type="checkbox"/> RequestorType set to the next value in the table below. <input type="checkbox"/> ClientNameType set to the next value in the table below. 7. Repeat step 6 for all remaining values in the table below. |

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| Pass-Criteria | All Cases: 1. At step 4 the SET shall correctly display or use: <ul style="list-style-type: none"> <input type="checkbox"/> Requestor ID set in step 2 <input type="checkbox"/> Client Name set in step 2 2. At step 5 the Location Session shall complete successfully. |
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| Value # | Requestor Types and Client Name Types |
|---------|---------------------------------------|
| Value 1 | Logical name |
| Value 2 | MSISDN |
| Value 3 | E-mail address |
| Value 4 | URL |
| Value 5 | SIP URL |
| Value 6 | IMS public identity |
| Value 7 | MIN |
| Value 8 | MDN |

Table 2: Requestor Types and Client Name Types

5.1.2.6 SUPL-2.0-con-025 - Notification and verification based on current location [Includes optional features]

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| Test Case Id | SUPL-2.0-con-025 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions Notification and verification based on current location |
| Specification Reference | ULP TS 5.1.12, 5.1.16.4, 8, 9 |
| SCR Reference | ULP-PRO-C-029-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: ics_notification_currentLocation ixit: ixit_verification_timeout |

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| Test Procedure | <p>Test 1: User accepts the verification</p> <p>Test 2: User denies the verification</p> <p>Note that this test case only covers two conditions for Notification and Verification. It is assumed that the other conditions are fully tested in the Notification and Verification test cases.</p> <p>Test 1: User accepts the verification</p> <ol style="list-style-type: none"> 1. Start a NI Location Session 2. In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to any method supported by the SET that requires a SUPL POS session <input type="checkbox"/> Notification Mode to Notification/Verification based on location <input type="checkbox"/> Do not use Notification 3. The SUPL POS session completes 4. Send SUPL NOTIFY with: <ul style="list-style-type: none"> <input type="checkbox"/> Notification set to Notification and verification (Allowed on no answer) <input type="checkbox"/> Do not use Encoding type, RequestorID and ClientName 5. The user accepts the Location attempt prompt before the internal SET timer expires (value is implementation specific, defined by <code>ixit_verification_timeout</code>) 6. The SET sends SUPL NOTIFY RESPONSE with: <ul style="list-style-type: none"> <input type="checkbox"/> Notification Response set to allowed 7. Send SUPL END 8. The SET releases the secure IP connection. <p>Test 2: User denies the verification</p> <ol style="list-style-type: none"> 9. Start a NI Location Session 10. In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to any method supported by the SET that requires a SUPL POS session <input type="checkbox"/> Notification Mode to Notification/Verification based on location <input type="checkbox"/> Do not use Notification 11. The SUPL POS session completes 12. Send SUPL NOTIFY with: <ul style="list-style-type: none"> <input type="checkbox"/> Notification set to Notification and verification (Denied on no answer) <input type="checkbox"/> Do not use Encoding type, RequestorID and ClientName 13. The user denies the Location attempt prompt before the internal SET timer expires (value is implementation specific defined by <code>ixit_verification_timeout</code>) 14. The SET sends SUPL NOTIFY RESPONSE with: <ul style="list-style-type: none"> <input type="checkbox"/> Notification Response set to not allowed 15. Send SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> status code set to <code>consentDeniedByUser</code> 16. The SET releases the secure IP connection. |
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| Pass-Criteria | <p>Test 1:</p> <ol style="list-style-type: none"> 1. At step 4 there shall be a Location attempt prompt on the SET 2. At step 6 the SET shall send SUPL NOTIFY RESPONSE with: <ul style="list-style-type: none"> □ Notification Response set to allowed 3. At step 8 the SET shall release the secure IP connection. <p>Test 2:</p> <ol style="list-style-type: none"> 4. At step 12 there shall be a Location attempt prompt on the SET 5. At step 14 the SET shall send SUPL NOTIFY RESPONSE with: <ul style="list-style-type: none"> □ Notification Response set to not allowed 6. At step 16 the SET shall release the secure IP connection. |
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5.1.3 Single sessions

5.1.3.1 SUPL-2.0-con-030 - Positioning method [Includes optional features].

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| Test Case Id | SUPL-2.0-con-030 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions single session Positioning method |
| Specification Reference | ULP TS 5.1.1, 8, 9 |
| SCR Reference | ULP-PRO-C-007-O, ULP-PRO-C-011-M, ULP-PRO-C-012-O, ULP-PRO-C-013-O, ULP-PRO-C-014-O, ULP-PRO-C-015-O, ULP-PRO-C-016-O, ULP-PRO-C-018-O, ULP-PRO-C-020-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p>Test 1: ics_AGPSSSETassisted_Network_initiated</p> <p>Test 2: ics_AGPSSSETbased_Network_initiated</p> <p>Test 3: ics_autonomousGPS_Network_initiated</p> <p>Test 4: ics_eCID_Network_initiated</p> <p>Test 5: NOT ics_eCID_Network_initiated</p> <p>Test 6: ics_AGANSSSETassisted_Galileo_Network_initiated</p> <p>Test 7: ics_AGANSSSETassisted_GLONASS_Network_initiated</p> <p>Test 8: ics_AGANSSSETbased_Galileo_Network_initiated</p> <p>Test 9: ics_AGANSSSETbased_GLONASS_Network_initiated</p> <p>Test 10: ics_autonomousGANSS_Network_initiated</p> <p>Test 11: ics_AGPSSSETassisted_Network_initiated AND ics_AGPSSSETbased_Network_initiated</p> <p>Test 12: (ics_AGANSSSETassisted_Galileo_Network_initiated AND ics_AGANSSSETbased_Galileo_Network_initiated) OR (ics_AGANSSSETassisted_GLONASS_Network_initiated AND ics_AGANSSSETbased_GLONASS_Network_initiated)</p> <p>Test 13: ics_OTDOA_Network_initiated</p> <p>ixit:</p> <p>Test 10, Test 12: ixit_gANSS</p> |

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| Test Procedure | <p>Test 1: A-GPS SET assisted [Includes optional features] Test 2: A-GPS SET based [Includes optional features] Test 3: Autonomous GPS [Includes optional features] Test 4: Enhanced Cell ID [Includes optional features] Test 5: Cell ID Test 6: A-GANSS SET assisted –Galileo [Includes optional features] Test 7: A-GANSS SET assisted –GLONASS [Includes optional features] Test 8: A-GANSS SET based –Galileo [Includes optional features] Test 9: A-GANSS SET based –GLONASS [Includes optional features] Test 10: Autonomous GANSS [Includes optional features] Test 11: A-GPS Preferred methods [Includes optional features] Test 12: A-GANSS Preferred methods [Includes optional features] Test 13: OTDOA [Includes optional features]</p> <p>Note that tests 11 and 12 only test the case where the SET supports both SET assisted and SET based modes. The cases where the SET supports only one of these modes are covered by test cases in the SUPL 1.0 ETS and could be added here if found useful.</p> <p>Note that these test cases only test a single GNSS at one time. Testing of support for multiple simultaneous GNSSs is for further study.</p> <ol style="list-style-type: none"> 1. All tests: start a NI Location Session 2. In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to the value specified in the table below <input type="checkbox"/> GNSS Positioning Technology to the value specified in the table below 3. The SET sends SUPL POS INIT with: <ul style="list-style-type: none"> <input type="checkbox"/> SET capabilities parameter consistent with the Positioning technologies supported by the SET as declared in the ics <input type="checkbox"/> Test 4 only: Location ID, Cell info, the following parameters: NMR and/or TA if testing using GSM, Measured Results List if testing using WCDMA, Measured Results List EUTRA if testing using LTE. 4. Test 4 and Test 5: send SUPL END 5. All tests except Test 4 and Test 5: <ul style="list-style-type: none"> <input type="checkbox"/> A SUPL POS session takes place and completes successfully using the Positioning Method defined by the test case. <p>Test 3 and Test 10:</p> <ul style="list-style-type: none"> <input type="checkbox"/> No Assistance Data is sent. <p>Test 10: one of Galileo or GLONASS can be used depending on the technology supported by the SET and declared in <code>ixit_gANSS</code>.</p> <p>Test 11, Case 1:</p> <ul style="list-style-type: none"> <input type="checkbox"/> A-GPS SET assisted is used. <p>Test 11, Case 2:</p> <ul style="list-style-type: none"> <input type="checkbox"/> A-GPS SET based is used. <p>Test 12, Case 1:</p> <ul style="list-style-type: none"> <input type="checkbox"/> A-GANSS SET assisted is used. The GANSS used can be one of Galileo or GLONASS depending on the technology supported by the SET and declared in <code>ixit_gANSS</code>. |
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| | <p>Test 12, Case 2:</p> <ul style="list-style-type: none"> <input type="checkbox"/> A-GANSS SET based is used. The GANSS used can be one of Galileo or GLONASS depending on the technology supported by the SET and declared in <code>ixit_gANSS</code>. <p>6. All tests except Test 4 and Test 5: send SUPL END</p> <p>7. All tests: the SET releases the secure IP connection.</p> <p>Note: Repeat for all Positioning technologies supported by the SET as declared in the ics</p> |
| <p>Pass-Criteria</p> | <p>All tests:</p> <p>1. At step 3 the SET shall respond with SUPL POS INIT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> SET capabilities parameter consistent with the Positioning technologies supported by the SET as declared in the ics <p>Test 4:</p> <p>2. At step 3 the SET shall respond with SUPL POS INIT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Location ID, Cell info, the following parameters: NMR and/or TA if testing using GSM, Measured Results List if testing using WCDMA, Measured Results List EUTRA if testing using LTE. <p>All tests except Test 4 and Test 5:</p> <p>3. At step 5 a SUPL POS session shall take place and shall complete successfully using the Positioning Method defined by the test case.</p> <p>Test 10: one of Galileo or GLONASS can be used depending on the technology supported by the SET and declared in <code>ixit_gANSS</code>.</p> <p>Test 11, Case 1: A-GPS SET assisted shall be used.</p> <p>Test 11, Case 2: A-GPS SET based shall be used.</p> <p>Test 12, Case 1: A-GANSS SET assisted shall be used. The GANSS used can be one of Galileo or GLONASS depending on the technology supported by the SET and declared in <code>ixit_gANSS</code>.</p> <p>Test 12, Case 2: A-GANSS SET based shall be used. The GANSS used can be one of Galileo or GLONASS depending on the technology supported by the SET and declared in <code>ixit_gANSS</code>.</p> <p>Test 13: OTDOA shall be used.</p> |

| Test # | Value of Positioning Method | Value of GNSS Positioning Technology |
|---------|-----------------------------|--------------------------------------|
| Test 1 | A-GPS SET assisted only | Not set |
| Test 2 | A-GPS SET based only | Not set |
| Test 3 | Autonomous GPS | Not set |
| Test 4 | Enhanced Cell / sector | Not set |
| Test 5 | Enhanced Cell / sector | Not set |
| Test 6 | A-GNSS SET assisted only | Galileo |
| Test 7 | A-GNSS SET assisted only | GLONASS |
| Test 8 | A-GNSS SET based only | Galileo |
| Test 9 | A-GNSS SET based only | GLONASS |
| Test 10 | Autonomous GNSS | Not set |

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| Test 11 | Case 1: A-GPS SET assisted preferred (A-GPS SET based is the fallback mode) Case 2: A-GPS SET based preferred (A-GPS SET assisted is the fallback mode) | Not set |
| Test 12 | Case 1: A-GNSS SET assisted preferred (A-GANSS SET based is the fallback mode) Case 2: A-GNSS SET based preferred (A-GANSS SET assisted is the fallback mode) | Galileo or GLONASS |
| Test 13 | OTDOA | Not set |

Table 3: Positioning Method and GNSS Positioning Technology

5.1.3.2 SUPL-2.0-con-031 - No Position

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| Test Case Id | SUPL-2.0-con-031 |
| Test Object | Client |
| Test Case Description | To test SET correctly responds if No Position is signalled by the SLP. |
| Specification Reference | ULP TS 5.1, 8, 9 |
| SCR Reference | ULP-PRO-C-026-M |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: |
| Test Procedure | Note that this test case only covers basic functionality for Notification and Verification. It is assumed that the other Notification and Verification conditions are fully tested in the Notification and Verification test cases. 1. Start a NI Location Session 2. In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to No Position <input type="checkbox"/> Notification to Notification only 3. The SET sends SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Correctly calculated Ver parameter <input type="checkbox"/> No Status Code 4. There is some form of indication or notification of the Location Session to the User on the SET 5. The Location Session ends and the SET releases the secure IP connection |
| Pass-Criteria | 1. At step 3 the SET shall respond with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Correctly calculated Ver parameter <input type="checkbox"/> No Status Code 2. At step 4 there shall be some form of notification of the Location Session to the User on the SET. 3. At step 5 the SET shall release the secure IP connection |

5.1.3.3 SUPL-2.0-con-033 - Emergency Services Location Requests

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| Test Case Id | SUPL-2.0-con-033 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions Emergency Services Location Requests |
| Specification Reference | ULP TS 5.1.15, 8, 9 |
| SCR Reference | ULP-PRO-C-034-M |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p>ixit: ixit_emergency_call_required</p> |
| Test Procedure | <p>Case 1: E-SLP address sent in SUPL INIT</p> <p>Case 2: Use of provisioned H-SLP address</p> <p>Case 3: Use of default E-SLP address.</p> <ol style="list-style-type: none"> If required (determined by ixit_emergency_call_required) set up an emergency call from the SET. Note that this step is outside the scope of SUPL and SUPL testing, but may be required. Start a NI Emergency Services Location Session In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to Enhanced Cell / sector <input type="checkbox"/> Notification to: <ul style="list-style-type: none"> ▪ Notification type: No notification & no verification ▪ Set: Emergency Call Location <input type="checkbox"/> E-SLP address to: <ul style="list-style-type: none"> ▪ Case 1: SLP Address type set to FQDN with a suitable FQDN value that is different from the H-SLP address used for other testing Case 2 and Case 3: E-SLP address not set 4. The SET sends a DNS Query to resolve the FQDN of the SLP <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: Query includes the E-SLP FQDN used in step 3 (Case 1) <input type="checkbox"/> Case 2: Query includes the normal H-SLP FQDN provisioned in the SET, or may not be sent if the SET has previously resolved the normal H-SLP FQDN. <input type="checkbox"/> Case 3: Query includes the Default E-SLP FQDN (“e-slp.mnc<MNC>.mcc<MCC>.pub.3gppnetwork.org” where MCC and MNC correspond to the network being simulated). In this case the SET must not be provisioned with an H-SLP address in the UICC. 5. Send a DNS response to the SET 6. The SET establishes a secure session with the SLP and sends SUPL POS INIT. 7. Send SUPL END |

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| | <p>8. The SET releases the secure IP connection.</p> <p>9. If an emergency call was set up in step 1, release the emergency call.</p> <p>10. Repeat for all Cases.</p> |
| Pass-Criteria | <p>1. At step 4 the SET shall send a DNS Query to resolve the FQDN of the SLP</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: Query shall include the E-SLP FQDN used in step 3 (Case 1) <input type="checkbox"/> Case 2: If sent, Query shall include the normal H-SLP FQDN provisioned in the SET, or may not be sent. <input type="checkbox"/> Case 3: Query shall include the Default E-SLP FQDN (“e-slp.mnc<MNC>.mcc<MCC>.pub.3gppnetwork.org” where MCC and MNC correspond to the network being simulated). <p>2. At step 6 the SET shall establish a secure session with the SLP and send SUPL POS INIT.</p> |

5.1.3.4 SUPL-2.0-con-034 - Emergency Services Location Request – Interaction with normal SUPL session

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| Test Case Id | SUPL-2.0-con-034 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions an Emergency Services Location Request when a normal SUPL session is also active |
| Specification Reference | ULP TS 6.1.5 |
| SCR Reference | ULP-PRO-C-034-M |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p>ixit: ixit_emergency_call_required</p> <p> ixit_verification_timeout</p> |
| Test Procedure | <p>Case 1: Normal SUPL session already in progress before Emergency SUPL session</p> <p>Case 2: Normal SUPL session attempted during Emergency SUPL session</p> <p>Case 1: Normal SUPL session already in progress before Emergency SUPL session</p> <ol style="list-style-type: none"> 1. Start a normal NI Location Session 2. In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to Enhanced Cell / sector <input type="checkbox"/> Notification to: <ul style="list-style-type: none"> ▪ Notification type: Notification and verification, Allowed on no answer 3. The SET displays the Notification and prompts the User for Verification 4. (Do not respond to the Verification prompt.) 5. If required (determined by ixit_emergency_call_required) set up an emergency call from the SET. Note that this step is outside the scope of SUPL and SUPL testing, but may be required. Editor’s note: It is not clear if |

this will always be possible from the GUI of the SET – for further consideration.

6. Immediately start a NI Emergency Services Location Session

7. In SUPL INIT set:

- In Session ID, a different SLP Session ID from that used in step 1.
- Positioning Method to Enhanced Cell / sector
- Notification to:
 - Notification type: No notification & no verification
 - Set: Emergency Call Location
- E-SLP address to:
 - Not set (equivalent to using the H-SLP address)

8. The SET aborts the normal SUPL session initiated in step 1 and the Notification display and the Verification prompt are removed

9. The SET sends SUPL POS INIT in response to the Emergency Services session with:

- In Session ID, SLP Session ID from step 7.

10. Send SUPL END with:

- In Session ID use SLP Session ID from step 7

11. The SET releases the secure IP connection.

12. If an emergency call was set up in step 5, release the emergency call.

13. After step 11 (or step 12 if used) wait for a length of time equivalent to the Verification timeout in the SET, determined by `ixit_verification_timeout`, plus two seconds and monitor any SUPL messages sent by the SET.

14. Perform Case 2.

Case 2: Normal SUPL session attempted during Emergency SUPL session

15. If required (determined by `ixit_emergency_call_required`) set up an emergency call from the SET. Note that this step is outside the scope of SUPL and SUPL testing, but may be required.

16. Start a NI Emergency Services Location Session

17. In SUPL INIT set:

- Positioning Method to Enhanced Cell / sector
- Notification to:
 - Notification type: Notification and verification, Allowed on no answer
 - Set: Emergency Call Location
- E-SLP address to:
 - Not set (equivalent to using the H-SLP address)

18. The SET displays the Notification and prompts the User for Verification

19. (Do not respond to the Verification prompt.)

20. Immediately start a normal NI Location Session

21. In SUPL INIT set:

- In Session ID, a different SLP Session ID from that used in step 17.
- Positioning Method to Enhanced Cell / sector
- Notification to:
 - Notification type: No notification & no verification

22. (The SET ignores the SUPL INIT sent in step 21.)

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| | <p>23. Accept the Verification prompt from step 18.</p> <p>24. The SET sends SUPL POS INIT in response to the Emergency Services session with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> In Session ID, SLP Session ID from step 17. <p>25. Send SUPL END with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> In Session ID , use SLP Session ID from step 17 <p>26. The SET releases the secure IP connection.</p> <p>27. If an emergency call was set up in step 15, release the emergency call.</p> <p>28. After step 26 (or step 27 if used) wait for a length of time equivalent to the Verification timeout in the SET, determined by <code>ixit_verification_timeout</code>, plus two seconds and monitor any SUPL messages sent by the SET.</p> |
| Pass-Criteria | <p>Case 1.</p> <p>1. At step 8 the SET shall remove the Notification display and the Verification prompt.</p> <p>2. From step 6 until the end of step 13 there shall be no SUPL messages sent by the SET with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> In Session ID, the SLP Session ID used in step 1. <p>3. At step 9 the SET shall send SUPL POS INIT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> In Session ID, the SLP Session ID from step 7. <p>Case 2.</p> <p>4. At step 24 the SET shall send SUPL POS INIT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> In Session ID, the SLP Session ID from step 17. <p>5. From step 21 until the end of step 28 there shall be no SUPL messages sent by the SET with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> In Session ID, the SLP Session ID used in step 21. |

5.1.3.5 SUPL-2.0-con-035 - Retrieval of historical positions [Includes optional features].

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| Test Case Id | SUPL-2.0-con-035 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions Retrieval of historical positions |
| Specification Reference | ULP TS 5.1.13, 8, 9, 10 |
| SCR Reference | ULP-PRO-C-035-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="padding-left: 40px;"><code>ics_historic_reporting</code></p> |
| Test Procedure | <p>Case 1: Position estimates only</p> <p>Case 2: Enhanced cell/sector measurements only</p> <p>Case 3: Both position estimates and enhanced cell/sector measurements</p> <p>1. Ensure the SET has performed and stored at least one SET-based location session and at least one cell/sector measurement at some time before this test</p> |

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| | <p>is initiated. If necessary perform one SET-based location session using default parameters and a SET-based positioning method such as A-GPS. If necessary perform one cell/sector measurement using default parameters and ECID as the positioning method. The conditions under which these measurements are stored is outside the scope of SUPL.</p> <p>2. Start a Retrieval of historic positions session.</p> <p>3. In SUPL INIT set:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to Historical Data Retrieval <input type="checkbox"/> Historic Reporting, Allowed Reporting Type to: <ul style="list-style-type: none"> o Case 1: Position estimates only o Case 2: Enhanced cell/sector measurements only o Case 3: Both position estimates and enhanced cell/sector measurements <p>4. The SET sends SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> From 1 to 1024 sets of Report Data with: <ul style="list-style-type: none"> o Case 1: Position Data only, with a Timestamp and a Position Estimate o Case 2: <ul style="list-style-type: none"> ▪ Multiple Location Ids only, with one or more sets of Location ID and Serving Cell Flag ▪ Timestamp o Case 3: Either: <ul style="list-style-type: none"> ▪ Both Position Data, with a Timestamp and a Position Estimate, and Multiple Location Ids, with one or more sets of Location ID and Serving Cell Flag Or: <ul style="list-style-type: none"> ▪ Result Code set to No Position and no measurement if the SET has deleted all data during the running of Case 1 and Case 2. This behaviour is outside the scope of SUPL. ▪ Timestamp <input type="checkbox"/> Ver: correctly calculated <input type="checkbox"/> More Components not set <p>5. The SET releases the secure IP connection.</p> <p>6. Repeat for all Cases.</p> |
| <p>Pass-Criteria</p> | <p>1. At step 4 the SET shall send SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> From 1 to 1024 sets of Report Data with: <ul style="list-style-type: none"> o Case 1: Position Data only, with a Timestamp and a Position Estimate o Case 2: <ul style="list-style-type: none"> ▪ Multiple Location Ids only, with one or more sets of Location ID and Serving Cell Flag ▪ Timestamp o Case 3: Either: <ul style="list-style-type: none"> ▪ Both Position Data, with a Timestamp and a Position Estimate, and Multiple Location Ids, with one or more sets of Location ID and Serving Cell Flag Or: |

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| | <ul style="list-style-type: none"> ▪ Result Code set to No Position and no measurement if the SET has deleted all data during the running of Case 1 and Case 2. ▪ Timestamp <ul style="list-style-type: none"> <input type="checkbox"/> Ver: correctly calculated <input type="checkbox"/> More Components not set <p>2. At step 5 the SET shall release the secure IP connection.</p> |
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5.1.4 Triggered Services: Periodic Triggers

5.1.4.1 SUPL-2.0-con-040 - Real Time reporting [Includes optional features]

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| Test Case Id | SUPL-2.0-con-040 |
| Test Object | Client |
| Test Case Description | To test SET correctly performs Real Time Periodic reporting |
| Specification Reference | ULP TS 5.1.7 |
| SCR Reference | ULP-PRO-C-032-O, ULP-PRO-C-046-O,, |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="padding-left: 40px;">Test 1: ics_real_time AND ics_periodic_Network_initiated AND ics_AGPSSETassisted_Network_initiated</p> <p style="padding-left: 40px;">Test 2: ics_real_time AND ics_periodic_Network_initiated AND ics_AGPSSETbased_Network_initiated</p> |
| Test Procedure | <p>Test 1: A-GPS SET assisted</p> <p>Test 2: A-GPS SET based</p> <p>Test 1: A-GPS SET assisted:</p> <ol style="list-style-type: none"> 1. Start a NI Periodic Location Session 2. In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to A-GPS SET assisted <input type="checkbox"/> Trigger Type set to Periodic 3. The SET responds with SUPL TRIGGERED START with: <ul style="list-style-type: none"> <input type="checkbox"/> The details of the Reporting Capability parameter consistent with the known reporting capabilities supported by the SET. <input type="checkbox"/> The details of the Services Supported and the Reporting Capabilities parameters in the Services Capabilities parameter in the SET Capabilities are consistent with the known reporting capabilities supported by the SET. 4. Send SUPL TRIGGERED RESPONSE with: <ul style="list-style-type: none"> <input type="checkbox"/> Trigger Params set to Periodic Params with: <ul style="list-style-type: none"> o Number of Fixes: 50 o Interval Between Fixes: 60 or equal to “minimum interval between fixes” received in Reporting Capability if greater |

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| | <p>than 60</p> <ul style="list-style-type: none"> ○ Start Time: 30 <p>[Editors note: these values are just place-holders, we may wish to change these values after further study]</p> <ul style="list-style-type: none"> □ Do not set Reporting Mode (this is equivalent to Real Time reporting) <p>Note that the SET may release the secure connection at this point.</p> <p>5. After approximately 30 seconds (set by Start Time) the SET responds with SUPL POS INIT and a SUPL POS session takes place</p> <p>6. The SUPL POS Session completes successfully</p> <p>7. Send SUPL REPORT with no parameters.</p> <p>Note that the SET may release the secure connection at this point.</p> <p>8. After approximately 60 seconds after the SET sends SUPL POS INIT in step 5 (set by Interval Between Fixes) the SET responds with SUPL POS INIT and a SUPL POS session takes place</p> <p>9. The SUPL POS Session completes successfully</p> <p>10. Send SUPL REPORT with no parameters.</p> <p>Note that the SET may release the secure connection at this point.</p> <p>11. Steps 8 through 10 are repeated until the remaining number of fixes (the total number is set by Number of Fixes) have been received.</p> <p>12. Send SUPL END</p> <p>Test 2: A-GPS SET based:</p> <p>13. Start a NI Periodic Location Session</p> <p>14. In SUPL INIT set:</p> <ul style="list-style-type: none"> □ Positioning Method to A-GPS SET based □ Trigger Type set to Periodic <p>15. The SET responds with SUPL TRIGGERED START with:</p> <ul style="list-style-type: none"> □ The details of the Reporting Capability parameter consistent with the known reporting capabilities supported by the SET. □ The details of the Services Supported and the Reporting Capabilities parameters in the Services Capabilities parameter in the SET Capabilities are consistent with the known reporting capabilities supported by the SET. <p>16. Send SUPL TRIGGERED RESPONSE with:</p> <ul style="list-style-type: none"> □ Trigger Params set to Periodic Params with: <ul style="list-style-type: none"> ○ Number of Fixes: 50 ○ Interval Between Fixes: 60 or equal to “minimum interval between fixes” received in Reporting Capability if greater than 60 ○ Start Time: 30 <p>[Editors note: these values are just place-holders, we may wish to change these values after further study]</p> <ul style="list-style-type: none"> □ Do not set Reporting Mode (this is equivalent to Real Time reporting) <p>Note that the SET may release the secure connection at this point.</p> <p>17. At any time during the following part of the test when the SET is required to make a position estimate, if the SET requires Assistance Data, then:</p> |
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| | <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT <input type="checkbox"/> A SUPL POS session takes place and completes successfully <input type="checkbox"/> Send SUPL REPORT with no parameters. <p>In this case this procedure replaces the procedure detailed in the relevant step below.</p> <p>18. After approximately 30 seconds (set by Start Time): The SET sends SUPL REPORT with the position estimate</p> <p>Note that the SET may release the secure connection at this point.</p> <p>19. After approximately 60 seconds (set by Interval Between Fixes):</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET sends SUPL REPORT with the position estimate. <p>Note that the SET may release the secure connection at this point.</p> <p>20. Step 19 is repeated until theremaining number of fixes (the total number is set by Number of Fixes) have been received.</p> <p>21. Send SUPL END</p> |
| Pass-Criteria | <p>Test 1 and 2:</p> <ol style="list-style-type: none"> 1. At step 3 and step 15: <ul style="list-style-type: none"> <input type="checkbox"/> The details of the Reporting Capability parameter shall be consistent with the known Reporting capabilities supported by the SET. <input type="checkbox"/> The details of the Services Supported and the Reporting Capabilities parameters in the Services Capabilities parameter in the SET Capabilities shall be consistent with the known reporting capabilities supported by the SET. <p>Test 1:</p> <ol style="list-style-type: none"> 2. At step 6 and 9 the SUPL POS Session shall complete successfully the requested number of times. <p>Test 2:</p> <ol style="list-style-type: none"> 3. At step 18 and 19 the SET shall send SUPL REPORT with the position estimate the requested number of times. If step 17 occurs, then the position estimate shall be sent in the SUPL POS session instead. |

5.1.4.2 SUPL-2.0-con-041 - Basic Quasi Real Time reporting [Includes optional features]

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| Test Case Id | SUPL-2.0-con-041 |
| Test Object | Client |
| Test Case Description | To test SET correctly performs basic Quasi Real Time Periodic reporting |
| Specification Reference | ULP TS 5.1.7 |
| SCR Reference | ULP-PRO-C-032-O,, ULP-PRO-C-047-O,, |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |

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| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p>Test 1: ics_quasi_real_time AND ics_periodic_Network_initiated AND ics_AGPSSETassisted_Network_initiated AND ics_SETbased_in_quasi_real_time</p> <p>Test 2: ics_quasi_real_time AND ics_periodic_Network_initiated AND ics_AGPSSETbased_Network_initiated</p> |
| Test Procedure | <p>Test 1: A-GPS SET assisted</p> <p>Test 2: A-GPS SET based</p> <p>Test 1: A-GPS SET assisted</p> <p>Note that this test depends on the SET using either Autonomous GPS or SET based A-GPS during the period that it is out of contact with the SLP. In this case the SET must receive or have received current Assistance Data before step 11. [Editor's note: the method for providing this Assistance Data may need to be specified after further study]</p> <ol style="list-style-type: none"> 1. Start a NI Periodic Location Session 2. In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to A-GPS SET assisted <input type="checkbox"/> Trigger Type set to Periodic 3. The SET responds with SUPL TRIGGERED START with: <ul style="list-style-type: none"> <input type="checkbox"/> The details of the Reporting Capability parameter are consistent with the known reporting capabilities supported by the SET. <input type="checkbox"/> The details of the Services Supported and the Reporting Capabilities parameters in the Services Capabilities parameter in the SET Capabilities are consistent with the known reporting capabilities supported by the SET. 4. Send SUPL TRIGGERED RESPONSE with: <ul style="list-style-type: none"> <input type="checkbox"/> Trigger Params set to Periodic Params with: <ul style="list-style-type: none"> o Number of Fixes: 15 o Interval Between Fixes: 60 or equal to "minimum interval between fixes" received in Reporting Capability if greater than 60 o Start Time: 30 <p>[Editors note: these values are just place-holders, we may wish to change these values after further study]</p> <ul style="list-style-type: none"> <input type="checkbox"/> Reporting Mode set to: <ul style="list-style-type: none"> o Rep Mode to Quasi real time o Batch Report Type with: <ul style="list-style-type: none"> ▪ Position set to true ▪ Other values set to false <p>Note that the SET may release the secure connection at this point.</p> 5. After approximately 30 seconds (set by Start Time) the SET responds with SUPL POS INIT and a SUPL POS session takes place |

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| | <p>6. The SUPL POS Session completes successfully</p> <p>7. Send SUPL REPORT with no parameters.</p> <p>Note that the SET may release the secure connection at this point.</p> <p>8. After approximately 60 seconds after the SET sends SUPL POS INIT in step 5 (set by Interval Between Fixes) the SET responds with SUPL POS INIT and a SUPL POS session takes place</p> <p>9. The SUPL POS Session completes successfully</p> <p>10. Send SUPL REPORT with no parameters.</p> <p>Note that the SET may release the secure connection at this point.</p> <p>11. Simulate a loss of communication with the H-SLP (Conformance Test Tool) such that the SET will detect a loss of lower layer communication with the SLP by, for example, heavily attenuating the RF signal to the SET.</p> <p>12. Wait for a time equivalent to 10 intervals between fixes (set by Interval Between Fixes) and then simulate re-established communication with the H-SLP (Conformance Test Tool) by, for example, restoring the RF signal to the SET.</p> <p>13. The SET sends SUPL REPORT with the stored position estimates. Note that this step depends on the SET having used either Autonomous GPS or SET based A-GPS in which case the SET must have received current Assistance Data before step 11. [Editor's note: the method for providing this Assistance Data may need to be specified after further study]</p> <p>14. At approximately the next 60 second interval (set by Interval Between Fixes) the SET responds with SUPL POS INIT and a SUPL POS session takes place</p> <p>15. The SUPL POS Session completes successfully</p> <p>16. Send SUPL REPORT with no parameters.</p> <p>17. Steps 14 through 16 are repeated until the remaining number of SUPL POS sessions (the total number is set by Number of Fixes) have been completed.</p> <p>18. Send SUPL END</p> <p>Test 2: A-GPS SET based:</p> <p>19. Start a NI Periodic Location Session</p> <p>20. In SUPL INIT set:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to A-GPS SET based <input type="checkbox"/> Trigger Type set to Periodic <p>21. The SET responds with SUPL TRIGGERED START with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The details of the Reporting Capability parameter consistent with the known reporting capabilities supported by the SET. <input type="checkbox"/> The details of the Services Supported and the Reporting Capabilities parameters in the Services Capabilities parameter in the SET Capabilities are consistent with the known reporting capabilities supported by the SET. <p>22. Send SUPL TRIGGERED RESPONSE with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Trigger Params set to Periodic Params with values as follows: <ul style="list-style-type: none"> o Number of Fixes: 15 o Interval Between Fixes: 60 or equal to "minimum interval between fixes" received in Reporting Capability if greater than 60 |
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- Start Time: 30

[Editors note: these values are just place-holders, we may wish to change these values after further study]

- Reporting Mode set to:
 - Rep Mode to Quasi real time
 - Batch Report Type with:
 - Position set to true
 - Other values set to false

Note that the SET may release the secure connection at this point.

23. At any time during the following part of the test when the SET is required to make a position estimate, if the SET requires Assistance Data, then:

- The SET responds with SUPL POS INIT
- A SUPL POS session takes place and completes successfully
- Send SUPL REPORT with no parameters.

In this case this procedure replaces the procedure detailed in the relevant step below.

24. After approximately 30 seconds (set by Start Time):

- The SET sends SUPL REPORT with the position estimate

Note that the SET may release the secure connection at this point.

25. After approximately 60 seconds (set by Interval Between Fixes):

- The SET sends SUPL REPORT with the position estimate.

Note that the SET may release the secure connection at this point.

26. Simulate a loss of communication with the H-SLP (Conformance Test Tool) such that the SET will detect a loss of lower layer communication with the SLP by, for example, heavily attenuating the RF signal to the SET.

27. Wait for a time equivalent to 10 intervals between fixes (set by Interval Between Fixes) and then simulate re-established communication with the H-SLP (Conformance Test Tool) by, for example, restoring the RF signal to the SET.

28. The SET sends SUPL REPORT with the stored position estimates. Note that this step depends on the SET having used either Autonomous GPS or SET based A-GPS which assumes the SET had current Assistance Data

29. At approximately the next 60 second interval (set by Interval Between Fixes):

- The SET sends SUPL REPORT with the position estimate.

Note that the SET may release the secure connection at this point.

30. Step 29 is repeated until the remaining number of fixes (the total number is set by Number of Fixes) have been received.

31. Send SUPL END

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| Pass-Criteria | <p>Test 1 and 2:</p> <ol style="list-style-type: none"> 1. At step 3 and step 21: <ul style="list-style-type: none"> <input type="checkbox"/> The details of the Reporting Capability parameter shall be consistent with the known Reporting capabilities supported by the SET. <input type="checkbox"/> The details of the Services Supported and the Reporting Capabilities parameters in the Services Capabilities parameter in the SET Capabilities shall be consistent with the known reporting capabilities supported by the SET. <p>Test 1:</p> <ol style="list-style-type: none"> 2. At step 6 and 9 the SUPL POS Session shall complete successfully. 3. At step 13 the SET shall send SUPL REPORT with the stored position estimates. 4. At step 15 the SUPL POS Session shall complete successfully 5. At step 17 the SUPL POS Session shall complete successfully the remaining number of times (the total number is set by Number of Fixes). <p>Test 2:</p> <ol style="list-style-type: none"> 6. At step 24 and 25 the SET shall send SUPL REPORT with the position estimate. If step 23 occurs, then the position estimate shall be sent in the SUPL POS session instead. 7. At step 28 the SET shall send SUPL REPORT with the stored position estimates. 8. At step 29 the SET shall send SUPL REPORT with the position estimate. If step 23 occurs, then the position estimate shall be sent in the SUPL POS session instead. 9. At step 30 the remaining number of fixes shall be received (the total number is set by Number of Fixes). |
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5.1.4.3 SUPL-2.0-con-042 - Basic Batch reporting [Includes optional features]

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| Test Case Id | SUPL-2.0-con-042 |
| Test Object | Client |
| Test Case Description | To test SET correctly performs basic Batch Periodic reporting |
| Specification Reference | ULP TS 5.1.7 |
| SCR Reference | ULP-PRO-C-032-O, ULP-PRO-C-048-O,, |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="padding-left: 40px;">Test 1: ics_batch AND ics_periodic_Network_initiated AND ics_AGPSSETassisted_Network_initiated</p> <p style="padding-left: 40px;">Test 2: ics_batch AND ics_periodic_Network_initiated AND ics_AGPSSETbased_Network_initiated</p> |
| Test Procedure | Test 1: A-GPS SET assisted |

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| | <p>Test 2: A-GPS SET based</p> <p>Test 1: A-GPS SET assisted, Case #1:</p> <ol style="list-style-type: none"> 1. Start a NI Periodic Location Session 2. In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to A-GPS SET assisted <input type="checkbox"/> Trigger Type set to Periodic 3. The SET responds with SUPL TRIGGERED START with: <ul style="list-style-type: none"> <input type="checkbox"/> The details of the Reporting Capability parameter consistent with the known reporting capabilities supported by the SET. <input type="checkbox"/> The details of the Services Supported and the Reporting Capabilities parameters in the Services Capabilities parameter in the SET Capabilities are consistent with the known reporting capabilities supported by the SET. 4. Send SUPL TRIGGERED RESPONSE with: <ul style="list-style-type: none"> <input type="checkbox"/> The parameters set according to the table below for Case #1 <p>Note that the SET may release the secure connection at this point.</p> 5. After approximately 30 seconds (set by Start Time) the SET responds with SUPL POS INIT and a SUPL POS session takes place 6. The SUPL POS Session completes successfully 7. Send SUPL REPORT with a realistic position estimate (see note at step 10) <p>Note that the SET may release the secure connection at this point.</p> <ol style="list-style-type: none"> 8. After approximately 60 seconds after the SET sends SUPL POS INIT in step 5 (set by Interval Between Fixes) the SET responds with SUPL POS INIT and a SUPL POS session takes place 9. The SUPL POS Session completes successfully 10. Send SUPL REPORT with a realistic position estimate (Note: for convenience of checking the Pass Criteria, make this position estimate slightly different from the previous position estimate, e.g. by incrementing the LSB of the latitude and longitude.) <p>Note that the SET may release the secure connection at this point.</p> <ol style="list-style-type: none"> 11. Steps 8 through 10 are repeated until the 8th SUPL POS session and SUPL REPORT (set by Batch Reporting Conditions) is completed 12. The SET sends a SUPL REPORT with: <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing all the stored positions correctly listed in the Position Data fields of the Report Data fields. In the first SUPL REPORT there are 8 stored positions. 13. Steps 11 through 12 are repeated a further 5 times so that the final possible fully populated SUPL REPORT is received (set by the Number of Fixes and the Batch Reporting Conditions). Each SUPL REPORT contains all the stored positions since the previous SUPL REPORT and each contains 8 stored positions 14. Steps 8 through 10 are repeated until the remaining number of SUPL POS Sessions have been completed (the total number is set by the Number of Fixes) 15. The SET sends a SUPL REPORT with: <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing the remaining 4 stored positions listed in the Position Data fields of the Report Data fields 16. Send SUPL END |
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Test 1: A-GPS SET assisted, Case #2:

17. Repeat steps 1 through 10, but at step 4 send SUPL TRIGGERED RESPONSE with:

- The parameters set according to the table below for Case #2.

18. Steps 8 through 10 are repeated until the end of step 21

19. Approximately 5 minutes after step 4 occurred, the SET sends a SUPL REPORT with:

- Report Data List containing all the stored positions listed in the Position Data fields of the Report Data fields. In the first SUPL REPORT there are 5 stored positions.

20. At approximately 5 minute interval thereafter, the SET sends a SUPL REPORT with:

- Report Data List containing all the stored positions listed in the Position Data fields of the Report Data fields. The SUPL REPORT contains all the stored positions since the previous SUPL REPORT and contains 5 stored positions

21. Step 20 is repeated a further 8 times so that the final possible fully populated SUPL REPORT is received (set by the Number of Fixes and the Batch Reporting Conditions).

21. Steps 8 through 10 are repeated so that the remaining number of SUPL POS Sessions have been completed (the total number is set by the Number of Fixes)

22. The SET sends a SUPL REPORT with:

- Report Data List containing the remaining 2 stored positions listed in the Position Data fields of the Report Data fields.

23. Send SUPL END

Test 1: A-GPS SET assisted, Case #3:

24. Repeat steps 1 through 10, but at step 4 send SUPL TRIGGERED RESPONSE with:

- The parameters set according to the table below for Case #3.

25. Steps 8 through 10 are repeated until the remaining number of SUPL POS sessions (the total number is set by Number of Fixes) have been completed.

26. The SET sends a SUPL REPORT with:

- Report Data List containing all the 52 stored positions listed in the Position Data fields of the Report Data fields.

27. Send SUPL END

Test 2: A-GPS SET based, Case #1:

28. Start a NI Periodic Location Session

29. In SUPL INIT set:

- Positioning Method to A-GPS SET based
- Trigger Type set to Periodic

30. The SET responds with SUPL TRIGGERED START with:

- The details of the Reporting Capability parameter consistent with the known reporting capabilities supported by the SET.
- The details of the Services Supported and the Reporting Capabilities parameters in the Services Capabilities parameter in

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| | <p>the SET Capabilities are consistent with the known reporting capabilities supported by the SET.</p> <p>31. Send SUPL TRIGGERED RESPONSE with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The parameters set according to the table below for Case #1 <p>Note that the SET may release the secure connection at this point.</p> <p>Note that at any time during the following procedure when the SET is required to make a position estimate, if the SET requires Assistance Data:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT <input type="checkbox"/> A SUPL POS session takes place <input type="checkbox"/> Send SUPL REPORT with no parameters. <p>32. After approximately 30 seconds (set by Start Time) the SET makes a position estimate</p> <p>33. After approximately 60 seconds (set by Interval Between Fixes) the SET makes a position estimate</p> <p>34. Step 33 is repeated until the 8th position estimate (set by Batch Reporting Conditions) is completed</p> <p>35. The SET sends a SUPL REPORT with a Report Data List containing all the stored positions listed in the Position Data fields of the Report Data fields. In the first SUPL REPORT there are 8 stored positions.</p> <p>36. Steps 34 through 35 are repeated a further 5 times so that the final possible fully populated SUPL REPORT is received (set by the Number of Fixes and the Batch Reporting Conditions). Each SUPL REPORT contains all the stored positions since the previous SUPL REPORT.</p> <p>37. Step 33 is repeated until the remaining number of position estimates have been completed (the total number is set by the Number of Fixes)</p> <p>38. The SET sends a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing the remaining 4 stored positions listed in the Position Data fields of the Report Data fields. <p>39. Send SUPL END</p> <p>Test 2: A-GPS SET based, Case #2:</p> <p>40. Repeat steps 28 through 34 but at step 31 send SUPL TRIGGERED RESPONSE with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The parameters set according to the table below for Case #2. <p>41. Step 33 is repeated until the end of step 44</p> <p>42. Approximately 5 minutes after step 31 occurred, the SET sends a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing all the stored positions listed in the Position Data fields of the Report Data fields. In the first SUPL REPORT there are 5 stored positions. <p>43. At approximately 5 minute interval thereafter, the SET sends a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing all the stored positions listed in the Position Data fields of the Report Data fields. The SUPL REPORT contains all the stored positions since the previous SUPL REPORT and contains 5 stored positions <p>44. Step 43 is repeated a further 8 times so that the final possible fully populated SUPL REPORT is received (set by the Number of Fixes and the Batch Reporting Conditions).</p> <p>45. Step 33 is repeated so that the remaining number of position estimates have been completed (the total number is set by the Number of Fixes)</p> |
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| | <p>46. The SET sends a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing the remaining 2 stored positions listed in the Position Data fields of the Report Data fields. <p>47. Send SUPL END</p> <p>Test 2: A-GPS SET based, Case #3:</p> <p>48. Repeat steps 28 through 34 but at step 31 send SUPL TRIGGERED RESPONSE with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The parameters set according to the table below for Case #3. <p>49. Step 33 is repeated until the remaining number of position estimates (the total number is set by Number of Fixes) have been completed.</p> <p>50. The SET sends a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing all the 52 stored positions listed in the Position Data fields of the Report Data fields. <p>51. Send SUPL END</p> |
| <p>Pass-Criteria</p> | <p>Test 1, all Cases:</p> <p>1. At step 3:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The details of the Reporting Capability parameter shall be consistent with the known Reporting capabilities supported by the SET. <input type="checkbox"/> The details of the Services Supported and the Reporting Capabilities parameters in the Services Capabilities parameter in the SET Capabilities shall be consistent with the known reporting capabilities supported by the SET. <p>2. At steps 6 and 9 the SUPL POS session shall complete successfully</p> <p>Test 1, Case #1:</p> <p>3. At step 12 the SET shall send a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing all the correct stored positions correctly listed in the Position Data fields of the Report Data fields. (The stored positions can be checked for correctness by comparing with the values previously sent to the SET in the SUPL REPORTs.) Each SUPL REPORT shall contain all the stored positions since the previous SUPL REPORT. In the first SUPL REPORT there are 8 stored positions. The subsequent 5 SUPL REPORTs each contains 8 stored positions <p>4. At step 15 the SET shall send a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing the remaining 4 correct stored positions correctly listed in the Position Data fields of the Report Data fields. (The stored positions can be checked for correctness by comparing with the values previously sent to the SET in the SUPL REPORTs.) <p>Test 1, Case #2:</p> <p>5. At step 19 the SET shall send a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing all the correct stored positions correctly listed in the Position Data fields of the Report Data fields. (The stored positions can be checked for correctness by comparing with the values previously sent to the SET in the SUPL REPORTs.) In the first SUPL REPORT there are 5 stored positions. <p>6. At step 20 the SET shall send SUPL REPORT 9 times with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing all the correct stored positions correctly listed in the Position Data fields of the Report Data |

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| | <p>fields. (The stored positions can be checked for correctness by comparing with the values previously sent to the SET in the SUPL REPORTs.) The SUPL REPORT contains all the stored positions since the previous SUPL REPORT and contains 5 stored positions</p> <p>7. At step 22 the SET shall send a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing the remaining 2 correct stored positions correctly listed in the Position Data fields of the Report Data fields. (The stored positions can be checked for correctness by comparing with the values previously sent to the SET in the SUPL REPORTs.) <p>Test 1, Case #3:</p> <p>8. At step 26 the SET shall send a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing all the 52 correct stored positions correctly listed in the Position Data fields of the Report Data fields. (The stored positions can be checked for correctness by comparing with the values previously sent to the SET in the SUPL REPORTs.) <p>Test 2, all Cases:</p> <p>9. At step 30:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The details of the Reporting Capability parameter shall be consistent with the known Reporting capabilities supported by the SET. <input type="checkbox"/> The details of the Services Supported and the Reporting Capabilities parameters in the Services Capabilities parameter in the SET Capabilities shall be consistent with the known reporting capabilities supported by the SET. <p>Test 2, Case #1:</p> <p>10. At step 35 the SET shall send a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing all the stored positions correctly listed in the Position Data fields of the Report Data fields. Note that each SUPL REPORT shall contain all the stored positions since the previous SUPL REPORT. In the first SUPL REPORT there are 8 stored positions. The subsequent 5 SUPL REPORTs each contains 8 stored positions <p>11. At step 38 the SET shall send a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing the remaining 4 stored positions correctly listed in the Position Data fields of the Report Data fields. <p>Test 2, Case #2:</p> <p>12. At step 42 the SET shall send a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing all the stored positions correctly listed in the Position Data fields of the Report Data fields. In the first SUPL REPORT there are 5 stored positions. <p>13. At step 43 the SET shall send SUPL REPORT 9 times with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing all the stored positions correctly listed in the Position Data fields of the Report Data fields. The SUPL REPORT contains all the stored positions since the previous SUPL REPORT and contains 5 stored positions <p>14. At step 46 the SET shall send a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing the remaining 2 stored positions |
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| | <p>correctly listed in the Position Data fields of the Report Data fields.</p> <p>Test 2, Case #3:</p> <p>15. At step 50 the SET shall send a SUPL REPORT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Report Data List containing all the 52 stored positions correctly listed in the Position Data fields of the Report Data fields. |
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| Parameter | Value |
|----------------------------|--|
| Trigger Params | <p>Periodic Params, with values as follows:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Number of Fixes: 52 <input type="checkbox"/> Interval Between Fixes: 60 or equal to “minimum interval between fixes” received in Reporting Capability if greater than 60 <input type="checkbox"/> Start Time: 30 <p>[Editors note: these values are just place-holders, we may wish to change these values after further study]</p> |
| Reporting Mode | Batch reporting |
| Batch Reporting Conditions | <p>Case #1: Sending of a batch report after every 8fixes/measurements</p> <p>Case #2: Sending of a batch report after every 5 minutes</p> <p>Case #3: Sending of only one batch report at the end of the session</p> <p>[Editors note: these values are place-holders and may need revision if the values above are changed.]</p> |
| Batch Report Type | <p>Position set to true</p> <p>Other values set to false</p> |

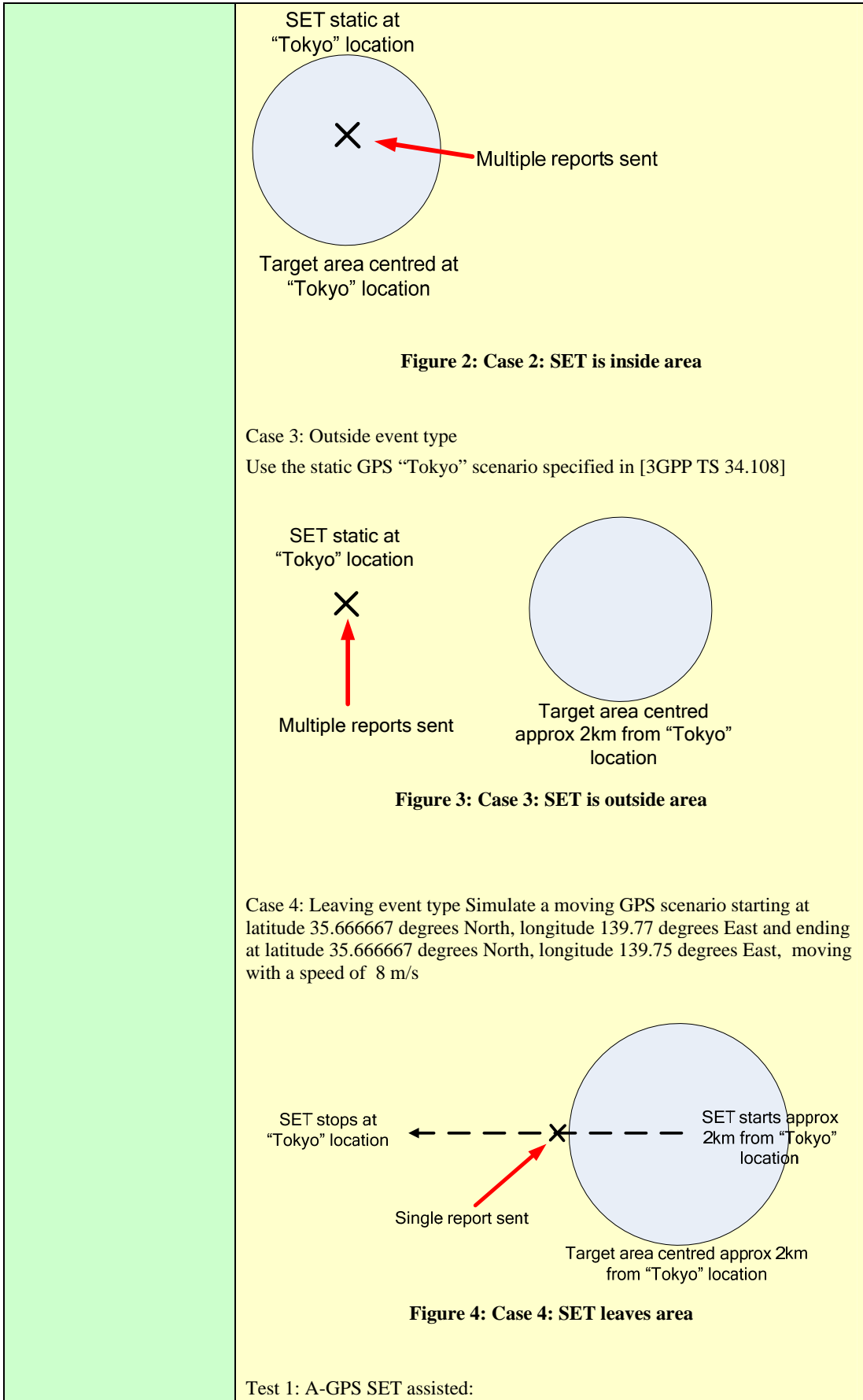
Table 4: SUPL TRIGGERED RESPONSE parameters

5.1.5 Triggered Services: Area Event Triggers

5.1.5.1 SUPL-2.0-con-050 - Geographic Target Area [Includes optional features]

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|-------------------------|---|
| Test Case Id | SUPL-2.0-con-050 |
| Test Object | Client |
| Test Case Description | To test SET correctly performs Area Event reporting with Geographic Target Area |
| Specification Reference | ULP TS 5.1.8 |
| SCR Reference | ULP-PRO-C-033-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: |

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| | <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p>Test 1: ics_AreaEvent_Network_initiated AND ics_GeoTargetArea AND ics_AGPSSETassisted_Network_initiated</p> <p>Test 2: ics_AreaEvent_Network_initiated AND ics_GeoTargetArea AND ics_AGPSSETbased_Network_initiated</p> |
| <p>Test Procedure</p> | <p>Test 1: A-GPS SET assisted</p> <p>Test 2: A-GPS SET based</p> <p>Case 1: Entering event type</p> <p>Case 2: Inside event type</p> <p>Case 3: Outside event type</p> <p>Case 4: Leaving event type</p> <p>Details of GPS scenarios to be used and figures showing locations to aid understanding of test cases:</p> <p>Case 1: Entering event type</p> <p>Simulate a moving GPS scenario starting at latitude 35.666667 degrees North, longitude 139.77 degrees East and ending at latitude 35.666667 degrees North, longitude 139.75 degrees East, moving with a speed of 8 m/s</p> <div> <p>The diagram illustrates the 'Entering event type' scenario. It features a light blue circle representing the 'Target area centred on "Tokyo" location'. A dashed horizontal line represents the path of the SET. The path starts on the right, labeled 'SET starts approx 2km from "Tokyo" location', and moves left towards the target area. A red arrow points to the point where the path enters the target area, labeled 'Single report sent'. A solid arrow points from this intersection point to the left, labeled 'SET stops at "Tokyo" location'.</p> </div> <p>Figure 1: Case 1: SET enters area</p> <p>Case 2: Inside event type</p> <p>Use the static GPS "Tokyo" scenario specified in [3GPP TS 34.108]</p> |



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| | <p>1. Start a NI Area Event Triggered Session</p> <p>2. In SUPL INIT set:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to A-GPS SET assisted <input type="checkbox"/> Trigger Type set to Area Event <p>3. The SET responds with SUPL TRIGGERED START with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The details of the Services Supported and the Event Trigger Capabilities parameters in the SET Capabilities parameter are consistent with the known trigger capabilities supported by the SET. <p>4. Send SUPL TRIGGERED RESPONSE with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Trigger Params set to Area Event Params with: <ul style="list-style-type: none"> o Area Event Type: <ul style="list-style-type: none"> ▪ Case 1: Entering event type ▪ Case 2: Inside event type ▪ Case 3: Outside event type ▪ Case 4: Leaving event type o Location estimate: True o Repeated reporting <ul style="list-style-type: none"> ▪ Minimum Interval Time: 60 ▪ Maximum Number of Reports: 6 o Start Time: 30 o Stop Time: 240 o Geographic Target Area List with: <ul style="list-style-type: none"> ▪ Geographic Target Area set to: <ul style="list-style-type: none"> • Circular with: <ul style="list-style-type: none"> Case #1, Case #2: <ul style="list-style-type: none"> • Coordinate set to: <ul style="list-style-type: none"> o latitudeSign set to: North o latitude set to: 35.666667 degrees o longitude set to: +139.75 degrees • Radius set to: 1000 meters • Radius-min radius and Radius-max radius not set <p>Note that this is an area centred on the coordinates of the GPS “Tokyo” scenario specified in [3GPP TS 34.108]</p> <ul style="list-style-type: none"> Case #3, Case #4: <ul style="list-style-type: none"> • Coordinate set to: <ul style="list-style-type: none"> o latitudeSign set to: North o latitude set to: 35.666667 degrees o longitude set to: +139.77 degrees • Radius set to: 1000 meters • Radius-min radius and Radius- |
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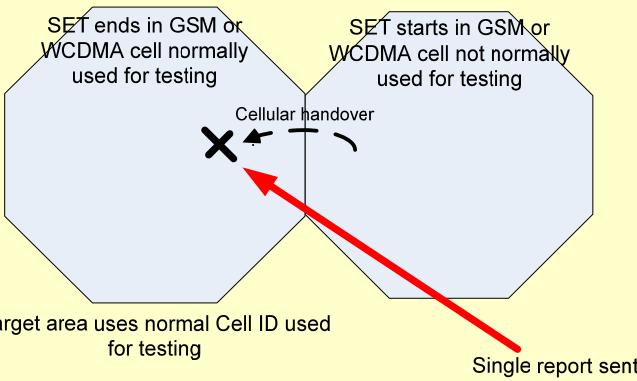
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| | <p style="text-align: right;">max radius not set</p> <p>Note that this is an area centred approximately 2km from the coordinates of the GPS “Tokyo” scenario specified in [3GPP TS 34.108]</p> <ul style="list-style-type: none"> ○ Area Id Lists not set <p>Note that the SET may release the secure connection at this point.</p> <p>5. At any time the following sequence up to step 7 occurs, and may occur more than once:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT and a SUPL POS session takes place <p>6. The SUPL POS Session completes successfully</p> <p>7. Send SUPL REPORT with the correctly calculated position.</p> <p>Note that the SET may release the secure connection at this point.</p> <p>8. Case 1: The SET does not immediately respond as Entering event has not been met. Note however that the SET will eventually respond as described in step 9.</p> <p>Case 2: After at least 30 seconds (set by Start Time) after step 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET sends SUPL REPORT with the position estimate as Inside event has been met <p>Case 3: After at least 30 seconds (set by Start Time) after step 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET sends SUPL REPORT with the position estimate as Outside event has been met <p>Case 4: The SET does not immediately respond as Leaving event has not been met. Note however that the SET will eventually respond as described in step 9.</p> <p>9. Until step 11 is reached, the following sequence takes place repeatedly:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT and a SUPL POS session takes place. <input type="checkbox"/> The SUPL POS Session completes successfully <input type="checkbox"/> Send SUPL REPORT with the correctly calculated position. <p>Note that the SET may release the secure connection at this point.</p> <p>10. Case 1: After one of these sequences the SET sends SUPL REPORT with the position estimate as Entering event has been met. After the others of these sequences the SET does not respond as Entering event has not been met.</p> <p>Case 2: After some of these sequences the SET sends SUPL REPORT with the position estimate as Inside event has been met. The interval between these SUPL REPORTs is at least 60 seconds (set by Minimum Interval Time)</p> <p>Case 3: After some of these sequences the SET sends SUPL REPORT with the position estimate as Outside event has been met. The interval between these SUPL REPORTs is at least 60 seconds (set by Minimum Interval Time)</p> <p>Case 4: After one of these sequences the SET sends SUPL REPORT with the position estimate as Leaving event has been met. After the others of these sequences the SET does not respond as Leaving event has not been met.</p> <p>11. Approximately 240 seconds (set by Stop Time) after step 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET sends SUPL END (as Stop Time has been reached) |
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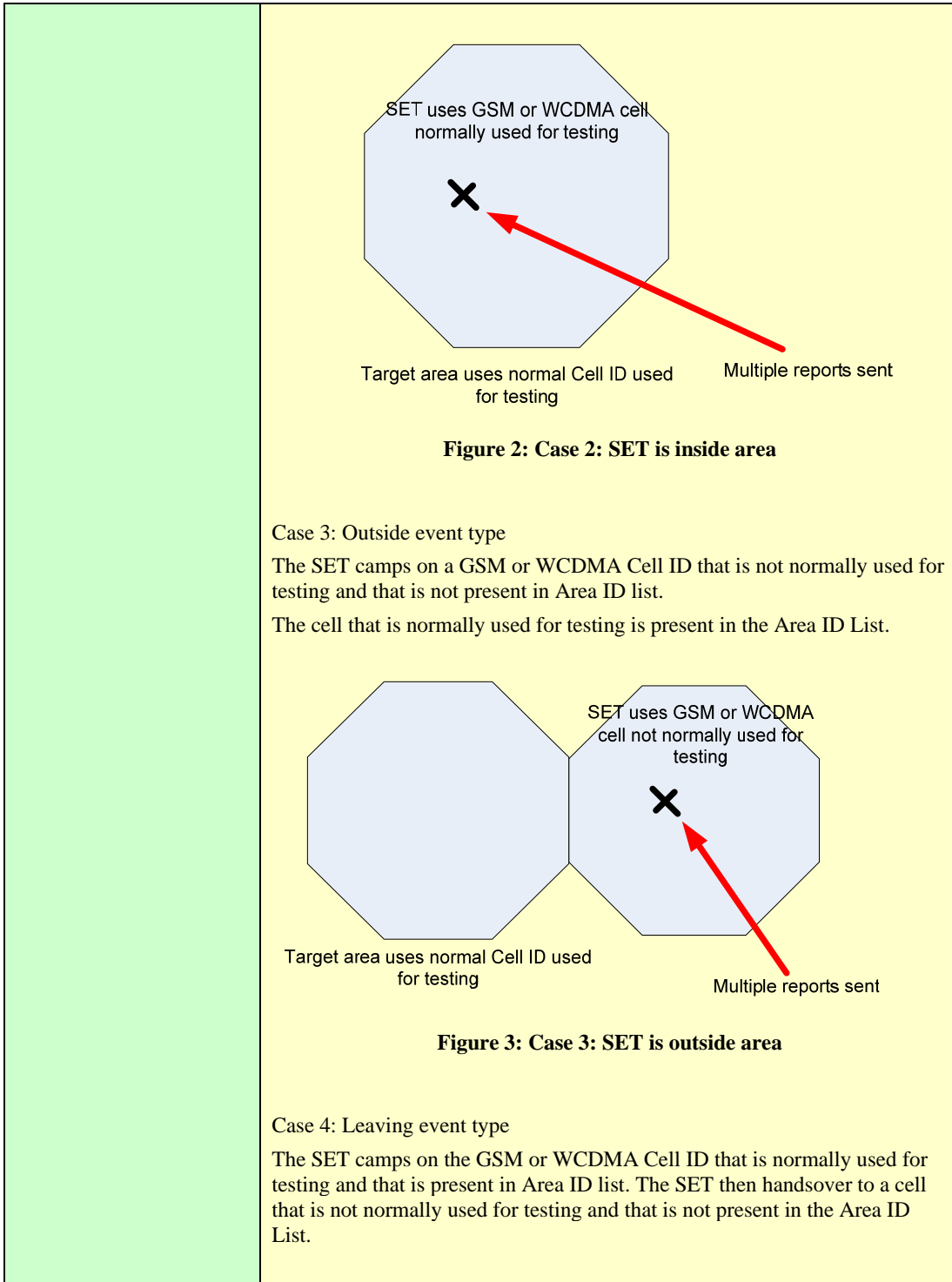
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| | <p>with:</p> <ul style="list-style-type: none"> o Status Code set to sessionStopped <p>Test 2: A-GPS SET based:</p> <p>12. Repeat step 1 through step 4, but at step 2 set:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to A-GPS SET based <p>13. At any time during the following part of the test when the SET is required to make a position estimate, if the SET requires Assistance Data, then:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT <input type="checkbox"/> A SUPL POS session takes place and completes successfully <input type="checkbox"/> Send SUPL REPORT with no parameters. <p>Note that the SET may release the secure connection at this point.</p> <p>14. After at least 30 seconds (set by Start Time) after step 4 :</p> <p>Case 1: The SET does not immediately respond as Entering event has not been met. Note however that the SET will eventually respond as described in step 15.</p> <p>Case 2: The SET sends SUPL REPORT with the position estimate as Inside event has been met</p> <p>Case 3: The SET sends SUPL REPORT with the position estimate as Outside event has been met</p> <p>Case 4: The SET does not immediately respond as Leaving event has not been met. Note however that the SET will eventually respond as described in step 15.</p> <p>15. Until step 16 is reached:</p> <p>Case 1: At one point in time the SET sends SUPL REPORT with the position estimate as Entering event has been met.</p> <p>Case 2: At intervals of at least 60 seconds (set by Minimum Interval Time) after the previous SUPL REPORT, the SET sends SUPL REPORT with the position estimate as Inside event has been met</p> <p>Case 3: At intervals of at least 60 seconds (set by Minimum Interval Time) after the previous SUPL REPORT, the SET sends SUPL REPORT with the position estimate as Outside event has been met</p> <p>Case 4: At one point in time the SET sends SUPL REPORT with the position estimate as Leaving event has been met.</p> <p>16. Approximately 240 seconds (set by Stop Time) after step 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET sends SUPL END (as Stop Time has been reached) with: <ul style="list-style-type: none"> o Status Code set to sessionStopped |
| <p>Pass-Criteria</p> | <p>Test 1 and 2:</p> <p>1. At step 3:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The details of the Services Supported and the Event Trigger Capabilities parameters in the SET Capabilities parameter shall be consistent with the known trigger capabilities supported by the SET. <p>Test 1:</p> <p>2. At step 5 the SET shall respond with SUPL POS INIT and a SUPL POS session shall take place and complete successfully</p> <p>3. At step 8:</p> <p>Case 1: The SET shall not respond</p> |

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| | <p>Case 2: The SET shall send SUPL REPORT with the position estimate after at least 30 seconds after step 4</p> <p>Case 3: The SET shall send SUPL REPORT with the position estimate after at least 30 seconds after step 4</p> <p>Case 4: The SET shall not respond</p> <p>4. At step 9 the SET shall repeatedly respond with SUPL POS INIT and a SUPL POS session takes place and completes successfully</p> <p>5. At step 10:</p> <p>Case 1: After one of these sequences the SET shall send SUPL REPORT with the position estimate and the position estimate shall be within the target area. After the others of these sequences the SET shall not respond</p> <p>Case 2: After some of these sequences the SET shall send SUPL REPORT with the position estimate. The interval between these SUPL REPORTs shall be at least 60 seconds</p> <p>Case 3: After some of these sequences the SET shall send SUPL REPORT with the position estimate. The interval between these SUPL REPORTs shall be at least 60 seconds</p> <p>Case 4: After one of these sequences the SET shall send SUPL REPORT with the position estimate and the position estimate shall be outside the target area.. After the others of these sequences the SET shall not respond</p> <p>5a. At step 11 the SET shall send SUPL END with:</p> <ul style="list-style-type: none"> o Status Code set to sessionStopped <p>Test 2:</p> <p>6. At step 14:</p> <p>Case 1: The SET shall not respond</p> <p>Case 2: The SET shall send SUPL REPORT with the position estimate after at least 30 seconds after step 4</p> <p>Case 3: The SET shall send SUPL REPORT with the position estimate after at least 30 seconds after step 4</p> <p>Case 4: The SET shall not respond</p> <p>7. At step 15:</p> <p>Case 1: At one point in time only, the SET shall send SUPL REPORT with the position estimate and the position estimate shall be within the target area.</p> <p>Case 2: At intervals of at least 60 seconds after the previous SUPL REPORT, the SET shall send SUPL REPORT with the position estimate</p> <p>Case 3: At intervals of at least 60 seconds after the previous SUPL REPORT, the SET shall send SUPL REPORT with the position estimate</p> <p>Case 4: At one point in time only, the SET shall send SUPL REPORT with the position estimate and the position estimate shall be outside the target area.</p> <p>8. At step 16 the SET shall send SUPL END with:</p> <ul style="list-style-type: none"> o Status Code set to sessionStopped |
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5.1.5.2 SUPL-2.0-con-051 - Area ID [Includes optional features]

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| Test Case Id | SUPL-2.0-con-051 |
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| Test Object | Client |
| Test Case Description | To test SET correctly performs Area Event reporting with Area ID |
| Specification Reference | ULP TS 5.1.8 |
| SCR Reference | ULP-PRO-C-033-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p>Test 1: ics_AreaEvent_Network_initiated AND ics_AreaId AND ics_AGPSSETassisted_Network_initiated</p> <p>Test 2: ics_AreaEvent_Network_initiated AND ics_AreaId AND ics_AGPSSETbased_Network_initiated</p> |
| Test Procedure | <p>Test 1: A-GPS SET assisted</p> <p>Test 2: A-GPS SET based</p> <p>Case 1: Entering event type</p> <p>Case 2: Inside event type</p> <p>Case 3: Outside event type</p> <p>Case 4: Leaving event type</p> <p>Details of cellular scenarios to be used and figures showing locations to aid understanding of test cases:</p> <p>Case 1: Entering event type</p> <p>The SET camps on a GSM or WCDMA Cell ID that is not normally used for testing and that is not present in Area ID list. The SET then handover to the cell that is normally used for testing and that is present in the Area ID List.</p>  <p>Figure 1: Case 1: SET enters area</p> <p>Case 2: Inside event type</p> <p>The SET camps on the GSM or WCDMA Cell ID that is normally used for testing and that is present in the Area ID list.</p> |



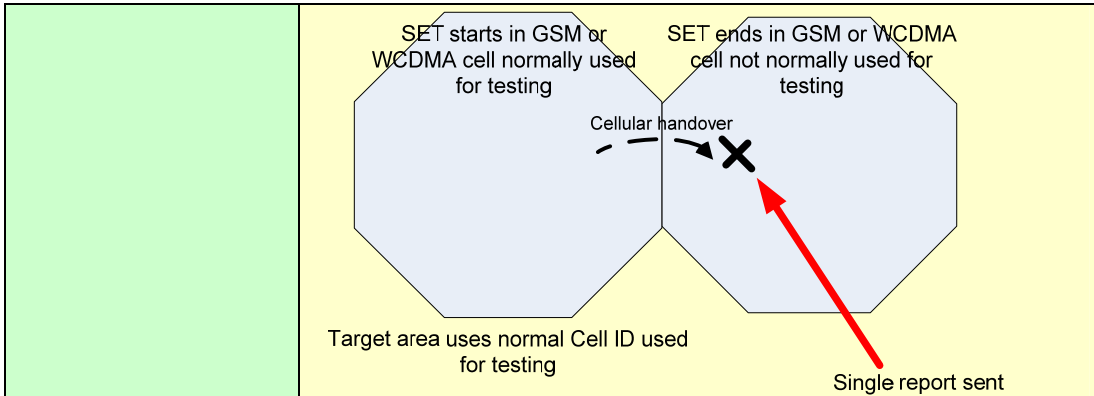


Figure 4: Case 4: SET leaves area

Test 1: A-GPS SET assisted

1. Start a NI Area Event Triggered Session
2. In SUPL INIT set:
 - Positioning Method to A-GPS SET assisted
 - Trigger Type set to Area Event
3. The SET responds with SUPL TRIGGERED START with:
 - The details of the Services Supported and the Event Trigger Capabilities parameters in the SET Capabilities parameter are consistent with the known trigger capabilities supported by the SET.
4. Send SUPL TRIGGERED RESPONSE with:
 - Trigger Params set to Area Event Params with:
 - o Area Event Type:
 - Case 1: Entering event type
 - Case 2: Inside event type
 - Case 3: Outside event type
 - Case 4: Leaving event type
 - o Location estimate: True
 - o Repeated reporting
 - Minimum Interval Time: 60
 - Maximum Number of Reports: 6
 - o Start Time: 30
 - o Stop Time:
 - Case 1 and Case 4: 210
 - Case 2 and Case 3: 120
 - o Geographic Target Area List not set
 - o Area Id List with:
 - Area Id Set set to one of the following, depending on the technology being used for testing:
 - GSM Area Id with: Cell Global Identity set to value normally used during testing with GSM and Mobile Country Code, Mobile

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| | <p>Network Code and Location Area Code not set</p> <ul style="list-style-type: none"> • WCDMA Area Id with: Cell Identity set to value normally used during testing with WCDMA and Mobile Country Code, Mobile Network Code and Location Area Code not set ▪ Area Id Set Type and Geographic Area Mapping List not set <p>Note that the SET may release the secure connection at this point.</p> <p>5. At some time</p> <p>Case 2 and Case 3:</p> <p>The following sequence occurs, and may occur more than one:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT and a SUPL POS session takes place <input type="checkbox"/> The SUPL POS Session completes successfully <input type="checkbox"/> Send SUPL REPORT with the correctly calculated position. <p>Note that the SET may release the secure connection at this point.</p> <p>Case 1 and Case 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: The SET does not respond as Entering event has not been met. <input type="checkbox"/> Case 4: The SET does not respond as Leaving event has not been met <p>6. After at least 30 seconds (set by Start Time) after step 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 2: The SET sends SUPL REPORT with the position estimate as Inside event has been met <input type="checkbox"/> Case 3: The SET sends SUPL REPORT with the position estimate as Outside event has been met <p>7. At some time:</p> <p>Case 2 and Case 3:</p> <p>The following sequence occurs, and may occur more than once:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT and a SUPL POS session takes place <input type="checkbox"/> The SUPL POS Session completes successfully <input type="checkbox"/> Send SUPL REPORT with the correctly calculated position. <p>Case 1 and Case 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: The SET does not respond as Entering event has not been met. <input type="checkbox"/> Case 4: The SET does not respond as Leaving event has not been met <p>8. After at least 60 seconds (set by Minimum Interval Time) after step 6:</p> <p>Case 2 and Case 3:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 2: The SET sends SUPL REPORT with the position estimate as Inside event has been met <input type="checkbox"/> Case 3: The SET sends SUPL REPORT with the position estimate as Outside event has been met <p>9. Case 2 and Case 3:</p> |
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| | <p>Approximately 120 seconds (set by Stop Time) after step 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET sends SUPL END (as Stop Time has been reached) with: <ul style="list-style-type: none"> o Status Code set to sessionStopped <p>10. Case 1 and Case 4</p> <p>120 seconds after step 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: force a cellular handover to the GSM or WCDMA Cell ID that is normally used for testing. <input type="checkbox"/> Case 4: force a cellular handover to a GSM or WCDMA Cell ID that is not normally used for testing. <p>11. Case 1 and Case 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT and a SUPL POS session takes place <input type="checkbox"/> The SUPL POS Session completes successfully <input type="checkbox"/> Send SUPL REPORT with the correctly calculated position. <p>Note that the SET may release the secure connection at this point.</p> <p>12. Case 1 and Case 4</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: The SET sends SUPL REPORT with the position estimate as Entering event has been met. <input type="checkbox"/> Case 4: The SET sends SUPL REPORT with the position estimate as Leaving event has been met. <p>13. Case 1 and Case 4:</p> <p>After at least 60 seconds (set by Minimum Interval Time)(wait for 90 seconds):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: The SET does not respond as Entering event has not been met. <input type="checkbox"/> Case 4: The SET does not respond as Leaving event has not been met <p>14. Case 1 and Case 4</p> <p>Approximately 210 seconds (set by Stop Time) after step 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET sends SUPL END (as Stop Time has been reached) with: <ul style="list-style-type: none"> o Status Code set to sessionStopped <p>Test 2: A-GPS SET based:</p> <p>15. Repeat step 1 through step 4, but at step 2 set:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to A-GPS SET based <p>16. At any time during the following part of the test when the SET is required to make a position estimate, if the SET requires Assistance Data, then:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT <input type="checkbox"/> A SUPL POS session takes place and completes successfully <input type="checkbox"/> Send SUPL REPORT with no parameters. <p>Note that the SET may release the secure connection at this point.</p> <p>17. After at least 30 seconds (set by Start Time) after step 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: The SET does not respond as Entering event has not been met. <input type="checkbox"/> Case 2: The SET sends SUPL REPORT with the position |
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| | <p>estimate as Inside event has been met</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 3: The SET sends SUPL REPORT with the position estimate as Outside event has been met <input type="checkbox"/> Case 4: The SET does not respond as Leaving event has not been met <p>18. After at least 60 seconds (set by Minimum Interval Time) after step 17:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: The SET does not respond as Entering event has not been met. <input type="checkbox"/> Case 2: The SET sends SUPL REPORT with the position estimate as Inside event has been met <input type="checkbox"/> Case 3: The SET sends SUPL REPORT with the position estimate as Outside event has been met <input type="checkbox"/> Case 4: The SET does not respond as Leaving event has not been met <p>19. Case 2 and Case 3: Approximately 120 seconds (set by Stop Time) after step 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET sends SUPL END (as Stop Time has been reached) with: <ul style="list-style-type: none"> o Status Code set to sessionStopped <p>20. Case 1 and Case 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: force a cellular handover to the GSM or WCDMA Cell ID that is normally used for testing. <input type="checkbox"/> Case 4: force a cellular handover to a GSM or WCDMA Cell ID that is not normally used for testing. <p>21. Case 1 and Case 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: The SET sends SUPL REPORT with the position estimate as Entering event has been met. <input type="checkbox"/> Case 4: The SET sends SUPL REPORT with the position estimate as Leaving event has been met. <p>22. Case 1 and Case 4: After at least 60 seconds (set by Minimum Interval Time)(wait for 90 seconds):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: The SET does not respond as Entering event has not been met. <input type="checkbox"/> Case 4: The SET does not respond as Leaving event has not been met <p>23. Case 1 and Case 4: Approximately 210 seconds (set by Stop Time) after step 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET sends SUPL END (as Stop Time has been reached) with: <ul style="list-style-type: none"> o Status Code set to sessionStopped |
| <p>Pass-Criteria</p> | <p>Test 1 and Test 2:</p> <p>1. At step 3:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The details of the Services Supported and the Event Trigger Capabilities parameters in the SET Capabilities parameter shall be consistent with the known trigger capabilities supported by the SET. <p>Test 1:</p> |

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| | <p>2. At step 5: Case 2 and Case 3: the SET shall respond with SUPL POS INIT and a SUPL POS session shall take place and complete successfully</p> <p>Case 1 and Case 4: the SET shall not respond</p> <p>3. At step 6: Case 2 and Case 3: the SET shall send SUPL REPORT with the position estimate after at least 30 seconds after step 4</p> <p>4. At step 7:</p> <p>Case 2 and Case 3: the SET shall respond with SUPL POS INIT and a SUPL POS session shall take place and complete successfully</p> <p>Case 1 and Case 4: the SET shall not respond</p> <p>5. At step 8:</p> <p>Case 2 and Case 3: the SET shall send SUPL REPORT with the position estimate after at least 60 seconds after step 6</p> <p>5a. At step 9:</p> <p>Case 2 and Case 3: The SET shall send SUPL END with:</p> <ul style="list-style-type: none"> o Status Code set to sessionStopped <p>6. At step 11:</p> <p>Case 1 and Case 4: The SET shall respond with SUPL POS INIT and a SUPL POS session shall take place and complete successfully.</p> <p>7. At step 12:</p> <p>Case 1 and Case 4: The SET shall send SUPL REPORT with the position estimate</p> <p>8. At step 13:</p> <p>Case 1 and Case 4: The SET shall not respond</p> <p>8a. At step 14:</p> <p>Case 1 and Case 4: The SET shall send SUPL END with:</p> <ul style="list-style-type: none"> o Status Code set to sessionStopped <p>Test 2:</p> <p>9. At step 17:</p> <p>Case 1: The SET shall not respond</p> <p>Case 2: The SET shall send SUPL REPORT with the position estimate after at least 30 seconds after step 4</p> <p>Case 3: The SET shall send SUPL REPORT with the position estimate after at least 30 seconds after step 4</p> <p>Case 4: The SET shall not respond</p> <p>10. At step 18:</p> <p>Case 1: The SET shall not respond</p> <p>Case 2: The SET shall send SUPL REPORT with the position estimate after at least 60 seconds after step 17</p> <p>Case 3: The SET shall send SUPL REPORT with the position estimate after at least 60 seconds after step 17</p> <p>Case 4: The SET shall not respond</p> <p>10a. At step 19:</p> <p>Case 2 and Case 3: The SET shall send SUPL END with:</p> <ul style="list-style-type: none"> o Status Code set to sessionStopped <p>11. At step 21:</p> |
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| | <p>Case 1: The SET shall send SUPL REPORT with the position estimate</p> <p>Case 4: The SET shall send SUPL REPORT with the position estimate</p> <p>12. At step 22:</p> <p>Case 1 and Case 4: the SET shall not respond</p> <p>13. At step 23:</p> <p>Case 1 and Case 4: The SET shall send SUPL END with:</p> <ul style="list-style-type: none"> ○ Status Code set to sessionStopped |
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5.1.6 Triggered Services: Other Scenarios

5.1.6.1 SUPL-2.0-con-060 - Network Capabilities change [Includes optional features].

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| Test Case Id | SUPL-2.0-con-060 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions Network Capabilities change for Area Event triggered session |
| Specification Reference | ULP TS 5.1.14, 8, 9, 10 |
| SCR Reference | ULP-PRO-C-033-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="padding-left: 40px;">ics_event_Network_initiated OR ics_event_SET_initiated</p> |
| Test Procedure | <p>Case 1: Network sends new trigger parameters</p> <p>Case 2: Network does not send new trigger parameters</p> <p>Case 1:</p> <ol style="list-style-type: none"> 1. Start a NI Area Event Triggered Location Session or a SI Area Event Triggered Location Session in the case that Network Initiated Area Event Triggered Location Session is not supported in the SET. Use suitable parameters, for example Inside event type and suitable Area Id List, such that Area Event triggers are easily observed. 2. The first trigger event occurs and completes. 3. Force a handover from the current cellular serving cell to a target cell for which the MNC is not in the downloaded Area Id lists in Area Event Params in Trigger Params in SUPL TRIGGERED RESPONSE used in step 1. 4. The SET sends SUPL TRIGGERED START with: <ul style="list-style-type: none"> □ Cause Code set to Serving Network not in Area Id list 5. Send SUPL TRIGGERED RESPONSE with: <ul style="list-style-type: none"> □ MNC in the Area Id lists in Area Event Params in Trigger Params set to the value from the target cell (network). Use suitable parameters, for example Inside event type and suitable Area Id List, such that Area Event triggers are easily observed. 6. The triggered session continues and a trigger event occurs and |

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| | <p>completes</p> <p>7. After the first trigger for the continued session has occurred and the associated session has completed the Triggered Location Session can be allowed to continue, or send SUPL TRIGGERED STOP to terminate the session</p> <p>Case 2:</p> <p>8. After the Area Event Triggered Location Session in Case 1 has finished, repeat steps 1 to 4.</p> <p>9. Send SUPL TRIGGERED RESPONSE with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Empty Area Id list. <p>10. The triggered session is paused as the SET has no valid parameters for the current cellular network so the SET does not respond.</p> <p>11. Force a handover from the current cellular serving cell back to the original cell used in step 1.</p> <p>12. The SET does not respond with SUPL TRIGGERED START as it maintains the previous trigger parameters.</p> <p>13. The original triggered session continues and a trigger event occurs and completes</p> <p>14. After the first trigger for the continued session has occurred and the associated session has completed the Triggered Location Session can be allowed to continue, or send SUPL TRIGGERED STOP to terminate the session</p> |
| Pass-Criteria | <p>Case 1 and Case 2:</p> <p>1. At step 4 the SET shall send SUPL TRIGGERED START with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Cause Code set to Serving Network not in Area Id list <p>Case 1:</p> <p>2. At step 6 the triggered session shall continue successfully</p> <p>Case 2:</p> <p>3. At step 10 the SET shall not respond.</p> <p>4. At step 12 the SET shall not respond with SUPL TRIGGERED START.</p> <p>5. At step 13 the original triggered session shall continue successfully</p> |

5.1.6.2 SUPL-2.0-con-061 - Network cancels Triggered Location Request [Includes optional features].

Note: Only the case of the Network cancelling a Triggered Location session is given. The case of the SET cancelling a Triggered Location session is considered trivial and is therefore not tested

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|--------------------------------|---|
| Test Case Id | SUPL-2.0-con-061 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions when the Network cancels a Triggered Location Request |
| Specification Reference | ULP TS 5.1.17, 8, 9, 10 |
| SCR Reference | ULP-MES-C-011-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: |

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| | <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="padding-left: 40px;">cs_NetworkInitiated AND (ics_periodic_Network_initiated OR ics_periodic_SET_initiated)</p> <p style="padding-left: 40px;">OR</p> <p style="padding-left: 40px;">ics_event_Network_initiated OR ics_event_SET_initiated)</p> |
| Test Procedure | <p>Case 1.</p> <ol style="list-style-type: none"> 1. Start a NI Periodic Triggered Location Session, or a NI AreaEvent Triggered Location session if Periodic Location sessions are not supported in the SET or in the case that Network Initiated Periodic or Area Event Triggered Location Sessions are not supported in the SET start a SI Periodic Triggered Location Session, or a SI Area Event Triggered Location session if Periodic Location sessions are not supported in the SET,. 2. Immediately after the first trigger has occurred and the associated session has completed and if the secure IP connection is not released by the SET, send SUPL TRIGGERED STOP with no parameters 3. The SET sends SUPL END 4. The Triggered Location Session ends and the SET releases the secure IP connection. 5. If at step 2 the SET releases the secure connection such that SUPL TRIGGERED STOP cannot be sent to the SET, then proceed directly to step 8 in Case 2. (In this case steps 6 and 7 of Case 2 are not required) <p>Case 2.</p> <ol style="list-style-type: none"> 6. Start a NI Periodic Triggered Location Session, or a NI Area Event Triggered Location session if Periodic Location sessions are not supported in the SET or in the case that Network Initiated Periodic or Area Event Triggered Location Sessions are not supported in the SET start a SI Periodic Triggered Location Session, or a SI Area Event Triggered Location session if Periodic Location sessions are not supported in the SET,. 7. After the first trigger has occurred and the associated session has completed release the secure IP connection. 8. Send SUPL INIT with: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method set to Session-Info Query 9. The SET sends SUPL REPORT 10. Send SUPL TRIGGERED STOP with no parameters 11. The SET sends SUPL END 12. The Triggered Location Session ends and the SET releases the secure IP connection. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 3 and step 11 the SET shall respond with SUPL END 2. At step 4 and step 12 the SET shall release the secure IP connection. |

5.1.6.3 SUPL-2.0-con-062 - V-SLP to V-SLP Handover [Includes optional features].

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|--------------------------------|---|
| Test Case Id | SUPL-2.0-con-062 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions V-SLP to V-SLP Handover |
| Specification Reference | UPL TS 5.1.11, 8, 9, 10 |

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|-----------------------|--|
| SCR Reference | ULP-PRO-C-032-O, ULP-PRO-C-033-O, |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="text-align: center;">ics_periodic_Network_initiated OR ics_event_Network_initiated OR ics_periodic_SET_initiated OR ics_event_SET_initiated</p> |
| Test Procedure | <p>Note: This test case is applicable to all SETs that support any location method that at some point causes the SET to send a SUPL POS INIT to the SLP, and that supports any triggered service. This test case has been written for a Periodic Triggered, SET assisted mode Location Session. The case where Periodic Location sessions or a SET assisted mode is not supported in the SET is FFS</p> <ol style="list-style-type: none"> 1. Start a NI Periodic Triggered Location Session, or a SI Periodic Triggered Location Session if NI Periodic Location sessions are not supported in the SET. 2. In SUPL INIT and/or SUPL TRIGGERED RESPONSE set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to any SET assisted method that is supported by the SET 3. After the first trigger has occurred and the associated session has completed the SET sends SUPL POS INIT to initiate the second triggered positioning session 4. Send SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code set to No SUPL Coverage 5. The SET sends SUPL TRIGGERED START with: <ul style="list-style-type: none"> <input type="checkbox"/> Session ID set to the same as that sent in SUPL END in step 3 including both SET Session ID and SLP Session ID <input type="checkbox"/> Cause Code set to No SUPL Coverage 6. Send SUPL TRIGGERED RESPONSE with the same or similar parameters to those used in step 1. 7. The triggered session continues 8. After the first trigger for the continued session has occurred and the associated session has completed the Triggered Location Session can be allowed to continue, or send SUPL TRIGGERED STOP to terminate the session |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 5 the SET shall send SUPL TRIGGERED START with: <ul style="list-style-type: none"> <input type="checkbox"/> Session ID set to the same as that sent in SUPL END in step 3 including both SET Session ID and SLP Session ID <input type="checkbox"/> Cause Code set to No SUPL Coverage 2. At step 7 the triggered session shall continue successfully |

5.1.7 Timer expiration

5.1.7.1 SUPL-2.0-con-070 - Timeout UT2 [Includes optional features]

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|--------------------------------|--|
| Test Case Id | SUPL-2.0-con-070 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions timer UT2 |
| Specification Reference | ULP TS Appendix D |
| SCR Reference | ULP-PRO-C-007-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p>Test 1: ics_AGPSSETassisted_Network_initiated OR ics_AGPSSETbased_Network_initiated OR [others FFS] (Any positioning method requiring a SUPL POS session)</p> <p>Test 2: (ics_AGPSSETassisted_Network_initiated OR ics_AGPSSETbased_Network_initiated OR [others FFS]) AND (ics_periodic_Network_initiated OR ics_event_Network_initiated)</p> <p>Test 4: ics_periodic_Network_initiated OR ics_event_Network_initiated</p> <p>ixit: ixit_timer_UT2</p> |
| Test Procedure | <p>Test 1: SUPL POS session (Immediate session) [Includes optional features]</p> <p>Test 2: SUPL POS session (Triggered session) [Includes optional features]</p> <p>Test 3: No SUPL POS session (Immediate session)</p> <p>Test 4: No SUPL POS session (Triggered session) [Includes optional features]</p> <p>Test 1: SUPL POS session (Immediate session) [Includes optional features]</p> <ol style="list-style-type: none"> 1. Start a NI Location Session 2. In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to any method that requires a SUPL POS session that is supported by the SET 3. The SET sends SUPL POS INIT 4. Do not respond 5. After timer UT2 expires (depending on ixit_timer_UT2) the SET sends SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 6. The Location Session ends and the SET releases the secure IP connection. <p>Test 2: SUPL POS session (Triggered session) [Includes optional</p> |

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| | <p>features]</p> <p>Note: This test case is applicable to SETs that support any location method that requires a SUPL POS session and that supports any triggered service. This test case has been written for a Periodic Triggered, SET assisted mode Location Session. The case where Periodic Location sessions or a SET assisted mode is not supported in the SET is FFS</p> <p>7. Start a NI Periodic Triggered Location Session</p> <p>8. In SUPL INIT set:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to any SET assisted method that requires a SUPL POS session that is supported by the SET <p>In SUPL TRIGGERED RESPONSE set:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to any SET assisted method that requires a SUPL POS session that is supported by the SET <input type="checkbox"/> Do not set Reporting Mode (equivalent to Real Time Reporting) <p>9. When the first periodic trigger occurs the SET sends SUPL POS INIT</p> <p>10. Do not respond</p> <p>11. (After timer UT2 expires (depending on ixit_timer_UT2) the SET will abandon the SUPL POS session)</p> <p>Note that the SET may release the secure connection at this time.</p> <p>12. When the second periodic trigger occurs the SET sends SUPL POS INIT</p> <p>13. A SUPL POS session takes place</p> <p>14. Send SUPL REPORT</p> <p>15. The Triggered Location Session can be allowed to continue, or send SUPL TRIGGERED STOP to terminate the session</p> <p>Test 3: No SUPL POS session (Immediate session)</p> <p>16. Start a NI Location Session</p> <p>17. In SUPL INIT set:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to Enhanced Cell/sector <p>18. The SET sends SUPL POS INIT</p> <p>19. Do not respond</p> <p>20. After timer UT2 expires (depending on ixit_timer_UT2) the SET sends SUPL END with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. <p>21. The Location Session ends and the SET releases the secure IP connection.</p> <p>Test 4: No SUPL POS session (Triggered session) [Includes optional features]</p> <p>Note: This test case is applicable to SETs that support any triggered service. This test case has been written for a Periodic Triggered Location Session. The case where Periodic Location sessions is not supported in the SET is FFS</p> <p>22. Start a NI Periodic Triggered Location Session</p> |
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| | <p>23. In SUPL INIT set:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to Enhanced Cell/sector <p>In SUPL TRIGGERED RESPONSE set:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to Enhanced Cell/sector <input type="checkbox"/> Do not set Reporting Mode (equivalent to Real Time Reporting) <p>24. When the first periodic trigger occurs the SET sends SUPL POS INIT</p> <p>25. Do not respond</p> <p>26. (After timer UT2 expires (depending on ixit_timer_UT2) the SET will abandon the individual location session)</p> <p>Note that the SET may release the secure connection at this time.</p> <p>27. When the second periodic trigger occurs the SET sends SUPL POS INIT</p> <p>28. Send SUPL REPORT</p> <p>29. The Triggered Location Session can be allowed to continue, or send SUPL TRIGGERED STOP to terminate the session</p> |
| Pass-Criteria | <p>Test 1 and Test 3:</p> <ol style="list-style-type: none"> 1. At step 5 and step 20 the SET shall respond with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 2. At step 6 and step 21 the SET shall release the secure IP connection. <p>Test 2 and Test 4:</p> <ol style="list-style-type: none"> 1. At step 12 and step 27 the SET shall send SUPL POS INIT |

5.1.7.2 SUPL-2.0-con-071 - Timeout UT3 [Includes optional features]

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| Test Case Id | SUPL-2.0-con-071 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions timer UT3 |
| Specification Reference | ULP TS Appendix D |
| SCR Reference | ULP-PRO-C-007-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |

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| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p>Test 1:</p> <p>ics_AGPSSETassisted_Network_initiated OR ics_AGPSSETbased_Network_initiated OR [others FFS] (Any positioning method requiring a SUPL POS session)</p> <p>Test 2:</p> <p>(ics_AGPSSETassisted_Network_initiated OR ics_AGPSSETbased_Network_initiated OR [others FFS]) AND (ics_periodic_Network_initiated OR ics_event_Network_initiated)</p> <p>ixit:</p> <p>ixit_timer_UT3</p> |
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| Test Procedure | <p>Test 1: Immediate session Test 2: Triggered session</p> <p>Test 1: Immediate session</p> <ol style="list-style-type: none"> 1. Start a NI Location Session 2. In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to any method that requires a SUPL POS session that is supported by the SET 3. The SET sends SUPL POS INIT 4. A SUPL POS session takes place 5. After the SET sends the final SUPL POS do not respond 6. After timer UT3 expires (depending on ixit_timer_UT3) the SET sends SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 7. The Location Session ends and the SET releases the secure IP connection. <p>Test 2: Triggered session</p> <p>Note: This test case is applicable to SETs that support any location method that requires a SUPL POS session and that supports any triggered service. This test case has been written for a Periodic Triggered, SET assisted mode Location Session. The case where Periodic Location sessions or a SET assisted mode is not supported in the SET is FFS</p> <ol style="list-style-type: none"> 8. Start a NI Periodic Triggered Location Session 9. In SUPL INIT set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to any SET assisted method that requires a SUPL POS session that is supported by the SET In SUPL TRIGGERED RESPONSE set: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to any SET assisted method that requires a SUPL POS session that is supported by the SET <input type="checkbox"/> Do not set Reporting Mode (equivalent to Real Time Reporting) 10. When the first periodic trigger occurs the SET sends SUPL POS INIT 11. A SUPL POS session takes place 12. After the SET sends the final SUPL POS do not respond 13. (After timer UT3 expires (depending on ixit_timer_UT3) the SET will continue to the next trigger in the session) <p>Note that the SET may release the secure connection at this time.</p> <ol style="list-style-type: none"> 14. When the second periodic trigger occurs the SET sends SUPL POS INIT 15. A SUPL POS session takes place 16. Send SUPL REPORT 17. The Triggered Location Session can be allowed to continue, or send SUPL TRIGGERED STOP to terminate the session |
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| Pass-Criteria | <p>Test 1:</p> <ol style="list-style-type: none"> At step 6 the SET shall respond with SUPL END with: <ul style="list-style-type: none"> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. At step 7 the SET shall release the secure IP connection. <p>Test 2:</p> <ol style="list-style-type: none"> At step 14 the SET shall send SUPL POS INIT |
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5.1.7.3 SUPL-2.0-con-072 - Timeout UT5 [Includes optional features]

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| Test Case Id | SUPL-2.0-con-072 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions timer UT5 |
| Specification Reference | ULP TS Appendix D |
| SCR Reference | ULP-PRO-C-007-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <ul style="list-style-type: none"> ics_notification_currentLocation <p>ixit:</p> <ul style="list-style-type: none"> ixit_verification_timeout ixit_timer_UT5 |
| Test Procedure | <ol style="list-style-type: none"> Start a NI Location Session with Notification/Verification based on current location In SUPL INIT set: <ul style="list-style-type: none"> Positioning Method to any method supported by the SET that requires a SUPL POS session Notification Mode to Notification/Verification based on location Do not use Notification The SUPL POS session completes Send SUPL NOTIFY with: <ul style="list-style-type: none"> Notification set to Notification and verification (Allowed on no answer) Do not use Encoding type, RequestorID and ClientName The user accepts the Location attempt prompt before the internal SET timer expires (defined by ixit_verification_timeout) The SET sends SUPL NOTIFY RESPONSE with: <ul style="list-style-type: none"> Notification Response set to allowed Do not respond After timer UT5 expires (depending on ixit_timer_UT5) the SET sends SUPL END with: <ul style="list-style-type: none"> Status Code not sent or set to any of: unspecified, |

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| | <p>systemFailure or posMethodFailure.</p> <p>9. The Location Session ends and the SET releases the secure IP connection.</p> |
| Pass-Criteria | <p>1. At step 8 the SET shall respond with SUPL END with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. <p>2. At step 9 the SET shall release the secure IP connection.</p> |

5.1.7.4 SUPL-2.0-con-073 - Timeout UT7 [Includes optional features].

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|--------------------------------|--|
| Test Case Id | SUPL-2.0-con-073 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions timer UT7 |
| Specification Reference | ULP TS Appendix D |
| SCR Reference | ULP-PRO-C-007-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="padding-left: 40px;">(ics_periodic_Network_initiated OR ics_event_Network_initiated) AND ics_stop_triggered_session</p> <p>ixit:</p> <p style="padding-left: 40px;">ixit_timer_UT7</p> |
| Test Procedure | <ol style="list-style-type: none"> 1. Start a NI Periodic Triggered Location Session, or a NI Area Event Triggered Location session if Periodic Location sessions are not supported in the SET. 2. Allow the first trigger to occur (either periodic or area event) and the first location session to complete 3. From the SET stop the Triggered Location Session 4. The SET sends SUPL TRIGGERED STOP 5 Do not respond 6. After timer UT7 expires (depending on ixit_timer_UT7) the SET sends SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 7. The Triggered Location Session ends and the SET releases the secure IP connection. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 6 the SET shall respond with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 2. At step 7 the SET shall release the secure IP connection. |

5.1.7.5 SUPL-2.0-con-074 - Timeout UT8 [Includes optional features]

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| Test Case Id | SUPL-2.0-con-074 |
| Test Object | Client |

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|--------------------------------|--|
| Test Case Description | To test SET correctly actions timer UT8 |
| Specification Reference | ULP TS Appendix D |
| SCR Reference | ULP-PRO-C-007-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: ics_periodic_Network_initiated ixit: ixit_timer_UT8 |
| Test Procedure | <ol style="list-style-type: none"> 1. Start a NI Periodic Triggered Location Session [Editor's note: in the "default" Periodic session we need to make sure the total session is as short as possible] 2. Allow all the triggers to occur 3. The SET sends the final SUPL REPORT [Editor's note: we may need to give guidance on how to tell the last SUPL REPORT has been sent] 4 Do not respond 5. After timer UT8 expires (depending on ixit_timer_UT8) the SET sends SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 6. The Triggered Location Session ends and the SET releases the secure IP connection. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 5 the SET shall respond with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 2. At step 6 the SET shall release the secure IP connection. |

5.2 Client Conformance: SET Initiated

The Test Cases in this section are applicable for SETs that support any SET Initiated call flows. This particular applicability is not specified in the individual test cases. For definitive applicabilities of test cases see Appendix B.

5.2.1 Common Part of ULP Message, Basic Functionality and Cross Version Compatibility

5.2.1.1 SUPL-2.0-con-100 - Correct Session ID

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|--------------------------------|--|
| Test Case Id | SUPL-2.0-con-100 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions Session ID |
| Specification Reference | ULP TS 9, 10 |
| SCR Reference | |

| | |
|-----------------------|--|
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: |
| Test Procedure | <ol style="list-style-type: none"> 1. Case 1, Case 2 and Case3 : Start a SI Location Session 2. The SET sends SUPL START 3. Send SUPL RESPONSE with: <ul style="list-style-type: none"> <input type="checkbox"/> SLP Session ID set to a valid value with: <ul style="list-style-type: none"> <input type="checkbox"/> SLP ID using the Parameter type: <ul style="list-style-type: none"> ▪ Case 1: IPAddress, IPv4 ▪ Case 2: IPAddress, IPv6 ▪ Case 3: FQDN 4. The SET sends SUPL POS INIT with: <ul style="list-style-type: none"> <input type="checkbox"/> Correct full Session ID 5. The Location Session completes successfully |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 4 in each case the SET shall respond with SUPL POS INIT with: <ul style="list-style-type: none"> <input type="checkbox"/> Correct full Session ID |

5.2.1.2 SUPL-2.0-con-101 - Invalid SET Session ID

| | |
|--------------------------------|---|
| Test Case Id | SUPL-2.0-con-101 |
| Test Object | Client |
| Test Case Description | To test SET correctly rejects an invalid SET Session ID |
| Specification Reference | ULP TS 9, 10 |
| SCR Reference | |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: |

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| Test Procedure | <ol style="list-style-type: none"> 1. Case 1 and Case 2: Start a SI Location Session 2. The SET sends SUPL START 3. Send SUPL RESPONSE with: <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: In SET Session ID set: <ul style="list-style-type: none"> ○ Session ID to an invalid value (i.e. set Session ID to a different value from that received from the SET) <input type="checkbox"/> Case 2: In SET Session ID set: <ul style="list-style-type: none"> ○ SET ID to an invalid value (i.e. set SET ID to a different value or a different parameter type from that received from the SET) 4. The SET responds with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> The invalid Session ID in the SUPL END Common Part <input type="checkbox"/> Status Code set to invalidSessionID. <p>Note that between Cases, in order to return to a “known state” for the next Case, the Conformance Test Tool ends the Location Session and releases the secure IP connection.</p> |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 4 in both cases, the SET shall respond with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> The invalid Session ID in the SUPL END Common Part Status Code set to invalidSessionID. |

5.2.1.3 SUPL-2.0-con-102 - Invalid SLP Session ID

| | |
|--------------------------------|---|
| Test Case Id | SUPL-2.0-con-102 |
| Test Object | Client |
| Test Case Description | To test SET correctly rejects an invalid SLP Session ID |
| Specification Reference | ULP TS 9, 10 |
| SCR Reference | |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: |

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| Test Procedure | <ol style="list-style-type: none"> 1. Case 1 and Case 2: Start a SI Location Session 2. The SET sends SUPL START 3. Send SUPL RESPONSE with: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method set to: <ul style="list-style-type: none"> o Any method supported by the SET that requires a SUPL POS session (e.g. A-GPS SET Assisted) 4. The SET sends SUPL POS INIT 5. Send SUPL POS with: <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: In SLP Session ID set: <ul style="list-style-type: none"> o Session ID to an invalid value (i.e. set Session ID to a different value from that used in the SUPL RESPONSE message) <input type="checkbox"/> Case 2: In SLP Session ID set: <ul style="list-style-type: none"> o SLP ID to an invalid value (i.e. set SET ID to a different value or a different parameter type from that used in the SUPL RESPONSE message) 6. The SET responds with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> The invalid Session ID in the SUPL END Common Part <input type="checkbox"/> Status Code set to invalidSessionID. <p>Note that between Cases, in order to return to a “known state” for the next Case, the Conformance Test Tool ends the Location Session and releases the secure IP connection.</p> |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 6 in both cases, the SET shall respond with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> The invalid Session ID in the SUPL END Common Part Status Code set to invalidSessionID. |

5.2.1.4 SUPL-2.0-con-103 - Compatible versions

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| Test Case Id | SUPL-2.0-con-103 |
| Test Object | Client |
| Test Case Description | To test SET correctly accepts compatible Version numbers in SUPL messages |
| Specification Reference | ULP TS 7,9,10 |
| SCR Reference | ULP-PRO-C-009-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> o Applicability: |

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| <p>Test Procedure</p> | <p>Test 1: Support for higher versions of SUPL 2.X.X Test 2: Support for lower versions of SUPL 2.X.X</p> <p>Test 1: Support for higher versions of SUPL 2.X.X</p> <ol style="list-style-type: none"> 1. Start a SI Location Session 2. In the Common Part of all messages set: <ul style="list-style-type: none"> <input type="checkbox"/> Version to: <ul style="list-style-type: none"> o Maj set to 2 o Min set to a higher value than that supported by the SET o Serv ind set to a higher value than that supported by the SET 3. The SET sends SUPL START 4. Send SUPL RESPONSE with Version set as in step 2. 5. The SET sends SUPL POS INIT with: <ul style="list-style-type: none"> <input type="checkbox"/> In the Common Part, Version set to: <ul style="list-style-type: none"> o Maj set to 2 o Min set to 0 or correct version supported by the SET o Serv ind set to 0 or correct version supported by the SET 6. The Location Session completes successfully. <p>Test 2: Support for lower versions of SUPL 2.X.X. Only applicable if there exists SUPL V2.X where X>0</p> <ol style="list-style-type: none"> 7. Repeat Test 1 with following change at step 2: In the Common Part of all messages set: <ul style="list-style-type: none"> <input type="checkbox"/> Version to: <ul style="list-style-type: none"> o Maj set to 2 o Min set to a lower values than the maximum value supported by the SET o Serv ind set to a lower values than the maximum value supported by the SET |
| <p>Pass-Criteria</p> | <p>Test 1 and 2:</p> <ol style="list-style-type: none"> 1. 1. At step 5 the SET shall respond with SUPL POS INIT with: <ul style="list-style-type: none"> <input type="checkbox"/> In the Common Part, Version set to: <ul style="list-style-type: none"> o Maj set to 2 o Min set to 0 or correct version supported by the SET o Serv ind set to 0 or correct version supported by the SET |

5.2.2 Single sessions

5.2.2.1 SUPL-2.0-con-110 - Positioning method [Includes optional features].

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| <p>Test Case Id</p> | <p>SUPL-2.0-con-110</p> |
| <p>Test Object</p> | <p>Client</p> |

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| Test Case Description | To test SET correctly actions single session Positioning method |
| Specification Reference | ULP TS 5.2.1, 8, 9 |
| SCR Reference | ULP-PRO-C-009-O, ULP-PRO-C-011-M, ULP-PRO-C-012-O, ULP-PRO-C-013-O, ULP-PRO-C-014-O, ULP-PRO-C-015-O, ULP-PRO-C-016-O, ULP-PRO-C-018-O, ULP-PRO-C-020 |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <ul style="list-style-type: none"> Test 1: ics_AGPSSSETassisted_SET_initiated Test 2: ics_AGPSSSETbased_SET_initiated Test 3: ics_autonomousGPS_SET_initiated Test 4: ics_eCID_SET_initiated Test 5: NOT ics_eCID_SET_initiated Test 6: ics_AGANSSSETassisted_Galileo_SET_initiated Test 7: ics_AGANSSSETassisted_GLONASS_SET_initiated Test 8: ics_AGANSSSETbased_Galileo_SET_initiated Test 9: ics_AGANSSSETbased_GLONASS_SET_initiated Test 10: ics_autonomousGANSS_SET_initiated Test 11: ics_AGNSSSETassisted_preferred Test 12: ics_AGNSSSETbased_preferred Test 13: ics_OTDOA_SET_initiated <p>ixit:</p> <p>Test 10, Test 11, Test 12: ixit_gANSS</p> |
| Test Procedure | <p>Test 1: A-GPS SET assisted [Includes optional features]</p> <p>Test 2: A-GPS SET based [Includes optional features]</p> <p>Test 3: Autonomous GPS [Includes optional features]</p> <p>Test 4: Enhanced Cell ID [Includes optional features]</p> <p>Test 5: Cell ID</p> <p>Test 6: A-GANSS SET assisted –Galileo [Includes optional features]</p> <p>Test 7: A-GANSS SET assisted –GLONASS [Includes optional features]</p> <p>Test 8: A-GANSS SET based –Galileo [Includes optional features]</p> <p>Test 9: A-GANSS SET based –GLONASS [Includes optional features]</p> <p>Test 10: Autonomous GANSS [Includes optional features]</p> <p>Test 11: SET declares A-GNSS SET-assisted Preferred method [Includes optional features]</p> <p>Test 12: SET declares A-GNSS SET-based Preferred method [Includes optional features]</p> <p>Test 13: OTDOA [Includes optional features]</p> <p>Note that these test cases only test a single GNSS at one time. Testing of support for multiple simultaneous GNSSs is for further study.</p> |

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| | <p>1. All tests: start a SI Location Session</p> <p>2. The SET sends SUPL START with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> SET capabilities parameter consistent with the Positioning technologies supported by the SET as declared in the ics <p>3. Send SUPL RESPONSE with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method set to the value specified in the table below <input type="checkbox"/> GNSS Positioning Technology set to the value specified in the table below <p>4. The SET sends SUPL POS INIT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> SET capabilities parameter consistent with the Positioning technologies supported by the SET as declared in the ics <input type="checkbox"/> Test 4 only: Location ID, Cell info, the following parameters: NMR and/or TA if testing using GSM, Measured Results List if testing using WCDMA, Measured Results List EUTRA if testing using LTE. <p>5. Test 4 and Test 5: send SUPL END with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Position set to a realistic position for the SET. <p>6. All tests except Test 4 and Test 5:</p> <ul style="list-style-type: none"> <input type="checkbox"/> A SUPL POS session takes place and completes successfully using the Positioning Method defined by the test case. <p>Test 3 and Test 10:</p> <ul style="list-style-type: none"> <input type="checkbox"/> No Assistance Data is sent. Test 10: one of Galileo or GLONASS can be used depending on the technology supported by the SET and declared in ixit_gANSS. <p>Test 11:</p> <ul style="list-style-type: none"> <input type="checkbox"/> If A-GPS is supported by the SET then A-GPS SET based is used. Otherwise A-GANSS SET based is used. The GANSS used can be one of Galileo or GLONASS depending on the technology supported by the SET and declared in ixit_gANSS <p>Test 12:</p> <ul style="list-style-type: none"> <input type="checkbox"/> If A-GPS is supported by the SET then A-GPS SET assisted is used. Otherwise A-GANSS SET assisted is used. The GANSS used can be one of Galileo or GLONASS depending on the technology supported by the SET and declared in ixit_gANSS. <p>7. Test 2, Test 3, Test 8, Test 9, Test 10 and Test 11: send SUPL END</p> <p>8. Test 1, Test 6, Test 7, Test 12 and Test 13: send SUPL END with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Position set to a realistic position for the SET. <p>9. All tests: the SET releases the secure IP connection.</p> <p>Note: Repeat for all Positioning technologies supported by the SET as declared in the ics</p> |
| <p>Pass-Criteria</p> | <p>All tests:</p> <p>1. At step 2 the SET shall send SUPL START with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> SET capabilities parameter consistent with the Positioning technologies supported by the SET as declared in the ics <p>2. At step 2 the SET shall send SUPL POS INIT with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> SET capabilities parameter consistent with the Positioning technologies supported by the SET as declared in the ics <input type="checkbox"/> Test 4 only: Location ID, Cell info, the following parameters: NMR and/or TA if testing using GSM, Measured Results List if testing using WCDMA, Measured Results List EUTRA if testing |

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| | <p>using LTE.</p> <p>All tests except Test 4 and Test 5:</p> <p>3. At step 6 a SUPL POS session shall take place and shall complete successfully using the Positioning Method defined by the test case.</p> <p>Test 10: one of Galileo or GLONASS can be used depending on the technology supported by the SET and declared in ixit_gANSS.</p> <p>Test 11: If A-GPS is supported by the SET then A-GPS SET based shall be used. Otherwise A-GANSS SET based shall be used. The GANSS used can be one of Galileo or GLONASS depending on the technology supported by the SET and declared in ixit_gANSS.</p> <p>Test 12: If A-GPS is supported by the SET then A-GPS SET assisted shall be used. Otherwise A-GANSS SET assisted shall be used. The GANSS used can be one of Galileo or GLONASS depending on the technology supported by the SET and declared in ixit_gANSS.</p> <p>Test 13: OTDOA shall be used.</p> |
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| Test # | Value of Positioning Method | Value of GNSS Positioning Technology |
|---------|---|--------------------------------------|
| Test 1 | A-GPS SET assisted only | Not set |
| Test 2 | A-GPS SET based only | Not set |
| Test 3 | Autonomous GPS | Not set |
| Test 4 | Enhanced Cell / sector | Not set |
| Test 5 | Enhanced Cell / sector | Not set |
| Test 6 | A-GNSS SET assisted only | Galileo |
| Test 7 | A-GNSS SET assisted only | GLONASS |
| Test 8 | A-GNSS SET based only | Galileo |
| Test 9 | A-GNSS SET based only | GLONASS |
| Test 10 | Autonomous GNSS | Not set |
| Test 11 | If A-GPS is supported by the SET then A-GPS SET based only. Otherwise A-GANSS SET based only | Not set or Galileo or GLONASS |
| Test 12 | If A-GPS is supported by the SET then A-GPS SET assisted only. Otherwise A-GANSS SET assisted only. | Not set or Galileo or GLONASS |
| Test 13 | OTDOA | Not set |

Table 5: Positioning Method and GNSS Positioning Technology

5.2.2.2 SUPL-2.0-con-111 - SET Initiated Location Request of another SET [Includes optional features]

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| Test Case Id | SUPL-2.0-con-111 |
| Test Object | Client |

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| Test Case Description | To test SET correctly supports SET Initiated Location Request of another SET |
| Specification Reference | ULP TS 5.2.7 |
| SCR Reference | ULP-PRO-C-038-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: ics_silr_another_SET ixit: ixit_timer_UT9 |
| Test Procedure | <ol style="list-style-type: none"> 1. Start a SI Location Request of another SET 2. The SET sends SUPL SET INIT 3 Wait for approximately 90% of timer UT9 (depending on ixit_timer_UT9). During this time the SET does not release the secure IP connection 4. Send SUPL END with: <ul style="list-style-type: none"> □ Position set to some suitable value. 5. The Session ends and the SET releases the secure IP connection. 6. The SET displays the received position |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 3 the SET shall not release the secure IP connection 2. At step 5 the SET shall release the secure IP connection. 3. At step 6 the SET shall display the received position |

5.2.2.3 SUPL-2.0-con-113 - Transfer Location to Third Party [Includes optional features].

Note that this test case only tests Transfer Location to Third Party in the case of A-GPS SET based positioning method. In the case of all other positioning methods, Transfer Location to Third Party is considered trivial and is not tested.

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| Test Case Id | SUPL-2.0-con-113 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions Transfer Location to Third Party |
| Specification Reference | ULP TS 5.2.15, 8.1.6.2 |
| SCR Reference | ULP-PRO-C-040-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: ics_transfer_thirdParty AND ics_AGPSSETbased_SET_initiated |

| | |
|-----------------------|--|
| Test Procedure | <ol style="list-style-type: none"> 1. Start a SI Location Session 2. The SET sends SUPL START with: <ul style="list-style-type: none"> <input type="checkbox"/> SET capabilities parameter consistent with the Positioning technologies supported by the SET as declared in the ics <input type="checkbox"/> Third Party ID in Third Party set to a valid value 3. Send SUPL RESPONSE with: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method set to A-GPS SET based only 4. The SET sends SUPL POS INIT 6. A SUPL POS session takes place and completes successfully using: <ul style="list-style-type: none"> <input type="checkbox"/> Either in the case of RRLP: Measure Position Request / Measure Position Response messages <input type="checkbox"/> Or in the case of RRC: Measurement Control / Measurement Response messages <input type="checkbox"/> Or in the case of LPP: RequestLocationInformation / ProvideLocationInformation messages 7. The SET returns its position in either Measure Position Response (RRLP), Measurement Response (RRC) or ProvideLocationInformation (LPP) 8. Send SUPL END |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 2 the SET shall send SUPL START with: <ul style="list-style-type: none"> <input type="checkbox"/> SET capabilities parameter consistent with the Positioning technologies supported by the SET as declared in the ics <input type="checkbox"/> Third Party ID in Third Party set to a valid value 2. At step 6 a SUPL POS session shall take place and shall complete successfully using: <ul style="list-style-type: none"> <input type="checkbox"/> Either in the case of RRLP: Measure Position Request / Measure Position Response messages <input type="checkbox"/> Or in the case of RRC: Measurement Control / Measurement Response messages <input type="checkbox"/> Or in the case of LPP: RequestLocationInformation / ProvideLocationInformation messages 3. At step 7 the SET shall return its position in either Measure Position Response (RRLP), Measurement Response (RRC) or ProvideLocationInformation (LPP) |

5.2.3 Triggered Services: Periodic Triggers

5.2.3.1 SUPL-2.0-con-120 - Periodic reporting [Includes optional features]

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| Test Case Id | SUPL-2.0-con-120 |
| Test Object | Client |
| Test Case Description | To test SET correctly performs Periodic reporting |
| Specification Reference | ULP TS 5.1.7 |
| SCR Reference | ULP-PRO-C-032-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: |

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| | <p>Applicability:</p> <p>Test 1: ics_periodic_SET_initiated AND ics_AGPSSETassisted_SET_initiated</p> <p>Test 2: ics_periodic_SET_initiated AND ics_AGPSSETbased_SET_initiated</p> |
| <p>Test Procedure</p> | <p>Test 1: A-GPS SET assisted</p> <p>Test 2: A-GPS SET based</p> <p>Test 1: A-GPS SET assisted:</p> <ol style="list-style-type: none"> 1. Start a SI Periodic Location Session with the following values set in the application running on the SET or otherwise: <ul style="list-style-type: none"> <input type="checkbox"/> Number of Fixes: 50 <input type="checkbox"/> Interval Between Fixes: 60 seconds or equal to the minimum interval between fixes supported by the SET if greater than 60 seconds <input type="checkbox"/> Start Time: 30 seconds <p>[Editors note: these values are just place-holders, we may wish to change these values after further study]</p> 2. The SET sends SUPL TRIGGERED START with: <ul style="list-style-type: none"> <input type="checkbox"/> Trigger Type set to Periodic <input type="checkbox"/> Details of the Reporting Capability parameter consistent with the known reporting capabilities supported by the SET. <input type="checkbox"/> If the SET sends the Services Capabilities parameter in the SET Capabilities then the details of the Services Supported and the Reporting Capabilities parameters are consistent with the known reporting capabilities supported by the SET. 3. Send SUPL TRIGGERED RESPONSE with: Positioning Method set to A-GPS SET assisted.. <p>Note that the SET may release the secure connection at this point.</p> <ol style="list-style-type: none"> 4. After approximately 30 seconds (set by Start Time) the SET responds with SUPL POS INIT and a SUPL POS session takes place 5. The SUPL POS Session completes successfully 6. Send SUPL REPORT with a realistic position estimate <p>Note that the SET may release the secure connection at this point.</p> <ol style="list-style-type: none"> 7. The SET displays the received position estimate 8. After approximately 60 seconds after the SET sends SUPL POS INIT in step 4 (set by Interval Between Fixes) the SET responds with SUPL POS INIT and a SUPL POS session takes place 9. The SUPL POS Session completes successfully 10. Send SUPL REPORT with a realistic position estimate <p>Note that the SET may release the secure connection at this point.</p> <ol style="list-style-type: none"> 11. The SET displays the received position estimate 12. Repeat steps 8 through 11 until the remaining number of fixes (set by Number of Fixes) have been sent and displayed. 13. The SET sends SUPL END <p>Test 2: A-GPS SET based:</p> <ol style="list-style-type: none"> 14. Start a SI Periodic Location Session with the following values set in |

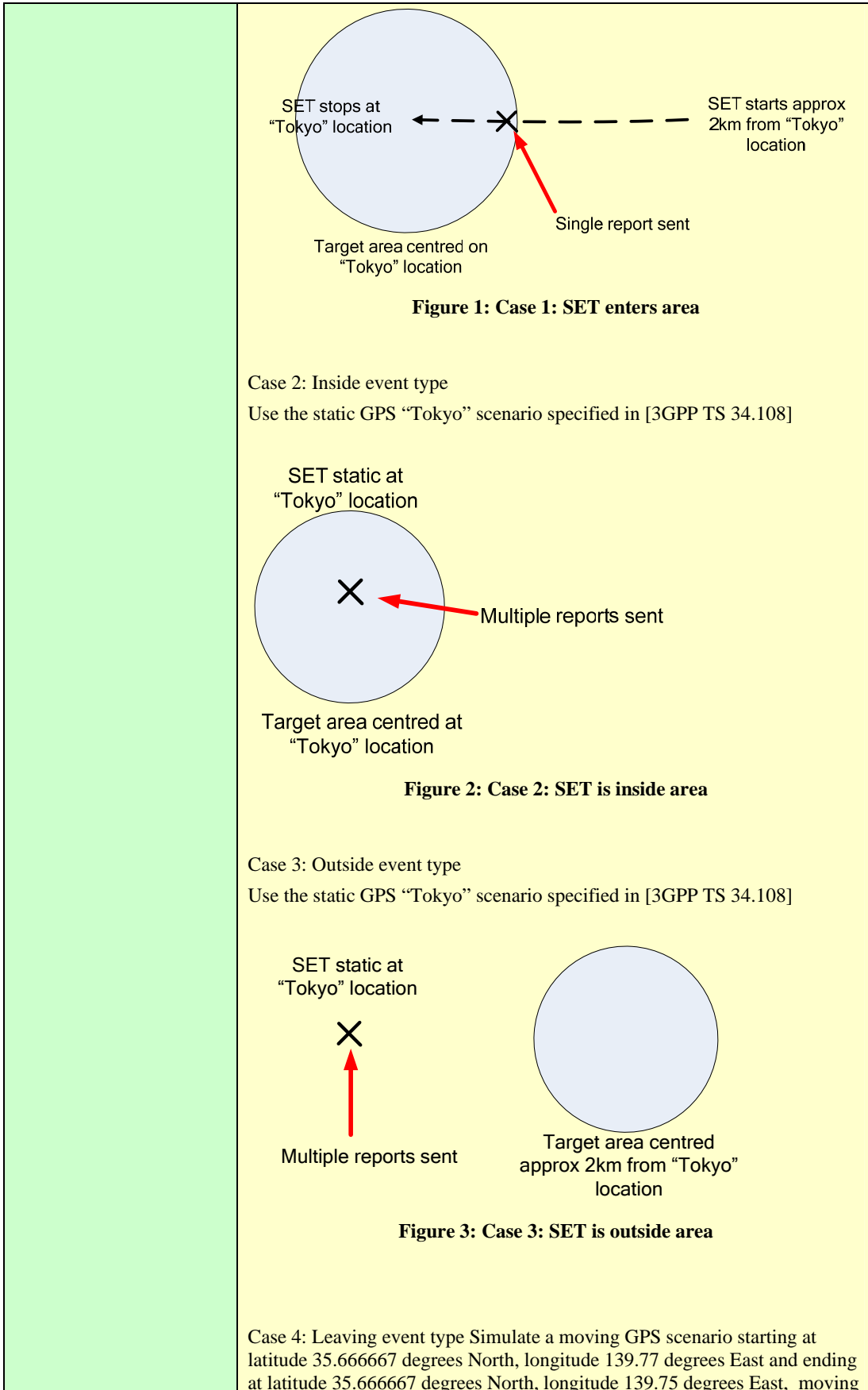
| | |
|-----------------------------|---|
| | <p>the application running on the SET or otherwise:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Number of Fixes: 50 <input type="checkbox"/> Interval Between Fixes: 60 seconds or equal to the minimum interval between fixes supported by the SET if greater than 60 seconds <input type="checkbox"/> Start Time: 30 seconds <p>[Editors note: these values are just place-holders, we may wish to change these values after further study]</p> <p>15. The SET sends SUPL TRIGGERED START with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Trigger Type set to Periodic <input type="checkbox"/> The details of the Reporting Capability parameter consistent with the known reporting capabilities supported by the SET. <input type="checkbox"/> If the SET sends the Services Capabilities parameter in the SET Capabilities then the details of the Services Supported and the Reporting Capabilities parameters are consistent with the known reporting capabilities supported by the SET. <p>16. Send SUPL TRIGGERED RESPONSE with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method set to A-GPS SET based.. <p>Note that the SET may release the secure connection at this point. Note that at any time during the following procedure when the SET is required to make a position estimate, if the SET requires Assistance Data:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT <input type="checkbox"/> A SUPL POS session takes place <input type="checkbox"/> Send SUPL REPORT with no parameters. <p>17. After approximately 30 seconds (set by Start Time) the SET makes a position estimate</p> <p>18. The SET displays the calculated position estimate</p> <p>19. After approximately 60 seconds (set by Interval Between Fixes) the SET makes a position estimate</p> <p>20. The SET displays the calculated position estimate</p> <p>21. Steps 19 and 20 are repeated until the remaining number of fixes (set by Number of Fixes) have been displayed.</p> <p>22. The SET sends SUPL END</p> |
| <p>Pass-Criteria</p> | <p>1. At step 2 and step 15:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The Trigger Type shall be set to Periodic <input type="checkbox"/> The details of the Reporting Capability parameter shall be consistent with the known Reporting capabilities supported by the SET. <input type="checkbox"/> If the SET sends the Services Capabilities parameter in the SET Capabilities then the details of the Services Supported and the Reporting Capabilities parameters shall be consistent with the known reporting capabilities supported by the SET. <p>Test 1:</p> <ol style="list-style-type: none"> 2. At step 5 and step 9 the SUPL POS Session shall complete successfully 3. At step 7 and step 11 the SET shall display the received position estimate the requested number of times 4. At step 13 the SET shall send SUPL END <p>Test 2:</p> |

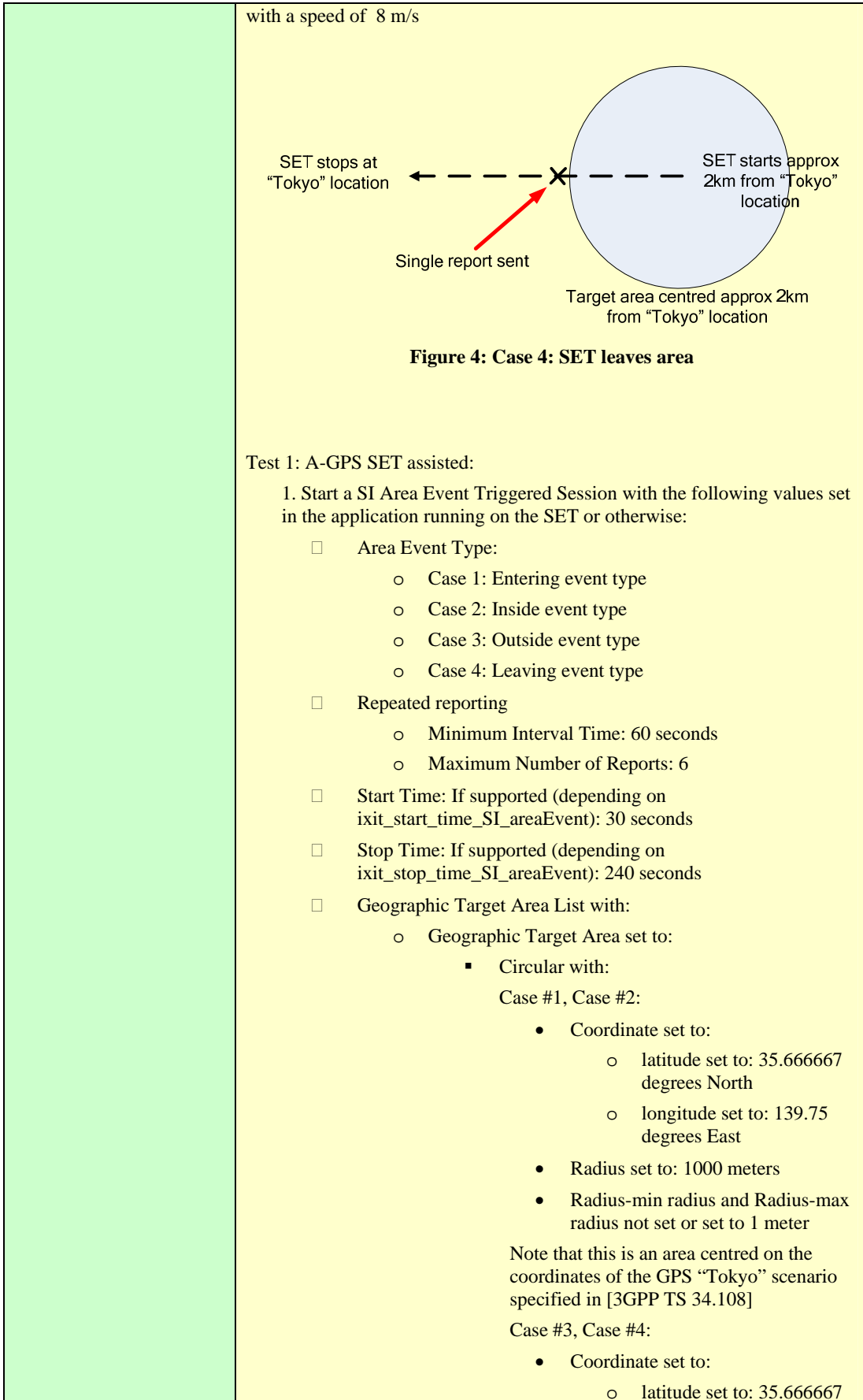
| | |
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| | <p>5. At step 18 and step 20 the SET shall display the position estimate the requested number of times</p> <p>6. At step 22 the SET shall send SUPL END</p> |
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5.2.4 Triggered Services: Area Event Triggers

5.2.4.1 SUPL-2.0-con-130 - Geographic Target Area [Includes optional features]

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| Test Case Id | SUPL-2.0-con-130 |
| Test Object | Client |
| Test Case Description | To test SET correctly performs Area Event reporting using Geographic Target Area |
| Specification Reference | ULP TS 5.2.9 |
| SCR Reference | ULP-PRO-C-033-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="padding-left: 40px;">Test 1: ics_AreaEvent_SET_initiated AND ics_GeoTargetArea AND ics_AGPSSETassisted_SET_initiated</p> <p style="padding-left: 40px;">Test 2: ics_AreaEvent_SET_initiated AND ics_GeoTargetArea AND ics_AGPSSETbased_SET_initiated</p> <p>Ixit:</p> <p style="padding-left: 40px;">ixit_start_time_SI_areaEvent</p> <p style="padding-left: 40px;">ixit_stop_time_SI_areaEvent</p> |
| Test Procedure | <p>Test 1: A-GPS SET assisted</p> <p>Test 2: A-GPS SET based</p> <p>Case 1: Entering event type</p> <p>Case 2: Inside event type</p> <p>Case 3: Outside event type</p> <p>Case 4: Leaving event type</p> <p>Details of GPS scenarios to be used and figures showing locations to aid understanding of test cases:</p> <p>Case 1: Entering event type</p> <p>Simulate a moving GPS scenario starting at latitude 35.666667 degrees North, longitude 139.77 degrees East and ending at latitude 35.666667 degrees North, longitude 139.75 degrees East, moving with a speed of 8 m/s</p> |





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| | <p>degrees North</p> <ul style="list-style-type: none"> ○ longitude set to: 139.77 degrees East • Radius set to: 1000 meters • Radius-min radius and Radius-max radius not set or set to 1 meter <p>Note that this is an area centred approximately 2km from the coordinates of the GPS “Tokyo” scenario specified in [3GPP TS 34.108]</p> <ul style="list-style-type: none"> <input type="checkbox"/> Area Id Lists not set <p>2. The SET sends SUPL TRIGGERED START with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Trigger Type set to Area Event <input type="checkbox"/> If the SET sends the Service Capabilities parameter in the SET Capabilities then the details of the Services Supported and the Event Trigger Capabilities parameters are consistent with the known trigger capabilities supported by the SET. <p>3. Send SUPL TRIGGERED RESPONSE with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method set to A-GPS SET assisted. <input type="checkbox"/> Trigger Params not set <p>Note that the SET may release the secure connection at this point.</p> <p>4. At any time the following sequence occurs, and may occur more than once:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT and a SUPL POS session takes place <input type="checkbox"/> The SUPL POS Session completes successfully <input type="checkbox"/> Send SUPL REPORT with the correctly calculated position <p>Note that the SET may release the secure connection at this point.</p> <p>5. After at least 30 seconds (set by Start Time) after step 2, or immediately after step 4 if Start Time is not supported (depending on <code>ixit_start_time_SI_areaEvent</code>):</p> <p>Case 1: The SET does not immediately display the position estimate as Entering event has not been met. Note however that the SET will eventually respond as described in step 7.</p> <p>Case 2: The SET displays the calculated position estimate as Inside event has been met</p> <p>Case 3: The SET displays the calculated position estimate as Outside event has been met</p> <p>Case 4: The SET does not immediately display the position estimate as Leaving event has not been met. Note however that the SET will eventually respond as described in step 7.</p> <p>6. Until step 8 is reached, the following sequence takes place repeatedly:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT and a SUPL POS session takes place <input type="checkbox"/> The SUPL POS Session completes successfully <input type="checkbox"/> Send SUPL REPORT with the correctly calculated position. <p>Note that the SET may release the secure connection at this point.</p> <p>7. Case 1: After one of these sequences the SET displays the position estimate as Entering event has been met. At other times the SET does not display the position estimate as Entering event has not been met.</p> |
|--|---|

Case 2: At intervals of at least 60 seconds (set by Minimum Interval Time) after the display of the previous position estimate, the SET displays the position estimate as Inside event has been met

Case 3: At intervals of at least 60 seconds (set by Minimum Interval Time) after the display of the previous position estimate, the SET displays the position estimate as Outside event has been met

Case 4: After one of these sequences the SET displays the position estimate as Leaving event has been met. At other times the SET does not display the position estimate as Leaving event has not been met.

8. If Stop Time is supported (depending on `ixit_stop_time_SI_areaEvent`), approximately 240 seconds (set by Stop Time) after step 2 the SET sends SUPL END with:

- o Status Code set to `sessionStopped`.

If Stop Time is not supported:

Case 1 and Case 4: 240 seconds after step 2 send SUPL TRIGGERED STOP (to terminate the test)

Case 2 and Case 3: At intervals of at least 60 seconds (set by Minimum Interval Time) after the display of the previous position estimate, the SET displays the remaining number of position estimates (the total number set by Maximum Number of Reports), and then the SET sends SUPL END

Test 2: A-GPS SET based:

9. Repeat step 1 through step 3, but at step 2 set:

- Positioning Method to A-GPS SET based

10. At any time during the following part of the test when the SET is required to make a position estimate, if the SET requires Assistance Data, then:

- The SET responds with SUPL POS INIT
- A SUPL POS session takes place and completes successfully
- Send SUPL REPORT with no parameters.

Note that the SET may release the secure connection at this point.

11. After at least 30 seconds (set by Start Time) after step 2, or immediately after step 3 if Start Time is not supported (depending on `ixit_start_time_SI_areaEvent`):

Case 1: The SET does not immediately display the position estimate as Entering event has not been met. Note however that the SET will eventually respond as described in step 12.

Case 2: The SET displays the calculated position estimate as Inside event has been met

Case 3: The SET displays the calculated position estimate as Outside event has been met

Case 4: The SET does not immediately display the position estimate as Leaving event has not been met. Note however that the SET will eventually respond as described in step 12.

12. Until step 13 is reached:

Case 1: At one time the SET displays the position estimate as Entering event has been met. The remainder of the time the SET does not display the position estimate as Entering event has not been met.

Case 2: At intervals of at least 60 seconds (set by Minimum Interval Time) after the display of the previous position estimate, the SET displays the position estimate as Inside event has been met

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| | <p>Case 3: At intervals of at least 60 seconds (set by Minimum Interval Time) after the display of the previous position estimate, the SET displays the position estimate as Outside event has been met</p> <p>Case 4: At one time the SET displays the position estimate as Leaving event has been met. The remainder of the time the SET does not display the position estimate as Leaving event has not been met.</p> <p>13. If Stop Time is supported (depending on <code>ixit_stop_time_SI_areaEvent</code>), approximately 240 seconds (set by Stop Time) after step 2.</p> <p>If Stop Time is not supported the SET sends SUPL END with:</p> <ul style="list-style-type: none"> o Status Code set to <code>sessionStopped</code>: <p>Case 1 and Case 4: 240 seconds after step 2 send SUPL TRIGGERED STOP (to terminate the test)</p> <p>Case 2 and Case 3: At intervals of at least 60 seconds (set by Minimum Interval Time) after the display of the previous position estimate, the SET displays the remaining number of position estimates (the total number set by Maximum Number of Reports), and then the SET sends SUPL END</p> |
| <p>Pass-Criteria</p> | <p>1. At step 2:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The Trigger Type shall be set to Area Event <input type="checkbox"/> If the SET sends the Service Capabilities parameter in the SET Capabilities then the details of the Services Supported and the Event Trigger Capabilities parameters shall be consistent with the known trigger capabilities supported by the SET. <p>Test 1:</p> <p>2. At step 4 and step 6 the SUPL POS Sessions shall complete successfully</p> <p>3. At step 5: Case 1 and Case 4: The SET shall not display the position estimate</p> <p>Case 2 and Case 3: The SET shall display the calculated position estimate after at least 30 seconds after step 2 or immediately after step 3 if Start Time is not supported</p> <p>4: At step 7: Case 1 and Case 4: After one of these sequences the SET shall display the position estimate. After the others of these sequences the SET shall not display the position estimate.</p> <p>Case 2 and Case 3: After some of these sequences the SET shall display the position estimate at intervals of at least 60 seconds after the display of the previous position estimate.</p> <p>5. At step 8:</p> <p>If Stop Time is supported the SET shall send SUPL END with :</p> <ul style="list-style-type: none"> o Status Code set to <code>sessionStopped</code>. <p>If Stop Time is not supported:</p> <p>Case 1 and Case 4: No requirement</p> <p>Case 2 and Case 3: At intervals of at least 60 seconds after the display of the previous position estimate, the SET shall display the remaining number of position estimates and then the SET shall send SUPL END</p> <p>Test 2:</p> <p>6. At step 11: Case 1 and Case 4: The SET shall not display the position estimate</p> <p>Case 2 and Case 3: The SET shall display the calculated position estimate after at least 30 seconds after step 2 or immediately after step 3</p> |

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| | <p>if Start Time is not supported</p> <p>7: At step 12: Case 1 and Case 4: At one time the SET shall display the position estimate. The remainder of the time the SET shall not display the position estimate.</p> <p>Case 2 and Case 3: At intervals of at least 60 seconds (set by Minimum Interval Time) after the display of the previous position estimate, the SET shall display the position estimate.</p> <p>8. At step 13:</p> <p>If Stop Time is supported the SET shall send SUPL END with:</p> <ul style="list-style-type: none"> o Status Code set to sessionStopped. <p>approximately 240 seconds after step 2.</p> <p>If Stop Time is not supported:</p> <p>Case 1 and Case 4: No requirement</p> <p>Case 2 and Case 3: At intervals of at least 60 seconds after the display of the previous position estimate, the SET shall display the remaining number of position estimates and then the SET shall send SUPL END</p> |
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5.2.4.2 SUPL-2.0-con-131 - Area ID [Includes optional features]

Note: This test case tests the case where the SET initiates the session using a Geographic Target Area and the SLP then converts this into an Area Id. The session then continues using this Area Id supplied by the SLP. Note that this test case requires that the SET supports both Geographic Target Area and Area Id

The use of Area Id initially supplied by the SET seems to be allowed by the SUPL TS, however no Use Case for this feature can be imagined, and so no test case is provided.

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| Test Case Id | SUPL-2.0-con-131 |
| Test Object | Client |
| Test Case Description | To test SET correctly performs Area Event reporting using Area ID generated by the SLP |
| Specification Reference | ULP TS 5.2.9 |
| SCR Reference | ULP-PRO-C-033-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="padding-left: 40px;">Test 1: ics_AreaEvent_SET_initiated AND ics_GeoTargetArea AND ics_AreaId AND ics_AGPSSETassisted_SET_initiated</p> <p style="padding-left: 40px;">Test 2: ics_AreaEvent_SET_initiated AND ics_GeoTargetArea AND ics_AreaId AND ics_AGPSSETbased_SET_initiated</p> <p>Ixit:</p> <p style="padding-left: 40px;">ixit_start_time_SI_areaEvent</p> <p style="padding-left: 40px;">ixit_stop_time_SI_areaEvent</p> |
| Test Procedure | <p>Test 1: A-GPS SET assisted</p> <p>Test 2: A-GPS SET based</p> |

- Case 1: Entering event type
- Case 2: Inside event type
- Case 3: Outside event type
- Case 4: Leaving event type

Details of cellular scenarios to be used and figures showing locations to aid understanding of test cases:

In all cases the SET specifies the “Tokyo” Geographical target area and the SLP converts this into the Cell ID that is normally used for testing and returns it to the SET in the target Area ID List.

Case 1: Entering event type

The SET camps on a GSM or WCDMA Cell ID that is not normally used for testing and that is not present in Area ID list. The SET then handover to the cell that is normally used for testing and that is present in the Area ID List.

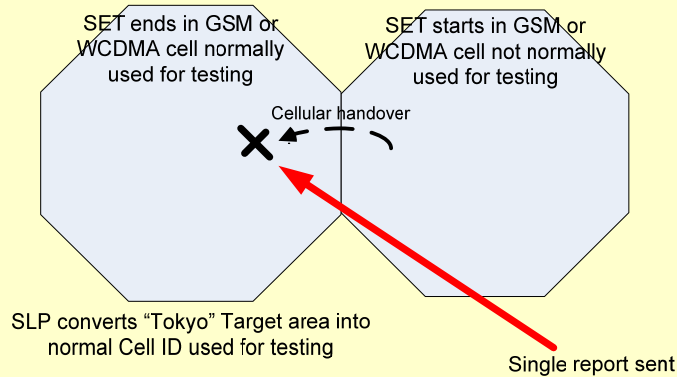


Figure 1: Case 1: SET enters area

Case 2: Inside event type

The SET camps on the GSM or WCDMA Cell ID that is normally used for testing and that is present in the Area ID list.

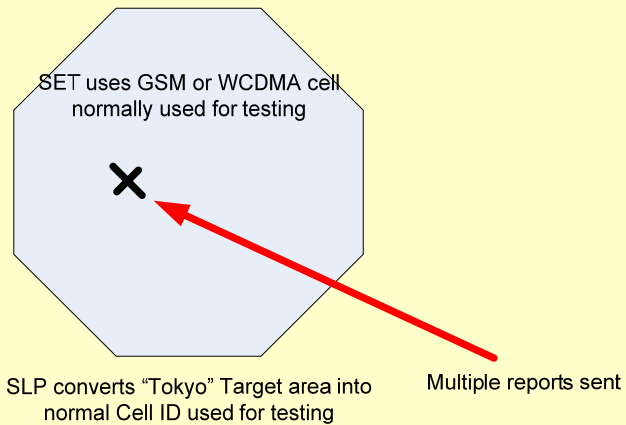


Figure 2: Case 2: SET is inside area

Case 3: Outside event type

The SET camps on a GSM or WCDMA Cell ID that is not normally used for testing and that is not present in Area ID list.

The cell that is normally used for testing is present in the Area ID List.

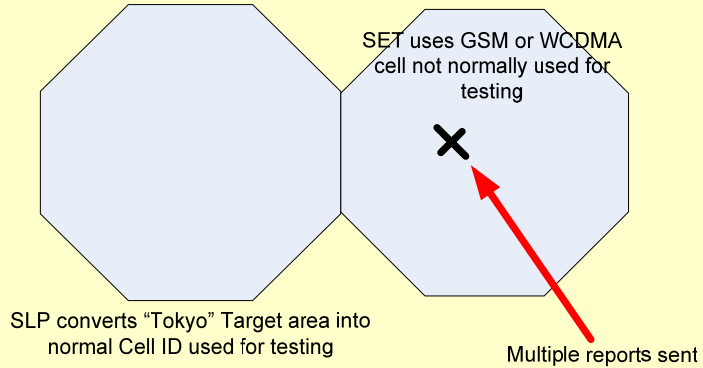


Figure 3: Case 3: SET is outside area

Case 4: Leaving event type

The SET camps on the GSM or WCDMA Cell ID that is normally used for testing and that is present in Area ID list. The SET then handover to a cell that is not normally used for testing and that is not present in the Area ID List.

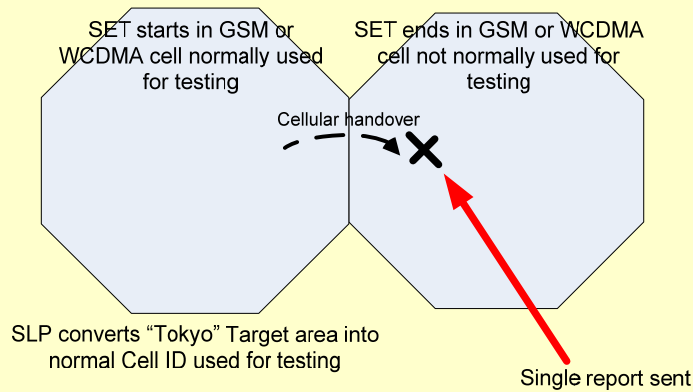


Figure 4: Case 4: SET leaves area

Test 1: A-GPS SET assisted:

1. Start a SI Area Event Triggered Session with the following values set in the application running on the SET or otherwise:

- Area Event Type:
 - Case 1: Entering event type
 - Case 2: Inside event type
 - Case 3: Outside event type
 - Case 4: Leaving event type
- Repeated reporting

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| | <ul style="list-style-type: none"> ○ Minimum Interval Time: 60 seconds ○ Maximum Number of Reports: 4 □ Start Time: If supported (depending on <code>ixit_start_time_SI_areaEvent</code>): 30 seconds □ Stop Time: If supported (depending on <code>ixit_stop_time_SI_areaEvent</code>): <ul style="list-style-type: none"> ○ Case 1 and Case 4: 240 seconds ○ Case 2 and Case 3: 120 seconds □ Geographic Target Area List with: <ul style="list-style-type: none"> ○ Geographic Target Area set to: <ul style="list-style-type: none"> ▪ Circular with: <ul style="list-style-type: none"> • Coordinate set to: <ul style="list-style-type: none"> ○ latitude set to: 35.666667 degrees North ○ longitude set to: 139.75 degrees East • Radius set to: 1000 meters • Radius-min radius and Radius-max radius not set or set to 1 meter <p>Note that this is an area centred on the coordinates of the GPS “Tokyo” scenario specified in [3GPP TS 34.108]</p> <ul style="list-style-type: none"> □ Area Id Lists not set <p>2. The SET sends SUPL TRIGGERED START with:</p> <ul style="list-style-type: none"> □ Trigger Type set to Area Event □ If the SET sends the Service Capabilities parameter in the SET Capabilities then the details of the Services Supported and the Event Trigger Capabilities parameters are consistent with the known trigger capabilities supported by the SET. <p>3. Send SUPL TRIGGERED RESPONSE with:</p> <ul style="list-style-type: none"> □ Positioning Method set to A-GPS SET assisted. □ Trigger Params set to Area Event Params with: <ul style="list-style-type: none"> ○ Area Event Type: <ul style="list-style-type: none"> ▪ Case 1: Entering event type ▪ Case 2: Inside event type ▪ Case 3: Outside event type ▪ Case 4: Leaving event type ○ Location estimate: True ○ Repeated reporting not set ○ Geographic Target Area List not set ○ Area Id List with: <ul style="list-style-type: none"> ▪ Area Id Set set to one of the following, depending on the technology being used for testing: <ul style="list-style-type: none"> • GSM Area Id with: Cell Global Identity set to value normally used during testing with GSM and Mobile Country Code, Mobile Network Code and Location Area |
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| | <p>Code not set</p> <ul style="list-style-type: none"> • WCDMA Area Id with: Cell Identity set to value normally used during testing with WCDMA and Mobile Country Code, Mobile Network Code and Location Area Code not set ▪ Area Id Set Type and Geographic Area Mapping List not set <p>Note that the SET may release the secure connection at this point.</p> <p>4. At some time: Case 2 and Case 3:</p> <p>The following sequence occurs, and may occur more than once:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT and a SUPL POS session takes place <input type="checkbox"/> The SUPL POS Session completes successfully <input type="checkbox"/> Send SUPL REPORT with the correctly calculated position. <p>Note that the SET may release the secure connection at this point.</p> <p>Case 1 and Case 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: The SET does not respond as Entering event has not been met. <input type="checkbox"/> Case 4: The SET does not respond as Leaving event has not been met <p>5. After at least 30 seconds (set by Start Time) after step 2, or immediately after step 4 if Start Time is not supported (depending on <code>ixit_start_time_SI_areaEvent</code>):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 2: The SET displays the calculated position estimate as Inside event has been met <input type="checkbox"/> Case 3: The SET displays the calculated position estimate as Outside event has been met <p>6. At some time: Case 2 and Case 3:</p> <p>The following sequence occurs, and may occur more than once:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT and a SUPL POS session takes place <input type="checkbox"/> The SUPL POS Session completes successfully <input type="checkbox"/> Send SUPL REPORT with the correctly calculated position. <p>Note that the SET may release the secure connection at this point.</p> <p>Case 1 and Case 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: The SET does not respond as Entering event has not been met. <input type="checkbox"/> Case 4: The SET does not respond as Leaving event has not been met <p>7. After at least 60 seconds (set by Minimum Interval Time) after step 5:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 2: The SET displays the calculated position estimate as Inside event has been met <input type="checkbox"/> Case 3: The SET displays the calculated position estimate as Outside event has been met |
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8. Case 2 and Case 3:

If Stop Time is supported (depending on `ixit_stop_time_SI_areaEvent`), approximately 120 seconds (set by Stop Time) after step 2 the SET sends SUPL END with:

- Status Code set to `sessionStopped`.

Note that one or more sequences as detailed below may take place before this occurs.

If Stop Time is not supported the following sequence takes place repeatedly until the SET has displayed the remaining number of position estimates (the total number set by Maximum Number of Reports), and then the SET sends SUPL END

At some time:

- The SET responds with SUPL POS INIT and a SUPL POS session takes place
- The SUPL POS Session completes successfully
- Send SUPL REPORT with the correctly calculated position.

Note that the SET may release the secure connection at this point.

Case 2: After at least 60 seconds (set by Minimum Interval Time) after the display of the previous position estimate, the SET displays the calculated position estimate as Inside event has been met

Case 3: After at least 60 seconds (set by Minimum Interval Time) after the display of the previous position estimate, the SET displays the calculated position estimate as Outside event has been met

9. Case 1 and Case 4

120 seconds after step 2:

Case 1: force a cellular handover to the GSM or WCDMA Cell ID that is normally used for testing.

Case 4: force a cellular handover to a GSM or WCDMA Cell ID that is not normally used for testing.

10. Case 1 and Case 4

At some time:

- The SET responds with SUPL POS INIT and a SUPL POS session takes place
- The SUPL POS Session completes successfully
- Send SUPL REPORT with the correctly calculated position.

Note that the SET may release the secure connection at this point.

11. Case 1 and Case 4

Case 1: The SET displays the calculated position estimate as Entering event has been met.

Case 4: The SET displays the calculated position estimate as Leaving event has been met.

12. Case 1 and Case 4

If Stop Time is supported (depending on `ixit_stop_time_SI_areaEvent`), approximately 240 seconds (set by Stop Time) after step 2 the SET sends SUPL END with:

- Status Code set to `sessionStopped`.

If Stop Time is not supported, 240 seconds after step 2 send SUPL TRIGGERED STOP (to terminate the test)

Test 2: A-GPS SET based:

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| | <p>13. Repeat step 1 through step 3, but at step 3 set:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method to A-GPS SET based <p>14. At any time during the following part of the test when the SET is required to make a position estimate, if the SET requires Assistance Data, then:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The SET responds with SUPL POS INIT <input type="checkbox"/> A SUPL POS session takes place and completes successfully <input type="checkbox"/> Send SUPL REPORT with no parameters. <p>Note that the SET may release the secure connection at this point.</p> <p>15. After at least 30 seconds (set by Start Time) after step 2, or immediately after step 3 if Start Time is not supported (depending on <code>ixit_start_time_SI_areaEvent</code>):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: The SET does not respond as Entering event has not been met. <input type="checkbox"/> Case 2: The SET displays the calculated position estimate as Inside event has been met <input type="checkbox"/> Case 3: The SET displays the calculated position estimate as Outside event has been met <input type="checkbox"/> Case 4: The SET does not respond as Leaving event has not been met <p>16. After at least 60 seconds (set by Minimum Interval Time) after step 15:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Case 1: The SET does not respond as Entering event has not been met. <input type="checkbox"/> Case 2: The SET displays the calculated position estimate as Inside event has been met <input type="checkbox"/> Case 3: The SET displays the calculated position estimate as Outside event has been met <p>Case 4: The SET does not respond as Leaving event has not been met</p> <p>17. Case 2 and Case 3:</p> <p>If Stop Time is supported (depending on <code>ixit_stop_time_SI_areaEvent</code>), approximately 120 seconds (set by Stop Time) after step 2 the SET sends SUPL END with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Status Code set to <code>sessionStopped</code>. <p>Note that one more display of the calculated position estimate as detailed below may take place before this occurs.</p> <p>If Stop Time is not supported the following takes place repeatedly until the SET has displayed the remaining number of position estimates (the total number set by Maximum Number of Reports), and then the SET sends SUPL END</p> <p>Case 2: After at least 60 seconds (set by Minimum Interval Time) after the display of the previous position estimate, the SET displays the calculated position estimate as Inside event has been met</p> <p>Case 3: After at least 60 seconds (set by Minimum Interval Time) after the display of the previous position estimate, the SET displays the calculated position estimate as Outside event has been met</p> <p>18. Case 1 and Case 4:</p> <p>120 seconds after step 3:</p> <p>Case 1: force a cellular handover to the GSM or WCDMA Cell ID that is normally used for testing.</p> <p>Case 4: force a cellular handover to a GSM or WCDMA Cell ID that is</p> |
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| | <p>not normally used for testing.</p> <p>19. Case 1 and Case 4</p> <p>Case 1: The SET displays the calculated position estimate as Entering event has been met.</p> <p>Case 4: The SET displays the calculated position estimate as Leaving event has been met.</p> <p>20. Case 1 and Case 4</p> <p>If Stop Time is supported (depending on <code>ixit_stop_time_SI_areaEvent</code>), approximately 240 seconds (set by Stop Time) after step 2 the SET sends SUPL END with:</p> <ul style="list-style-type: none"> ○ Status Code set to <code>sessionStopped</code>. <p>If Stop Time is not supported, 240 seconds after step 2 send SUPL TRIGGERED STOP (to terminate the test)</p> |
| <p>Pass-Criteria</p> | <p>1. At step 2:</p> <ul style="list-style-type: none"> □ The Trigger Type shall be set to Area Event □ If the SET sends the Service Capabilities parameter in the SET Capabilities then the details of the Services Supported and the Event Trigger Capabilities parameters shall be consistent with the known trigger capabilities supported by the SET. <p>Test 1:</p> <p>2. At step 4: Case 2 and Case 3 the SET shall respond with SUPL POS INIT and a SUPL POS session shall take place and complete successfully.</p> <p>Case 1 and Case 4 the SET shall not respond</p> <p>3. At step 5: Case 2 and Case 3 the SET shall display the calculated position estimate after at least 30 seconds after step 2 or immediately after step 4 if Start Time is not supported</p> <p>4. At step 6: Case 2 and Case 3 the SET shall respond with SUPL POS INIT and a SUPL POS session shall take place and complete successfully.</p> <p>Case 1 and Case 4 the SET shall not respond</p> <p>5. At step 7: Case 2 and Case 3 the SET shall display the calculated position estimate after at least 60 seconds after step 5</p> <p>6. At step 8: Case 2 and Case 3:</p> <p>If Stop Time is supported the SET shall send SUPL END with:</p> <ul style="list-style-type: none"> ○ Status Code set to <code>sessionStopped</code>. <p>If Stop Time is not supported the following shall take place repeatedly until the SET has displayed the remaining number of position estimates, and then the SET shall send SUPL END</p> <ul style="list-style-type: none"> □ The SET shall respond with SUPL POS INIT and a SUPL POS session shall take place and complete successfully. <p>After at least 60 seconds after the display of the previous position estimate, the SET shall display the calculated position estimate</p> <p>7. At step 10: Case 1 and Case 4 the SET shall respond with SUPL POS INIT and a SUPL POS session shall take place and complete successfully</p> <p>8. At step 11: Case 1 and Case 4 the SET shall display the calculated position estimate</p> <p>9. At step 12: Case 1 and Case 4 if Stop Time is supported, the SET shall send SUPL END with:</p> <ul style="list-style-type: none"> ○ Status Code set to <code>sessionStopped</code>. |

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| | <p>Test 2:</p> <p>10. At step 15: Case 1 and Case 4: The SET shall not display the position estimate.</p> <p>Case 2 and Case 3 The SET shall display the calculated position estimate after at least 30 seconds after step 2 or immediately after step 3 if Start Time is not supported</p> <p>11. At step 16: Case 1 and Case 4 the SET shall not respond</p> <p>Case 2 and Case 3 the SET shall display the calculated position estimate after at least 60 seconds after step 15</p> <p>12. At step 17: Case 2 and Case 3:</p> <p>If Stop Time is supported the SET shall send SUPL END with:</p> <ul style="list-style-type: none"> o Status Code set to sessionStopped. <p>If Stop Time is not supported the following shall take place repeatedly until the SET has displayed the remaining number of position estimates, and then the SET shall send SUPL END</p> <p>After at least 60 seconds after the display of the previous position estimate, the SET shall display the calculated position estimate</p> <p>13: At step 19: Case 1 and Case 4 The SET shall display the calculated position estimate.</p> <p>14. At step 20: Case 1 and Case 4 if Stop Time is supported, the SET shall send SUPL END with:</p> <ul style="list-style-type: none"> o Status Code set to sessionStopped. |
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5.2.5 Triggered Services: Other Scenarios

5.2.5.1 SUPL-2.0-con-135 - Network cancels Triggered Location Request [Includes optional features].

Notes:

1. Only the case of the Network cancelling a Triggered Location session is given. The case of the SET cancelling a Triggered Location session is considered trivial and is therefore not tested
2. This test case covers the case where a Network Initiated session is not supported. If a Network Initiated session is supported, then test case SUPL-2.0-con-061 is used instead.

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| Test Case Id | SUPL-2.0-con-135 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions when the Network cancels a Triggered Location Request |
| Specification Reference | ULP TS 5.1.17, 8, 9, 10 |
| SCR Reference | ULP-MES-C-011-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> |

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| | NOT ics_NetworkInitiated AND (ics_periodic_SET_initiated OR ics_event_SET_initiated) |
| Test Procedure | <ol style="list-style-type: none"> 1. Start a SI Periodic Triggered Location Session, or a SI Area Event Triggered Location session if Periodic Location sessions are not supported in the SET. 2. Immediately after the first trigger has occurred and the associated session has completed and if the secure IP connection is not released by the SET, send SUPL TRIGGERED STOP with no parameters 3. The SET sends SUPL END 4. The Triggered Location Session ends and the SET releases the secure IP connection. 5. If at step 2 the SET releases the secure connection such that SUPL TRIGGERED STOP cannot be sent to the SET, then stop the test. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 3 the SET shall respond with SUPL END 2. If at step 2 the SET releases the secure connection the test shall PASS. |

5.2.6 Timer expiration

5.2.6.1 SUPL-2.0-con-140 - Timeout UT1

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| Test Case Id | SUPL-2.0-con-140 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions timer UT1 |
| Specification Reference | ULP TS Appendix D |
| SCR Reference | ULP-PRO-C-009-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: Test 2: ics_periodic_SET_initiated OR ics_event_SET_initiated Ixit: ixit_timer_UT1 |

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| <p>Test Procedure</p> | <p>Test 1: Immediate session Test 2: Triggered session [Includes Optional Features]</p> <p>Test 1: Immediate session</p> <ol style="list-style-type: none"> 1. Start a SI Location Session. 2. The SET sends SUPL START 3. Do not respond 4. After timer UT1 expires (depending on ixit_timer_UT1) the SET sends SUPL END with <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 5. The Location Session ends and the SET releases the secure IP connection. <p>Test 2: Triggered session [Includes Optional Features]</p> <ol style="list-style-type: none"> 6. Start a SI Periodic Triggered Location Session, or a SI Area Event Triggered Location session if Periodic Location sessions are not supported in the SET. 7. The SET sends SUPL TRIGGERED START 8. Do not respond 9. After timer UT1 expires (depending on ixit_timer_UT1) the SET sends SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 10. The Location Session ends and the SET releases the secure IP connection. |
| <p>Pass-Criteria</p> | <ol style="list-style-type: none"> 1. At step 4 and step 9 the SET shall respond with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 2. At step 5 and step 10 the SET shall release the secure IP connection. |

5.2.6.2 SUPL-2.0-con-141 - Timeout UT2

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| <p>Test Case Id</p> | <p>SUPL-2.0-con-141</p> |
| <p>Test Object</p> | <p>Client</p> |
| <p>Test Case Description</p> | <p>To test SET correctly actions timer UT2</p> |
| <p>Specification Reference</p> | <p>ULP TS Appendix D</p> |
| <p>SCR Reference</p> | <p>ULP-PRO-C-009-O</p> |
| <p>Tool</p> | <p>SUPL Client Conformance Test Tool</p> |
| <p>Test code</p> | <p>Validated test code for this test case</p> |
| <p>Preconditions</p> | <p>State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: Test 1: ics_AGPSSSETassisted_SET_initiated OR ics_AGPSSSETbased_SET_initiated OR [others FFS] (Any positioning method requiring a SUPL POS session)</p> |

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| | <p>Test 2: (ics_AGPSSETassisted_SET_initiated OR ics_AGPSSETbased_SET_initiated OR [others FFS]) AND (ics_periodic_SET_initiated OR ics_event_SET_initiated)</p> <p>Test 4: ics_periodic_SET_initiated OR ics_event_SET_initiated</p> <p>ixit: ixit_timer_UT2</p> |
| <p>Test Procedure</p> | <p>Test 1: SUPL POS session (Immediate session) [Includes optional features] Test 2: SUPL POS session (Triggered session) [Includes optional features] Test 3: No SUPL POS session (Immediate session) Test 4: No SUPL POS session (Triggered session) [Includes optional features]</p> <p>Test 1: SUPL POS session (Immediate session) [Includes optional features]</p> <ol style="list-style-type: none"> 1. Start a SI Location Session 2. The SET sends SUPL START 3. Send SUPL RESPONSE with: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method set to any method that requires a SUPL POS session that is supported by the SET 4. The SET sends SUPL POS INIT 5. Do not respond 6. After timer UT2 expires (depending on ixit_timer_UT2) the SET sends SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 7. The Location Session ends and the SET releases the secure IP connection. <p>Test 2: SUPL POS session (Triggered session) [Includes optional features]</p> <p>Note: This test case is applicable to SETs that support any location method that requires a SUPL POS session and that supports any triggered service. This test case has been written for a Periodic Triggered, SET assisted mode Location Session. The case where Periodic Location sessions or a SET assisted mode is not supported in the SET is FFS</p> <ol style="list-style-type: none"> 8. Start a SI Periodic Triggered Location Session 9. The SET sends SUPL TRIGGERED START 10. Send SUPL TRIGGERED RESPONSE with: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method set to any SET assisted method that requires a SUPL POS session that is supported by the SET 11. When the first periodic trigger occurs the SET sends SUPL POS INIT 12. Do not respond 13. (After timer UT2 expires (depending on ixit_timer_UT2) the SET will abandon the SUPL POS session) <p>Note that the SET may release the secure connection at this time.</p> <ol style="list-style-type: none"> 14. When the second periodic trigger occurs the SET sends SUPL POS INIT |

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| | <p>15. A SUPL POS session takes place</p> <p>16. Send SUPL REPORT</p> <p>17. The Triggered Location Session can be allowed to continue, or send SUPL TRIGGERED STOP to terminate the session</p> <p>Test 3: No SUPL POS session (Immediate session)</p> <p>18. Start a SI Location Session</p> <p>19. The SET sends SUPL START</p> <p>20. Send SUPL RESPONSE with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method set to Enhanced Cell/sector <p>21. The SET sends SUPL POS INIT</p> <p>22. Do not respond</p> <p>23. After timer UT2 expires (depending on ixit_timer_UT2) the SET sends SUPL END with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. <p>24. The Location Session ends and the SET releases the secure IP connection.</p> <p>Test 4: No SUPL POS session (Triggered session) [Includes optional features]</p> <p>Note: This test case is applicable to SETs that support any triggered service. This test case has been written for a Periodic Triggered Location Session. The case where Periodic Location sessions is not supported in the SET is FFS</p> <p>25. Start a SI Periodic Triggered Location Session</p> <p>26. The SET sends SUPL TRIGGERED START</p> <p>27. Send SUPL TRIGGERED RESPONSE with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method set to Enhanced Cell/sector <p>28. When the first periodic trigger occurs the SET sends SUPL POS INIT</p> <p>29. Do not respond</p> <p>30. (After timer UT2 expires (depending on ixit_timer_UT2) the SET will abandon the individual location session)</p> <p>31. When the second periodic trigger occurs the SET sends SUPL POS INIT</p> <p>32. Send SUPL REPORT</p> <p>33. The Triggered Location Session can be allowed to continue, or send SUPL TRIGGERED STOP to terminate the session</p> |
| <p>Pass-Criteria</p> | <p>Test 1 and Test 3:</p> <ol style="list-style-type: none"> 1. At step 6 and step 23 the SET shall respond with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 2. At step 7 and step 24 the SET shall release the secure IP connection. <p>Test 2 and Test 4:</p> <ol style="list-style-type: none"> 3. At step 14 and step 31 the SET shall send SUPL POS INIT |

5.2.6.3 SUPL-2.0-con-142 - Timeout UT3 [Includes optional features]

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| Test Case Id | SUPL-2.0-con-142 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions timer UT3 |
| Specification Reference | ULP TS Appendix D |
| SCR Reference | ULP-PRO-C-009-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p>Test 1:</p> <p>ics_AGPSSETassisted_SET_initiated OR ics_AGPSSETbased_SET_initiated OR [others FFS] (Any positioning method requiring a SUPL POS session)</p> <p>Test 2:</p> <p>(ics_AGPSSETassisted_SET_initiated OR ics_AGPSSETbased_SET_initiated OR [others FFS]) AND (ics_periodic_SET_initiated OR ics_event_SET_initiated)</p> <p>ixit:</p> <p>ixit_timer_UT3</p> |
| Test Procedure | <p>Test 1: Immediate session</p> <p>Test 2: Triggered session</p> <p>Test 1: Immediate session</p> <ol style="list-style-type: none"> 1. Start a SI Location Session 2. The SET sends SUPL START 3. Send SUPL RESPONSE with: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method set to any method that requires a SUPL POS session that is supported by the SET 4. The SET sends SUPL POS INIT 5. A SUPL POS session takes place 6. After the SET sends the final SUPL POS do not respond 7. After timer UT3 expires (depending on ixit_timer_UT3) the SET sends SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 8. The Location Session ends and the SET releases the secure IP connection. <p>Test 2: Triggered session</p> <p>Note: This test case is applicable to SETs that support any location method that requires a SUPL POS session and that supports any triggered service. This test case has been written for a Periodic Triggered, SET assisted mode Location Session. The case where Periodic Location sessions or a SET assisted mode is not supported in</p> |

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| | <p>the SET is FFS</p> <ol style="list-style-type: none"> 9. Start a SI Periodic Triggered Location Session 10. The SET sends SUPL TRIGGERED START 11. Send SUPL TRIGGERED RESPONSE with: <ul style="list-style-type: none"> <input type="checkbox"/> Positioning Method set to any SET assisted method that requires a SUPL POS session that is supported by the SET 12. When the first periodic trigger occurs the SET sends SUPL POS INIT 13. A SUPL POS session takes place 14. After the SET sends the final SUPL POS do not respond 15. (After timer UT3 expires (depending on ixit_timer_UT3) the SET will continue to the next trigger in the session) <p>Note that the SET may release the secure connection at this time.</p> <ol style="list-style-type: none"> 16. When the second periodic trigger occurs the SET sends SUPL POS INIT 17. A SUPL POS session takes place 18. Send SUPL REPORT 19. The Triggered Location Session can be allowed to continue, or send SUPL TRIGGERED STOP to terminate the session |
| Pass-Criteria | <p>Test 1:</p> <ol style="list-style-type: none"> 1. At step 7 the SET shall respond with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 2. At step 8 the SET shall release the secure IP connection. <p>Test 2:</p> <ol style="list-style-type: none"> 3. At step 16 the SET shall send SUPL POS INIT |

5.2.6.4 SUPL-2.0-con-143 - Timeout UT7 [Includes optional features]

Note: If Test Case SUPL-2.0-con-073 - Timeout UT7 (Network Initiated) is run, then this test case is not required as it tests the same feature. This test case is only included in case Network Initiated Triggered sessions are not supported, but SET Initiated Triggered sessions are supported

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| Test Case Id | SUPL-2.0-con-143 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions timer UT7 |
| Specification Reference | ULP TS Appendix D |
| SCR Reference | ULP-PRO-C-009-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="padding-left: 40px;">(ics_periodic_SET_initiated OR ics_event_SET_initiated) AND NOT (ics_periodic_Network_initiated OR ics_event_Network_initiated)</p> <p>ixit:</p> |

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| | ixit_timer_UT7 |
| Test Procedure | <ol style="list-style-type: none"> 1. Start a SI Periodic Triggered Location Session, or a SI Area Event Triggered Location session if Periodic Location sessions are not supported in the SET. 2. Allow the first trigger to occur (either periodic or area event) and the first location session to complete 3. From the SET stop the Triggered Location Session 4. The SET sends SUPL TRIGGERED STOP 5 Do not respond 6. After timer UT7 expires (depending on ixit_timer_UT7) the SET sends SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 7. The Triggered Location Session ends and the SET releases the secure IP connection. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 6 the SET shall respond with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 2. At step 7 the SET shall release the secure IP connection. |

5.2.6.5 SUPL-2.0-con-144 - Timeout UT9 [Includes optional features].

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|--------------------------------|---|
| Test Case Id | SUPL-2.0-con-144 |
| Test Object | Client |
| Test Case Description | To test SET correctly actions timer UT9 |
| Specification Reference | ULP TS Appendix D |
| SCR Reference | ULP-PRO-C-009-O |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | State: Continuation of / Can be tested at the same time as: Prerequisite for this test: Applicability: ics_silr_another_SET ixit: ixit_timer_UT9 |
| Test Procedure | <ol style="list-style-type: none"> 1. Start a SI Location Request of another SET 2. The SET sends SUPL SET INIT 3 Do not respond 4. After timer UT9 expires (depending on ixit_timer_UT9) the SET sends SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 5. The Session ends and the SET releases the secure IP connection. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 4 the SET shall respond with SUPL END with: <ul style="list-style-type: none"> <input type="checkbox"/> Status Code not sent or set to any of: unspecified, systemFailure or posMethodFailure. 2. At step 5 the SET shall release the secure IP connection. |

5.3 Client Conformance Testing: Common

The Test Cases in this section are applicable for all SETs but they only require to be run once in either a Network Initiated or a SET Initiated call flow.

5.3.1 Basic Functionality

5.3.1.1 SUPL-2.0-con-007 - Alternative H-SLP Addresses [Includes optional features]

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|--------------------------------|--|
| Test Case Id | SUPL-2.0-con-007 |
| Test Object | Client |
| Test Case Description | To test SET correctly generates and uses the correct H-SLP address |
| Specification Reference | ULP TS 6.2 |
| SCR Reference | |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="text-align: right;">Test 2: ics_HSLP_stored_in_SET AND ics_PSK_TLS</p> |
| Test Procedure | <p>Test 1: H-SLP address stored on UICC</p> <p>Test 2: H-SLP address stored on SET [Includes optional features]</p> <p>Test 3: Auto configuration of H-SLP address</p> <p>Test 4: Auto configuration of H-SLP address following authentication failure:</p> <p>Test 5: Clearing of old H-SLP address following change of IMSI:</p> <p>Test 1: H-SLP address stored on UICC:</p> <ol style="list-style-type: none"> 1. Ensure there is an H-SLP address stored on the UICC <p>Test 2: H-SLP address stored on SET [Includes optional features]:</p> <ol style="list-style-type: none"> 2. Ensure there is no H-SLP address stored on the UICC, and ensure there is an H-SLP address stored on the SET <p>Test 3: Auto configuration of H-SLP address:</p> <ol style="list-style-type: none"> 3. Ensure there is no H-SLP address stored on either the UICC or on the SET <p>Test 4: Auto configuration of H-SLP address following authentication failure:</p> <ol style="list-style-type: none"> 4. Ensure there is an H-SLP address stored on either the UICC or on the SET <p>Test 5: Clearing of old H-SLP address following change of IMSI:</p> <ol style="list-style-type: none"> 5. Ensure there is no H-SLP address stored on the SET |

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| | <p>Tests 1, 2 and 3:</p> <ol style="list-style-type: none">6. Start a NI Location Session or a SI Location Session if NI Location Session is not supported in the SET.7. The SET establishes a secure IP connection using:<ul style="list-style-type: none"><input type="checkbox"/> Test 1: The H-SLP address provisioned in the UICC<input type="checkbox"/> Test 2: PSK-TLS and using the H-SLP address provisioned on the SET<input type="checkbox"/> Test 3: The H-SLP address generated from the IMSI stored on the UICC8. The Location Session completes successfully. <p>Test 4:</p> <ol style="list-style-type: none">9. Start a NI Location Session or a SI Location Session if NI Location Session is not supported in the SET.10. The SET attempts to establish a secure IP connection11. Send an invalid server certificate to the SET resulting in an authentication failure.12. The SET establishes a secure IP connection using:<ul style="list-style-type: none"><input type="checkbox"/> The H-SLP address generated from the IMSI stored in the UICC13. The Location Session completes successfully. <p>Test 5:</p> <ol style="list-style-type: none">14. Start a NI Location Session or a SI Location Session if NI Location Session is not supported in the SET.15. The SET establishes a secure IP connection16. Record the H-SLP address used.17. The Location Session completes successfully.18. Power down the SET19. Insert a new UICC into the SET with a different MNC and, or MCC. If the H-SLP address is stored in the UICC, then the new UICC must have a different H-SLP address from the original one.20. Start a NI Location Session or a SI Location Session if a SI Location Session was used in step 14.21. The SET establishes a secure IP connection using:<ul style="list-style-type: none"><input type="checkbox"/> The H-SLP address stored on the new UICC or generated from the new IMSI stored in the UICC22. The Location Session completes successfully. |
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| Pass-Criteria | <p>Test 1, 2 and 3:</p> <ol style="list-style-type: none"> 1. At step 7 the SET shall establish a secure IP connection using: <ul style="list-style-type: none"> <input type="checkbox"/> Test 1: The H-SLP address provisioned in the UICC <input type="checkbox"/> Test 2: PSK-TLS and using the H-SLP address provisioned on the SET <input type="checkbox"/> Test 3: The H-SLP address generated from the IMSI stored on the UICC 2. At step 8 the Location Session shall complete successfully. <p>Test 4:</p> <ol style="list-style-type: none"> 3. At step 12 the SET shall establish a secure IP connection using: <ul style="list-style-type: none"> <input type="checkbox"/> The H-SLP address generated from the IMSI stored in the UICC 4. At step 13 the Location Session shall complete successfully. <p>Test 5:</p> <ol style="list-style-type: none"> 5. At step 21 the SET shall establish a secure IP connection using: <ul style="list-style-type: none"> <input type="checkbox"/> The H-SLP address stored on the new UICC or generated from the new IMSI stored in the UICC 6. At step 22 the Location Session shall complete successfully. |
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5.3.1.2 SUPL-2.0-con-008 - Optional Ciphering Suites [Includes optional features]

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| Test Case Id | SUPL-2.0-con-008 |
| Test Object | Client |
| Test Case Description | To test SET correctly uses optional ciphering suites |
| Specification Reference | ULP TS 6.3 |
| SCR Reference | |
| Tool | SUPL Client Conformance Test Tool |
| Test code | Validated test code for this test case |
| Preconditions | <p>State:</p> <p>Continuation of / Can be tested at the same time as:</p> <p>Prerequisite for this test:</p> <p>Applicability:</p> <p style="text-align: right;">Test 1: ics_TLS_add_cipher</p> <p style="text-align: right;">Test 2: ics_PSKTLS_add_cipher</p> |

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| Test Procedure | <p>Test 1: TLS_RSA_WITH_3DES_EDE_CBC_SHA Test 2: TLS_PSK_WITH_3DES_EDE_CBC_SHA</p> <ol style="list-style-type: none"> 1. Configure the Conformance Test Tool to use: <ul style="list-style-type: none"> <input type="checkbox"/> Test 1: TLS_RSA_WITH_3DES_EDE_CBC_SHA <input type="checkbox"/> Test 2: TLS_PSK_WITH_3DES_EDE_CBC_SHA 2. Start a NI Location Session or a SI Location Session if NI Location Session is not supported in the SET. 3. The SET establishes a secure IP connection using : <ul style="list-style-type: none"> <input type="checkbox"/> Test 1: TLS_RSA_WITH_3DES_EDE_CBC_SHA <input type="checkbox"/> Test 2: TLS_PSK_WITH_3DES_EDE_CBC_SHA 4. The Location Session completes successfully. |
| Pass-Criteria | <p>Test 1 and 2:</p> <ol style="list-style-type: none"> 1. At step 3 the SET shall establish a secure IP connection using: <ul style="list-style-type: none"> <input type="checkbox"/> Test 1: TLS_RSA_WITH_3DES_EDE_CBC_SHA <input type="checkbox"/> Test 2: TLS_PSK_WITH_3DES_EDE_CBC_SHA 2. At step 4 the Location Session shall complete successfully. |

6. SUPL Server Conformance Test Cases

6.1 SUPL Server Conformance: Network Initiated

None

6.2 SUPL Server Conformance: SET Initiated

None

7. SUPL Interoperability Test Cases

7.1 SUPL Interoperability: Network Initiated

The following Network Initiated SUPL 1.0 test cases from [SUPL 1.0 ETS] test features that have not changed since SUPL 1.0. Where indicated these test cases (and features) have been tested sufficiently in various TestFests and therefore these test cases do not require retesting for SUPL 2.0. In addition most of the features indicated will be tested implicitly in some of the new test cases for SUPL 2.0. Where the test cases have not been run during SUPL 1.0 TestFests, they may be considered for SUPL 2.0 testing

| SUPL 2.0 ETR reference | SUPL 1.0 Test Case | Tested in SUPL 1.0 TestFests |
|---|---|------------------------------|
| NB1: Basic Network Initiated flows – Proxy mode NB2: Basic Network Initiated flows – Non-Proxy mode NPP: Negotiation of Positioning method, Proxy mode and Protocol | SUPL-1.0-int-000 - Cell ID | Yes |
| | SUPL-1.0-int-200 - SET-assisted A-GPS | Yes |
| | SUPL-1.0-int-201 - SET-based A-GPS | Yes |
| | SUPL-1.0-int-202 - Autonomous GPS | Yes |
| | SUPL-1.0-int-203 - AFLT | No |
| | SUPL-1.0-int-204 - Enhanced Cell ID | No |
| | SUPL-1.0-int-205 - E-OTD | No |
| ACA: Alternative Client Authentication (ACA) Mechanisms - ACA Procedures | SUPL-1.0-int-010 - Alternative authentication model for GSM/WCDMA | Yes |
| QOP: QoS ALT: Altitude | SUPL-1.0-int-210 - Horizontal accuracy | Yes |
| | SUPL-1.0-int-211 - Response time | Yes |
| | SUPL-1.0-int-212 - Vertical accuracy (Altitude), Best Effort | Yes |
| | SUPL-1.0-int-213 - Vertical accuracy (Altitude), Assured | Yes |
| | SUPL-1.0-int-214 - Horizontal Accuracy, Best Effort | Yes |
| | SUPL-1.0-int-215 - Horizontal Accuracy, Assured | Yes |
| | SUPL-1.0-int-217 - Max location age, current position returned | Yes |
| | SUPL-1.0-int-220 - Position fulfils requested QoS | Yes |
| VEL: Velocity | SUPL-1.0-int-240 - SET-based A-GPS | Yes |
| | SUPL-1.0-int-241 - SET-assisted A-GPS | Yes |
| NB: Notification and Verification | SUPL-1.0-int-250 - Notification only | Yes |
| | SUPL-1.0-int-251 - Notification and Verification Allowed on No Answer, SET User Answers and Accepts | Yes |
| | SUPL-1.0-int-252 - Notification and Verification Allowed on No Answer, SET User answers and Rejects | Yes |
| | SUPL-1.0-int-253 - Notification and Verification Allowed on No Answer, SET User does not answer, which means Accept | Yes |
| | SUPL-1.0-int-254 - Notification and Verification Denied on No Answer, SET User answers and Accepts | Yes |

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| | SUPL-1.0-int-255 - Notification and Verification Denied on No Answer, SET User answers and Rejects | Yes |
| | SUPL-1.0-int-256 - Notification and Verification Denied on No Answer, SET User does not answer, which means Reject | Yes |
| | SUPL-1.0-int-257 - Privacy Override | Yes |
| | SUPL-1.0-int-258 - Requestor Id | Yes |
| | SUPL-1.0-int-259 - Client Name | Yes |

7.1.1 SUPL-2.0-int-001 - SET-assisted A-GANSS [Includes optional features]

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| Test Case Id | SUPL-2.0-int-001 |
| Test Object | H-SLP and SET |
| Test Case Description | To test SET-assisted A-GANSS positioning method when SET is not roaming. |
| Specification Reference | TS-ULP 5.1.1, TS-ULP 9, AD 5.3.2.1, AD 5.3.2.2, AD 5.3.2.3 |
| SCR Reference | ULP-PRO-S-017-O, ULP-PRO-C-015-O |
| ETR Reference | NPP - Negotiation of Positioning method, Proxy mode and Protocol NB1 – Basic Network Initiated Flows – Proxy Mode |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. GNSS-simulator <p>State:</p> <ul style="list-style-type: none"> SET is attached to the home PLMN. SET is idle. The SET's position is known to tester. H-SLP has access to cell data from the Home PLMN. SET and H-SLP support the Proxy mode of operation The H-SLP is configured to use the SET-assisted GANSS positioning method. The GANSS or GANSSs to be used depend on the SET capabilities and the available GANSS signals. The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Note this test case is intended to test GANSS systems e.g. Galileo, SBAS, Modemized GPS, QZSS, GLONASS and not GPS</p> <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> None |
| Test Procedure | <ol style="list-style-type: none"> The network resident MLS application requests the current position of the SET The H-SLP initiates a location session with the SET. The H-SLP and the SET complete a secure positioning session using the selected positioning method or methods The H-SLP returns position and timestamp to the SUPL Agent, which in turn returns position and timestamp to the network resident MLS application. |

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| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that correct positioning method is used and that relevant signalling between H-SLP and SET is sent over a secure IP connection. 2. Check that the returned position is acceptable and that the timestamp indicates that the current position of the SET has been calculated. |
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7.1.2 SUPL-2.0-int-002 - SET-based A-GANSS [Includes optional features]

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|--------------------------------|--|
| Test Case Id | SUPL-2.0-int-002 |
| Test Object | H-SLP and SET |
| Test Case Description | To test SET-based A-GANSS positioning method when SET is not roaming. |
| Specification Reference | TS-ULP 5.1.1, TS-ULP 9, AD 5.3.2.1, AD 5.3.2.2, AD 5.3.2.3 |
| SCR Reference | ULP-PRO-S-018-O, ULP-PRO-C-016-O |
| ETR Reference | NPP - Negotiation of Positioning method, Proxy mode and Protocol NB1 – Basic Network Initiated Flows – Proxy Mode |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> • 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with either GSM, WCDMA or LTE access network or combination thereof. • GNSS-simulator <p>State:</p> <ul style="list-style-type: none"> • SET is attached to the home PLMN. • SET is idle. • The SET's position is known to tester. • H-SLP has access to cell data from the Home PLMN. • SET and H-SLP support the Proxy mode of operation • The H-SLP is configured to use the SET-based GANSS positioning method. The GANSS or GANSSs to be used depend on the SET capabilities and the available GANSS signals. • The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Note this test case is intended to test GANSS systems e.g. Galileo, SBAS, Modemized GPS, QZSS, GLONASS and not GPS</p> <ul style="list-style-type: none"> • <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> • None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> • None |
| Test Procedure | <ol style="list-style-type: none"> 1. The network resident MLS application requests the current position of the SET 2. The H-SLP initiates a location session with the SET. 3. The H-SLP and the SET complete a secure positioning session using the selected positioning method or methods 4. The H-SLP returns position and timestamp to the SUPL Agent, which in turn returns position and timestamp to the network resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that correct positioning method is used and that relevant signalling between H-SLP and SET is sent over a secure IP connection. 2. Check that the returned position is acceptable and that the timestamp indicates that the current position of the SET has been calculated. |

7.1.3 SUPL-2.0-int-003 - Autonomous GANSS [Includes optional features]

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| Test Case Id | SUPL-2.0-int-003 |
| Test Object | H-SLP and SET |
| Test Case Description | To test Autonomous GANSS positioning method when SET is not roaming. |
| Specification Reference | TS-ULP 5.1.1, TS-ULP 9, AD 5.3.2.1, AD 5.3.2.2, AD 5.3.2.3 |
| SCR Reference | ULP-PRO-S-016-O, ULP-PRO-C-014-O |
| ETR Reference | NPP - Negotiation of Positioning method, Proxy mode and Protocol NB1 – Basic Network Initiated Flows – Proxy Mode |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> • 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. • GNSS-simulator <p>State:</p> <ul style="list-style-type: none"> • SET is attached to the home PLMN. • SET is idle. • The SET's position is known to tester. • H-SLP has access to cell data from the Home PLMN. • SET and H-SLP support the Proxy mode of operation. • The H-SLP is configured to use the Autonomous GANSS positioning method. The GANSS or GANSSs to be used depend on the SET capabilities and the available GANSS signals. • The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Note this test case is intended to test GANSS systems e.g. Galileo, SBAS, Modernized GPS, QZSS, GLONASS and not A-GPS</p> <ul style="list-style-type: none"> • <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> • None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> • None |
| Test Procedure | <ol style="list-style-type: none"> 1. The network resident MLS application requests the current position of the SET 2. The H-SLP initiates a location session with the SET. 3. The H-SLP and the SET complete a secure positioning session using the selected positioning method or methods and including a SUPL POS session with no Assistance Data 4. The H-SLP returns position and timestamp to the SUPL Agent, which in turn returns position and timestamp to the network resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that correct positioning method is used and that relevant signalling between H-SLP and SET is sent over a secure IP connection. This shall include a SUPL POS session with no Assistance Data. 2. Check that the returned position is acceptable and that the timestamp indicates that the current position of the SET has been calculated. |

7.1.4 SUPL-2.0-int-004 - Emergency Services: Successful Case

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| Test Case Id | SUPL-2.0-int-004 |
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| Test Object | E-SLP and SET |
| Test Case Description | To test Network Initiated Emergency Services Proxy-Mode in case emergency services location request |
| Specification Reference | TS-ULP 5.1.15.1 |
| SCR Reference | ULP-PRO-S-036-M, ULP-PRO-C-034-M |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <ul style="list-style-type: none"> • Equipment for GSM/WCDMA/LTE implementations: <ul style="list-style-type: none"> ○ 1 MLS Client, 1 SET, 1 E-SLP, 1 PPG, 1 SMS-C, Home PLMN with either GSM, WCDMA or LTE access network or combination thereof. • Equipment for CDMA implementations: <ul style="list-style-type: none"> ○ 1 MLS Client, 1 SET, 1 E-SLP, Home PLMN with CDMA access network. • State: <ul style="list-style-type: none"> ○ SET is attached to the home PLMN. ○ SET is idle. ○ The SET's position is known to the tester. ○ E-SLP has access to cell data from the Home PLMN. ○ SET and E-SLP support the same mode of operation: Proxy Mode • Continuation of / Can be tested at the same time as: <ul style="list-style-type: none"> ○ None • Prerequisite for this test: <ul style="list-style-type: none"> ○ None |
| Test Procedure | <ol style="list-style-type: none"> 1. The network resident MLS application requests the current position of the SET and the SUPL Agent issues a MLP-ELIR request containing the following optional parameter to the E-SLP: <ul style="list-style-type: none"> • The loc_type parameter is set to "CURRENT " 2. The E-SLP returns position and timestamp in MLP-ELIA to the SUPL Agent, which in turn returns position and timestamp to the network resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that correct positioning method is used and that relevant signalling between E-SLP and SET is sent over a secure IP connection. 2. At step 2, check that the returned position is acceptable and that the timestamp indicates that the current position of the SET has been calculated. |

7.1.5 SUPL-2.0-int-005 - Emergency Services: Non-emergency request comes when there is ongoing Emergency session

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| Test Case Id | SUPL-2.0-int-005 |
| Test Object | E-SLP and SET |
| Test Case Description | To test Emergency Service in case non-emergency request comes when there is ongoing Emergency session |
| Specification Reference | TS-ULP 6.1.5 |
| SCR Reference | ULP-PRO-S-036-M, ULP-PRO-C-034-M |

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| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <ul style="list-style-type: none"> • Equipment for GSM/WCDMA/LTE implementations: <ul style="list-style-type: none"> ○ 1 MLS Client, 1 SET, 1 E-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. • Equipment for CDMA implementations: <ul style="list-style-type: none"> ○ 1 MLS Client, 1 SET, 1 E-SLP, Home PLMN with CDMA access network. • State: <ul style="list-style-type: none"> ○ SET is attached to the home PLMN. ○ SET is idle. ○ The SET's position is known to the tester. ○ E-SLP has access to cell data from the Home PLMN. ○ SET and E-SLP support the same mode of operation: Proxy Mode. • Continuation of / Can be tested at the same time as: <ul style="list-style-type: none"> ○ None • Prerequisite for this test: <ul style="list-style-type: none"> ○ None |
| Test Procedure | <ol style="list-style-type: none"> 1. The network resident MLS application requests the current position of the SET and the SUPL Agent issues a MLP-ELIR request containing the following optional parameter to the E-SLP: <ul style="list-style-type: none"> • The loc_type parameter is set to "CURRENT " 2. Before the emergency positioning is finished, the network resident MLS application requests the current position of the same SET and the SUPL Agent issues a MLP-SLIR request containing the following optional parameter to the H-SLP: <ul style="list-style-type: none"> • The loc_type parameter is set to "CURRENT " 3. The E-SLP returns position and timestamp in MLP-ELIA to the SUPL Agent, which in turn returns position and timestamp to the network resident MLS application. 4. The H-SLP returns no position but error response in MLP-SLIA to the SUPL Agent, which in turn returns error response to the network resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 3, check that the returned position is acceptable and that the timestamp indicates that the current position of the SET has been calculated. 2. At step 2 and 4, check the SUPL Init for non-emergency request is discarded by SET and SET doesn't respond any ULP message when there is ongoing Emergency session. |

7.1.6 SUPL-2.0-int-006 - Emergency Services: Emergency request comes when there is ongoing non-emergency session

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| Test Case Id | SUPL-2.0-int-006 |
| Test Object | E-SLP and SET |
| Test Case Description | To test Emergency Service in case Emergency Request comes when there is ongoing non-emergency session |

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|--------------------------------|---|
| Specification Reference | TS-ULP 6.1.5 |
| SCR Reference | ULP-PRO-S-036-M, ULP-PRO-C-034-M |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <ul style="list-style-type: none"> • Equipment for GSM/WCDMA/LTE implementations: <ul style="list-style-type: none"> ○ 1 MLS Client, 1 SET, 1 E-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. • Equipment for CDMA implementations: <ul style="list-style-type: none"> ○ 1 MLS Client, 1 SET, 1 E-SLP, Home PLMN with CDMA access network. • State: <ul style="list-style-type: none"> ○ SET is attached to the home PLMN. ○ SET is idle. ○ The SET's position is known to the tester. ○ E-SLP has access to cell data from the Home PLMN. ○ SET and E-SLP support the same mode of operation: Proxy Mode. • Continuation of / Can be tested at the same time as: <ul style="list-style-type: none"> ○ None • Prerequisite for this test: <ul style="list-style-type: none"> ○ None |
| Test Procedure | <ol style="list-style-type: none"> 1. The network resident MLS application requests the current position of the SET and the SUPL Agent issues a MLP-SLIR request containing the following optional parameter to the H-SLP: <ul style="list-style-type: none"> • The loc_type parameter is set to "CURRENT " 2. Before the Non-Emergency positioning is finished, the network resident MLS application requests the current position of the same SET and the SUPL Agent issues a MLP-ELIR request containing the following optional parameter to the E-SLP: <ul style="list-style-type: none"> • The loc_type parameter is set to "CURRENT " 3. The E-SLP returns position and timestamp in MLP-ELIA to the SUPL Agent, which in turn returns position and timestamp to the network resident MLS application. 4. The H-SLP returns no position but error response in MLP-SLIA to the SUPL Agent, which in turn returns error response to the network resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 3, check that the returned position is acceptable and that the timestamp indicates that the current position of the SET has been calculated. 2. At step 4, check the processes for ongoing non-emergency request are aborted by SET when Emergency Request comes. |

7.1.7 SUPL-2.0-int-007 - Periodic Triggers (Real time reporting) [Includes optional features]

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| Test Case Id | SUPL-2.0-int-007 |
| Test Object | Client (SET) and Server (H-SLP) |

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| Test Case Description | To test network initiated Periodic triggered services with real time reporting. |
| Specification Reference | TS-ULP 5.1.7 |
| SCR Reference | ULP-PRO-C-032-O, ULP-PRO-C-046-O , , ULP-PRO-S-034-O, ULP-PRO-S-048-O |
| ETR Reference | NPT1 - Network Initiated– Triggered Services: Periodic Triggers Proxy Mode |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. <p>State:</p> <ul style="list-style-type: none"> SET is attached to the home PLMN. SET is idle. The SET's position is known to the tester. H-SLP has access to cell data from the Home PLMN. SET and H-SLP support the Proxy mode of operation The H-SLP is configured to use the Enhanced Cell ID positioning method. The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> None |
| Test Procedure | <ol style="list-style-type: none"> The network resident MLS application requests periodic location of the SET with real time reporting and a reasonable number of fixes and intervals between fixes The H-SLP initiates the periodic trigger session with the SET using the SUPL INIT message. Each time the periodic trigger in the SET indicates that a position fix has to be performed the SET initiates a secure session with the H-SLP. The H-SLP and the SET complete a secure positioning session using the selected positioning method. The H-SLP returns the position to the SUPL Agent, which in turn returns the position to the network resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> For all the SUPL sessions check that correct positioning method is used and that relevant signaling between H-SLP and SET is sent over a secure IP connection. For all the positioning sessions, check that the returned position is acceptable and that the current position of the SET has been received. Check the number of sessions is correct and the interval between the sessions is acceptable |

7.1.8 SUPL-2.0-int-008 - Periodic Triggers (Quasi Real time reporting) [Includes optional features]

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| Test Case Id | SUPL-2.0-int-008 |
| Test Object | Client (SET) and Server (H-SLP) |
| Test Case Description | To test network initiated Periodic triggered services with quasi real time reporting. |
| Specification Reference | TS-ULP 5.1.7 |

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| SCR Reference | ULP-PRO-C-032-O, ULP-PRO-C-047-O, ULP-PRO-S-034-O, ULP-PRO-S-049-O |
| ETR Reference | NPT1 - Network Initiated– Triggered Services: Periodic Triggers Proxy Mode |
| Tool | Protocol analyzer to monitor signaling between SET and SLP. If a protocol analyzer is not available, log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> • 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. • GNSS simulator <p>State:</p> <ul style="list-style-type: none"> • SET is attached to the home PLMN. • SET is idle. • The SET's position is known to the tester. • H-SLP has access to cell data from the Home PLMN. • SET and H-SLP support the Proxy mode of operation. • The H-SLP is configured to use the A-GPS SET Based positioning method. • The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> • None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> • None |
| Test Procedure | <ol style="list-style-type: none"> 1. The network resident MLS application requests periodic location of the SET with quasi real time reporting and a reasonable number of fixes and intervals between fixes. 2. The H-SLP initiates the periodic trigger session with the SET using the SUPL INIT message. 3. The SET and the H-SLP follow the standard call flow procedure used for periodic trigger SUPL sessions. 4. After a reasonable number of periodic fixes (and well before the end of the triggered session is reached) were determined and reported to the H-SLP, the SET's connection to the H-SLP is artificially interrupted. 5. While the connection to the H-SLP is interrupted, the SET continues to determine its position periodically and – since real time reporting of the determined positions is not possible – stores the position results in internal memory. This condition remains in place for the duration of a few times the interval between fixes. 6. The connection between the SET and the H-SLP is restored. 7. When the next interval for determining and reporting a position is reached, the SET determines its position and reports the position together with the buffered position results (i.e. the position results which could not be reported to the H-SLP due to lack of connectivity) in one batch to the H-SLP. The H-SLP reports the position results to the MLS application. 8. The SET and the H-SLP continue their triggered periodic session. 9. The connection between the SET and the H-SLP may be artificially interrupted a few more times. In this case steps 5 to 8 are repeated accordingly. 10. The H-SLP and the SET complete the triggered periodic SUPL session. |

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| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that the correct positioning method is used throughout the triggered periodic SUPL session and that ULP message exchange between the H-SLP and the SET takes place over a secure IP connection. 2. For all reported positions, check that the returned positions are acceptable and that the positions of the SET have been received correctly by the H-SLP (and the MLS Application). 3. Check that all reported "missed" position fixes (i.e. position results which the SET was unable to report to the H-SLP in real time and which were stored in internal memory of the SET) are reported correctly. 4. Check that the SET and the H-SLP terminate the triggered SUPL session successfully. |
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7.1.9 SUPL-2.0-int-009 - Periodic Triggers (Batch reporting) [Includes optional features]

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| Test Case Id | SUPL-2.0-int-009 |
| Test Object | Client (SET) and Server (H-SLP) |
| Test Case Description | To test network initiated Periodic triggered services with batch reporting. |
| Specification Reference | TS-ULP 5.1.7 |
| SCR Reference | ULP-PRO-C-032-O, ULP-PRO-C-048-O , , ULP-PRO-S-034-O, ULP-PRO-S-050-O |
| ETR Reference | NPT1 - Network Initiated- Triggered Services: Periodic Triggers Proxy Mode |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> • 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. <p>State:</p> <ul style="list-style-type: none"> • SET is attached to the home PLMN. • SET is idle. • The SET's position is known to the tester. • H-SLP has access to cell data from the Home PLMN. • SET and H-SLP support the Proxy mode of operation • The H-SLP is configured to use the Enhanced Cell ID positioning method. • The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> • None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> • None |

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| Test Procedure | <ol style="list-style-type: none"> 1. The network resident MLS application requests periodic location of the SET with batch reporting and a reasonable number of fixes, intervals between fixes and batch reporting conditions 2. The H-SLP initiates the periodic trigger session with the SET using the SUPL INIT message. 3. Each time the periodic trigger in the SET indicates that a position fix has to be performed the SET initiates a secure session with the H-SLP. 4. The H-SLP and the SET complete a secure positioning session using the selected positioning method. 5. Each time, or when, the batch reporting conditions are fulfilled; the SET initiates a secure session with the H-SLP and sends the stored positions in SUPL REPORT. 6. The H-SLP returns the reported positions to the SUPL Agent, which in turn returns the positions to the network resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. For all the SUPL sessions check that correct positioning method is used and that relevant signaling between H-SLP and SET is sent over a secure IP connection. 2. For all the positioning results, check that the returned position is acceptable and that the current position of the SET has been received. 3. Check the number of sessions is correct, the interval between the sessions is acceptable and the batch reporting conditions are acceptable. |

7.1.10 SUPL-2.0-int-013 - Area Event Trigger [Includes optional features]

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| Test Case Id | SUPL-2.0-int-013 |
| Test Object | Client (SET) and Server (H-SLP) |
| Test Case Description | To test network initiated area event triggered services. |
| Specification Reference | TS-ULP 5.1.8 |
| SCR Reference | ULP-PRO-S-035-O, ULP-PRO-C-033-O |
| ETR Reference | NET1 - Network Initiated- Triggered Services: Event Triggers Proxy Mode |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> • 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. <p>State:</p> <ul style="list-style-type: none"> • SET is attached to the home PLMN. • SET is idle. • The SET's position is known to tester. • H-SLP has access to cell data from the Home PLMN. • SET and H-SLP support the Proxy mode of operation • The H-SLP is configured to use the Enhanced Cell ID positioning method. • The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> • None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> • None |

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| Test Procedure | <ol style="list-style-type: none"> 1. The network resident MLS application requests the area event triggered service with conditions that can easily be realised in the test network, e.g. "Inside" or "Outside". The trigger resides in the SET and the SET makes the decision if an area event occurred based on continuously repeated position determinations. 2. The SUPL Agent issues a MLP-TLRR message to the H-SLP. 3. The H-SLP initiates the event trigger session with the SET using the SUPL INIT message. 4. The H-SLP and the SET complete a secure positioning session using the selected positioning method 5. The SET compares the calculated position estimate with the area event and determines that the trigger condition has been met. 6. The SET sends the position estimate to the H-SLP in SUPL REPORT. 7. The H-SLP returns the position to the SUPL Agent, which in turn returns the position to the network resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that correct trigger type is used and that relevant signalling between H-SLP and SET is sent over a secure IP connection. 2. Check that the area event trigger condition has been met correctly and check that the returned position is acceptable |

7.1.11 SUPL-2.0-int-014 - Retrieval of Historical Positions [Includes optional features

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| Test Case Id | SUPL-2.0-int-014 |
| Test Object | H-SLP (Server) and SET (Client) |
| Test Case Description | To test retrieval of historical positions. |
| Specification Reference | TS-ULP 5.1.13 |
| SCR Reference | ULP-PRO-C-035-O, ULP-PRO-S-037-O |
| ETR Reference | HP - Retrieval of Historical Positions and/or Enhanced Cell Sector Measurements |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> • 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home • PLMN with GSM, WCDMA or LTE access network or combination thereof. <p>State:</p> <ul style="list-style-type: none"> • SET is attached to the home PLMN. • SET is idle. • The SET's position is known to the tester. • H-SLP has access to cell data from the Home PLMN. • SET and H-SLP support the Proxy mode of operation • The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> • None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> • Small amount of Historical data collected |

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| Test Procedure | <ol style="list-style-type: none"> 1. The network resident MLS application requests small amount of historical positions of the SET and the SUPL Agent issues a MLP HLIR request to the H-SLP 2. The H-SLP initiates the retrieval of historical positions with the SET using the SUPL INIT message. 3. The H-SLP returns historic positions in MLP HLIA to the SUPL Agent, which in turn returns historic positions to the network resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. The SUPL INIT message contains "posmethod=historical data retrieval" 2. Check that the returned historical data is acceptable and is consistent with the amount of data requested |

7.1.12 SUPL-2.0-int-015 - Cancellation of Triggered Session by the Network [Includes optional features]

Note that this test case can be run with either a Network Initiated session or a SET Initiated session

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| Test Case Id | SUPL-2.0-int-015 |
| Test Object | Client (SET) and Server (H-SLP) |
| Test Case Description | To test successful cancellation of an ongoing triggered session by the Network |
| Specification Reference | TS-ULP 5.1.17.2 |
| SCR Reference | ULP-PRO-C-032-O, ULP-PRO-C-033-O, ULP-PRO-S-034-O, ULP-PRO-S-035-O |
| ETR Reference | NCT - Network cancels the triggered location request, |
| Tool | Protocol analyzer to monitor signaling between SET and SLP. If a protocol analyzer is not available, log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> • 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. <p>State:</p> <ul style="list-style-type: none"> • SET is attached to the home PLMN. • SET is idle. • The SET's position is known to the tester. • H-SLP has access to cell data from the Home PLMN. • SET and H-SLP support the Proxy mode of operation. • The H-SLP is configured to use the Enhanced Cell ID positioning method. • The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> • None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> • None |

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| Test Procedure | <p>Case 1 - Network cancels the ongoing triggered session (SET can be reached):</p> <ol style="list-style-type: none"> 1. The SET and the H-SLP are engaged in a triggered SUPL session. 2. The H-SLP receives a triggered session cancellation request message from the MLS client. 3. If there is an open data connection with the SET the H-SLP initiates the cancellation of the triggered session with the SET by sending a SUPL TRIGGERED STOP message. 4. The SET responds with a SUPL END message and the triggered session ends. 5. The H-SLP informs the MLS client that the triggered session has been successfully cancelled. 6. If there is not an open data connection with the SET, the H-SLP initiates a data connection by sending SUPL INIT and a Session Info Query 7. The SET responds with SUPL REPORT and the H-SLP initiates the cancellation of the triggered session with the SET by sending a SUPL TRIGGERED STOP message. 8. The SET responds with a SUPL END message and the triggered session ends. 9. The H-SLP informs the MLS client that the triggered session has been successfully cancelled. <p>Case 2 – Network cancels the ongoing triggered session (no data connection):</p> <ol style="list-style-type: none"> 10. The SET and the H-SLP are engaged in a triggered SUPL session. 11. Ensure there is no data connection between the H-SLP and the SET by, for example, blocking the cellular signal for sufficient time that the data connection drops. 12. Restore the cellular signal so that a data connection can be set up again. 13. The H-SLP receives a triggered session cancellation request message from the MLS client. 14. As there is no open data connection the H-SLP initiates the cancellation of the triggered session with the SET by initiating a data connection by sending SUPL INIT and a Session Info Query.. 15. The SET responds with SUPL REPORT and the H-SLP initiates the cancellation of the triggered session with the SET by sending a SUPL TRIGGERED STOP message. 16. The SET responds with a SUPL END message and the triggered session ends. 17. The H-SLP informs the MLS client that the triggered session has been successfully cancelled. <p>Case 3 – Network cancels the ongoing triggered session (SET cannot be reached):</p> <ol style="list-style-type: none"> 18. The SET and the H-SLP are engaged in a triggered SUPL session. 19. Ensure the H-SLP cannot reach the SET by, for example, blocking the cellular signal for sufficient time that the data connection drops. 20. The H-SLP receives a triggered session cancellation request message from the MLS client. 21. As there is no open data connection the H-SLP initiates the cancellation of the triggered session with the SET by attempting to initiate a data connection by sending SUPL INIT and a Session Info Query. 22. The SET is not reachable and therefore does not respond to the SUPL INIT message. 23. After an adequate amount of time has passed, the SET continues the triggered SUPL session by sending a SUPL POS INIT message. 24. The H-SLP sends a SUPL END message with cause code “session stopped” to the SET and the triggered session is stopped. |
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| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that a triggered SUPL session is in progress. 2. Check that the SET and the H-SLP terminate the triggered SUPL session successfully. |
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7.1.13 SUPL-2.0-int-016 - Cancellation of Triggered Session by the SET [Includes optional features]

Note that this test cases can be run with either a Network Initiated session or a SET Initiated session

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| Test Case Id | SUPL-2.0-int-016 |
| Test Object | Client (SET) and Server (H-SLP) |
| Test Case Description | To test successful cancellation of an ongoing triggered session by the SET. |
| Specification Reference | TS-ULP 5.1.17.3 |
| SCR Reference | ULP-PRO-C-032-O, ULP-PRO-C-033-O, ULP-PRO-S-034-O, ULP-PRO-S-035-O |
| ETR Reference | SCT - SET cancels the triggered location request |
| Tool | Protocol analyzer to monitor signaling between SET and SLP. If a protocol analyzer is not available, log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> • 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. <p>State:</p> <ul style="list-style-type: none"> • SET is attached to the home PLMN. • SET is idle. • The SET's position is known to the tester. • H-SLP has access to cell data from the Home PLMN. • SET and H-SLP support the Proxy mode of operation. • The H-SLP is configured to use the Enhanced Cell ID positioning method. • The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> • None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> • None |
| Test Procedure | <ol style="list-style-type: none"> 1. The SET and the H-SLP are engaged in a triggered SUPL session. 2. The SET initiates the cancellation of the triggered session with the H-SLP by sending a SUPL TRIGGERED STOP message. 3. The H-SLP responds with a SUPL END message and the triggered session ends. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that a triggered SUPL session is in progress. 2. Check that the SET and the H-SLP terminate the triggered SUPL session successfully. |

7.1.14 SUPL-2.0-int-017 - V-SLP to V-SLP handover [Includes optional features]

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| Test Case Id | SUPL-2.0-int-017 |
| Test Object | Client (SET) and Server (H-SLP) |
| Test Case Description | To test V-SLP to V-SLP handover |

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| Specification Reference | TS-ULP 5.1.11 and 5.2.12 |
| SCR Reference | ULP-PRO-C-032-O, ULP-PRO-C-046-O, ULP-PRO-S-034-O, ULP-PRO-S-048-O |
| ETR Reference | HR1 - V-SLP to V-SLP Handover - Proxy mode |
| Tool | Protocol analyzer to monitor signaling between SET and SLP. If a protocol analyzer is not available, log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> 1 MLS Client, 1 SET, 1 H-SLP, V-SLP1, V-SLP2, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. <p>State:</p> <ul style="list-style-type: none"> SET is attached to the Home PLMN via one or more radio cells (cell set1) which are associated with the V-SLP 1 (i.e. roaming with H-SLP where SUPL coverage is provided by V-SLP1). SET is idle. There are one or more radio cells (cell set2) which are associated with V-SLP2 (i.e. roaming with H-SLP where SUPL coverage is provided by V-SLP2). SET and H-SLP support the Proxy mode of operation. The H-SLP is configured to use the A-GPS SET Assisted positioning method. The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> Two (non overlapping) sets of radio cells (i.e. cell set1 and cell set2) associated with two separate V-SLPs: V-SLP1 and V-SLP2. SET must be able to SUPL roam from V-SLP1 SUPL coverage to V-SLP2 SUPL coverage. |
| Test Procedure | <ol style="list-style-type: none"> The network resident MLS application requests periodic location of the SET with real time reporting. The H-SLP initiates the periodic trigger session with the SET using the SUPL INIT message. The SET and the H-SLP follow the standard call flow procedures to establish and maintain a periodic SUPL session while roaming with H-SLP with V-SLP1. After a reasonable number of periodic fixes (and well before the end of the triggered session is reached) the SET roams from cell set1 to cell set2 (i.e. the SET 'SUPL roams' from V-SLP1 to V-SLP2). When after roaming from cell set1 to cell set2 the SET sends its first SUPL POS INIT message to the H-SLP, the H-SLP responds with SUPL END with status code 'no SUPL coverage'. The SET sends a SUPL TRIGGERED START message with cause code 'no SUPL coverage'. The H-SLP sends a SUPL TRIGGERED RESPONSE message. The SET and the H-SLP continue their triggered periodic session (on cell set2 i.e. roaming with H-SLP with V-SLP2). The H-SLP and the SET complete the triggered periodic SUPL session. |
| Pass-Criteria | <ol style="list-style-type: none"> At step 5 the H-SLP shall respond with SUPL END with status code 'no SUPL coverage'. At step 6 the SET shall respond with SUPL TRIGGERED START with cause code 'no SUPL coverage'. At step 8 the SET and the H-SLP continue their triggered periodic session |

7.1.15 SUPL-2.0-int-018 - Capabilities Change [Includes optional features]

Note that this test case can be run with either a Network Initiated session or a SET Initiated session

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| Test Case Id | SUPL-2.0-int-018 |
| Test Object | H-SLP (Server) and SET (Client) |
| Test Case Description | To test Network Change for Area Event Triggered Scenarios, when the network changes. |
| Specification Reference | TS-ULP 5.1.14 |
| SCR Reference | ULP-PRO-C-046-O, ULP-PRO-S-048-O |
| ETR Reference | CAT - Network / SET Capabilities Change for Area Event Triggered Scenarios |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> • 1 MLS Client, 1 SET supporting, if a single PLMN is used in the test, at least two Radio Access Network e.g. GSM and WCDMA, or, if multiple PLMNs are used in the test, supporting handover between the PLMNs • 1 H-SLP, 1 V-SLP if necessary, 1 PPG, 1 SMS-C • A single PLMN with at least two Radio Access Networks e.g. GSM and WCDMA, or two PLMNs each supporting one or more of GSM, WCDMA or LTE access. <p>State:</p> <ul style="list-style-type: none"> • SET is attached to the home PLMN. • SET is monitoring serving network identity. • The SET's position is known to the tester. • H-SLP has access to cell data from the Home PLMN. • SET and H-SLP support the Proxy mode of operation <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> • An Area Event session <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> • An Area Event session is ongoing and area id lists are based on the used network |
| Test Procedure | <ol style="list-style-type: none"> 1. The SET monitors the serving network identity. The Network changes from e.g. WCDMA to GSM, or between PLMNs. 2. When the SET detects that the new serving network is not part of any original downloaded area lists the SET attaches itself to the new network. 3. The SET then sends a SUPL TRIGGERED START message to request new event trigger parameters. 4. The H-SLP sends SUPL TRIGGERED RESPONSE message to the SET. 5. Area event session continues |

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| Pass-Criteria | <ol style="list-style-type: none"> 1. The SUPL TRIGGERED START message contains at least session-id, SET capabilities, Location ID (lid) and cause for re-sending the SUPL TRIGGERED START message. The SET capabilities include the supported positioning methods (e.g. SET Assisted A-GPS, SET-Based A-GPS) and associated positioning protocols (e.g. RRLP, RRC, TIA-801, LPP) 2. SUPL TRIGGERED RESPONSE message includes session-id, the positioning method to be used for the area event triggered session and area event trigger parameters. It may also contain the area ids of the specified area based on the e.g. GSM network for the area event triggered session. 3. Area event session does not discontinue because of capabilities has changed |
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7.1.16 SUPL-2.0-int-020 - Session Info Query [Includes optional features]

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| Test Case Id | SUPL-2.0-int-020 |
| Test Object | Client (SET) and Server (H-SLP) |
| Test Case Description | To test successful session info query |
| Specification Reference | TS-ULP 5.1.18 |
| SCR Reference | ULP-PRO-C-049-O, ULP-PRO-S-051-O |
| ETR Reference | N/A |
| Tool | Protocol analyzer to monitor signaling between SET and SLP. If a protocol analyzer is not available, log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> • 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. <p>State:</p> <ul style="list-style-type: none"> • SET is attached to the home PLMN. • SET has at least one session – not including the session info query session itself - active (preferably more than one session is active at the SET and preferably the active sessions are triggered SUPL sessions). • SET and H-SLP support the Proxy mode of operation. • The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> • None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> • None |
| Test Procedure | <ol style="list-style-type: none"> 1. The H-SLP initiates a session info query session with the SET by sending a SUPL INIT message with posmethod “sessioninfoquery” to the SET. 2. The SET replies with a SUPL RESPONSE message containing a list of all SUPL sessions the SET deems active. The session info query session ends. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that in step 2 the H-SLP receives a list of session ids which are active at the time of sending the SUPL REPORT message. 2. Check that after sending of the SUPL REPORT message both the SET and the H-SLP release the secure connection. |

7.1.17 SUPL-2.0-int-021 - Notification based on Location [Includes optional features]

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| Test Case Id | SUPL-2.0-int-021 |
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| Test Object | Client (SET) and Server (H-SLP) |
| Test Case Description | To test successful Notification based on Location |
| Specification Reference | TS-ULP 5.1.12 |
| SCR Reference | ULP-PRO-C-029-O, ULP-PRO-S-031-O |
| ETR Reference | N1 - Notification/Verification based on current location. Proxy mode |
| Tool | Protocol analyzer to monitor signaling between SET and SLP. If a protocol analyzer is not available, log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> • 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. <p>State:</p> <ul style="list-style-type: none"> • SET is attached to the home PLMN. • SET is idle • The SET's position is known to the tester • H-SLP has access to cell data from the Home PLMN • SET and H-SLP support proxy mode of operation. • The H-SLP and SET are configured to use the Cell ID positioning method • The H-SLP is configured for notification based on current location and therefore includes the Notification Mode element in the SUPL INIT message and does not include the notification element in the SUPL INIT message • The H-SLP is configured to set the notification element in the SUPL NOTIFY message to "notification and verification, allowed on no answer" <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> • None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> • None |
| Test Procedure | <ol style="list-style-type: none"> 1. Set up the conditions in the H-SLP such that the H-SLP deems the SET to be in a location which requires the selected notification/verification procedure i.e. notification/verification is invoked (i.e. SUPL NOTIFY is sent). 2. The network resident MLS application requests the current position of the SET and the SUPL Agent issues an MLP-SLIR request with loc_type parameter set to "CURRENT" 3. The H-SLP and the SET successfully execute the call flow (including the selected notification/verification procedure) and the H-SLP returns position and timestamp in MLP-SLIA to the SUPL Agent. 4. Set up the conditions in the H-SLP such that the H-SLP deems the SET not to be in a location which requires the selected notification/verification procedure i.e. notification/verification is not invoked (i.e. SUPL NOTIFY is not sent and a SUPL END message is sent instead) 5. The network resident MLS application requests the current position of the SET and the SUPL Agent issues an MLP-SLIR request with loc_type parameter set to "CURRENT" 6. The H-SLP and the SET successfully execute the call flow (without invoking the notification/verification procedure) and the H-SLP returns position and timestamp in MLP-SLIA to the SUPL Agent. |

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| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that the correct positioning method is used and that relevant signalling between H-SLP and SET is sent over a secure IP connection 2. Check that the “silent” position determination was performed successfully 3. Check that the selected notification/verification procedures in step 3 and 5 are executed properly 4. Check that the H-SLP sends the position result to the requesting MLS client in line with SET user consent or objection. |
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7.1.18 SUPL-2.0-int-022 - SET-assisted OTDOA in LTE [Includes optional features]

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| Test Case Id | SUPL-2.0-int-022 |
| Test Object | H-SLP and SET |
| Test Case Description | To test SET-assisted OTDOA in LTE positioning method when SET is not roaming. |
| Specification Reference | TS-ULP 5.1.1, TS-ULP 9, AD 5.3.2.1, AD 5.3.2.2, AD 5.3.2.3 |
| SCR Reference | ULP-PRO-S-022-O, ULP-PRO-C-020-O |
| ETR Reference | NPP - Negotiation of Positioning method, Proxy mode and Protocol NB1 – Basic Network Initiated Flows – Proxy Mode |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <p>Equipment for LTE implementations:</p> <ul style="list-style-type: none"> • 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with LTE access network supporting OTDOA. Multiple neighbour LTE cells supporting OTDOA must be hearable to the SET in order to make OTDOA measurements possible. <p>State:</p> <ul style="list-style-type: none"> • SET is attached to the home PLMN. • SET is idle. • The SET’s position is known to tester. • H-SLP has access to cell data from the Home PLMN. • SET and H-SLP support the Proxy mode of operation • The H-SLP is configured to use the SET-assisted OTDOA positioning method. • The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> • None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> • None |
| Test Procedure | <ol style="list-style-type: none"> 1. The network resident MLS application requests the current position of the SET 2. The H-SLP initiates a location session with the SET. 3. The H-SLP and the SET complete a secure positioning session using the selected positioning method or methods 4. The H-SLP returns position and timestamp to the SUPL Agent, which in turn returns position and timestamp to the network resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that correct positioning method is used and that relevant signalling between H-SLP and SET is sent over a secure IP connection. 2. Check that the returned position is acceptable and that the timestamp indicates that the current position of the SET has been calculated. |

7.2 SUPL Interoperability: SET Initiated

The following SET Initiated SUPL 1.0 test cases from [SUPL 1.0 ETS] test features that have not changed since SUPL 1.0. Where indicated these test cases (and features) have been tested sufficiently in various TestFests and therefore these test cases do not require retesting for SUPL 2.0. In addition most of the features indicated will be tested implicitly in some of the new test cases for SUPL 2.0. Where the test cases have not been run during SUPL 1.0 TestFests, they may be considered for SUPL 2.0 testing

| SUPL 2.0 ETR reference | SUPL 1.0 Test Case | Tested in SUPL 1.0 TestFests |
|---|--|------------------------------|
| SB1 Basic SET Initiated flows – Proxy mode SB2 Basic SET Initiated flows – Non-Proxy mode NPP: Negotiation of Positioning method, Proxy mode and Protocol | SUPL-1.0-int-500 - Cell ID | Yes |
| | SUPL-1.0-int-600 - SET-assisted A-GPS | Yes |
| | SUPL-1.0-int-601 - SET-based A-GPS | Yes |
| | SUPL-1.0-int-602 - Autonomous GPS | No |
| | SUPL-1.0-int-603 - AFLT | No |
| | SUPL-1.0-int-604 - Enhanced Cell ID | No |
| | SUPL-1.0-int-605 - E-OTD | No |
| ACA: Alternative Client Authentication (ACA) Mechanisms - ACA Procedures | SUPL-1.0-int-606 - OTDOA | No |
| QOP: QoP ALT: Altitude | SUPL-1.0-int-510 - Alternative authentication model for GSM/WCDMA | Yes |
| | SUPL-1.0-int-610 - Horizontal accuracy | Yes |
| | SUPL-1.0-int-611 - Response time | Yes |
| | SUPL-1.0-int-612 - Vertical accuracy (Altitude) | Yes |
| | SUPL-1.0-int-613 - Max location age, previously computed position returned | Yes |
| SUPL-1.0-int-614 - Max location age, current position returned | Yes | |
| VEL: Velocity | SUPL-1.0-int-630 - SET-assisted A-GPS | Yes |

7.2.1 SUPL-2.0-int-100 - SET-assisted A-GANSS [Includes optional features]

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| Test Case Id | SUPL-2.0-int-100 |
| Test Object | H-SLP and SET |
| Test Case Description | To test SET-assisted A-GANSS positioning method when SET is not roaming. |
| ETR Reference | NPP - Negotiation of Positioning method, Proxy mode and Protocol SB1 – Basic SET Initiated Flows – Proxy Mode |
| Specification Reference | TS-ULP 5.2.1, TS-ULP 9, AD 5.3.2.1, AD 5.3.2.2, AD 5.3.2.3 |
| SCR Reference | ULP-PRO-S-017-O, ULP-PRO-C-015-O |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |

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| Preconditions | <ul style="list-style-type: none"> • Equipment for GSM/WCDMA/LTE implementations: <ul style="list-style-type: none"> ○ 1 SET, 1 H-SLP, Home PLMN with GSM, WCDMA or LTE access network or combination thereof, or both, GNSS-simulator • State: <ul style="list-style-type: none"> ○ SET is attached to the home PLMN. ○ SET is idle. ○ The SET's position is known to tester. ○ H-SLP has access to cell data from the Home PLMN. ○ SET and H-SLP support the same mode of operation: Proxy. ○ The H-SLP is configured to use the SET-assisted GANSS positioning method. The GANSS or GANSSs to be used depend on the SET capabilities and the available GANSS signals. <p>Note this test case is intended to test GANSS systems e.g. Galileo, SBAS, Modernized GPS, QZSS, GLONASS and not GPS</p> • Continuation of / Can be tested at the same time as: <ul style="list-style-type: none"> ○ None • Prerequisite for this test: <ul style="list-style-type: none"> ○ None |
| Test Procedure | <ol style="list-style-type: none"> 1. The SET resident MLS application requests its current position. 2. The SET initiates a secure session with the H-SLP. 3. The H-SLP and the SET complete a secure positioning session using the selected positioning method or methods. 4. The H-SLP returns position and timestamp to the SUPL Agent, which in turn returns position and timestamp to the SET resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that correct positioning method is used and that all signalling between H-SLP and SET is sent over a secure IP connection. 2. Check that the returned position is acceptable and that the timestamp indicates that the current position of the SET has been calculated. |

7.2.2 SUPL-2.0-int-101 - SET-based A-GANSS [Includes optional features]

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| Test Case Id | SUPL-2.0-int-101 |
| Test Object | H-SLP and SET |
| Test Case Description | To test SET-based A-GANSS positioning method when SET is not roaming. |
| Specification Reference | TS-ULP 5.2.1, TS-ULP 9, AD 5.3.2.1, AD 5.3.2.2, AD 5.3.2.3 |
| SCR Reference | ULP-PRO-S-018-O, ULP-PRO-C-016-O |
| ETR Reference | NPP - Negotiation of Positioning method, Proxy mode and Protocol SB1 – Basic SET Initiated Flows – Proxy Mode |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |

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| Preconditions | <ul style="list-style-type: none"> • Equipment for GSM/WCDMA/LTE implementations: <ul style="list-style-type: none"> ○ 1 SET, 1 H-SLP, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. ○ GNSS-simulator • State: <ul style="list-style-type: none"> ○ SET is attached to the home PLMN. ○ SET is idle. ○ The SET's position is known to tester. ○ H-SLP has access to cell data from the Home PLMN. ○ SET and H-SLP support the same mode of operation: Proxy. ○ The H-SLP is configured to use the SET-based GANSS positioning method. The GANSS or GANSSs to be used depend on the SET capabilities and the available GANSS signals. <p>Note this test case is intended to test GANSS systems e.g. Galileo, SBAS, Modernized GPS, QZSS, GLONASS and not GPS</p> • Continuation of / Can be tested at the same time as: <ul style="list-style-type: none"> ○ None • Prerequisite for this test: <ul style="list-style-type: none"> ○ None |
| Test Procedure | <ol style="list-style-type: none"> 1. The SET resident MLS application requests its current position 2. The SET initiates a secure session with the H-SLP. 3. The H-SLP and the SET complete a secure positioning session using the selected positioning method or methods. 4. The SUPL Agent returns position and timestamp to the SET resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that correct positioning method is used and that all signalling between H-SLP and SET is sent over a secure IP connection. 2. Check that the returned position is acceptable and that the timestamp indicates that the current position of the SET has been calculated. |

7.2.3 SUPL-2.0-int-102 - Autonomous GANSS [Includes optional features]

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| Test Case Id | SUPL-2.0-int-102 |
| Test Object | H-SLP and SET |
| Test Case Description | To test Autonomous GANSS positioning method when SET is not roaming. |
| Specification Reference | TS-ULP 5.2.1, TS-ULP 9, AD 5.3.2.1, AD 5.3.2.2, AD 5.3.2.3 |
| SCR Reference | ULP-PRO-S-016-O, ULP-PRO-C-014-O |
| ETR Reference | NPP - Negotiation of Positioning method, Proxy mode and Protocol SB1 – Basic SET Initiated Flows – Proxy Mode |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |

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|-----------------------|--|
| Preconditions | <ul style="list-style-type: none"> • Equipment for GSM/WCDMA/LTE implementations: <ul style="list-style-type: none"> • 1 SET, 1 H-SLP, Home PLMN with GSM, WCDMA or LTE access network or combination thereof, GNSS-simulator • State: <ul style="list-style-type: none"> ○ SET is attached to the home PLMN. ○ SET is idle. ○ The SET's position is known to tester. ○ H-SLP has access to cell data from the Home PLMN. ○ SET and H-SLP support the same mode of operation: Proxy. ○ The H-SLP is configured to use the Autonomous GANSS positioning method. The GANSS or GANSSs to be used depend on the SET capabilities and the available GANSS signals. <p>Note this test case is intended to test GANSS systems e.g. Galileo, SBAS, Modemized GPS, QZSS, GLONASS and not GPS</p> • Continuation of / Can be tested at the same time as: <ul style="list-style-type: none"> ○ None • Prerequisite for this test: <ul style="list-style-type: none"> ○ The SET supports other positioning methods than just Autonomous GANSS. In the case the SET only supports Autonomous GANSS this test case is not applicable since the SET calculates its own position without connecting to the H-SLP. |
| Test Procedure | <ol style="list-style-type: none"> 1. The SET resident MLS application requests its current position 2. The SET initiates a secure session with the H-SLP. 3. The H-SLP and the SET complete a secure positioning session using the selected positioning method or methods including a SUPL POS session with no Assistance Data. 4. The SUPL Agent returns position and timestamp to the SET resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that correct positioning method is used and that all signalling between H-SLP and SET is sent over a secure IP connection. This shall include a SUPL POS session with no Assistance Data. 2. Check that the returned position is acceptable and that the timestamp indicates that the current position of the SET has been calculated. |

7.2.4 SUPL-2.0-int-103 - Transfer to third party [Includes optional features]

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| Test Case Id | SUPL-2.0-int-103 - Transfer to third party [Includes optional features] |
| Test Object | H-SLP (Server) and SET (Client) |
| Test Case Description | To test SET-initiated Location Request of Transfer Location to Third Party |
| Specification Reference | TS-ULP 5.2.15 |
| SCR Reference | ULP-PRO-C-040-O, ULP-PRO-S-042-O |
| ETR Reference | STT - SET-Initiated Location Request of Transfer Location to Third Party |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |

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|-----------------------|--|
| Test code | - |
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> 1 UE, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. <p>State:</p> <ul style="list-style-type: none"> SET is attached to the home PLMN. SET is idle. The SET's position is known to the tester. H-SLP has access to cell data from the Home PLMN. SET and H-SLP support the Proxy mode of operation SET is not roaming <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> None |
| Test Procedure | <ol style="list-style-type: none"> The SUPL Agent on SET initiates a SET Initiated location request with Transfer to third party (i.e. the UE). The SET takes required action establishing or resuming a secure connection. The SUPL Agent on SET uses the default address provisioned by the Home Network to establish a secure connection to the H-SLP and sends a SUPL START message to start a positioning session with the H-SLP. The Third Party ID (i.e. the ID of UE) is contained in the SUPL START message. The H-SLP and the SET collaborate to determine the position of the SET and the H-SLP obtains the result of the position determination. The H-SLP sends a SUPL END message to SET to stop the session. Check the H-SLP attempts to transfer the position result to the correct third party address. (This can be done by checking the debug log in the H-SLP). |
| Pass-Criteria | <ol style="list-style-type: none"> The SUPL START message contains session ID, Third Party ID. Check that the returned position estimate is acceptable |

7.2.5 SUPL-2.0-int-110 - Periodic Triggers [Includes optional features]

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| Test Case Id | SUPL-2.0-int-110 |
| Test Object | Client (SET) and Server (H-SLP) |
| Test Case Description | To test SET initiated Periodic triggered services. |
| Specification Reference | TS-ULP 5.1.7 |
| SCR Reference | ULP-PRO-C-032-O, ULP-PRO-S-034-O |
| ETR Reference | SPT1 - SET Initiated– Triggered Services: Periodic Triggers Proxy Mode |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |

| | |
|-----------------------|---|
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. <p>State:</p> <ul style="list-style-type: none"> SET is attached to the home PLMN. SET is idle. The SET's position is known to the tester. H-SLP has access to cell data from the Home PLMN. SET and H-SLP support the Proxy mode of operation The H-SLP and/or SET are configured to use the Enhanced Cell ID positioning method. The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> None |
| Test Procedure | <ol style="list-style-type: none"> The SET resident MLS application requests its periodic location with a reasonable number of fixes and intervals between fixes The SUPL Agent issues a SUPL TRIGGERED START message to the H-SLP. The SUPL TRIGGERED START message shall contain trigger_type=periodic and appropriate trigger_params. Each time the periodic trigger in the SET indicates that a position fix has to be performed the SET initiates a secure session with the H-SLP. The H-SLP and the SET complete a secure positioning session using the selected positioning method. The H-SLP returns position in SUPL REPORT to the SUPL Agent, which in turn returns position to the SET resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> For all the SUPL sessions check that correct positioning method is used and that relevant signalling between H-SLP and SET is sent over a secure IP connection. For all the positioning sessions, check that the returned position is acceptable and that the current position of the SET has been received. Check the number of sessions is correct and the interval between the sessions is acceptable |

7.2.6 SUPL-2.0-int-111 - Periodic transfer to third party [Includes optional features]

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|--------------------------------|--|
| Test Case Id | SUPL-2.0-int-111 - Periodic Transfer to third party [Includes optional features] |
| Test Object | H-SLP (Server) and SET (Client) |
| Test Case Description | To test SET-initiated Periodic Location Request with Transfer to Third Party |
| Specification Reference | TS-ULP 5.2.14.1 |
| SCR Reference | ULP-PRO-C-032-O, ULP-PRO-S-034-O, ULP-PRO-C-040-O, ULP-PRO-S-042-O |
| ETR Reference | STP - SET-Initiated Periodic Location Request with Transfer to Third Party |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |

| | |
|-----------------------|---|
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> 1 UE, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. <p>State:</p> <ul style="list-style-type: none"> SET is attached to the home PLMN. SET is idle. The SET's position is known to the tester. H-SLP has access to cell data from the Home PLMN. SET and H-SLP support the Proxy mode of operation SET is not roaming <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> None |
| Test Procedure | <ol style="list-style-type: none"> The SUPL Agent on SET initiates a SET Initiated location periodic request with Transfer to third party (i.e. the UE) with a reasonable number of fixes and intervals between fixes. The SET takes required action establishing or resuming a secure connection. The SUPL Agent on SET uses the default address provisioned by the Home Network to establish a secure connection to the H-SLP and sends a SUPL TRIGGERED START message to start a periodic trigger positioning session with the H-SLP. The Third Party ID (i.e. the ID of UE) is contained in the SUPL TRIGGERED START message. Each time the periodic trigger in the SET indicates that a position fix has to be performed the SET initiates a secure session with the H-SLP. The H-SLP and the SET complete a secure positioning session using the selected positioning method. Check the H-SLP attempts to transfer the position results to the correct third party address. (This can be done by checking the debug log in the H-SLP). |
| Pass-Criteria | <ol style="list-style-type: none"> The SUPL TRIGGERED START message contains session ID, Third Party ID. Check that the returned position estimates are acceptable |

7.2.7 SUPL-2.0-int-112 - Area Event Triggers [Includes optional features]

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|--------------------------------|--|
| Test Case Id | SUPL-2.0-int-112 |
| Test Object | Client (SET) and Server (H-SLP) |
| Test Case Description | To test SET initiated area event triggered services. |
| Specification Reference | TS-ULP 5.2.9 |
| SCR Reference | ULP-PRO-S-035-O, ULP-PRO-C-033-O |
| ETR Reference | SET1 - SET Initiated– Triggered Services: Event Triggers Proxy Mode |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |

| | |
|-----------------------|---|
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> • 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. <p>State:</p> <ul style="list-style-type: none"> • SET is attached to the home PLMN. • SET is idle. • The SET's position is known to tester. • H-SLP has access to cell data from the Home PLMN. • SET and H-SLP support the Proxy mode of operation • The H-SLP is configured to use the Enhanced Cell ID positioning method. • The H-SLP is configured to indicate no notification and no verification to the SET user. <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> • None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> • None |
| Test Procedure | <ol style="list-style-type: none"> 1. The SET resident MLS application requests an area event triggered service with conditions that can easily be realised in the test network, e.g. "Inside" or "Outside". 2. The SET initiates a secure session with the H-SLP and issues a SUPL TRIGGERED START message to the H-SLP. 3. The SET determines that the trigger condition has been met. 4. The SET initiates a secure session and the H-SLP and the SET complete a secure positioning session using the selected positioning method 5. The H-SLP returns the position in SUPL REPORT to the SUPL Agent, which in turn returns the position to the SET resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. Check that correct trigger type is used and that relevant signaling between H-SLP and SET is sent over a secure IP connection. 2. Check that the area event trigger condition has been met correctly and check that the returned position is acceptable |

7.2.8 SUPL-2.0-int-120 - Location of another SET [Includes optional features]

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|--------------------------------|--|
| Test Case Id | SUPL-2.0-int-120 - Location of another SET [Includes optional features] |
| Test Object | H-SLP (Server) and SET (Client) |
| Test Case Description | To test SET-initiated location request of another SET. |
| Specification Reference | TS-ULP 5.2.7 |
| SCR Reference | ULP-PRO-C-038-O, ULP-PRO-S-040-O ULP-MES-S-014-O, ULP-MES-C-014-O |
| ETR Reference | SAS - SET-Initiated Location Request of another SET |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |

| | |
|-----------------------|---|
| Preconditions | <p>Equipment for GSM/WCDMA/LTE implementations:</p> <ul style="list-style-type: none"> • 2 SETs, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. <p>State:</p> <ul style="list-style-type: none"> • SETs are attached to the same home PLMN. SETs have the same H-SLP. • SETs are idle. • The SET2's position is known to the tester. • H-SLP has access to cell data from the Home PLMN. • SET and H-SLP support the Proxy mode of operation • SETs are not roaming <p>Continuation of / Can be tested at the same time as:</p> <ul style="list-style-type: none"> • None <p>Prerequisite for this test:</p> <ul style="list-style-type: none"> • None |
| Test Procedure | <ol style="list-style-type: none"> 1. The SUPL Agent on SET1 receives a request for position of Target SET2. The SET1 takes required action establishing or resuming a secure connection. 2. The SUPL Agent on SET1 uses the default address provisioned by the Home Network to establish a secure connection to the H-SLP and sends a SUPL SET INIT message to start a positioning session of the Target SET2. The Target SETid is the identity of the Target SET2 that will be used by the SLP to identify the home network (H-SLP) of SET2. 3. The H-SLP determines the location of SET2. 4. The H-SLP sends a SUPL END message containing the position estimate to the SET1. The SET1 sends the position estimate back to the SUPL Agent. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. The SUPL SET INIT message contains session ID, Target SETid. It MAY also contain the desired QoS. 2. Check that the returned position estimate is acceptable |

7.2.9 SUPL-2.0-int-121 - SET-assisted OTDOA in LTE [Includes optional features]

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| Test Case Id | SUPL-2.0-int-121 |
| Test Object | H-SLP and SET |
| Test Case Description | To test SET-assisted OTDOA positioning method when SET is not roaming. |
| ETR Reference | NPP - Negotiation of Positioning method, Proxy mode and Protocol SB1 – Basic SET Initiated Flows – Proxy Mode |
| Specification Reference | TS-ULP 5.2.1, TS-ULP 9, AD 5.3.2.1, AD 5.3.2.2, AD 5.3.2.3 |
| SCR Reference | ULP-PRO-S-022-O, ULP-PRO-C-020-O |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |

| | |
|-----------------------|---|
| Preconditions | <ul style="list-style-type: none"> • Equipment for LTE implementations: <ul style="list-style-type: none"> 1 SET, 1 H-SLP, Home PLMN with LTE access network supporting OTDOA. Multiple neighbour LTE cells supporting OTDOA must be hearable to the SET in order to make OTDOA measurements possible. • State: <ul style="list-style-type: none"> ○ SET is attached to the home PLMN. ○ SET is idle. ○ The SET's position is known to tester. ○ H-SLP has access to cell data from the Home PLMN. ○ SET and H-SLP support the same mode of operation: Proxy. ○ The H-SLP is configured to use the SET-assisted OTDOA positioning method. • Continuation of / Can be tested at the same time as: <ul style="list-style-type: none"> ○ None • Prerequisite for this test: <ul style="list-style-type: none"> ○ None |
| Test Procedure | <ol style="list-style-type: none"> 5. The SET resident MLS application requests its current position. 6. The SET initiates a secure session with the H-SLP. 7. The H-SLP and the SET complete a secure positioning session using the selected positioning method or methods. 8. The H-SLP returns position and timestamp to the SUPL Agent, which in turn returns position and timestamp to the SET resident MLS application. |
| Pass-Criteria | <ol style="list-style-type: none"> 3. Check that correct positioning method is used and that all signalling between H-SLP and SET is sent over a secure IP connection. 4. Check that the returned position is acceptable and that the timestamp indicates that the current position of the SET has been calculated. |

7.3 Cross version Compatibility

7.3.1 SUPL-2.0-int-200 - Cross version Compatibility: H-SLP V2.0 and SET V2.0

Note that this test case tests a feature that is tested inherently in most other Interoperability test cases, however this test case is used as part of the minimum entry criteria for TestFests and is therefore included here.

| | |
|--------------------------------|--|
| Test Case Id | SUPL-2.0-int-200 |
| Test Object | Client (SET) and Server (H-SLP) |
| Test Case Description | To test ULP version Negotiation function in case H-SLP supports ULP 2.0 and SET supports ULP2.0 version |
| Specification Reference | TS-ULP 7 |
| SCR Reference | ULP-PRO-S-027-M , ULP-PRO-C-025-M |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |

| | |
|-----------------------|---|
| Preconditions | <ul style="list-style-type: none"> • Equipment for GSM/WCDMA/LTE implementations: <ul style="list-style-type: none"> ○ 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. • Equipment for CDMA implementations: <ul style="list-style-type: none"> ○ 1 MLS Client, 1 SET, 1 H-SLP, Home PLMN with CDMA access network. • State: <ul style="list-style-type: none"> ○ SET is attached to the home PLMN. ○ SET is idle. ○ The SET's position is known to the tester. ○ H-SLP has access to cell data from the Home PLMN. ○ SET and H-SLP support the same mode of operation: Proxy or Non-Proxy. • Continuation of / Can be tested at the same time as: <ul style="list-style-type: none"> ○ None • Prerequisite for this test: <ul style="list-style-type: none"> ○ Both SLP and SET support ULP2.0. |
| Test Procedure | <p>Test 1:</p> <ol style="list-style-type: none"> 1. The network resident MLS application requests the position of the SET and the SUPL Agent issues a MLP-SLRR request to H-SLP. 2. H-SLP send the SUPL INIT (version = 2.0, minimum = 2) or (version = 2.0, minimum = 1) to SET. (Note 1) 3. SET responds with SUPL POS INIT and the Location Session completes successfully. <p>Test 2:</p> <ol style="list-style-type: none"> 4. SET send the SUPL START (version = 2.0) to H-SLP. 5. H-SLP response with SUPL RESPONSE to SET and the location session completes successfully. <p>Note 1: If SLP supports both ULP2.0 and 1.0, SUPL INIT (version = 2.0, minimum = 1) will be sent, if SLP supports only ULP2.0, SUPL INIT (version = 2.0, minimum = 2.0) will be sent.</p> |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 3 the SET shall respond with SUPL POS INIT with the correct version number (2.0) supported by the SET. 2. At step 5 the H-SLP shall respond with SUPL RESPONSE with the correct version number (2.0) supported by the H-SLP. |

7.3.2 SUPL-2.0-int-201 - Cross version Compatibility: H-SLP V2.0 and SET V1.0

| | |
|--------------------------------|---|
| Test Case Id | SUPL-2.0-int-201 |
| Test Object | Client (SET) and Server (H-SLP) |
| Test Case Description | To test ULP version Negotiation function in case H-SLP supports ULP 2.0 only and SET supports ULP1.0 version |
| Specification Reference | TS-ULP 7 |
| SCR Reference | ULP-PRO-S-027-M , ULP-PRO-C-025-M |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <ul style="list-style-type: none"> • Equipment for GSM/WCDMA/LTE implementations: <ul style="list-style-type: none"> ○ 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. • Equipment for CDMA implementations: <ul style="list-style-type: none"> ○ 1 MLS Client, 1 SET, 1 H-SLP, Home PLMN with CDMA access network. • State: <ul style="list-style-type: none"> ○ SET is attached to the home PLMN. ○ SET is idle. ○ The SET's position is known to the tester. ○ H-SLP has access to cell data from the Home PLMN. ○ SET and H-SLP support the same mode of operation: Proxy or Non-Proxy. • Continuation of / Can be tested at the same time as: <ul style="list-style-type: none"> ○ None • Prerequisite for this test: <ul style="list-style-type: none"> ○ H-SLP supports ULP 2.0 only and SET supports ULP 1.0 |
| Test Procedure | <p>Test 1:</p> <ol style="list-style-type: none"> 1. The network resident MLS application requests the position of the SET and the SUPL Agent issues a MLP-SLRR request to H-SLP. 2. H-SLP send the SUPL INIT (version = 2.0, minimum = 2) to SET. 3. SET responds with SUPL END (version = 1.0 and status code = versionNotSupported) and the location session fails. <p>Test 2:</p> <ol style="list-style-type: none"> 4. SET send the SUPL START (version = 1.0) to H-SLP. 5. H-SLP response with SUPL END (version = 2.0 and status code = versionNotSupported) to SET and the location session fails. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 3 the SET shall respond with SUPL END with the correct version number (1.0) supported by the SET. 2. At step 5 the H-SLP shall respond with SUPL END with the correct version number (2.0) supported by the H-SLP. |

7.3.3 SUPL-2.0-int-202 - Cross version Compatibility: H-SLP V2.0 and V1.0 and SET V1.0

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|--------------------------------|---|
| Test Case Id | SUPL-2.0-int-202 |
| Test Object | Client (SET) and Server (H-SLP) |
| Test Case Description | To test ULP version Negotiation function in case H-SLP supports both ULP 2.0 and ULP1.0 , SET supports ULP1.0 version |
| Specification Reference | TS-ULP 7 |
| SCR Reference | ULP-PRO-S-027-M , ULP-PRO-C-025-M |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <ul style="list-style-type: none"> • Equipment for GSM/WCDMA/LTE implementations: <ul style="list-style-type: none"> ○ 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. • Equipment for CDMA implementations: <ul style="list-style-type: none"> ○ 1 MLS Client, 1 SET, 1 H-SLP, Home PLMN with CDMA access network. • State: <ul style="list-style-type: none"> ○ SET is attached to the home PLMN. ○ SET is idle. ○ The SET's position is known to the tester. ○ H-SLP has access to cell data from the Home PLMN. ○ SET and H-SLP support the same mode of operation: Proxy or Non-Proxy. • Continuation of / Can be tested at the same time as: <ul style="list-style-type: none"> ○ None • Prerequisite for this test: <ul style="list-style-type: none"> ○ H-SLP supports ULP 2.0 and ULP1.0 and SET supports ULP 1.0 |
| Test Procedure | <p>Test 1:</p> <ol style="list-style-type: none"> 1. The network resident MLS application requests the position of the SET and the SUPL Agent issues a MLP-SLIR request to H-SLP. 2. H-SLP send the SUPL INIT (version = 2.0, minimum = 1) to SET. 3. SET responds with SUPL END (version = 1.0) 4. H-SLP send the SUPL INIT (version = 1.0) to SET and the location session completes successfully. <p>Test 2:</p> <ol style="list-style-type: none"> 5. SET send the SUPL START (version = 1.0) to H-SLP. 6. H-SLP response with SUPL RESPONSE (version = 1.0) to SET and the location session completes successfully. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 3 the SET shall respond with SUPL END with the correct version number (1.0) supported by the SET. 2. At step 4 the H-SLP shall send the SUPL INIT with the correct version number (1.0). 3. At step 6 the H-SLP shall respond with SUPL RESPONSE with the correct version number (1.0). |

7.3.4 SUPL-2.0-int-203 - Cross version Compatibility: H-SLP V1.0 and SET V 2.0

| | |
|--------------------------------|---|
| Test Case Id | SUPL-2.0-int-203 |
| Test Object | Client (SET) and Server (H-SLP) |
| Test Case Description | To test ULP version Negotiation function in case H-SLP supports ULP 1.0 only , SET supports ULP2.0 version |
| Specification Reference | TS-ULP 7 |
| SCR Reference | ULP-PRO-S-027-M , ULP-PRO-C-025-M |
| Tool | Protocol analyser to monitor signalling between SET and SLP. If a protocol analyser is not available log files in SLP and SET can be used instead. |
| Test code | - |
| Preconditions | <ul style="list-style-type: none"> • Equipment for GSM/WCDMA/LTE implementations: <ul style="list-style-type: none"> ○ 1 MLS Client, 1 SET, 1 H-SLP, 1 PPG, 1 SMS-C, Home PLMN with GSM, WCDMA or LTE access network or combination thereof. • Equipment for CDMA implementations: <ul style="list-style-type: none"> ○ 1 MLS Client, 1 SET, 1 H-SLP, Home PLMN with CDMA access network. • State: <ul style="list-style-type: none"> ○ SET is attached to the home PLMN. ○ SET is idle. ○ The SET's position is known to the tester. ○ H-SLP has access to cell data from the Home PLMN. ○ SET and H-SLP support the same mode of operation: Proxy or Non-Proxy. • Continuation of / Can be tested at the same time as: <ul style="list-style-type: none"> ○ None • Prerequisite for this test: <ul style="list-style-type: none"> ○ H-SLP supports ULP 1.0 only and SET supports ULP 2.0 |
| Test Procedure | <p>Test 1:</p> <ol style="list-style-type: none"> 1. The network resident MLS application requests the position of the SET and the SUPL Agent issues a MLP-SLIR request to H-SLP. 2. H-SLP send the SUPL INIT (version = 1.0) to SET. 3. SET responds with SUPL END (version = 2.0 and status code = versionNotSupported) and the location session fails. <p>Test 2:</p> <ol style="list-style-type: none"> 4. SET send the SUPL START (version = 2.0) to H-SLP. 5. H-SLP responds with SUPL END (version = 1.0 and status code = versionNotSupported) and the location session fails. |
| Pass-Criteria | <ol style="list-style-type: none"> 1. At step 3 the SET shall respond with SUPL END with the correct version number (2.0) supported by the SET 2. At step 5 the H-SLP shall respond with SUPL END with the correct version number (1.0) supported by the H-SLP. |

Appendix A. Change History

(Informative)

A.1 Approved Version History

| Reference | Date | Description |
|-----------|------|------------------|
| n/a | n/a | No prior version |
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A.2 Draft/Candidate Version 2.0 History

| Document Identifier | Date | Sections | Description |
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| Draft Versions OMA-ETS-SUPL-V2_0 | 24 Jun 2008 | All | Initial empty draft |
| | 19 Nov 2008 | 5, App B | CR incorporated: OMA-IOP-MEC-2008-0198 |
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| | 15 Jan 2009 | 5, App B | CR incorporated: OMA-IOP-MEC-2008-0241R01 OMA-IOP-MEC-2008-0242R01 |
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| | 05 May 2009 | | Incorporated CRs: OMA-IOP-MEC-2009-0061 OMA-IOP-MEC-2009-0063R01 OMA-IOP-MEC-2009-0065 OMA-IOP-MEC-2009-0067 OMA-IOP-MEC-2009-0068 OMA-IOP-MEC-2009-0070 OMA-IOP-MEC-2009-0071 |
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| | 03 Jun 2009 | 7.1 | Incorporated CRs: OMA-IOP-MEC-2009-0088R03 OMA-IOP-MEC-2009-0091R02 |
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| | 27 Oct 2009 | 4.1, 5, 6, 7 App B | Incorporated CR: OMA-IOP-MEC-2009-0180 OMA-IOP-MEC-2009-0181 OMA-IOP-MEC-2009-0182 |
| | 21 Jan 2010 | 5.1.5, 5.2.4 | Incorporated CR: OMA-IOP-MEC-2010-0001R01 |
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| | 16 Feb 2011 | 5.1.4 5.1.5, 5.2.4 App B3, B4 | Incorporated CR: OMA-IOP-MEC-2011-0005R01- CR_SUPL_V2.0_ETS_Conformance_Area_Event_corrections OMA-IOP-MEC-2011-0006- CR_SUPL_V2.0_ETS_Conformance_Timeout_UT7_applicability_change OMA-IOP-MEC-2011-0007- CR_SUPL_V2.0_ETS_Conformance_Periodic_test_cases_corrections |
| | 10 Mar 2011 | 5.1.4 | Incorporated CR: OMA-IOP-MEC-2011-0021- CR_SUPL_V2.0_ETS_Conformance_Periodic_test_cases_corrections |
| | 16 Mar 2011 | 5.1.5 5.2.4 | Incorporated CR: OMA-IOP-MEC-2011-0022- CR_SUPL_V2.0_ETS_Area_Events_clarifications |
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Appendix B. Client Conformance Test Case applicability

B.1 Introduction

This section allows implementers of the client SUPL Enabler to select appropriate Client Conformance test cases from section 5 that are applicable to the features implemented in the client-under-test.

Section B.2 of this appendix lists all the test cases testing only mandatory features.

Section B.3 of this appendix provides the applicabilities of the Client Conformance test cases for optional features. It lists all the possible optional features in the client in the form of an ICS (Implementation Conformance Specification) table. It also provides an EXIT (protocol Implementation eXtra Information) table to note any extra information necessary to run the test cases.

B.2 Test Cases testing only mandatory features

These Conformance test cases are independent from any applicability and are testing only mandatory features (SCRs) and SHALL be run with every client implementation.

| Test Case |
|--|
| SUPL-2.0-con-007-1 - Alternative H-SLP Addresses. Test 1: H-SLP address stored on UICC |
| SUPL-2.0-con-007-3 - Alternative H-SLP Addresses. Test 3: Auto configuration of H-SLP address |
| SUPL-2.0-con-007-4 - Alternative H-SLP Addresses. Test 4: Auto configuration of H-SLP address following authentication failure |
| SUPL-2.0-con-007-5 - Alternative H-SLP Addresses. Test 5: Clearing of old H-SLP address following change of IMSI |

B.2.1 Test Cases testing only mandatory features for Network Initiated call flows

These test cases are testing only mandatory features (SCRs) for Network Initiated call flows and SHALL be run with every client implementation supporting Network Initiated call flows.

| Applicability | Test Cases |
|----------------------|---|
| ics_NetworkInitiated | <p>SUPL-2.0-con-000-1 - SUPL INIT delivery. Test 1: OMA Push</p> <p>SUPL-2.0-con-001 - Incorrect OMA Push message content</p> <p>SUPL-2.0-con-004 - Correct Session ID</p> <p>SUPL-2.0-con-005 - Invalid SET Session ID</p> <p>SUPL-2.0-con-006 - Missing or invalid SLP Session ID</p> <p>SUPL-2.0-con-010-1 - Compatible Versions. Test 1: Support for higher versions of SUPL 2.X.X</p> <p>SUPL-2.0-con-010-2 - Compatible Versions. Test 2: Support for lower versions of SUPL 2.X.X</p> <p>SUPL-2.0-con-010-3 - Compatible Versions. Test 3: Correct support with SLP supporting SUPL V3.0 and V2.0</p> <p>SUPL-2.0-con-011-1 Unsupported Versions. Test 1: Higher Version not</p> |

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| | supported SUPL-2.0-con-020 - No notification & no verification SUPL-2.0-con-021 - Notification only SUPL-2.0-con-022 - Notification and verification SUPL-2.0-con-023 - Privacy override SUPL-2.0-con-024 - Requestor ID and Client Name SUPL-2.0-con-031 - No Position SUPL-2.0-con-033 - Emergency Services Location Requests SUPL-2.0-con-034 - Emergency Services Location Request – Interaction with normal SUPL session SUPL-2.0-con-070-3 - Timeout UT2. Test 3: No SUPL POS session (Immediate session) |
|--|--|

B.2.2 Test Cases testing only mandatory features for SET Initiated call flows

These test cases are testing only mandatory features (SCRs) for SET Initiated call flows and SHALL be run with every client implementation supporting SET Initiated call flows.

| Applicability | Test Cases |
|------------------|--|
| ics_SETInitiated | SUPL-2.0-con-100 - Correct Session ID SUPL-2.0-con-101 - Invalid SET Session ID SUPL-2.0-con-102 - Invalid SLP Session ID SUPL-2.0-con-103-1 - Compatible Versions. Test 1: Support for higher versions of SUPL 2.X.X SUPL-2.0-con-103-2 - Compatible Versions. Test 2: Support for lower versions of SUPL 2.X.X SUPL-2.0-con-140-1 - Timeout UT1. Test 1: Immediate session SUPL-2.0-con-141-3 - Timeout UT2. Test 3: No SUPL POS session (Immediate session) |

B.3 Client Test Case Applicability

B.3.1 Client ICS

This section provides the applicabilities of the Client Conformance test cases for optional features. It lists all the possible optional features in the client in the form of an ICS (Implementation Conformance Specification) table, including a reference to the relevant SCRs defined in the core specifications.

| ICS | Description | SCR Reference(s) | Supported (yes/no) |
|----------------------|---|------------------|--------------------|
| ics_NetworkInitiated | Any Network Initiated call flow supported | ULP-PRO-C-007-O | |

| | | | |
|---------------------------------------|---|----------------------------------|-----------|
| ics_SETInitiated | Any SET Initiated call flow supported | ULP-PRO-C-009-O | |
| ics_PSK_TLS | PSK-TLS with GBA supported | ULP-PRO-C-004-O, ULP-PRO-C-037-O | |
| ics_MT_SMS | MT SMS supported | ULP-PIN-C-005-M | |
| ics_SIP_Push | SIP Push supported | ULP-PIN-C-006-O | |
| ics_UDP | UDP supported | ULP-PIN-C-007-O | |
| ics_HSLP_stored_in_SET | H-SLP address stored in SET | | |
| ics_TLS_add_cipher | TLS additional cipher suite supported | | |
| ics_PSKTLS_add_cipher | PSK-TLS additional cipher suite supported | | |
| ics_support_SUPLV1.0 | SUPL V1.0 supported | | |
| ics_transfer_thirdParty | Transfer Location to Third Party supported | ULP-PRO-C-040-O | |
| ics_notification_currentLocation | Notification based on current location supported | ULP-PRO-C-029-O | |
| ics_real_time | Real time reporting supported | ULP-PRO-C-046-O | |
| ics_quasi_real_time | Quasi real time reporting supported | ULP-PRO-C-047-O | |
| ics_periodic_Network_initiated | Periodic trigger in Network initiated call flows supported | ULP-PRO-C-032-O | |
| ics_periodic_SET_initiated | Periodic trigger in SET initiated call flows supported | ULP-PRO-C-032-O | |
| ics_SETbased_in_quasi_real_time | SET based positioning in quasi real time reporting supported | - | |
| ics_AGPSSETassisted_Network_initiated | A-GPS SET assisted mode in Network initiated call flows supported | ULP-PRO-C-012-O | |
| ics_AGPSSETassisted_SET_initiated | A-GPS SET assisted mode in SET initiated call flows supported | ULP-PRO-C-012-O | See note. |
| ics_AGPSSETbased_Network_initiated | A-GPS SET based mode in Network initiated call flows supported | ULP-PRO-C-013-O | |
| ics_AGPSSETbased_SET_initiated | A-GPS SET based mode in SET initiated call flows supported | ULP-PRO-C-013-O | See note. |
| ics_autonomousGPS_Network_initiated | Autonomous GPS mode in Network initiated call flows supported | ULP-PRO-C-014-O | |
| ics_autonomousGPS_SET_initiated | Autonomous GPS mode in SET initiated call flows supported | ULP-PRO-C-014-O | See note. |
| ics_eCID_Network_initiated | Enhanced Cell ID mode in Network initiated | ULP-PRO-C- | |

| | | | |
|---|--|-----------------|-----------|
| | call flows supported | 018-O | |
| ics_eCID_SET_initiated | Enhanced Cell ID mode in SET initiated call flows supported | ULP-PRO-C-018-O | See note. |
| ics_AGANSSSETassisted_Galileo_Network_initiated | A-Galileo SET assisted mode in Network initiated call flows supported | ULP-PRO-C-015-O | |
| ics_AGANSSSETassisted_Galileo_SET_initiated | A- Galileo SET assisted mode in SET initiated call flows supported | ULP-PRO-C-015-O | See note. |
| ics_AGANSSSETassisted_GLONASS_Network_initiated | A- GLONASS SET assisted mode in Network initiated call flows supported | ULP-PRO-C-015-O | |
| ics_AGANSSSETassisted_GLONASS_SET_initiated | A- GLONASS SET assisted mode in SET initiated call flows supported | ULP-PRO-C-015-O | See note. |
| ics_AGANSSSETbased_Galileo_Network_initiated | A- Galileo SET based mode in Network initiated call flows supported | ULP-PRO-C-016-O | |
| ics_AGANSSSETbased_Galileo_SET_initiated | A- Galileo SET based mode in SET initiated call flows supported | ULP-PRO-C-016-O | See note. |
| ics_AGANSSSETbased_GLONASS_Network_initiated | A- GLONASS SET based mode in Network initiated call flows supported | ULP-PRO-C-016-O | |
| ics_AGANSSSETbased_GLONASS_SET_initiated | A- GLONASS SET based mode in SET initiated call flows supported | ULP-PRO-C-016-O | See note. |
| ics_autonomousGANSS_Network_initiated | Autonomous GANSS mode in Network initiated call flows supported | ULP-PRO-C-014-O | |
| ics_autonomousGANSS_SET_initiated | Autonomous GANSS mode in SET initiated call flows supported | ULP-PRO-C-014-O | See note. |
| ics_AGANSSSETassisted_preferred | SET declares A-GNSS SET-assisted preferred in Pref Method in SUPL START | | See note. |
| ics_AGANSSSETbased_preferred | SET declares A-GNSS SET-based preferred in Pref Method in SUPL START | | See note. |
| ics_OTDOA_Network_initiated | OTDOA mode in Network initiated call flows supported | ULP-PRO-C-020-O | |
| ics_OTDOA_SET_initiated | OTDOA mode in SET initiated call flows supported | ULP-PRO-C-020-O | |
| ics_event_Network_initiated | Area Event Triggered Service in Network initiated call flows supported | ULP-PRO-C-033-O | |
| ics_event_SET_initiated | Area Event Triggered Service in SET initiated call flows supported | ULP-PRO-C-033-O | |
| ics_GeoTargetArea | Geographic Target Area supported | | |
| ics_Areaid | Area Id supported | | |
| ics_silr_another_SET | SET Initiated Location Request of another SET supported | ULP-PRO-C-038-O | |
| ics_historic_reporting | Retrieval of historical positions and/or enhanced cell/sector measurements supported | ULP-PRO-C-035-O | |
| ics_stop_triggered_session | Ability to stop Triggered Location Session | | |

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| | supported | | |
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Note: Support for this ICS may vary, depending on the test case being run.

B.3.2 Client IXIT

This section provides an IXIT (protocol Implementation eXtra Information) table to note any extra information necessary to run the test cases.

| <i>IXIT</i> | <i>Description</i> | Unit <(Range of values)> | Value |
|------------------------------|--|--|--------------|
| ixit_verification_timeout | Value of Verification timeout | seconds (30 to 50. Recommended value: 40) | |
| ixit_timer_UT1 | Value of Timer UT1 | seconds (10 to 20) | |
| ixit_timer_UT2 | Value of Timer UT2 | seconds (10 to 20) | |
| ixit_timer_UT3 | Value of Timer UT3 | seconds (8 to 20) | |
| ixit_timer_UT5 | Value of Timer UT5 | seconds (8 to 20) | |
| ixit_timer_UT7 | Value of Timer UT7 | seconds (8 to 20) | |
| ixit_timer_UT8 | Value of Timer UT8 | seconds (8 to 20) | |
| ixit_timer_UT9 | Value of Timer UT9 | seconds (50 to 120) | |
| ixit_gANSS | GANSS technology supported | -(Galileo, GLONASS, both) | |
| ixit_emergency_call_required | Emergency call required to be in progress for an Emergency Services Location Request | -(Yes/No) | |
| ixit_start_time_SI_areaEvent | Start Time supported in SET Initiated Area Event sessions | -(Yes/No) | |
| ixit_stop_time_SI_areaEvent | Stop Time supported in SET Initiated Area Event sessions | -(Yes/No) | |

B.3.3 Server ICS

| <i>ICS</i> | <i>Description</i> | SCR Reference(s) | Supported (yes/no) |
|------------|--------------------|-------------------------|---------------------------|
| | | | |

B.3.4 Server IXIT

| <i>IXIT</i> | <i>Description</i> | Unit <(Range of | Value |
|-------------|--------------------|---------------------------|--------------|
| | | | |

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|--|--|----------|--|
| | | values)> | |
| | | | |

B.4 Client ICS to test case mapping

This section provides a mapping from the optional client applicabilities (Client ICS) in section B.3.1 to the applicable test cases from section 5, so that by using the Client ICS described above the applicable optional test cases can be derived from the following table.

| Applicability | Test Cases |
|---|---|
| ics_PSK_TLS AND ics_NetworkInitiated | SUPL-2.0-con-009 - Basic SUPL INIT protection |
| ics_MT_SMS | SUPL-2.0-con-000 - SUPL INIT delivery. Test 2 : MT SMS SUPL-2.0-con-002 - Incorrect MT SMS message content |
| ics_SIP_Push | SUPL-2.0-con-000 - SUPL INIT delivery. Test 3: SIP Push SUPL-2.0-con-003 - Incorrect SIP Push message content |
| ics_UDP | SUPL-2.0-con-000 - SUPL INIT delivery. Test 4 : UDP SUPL-2.0-con-012 - Incorrect UDP message content |
| ics_HSLP_stored_in_SET AND ics_PSK_TLS. | SUPL-2.0-con-007-2 - Alternative H-SLP Addresses. Test 2: H-SLP address stored on SET |
| ics_TLS_add_cipher | SUPL-2.0-con-008-1 - Optional Ciphering Suites. Test 1: TLS_RSA_WITH_3DES_EDE_CBC_SHA |
| ics_PSKTLS_add_cipher | SUPL-2.0-con-008-2 - Optional Ciphering Suites. Test 2: TLS_PSK_WITH_3DES_EDE_CBC_SHA |
| ics_support_SUPLV1.0 AND ics_NetworkInitiated | SUPL-2.0-con-010-4 - Compatible Versions. Test 4: Correct support with SLP supporting SUPL V1.0 only. SUPL V1.0 supported by SET |
| NOT ics_support_SUPLV1.0 AND ics_NetworkInitiated | SUPL-2.0-con-011-2 - Unsupported Versions. Test 2: Lower Version not supported. SUPL V1.0 not supported by SET |
| ics_notification_currentLocation | SUPL-2.0-con-025-1 - Notification and verification based on current location. Test 1: User accepts the verification SUPL-2.0-con-025-2 - Notification and verification based on current location. Test 2: User denies the verification SUPL-2.0-con-072 - Timeout UT5 |
| ics_transfer_thirdParty AND ics_AGPSETbased_SET_initiated | SUPL-2.0-con-113 - Transfer Location to Third Party |
| ics_AGPSETassisted_Network_initiated | SUPL-2.0-con-030-1 - Positioning method. Test 1: A-GPS SET assisted |
| ics_AGPSETassisted_SET_initiated | SUPL-2.0-con-110-1 - Positioning method. Test 1: A-GPS SET assisted |
| ics_AGPSETbased_Network_initiated | SUPL-2.0-con-030-2 - Positioning method. Test 2: A-GPS SET based |
| ics_AGPSETbased_SET_initiated | SUPL-2.0-con-110-2 - Positioning method. Test 2: A-GPS SET based |

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| ated | |
| ics_autonomousGPS_Network_initiated | SUPL-2.0-con-030-3 - Positioning method. Test 3: Autonomous GPS |
| ics_autonomousGPS_SET_initiated | SUPL-2.0-con-110-3 - Positioning method. Test 3: Autonomous GPS |
| ics_eCID_Network_initiated | SUPL-2.0-con-030-4 - Positioning method. Test 4: Enhanced Cell ID |
| ics_eCID_SET_initiated | SUPL-2.0-con-110-4 - Positioning method. Test 4: Enhanced Cell ID |
| NOT ics_eCID_Network_initiated | SUPL-2.0-con-030-5 - Positioning method. Test 5: Cell ID |
| NOT ics_eCID_SET_initiated | SUPL-2.0-con-110-5 - Positioning method. Test 5: Cell ID |
| ics_AGANSSSETassisted_Galileo_Network_initiated | SUPL-2.0-con-030-6 - Positioning method. Test 6: A-GANSS SET assisted – Galileo |
| ics_AGANSSSETassisted_Galileo_SET_initiated | SUPL-2.0-con-110-6 - Positioning method. Test 6: A-GANSS SET assisted – Galileo |
| ics_AGANSSSETassisted_GLONASS_Network_initiated | SUPL-2.0-con-030-7 - Positioning method. Test 7: A-GANSS SET assisted – GLONASS |
| ics_AGANSSSETassisted_GLONASS_SET_initiated | SUPL-2.0-con-110-7 - Positioning method. Test 7: A-GANSS SET assisted – GLONASS |
| ics_AGANSSSETbased_Galileo_Network_initiated | SUPL-2.0-con-030-8 - Positioning method. Test 8: A-GANSS SET based – Galileo |
| ics_AGANSSSETbased_Galileo_SET_initiated | SUPL-2.0-con-110-8 - Positioning method. Test 8: A-GANSS SET based – Galileo |
| ics_AGANSSSETbased_GLONASS_Network_initiated | SUPL-2.0-con-030-9 - Positioning method. Test 9: A-GANSS SET based – GLONASS |
| ics_AGANSSSETbased_GLONASS_SET_initiated | SUPL-2.0-con-110-9 - Positioning method. Test 9: A-GANSS SET based – GLONASS |
| ics_autonomousGANSS_Network_initiated | SUPL-2.0-con-030-10 - Positioning method. Test 10: Autonomous GANSS |
| ics_autonomousGANSS_SET_initiated | SUPL-2.0-con-110-10 - Positioning method. Test 10: Autonomous GANSS |
| ics_OTDOA_Network_initiated | SUPL-2.0-con-030-13 - Positioning method. Test 13: OTDOA |
| ics_OTDOA_SET_initiated | SUPL-2.0-con-110-13 - Positioning method. Test 13: OTDOA |
| ics_AGPSSETassisted_Network_initiated AND ics_AGPSSETbased_Network_initiated | SUPL-2.0-con-030-11 - Positioning method. Test 11: A-GPS Preferred methods |
| ics_AGNSSETassisted_preferred | SUPL-2.0-con-110-11 - Positioning method. Test 11: SET declares A-GNSS SET-assisted Preferred method |
| ics_AGNSSETbased_preferred | SUPL-2.0-con-030-12 - Positioning method. Test 12: SET declares A-GNSS SET-based Preferred method |
| (ics_AGANSSSETassisted_Galileo_SET_initiated AND ics_AGANSSSETbased_Galileo) | SUPL-2.0-con-110-12 - Positioning method. Test 12: A-GANSS Preferred methods |

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| o_SET_initiated) OR (ics_AGANSSSETassisted_GLO NASS_SET_initiated AND ics_AGANSSSETbased_GLO NASS_SET_initiated) | |
| ics_real_time AND ics_periodic_Network_initiated AND ics_AGPSSETassisted_Netwo rk_initiated | SUPL-2.0-con-040-1 Real Time reporting. Test 1: A-GPS SET assisted |
| ics_real_time AND ics_periodic_Network_initiated AND ics_AGPSSETbased_Netwo rk_initiated | SUPL-2.0-con-040-2 Real Time reporting. Test 2: A-GPS SET based |
| ics_quasi_real_time AND ics_periodic_Network_initiated AND ics_SETbased_in_quasi_real_t ime AND ics_AGPSSETassisted_Netwo rk_initiated | SUPL-2.0-con-041-1 - Basic Quasi Real Time reporting. Test 1: A-GPS SET assisted |
| ics_quasi_real_time AND ics_periodic_Network_initiated AND ics_AGPSSETbased_Netwo rk_initiated | SUPL-2.0-con-041-2 Basic Quasi Real Time reporting. Test 2: A-GPS SET based |
| ics_batch AND ics_periodic_Network_initiated AND ics_AGPSSETassisted_Netwo rk_initiated | SUPL-2.0-con-042-1 - Basic Batch reporting. Test 1: A-GPS SET assisted |
| ics_batch AND ics_periodic_Network_initiated AND ics_AGPSSETbased_Netwo rk_initiated | SUPL-2.0-con-042-2 - Basic Batch reporting. Test 2: A-GPS SET based |
| ics_AreaEvent_Network_initiat ed AND ics_GeoTargetArea AND ics_AGPSSETassisted_Netwo rk_initiated | SUPL-2.0-con-050-1 - Geographic Target Area. Test 1: A-GPS SET assisted |
| ics_AreaEvent_Network_initiat ed AND ics_GeoTargetArea AND ics_AGPSSETbased_Netwo rk_initiated | SUPL-2.0-con-050-2 - Geographic Target Area. Test 2: A-GPS SET based |
| ics_AreaEvent_Network_initiat ed AND ics_Areald AND ics_AGPSSETassisted_Netwo rk_initiated | SUPL-2.0-con-051-1 - Area ID. Test 1: A-GPS SET assisted |
| ics_AreaEvent_Network_initiat ed AND ics_Areald AND | SUPL-2.0-con-051-2 - Area ID. Test 2: A-GPS SET based |

| | |
|---|---|
| ics_AGPSSETbased_Network_initiated | |
| ics_periodic_SET_initiated AND ics_AGPSSETassisted_SET_i nitiated | SUPL-2.0-con-120-1 - Periodic reporting. Test 1: A-GPS SET assisted |
| ics_periodic_SET_initiated AND ics_AGPSSETbased_SET_initi ated | SUPL-2.0-con-120-2 - Periodic reporting. Test 2: A-GPS SET based |
| ics_AreaEvent_SET_initiated AND ics_GeoTargetArea AND ics_AGPSSETassisted_SET_i nitiated | SUPL-2.0-con-130-1 - Geographic Target Area. Test 1: A-GPS SET assisted |
| ics_AreaEvent_SET_initiated AND ics_GeoTargetArea AND ics_AGPSSETbased_SET_initi ated | SUPL-2.0-con-130-2 - Geographic Target Area. Test 2: A-GPS SET based |
| ics_AreaEvent_SET_initiated AND ics_GeoTargetArea AND ics_Areald AND ics_AGPSSETassisted_SET_i nitiated | SUPL-2.0-con-131-1 - Area ID. Test 1: A-GPS SET assisted |
| ics_AreaEvent_SET_initiated AND ics_GeoTargetArea AND ics_Areald AND ics_AGPSSETbased_SET_initi ated | SUPL-2.0-con-131-2 - Area ID. Test 2: A-GPS SET based |
| ics_AGPSSETassisted_Netwo rk_initiated OR ics_AGPSSETbased_Netwo rk_initiated OR ics_autonomousGPS_Netwo rk_initiated OR [others FFS] (Any positioning method requiring a SUPL POS session) | SUPL-2.0-con-070-1 - Timeout UT2. Test 1: SUPL POS session (Immediate session) SUPL-2.0-con-071- Timeout UT3. Test 1: Immediate session |
| ics_AGPSSETassisted_SET_i nitiated OR ics_AGPSSETbased_SET_initi ated OR [others FFS] (Any positioning method requiring a SUPL POS session) | SUPL-2.0-con-141-1 - Timeout UT2. Test 1: SUPL POS session (Immediate session) SUPL-2.0-con-142-1 - Timeout UT3. Test 1: Immediate session |
| (ics_AGPSSETassisted_Netwo rk_initiated OR ics_AGPSSETbased_Netwo rk_initiated OR [others FFS]) AND (ics_periodic_Network_initiated OR ics_event_Network_initiated) | SUPL-2.0-con-070-2 - Timeout UT2. Test 2: SUPL POS session (Triggered session) SUPL-2.0-con-071-2 - Timeout UT3. Test 2: Triggered session |
| (ics_AGPSSETassisted_SET_i | SUPL-2.0-con-141-2 - Timeout UT2. Test 2: SUPL POS session (Triggered |

| | |
|--|--|
| initiated OR ics_AGPSETbased_SET_initiated OR [others FFS]) AND (ics_periodic_SET_initiated OR ics_event_SET_initiated) | session) SUPL-2.0-con-142-2 - Timeout UT3. Test 2: Triggered session |
| ics_periodic_Network_initiated OR ics_event_Network_initiated | SUPL-2.0-con-070-4 - Timeout UT2. Test 4: No SUPL POS session (Triggered session) |
| (ics_periodic_Network_initiated OR ics_event_Network_initiated) AND ics_stop_triggered_session | SUPL-2.0-con-073 - Timeout UT7 |
| ics_periodic_Network_initiated OR ics_periodic_SET_initiated OR ics_event_Network_initiated OR ics_event_SET_initiated | SUPL-2.0-con-061 - Network cancels Triggered Location Request |
| NOT ics_NetworkInitiated AND (ics_periodic_SET_initiated OR ics_event_SET_initiated) | SUPL-2.0-con-135 - Network cancels Triggered Location Request |
| ics_periodic_SET_initiated OR ics_event_SET_initiated | SUPL-2.0-con-140-2 - Timeout UT1. Test 2: Triggered session SUPL-2.0-con-141-4 - Timeout UT2. Test 4: No SUPL POS session (Triggered session) |
| ics_event_Network_initiated OR ics_event_SET_initiated | SUPL-2.0-con-060 - Network Capabilities change |
| (ics_periodic_SET_initiated OR ics_event_SET_initiated) AND NOT (ics_periodic_Network_initiated OR ics_event_Network_initiated) | SUPL-2.0-con-143 - Timeout UT7 |
| ics_periodic_Network_initiated | SUPL-2.0-con-074 - Timeout UT8 |
| ics_silr_another_SET | SUPL-2.0-con-144 - Timeout UT9 SUPL-2.0-con-111 - SET Initiated Location Request of another SET |
| ics_historic_reporting | SUPL-2.0-con-035 - Retrieval of historical positions |
| ics_periodic_Network_initiated OR ics_event_Network_initiated OR ics_periodic_SET_initiated OR ics_event_SET_initiated | SUPL-2.0-con-062 - V-SLP to V-SLP Handover |

Appendix C. ULP default message content for Client conformance testing

C.1 Introduction

This section defines the default message content that shall be used during Client conformance testing.

The values specified below shall be used unless overridden in the Test Procedure of a test case.

In the case of SUPL messages sent from the SLP (Conformance Test Tool) to the SET-under test, the values that shall be used for the mandatory parameters are given below. Optional information elements are normally set to "Omit".

In the case of SUPL messages sent from the SET-under-test to the SLP (Conformance Test Tool), optional parameters are generally marked as "Not checked or not present". Mandatory parameters have the value that must be checked by the Conformance Test Tool or are marked as "Not checked" meaning that any value is acceptable.

In some cases the message content is dependant on the context. In these cases the values is marked "Conditional" and in the Comment column the dependency is explained.

Common Part

The common part contains parameters that are present in all ULP messages.

C.1.1 SLP to SET

| Parameter | Value | Comment |
|-----------------|--|---|
| Message Length | Correctly calculated | |
| Version | 2.0.0 | |
| Session ID | Correctly formulated. In the case of the initial SLP Session ID, any value may be used | |
| Message Payload | Any | One of the messages defined in the following sections |

Table 6: Common Part for all ULP Messages

C.1.2 SET to SLP

| Parameter | Value | Comment |
|-----------------|-------------|---|
| Message Length | Not checked | |
| Version | 2.0.0 | |
| Session ID | Not checked | |
| Message Payload | Any | One of the messages defined in the following sections |

Table 7: Common Part for all ULP Messages

C.2 SUPL INIT

SUPL INIT is the initial message from the H-SLP (or E-SLP) to the SET in Network initiated cases.

| Parameter | Value | Comment |
|--------------------|------------|---------|
| Positioning Method | eCID | |
| Notification | Omit | |
| SLP Address | Omit | |
| QoS | Omit | |
| SLP Mode | Proxy mode | |

| | | |
|-------------------------------|------|--------------|
| MAC | Omit | For SUPL 2.0 |
| Key Identity | Omit | |
| Notification Mode | Omit | |
| Supported Network Information | Omit | |
| Trigger Type | Omit | |
| E-SLP Address | Omit | |
| Historic Reporting | Omit | |
| Protection Level | Omit | |
| GNSS Positioning Technology | Omit | |
| Minimum Major Version | Omit | |

Table 8: SUPL_INIT Message

C.3 SUPL SET INIT

The SUPL SET INIT message is the initial message where a SET can initiate location request to another target SET.

| Parameter | Value | Comment |
|---------------|----------------------------|---------|
| Target SET ID | Not checked | |
| QoP | Not checked or not present | |

Table 9: SUPL_SET_INIT Message

C.4 SUPL START

SUPL START is the initial message from the SET to the SLP.

| Parameter | Value | Comment |
|-----------------------|---|---------|
| SET capabilities | According to ICS/ declared for the SET-under-test ... | |
| Location ID | Not checked | |
| QoP | Not checked or not present | |
| Multiple Location IDs | Not checked or not present | |
| Third Party | Not checked or not present | |
| Position | Not checked or not present | |

Table 10: SUPL START Message

C.5 SUPL RESPONSE

SUPL RESPONSE is the response to a SUPL START message.

| Parameter | Value | Comment |
|-------------------------------|-------|--------------|
| Positioning Method | eCID | |
| SLP Address | Omit | |
| SET Auth key | Omit | For SUPL 2.0 |
| Key Identity 4 | Omit | For SUPL 2.0 |
| SPC_SET_Key | Omit | |
| SPC-TID | Omit | |
| SPC_SET_Key_lifetime | Omit | |
| Supported Network Information | Omit | |
| Initial Approximate Position | Omit | |

| | | |
|-----------------------------|------|--|
| GNSS Positioning Technology | Omit | |
|-----------------------------|------|--|

Table 11: SUPL RESPONSE Message

C.6 SUPL POS INIT

SUPL POS INIT is the message following the SUPL INIT message in Network initiated cases or the SUPL RESPONSE message in SET initiated cases

| Parameter | Value | Comment |
|-----------------------------------|--|---------|
| SET Capabilities | According to ICS/ declared for the SET-under-test ... | |
| Requested Assistance Data | Not checked or not present | |
| Location ID | Not checked | |
| Position | Not checked or not present | |
| SUPLPOS | Not checked or not present | |
| Ver | In Network initiated mode the hash of the SUPL INIT message, otherwise not present | |
| Multiple Location IDs | Not checked or not present | |
| UTRAN GPS Reference Time Result | Not checked or not present | |
| UTRAN GANSS Reference Time Result | Not checked or not present | |

Table 12: SUPL POS INIT Message

C.7 SUPL POS

SUPL POS is the message that wraps the underlying TIA-801, RRLP or RRC element and may contain additional information such as velocity, UTRAN GPS/GANSS Reference Time Assistance or UTRAN GPS/GANSS Reference Time Result.

C.7.1 SLP to SET

| Parameter | Value | Comment |
|---------------------------------------|--|---|
| Positioning Payload | The underlying TIA-801, RRLP, RRC or LPP element | FFS – we may wish to define RRLP messages |
| Velocity | Omit | |
| UTRAN GPS Reference Time Assistance | Omit | |
| UTRAN GPS Reference Time Result | Omit | |
| UTRAN GANSS Reference Time Assistance | Omit | |
| UTRAN GANSS Reference Time Result | Omit | |

Table 13: SUPL POS Message

C.7.2 SET to SLP

| Parameter | Value | Comment |
|-------------------------------------|----------------------------|---|
| Positioning Payload | Not checked | The underlying TIA-801, RRLP, RRC or LPP element. |
| Velocity | Not checked or not present | |
| UTRAN GPS Reference Time Assistance | Not present | |

| | | |
|---------------------------------------|----------------------------|--|
| UTRAN GPS Reference Time Result | Not checked or not present | |
| UTRAN GANSS Reference Time Assistance | Not present | |
| UTRAN GANSS Reference Time Result | Not checked or not present | |

Table 14: SUPL POS Message

C.8 SUPL END

SUPL END is the message that ends the SUPL procedure, normally or abnormally.

C.8.1 SLP to SET

| Parameter | Value | Comment |
|--------------------|--|---------|
| Position | n the case that a position needs to be sent to the SET, otherwise omit | |
| >Timestamp | Time when position fix was calculated | |
| >Position Estimate | | |
| >>Sign of latitude | north | |
| >>Latitude | 2064427 | |
| >>Longitude | 5292209 | |
| Status Code | Omit | |
| Ver | Omit | |
| SET Capabilities | Omit | |

Table 15: SUPL END Message

C.8.2 SET to SLP

| Parameter | Value | Comment |
|------------------|---|---|
| Position | Not checked or not present | |
| Status Code | Not checked or not present | |
| Ver | C | Need to be sent when SUPL END message is sent as a direct response to SUPL INIT. Otherwise not present. |
| SET Capabilities | According to ICS declared for the SET-under-test ... or not present | |

Table 16: SUPL END Message

C.9 SUPL AUTH REQ

Not currently used for conformance testing.

C.10 SUPL AUTH RESP

Not currently used for conformance testing.

C.11 SUPL TRIGGERED START

SUPL TRIGGERED START is the initial message from the SET to the H-SLP for establishing a triggered session or for requesting new trigger parameters during an ongoing Area event triggered session.

C.11.1 Network initiated sessions

C.11.1.1 Periodic Trigger

| Parameter | Value | Comment |
|-----------------------|--|---|
| SET capabilities | According to ICS declared for the SET-under-test / ... | |
| Location ID | Not checked | |
| Ver | Not checked | Hash of the SUPL INIT message which triggered this SUPL TRIGGERED START message (not in other cases) in Network initiated proxy mode. |
| QoP | Not checked or not present | |
| Multiple Location IDs | Not checked or not present | |
| Third Party | Not present | |
| Trigger Type | Not present | |
| Trigger Params | Not present | |
| Position | Not checked or not present | |
| Reporting Capability | According to ICS declared for the SET-under-test ... | |
| Cause Code | Not present | |

Table 17: SUPL TRIGGERED START Message

C.11.1.2 Event Trigger

| Parameter | Value | Comment |
|-----------------------|--|--|
| SET capabilities | According to ICS declared for the SET-under-test ... | |
| Location ID | Not checked | |
| Ver | Not checked | Hash of the SUPL INIT message which triggered this SUPL TRIGGERED START message (not in other cases) in Network initiated proxy mode. FFS. |
| QoP | Not checked or not present | |
| Multiple Location IDs | Not checked or not present | |
| Third Party | Not present | |
| Trigger Type | Not present | |
| Trigger Params | Not present | |
| Position | Not checked or not present | |
| Reporting Capability | Not present | |
| Cause Code | Not checked | |

Table 18: SUPL TRIGGERED START Message

C.11.2 SET initiated sessions

C.11.2.1 Periodic Trigger

| Parameter | Value | Comment |
|------------------|---|---------|
| SET capabilities | According to ICS declared for the SET-under-test/ ... | |

| | | |
|-----------------------|---|--|
| Location ID | Not checked | |
| Ver | Not present | |
| QoP | Not checked or not present | |
| Multiple Location IDs | Not checked or not present | |
| Third Party | C | Only for SET Initiated location requests with transfer to Third Party. |
| >Third Party ID | Not checked | |
| Trigger Type | Periodic | |
| Trigger Params | Not checked | |
| Position | Not checked or not present | |
| Reporting Capability | According to ICS declared for the SET-under-test/ ... | |
| Cause Code | Not present | |

Table 19: SUPL TRIGGERED START Message

C.11.2.2 Area Event Trigger

| Parameter | Value | Comment |
|-----------------------|--|--|
| SET capabilities | According to ICS declared for the SET-under-test / ... | |
| Location ID | Not checked | |
| Ver | Not present | |
| QoP | Not checked or not present | |
| Multiple Location IDs | Not checked or not present | |
| Third Party | C | Only for SET Initiated location requests with transfer to Third Party. |
| >Third Party ID | Not checked | |
| Trigger Type | Area event | |
| Trigger Params | Not checked | |
| Position | Not checked or not present | |
| Reporting Capability | Not present | |
| Cause Code | Not checked | |

Table 20: SUPL TRIGGERED START Message

C.12 SUPL TRIGGERED RESPONSE

SUPL TRIGGERED RESPONSE is the response to a SUPL TRIGGERED START message from the SLP to the SET

C.12.1 Network initiated sessions

C.12.1.1 Periodic Trigger

| Parameter | Value | Comment |
|-------------------------|------------------|--|
| Positioning Method | eCID | |
| Trigger Params | Periodic Params | |
| >Number of fixes | 3 | FFS |
| >Interval Between Fixes | 30 (see comment) | FFS If the minimum interval between fixes received from the SET in SUPL TRIGGERED START is greater than 30, use this value. |

| | | |
|-------------------------------|------|----------------------------------|
| >Start Time | 30 | FFS |
| SLP Address | Omit | |
| Supported Network Information | Omit | |
| Reporting Mode | Omit | This implies real time reporting |
| SPC_SET_Key | Omit | |
| SPC-TID | Omit | |
| SPC_SET_Key_lifetime | Omit | |
| GNSS Positioning Technology | Omit | |

Table 21: SUPL TRIGGERED RESPONSE Message

C.12.1.2 Area Event Trigger

| Parameter | Value | Comment |
|-------------------------------|-------------------|---------|
| Positioning Method | eCID | |
| Trigger Params | Area Event Params | |
| >Area Event Type | FFS | |
| >Location estimate | FFS | |
| >Repeated reporting | Omit FFS | |
| >Start Time | Omit FFS | |
| >Stop Time | Omit FFS | |
| >Geographic Target Area List | Omit FFS | |
| >Area Id Lists | FFS | |
| SLP Address | Omit | |
| Supported Network Information | Omit | |
| Reporting Mode | Omit | |
| SPC_SET_Key | Omit | |
| SPC-TID | Omit | |
| SPC_SET_Key_lifetime | Omit | |
| GNSS Positioning Technology | Omit | |

Table 22: SUPL TRIGGERED RESPONSE Message

C.12.2 SET initiated sessions

C.12.2.1 Periodic Trigger

| Parameter | Value | Comment |
|-------------------------------|-------|---------|
| Positioning Method | eCID | |
| Trigger Params | Omit | |
| SLP Address | Omit | |
| Supported Network Information | Omit | |

| | | |
|-----------------------------|------|----------------------------------|
| Reporting Mode | Omit | This implies real time reporting |
| SPC_SET_Key | Omit | |
| SPC-TID | Omit | |
| SPC_SET_Key_lifetime | Omit | |
| GNSS Positioning Technology | Omit | |

Table 23: SUPL TRIGGERED RESPONSE Message

C.12.2.2 Area Event Trigger

| Parameter | Value | Comment |
|-------------------------------|---------|---------|
| Positioning Method | eCID | |
| Trigger Params | Omit | |
| SLP Address | Omit | |
| Supported Network Information | Omit | |
| Reporting Mode | Omit | |
| SPC_SET_Key | 1. Omit | |
| SPC-TID | 2. Omit | |
| SPC_SET_Key_lifetime | 3. Omit | |
| GNSS Positioning Technology | 4. Omit | |

Table 24: SUPL TRIGGERED RESPONSE Message

C.13 SUPL TRIGGERED STOP

SUPL TRIGGERED STOP is used by the SLP or the SET to cancel a triggered session.

C.13.1 SLP to SET

| Parameter | Value | Comment |
|-------------|-------|---------|
| Status Code | Omit | |

Table 25: SUPL TRIGGERED STOP Message

C.13.2 SET to SLP

| Parameter | Value | Comment |
|-------------|----------------------------|---------|
| Status Code | Not checked or not present | |

Table 26: SUPL TRIGGERED STOP Message

C.14 SUPL NOTIFY

SUPL NOTIFY is the message from the SLP to the SET in Network initiated cases.

| Parameter | Value | Comment |
|--------------|-----------------------------------|---------|
| Notification | No notification & no verification | |

Table 27: SUPL NOTIFY Message

C.15 SUPL NOTIFY RESPONSE

SUPL NOTIFY RESPONSE is the response to a SUPL NOTIFY message.

| Parameter | Value | Comment |
|-----------------------|----------------------------|---------|
| Notification Response | Not checked or not present | |

Table 28: SUPL NOTIFY RESPONSE Message

C.16 SUPL REPORT - FFS

The SUPL REPORT message is used in the following instances:

- (1) For triggered applications, the SUPL REPORT message is used by the SLP to indicate the end of a positioning procedure (SUPL POS session) to the SET. In this case the SUPL REPORT message may or may not contain a calculated position.

| Parameter | Value | Comment |
|-------------------------|-------|--|
| SessionList | Omit | |
| SET capabilities | Omit | |
| ReportDataList | Omit | |
| >Report Data | Omit | |
| >>Position Data | Omit | A calculated position and the respective positioning mode used (optional). |
| >>Multiple Location Ids | FFS | Multiple Location Ids. |
| >>Result Code | Omit | |
| >>Time Stamp | C | Only used if Position Data is not present. |
| Ver | Omit | |
| More Components | Omit | |

Table 29: SUPL REPORT Message

- (2) For triggered applications, the SUPL REPORT message may be used to send one or more position result(s) (calculated by the SET) and/or enhanced cell/sector measurement(s) from the SET to the SLP. A result code may optionally be sent to indicate an error condition (e.g. no position available).

| Parameter | Value | Comment |
|-------------------------|----------------------------|--|
| SessionList | Omit | |
| SET capabilities | Omit | |
| ReportDataList | | |
| >Report Data | Not checked | |
| >>Position Data | Not checked | A calculated position and the respective positioning mode used (optional). |
| >>Multiple Location Ids | FFS | Multiple Location Ids. |
| >>Result Code | Not checked or not present | |
| >>Time Stamp | C | Only used if Position Data is not present. |
| Ver | Omit | |

| | | |
|-----------------|------|--|
| More Components | Omit | |
|-----------------|------|--|

Table 30: SUPL REPORT Message

- (3) As an intermediate report within a continuing batch reporting session, the SUPL REPORT message is used as in triggered applications, but the message should only contain the position result(s). This allows the SET to dynamically manage it's memory by managing the amount of data stored in SET.

| Parameter | Value | Comment |
|-------------------------|-------------|--|
| SessionList | Not present | |
| SET capabilities | Not present | |
| ReportDataList | | |
| >Report Data | Not checked | |
| >>Position Data | Not checked | A calculated position and the respective positioning mode used (optional). |
| >>Multiple Location Ids | FFS | Multiple Location Ids. |
| >>Result Code | Not checked | |
| >>Time Stamp | C | Only used if Position Data is not present. |
| Ver | C | Only if the SUPL REPORT message is sent in response to a SUPL INT message. |
| More Components | C | This parameter is used if the report data to be sent needs to be segmented into multiple SUPL REPORT messages. |

Table 31: SUPL REPORT Message

- (4) For single fix notification/verification based on current location, the SUPL REPORT message is used in non-proxy mode to indicate the end of the positioning procedure (SUPL POS) session) to the SET. In this case the SUPL REPORT message may or may not contain a calculated position.

Not currently used for conformance testing.

- (5) SUPL REPORT is used by the SET in response to a session info query from the H-SLP. In this case the SUPL REPORT message contains a list of session-ids of all active SUPL sessions. The SUPL REPORT message MAY also include the SET Capabilities.

| Parameter | Value | Comment |
|-------------------------|---|---------|
| SessionList | Not checked | FFS |
| SET capabilities | According to ICS declared for the SET-under-test or not present | FFS |
| ReportDataList | Not present | |
| >Report Data | Not present | |
| >>Position Data | Not present | |
| >>Multiple Location Ids | Not present | |
| >>Result Code | Not present | |
| >>Time Stamp | Not present | |

| | | |
|------------------------|--|--|
| Ver | The correctly calculated hash of the SUPL INIT message | |
| More Components | Not present | |

Table 32: SUPL REPORT Message