Generic Object Exchange Profile (GOEP)

Abstract:
This document defines test structures and procedures for the conformance test of Bluetooth® products implementing the Generic Object Exchange Profile 2.0 or later.
### Revision History

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<tr>
<td>1.1.1r0</td>
<td>2010-03-10</td>
<td>First draft of GOEP test specification</td>
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<td>1.1.1r1</td>
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<td>Removed duplicate test case RLS/BV-07 and updated SRM/BI-03 to run even if SRM is not claimed</td>
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1 Scope

This Bluetooth document contains the Test Suite Structure (TSS) and Test Cases (TC) to test certain features of the GOEP and IrDA Interoperability profiles. The features tested are mapped from application profiles that reference those features.

The objective of this test suite is to provide a basis for interoperability tests for Bluetooth devices giving a high probability of air interface interoperability between different manufacturers’ Bluetooth devices.
2 References, Definitions, and Abbreviations

2.1 References

This Bluetooth document incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter.

[1] Bluetooth Core Specification v2.0 or later


[4] Bluetooth GOEP-based Application Profile ICS


[7] ITU-T Z.120, Formal description techniques (FDT) - Message Sequence Chart

[8] IrDA Interoperability

2.2 Definitions

For the purpose of this Bluetooth document, the definitions in [1], [2] and [3] apply.

2.3 Abbreviations

For the purpose of this Bluetooth document, the abbreviations in [1], [2] and [3] apply.
3 Test Suite Structure (TSS)

3.1 Test Strategy

This specification consists of test cases to test features within the GOEP v2.0 or later specification. Historically there was not a test suite for tests common to all the OBEX-based profiles. It is expected that over time other test cases may be added to this test suite.

The test cases therefore cover much of OBEX, in particular those features that were added into the v2.0 or later versions of GOEP. These are the use of OBEX over L2CAP and enhancements to the IrOBEX protocol.

To allow efficient testing of many OBEX profiles this test suite contains the common test cases. The test case mappings of the application profiles, and the associated ICS, cause certain tests within this document to be run.

Note that the Backwards Compatibility test cases are mapped in only from the application profiles that require backwards compatibility with their previous versions based on earlier versions of GOEP. Future Application profiles will exclude these tests.

Application profile test suite structure

- Application profile tests
  
  As defined in separate TS

Generic Object Exchange Profile test suite structure

- Backwards Compatibility
- OBEX over L2CAP Connection
- Single Response Mode
- Single Response Mode Parameters
- Reliable Session
- Reliable Session with Single Response Mode
- Action Operation
- Robustness

Figure 3.1: GOEP Test Suite Structure Representation
4 Test Cases (TC)

4.1 Introduction

4.1.1 Test Case Identification Conventions

Test cases shall be assigned unique identifiers per the conventions in [2]. The convention used here is <spec abbreviation>/<IUT role>/<class>/<feat>/<func>/<subfunc>/<cap>/<xx>-<nn>-<y>.

Bolded ID parts shall appear in the order prescribed. Non-bolded ID parts (if applicable) shall appear between the bolded parts. The order of the non-bolded parts may vary from test suite to test suite, but shall be consistent within each individual test suite.

Note: The IUT role is defined by a higher level profile incorporating these generic tests.

<table>
<thead>
<tr>
<th>Identifier Abbreviation</th>
<th>Spec Identifier &lt;spec abbreviation&gt;</th>
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<td>GOEP</td>
<td>Generic Object Exchange Profile</td>
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<table>
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<th>Identifier Abbreviation</th>
<th>Feature Identifier &lt;feat&gt;</th>
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<td>ACT</td>
<td>Action Operation</td>
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Table 4.1: GOEP TC Class Naming Convention

4.1.2 Conformance

When conformance is claimed, all capabilities indicated as mandatory for this Specification shall be supported in the specified manner (process-mandatory). This also applies for all optional and conditional capabilities for which support is indicated. All mandatory capabilities, and optional and conditional capabilities for which support is indicated are subject to verification as part of the Bluetooth Qualification Program.

The Bluetooth Qualification Program may employ tests to verify implementation robustness. The level of implementation robustness that is verified varies from one Specification to another and may be revised for cause based on interoperability issues found in the market.

Such tests may verify

* that claimed capabilities may be used in any order and any number of repetitions that are not excluded by the Specification, OR
• that capabilities enabled by the implementations are sustained over durations expected by the use case, OR

• that the implementation gracefully handles any quantity of data expected by the use case, OR

• that the implementation gracefully rejects any attempt to exercise capabilities which were declared as not supported. Graceful rejection means that the implementation demonstrates uninterrupted conformance to the specification immediately after rejecting such attempts without any need to be externally reset or adjusted, OR

• that in cases where more than one valid interpretation of the Specification exists, the implementation complies with at least one interpretation and gracefully handles other interpretations OR

• that the implementation is immune to attempted security exploits.

A single execution of each of the required tests is required in order to constitute a pass verdict. However, it is noted that in order to provide a foundation for interoperability, it is necessary that a qualified implementation consistently and repeatedly pass any of the applicable tests.

In any case, where a member finds an issue with the Test Plan Generator, the test case as described in the test suite, or with the test system utilized, the member is required to notify the responsible party via an errata request such that the issue may be addressed.

4.1.3 Pass/Fail Verdict Conventions
Each test case has an Expected Outcome section, which outlines all the detailed pass criteria conditions that shall be met by the IUT to merit a Pass Verdict.

The convention in this test suite is that, unless there is a specific set of fail conditions outlined in the test case, the IUT fails the test case as soon as one of the pass criteria conditions cannot be met. If this occurs, the outcome of the test shall be the Fail Verdict.

4.2 Backwards Compatibility
4.2.1 GOEP/BC/BV-01-I [Process an incoming PUT request from a legacy device (OBEX over RFCOMM is used)]

• Test Purpose
  Verify that the IUT is able to accept and process an incoming PUT request from a legacy device.

• Reference
  [3] 8.2

• Initial Condition
  An OBEX Connection and an OBEX Transport Connection (using RFCOMM channel) exists.
  The PUT object is large enough to span multiple OBEX packets.

• Test Procedure
• Expected Outcome

Pass Verdict:

- On receiving the PUT requests from the Lower Tester, the IUT responds with CONTINUE messages and does not try to enable SRM.
- The PUT operation completes successfully.

4.2.2 GOEP/BC/BV-02-I [Initiate a PUT request to a legacy device (OBEX over RFCOMM is used)]

• Test Purpose

Verify that the IUT is able to initiate and process a PUT request to a legacy device.

• Reference

[3] 8.2

• Initial Condition

An OBEX Connection and an OBEX Transport Connection (using RFCOMM channel) exists.

The PUT object is large enough to span multiple OBEX packets.
• Expected Outcome

Pass Verdict:

- The IUT sends one or more PUT [0x02 or 0x82] requests to the Lower Tester.
- The PUT operation completes successfully.

4.2.3 GOEP/BC/BV-03-I [Process an incoming GET request from a legacy device (OBEX over RFCOMM is used)]

• Test Purpose

Verify that the IUT is able to accept and process an incoming GET request from a legacy device.

• Reference

[3] 8.2

• Initial Condition

An OBEX Connection and an OBEX Transport Connection (using RFCOMM channel) exists.

• Test Procedure
Expected Outcome

Pass Verdict:

- On receiving the GET requests from the Lower Tester, the IUT responds with CONTINUE messages.
- The GET operation completes successfully.

4.2.4 GOEP/BC/BV-04-I [Initiate a GET request to a legacy device (OBEX over RFCOMM is used)]

- Test Purpose
  Verify that the IUT is able to initiate and process a GET request to a legacy device.

- Reference
  [3] 8.2

- Initial Condition
  An OBEX Connection and an OBEX Transport Connection (using RFCOMM channel) exists.

- Test Procedure
• Expected Outcome

Pass Verdict:

- The IUT sends GET [0x03] requests to the Lower Tester and does not try to enable SRM.
- The GET operation completes successfully.

4.3 OBEX over L2CAP Connection

4.3.1 GOEP/CON/BV-01-C [IUT issues an OBEX CONNECT request]

• Test Purpose
  Verify that the Client issues an OBEX Connection request to the Server.

• Reference
  [8] 3

• Initial Condition
  None

• Test Procedure
4.3.2  GOEP/CON/BV-02-C [GoepL2CapPsm attribute id present in the SDP record]

- **Test Purpose**
  Verify that the GoepL2CapPsm attribute is present in IUT’s SDP record.

- **Reference**
  [8] 3.3

- **Initial Condition**
  None

- **Test Procedure**
• Expected Outcome
Pass Verdict:
- On receiving either the SDP_ServiceSearchAttributeRequest or SDP_ServiceAttributeRequest PDU (refer the SDP Test Suite) from the Lower Tester with attribute id=GoepL2CapPsm, the IUT responds with an appropriate SDP response which contains the requested attribute containing the L2CAP PSM.
- On receiving an OBEX Connect [0x80] request, the IUT does not include a SRM header in the Connect response.

4.4 Single Response Mode

4.4.1 GOEP/SRM/BV-01-C [Server does not wish to use SRM during a PUT request]

• Test Purpose
Verify that Single Response Mode (SRM) is not used during a PUT request if the Server does not wish to use SRM.

• Reference
[3] 4.6

• Initial Condition
The IUT supports Single Response Mode (SRM).

An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

The PUT object is large enough to span multiple OBEX packets.

- **Test Procedure**

  ![Diagram](image.png)

  - **Expected Outcome**
    
    **Pass Verdict:**
    
    - The IUT sends a PUT [0x02] request and a SRM header [0x01] indicating SRM to be enabled for the PUT request.
    
    - On receiving the CONTINUE response from Lower Tester without a SRM header, the IUT proceeds with the PUT request with SRM disabled (assuming the object to be transferred is large enough to span multiple OBEX packets).
    
    - The PUT operation completes successfully.

  4.4.2 GOEP/SRM/BV-03-C [IUT issues a PUT request with SRM enabled – Initiate PUT]

- **Test Purpose**

  Verify that the Client issues a PUT request with a valid SRM header value, i.e. 0x01, wanting SRM to be enabled for the PUT transaction.

- **Reference**

  [3] 4.6, 5.5.1

- **Initial Condition**

  The IUT supports Single Response Mode (SRM).
An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists. The PUT object is large enough to span multiple OBEX packets.

• Test Procedure

---

**Client**

**IUT**

**Server**

**Lower Tester**

---

• Expected Outcome

**Pass Verdict:**

- The IUT sends a PUT [0x02] request with a SRM [0x01] header indicating SRM to be enabled for the PUT request.
- On receiving the CONTINUE response from the Lower Tester with a SRM [0x01] header, the IUT proceeds with the PUT request with SRM enabled (assuming the object to be transferred is large enough to span multiple OBEX packets).
- The PUT operation completes successfully.

4.4.3 **GOEP/SRM/BV-04-C [IUT issues a PUT response with SRM enabled – Receive PUT]**

• Test Purpose

Verify that the Server issues a PUT response with a valid SRM header value, i.e. 0x01, wanting SRM to be enabled for the PUT transaction.

• Reference

[3] 4.6, 5.5.1

• Initial Condition

The IUT supports Single Response Mode (SRM).
An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

The PUT object is large enough to span multiple OBEX packets.

- **Test Procedure**

  ![Diagram of test procedure]

- **Expected Outcome**

  **Pass Verdict:**
  - On receiving the PUT request from the Lower Tester with SRM [0x01] header value, the IUT sends a CONTINUE [0x90] response with a SRM [0x01] header.
  - The IUT proceeds with the PUT request with SRM enabled.
  - The PUT operation completes successfully.

4.4.4 **GOEP/SRM/BV-05-C [Server does not wish to use SRM during a GET request]**

- **Test Purpose**
  Verify that Single Response Mode (SRM) is not used during a GET request if the Server does not wish to use SRM.

- **Reference**
  [3] 4.6

- **Initial Condition**
  The IUT supports Single Response Mode (SRM).

  An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

- **Test Procedure**
**4.4.5 GOEP/SRM/BV-07-C [IUT issues a GET request with SRM enabled – Initiate GET]**

- **Test Purpose**
  Verify that the Client issues a GET request with a valid SRM header value, i.e. 0x01, wanting SRM to be enabled for the GET transaction.

- **Reference**
  [3] 4.6, 5.6.1

- **Initial Condition**
  The IUT supports Single Response Mode (SRM).

  An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

- **Test Procedure**
• Expected Outcome

Pass Verdict:

- The IUT sends a GET [0x83] request with a SRM [0x01] header requesting SRM to be enabled for the GET request.
- On receiving the CONTINUE response from the Lower Tester with a SRM [0x01] header, the IUT proceeds with the GET request with SRM enabled.
- The GET operation completes successfully.

4.4.6 **GOEP/SRM/BV-08-C [IUT issues a GET response w/ SRM enabled – Receive GET]**

• Test Purpose
Verify that the Server issues a GET response with a valid SRM header value, i.e. 0x01, wanting SRM to be enabled for the GET transaction.

• Reference
[3] 4.6, 5.6.1

• Initial Condition
The IUT supports Single Response Mode (SRM).

An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

• Test Procedure
• Expected Outcome

Pass Verdict:

- On receiving the GET request from the Lower Tester with SRM [0x01] header value, the IUT sends a CONTINUE [0x90] response with a SRM [0x01] header.
- The IUT proceeds with the GET operation with SRM enabled (assuming the object to be transferred is large enough to span multiple OBEX packets).
- The GET operation completes successfully.

4.4.7 GOEP/SRM/B1-02-C [Process a PUT request with an invalid SRM header]

• Test Purpose

Verify that the Server ignores a SRM header with an invalid value in the PUT request and carries on with the PUT operation with SRM disabled.

• Reference

[3] 4.6

• Initial Condition

The IUT supports Single Response Mode (SRM).

An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

The PUT object is large enough to span multiple OBEX packets.

• Test Procedure
• Expected Outcome

Pass Verdict:

- On receiving the PUT request from the Lower Tester with an invalid SRM header value, the IUT proceeds with the PUT request with SRM disabled.
- The PUT operation completes successfully.

4.4.8 GOEP/SRM/BI-03-C [Process an OBEX CONNECT request (incorrectly) containing a SRM header]

• Test Purpose

Verify that the Server accepts an OBEX Connection request from the Client that (incorrectly) includes a SRM header.

• Reference

[3] 4.6

• Initial Condition

None

• Test Procedure
An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) is established

• Expected Outcome

Pass Verdict:
- On receiving the invalid SRM header in the OBEX_CONNECT request, the IUT responds with a SUCCESS without a SRM header.
- OBEX/L2CAP channel is established.

4.4.9 GOEP/SRM/BI-05-C [Process a GET request with an invalid SRM header]

• Test Purpose
Verify that the Server ignores a SRM header with an invalid value in the GET request and carries on with the GET operation with SRM disabled.

• Reference
[3] 4.6

• Initial Condition
The IUT supports Single Response Mode (SRM).
An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

• Test Procedure
• Expected Outcome

Pass Verdict:

- On receiving the GET request from the Lower Tester with an invalid SRM header value, the IUT proceeds with the GET request with SRM disabled.
- The GET operation completes successfully.

4.5 Single Response Mode Parameters

4.5.1 GOEP/SRMP/BV-01-C [IUT receives a PUT response with SRM enabled and a SRMP wait header]

• Test Purpose
Verify that the Client keeps issuing PUT requests until the remote device stops sending SRMP wait headers.

• Reference
[3] 4.6.1, 4.6.2

• Initial Condition
The IUT supports Single Response Mode (SRM) and Single Response Mode Parameters (SRMP).
An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.
The PUT object is large enough to span multiple OBEX packets.

• Test Procedure
• Expected Outcome

Pass Verdict:

- The IUT sends a PUT [0x02] request with a SRM [0x01] header.
- The IUT keeps sending PUT requests until the response from the Lower Tester does not contain a SRMP header; meaning that SRM is now enabled and can be used. Henceforth, the IUT sends remaining body/end-of-body headers without waiting for a response from the Lower Tester.
- The PUT operation completes successfully with SRM enabled.

4.5.2 GOEP/SRMP/BV-02-C [IUT receives a GET request with SRM enabled and a SRMP wait header]

• Test Purpose
Verify that the Server keeps waiting for GET requests until the remote device stops sending SRMP wait headers.

• Reference
[3] 4.6.1, 4.6.2

• Initial Condition
The IUT supports Single Response Mode (SRM) and Single Response Mode Parameters (SRMP).

An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.
• Test Procedure

The test procedure below is derived from Table 4.3 in GOEP section 4.6.1 and represents how the SRMP "wait" header may be used.

An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists

• Expected Outcome

**Pass Verdict:**

- On receiving the GET [0x83] request from the Lower Tester with a SRM [0x01] header and a SRMP [0x01] header, the IUT responds with a CONTINUE [0x90] message with a SRM [0x01] header.
- The IUT keeps waiting for GET requests until the request from the Lower Tester does not contain a SRMP header; meaning that SRM is now enabled and can be used. Body data may be included and the IUT may send remaining body/end-of-body headers without waiting for a request from the Lower Tester.
- The GET operation completes successfully with SRM enabled.

4.5.3 GOEP/SRMP/BV-03-C [IUT does not include an invalid SRMP header in the PUT response]

• Test Purpose

Verify that the Server does not issue a PUT response containing a SRMP header with some value other than 0x01.

• Reference

[3] 4.6.1
• Initial Condition

The IUT supports Single Response Mode (SRM) and Single Response Mode Parameters (SRMP).

The IUT supports sending a SRMP header, through its UI, when required.

An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

The PUT object is large enough to span multiple OBEX packets.

• Test Procedure

![Diagram]

• Expected Outcome

**Pass Verdict:**

- On receiving the PUT [0x02] request with a SRM [0x01] header from the Lower Tester, the IUT sends a CONTINUE [0x90] response with a SRM [0x01] header. It also includes a SRMP header (through its UI) with a value of 0x01 asking the Lower Tester to hold off on starting SRM.

**4.5.4 GOEP/SRMP/BV-04-C [IUT does not include an invalid SRMP header in the GET request]**

• Test Purpose

Verify that the Client does not issue a GET request containing a SRMP header with some value other than 0x01.

• Reference

[3] 4.6.1

• Initial Condition

The IUT supports Single Response Mode (SRM) and Single Response Mode Parameters (SRMP).

The IUT supports sending a SRMP header, through its UI, when required.

An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.
• Test Procedure

<table>
<thead>
<tr>
<th>IUT</th>
<th>Lower Tester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client</td>
<td>Server</td>
</tr>
</tbody>
</table>

An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists

Enable Tx of SRMP header

GET'ing Data

GET [0x83]

[SRM] [0x01]

[SRMP] [0x01]

CONTINUE [0x90]

GET'ing Data

SRM Enabled but Paused

• Expected Outcome

**Pass Verdict:**

- The IUT sends a GET [0x83] request with a SRM [0x01] header. It also includes a SRMP header (through its UI) with a value of 0x01 asking the Lower Tester to hold off on starting SRM.

4.5.5 **GOEP/SRMP/BV-05-C [IUT and Lower Tester include a SRMP header during the GET operation]**

• Test Purpose

Verify that the Client can GET an object when both devices use SRMP.

• Reference

[3] 4.6.1

• Initial Condition

The IUT supports Single Response Mode (SRM) and Single Response Mode Parameters (SRMP).

The IUT supports sending a SRMP header, through its UI, when required.

An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

• Test Procedure
**Expected Outcome**

**Pass Verdict:**

- The IUT sends a GET [0x83] request with a SRM [0x01] header and a SRMP [0x01] header.
- The IUT issues additional GET requests as long as the Lower Tester sends GET responses with a SRMP [0x01] header.
- The IUT transmits a GET request with an SRMP header after the IUT is commanded to enable transmission of SRMP headers.
- The GET operation completes successfully.

### 4.5.6 GOEP/SRMP/BV-06-C [IUT receives a GET response with SRM enabled and a SRMP wait header]

**Test Purpose**

Verify that the Client keeps sending GET requests until the remote device stops sending SRMP wait headers in GET responses.

**Reference**

[3] 4.6.1, 4.6.2

**Initial Condition**

The IUT supports Single Response Mode (SRM) and Single Response Mode Parameters (SRMP).
An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

- **Test Procedure**

  ![Diagram](image)

  - **Expected Outcome**

    **Pass Verdict:**
    - On receiving the Continue [0x90] response from Lower Tester with a SRM [0x01] header and a SRMP [0x01] header, the IUT responds with a GET request message without an SRM [0x01] header.
    - The IUT keeps issuing GET requests until the response from Lower Tester does not contain a SRMP header; meaning that SRM is now enabled and can be used. Henceforth, the Lower Tester sends remaining body/end-of-body headers without waiting for a request from the IUT.
    - The GET operation completes successfully with SRM enabled.

  4.5.7 **GOEP/SRMP/BI-01-C [IUT ignores an invalid SRMP header from Server during a GET operation (SRM enabled)]**

  - **Test Purpose**

    Verify that the IUT ignores an invalid SRMP header received from the Lower Tester while a GET operation (SRM enabled) is in progress and continues with the GET operation.

  - **Reference**

    [3] 4.6.1
• **Initial Condition**
  The IUT supports Single Response Mode (SRM) and Single Response Mode Parameters (SRMP).

  An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

• **Test Procedure**

  ![Diagram of test procedure](image)

• **Expected Outcome**

  **Pass Verdict:**
  - The IUT sends a GET [0x83] request with a SRM [0x01] header indicating SRM to be enabled for the GET operation.
  - On receiving the CONTINUE response from Lower Tester with a SRM [0x01] header, the IUT proceeds with the GET operation with SRM enabled (assuming the object to be transferred is large enough to span multiple OBEX packets).
  - On receiving a CONTINUE response from Lower Tester with an invalid SRMP [0x01] header, the IUT ignores the misplaced SRMP header and the GET operation completes successfully.

• **Reference**

  [3] 4.6.1

• **Initial Condition**
The IUT supports Single Response Mode (SRM) and Single Response Mode Parameters (SRMP).

An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

- **Test Procedure**

  ![Test Diagram]

  - **Expected Outcome**

    **Pass Verdict:**
    - On receiving the GET request from Lower Tester with SRM [0x01] header value, the IUT sends a CONTINUE [0x90] response with a SRM [0x01] header.
    - The IUT proceeds with the GET operation with SRM enabled (assuming the object to be transferred is large enough to span multiple OBEX packets).
    - On receiving a GET request from Lower Tester with an invalid SRMP [0x01] header, the IUT ignores the misplaced SRMP request and the GET operation completes successfully.

### 4.6 Reliable Session

#### 4.6.1 GOEP/RLS/BV-01-C [IUT is able to create a Reliable OBEX Session]

- **Test Purpose**
  
  Verify that the IUT is able to create a Reliable OBEX Session to the remote device.

- **Reference**
  
  [3] 4.8

- **Initial Condition**
  
  The IUT supports Reliable Sessions.
  
  L2CAP transport connection has been established.
Test Procedure

Expected Outcome

Pass Verdict:

- The IUT issues a CREATESESSION request containing the Session Parameters header, as the very first header, to the Lower Tester.
- On receiving a SUCCESS [0xA0] for the CREATESESSION request, the IUT sends an OBEX_CONNECT [0x80] request with the SSN header, as the very first header, to be established within the Reliable Session.

4.6.2 GOEP/RLS/BV-02-C [IUT is able to accept a Reliable OBEX Create Session request]

Test Purpose
Verify that the IUT is able to accept a Reliable OBEX Create Session request from the remote device.

Reference
[3] 4.8, 5.9

Initial Condition
The IUT supports Reliable Sessions.
L2CAP transport connection has been established.

Test Procedure
4.6.3 GOEP/RLS/BV-03-C [IUT rejects a Reliable OBEX Session request when an Active Session exists]

- **Test Purpose**
  Verify that the IUT rejects a Reliable OBEX Session request when an Active Session already exists on the same transport.

- **Reference**
  [3] 4.8, 5.9

- **Initial Condition**
  The IUT supports Reliable Sessions.
  L2CAP transport connection has been established.
4.6.4 GOEP/RLS/BV-04-C [IUT is able to close a Reliable OBEX Session]

- **Test Purpose**
  Verify that the IUT is able to close a Reliable OBEX Session to the remote device.

- **Reference**
  [3] 4.8

- **Initial Condition**
  The IUT supports Reliable Sessions.

  Reliable OBEX Session, an OBEX Connection, and an OBEX Transport Connection (using L2CAP channel) exists.

- **Test Procedure**
4.6.5 GOEP/RLS/BV-05-C [IUT is able to Suspend/Resume a Reliable OBEX Session (no OBEX operation)]

- **Test Purpose**
  Verify that the IUT is able to Suspend/Resume a Reliable OBEX Session without any ongoing OBEX operation.

- **Reference**
  [3] 4.8, 5.9, 5.10

- **Initial Condition**
  The IUT supports Reliable Sessions.

  Reliable OBEX Session, an OBEX Connection, and an OBEX Transport Connection (using L2CAP channel) exists.

- **Test Procedure**
• Expected Outcome

**Pass Verdict:**

- The IUT issues a **SUSPENDSESSION** request containing the Session Parameters header, as the very first header, to the Lower Tester.
- On receiving a SUCCESS [0xA0] for the SUSPENDSESSION request, the Reliable OBEX Session and the OBEX Connection are suspended.
- The IUT issues a **RESUMESESSION** request containing the Session Parameters header, as the very first header, to the Lower Tester.
- On receiving a SUCCESS [0xA0] for the RESUMESESSION request, the Reliable OBEX Session and the OBEX Connection are resumed.

4.6.6 **GOEP/RLS/BV-06-C [IUT is able to accept Suspend/Resume of Reliable OBEX Session (no OBEX operation)]**

• **Test Purpose**

Verify that the IUT is able to accept a Suspend/Resume of Reliable OBEX Session without any ongoing OBEX operation.

• **Reference**

[3] 4.8, 5.9, 5.10

• **Initial Condition**

The IUT supports Reliable Sessions.

Reliable OBEX Session, an OBEX Connection, and an OBEX Transport Connection (using L2CAP channel) exists.
4.6.7 GOEP/RLS/BV-08-C [IUT is able to accept a Reliable OBEX Close Session request]

- **Test Purpose**
  Verify that the IUT is able to accept a Reliable OBEX Close Session request from the remote device.

- **Reference**
  [3] 4.8, 5.11

- **Initial Condition**
  The IUT supports Reliable Sessions.

  Reliable OBEX Session, an OBEX Connection, and an OBEX Transport Connection (using L2CAP channel) exists.
• Expected Outcome

**Pass Verdict:**

- On receiving a CLOSESESSION request from Lower Tester, the IUT sends a SUCCESS [0xA0] response followed by a Session-Parameters header.
- On receiving an OBEX_DISCONNECT [0x81] request with the SSN header, as the very first header, from Lower Tester, the IUT sends a SUCCESS [0xA0] response.

4.6.8 **GOEP/RLS/BV-09-C [IUT is able to Suspend/Resume a PUT operation when SRM is disabled]**

• Test Purpose

Verify that the IUT is able to Suspend/Resume a PUT operation (SRM disabled) to the remote device.

• Reference

[3] 4.8, 5.9, 5.10

• Initial Condition

The IUT supports Reliable Sessions and Single Response Mode (SRM).

Reliable OBEX Session, an OBEX Connection, and an OBEX Transport Connection (using L2CAP channel) exists.

The PUT object is large enough to span multiple OBEX packets.

• Test Procedure
• Expected Outcome

Pass Verdict:

- When the PUT operation (with SRM disabled) is in progress, the IUT issues a SUSPENDSESSION request containing the Session Parameters header, as the very first header, to the Lower Tester.
- On receiving a SUCCESS [0xA0] for the SUSPENDSESSION request, the Reliable OBEX Session, OBEX Connection and the OBEX operation are suspended.
- In order to resume the interrupted session, the IUT issues a RESUMESESSION request containing the Session Parameters header, as the very first header, to the Lower Tester.
- On receiving a SUCCESS [0xA0] for the RESUMESESSION request, the Reliable OBEX Session, OBEX Connection and the PUT operation (with SRM disabled) are correctly resumed i.e. the IUT uses the Next-Sequence-Number as the SSN in the immediately-following PUT request.

4.6.9 GOEP/RLS/BV-10-C [IUT is able to Suspend/Resume a GET operation when SRM is disabled]

• Test Purpose
Verify that the IUT is able to Suspend/Resume a GET operation (SRM disabled) to the remote device.

- Reference
  [3] 4.8, 5.9, 5.10

- Initial Condition
  The IUT supports Reliable Sessions and Single Response Mode (SRM).

Reliable OBEX Session, an OBEX Connection, and an OBEX Transport Connection (using L2CAP channel) exists.

- Test Procedure

  
  \[
  \text{Client} \quad \text{IUT} \quad \text{Server} \quad \text{Lower Tester}
  \]

  Reliable OBEX Session, an OBEX Connection, and an OBEX Transport Connection (using L2CAP channel) exists

  GET`ing Data

  \[
  \text{GET} \{0x83\}
  \]

  CONTINUE \{0x90\}

  \[
  \text{GET} \{0x83\}
  \]

  CONTINUE \{0x90\}

  \[
  \text{GET} \{0x83\}
  \]

  CONTINUE \{0x90\}

  \[
  \text{GET} \{0x83\}
  \]

  SUSPENDSESSION Request

  [Session Parameters header]

  \[
  \text{SUCCESS} \{0xA0\}
  \]

  Reliable OBEX Session and OBEX operation suspended

  RESUMESESSION Request

  [Next-Sequence-Number]

  SUCCESS \{0x0A\}

  [Session Parameters header]

  [Next-Sequence-Number]

  \[
  \text{GET} \{0x83\}
  \]

  CONTINUE \{0x90\}

  [Body]

  \[
  \text{[SSN = Next-Sequence-Number]}
  \]

  \[
  \text{GET} \{0x83\}
  \]

  SUCCESS \{0xA0\}

  [End Of Body]

- Expected Outcome

  Pass Verdict:

  - When the GET operation (with SRM disabled) is in progress, the IUT issues a SUSPENDSESSION request containing the Session Parameters header, as the very first header, to the Lower Tester.
- On receiving a SUCCESS [0xA0] for the SUSPENDSESSION request, the Reliable OBEX Session, OBEX Connection and the OBEX operation are suspended.
- In order to resume the interrupted session, the IUT issues a RESUMESESSION request containing the Next-Sequence-Number to the Lower Tester.
- The Reliable OBEX Session, OBEX Connection and the GET operation (with SRM disabled) are correctly resumed.

4.6.10 GOEP/RLS/BV-11-C [IUT is able to accept a Suspend/Resume of PUT operation with SRM disabled]

• Test Purpose
Verify that the IUT is able to accept a Suspend/Resume of PUT operation (SRM disabled) from the remote device.

• Reference
[3] 4.8, 5.9, 5.10

• Initial Condition
The IUT supports Reliable Sessions and Single Response Mode (SRM).

Reliable OBEX Session, an OBEX Connection, and an OBEX Transport Connection (using L2CAP channel) exists.

The PUT object is large enough to span multiple OBEX packets.

• Test Procedure
• Expected Outcome

Pass Verdict:

- On receiving a SUSPENDSESSION request containing the Session Parameters header, as the very first header, from the Lower Tester, the IUT sends a SUCCESS [0xA0] response and the Reliable OBEX Session, OBEX Connection and the OBEX operation are suspended.

- On receiving a RESUMESESSION request from the Lower Tester, the IUT sends a SUCCESS [0xA0] response containing the Session Parameters header, as the very first header, (that includes the Next-Sequence-Number) and the Reliable OBEX Session, OBEX Connection and the OBEX operation are resumed.

- The PUT operation completes successfully.

4.6.11  **GOEP/RLS/BV-12-C [IUT is able to accept a Suspend/Resume of GET operation with SRM disabled]**

• Test Purpose

Verify that the IUT is able to accept a Suspend/Resume of GET operation (SRM disabled) from the remote device.
• Reference

[3] 4.8, 5.9, 5.10

• Initial Condition

The IUT supports Reliable Sessions and Single Response Mode (SRM).

Reliable OBEX Session, an OBEX Connection, and an OBEX Transport Connection (using L2CAP channel) exists.

• Test Procedure

![Diagram of test procedure]

• Expected Outcome

Pass Verdict:

- On receiving a SUSPENDSESSION request containing the Session Parameters header, as the very first header, from the Lower Tester, the IUT sends a SUCCESS [0xA0] response and the Reliable OBEX Session, OBEX Connection and the OBEX operation are suspended.
- On receiving a RESUMESESSION request from the Lower Tester, the IUT sends a SUCCESS [0xA0] response containing the Session Parameters header, as the very first header, (that includes the Next-Sequence-Number that was received in the RESUMESESSION request) and the Reliable OBEX Session, OBEX Connection and the OBEX operation are resumed.

- The GET operation of the large object completes successfully.

### 4.7 Reliable Session with Single Response Mode

#### 4.7.1 GOEP/SRS/BV-01-C [IUT is able to Suspend/Resume a PUT operation when SRM is enabled]

- **Test Purpose**
  Verify that the IUT is able to Suspend/Resume a PUT operation (SRM enabled) to the remote device.

- **Reference**
  [3] 4.6, 4.8, 5.9, 5.10

- **Initial Condition**
  The IUT supports Reliable Sessions.

  Reliable OBEX Session, an OBEX Connection, and an OBEX Transport Connection (using L2CAP channel) exists.

  The PUT object is large enough to span multiple OBEX packets.

- **Test Procedure**
• Expected Outcome

Pass Verdict:

- When the PUT operation of a large object (with SRM enabled) is in progress, the IUT issues a SUSPENDSESSION request containing the Session Parameters header, as the very first header, to the Lower Tester.

- On receiving a SUCCESS [0xA0] for the SUSPENDSESSION request, the Reliable OBEX Session, OBEX Connection and the OBEX operation are suspended.

- In order to resume the interrupted session, the IUT issues a RESUMESESSION request containing the Session Parameters header, as the very first header, to the Lower Tester.

- On receiving a SUCCESS [0xA0] for the RESUMESESSION request, the Reliable OBEX Session, OBEX Connection and the PUT operation (with SRM enabled) are correctly resumed i.e. the IUT uses the Next-Sequence-Number as the SSN in the immediately-following PUT request and the File Offset is used to trigger the next body headers’ data.

4.7.2 GOEP/SRS/BV-02-C [IUT is able to Suspend/Resume a GET operation when SRM is enabled]

• Test Purpose
Verify that the IUT is able to Suspend/Resume a GET operation (SRM enabled) to the remote device.

- Reference
  [3] 4.6, 4.8, 5.9, 5.10

- Initial Condition
  The IUT supports Reliable Sessions and Single Response Mode (SRM).
  Reliable OBEX Session, an OBEX Connection, and an OBEX Transport Connection (using L2CAP channel) exists.

- Test Procedure

  ![Test Procedure Diagram]

  - Expected Outcome
    Pass Verdict:

    - When the GET operation (with SRM enabled) is in progress, the IUT issues a SUSPENDSESSION request containing the Session Parameters header, as the very first header, to the Lower Tester.
- On receiving a SUCCESS [0xA0] for the SUSPENDSESSION request, the Reliable OBEX Session, OBEX Connection and the OBEX operation are suspended.
- In order to resume the interrupted session, the IUT issues a RESUMESESSION request containing the Next-Sequence-Number and File Offset to the Lower Tester.
- The Reliable OBEX Session, OBEX Connection and the GET operation (with SRM enabled) are correctly resumed.

4.7.3 GOEP/SRS/BV-03-C [IUT is able to accept a Suspend/Resume of PUT operation with SRM enabled]

• Test Purpose
Verify that the IUT is able to accept a Suspend/Resume of PUT operation (SRM enabled) from the remote device.

• Reference
[3] 4.6, 4.8, 5.9, 5.10

• Initial Condition
The IUT supports Reliable Sessions and Single Response Mode (SRM).
Reliable OBEX Session, an OBEX Connection, and an OBEX Transport Connection (using L2CAP channel) exists.
The PUT object is large enough to span multiple OBEX packets.

• Test Procedure
• Expected Outcome

**Pass Verdict:**

- On receiving a SUSPEND SESSION request containing the Session Parameters header, as the very first header, from the Lower Tester, the IUT sends a SUCCESS [0xA0] response and the Reliable OBEX Session, OBEX Connection and the OBEX operation are suspended.

- On receiving a RESUME SESSION request from the Lower Tester, the IUT sends a SUCCESS [0xA0] response containing the Session Parameters header, as the very first header, (that includes the Next-Sequence-Number and File Offset) and the Reliable OBEX Session, OBEX Connection and the OBEX operation are resumed.

- The PUT operation completes successfully.

4.7.4 **GOEP/SRS/BV-04-C [IUT is able to accept a Suspend/Resume of GET operation with SRM enabled]**

• Test Purpose

Verify that the IUT is able to accept a Suspend/Resume of GET operation (SRM enabled) from the remote device.
• Reference

[3] 4.6, 4.8, 5.9, 5.10

• Initial Condition

The IUT supports Reliable Sessions and Single Response Mode (SRM).

Reliable OBEX Session, an OBEX Connection, and an OBEX Transport Connection (using L2CAP channel) exists.

• Test Procedure

![Diagram showing the test procedure]

• Expected Outcome

Pass Verdict:

- On receiving a SUSPENDSESSION request containing the Session Parameters header, as the very first header, from the Lower Tester, the IUT sends a SUCCESS [0xA0] response and the Reliable OBEX Session, OBEX Connection and the OBEX operation are suspended.
- On receiving a RESUMESESSION request from the Lower Tester, the IUT sends a SUCCESS [0xA0] response containing the Session Parameters header, as the very first header, (that includes the Next-Sequence-Number that was received in the RESUMESESSION request and the File Offset is used to trigger the next body headers’ data) and the Reliable OBEX Session, OBEX Connection and the OBEX operation are resumed.
- The GET operation of the large object completes successfully.

4.8 Action Operation

4.8.1 GOEP/ACT/BV-01-C [IUT is able to issue a COPY command]

• Test Purpose
  Verify that the IUT is able to issue a COPY command to the Lower Tester.

• Reference
  [3] 4.5, 5.7

• Initial Condition
  The IUT supports Action commands.
  An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

• Test Procedure

  ![Diagram showing Client: IUT (Lower Tester) and Server: Lower Tester. An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists. Action Command Request [Action Identifier] [0x00] followed by SUCCESS [0xA0].]

• Expected Outcome
  **Pass Verdict:**
  - The IUT sends a COPY command including an Action Identifier [0x00], as the very first header to the Lower Tester.
  - The COPY command gets performed successfully.

4.8.2 GOEP/ACT/BV-02-C [IUT is able to process a COPY command]

• Test Purpose
  Verify that the IUT is able to process a COPY command from the Lower Tester.

• Reference
4.5, 5.7

• Initial Condition
The IUT supports Action commands.

An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

• Test Procedure

4.8.3 GOEP/ACT/BV-03-C [IUT is able to issue a MOVE/RENAME command]

• Test Purpose
Verify that the IUT is able to issue a MOVE/RENAME command to the Lower Tester.

• Reference
[3] 4.5, 5.7

• Initial Condition
The IUT supports Action commands.

An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

• Test Procedure
• Expected Outcome

Pass Verdict:
- The IUT sends a MOVE/RENAME command including an Action Identifier [0x01], as the very first header to the Lower Tester.
- The MOVE/RENAME command gets performed successfully.

4.8.4 GOEP/ACT/BV-04-C [IUT is able to process a MOVE/RENAME command]

• Test Purpose
Verify that the IUT is able to process a MOVE/RENAME command from the Lower Tester.

• Reference
[3] 4.5, 5.7

• Initial Condition
The IUT supports Action commands.
An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

• Test Procedure

• Expected Outcome

Pass Verdict:
- On receiving a MOVE/RENAME command including an Action Identifier [0x01], as the very first header from the Lower Tester, the IUT moves/renames the requested file and sends a SUCCESS [0xA0] response.

4.8.5 GOEP/ACT/BV-05-C [IUT is able to issue a SET PERMISSIONS command]

• Test Purpose
Verify that the IUT is able to issue a SET PERMISSIONS command to the Lower Tester.

• Reference
[3] 4.5, 5.7

• Initial Condition
The IUT supports Action commands.
An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

• Test Procedure

- Expected Outcome
Pass Verdict:
- The IUT sends a SET PERMISSIONS command including an Action Identifier [0x02], as the very first header to the Lower Tester.
- The SET PERMISSIONS command gets performed successfully.

4.8.6 GOEP/ACT/BV-06-C [IUT is able to process a SET PERMISSIONS command]

• Test Purpose
Verify that the IUT is able to process a SET PERMISSIONS command from the Lower Tester.

• Reference
[3] 4.5, 5.7

• Initial Condition
The IUT supports Action commands.

An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

- **Test Procedure**

![Diagram showing OBEX Connection and OBEX Transport Connection (using L2CAP channel)](image)

- **Expected Outcome**

  **Pass Verdict:**

  - On receiving a SET PERMISSIONS command including an Action Identifier [0x02], as the very first header from the Lower Tester, the IUT sets the file permissions on requested object and sends a SUCCESS [0xA0] response.

### 4.9 Robustness

#### 4.9.1 GOEP/ROB/BV-01-C [IUT (Action commands not supported) is able to reject an incoming ACTION command]

- **Test Purpose**
  
  Verify that an IUT, that does not support Action Commands, is able to reject an incoming ACTION command.

- **Reference**
  
  [3] 4.5, 5.7

- **Initial Condition**
  
  The IUT does not support Action commands.

  An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

- **Test Procedure**
Expected Outcome

Pass Verdict:
- On receiving an ACTION command from the Lower Tester, the IUT responds with any result other than a SUCCESS, to indicate that it does not support Action commands.

4.9.2 GOEP/ROB/BV-02-C [IUT (Reliable Sessions not supported) is able to reject the request to create a Reliable Session]

Test Purpose
Verify that an IUT, that does not support Reliable Sessions, is able to reject an incoming request to create a Reliable Session.

Reference
[3] 4.8, 5.9

Initial Condition
The IUT does not support Reliable Sessions.

An OBEX Connection and an OBEX Transport Connection (using L2CAP channel) exists.

Test Procedure
**Expected Outcome**

**Pass Verdict:**

- On receiving a CREATESESSION request from the Lower Tester, the IUT responds with any result other than SUCCESS, to indicate that it does not support Reliable Sessions.

- On receiving an OBEX_CONNECT [0x80] request, the IUT sends a SUCCESS [0xA0] response and the OBEX Connection is established without the Reliable Session.
5 Test Case Mapping

The test case mappings are defined in the application profile test suites. Those map to test cases defined in this test suite.