File Transfer Profile (FTP)

Bluetooth® **Test Specification**

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- ▪ **Revision Date:** 2017-11-28
- ▪ **Group Prepared By:** BTI
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Abstract:

This document defines test structures and procedures for the interoperability test of Bluetooth products implementing the File Transfer Profile.

Revision History

Revision Number	Date	Comments
1.1	2001-07-02	First version for Specification 1.1
1.1b	2002-11-13	Includes Test_Spec_PartK12_FTP_1_1_Addendum_Sep02
1.1.1	2004-12-17	Incorporated September 2002 Addendum:
		TSE 567 for TP/OMA/BV-08-I.
		TSE 593 for TCMT entries for TP/FBR/BV-02-I, TP/FBR/BV-03-I, TP/FBR/BV-04-I, TP/FBR/BV-05-I, TP/FBR/BV-06-I, TP/FBR/BV-07-I, and TP/OTR/BV-10-I.
		TSE 596 for TCMT for TP/OTR/BV-10-I.
		TSE 674 for TCMT for TP/OTR/BV-03-I.
		TSE 675 for TCMT for TP/FBR/BV-01-I, TP/FBR/BV-02-I, TP/FBR/BV-03-I, TP/FBR/BV-04-I, TP/FBR/BV-05-I, TP/FBR/BV-06-I, TP/FBR/BV-07-I and TP/FBR/BV-08-I.
		Made format and editorial changes.
1.1.2r0	2005-08-26	TSE 804:TCMT TP/FBR/BV-08-I TSE 805:TCMT TP/OTR/BV-10-I
1.1.2r1	2005-09-26	Accept ME review comments
1.1.3	2007-01-08	Added Conformance Section 4.1.1
		Miscellaneous reformatting.
		TSE 1840: TMCT changes for TP/FBR/BV-02-I and TP/FBR/BV-03-I
		TSE 1874: updates Notes in TP/OMA/BV-07-I; update TCMT for TP/OMA/BV-06-I, TP/OMA/BV-07-I, TP/OMA/BV-08-I
1.1.4	2007-08-28	TSE 2109 Change name of TP/FBR/BV-08-I
		TSE 2297: Update Client verdict for TP/FBR/BV-08-I and TP/FBR/BV-06-I
		TSE 2280: Correct TCMT
1.1.5r0	2008-09-01	TSE 2534: New Test case TP/OTR/BV-13-I TSE 2535: New Test case TSE 2536: New Test case TSE 2537: New Test case
1.2.0r0-1.2.0r2	2010-03-02 - 2010-08-09	TSE 2971: TP/OMA/BV-02-I: update pass verdict
		Updated TCMT for updated OBEX
		Added TCMT entries for new OBEX work
		Updated Conformance section.
1.2.1r0	2011-10-15	TSE 4168: TP/OTR/BV-15-I: text related PIXIT/file formats
		TSE 4299: TP/OTR/BV-16-I: TCMT update
		Removed descriptions from test case IDs in TCMT
1.3.0r0	2012-06-13	Updated versioning to accommodate FTP_SPEC_v1.3
1.3.0	2012-07-24	Prepare for publication.
1.3.1r1	2012-11-15	TSE 5013: Added FTP 1b/3 and 2b/3 to the TCMT where 1b/2 and 2b/2 appear so the test cases also map to FTP v.1.3.
1.3.1	2012-11-19	Prepare for Publication

Revision Number	Date	Comments
1.3.2r1	2013-04-26	TSE 5030: Edits to TCMT for server and client role test cases. • Updated TCMT mapping for TP/SSR/BV-03-I from "(2/1 AND OR 3/3 " to "(2/1 AND 2/2) OR 3/3" • Updated TCMT mapping for TP/OTR/BV-10-I to "(2/4a AND NOT 2/12) OR 3/8" • Updated TCMT mapping for TP/BC/BV-02-I to "2b/2 OR 2b/3) AND 3/6 AND 3/22" added description • Updated TCMT mapping for TP/BC/BV-03-I, to "(1b/2 OR 1/b3) AND 2/13 AND 2/27", added description • Updated TCMT mapping for TP/BC/BV-04-I to "(2b/2 OR 2b/3) AND 3/9 AND 3/22", added description • Added TCMT descriptions to TP/BC/BV-01-I, TP/CON/BV-01-C, TP/CON/BV-02-C, TP/SRM/BI-03-C, TP/RLS/BV-01-C, TP/RLS,BV-04-C, TP/RLS/BV-05-C, TP/RLS/BV-10-C, TP/RLS/BV-02-C, TP/RLS/BV-03-C, TP/RLS/BV-06-C, TP/RLS/BV-08-C, TP/RLS/BV-11-C, TP/RLS/BV-12-C, TP/SRM/BV-01-C, TP/SRM/BV-03-C, TP/SRM/BV-05-C, TP/SRM/BV-04-C, TP/SRM/BI-02-C, TP/SRM/BV-08-C, TP/SRM/BI-05-C, TP/SRM/BV-07-C, TP/SRMP/BV-01-C, TP/SRMP/BV-02-C, TP/SRMP/BV-03-C, TP/SRMP/BV-04-C, TP/SRMP/BV-05-C, TP/SRMP/BV-06-C, TP/SRMP/BI-01-C, TP/SRMP/BI-02-C, TP/SRS/BV-01-C, TP/SRS/BV-02-C, TP/SRS/BV-03-C, TP/SRS/BV-04-C, TP/ACT/BV-01-C, TP/ACT/BV-02-C, TP/ACT/BV-03-C, TP/ACT/BV-04-C, TP/ACT/BV-05-C, TP/ACT/BV-06-C, TP/ROB/BV-01-C, and TP/ROB/BV-02-C. • Deleted extra rows in TCMT that were empty
1.3.2	2013-07-02	Prepare for Publication
1.3.1.0r00	2015-10-28	Updated version numbering to align with Specification version change from 1.3 to 1.3.1 for ESR09. With the specification taking a third identifying number, the TS version identifier moves to the fourth number and starts again at 0.
1.3.1.0	2015-12-22	Prepared for TCRL 2015-2 publication
1.3.1.1r00	2017-03-03	TSE 8692: Updated Test Spec Template and miscellaneous editorials
1.3.1.1r01	2017-04-27	Converted to new Test Case ID conventions as defined in TSTO v4.1
1.3.1.1	2017-07-03	Approved by BTI. Prepared for TCRL 2017-1 publication.
1.3.1.2r00	2017-08-18	TSE 9586: Fixed FTP/SR/GOEP/CON/BV-02-C and FTP/SR/GOEP/SRM/BI-03-C names in the TCMT that were incorrectly labeled as Client tests.

Revision Number	Date	Comments
1.3.1.2r01	2017-09-01	TSE 9357FTP/SR/FBR/BV-01-I: added initial condition for Server role; added a Server role pass verdict with an alternative for Server IUT's that choose to not disclose the contents of the root folder; and removed the notes.
		FTP/SR/FBR/BV-02-I, FTP/SR/FBR/BV-03-I, FTP/SR/FBR/BV-04-I, FTP/SR/FBR/BV-05-I, FTP/SR/FBR/BV-06-I, FTP/SR/FBR/BV-07-I: added initial condition for Server role; added a Server role pass verdict with an alternative for Server IUT's that choose to not disclose the contents of the root folder; and incorporated the notes into the Server pass verdict.
		FTP/SR/OTR/BV-08-I, FTP/SR/OTR/BV-11-I: added initial condition for Server role; added a Server role pass verdict with an alternative for Server IUT's that choose to not disclose the contents of the root folder; and moved applicable portions from the notes into the Server pass verdict but otherwise left the notes as-is.
1.3.1.2r02	2017-09-06	Editorial change to remove a url ftp hyperlink in the FTP/CL/GOEP/BC/BV-02-I logical expression in the TCMT.
1.3.1.2	2017-11-28	Approved by BTI. Prepared for TCRL 2017-2 publication.

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Contents

1 Scope

This Bluetooth document contains the Test Suite Structure (TSS) and Test Cases (TC) to test the File Transfer Profile (FTP).

The objective of this test specification 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

[2]   File Transfer Profile Specification

[3]   Implementation Conformance Statement for File Transfer Profile, FTP.ICS

[4]   Bluetooth Test Strategy and Terminology Overview

[5]   Bluetooth Profile Specification: Generic Object Exchange Profile

[6]   FTP Implementation eXtra Information for Testing (IXIT)

2.2 Definitions

For the purpose of this Bluetooth document, the definitions from [1], [2], and [4] apply.

2.3 Abbreviations

For the purpose of this Bluetooth document, the abbreviations from [1], [2], and [4] apply.

3   Test Suite Structure (TSS)

3.1   Overview

Each Bluetooth Profile defines a series of features and the way they should be implemented using the available protocol stack.

Within the File Transfer Profile, the features are Folder Browsing, Object Transfer and Object Manipulation. Although certain features and formats may not be supported by an IUT, it must also be ensured that support can be handled properly by the applications (e.g. Pull non-support message).

The File Transfer Profile is based on the Generic Object Exchange (OBEX) profile and uses pre-defined object formats.
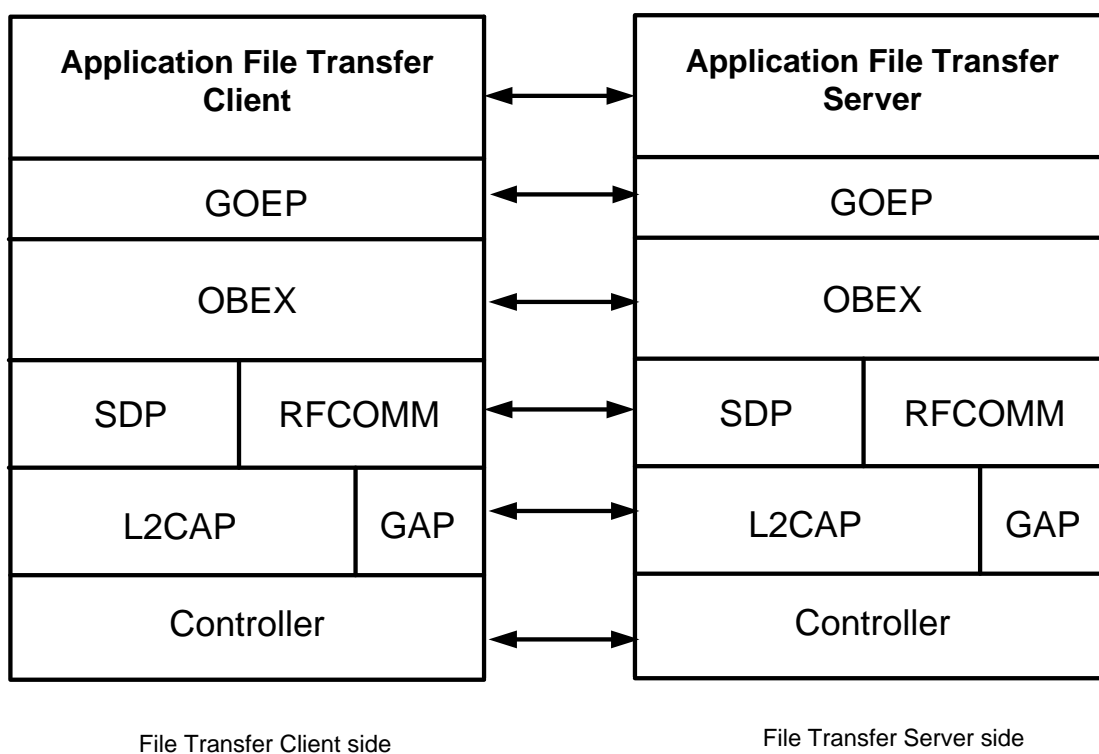
Figure 3.1: File Transfer Profile Test Models

3.2   Test Groups

Figure 3.2 shows the File Transfer Profile Test Suite Structure (TSS) including its subgroups defined for interoperability testing.

File Transfer Test Suite Structure

— Select Server

— Folder Browsing

— Object Transfer

— Object Manipulation
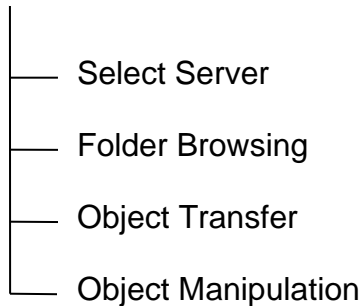
Figure 3.2: TSS for the File Transfer Profile

3.3 Test Groups

The test groups are organized in 3 levels. The first level defines the protocol groups representing the protocol services. The second level, if the third level exists, separates the protocol services in functional modules. The last level in each branch contains the standard ISO subgroups BV and BI.

3.3.1 Main Test Group

The main test groups are the valid behavior group and the invalid behavior group.

3.3.1.1 Valid Behavior (BV) Tests

This sub group provides testing to verify that the IUT reacts in conformity with the Bluetooth standard, after receipt or exchange of a valid Protocol Data Units (PDUs). Valid PDUs means that the exchange of messages and the content of the exchanged messages are considered as valid.

3.3.1.2 Invalid Behavior (BI) Tests

This sub group provides testing to verify that the IUT reacts in conformity with the Bluetooth standard, after receipt of a syntactically or semantically invalid PDU.

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 [4]. 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 specification to test specification, but shall be consistent within each individual test specification.

Testing of FTP funtionality includes a set of tests from the GOEP test specification the required GOEP tests are refered to in this TCMT per the following convention <spec abbreviation>/<IUT role>/GOEP/<GOEP TC Identification>.

Identifier Abbreviation	Spec Identifier <spec abbreviation>
FTP	File Transfer Profile
Identifier Abbreviation	**Role Identifier <IUT role>**
SR	Server Role
CL	Client Role
Identifier Abbreviation	**Feature Identifier <feat>**
GOEP	Generic Object Exchange Profile
FBR	Folder Browsing
OMA	Object Manipulation
OTR	Object Transfer
SSR	Select Server

Table 4.1: FTP TC Feature Naming Conventions

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 is 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 in cases where more than one valid interpretation of the Specification exist, 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 Specification, 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 Profile procedure groups

4.1.3.1 Selecting Server

In this section, the presented scenarios work as examples and variations in the actual implementations are possible and allowed.

When the Client wants to select a Server the following user interaction can be followed:

Client	Server
	The user sets the device **into File Transfer mode**. A Server typically does not need to provide any other user interaction.
The user of the Client selects the **File** Transfer Application on the device.	
A list of Servers that may support the File Transfer service is displayed to the user.	
The user selects a Server in which to connect. The connection may require the user to enter a password for authentication. If both link level authentication and OBEX authentication is required then the user will need to be prompted for two passwords.	If the Client requires authentication of the Server then the Server will need to prompt the user for a password. If both link level authentication and OBEX authentication are required then the user will need to be prompted for two passwords.
After the connection is complete including any authentication the contents of the Server's root folder are displayed.	

4.1.3.2 File Transfer

The following user interaction shows how the user of the Client performs file transfer functions. The operations assume a Server has already been selected as described above.

Client	Server
The user is presented with the folder hierarchy of the Server. The first presentation has the root folder selected as the current folder.	
The user chooses a folder to be the current folder. The contents of this folder are displayed.	
To push a file from the Client to the Server the user selects a file on the Client and activates the **Push Object** function. The object is transferred to the current folder on the Server.	
To pull a file from the Server the user selects a file in the current folder of the Server and activates the **Pull Object** function. The user is notified of the result of the operation.	
To delete a file on the Server the user selects the file in the Server's current folder and activates the **Delete Object** function. The user is notified of the result of the operation.	
To create a new folder on the Server the user activates the **Create Folder** function. This function requests a name from the user for the folder. When complete a new folder is created in the Server's current folder.	

4.1.4   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 specification is that, unless there are 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   Select Server Test Cases

Test Group Objectives:

- The application in the client will find the server to start the Object Exchange mode. The server must be in communication range. If the client fails to find the server, it cannot pass the rest of the tests.

4.2.1   List

- Test Purpose

    Client:

    To verify the accuracy of the list of surrounding devices that support File Transfer provided by the client.

    Server:

    To verify that Object Exchange mode is entered and the server is discoverable and connectable.

- Test Case ID(s)

  FTP/SR/SSR/BV-01-I

  FTP/CL/SSR/BV-01-I

- Reference

  [2] 4.2

- Initial Condition

  Client: Standby mode.

  Server: Standby mode.

- Test Procedure

  Server: Select Object Exchange mode.

  Client:

  - After setting the server into Object Exchange mode select the File Transfer Function on the client.
  - If possible, configure the client to look for the surrounding devices that support File Transfer service, otherwise look for all services.

  (Depending on the architecture of the application that is to use the File Transfer feature, the steps to trigger this inquiry may vary.)

- Expected Outcome

  Pass verdict:

  Client: The list of surrounding devices (server) that support File Transfer (if configured) or all services is correct.

  Server: A notification that Object Exchange mode has been entered may be given.

- Notes

  Server: The Object Exchange mode should be set by user action, but automatic setting will also be tolerated.

4.2.2 Server Selection

- Test Purpose

  Client: To verify that the server selected from the list of available servers is correct.

  Server: To verify that one particular server can be selected from a group of available servers.

- Test Case ID(s)

FTP/SR/SSR/BV-02-I

FTP/CL/SSR/BV-02-I

- Reference

  [2] 4.2

- Initial Condition

  Client:

    - File Transfer application is activated.

    - The item to be pushed is prepared.

  Server: Object Exchange mode is set.

- Test Procedure

  Client: Select the server to push the item to.

  Server:

    - Perform Bluetooth PIN exchange.

    - Perform OBEX authentication if used.

    - (Depending on the architecture that is to use the File Transfer feature, the steps how and when a Bluetooth PIN is requested may vary).

- Expected Outcome

  <u>Pass verdict:</u>

  Client: The proper connect response message is received from the selected server.

  Server: The selected server sends the proper connect response.

4.2.3   PIN Check

- Test Purpose

  Client: To verify that, if requested, the PIN code is handled correctly and the next state of the application is reached.

  Server: To verify that, if requested, the PIN code is handled correctly and the next state of the application is reached.

- Test Case ID(s)

FTP/SR/SSR/BV-03-I

FTP/CL/SSR/BV-03-I

- Reference

  [2] 4.2

- Initial Condition

No bonding has to be performed before.

Client:

- File Transfer application is activated.
- The item to be pushed is prepared.
- A server to push the item to is selectable.

Server: Object Exchange mode is set.

- Test Procedure

Client:

- Select the server to push the item to and activate the File Transfer function
- If a Bluetooth PIN code is requested, enter the same PIN code as on the server.

Server:

- If a Bluetooth PIN code is requested, enter the same PIN code as on the client.
- (Depending on the architecture that is to use the File Transfer feature, the steps how and when a Bluetooth PIN is requested may vary).

- Expected Outcome

Pass verdict:

Client: If the Bluetooth PIN code is requested from the user prior to the File Transfer function, the entered PIN code is treated correctly and the application steps to the next state.

Server: If the Bluetooth PIN code is requested from the user prior to the File Transfer function, the entered PIN code is treated correctly and the application steps to the next state.

4.3   Folder Browsing Test Cases

Test Group Objectives:

- To verify the application supports both browsing and changing folder capabilities.

4.3.1   Browse - Root Folder

- Test Purpose

Client: To verify that the user can browse the contents of the root folder.

Server: To verify that the server can provide the contents of the root folder to the client.

- Test Case ID(s)

   FTP/SR/FBR/BV-01-I

   FTP/CL/FBR/BV-01-I

- Reference

[2] 4.2

- Initial Condition

    Client:

    - The application for File Transfer is activated.
    - The server is selectable from a list.

    Server:

    - Object Exchange mode is set.
    - Create several files and folders.
    - The IUT should make every effort to be in a state where it can disclose the contents of its root folder to the Lower Tester.

- Test Procedure

    Client:

    - Select the server to perform initial File Transfer with.
    - Perform Bluetooth PIN exchange.
    - Perform OBEX authentication if used.
    - Start the File Transfer function.
    - Pull the contents of the Server's root folder using GET.

    Server:

    - Perform Bluetooth PIN exchange.
    - Perform OBEX authentication if used.

        (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

    Pass verdict:

    Client: The correct list of the files and the folders in the root folder is displayed.

    Server: The Server is able to provide the contents of the root folder to the client.

    Alternative: The Server refuses to disclose the root folder and replies with an Unauthorized or Forbidden response.

4.3.2   Browse - Sub-Folder

- Test Purpose

    Client: To verify that the user can browse the contents of the sub-folder.

    Server: To verify that the server can provide the contents of the sub-folder to the client.

- Test Case ID(s)

  FTP/SR/FBR/BV-02-I

  FTP/CL/FBR/BV-02-I

- Reference

  [2] 4.2

- Initial Condition

  Client:

  - The application for File Transfer is activated.
  - The server is selectable from a list.

  Server:

  - Create the sub-folder and add files to the sub-folder.
  - Object Exchange mode is set.
  - The IUT should make every effort to be in a state where it can disclose the contents of its root folder to the Lower Tester.

- Test Procedure

  Client:

  - Select the server to perform initial File Transfer with.
  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.
  - Start the Browse Sub-folder File Transfer function.

  Server:

  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.

    (Depending on the architecture that is to use the File Transfer feature, the steps how an item is pushed may vary).

- Expected Outcome

  Pass verdict:

  Client: The list of the contents of the sub-folder is displayed correctly.

  Server: The Server is able to provide the contents of the sub-folder to the client.

  Alternative: The Server refuses to disclose the root folder and replies with an Unauthorized or Forbidden response. The Client needs to browse the content of the root folder in order to move through the Server's folder hierarchy to select a subfolder, but the Server can refuse to disclose the root folder.

4.3.3 Browse - Current Folder

- Test Purpose

  Client: To verify that the user can browse the current folder.

  Server: To verify that the user can browse the current folder.

- Test Case ID(s)

  FTP/SR/FBR/BV-03-I

  FTP/CL/FBR/BV-03-I

- Reference

  [2] 4.2

- Initial Condition

  Client:

  - The application for File Transfer is activated.
  - The server is selectable from a list.

  Server:

  - Create some folders that include at least one sub-folder and files.
  - Object Exchange mode is set.
  - The IUT should make every effort to be in a state where it can disclose the contents of its root folder to the Lower Tester.

- Test Procedure

  Client:

  - Select the server to perform initial File Transfer with.
  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.
  - Start the Browse Sub-folder File Transfer function.
  - Perform a change to the sub-folder, and then change to the parent folder.
  - Perform the Browse Current Folder File Transfer function.

  Server:

  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.
  - Delete or rename some of the files in the sub-folder.

    (Depending on the architecture that is to use the File Transfer feature, the steps how an item is pushed may vary).

- Expected Outcome

Pass verdict:

Client: The list of the newest contents of the current folder (not sub-folder) is displayed correctly.

Server: The Server is able to provide the newest contents of the current folder to the client.

Alternative: The Server refuses to disclose the root folder and replies with an Unauthorized or Forbidden response. The Client needs to browse the content of the root folder in order to moving through the Server's folder hierarchy to select a subfolder, but the Server can refuse to disclose the root folder.

4.3.4 Set Folder - Parent Folder

- Test Purpose

  Client: To verify that the user can change the current folder to its parent folder.

  Server: To verify that the user is able to change the current folder to its parent folder.

- Test Case ID(s)

  FTP/SR/FBR/BV-04-I

  FTP/CL/FBR/BV-04-I

- Reference

  [2] 4.2

- Initial Condition

  Client:

  - The application for File Transfer is activated.
  - The server is selectable from a list.
  - Set the folder to the sub-folder.

  Server:

  - Object Exchange mode is set.
  - Create some folders that include sub-folders.
  - The IUT should make every effort to be in a state where it can disclose the contents of its root folder to the Lower Tester.

- Test Procedure

  Client:

  - Select the server to perform initial File Transfer with.
  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.
  - Start the File Transfer function.
  - Move to one of the sub-folders of the sub-folders.

- Perform a move to the parent folder.

Server:

- Perform Bluetooth PIN exchange.

- Perform OBEX authentication if used.

(Depending on the architecture that is to use the File Transfer feature, the steps how an item is pushed may vary).

- Expected Outcome

Pass verdict:

Client: The current folder is the parent folder of the previous one.

Server: The current folder is the parent folder of the previous one.

Alternative: The Server refuses to disclose the root folder and replies with an Unauthorized or Forbidden response. The Client needs to browse the content of the root folder in order to move through the Server's folder hierarchy to select a subfolder, but the Server can refuse to disclose the root folder.

4.3.5 Set folder - Sub-Folder

- Test Purpose

Client: To verify that the user can move to the sub-folder.

Server: To verify that the user can move to the sub-folder.

- Test Case ID(s)

FTP/SR/FBR/BV-05-I

FTP/CL/FBR/BV-05-I

- Reference

[2] 4.2

- Initial Condition

Client:

- The application for File Transfer is activated.

- The server is selectable from a list.

Server:

- Object Exchange mode is set.

- Create at least one sub-folder in the current folder.

- The IUT should make every effort to be in a state where it can disclose the contents of its root folder to the Lower Tester.

- Test Procedure

Client:

- Select the server to perform initial File Transfer with.

- Perform Bluetooth PIN exchange.

- Perform OBEX authentication if used.

- Start the File Transfer function.

- Perform a change to one of the sub-folders under the root folder.

Server:

- Perform Bluetooth PIN exchange.

- Perform OBEX authentication if used.

    (Depending on the architecture that is to use the File Transfer feature, the steps how an item is pushed may vary).

- **Expected Outcome**

    Pass verdict:

    Client: The current sub-folder is the sub-folder that was selected.

    Server: The current sub-folder is the sub-folder that was selected.

    Alternative: The Server refuses to disclose the root folder and replies with an Unauthorized or Forbidden response. The Client needs to browse the content of the root folder in order to move through the Server's folder hierarchy to select a subfolder, but the Server can refuse to disclose the root folder.

4.3.6   Set folder - Sub-Folder - Error Case

- **Test Purpose**

    Client: To verify that moving to a sub-folder that does not exist is not allowed.

    Server: To verify that moving to a sub-folder that does not exist is not allowed.

- **Test Case ID(s)**

    FTP/SR/FBR/BV-06-I

    FTP/CL/FBR/BV-06-I

- **Reference**

    [2] 4.2

- **Initial Condition**

    Client:

- The application for File Transfer is activated.

- The server is selectable from a list.

Server:

- Object Exchange mode is set.

- If the server supports sub-folders, create a root folder with sub-folders.

- The IUT should make every effort to be in a state where it can disclose the contents of its root folder to the Lower Tester.

- Test Procedure

    Client:

    - Select the server to perform initial File Transfer with.

    - Perform Bluetooth PIN exchange.

    - Perform OBEX authentication if used.

    - Start the File Transfer function.

    - When the application shows a list of sub-folders in the root folder of the server, change to a sub-folder that is not in the list.

    Server:

    - Perform Bluetooth PIN exchange.

    - Perform OBEX authentication if used.

        (Depending on the architecture that is to use the File Transfer feature, the steps how an item is pushed may vary).

- Expected Outcome

    Pass verdict:

    Client: An error message to notify that the selected folder does not exist in the server is generated, and the folder will not change, or the client does not allow a non-existing folder to be selected.

    Server: Send the error code to notify that the selected folder does not exist in the server.

    Alternative: The Server refuses to disclose the root folder and replies with an Unauthorized or Forbidden response. The Client needs to browse the content of the root folder in order to move through the Server's folder hierarchy to select a subfolder, but the Server can refuse to disclose the root folder.

4.3.7   Set Folder - Root Folder

- Test Purpose

    Client: To verify that the user can come back to the root folder from wherever the current folder is.

    Server: To verify that the user can return to the root folder from wherever the current folder is.

- Test Case ID(s)

FTP/SR/FBR/BV-07-I

FTP/CL/FBR/BV-07-I

- Reference

  [2] 4.2

- Initial Condition

  Client:

  - The application for File Transfer is activated.
  - The server is selectable from a list.

  Server:

  - Object Exchange mode is set.
  - Create several sub-folders.
  - The IUT should make every effort to be in a state where it can disclose the contents of its root folder to the Lower Tester.

- Test Procedure

  Client:

  - Select the server to perform initial File Transfer with.
  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.
  - Start the File Transfer function.
  - Move to a sub-folder within a sub-folder.
  - Perform a move back to the root folder.

  Server:

  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.

    (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

  Pass verdict:

  Client: The current folder is the root folder.

  Server: The current folder is the root folder.

    Alternative: The Server refuses to disclose the root folder and replies with an Unauthorized or Forbidden response. The Client needs to browse the content of the root folder in order to move through the Server's folder hierarchy to select a subfolder, but the Server can refuse to disclose the root folder.

4.3.8   Browse – Not permitted

- Test Purpose

    Client: To verify that moving to a sub-folder that does not permit folder browsing is not allowed.

    Server: To verify that moving to a sub-folder that does not permit folder browsing is not allowed.

- Test Case ID(s)

    FTP/SR/FBR/BV-08-I

    FTP/CL/FBR/BV-08-I

- Reference

    [2] 4.2

- Initial Condition

    Client:

    - The application for File Transfer is activated.
    - The server is selectable from a list.

    Server:

    - Object Exchange mode is set.
    - Create several sub-folders.

- Test Procedure

    Client:

    - Select the server to perform initial File Transfer with.
    - Perform Bluetooth PIN exchange if used.
    - Perform OBEX authentication if used.
    - Start the File Transfer function.
    - When the application shows a list of sub-folders in the root folder of the server, change to a sub-folder that does not permit folder browsing.

    Server:

    - Perform Bluetooth PIN exchange if used.
    - Perform OBEX authentication if used.

        (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

    <u>Pass verdict:</u>

    Client: An error message to notify that the selected folder does not permit folder browsing is generated, and the folder will not change, or the non-browsable folder is shown as empty.

Server: Send the error code to notify that the selected folder does not permit folder browsing.

- Notes

The server has to send the error code when the selected folder does not permit folder browsing. The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a subfolder, but the Server can refuse to disclose the root folder.

4.4   Object Transfer Test Cases

Test Group Objectives:

- To verify the application supports Pushing and Pulling capabilities for files and folders. Note that not all the applications support the Pushing and Pulling capabilities for folders, but the server has to respond with an appropriate error code.

4.4.1   Push - File

- Test Purpose

Client: To verify that the file is copied to the server correctly.

Server: To verify that the file is copied to the server correctly.

- Test Case ID(s)

FTP/SR/OTR/BV-01-I

FTP/CL/OTR/BV-01-I

- Reference

[2] 4.3

- Initial Condition

Client:

- The application for File Transfer is activated.
- The server is selectable from a list.
- Create the files to push.

Server:

- Object Exchange mode is set.
- Make sure that the attribute is not set as "read only" mode.

- Test Procedure

Client:

- Select the server to perform initial File Transfer with.
- Perform Bluetooth PIN exchange.
- Perform OBEX authentication if used.
- Start the File Transfer function.

> - Initiate a push file to a folder on the server.

Server:

> - Perform Bluetooth PIN exchange, if requested.
>
>   (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

  <u>Pass verdict:</u>

  Client: No error message is received from the server.

  Server: The file is copied correctly.

- Notes

  Notice in the verdicts that the successful transfer of a file to the Server does not necessarily imply that file can be immediately retrieved due to the protection policies enforced by the Server.

  The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.4.2   Push - File- Abort

- Test Purpose

  Client: To verify that the file to be pushed is aborted normally.

  Server: To verify that the pushed file is aborted normally.

- Test Case ID(s)

  FTP/SR/OTR/BV-02-I

  FTP/CL/OTR/BV-02-I

- Reference

  [2] 4.3

- Initial Condition

  Client:

> - The application for File Transfer is activated.
> - The server is selectable from a list.
> - Create a large file to push.

  Server:

> - Object Exchange mode is set.
> - Make sure that the attribute is not set as "read only" mode.

- Test Procedure

Client:

- Select the server to perform initial File Transfer with.

- Perform Bluetooth PIN exchange.

- Perform OBEX authentication if used.

- Start the File Transfer function.

- Initiate a push file to a folder on the server.

- Initiate an abort the pushed file function.

Server:

- Perform Bluetooth PIN exchange, if requested.

  (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

  Pass verdict:

  Client: The application stops pushing the file.

  Server: The server recognizes that the file transfer is aborted.

  - Notes

The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.4.3   Push - File - Error case

- Test Purpose

  Client: To verify that copying a file to the read only server is not allowed.

  Server: To verify that the server does not allow copying a file when set to read only mode.

- Test Case ID(s)

  FTP/SR/OTR/BV-03-I

  FTP/CL/OTR/BV-03-I

- Reference

  [2] 4.3

- Initial Condition

  Client:

- The application for File Transfer is activated.

- The server is selectable from a list.

- Create some files to push.

Server:

- Object Exchange mode is set.

- Set the attribute of the server to "read only" mode.

- Test Procedure

Client:

– Select the server to perform initial File Transfer with.

- Perform Bluetooth PIN exchange.

- Perform OBEX authentication if used.

- Start the File Transfer function.

- Initiate a push file to a folder on the server.

Server:

- Perform Bluetooth PIN exchange, if requested.

(Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

<u>Pass verdict:</u>

Client:

An error message is generated indicating that copying the folder is not allowed as the server is set to read only mode.

The file is not shown in the client's file-list.

Server:

Send the error code to notify that the server is set to read only mode.

- Notes

The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.4.4   Push - Folder

- Test Purpose

Client: To verify that the user can push a new folder on the server and that the folder contains files pushed from the client.

Server: To verify that a new folder can be created on the server and that the folder contains files pushed by the client.

- Test Case ID(s)

FTP/SR/OTR/BV-04-I

FTP/CL/OTR/BV-04-I

- Reference

  [2] 4.3

- Initial Condition

  Client:

  - The application for File Transfer is activated.
  - The server is selectable from a list.
  - Create the non empty folder.

  Server:

  - Object Exchange mode is set.
  - Make sure that the attribute is not the "read only" mode.

- Test Procedure

  Client:

  - Select the server to perform initial File Transfer with.
  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.
  - Start the File Transfer function.
  - Initiate create the new folder and push folder operations.

  Server:

  - If a Bluetooth PIN code is requested, enter the same PIN code as on the client.

    (Depending on the architecture that is to use the File Transfer feature, the steps how and when a Bluetooth PIN is requested may vary).

- Expected Outcome

  Pass verdict:

  Client:

  - The new folder and the files contained in the folder are on the server in the parent folder.
  - The current folder is the parent folder.

  Server: The new sub-folder is created, and its contents are correct.

- Notes

  The server must be able to respond with an appropriate error code even if it does not support the push folder capability.

The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

Notice in the verdicts that the successful transfer of a file to the Server does not necessarily imply that file can be immediately retrieved due to the protection policies enforced by the Server.

4.4.5　　　Push - Folder - Abort

- Test Purpose

Client:　　　To verify that the user can abort the push folder function normally.

Server:　　　To verify that the push folder function is aborted normally.

- Test Case ID(s)

FTP/SR/OTR/BV-05-I

FTP/CL/OTR/BV-05-I

- Reference

[2] 4.3

- Initial Condition

Client:

- The application for File Transfer is activated.
- The server is selectable from a list.
- Create the non empty folder.
- To verify the "Abort", prepare large files in the folder.

Server:

- Object Exchange mode is set.
- Make sure that the attribute is not the "read only" mode.

- Test Procedure

Client:

- Select the server to perform initial File Transfer with.
- Perform Bluetooth PIN exchange.
- Perform OBEX authentication if used.
- Start the File Transfer function.
- Initiate create the new folder and push folder operations.
- Initiate the abort the push folder function.

Server:

- If a Bluetooth PIN code is requested, enter the same PIN code as on the client.

(Depending on the architecture that is to use the File Transfer feature, the steps how and when a Bluetooth PIN is requested may vary).

- Expected Outcome

  Pass verdict:

  Client: The application stops pushing the folder.

  Server: The server recognizes that the push folder function is aborted.

- Notes

  The server must be able to respond with an appropriate error code even if it does not support the push folder capability.

  The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.4.6　　　Push - Folder - Not Supported

- Test Purpose

  Client: To verify the server will respond with an appropriate error code if it does not support the push folder capability.

  Server: To verify the server will respond with an appropriate error code if it does not support the push folder capability.

- Test Case ID(s)

  FTP/SR/OTR/BV-06-I

  FTP/CL/OTR/BV-06-I

- Reference

  [2] 4.3

- Initial Condition

  Client:

  - The application for File Transfer is activated.
  - The server is selectable from a list.

  Server:

  - Object Exchange mode is set.
  - The server does not support the push folder feature.

- Test Procedure

  Client:

  - Select the server to perform initial File Transfer with.

- Perform Bluetooth PIN exchange.

- Perform OBEX authentication if used.

- Start the File Transfer function.

- Initiate create new folder and push file operations.

Server:

If a Bluetooth PIN code is requested, enter the same PIN code as on the client.

(Depending on the architecture that is to use the File Transfer feature, the steps how and when a Bluetooth PIN is requested may vary).

- Expected Outcome

Pass verdict:

Client: The application notifies that the push folder function is not allowed, and the folder is not pushed.

Server:

- Send an error code to notify that the server does not support this feature.

- The folder is not created on the server.

- Notes

The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.4.7 Push - Folder - Error Case

- Test Purpose

Client: To verify that creating a new folder and copying files to the new folder is not allowed when the server is set to read only mode.

Server: To verify that when the server is set to read only mode, that creating a new folder and copying files to the new folder is not allowed.

- Test Case ID(s)

FTP/SR/OTR/BV-07-I

FTP/CL/OTR/BV-07-I

- Reference

[2] 4.3

- Initial Condition

Client:

- The application for File Transfer is activated.

- The server is selectable from a list.

Server:

- Object Exchange mode is set.
- Set the attribute of the server as "read only" mode.

- Test Procedure

    Client:

    - Select the server to perform initial File Transfer with.
    - Perform Bluetooth PIN exchange.
    - Perform OBEX authentication if used.
    - Start the File Transfer function.
    - Initiate create a new folder in the server operation.

    Server:

    - Perform Bluetooth PIN exchange, if requested.

        (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

    Pass verdict:

    Client:

    - The application shows an error message to notify that creating the new folder is not allowed as the server is set to read only mode.
    - The folder is not shown in the client's folder list.

    Server: Send the error code to notify that the server is set to read only mode.

- Notes

    The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.4.8   Pull - Folder

- Test Purpose

    Client: To verify that the folder is copied from the server correctly.

    Server: To verify that the server can supply the folder to be copied correctly.

- Test Case ID(s)

    FTP/SR/OTR/BV-08-I

    FTP/CL/OTR/BV-08-I

- Reference

[2] 4.3

- Initial Condition

  Client:

  - The application for File Transfer is activated.
  - The server is selectable from a list.

  Server:

  - Object Exchange mode is set.
  - Create a non empty folder.
  - The IUT should make every effort to be in a state where it can disclose the contents of its root folder to the Lower Tester.

- Test Procedure

  Client:

  - Select the server to perform initial File Transfer with.
  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.
  - Start the File Transfer function.
  - Initiate the pull folder function from the server.

  Server:

  - Perform Bluetooth PIN exchange, if requested.

    (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

  Pass verdict:

  Client:

  - The folder in the server is copied correctly to the client.
  - The files in the folder are the correct files.

  Server: The server supplies the folder to be copied correctly.

  The server must be able to respond with an appropriate error code even if it does not support this capability.

  Alternative: The Server refuses to disclose the root folder and replies with an Unauthorized or Forbidden response. The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

- Notes

   Notice in the verdicts that the successful transfer of a file to the Server does not necessarily imply that file can be immediately retrieved due to the protection policies enforced by the Server.

4.4.9   Pull - Folder - Abort

- Test Purpose

   Client: To verify that the user can abort the pull folder function.

   Server: To verify that the pull folder function can be aborted normally.

- Test Case ID(s)

   FTP/SR/OTR/BV-09-I

   FTP/CL/OTR/BV-09-I

- Reference

   [2] 4.3

- Initial Condition

   Client:

   - The application for File Transfer is activated.
   - The server is selectable from a list.

   Server:

   - Object Exchange mode is set.
   - Create a non empty folder.
   - To verify the "Abort", prepare large files in the folder.

- Test Procedure

   Client:

   - Select the server to perform initial File Transfer with.
   - Perform Bluetooth PIN exchange.
   - Perform OBEX authentication if used.
   - Start the File Transfer function.
   - Initiate the pull folder function from the server.
   - Initiate the abort the pull folder function.

   Server:

   - Perform Bluetooth PIN exchange, if requested.

      (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

  <u>Pass verdict:</u>

  Client: The application stops pulling the folder.

  Server: The server recognizes that the pull folder function is aborted.

- Notes

  The server must be able to respond with an appropriate error code even if it does not support this capability.

  The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.4.10   Pull - Folder - Not Supported

- Test Purpose

  Client: The server must respond with an appropriate error code if it does not support the pull folder capability.

  Server: The server must respond with an appropriate error code if it does not support the pull folder capability.

- Test Case ID(s)

  FTP/SR/OTR/BV-10-I

  FTP/CL/OTR/BV-10-I

- Reference

  [2] 4.3

- Initial Condition

  Client:

  - The application for File Transfer is activated.
  - The server is selectable from a list.

  Server:

  - Object Exchange mode is set.
  - Create the folder.
  - Assume the server does not support the Pull folder function.

- Test Procedure

  Client:

  - Select the server to perform initial File Transfer with.
  - Perform Bluetooth PIN exchange.

- Perform OBEX authentication if used.

- Start the File Transfer function.

- Initiate the pull folder function from the server.

Server:

- Perform Bluetooth PIN exchange, if requested.

(Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

Pass verdict:

Client: The application notifies that accessing the folder is not allowed, and the folder is not pulled from the server.

Server:

- Send the error code to notify that the server does not support this feature.

- The folder is not sent to the client.

- Notes

The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.4.11   Pull - File

- Test Purpose

Client: To verify that the file is copied correctly from the server.

Server: To verify that the server can supply the file correctly.

- Test Case ID(s)

FTP/SR/OTR/BV-11-I

FTP/CL/OTR/BV-11-I

- Reference

[2] 4.3

- Initial Condition

Client:

- The application for File Transfer is activated.

- The server is selectable from a list.

Server:

- Object Exchange mode is set.

- Prepare the arbitrary file.
- The IUT should make every effort to be in a state where it can disclose the contents of its root folder to the Lower Tester.

- Test Procedure

Client:

- Select the server to perform initial File Transfer with.
- Perform Bluetooth PIN exchange.
- Perform OBEX authentication if used.
- Start the File Transfer function.
- Pull the file from the server.

Server:

- Perform Bluetooth PIN exchange.
- Perform OBEX authentication if used.

    (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

    Pass verdict:

Client: The selected file is copied correctly from the server.

Server: The server supplies the file to be copied correctly.

    Alternative: The Server refuses to disclose the root folder and replies with an Unauthorized or Forbidden response. The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

- Notes

Notice in the verdicts that the successful transfer of a file to the Server does not necessarily imply that file can be immediately retrieved due to the protection policies enforced by the Server.

4.4.12   Pull - File - Abort

- Test Purpose

Client: To verify that the pull file function is aborted normally.

Server: To verify that the pull file function can be aborted normally.

- Test Case ID(s)

FTP/SR/OTR/BV-12-I

FTP/CL/OTR/BV-12-I

- Reference

  [2] 4.3

- Initial Condition

  Client:

  - The application for File Transfer is activated.
  - The server is selectable from a list.

  Server:

  - Object Exchange mode is set.
  - To verify the "Abort", prepare a large file.

- Test Procedure

  Client:

  - Select the server to perform initial File Transfer with.
  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.
  - Start the File Transfer function.
  - Pull the file from the server.
  - Initiate the abort pull file function.

  Server:

  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.

    (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

  Pass verdict:

  Client: The application stops pulling the file.

  Server: The server recognizes that the pull file function is aborted.

- Notes

  The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.4.13   Pull – Large 2 MB File from the FTP Server

- Test Purpose

  Client: To verify that a large file can be correctly copied from the FTP server to the FTP client.

  Server: To verify that the FTP server can correctly deliver a large file to the FTP client.

- Test Case ID(s)

  FTP/SR/OTR/BV-13-I

  FTP/CL/OTR/BV-13-I

- Reference

  [2] 4.3

- Initial Condition

  Client:

  - The application for File Transfer is activated.
  - The server is selectable from a list.
  - The client and server are paired.
  - Enough resources are free to accept a 2 MB file.

  Server:

  - Object Exchange mode is set.
  - The client and server are paired.
  - A 2MB file is on the server and ready to be sent via FTP.

- Test Procedure

  Client:

  - Select the server to perform initial File Transfer with.
  - Perform OBEX authentication if used.
  - Start the File Transfer function.
  - Pull the 2 MB file from the server.

  Server: Perform OBEX authentication if used.

- Expected Outcome

  Pass verdict:

  Client: The selected 2 MB file is copied correctly from the server.

  Server: The 2 MB file on the server is not altered in any way.

- Notes

The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

Notice in the verdicts that the successful transfer of a file to the Server does not necessarily imply that file can be immediately retrieved due to the protection policies enforced by the Server.

4.4.14   Push – Large 2 MB File from the FTP Client

- Test Purpose

  Client: To verify that a large file can be correctly copied from the FTP client to the FTP server.

  Server: To verify that the FTP client can correctly deliver a large file to the FTP server.

- Test Case ID(s)

  FTP/SR/OTR/BV-14-I

  FTP/CL/OTR/BV-14-I

- Reference

  [2] 4.3

- Initial Condition

  Client:

  - The application for File Transfer is activated.
  - The server is selectable from a list.
  - The client and server are paired.
  - A 2 MB file is on the client and ready to be sent via FTP.

  Server:

  - Object Exchange mode is set.
  - The client and server are paired.
  - The attribute is not set as "read-only" mode.
  - Enough resources are free to accept a 2 MB file.

- Test Procedure

  Client:

  - Select the server to perform initial File Transfer with.
  - Perform OBEX authentication if used.
  - Start the File Transfer function.
  - Push the 2 MB file to the root folder of the server.

  Server: Perform OBEX authentication if used.

- Expected Outcome

Pass verdict:

Client:

- No error message is received from the server.

- The 2 MB file is not altered in any way.

Server: The 2 MB file is copied correctly.

- Notes

Notice in the verdicts that the successful transfer of a file to the Server does not necessarily imply that file can be immediately retrieved due to the protection policies enforced by the Server.

The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.4.15   Push – Different File Formats to the FTP Server

- Test Purpose

Client: To verify that different file formats can be copied correctly from the FTP client to the FTP server.

Server: To verify that different file formats can be copied correctly from the FTP client to the FTP server.

- Test Case ID(s)

FTP/SR/OTR/BV-15-I

FTP/CL/OTR/BV-15-I

- Reference

[2] 4.3

- Initial Condition

Client:

- The application for File Transfer is activated.

- The server is selectable from a list.

- The client and server are paired.

- The client has the files indicated as supported in the IXIT ready to be sent via FTP.

Server:

- Object Exchange mode is set.

- The client and server are paired.

- The attribute is not set as "read-only" mode.

- Test Procedure

Client:

- Select the server to perform initial File Transfer with.

- Perform OBEX authentication if used.

- Start the File Transfer function.

- Push the supported files of different formats onto the server. This may be done by sending one file at a time, based on the implementation.

Server: Perform OBEX authentication if used.

- Expected Outcome

<u>Pass verdict:</u>

Client:

- No error message is received from the server.

- The supported files of different formats are not altered in any way.

Server: The supported files of different formats are copied correctly.

- Notes

Notice in the verdicts that the successful transfer of a file to the Server does not necessarily imply that file can be immediately retrieved due to the protection policies enforced by the Server.

The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.4.16 Push/Pull – File to/from the FTP Server

- Test Purpose

Client: To verify that the FTP Client can push the file to the FTP Server and pull the same file back to the FTP Client.

Server: To verify that the FTP Client can push the file to the FTP Server and pull the same file back to the FTP Client.

- Test Case ID(s)

FTP/SR/OTR/BV-16-I

FTP/CL/OTR/BV-16-I

- Reference

[2] 4.3

- Initial Condition

Client:

- The application for File Transfer is activated.

- The server is selectable from a list.

- The client and server are paired.

Server:

- Object Exchange mode is set.

- The client and server are paired.

- The attribute is not set as "read-only" mode.

- Test Procedure

    Client:

    - Select the server to perform initial File Transfer with.

    - Perform OBEX authentication if used.

    - Start the File Transfer function.

    - Push a file onto the server.

    - Pull the same file from the server.

    Server: Perform OBEX authentication if used.

- Expected Outcome

    Pass verdict:

    Client:

    - No error message is received from the server.

    - The file is pushed correctly to the server.

    - The same file is pulled correctly from the server.

    Server: The file is received correctly and stored.

- Notes

    Notice in the verdicts that the successful transfer of a file to the Server does not necessarily imply that file can be immediately retrieved due to the protection policies enforced by the Server.

    The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server may refuse to disclose the root folder.

4.5   Object Manipulation Test Cases

Test Group Objectives:

- To verify the application supports creating folders and deleting files and folders. Note that not all the applications support these capabilities, but the server has to respond with an appropriate error code.

4.5.1   Create - Folder

- Test Purpose

    Client: To verify that the user can create a new folder.

    Server: To verify that a new folder has been created on the server.

- Test Case ID(s)

  FTP/SR/OMA/BV-01-I

  FTP/CL/OMA/BV-01-I

- Reference

  [2] 4.4

- Initial Condition

  Client:

  - The application for File Transfer is activated.

  - The server is selectable from a list.

  - It has proper access privileges for the folder to create.

  Server:

  - Object Exchange mode is set.

  - Make sure that the attribute is not set to "read only" mode.

- Test Procedure

  Client:

  - Select the server to perform initial File Transfer with.

  - Perform Bluetooth PIN exchange.

  - Perform OBEX authentication if used.

  - Start the File Transfer function.

  - Perform the Create New Folder function.

  Server:

  - Perform Bluetooth PIN exchange.

  - Perform OBEX authentication if used.

    (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

  Pass verdict:

  Client: The current folder will be the new folder.

  Server: The new folder is created in the current folder in the server.

- Notes

  The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.5.2   Create - Folder - Error Case

- Test Purpose

    Client: To verify that the user cannot create a new folder when the server is set to read only.

    Server: To verify that the server will not create a new folder when set to read only mode.

- Test Case ID(s)

    FTP/SR/OMA/BV-02-I

    FTP/CL/OMA/BV-02-I

- Reference

    [2] 4.4

- Initial Condition

    Client:

    - The application for File Transfer is activated.
    - The server is selectable from a list.

    Server:

    - Object Exchange mode is set.
    - The folder in which the new folder is to be created is set to read only.

- Test Procedure

    Client:

    - Select the server to perform initial File Transfer with.
    - Perform Bluetooth PIN exchange.
    - Perform OBEX authentication if used.
    - Start the File Transfer function.
    - Perform the Create New Folder function.

    Server

    - Perform Bluetooth PIN exchange.
    - Perform OBEX authentication if used.

        (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

    Pass verdict:

    Client: The application notifies that creating the folder is not allowed. The new folder is not created.

Server:

- Send the Unauthorized error code (0xC1) to notify that the folder cannot be created.

- The new folder is not created in the current folder in the server.

- Notes

The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.5.3 Create - Folder - Not Supported

- Test Purpose

Client: The user application must receive an appropriate error code if the server does not support the Create Folder function.

Server: The server must respond with an appropriate error code if it does not support the Create Folder function.

- Test Case ID(s)

FTP/SR/OMA/BV-03-I

FTP/CL/OMA/BV-03-I

- Reference

[2] 4.4

- Initial Condition

Client:

- The application for File Transfer is activated.
- The server is selectable from a list.

Server:

- Object Exchange mode is set.
- Assume that the server does not support the Create Folder function.

- Test Procedure

Client:

- Select the server to perform initial File Transfer with.
- Perform Bluetooth PIN exchange.
- Perform OBEX authentication if used.
- Start the File Transfer function.
- Perform the Create New Folder function.

Server:

- Perform Bluetooth PIN exchange.

- Perform OBEX authentication if used.

  (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

  <u>Pass verdict:</u>

  Client: The application notifies that creating the folder is not allowed, and the folder is not created.

  Server:

  - Send the error code to notify that the server does not support this feature.

  - The folder is not created.

- Notes

  The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.5.4   Delete - File

- Test Purpose

  Client: To verify that the file is deleted.

  Server: To verify that the file is deleted.

- Test Case ID(s)

  FTP/SR/OMA/BV-04-I

  FTP/CL/OMA/BV-04-I

- Reference

  [2] 4.4

- Initial Condition

  Client:

  - The application for File Transfer is activated.

  - The server is selectable from a list.

  - It has proper access privileges for the file to delete.

  Server:

  - Object Exchange mode is set.

  - Prepare the arbitrary file.

  - Make sure that the attribute is not set to "read only" mode.

- Test Procedure

Client:

- Select the server to perform initial File Transfer with.

- Perform Bluetooth PIN exchange.

- Perform OBEX authentication if used.

- Start the File Transfer function.

- Perform the delete file function.

Server:

- Perform Bluetooth PIN exchange.

- Perform OBEX authentication if used.

  (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

  Pass verdict:

  Client: The selected file is not shown in the application.

  Server: The selected file is deleted.

- Notes

  The server must be able to respond with an appropriate error code even if it does not support this capability.

4.5.5   Delete - File - Error Case

- Test Purpose

  Client: To verify that the file will not be deleted when the server is set to read only mode.

  Server: To verify that the server will not delete the file when set to read only mode.

- Test Case ID(s)

  FTP/SR/OMA/BV-05-I

  FTP/CL/OMA/BV-05-I

- Reference

  [2] 4.4

- Initial Condition

  Client:

- The application for File Transfer is activated.

- The server is selectable from a list.

- It has proper access privileges for the empty folder to delete.

Server:

- Object Exchange mode is set.

- Create the arbitrary file.

- Set the attribute of the server to "read only" mode.

- Test Procedure

    Client:

- Select the server to perform initial File Transfer with.

- Perform Bluetooth PIN exchange.

- Perform OBEX authentication if used.

- Start the File Transfer function.

- Perform the delete file function.

    Server:

- Perform Bluetooth PIN exchange.

- Perform OBEX authentication if used.

    (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

    Pass verdict:

    Client:

- The application shows the error message to notify that deleting the file is not allowed as the server is set to read only mode.

- The file is still shown in the application.

    Server:

- Send the error code to notify that the server is set to read only mode.

- The selected file is not deleted.

- Notes

The server must be able to respond with an appropriate error code even if it does not support this capability.

The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.5.6   Delete - Empty Folder

- Test Purpose

    Client: To verify that an empty folder in the server is deleted.

Server: To verify that an empty folder in the server can be deleted.

- Test Case ID(s)

  FTP/SR/OMA/BV-06-I

  FTP/CL/OMA/BV-06-I

- Reference

  [2] 4.4

- Initial Condition

  Client:

  - The application for File Transfer is activated.
  - The server is selectable from a list.
  - It has proper access privileges for the empty folder to delete.

  Server:

  - Object Exchange mode is set.
  - Create the empty folder.

- Test Procedure

  Client:

  - Select the server to perform initial File Transfer with.
  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.
  - Start the File Transfer function.
  - Perform a delete folder function on the server.

  Server:

  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.

    (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

  Pass verdict:

  Client: The selected folder is not shown in the application.

  Server: The selected folder is deleted.

- Notes

The server must be able to respond with an appropriate error code even if it does not support this capability.

The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.5.7   Delete - Non-Empty Folder

- Test Purpose

  Client: To verify that deleting a non-empty folder on the server deletes the folder with all files and folders contained within the folder to be deleted.

  Server: To verify that the server deletes the non-empty folder selected and all files and folders contained within the folder.

- Test Case ID(s)

  FTP/SR/OMA/BV-07-I

  FTP/CL/OMA/BV-07-I

- Reference

  [2] 4.4

- Initial Condition

  Client:

  - The application for File Transfer is activated.
  - The server is selectable from a list.
  - It has proper access privileges for the non-empty folder to delete.

  Server:

  - Object Exchange mode is set.
  - Create the non empty folder.

- Test Procedure

  Client:

  - Select the server to perform initial File Transfer with.
  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.
  - Start the File Transfer function.
  - Perform the delete folder function.

  Server:

  - Perform Bluetooth PIN exchange.
  - Perform OBEX authentication if used.

(Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

  Pass verdict:

  Client: The application indicates that the selected folder and all files and folders contained within the selected folder are deleted.

  Server: The non-empty folder is deleted.

- Notes

  The server must be able to respond with an appropriate error code even if it does not support this capability.

  The client needs to browse the contents of the root folder in order to move through the Server's folder hierarchy to select a folder, but the Server can refuse to disclose the root folder.

4.5.8 Delete - Non-Empty Folder - Not Supported

- Test Purpose

  Client: After receiving the error code the client deletes the files and then the folder.

  Server: The error code "Precondition Failed" (0xCC) is sent to notify that the server does not support this feature.

- Test Case ID(s)

  FTP/SR/OMA/BV-08-I

  FTP/CL/OMA/BV-08-I

- Reference

  [2] 4.4

- Initial Condition

  Client:

  - The application for File Transfer is activated.
  - The server is selectable from a list.
  - The client has proper access privileges for the non-empty folder to delete.

  Server:

  - The application for File Transfer is activated.
  - A non-empty folder exists.
  - The server does not support deleting a non-empty folder.

- Test Procedure

  Client:

- Select the server to perform initial File Transfer with.

- Perform Bluetooth PIN exchange.

- Perform OBEX authentication if used.

- Start the File Transfer function.

- Perform the delete folder function.

Server:

- Perform Bluetooth PIN exchange.

- Perform OBEX authentication if used.

  (Depending on the architecture that is to use the File Transfer feature, the steps of the initial File Transfer procedure may vary.)

- Expected Outcome

  <u>Pass verdict:</u>

  Client: After receiving the error code the client deletes the files and then the folder.

  Server:

- The error code "Precondition Failed" (0xCC) is sent to notify that the server does not support this feature.

- The folder is not deleted.

- Notes

  The client shall send the OBEX delete folder command as the first attempt for successful execution of this test. It may be necessary to use a Bluetooth air sniffer to verify correct OBEX operation

5   Test Case Mapping

The Test Case Mapping Table (TCMT) maps test cases to specific requirements in the ICS. The product shall be tested in all roles for which support is declared in the ICS document.

The columns for the TCMT are defined as follows:

Item: Contains a y/x reference, where y corresponds to the table number and x corresponds to the feature number as defined in the ICS Proforma for File Transfer Profile (FTP) [3]. If the item is defined with Protocol, Profile or Service abbreviation before y/x, the table and feature number referenced are defined in the abbreviated ICS Proforma document.

Feature: Recommended to be the primary feature defined in the ICS being tested or may be the test case name.

Test Case(s): The applicable test case identifiers required for Bluetooth Qualification if the corresponding y/x references defined in the Item column are supported.

Test Case Applicable: May be used to note if a test is required based on the supported features.

For purpose and structure of the ICS/IXIT Proforma and instructions for completing the ICS/IXIT Proforma refer to the Bluetooth ICS and IXIT Proforma document.

Item	Feature	Test Case(s)	Test Case Applicable
Discovery & Connection Setup			
FTP 2/1	Server Selection	FTP/SR/SSR/BV-02-I	
FTP 3/2	Server Selection	FTP/CL/SSR/BV-02-I	
FTP 2/1 AND FTP 2/2	Accept/Respond to List Server requests	FTP/SR/SSR/BV-01-I	
FTP 3/1	Accept/Respond to List Server requests	FTP/CL/SSR/BV-01-I	
FTP 2/1 AND FTP 2/2	Perform PIN Check	FTP/SR/SSR/BV-03-I	
FTP 3/3	Perform PIN Check	FTP/CL/SSR/BV-03-I	
Folder Browsing			
FTP 2/4	Accept/Respond to Browse folder requests (Root folder)	FTP/SR/FBR/BV-01-I	
FTP 3/4	Accept/Respond to Browse folder requests (Root folder)	FTP/CL/FBR/BV-01-I	
FTP 2/4a AND FTP 2/6	Accept/ Respond to browse folder requests (Sub folders)	FTP/SR/FBR/BV-02-I FTP/SR/FBR/BV-03-I	
FTP 3/4	Accept/ Respond to browse folder requests (Sub folders)	FTP/CL/FBR/BV-02-I FTP/CL/FBR/BV-03-I	

Item	Feature	Test Case(s)	Test Case Applicable
FTP 2/4a AND FTP 2/5	Accept Set folder requests	FTP/SR/FBR/BV-06-I	
FTP 3/5	Accept Set folder requests	FTP/CL/FBR/BV-06-I	
FTP 2/4a AND FTP 2/6	Accept Set folder requests (Sub folder)	FTP/SR/FBR/BV-04-I FTP/SR/FBR/BV-05-I FTP/SR/FBR/BV-07-I	
FTP 3/5	Accept Set folder requests (Sub folder)	FTP/CL/FBR/BV-04-I FTP/CL/FBR/BV-05-I FTP/CL/FBR/BV-07-I	
FTP 2/5 AND FTP 2/6 AND FTP 2/9	Support non-browsable folder	FTP/SR/FBR/BV-08-I	
FTP 3/5	Support non-browsable folder	FTP/CL/FBR/BV-08-I	
Object Transfer			
FTP 2/10	Accept Push file requests	FTP/SR/OTR/BV-01-I FTP/SR/OTR/BV-02-I FTP/SR/OTR/BV-14-I	
FTP 3/6	Accept Push file requests	FTP/CL/OTR/BV-01-I FTP/CL/OTR/BV-02-I FTP/CL/OTR/BV-14-I	
FTP 2/10	Accept Push file requests	FTP/SR/OTR/BV-15-I	
FTP 3/6	Accept Push file requests	FTP/CL/OTR/BV-15-I	
FTP 2/8 AND FTP 2/10	Support read-only files	FTP/SR/OTR/BV-03-I	
FTP 3/6	Support read-only files	FTP/CL/OTR/BV-03-I	
FTP 2/11	Accept Push folder requests	FTP/SR/OTR/BV-04-I FTP/SR/OTR/BV-05-I	
FTP 3/7	Accept Push folder requests	FTP/CL/OTR/BV-04-I FTP/CL/OTR/BV-05-I	
FTP 1/1 AND NOT FTP 2/11	Accept Push folder requests	FTP/SR/OTR/BV-06-I	
FTP 3/7	Accept Push folder requests	FTP/CL/OTR/BV-06-I	
FTP 2/8 AND FTP 2/11	Support read-only folders	FTP/SR/OTR/BV-07-I	
FTP 3/7	Support read-only folders	FTP/CL/OTR/BV-07-I	
FTP 2/12	Accept Pull folder requests	FTP/SR/OTR/BV-08-I FTP/SR/OTR/BV-09-I	
FTP 3/8	Accept Pull folder requests	FTP/CL/OTR/BV-08-I FTP/CL/OTR/BV-09-I	
FTP 2/4a AND NOT FTP 2/12	Accept Pull folder requests	FTP/SR/OTR/BV-10-I	
FTP 3/8	Accept Pull folder requests	FTP/CL/OTR/BV-10-I	
FTP 2/13	Accept Pull file requests	FTP/SR/OTR/BV-11-I FTP/SR/OTR/BV-12-I FTP/SR/OTR/BV-13-I	

Item	Feature	Test Case(s)	Test Case Applicable
FTP 3/9	Accept Pull file requests	FTP/CL/OTR/BV-11-I FTP/CL/OTR/BV-12-I FTP/CL/OTR/BV-13-I	
FTP 2/10 AND FTP 2/13	Accept Push file requests/Accept Pull file requests	FTP/SR/OTR/BV-16-I	
FTP 3/6 AND FTP 3/9	Accept Push file requests/Accept Pull file requests	FTP/CL/OTR/BV-16-I	
Object Manipulation			
FTP 2/14	Accept Create folder request	FTP/SR/OMA/BV-01-I	
FTP 3/10	Accept Create folder request	FTP/CL/OMA/BV-01-I	
FTP 2/8 AND FTP 2/14	Support read-only folders	FTP/SR/OMA/BV-02-I	
FTP 3/10	Support read-only folders	FTP/CL/OMA/BV-02-I	
FTP 2/14	Accept Create folder request	FTP/SR/OMA/BV-03-I	
FTP 3/10	Accept Create folder request	FTP/CL/OMA/BV-03-I	
FTP 2/15	Accept Delete file requests	FTP/SR/OMA/BV-04-I	
FTP 3/11	Accept Delete file requests	FTP/CL/OMA/BV-04-I	
FTP 2/7 AND FTP 2/15	Support read-only files	FTP/SR/OMA/BV-05-I	
FTP 3/11	Support read-only files	FTP/CL/OMA/BV-05-I	
FTP 2/16	Accept Delete folder requests	FTP/SR/OMA/BV-06-I	
3/12a OR FTP 3/12b	Accept Delete folder requests	FTP/CL/OMA/BV-06-I	
FTP 2/17	Delete non-empty folders	FTP/SR/OMA/BV-07-I	
3/12a OR FTP 3/12b	Delete non-empty folders	FTP/CL/OMA/BV-07-I	
FTP 2/16 AND NOT FTP 2/17	Delete non-empty folders	FTP/SR/OMA/BV-08-I	
FTP 3/12a	Delete non-empty folders	FTP/CL/OMA/BV-08-I	
GOEP 2.0 or later tests			
(FTP 1b/2 OR FTP 1b/3) AND FTP 2/10 AND FTP 2/27	PUT response to a legacy device (OBEX over RFCOMM is used)	FTP/SR/GOEP/BC/BV-01-I	
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/6 AND FTP 3/22	PUT request to a legacy device (OBEX over RFCOMM is used)	FTP/CL/GOEP/BC/BV-02-I	
(FTP 1b/2 OR FTP 1b/3) AND FTP 2/13 AND FTP 2/27	GET response to a legacy device (OBEX over RFCOMM is used)	FTP/SR/GOEP/BC/BV-03-I	

Item	Feature	Test Case(s)	Test Case Applicable
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/9 AND FTP 3/22	GET request to a legacy device (OBEX over RFCOMM is used)	FTP/CL/GOEP/BC/BV-04-I	
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/21 AND FTP 3/23	OBEX CONNECT request – OBEX over L2CAP	FTP/CL/GOEP/CON/BV-01-C	
(FTP 1b/2 OR FTP 1b/3) AND FTP 2/26 AND FTP 2/28	OBEX CONNECT request – OBEX over L2CAP	FTP/SR/GOEP/CON/BV-02-C FTP/SR/GOEP/SRM/BI-03-C	
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/24	Reliable OBEX Session	FTP/CL/GOEP/RLS/BV-01-C FTP/CL/GOEP/RLS/BV-04-C FTP/CL/GOEP/RLS/BV-05-C	
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/6 AND FTP 3/24	Suspend/Resume a PUT operation when SRM is disabled	FTP/CL/GOEP/RLS/BV-09-C	
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/9 AND FTP 3/24	Suspend/Resume a GET operation when SRM is disabled.	FTP/CL/GOEP/RLS/BV-10-C	
(FTP 1b/2 OR FTP 1b/3) AND FTP 2/29	Reliable OBEX session	FTP/SR/GOEP/RLS/BV-02-C FTP/SR/GOEP/RLS/BV-03-C FTP/SR/GOEP/RLS/BV-06-C FTP/SR/GOEP/RLS/BV-08-C	
(FTP 1b/2 OR FTP 1b/3) AND FTP 2/10 AND FTP 2/29	Suspend/Resume of PUT operation with SRM disabled	FTP/SR/GOEP/RLS/BV-11-C	
(FTP 1b/2 OR FTP 1b/3) AND FTP 2/13 AND FTP 2/29	Suspend/Resume of GET operation with SRM disabled	FTP/SR/GOEP/RLS/BV-12-C	
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/6 AND FTP 3/25	PUT request – SRM enabled	FTP/CL/GOEP/SRM/BV-01-C FTP/CL/GOEP/SRM/BV-03-C	
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/9 AND FTP 3/25	GET request – SRM enabled	FTP/CL/GOEP/SRM/BV-05-C	
(FTP 1b/2 OR FTP 1b/3) AND FTP 2/10 AND FTP 2/30	PUT response – SRM enabled	FTP/SR/GOEP/SRM/BV-04-C FTP/SR/GOEP/SRM/BI-02-C	
(FTP 1b/2 OR FTP 1b/3) AND FTP 2/13 AND FTP 2/30	GET response – SRM enabled	FTP/SR/GOEP/SRM/BV-08-C FTP/SR/GOEP/SRM/BI-05-C	
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/9 AND FTP 3/25	GET request – SRM enabled	FTP/CL/GOEP/SRM/BV-07-C	
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/6 AND FTP 3/25 AND FTP 3/27	PUT request – SRM enabled and receive a SRMP wait header	FTP/CL/GOEP/SRMP/BV-01-C	
(FTP 1b/2 OR FTP 1b/3) AND FTP 2/13 AND FTP 2/30 AND FTP 2/32	GET response – SRM enabled and receive a SRMP wait header	FTP/SR/GOEP/SRMP/BV-02-C	
(FTP 1b/2 OR FTP 1b/3) AND FTP 2/10 AND FTP 2/30 AND FTP 2/31	PUT response – SRM enabled and send a SRMP wait header	FTP/SR/GOEP/SRMP/BV-03-C	

Item	Feature	Test Case(s)	Test Case Applicable
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/9 AND FTP 3/25 AND FTP 3/26	GET request – SRM enabled and send a SRMP wait header	FTP/CL/GOEP/SRMP/BV-04-C	
(FTP 2b/2 OR FTP 2b/3) AND (FTP 3/8 OR FTP 3/9) AND FTP 3/25 AND FTP 3/26 AND FTP 3/27	GET request – SRM enabled and send and receive a SRMP wait header	FTP/CL/GOEP/SRMP/BV-05-C	
(FTP 2b/2 OR FTP 2b/3) AND (FTP 3/8 OR FTP 3/9) AND FTP 3/25 AND FTP 3/27	GET request – SRM enabled and receive a SRMP wait header	FTP/CL/GOEP/SRMP/BV-06-C	
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/9 AND FTP 3/25 AND FTP 3/27	GET request – SRM enabled and an invalid SRMP wait header	FTP/CL/GOEP/SRMP/BI-01-C	
(FTP 1b/2 OR FTP 1b/3) AND FTP 2/13 AND FTP 2/30 AND FTP 2/32	GET response – SRM enabled and an invalid SRMP wait header	FTP/SR/GOEP/SRMP/BI-02-C	
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/6 AND FTP 3/24 AND FTP 3/25	Suspend/Resume a PUT operation when SRM is enabled	FTP/CL/GOEP/SRS/BV-01-C	
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/9 AND FTP 3/24 AND FTP 3/25	Suspend/Resume a GET operation when SRM is enabled	FTP/CL/GOEP/SRS/BV-02-C	
(FTP 1b/2 OR FTP 1b/3) AND FTP 2/10 AND FTP 2/29 AND FTP 2/30	Accept a Suspend/Resume of PUT operation with SRM enabled	FTP/SR/GOEP/SRS/BV-03-C	
(FTP 1b/2 OR FTP 1b/3) AND FTP 2/13 AND FTP 2/29 AND FTP 2/30	Accept a Suspend/Resume of PUT operation with SRM enabled	FTP/SR/GOEP/SRS/BV-04-C	
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/17	COPY command	FTP/CL/GOEP/ACT/BV-01-C	
(FTP 1b/2 OR 1b/3) AND FTP 2/22	Process a COPY command	FTP/SR/GOEP/ACT/BV-02-C	
(FTP 2b/2 OR FTP 2b/3) AND (FTP 3/13 OR FTP 3/15)	MOVE/RENAME command	FTP/CL/GOEP/ACT/BV-03-C	
(FTP 1b/2 OR FTP 1b/3) AND (FTP 2/18 OR FTP 2/20)	Process a MOVE/RENAME command	FTP/SR/GOEP/ACT/BV-04-C	
(FTP 2b/2 OR FTP 2b/3) AND FTP 3/19	SET PERMISSIONS command	FTP/CL/GOEP/ACT/BV-05-C	
(FTP 1b/2 OR FTP 1b/3) AND FTP 2/24	Process a SET PERMISSIONS command	FTP/SR/GOEP/ACT/BV-06-C	

Item	Feature	Test Case(s)	Test Case Applicable
(FTP 1b/2 OR FTP 1b/3) AND NOT (FTP 2/18 OR FTP 2/19 OR FTP 2/20 OR FTP 2/21 OR FTP 2/22 OR FTP 2/23 OR FTP 2/24 OR FTP 2/25)	Action commands not supported	FTP/SR/GOEP/ROB/BV-01-C	
(FTP 1b/2 OR FTP 1b/3) AND NOT FTP 2/29	Reliable Sessions not supported	FTP/SR/GOEP/ROB/BV-02-C	

Table 5.1: Test Case Mapping