

Basic Printing Profile (BPP)

Bluetooth[®] Test Suite

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1 Scope

This Bluetooth document contains the Test Suite Structure (TSS) and test cases to test the implementation of the Bluetooth Basic Printing Profile (BPP) with the objective to provide a high probability of air interface interoperability between the tested implementation and other manufacturers' Bluetooth devices.

2 References, definitions, and abbreviations

2.1 References

This document incorporates provisions from other publications by dated or undated reference. These references are cited at the appropriate places in the text, and the publications are listed hereafter. Additional definitions and abbreviations can be found in [1], [2], and [9].

- [1] Bluetooth Core Specification, Version 2.0 or later
- [2] Basic Printing Profile Specification
- [3] Generic Access Profile Specification
- [4] Generic Object Exchange Profile Specification
- [5] Infrared Data Association® (IrDA®) Object Exchange Protocol (OBEX™) Test Suite
- [6] http://www.irda.org/associations/2494/files/Specifications/OBEX_Test_Spec_V1p0p1.pdf
- [7] XHTML-Print, <http://www.pwg.org/xhtml-print/W3C-Version/XHTML-Print.html>
- [8] XHTML-Print Test Documents. Obtainable from www.bluetooth.org/qualification. See “External to the Core” requirements under BPP and select XHTML
- [9] Test Strategy and Terminology Overview
- [10] ICS Proforma for Basic Printing Profile (BPP)
- [11] IXIT Proforma for Basic Printing Profile (BPP)
- [12] SDP Test Suite, SDP.TS

2.2 Definitions

In this Bluetooth document, the definitions from [1], [2], and [9] apply.

Term	Definition
Idle mode	As seen from a remote device, a Bluetooth device is idle, or is in Idle mode, when there is no link established between them.
Online mode	For the purposes of this document, Online mode means Public or Private Online mode.
Ready state	Not in an error state, and the device is able to continue receiving and processing commands.

Table 2.1: Definitions

2.3 Acronyms and abbreviations

In this Bluetooth document, the abbreviations from [1], [2], and [9] apply.

Acronyms and abbreviations	Definition
CRLF	Carriage Return Line Feed
CSS	Cascading Style Sheets
DPS	Direct Printing Service
HTML	HyperText Markup Language
HTTP	HyperText Transfer Protocol
PBR	Print-By-Reference or Reference Printing option of BPP



Acronyms and abbreviations	Definition
RUI	Reflected User Interface option of BPP
XHTML	Extensible HyperText Markup Language
XML	Extensible Markup Language

Table 2.2: Acronyms and abbreviations

3 Test Suite Structure (TSS)

3.1 Overview

The Basic Printing Profile specifies two typical configurations of devices and their roles for this profile.

Printer	This device receives and/or retrieves printable data, including optional formatting information, and prints formatted output onto print media.
Sender	This device sends printable data or URLs pointing to printable data, along with optional formatting information, to the Printer.

Table 3.1: BPP typical configurations

3.2 Test groups

The following test groups have been defined:

- Generic SDP Integrated Tests
- Discovery and Connection Setup
- OBEX Authentication
- Direct Printing Services
- Object Formats
- Simple Push Transfer Model
- Enhanced-Layout Capability
- Reflected User Interface (RUI)
- Print-By-Reference (PBR)

4 Test cases (TC)

4.1 Introduction

4.1.1 Test case identification conventions

Test cases are assigned unique identifiers per the conventions in [9]. The convention used here is: **<spec abbreviation>/<IUT role>/<class>/<feat>/<func>/<subfunc>/<cap>/<xx>-<nn>-<y>**.

Additionally, testing of this specification includes tests from the SDP Test Suite [12] referred to as Generic SDP Integrated Tests (GSIT); when used, the GSIT tests are referred to through a TCID string using the following convention:

<spec abbreviation>/<IUT role>/<GSIT test group>/< GSIT class >/<xx>-<nn>-<y>.

Identifier Abbreviation	Spec Identifier <spec abbreviation>
BPP	Basic Printing Profile
Identifier Abbreviation	Role Identifier <IUT role>
PR	Printer role
SD	Sender Device role
Identifier Abbreviation	Reference Identifier <GSIT test group>
CGSIT	Client Generic SDP Integrated Tests
SGSIT	Server Generic SDP Integrated Tests
Identifier Abbreviation	Reference Identifier <GSIT class>
ATTR	Attribute
OFFS	Attribute ID Offset String
SERR	Service Record
SFC	SDP Future Compatibility
Identifier Abbreviation	Feature Identifier <feat>
DCS	Discovery and Connection Setup
DPS	Direct Printing Services
EL	Enhanced Layout
OF	Object Formats
PBR	Print-By-Reference
RUI	Reflected UI
SP	Simple Push

Table 4.1: BPP TC feature naming conventions

4.1.2 Conformance

When conformance is claimed for a particular specification, all capabilities are to be supported in the specified manner. The mandated tests from this Test Suite depend on the capabilities to which conformance is claimed.

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 not excluded by the specification
- That capabilities enabled by the implementations are sustained over durations expected by the use case
- That the implementation gracefully handles any quantity of data expected by the use case
- 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
- That the implementation is immune to attempted security exploits

A single execution of each of the required tests is required to constitute a Pass verdict. However, it is noted that 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 generated by the Bluetooth SIG qualification tool, with 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 erratum request such that the issue may be addressed.

4.1.3 Pass/Fail verdict conventions

Each test case has an Expected Outcome section. The IUT is granted the Pass verdict when all the detailed pass criteria conditions within the Expected Outcome section are met.

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, then the outcome of the test is a Fail verdict.

For those test cases that specify as a Pass condition that the Printer or Sender is able to process its next task, it is left to the discretion of the test operator to verify this condition, as appropriate. Example procedures include executing the next test or processing a predetermined test file.



4.2 Generic SDP Integrated Tests

4.2.1 Server Generic SDP Integrated Tests

4.2.1.1 Printer

Execute the Generic SDP Integrated Tests defined in Section 6.3, Server test procedures (SGSIT), in [12] using Table 4.2 below as input:

TCID	Reference	Attribute ID name	Attribute ID definition source (Universal, Profile)	Value/secondary value	Attribute presence (Present/Present for [role], Optionally present, TCMT defined)
BPP/PR/SGSIT/SERR/BV-01-C [Service record GSIT – BPP Printer]	[2] 12.1.1	ServiceClassIDList	Universal	“PrintingStatus” (UUID), “DirectPrinting” (UUID)	Present for Printer
BPP/PR/SGSIT/SERR/BV-02-C [Service record GSIT – BPP Printer, Reference Printing]	[2] 12.1.1	ServiceClassIDList	Universal	“ReferencePrinting” (UUID)	TCMT defined
BPP/PR/SGSIT/ATTR/BV-01-C [Attribute GSIT – Service ID]	[2] 12.1.1	ServiceID	Universal	skip (UUID)	Optionally present
BPP/PR/SGSIT/ATTR/BV-02-C [Attribute GSIT – Protocol Descriptor List]	[2] 12.1.1	ProtocolDescriptorList	Universal	“L2CAP” (UUID), “RFCOMM” (UUID): Job channel – skip (UInt8), “OBEX” (UUID)	Present for Printer
BPP/PR/SGSIT/ATTR/BV-03-C [Attribute GSIT – Bluetooth Profile Descriptor List]	[2] 12.1.1	BluetoothProfileDescriptorList	Universal	“BasicPrinting” (UUID): Version – skip (UInt16)	Optionally present
BPP/PR/SGSIT/ATTR/BV-04-C [Attribute GSIT – Additional Protocol Descriptor List]	[2] 12.1.1	AdditionalProtocolDescriptorList	Universal	“L2CAP” (UUID), “RFCOMM” (UUID): Status channel – skip (UInt8), “OBEX” (UUID)	Present for Printer
BPP/PR/SGSIT/ATTR/BV-05-C [Attribute GSIT – Document Formats Supported]	[2] 12.1.1	Document Formats Supported	Profile	skip (String)	Present for Printer
BPP/PR/SGSIT/ATTR/BV-06-C [Attribute GSIT – Character Repertoires Supported]	[2] 12.1.1	Character Repertoires Supported	Profile	skip (UInt128)	Present for Printer
BPP/PR/SGSIT/ATTR/BV-07-C [Attribute GSIT – XHTML-Print Image Formats Supported]	[2] 12.1.1	XHTML-Print Image Formats Supported	Profile	skip (String)	Present for Printer



TCID	Reference	Attribute ID name	Attribute ID definition source (Universal, Profile)	Value/secondary value	Attribute presence (Present/Present for [role], Optionally present, TCMT defined)
BPP/PR/SGSIT/ATTR/BV-08-C [Attribute GSIT – Color Supported]	[2] 12.1.1	Color Supported	Profile	skip (Boolean)	Optionally present
BPP/PR/SGSIT/ATTR/BV-09-C [Attribute GSIT – 1284ID]	[2] 12.1.1	1284ID	Profile	skip (String)	Present for Printer
BPP/PR/SGSIT/ATTR/BV-10-C [Attribute GSIT – Printer Name]	[2] 12.1.1	Printer Name	Profile	skip (String)	Optionally present
BPP/PR/SGSIT/ATTR/BV-11-C [Attribute GSIT – Printer Location]	[2] 12.1.1	Printer Location	Profile	skip (String)	Optionally present
BPP/PR/SGSIT/ATTR/BV-12-C [Attribute GSIT – Duplex Supported]	[2] 12.1.1	Duplex Supported	Profile	skip (Boolean)	Optionally present
BPP/PR/SGSIT/ATTR/BV-13-C [Attribute GSIT – Media Types Supported]	[2] 12.1.1	Media Types Supported	Profile	skip (String)	Optionally present
BPP/PR/SGSIT/ATTR/BV-14-C [Attribute GSIT – MaxMediaWidth]	[2] 12.1.1	MaxMediaWidth	Profile	skip (UInt16)	Optionally present
BPP/PR/SGSIT/ATTR/BV-15-C [Attribute GSIT – MaxMediaLength]	[2] 12.1.1	MaxMediaLength	Profile	skip (UInt16)	Optionally present
BPP/PR/SGSIT/ATTR/BV-16-C [Attribute GSIT – Enhanced Layout Supported]	[2] 12.1.1	Enhanced Layout Supported	Profile	skip (Boolean)	Optionally present
BPP/PR/SGSIT/ATTR/BV-17-C [Attribute GSIT – RUI Formats Supported]	[2] 12.1.1	RUI Formats Supported	Profile	skip (String)	Optionally present
BPP/PR/SGSIT/ATTR/BV-18-C [Attribute GSIT – Reference Printing RUI Supported]	[2] 12.1.1	Reference Printing RUI Supported	Profile	skip (Boolean)	Optionally present
BPP/PR/SGSIT/ATTR/BV-19-C [Attribute GSIT – Direct Printing RUI Supported]	[2] 12.1.1	Direct Printing RUI Supported	Profile	skip (Boolean)	Optionally present
BPP/PR/SGSIT/ATTR/BV-20-C [Attribute GSIT – Reference Printing Top URL]	[2] 12.1.1	Reference Printing Top URL	Profile	skip (URL)	TCMT defined
BPP/PR/SGSIT/ATTR/BV-21-C [Attribute GSIT – Direct Printing Top URL]	[2] 12.1.1	Direct Printing Top URL	Profile	skip (URL)	TCMT defined



TCID	Reference	Attribute ID name	Attribute ID definition source (Universal, Profile)	Value/secondary value	Attribute presence (Present/Present for [role], Optionally present, TCMT defined)
BPP/PR/SGSIT/ATTR/BV-22-C [Attribute GSIT – Device Name]	[2] 12.1.1	Device Name	Profile	skip (String)	Optionally present

Table 4.2: Input for the Printer SGSIT SDP test procedure

4.2.1.2 Referenced Objects Service Record

Execute the Generic SDP Integrated Tests defined in Section 6.3, Server test procedures (SGSIT), in [12] using Table 4.3 below as input:

TCID	Reference	Attribute ID name	Attribute ID definition source (Universal, Profile)	Value/secondary value	Attribute presence (Present/Present for [role], Optionally present, TCMT defined)
BPP/SD/SGSIT/SERR/BV-03-C [Service record GSIT – BPP Referenced Objects]	[2] 12.1.2	ServiceClassIDList	Universal	“DirectPrintingReferenced ObjectsService” (UUID)	Present for Sender
BPP/SD/SGSIT/ATTR/BV-23-C [Attribute GSIT – Service ID]	[2] 12.1.2	ServiceID	Universal	skip (UUID)	Optionally present
BPP/SD/SGSIT/ATTR/BV-24-C [Attribute GSIT – Protocol Descriptor List]	[2] 12.1.2	ProtocolDescriptorList	Universal	“L2CAP”, “RFCOMM” (UUID): Object channel – skip (UInt8), “OBEX” (UUID)	Present for Sender
BPP/SD/SGSIT/ATTR/BV-25-C [Attribute GSIT – Bluetooth Profile Descriptor List]	[2] 12.1.2	BluetoothProfileDescriptorList	Universal	“BasicPrinting” (UUID): Version – skip (UInt16)	Optionally present
BPP/SD/SGSIT/ATTR/BV-26-C [Attribute GSIT – Additional Protocol Descriptor Lists]	[2] 12.1.2	AdditionalProtocolDescriptorLists	Universal	“L2CAP” (UUID), “RFCOMM” (UUID): RUI referenced job channel – skip (UInt8), “OBEX” (UUID)	TCMT defined

Table 4.3: Input for the Referenced Objects Service SGSIT SDP test procedure



4.2.1.3 Printer Administrative User Interface

Execute the Generic SDP Integrated Tests defined in Section 6.3, Server test procedures (SGSIT), in [12] using Table 4.4 below as input:

TCID	Reference	Attribute ID name	Attribute ID definition source (Universal, Profile)	Value/secondary value	Attribute presence (Present/Present for [role], Optionally present, TCMT defined)
BPP/PR/SGSIT/SERR/BV-04-C [Service record GSIT – BPP Printer Administrative UI]	[2] 12.1.3	ServiceClassIDList	Universal	“ReflectedUI” (UUID)	TCMT defined
BPP/PR/SGSIT/ATTR/BV-27-C [Attribute GSIT – Service ID – Printer Administrative UI]	[2] 12.1.3	ServiceID	Universal	skip (UUID)	Optionally present
BPP/PR/SGSIT/ATTR/BV-28-C [Attribute GSIT – Protocol Descriptor List – Printer Administrative UI]	[2] 12.1.3	ProtocolDescriptorList	Universal	“L2CAP”, “RFCOMM” (UUID): Channel – skip (Uint8), “OBEX” (UUID)	TCMT defined
BPP/PR/SGSIT/ATTR/BV-29-C [Attribute GSIT – RUI Formats Supported – Printer Administrative UI]	[2] 12.1.3	RUI Formats Supported	Profile	skip (String)	TCMT defined
BPP/PR/SGSIT/ATTR/BV-30-C [Attribute GSIT – Printer Admin RUI Top URL – Printer Administrative UI]	[2] 12.1.3	Printer Admin RUI Top URL	Profile	skip (URL)	TCMT defined

Table 4.4: Input for the Printer Administrative User Interface SGSIT SDP test procedure

4.2.1.4 Basic Printing Profile – Attribute ID Offset String tests

Execute the Generic SDP Integrated Tests defined in Section 6.3, Server test procedures (SGSIT), in [12] using Table 4.5 below as input:

TCID	Reference	ServiceSearchPattern	Attribute ID name	Attribute ID Offset	Attribute presence (Present/Present for [role], Optionally present, TCMT defined)
BPP/PR/SGSIT/OFFS/BV-01-C [Attribute ID Offset String GSIT – Service Name]	[2] 12.1.1	DirectPrinting	ServiceName	0x0000	Optionally present



TCID	Reference	ServiceSearchPattern	Attribute ID name	Attribute ID Offset	Attribute presence (Present/Present for [role], Optionally present, TCMT defined)
BPP/SD/SGSIT/OFFS/BV-02-C [Attribute ID Offset String GSIT – Service Name]	[2] 12.1.2	DirectPrintingReferencedObjectsService	ServiceName	0x0000	Optionally present
BPP/PR/SGSIT/OFFS/BV-03-C [Attribute ID Offset String GSIT – Service Name]	[2] 12.1.3	ReflectedUI	ServiceName	0x0000	Optionally present

Table 4.5: Input for the Basic Printing Profile SGSIT Attribute ID Offset String tests

4.2.2 Client Generic SDP Integrated Tests

Execute the Generic SDP Future Compatibility Tests defined in Section 6.4, Client test procedures (CGSIT), in [12] using Table 4.6 below as input:

TCID	Reference	Service Record Service Class UUID description	Lower Tester SDP record initial conditions
BPP/SD/CGSIT/SFC/BV-01-C [SDP Future Compatibility – IUT is BPP Sender]	[2] 5.1.1, 12, 16	ReferencePrinting, PrintingStatus, DirectPrinting	The Lower Tester exposes a BPP Printer SDP record. The version in the Bluetooth Profile Descriptor List is greater than the most recently adopted version.

Table 4.6: Input for the Client CGSIT SDP future compatibility tests



4.3 Discovery and Connection Setup

Verify the discovery and connection setup capabilities.

4.3.1 Public Online mode

Verify that the Printer supports Public Online mode and can be discovered by and connected to the Sender using the General and Limited Inquiry, and Device Discovery procedures.

BPP/PR/DCS/BV-01-C [General Inquiry, Public Online]

- Test Purpose

Verify that the Printer is in Public Online mode and can be discovered by the Sender using the General Inquiry procedure.

- Reference

[2] 3

- Initial Condition

- The Printer is in Offline mode or Public Online mode.
- The Sender is in Idle mode.

- Test Procedure

1. Set the Printer to Public Online mode.
2. After the Printer is set to Public Online mode, perform a General Inquiry procedure to get a list of devices in the vicinity from the Sender.

- Test Condition

The Printer can be put into Public Online mode.

- Expected Outcome

Pass verdict

A list of discovered devices is available from the Sender, and the Printer is included in the list.

BPP/PR/DCS/BV-02-C [Limited Inquiry, Public Online]

- Test Purpose

Verify that the Printer is in Public Online mode and can be discovered by the Sender using the Limited Inquiry procedure.

- Reference

[2] 3

- Initial Condition

- The Printer is in Offline mode or Public Online mode.
- The Sender is in Idle mode.

- Test Procedure
 1. Set the Printer to Public Online mode. Set the Printer to Limited Discoverable mode.
 2. After the Printer is set to Public Online mode, perform a Limited Inquiry procedure to get a list of devices in the vicinity from the Sender.
- Expected Outcome

Pass verdict

A list of discovered devices is available from the Sender, and the Printer is included in the list.
- Notes

The Printer must be in both Public Online mode and in Limited Discoverable mode to be discovered with a Limited Inquiry.

BPP/PR/DCS/BV-03-C [Device Discovery, Public Online]

- Test Purpose

Verify that the Printer is in Public Online mode and can be discovered and connected by the Sender using the Device Discovery procedure.
- Reference

[2] 3
- Initial Condition
 - The Printer is in Offline mode or Public Online mode.
 - The Sender is in Idle mode.
- Test Procedure
 1. Set the Printer to Public Online mode.
 2. Perform a Device Discovery to get a list of devices in the vicinity from the Sender.
- Expected Outcome

Pass verdict

A list of discovered devices is available from the Sender, and the Printer is included in the list.

4.3.2 Private Online mode

Verify that the Printer supports Private Online mode and cannot be discovered by the Sender using General Inquiry or Limited Inquiry.

BPP/PR/DCS/BV-05-C [Inquiry, Private Online]

- Test Purpose

Verify that the Printer is in Private Online mode (not discoverable) and cannot be discovered by the Sender using the General or Limited Inquiry procedure.
- Reference

[2] 3



- Initial Condition
 - The Printer is in Offline mode or Private Online mode.
 - The Sender is in Idle mode.
- Test Procedure
 1. If the Sender supports Limited Inquiry, then the test is performed for both General and Limited Inquiry; otherwise, it is performed for only General Inquiry.
 2. Set the Printer to Private Online mode.
 3. Perform a General Inquiry to get a list of devices in the vicinity from the Sender.
 4. If supported, perform a Limited Inquiry to get a list of devices in the vicinity from the Sender.

- Expected Outcome

Pass verdict

After the General Inquiry, a list of discovered devices is available from the Sender, and the Printer under test is not included in the list.

After the Limited Inquiry, if performed, a list of discovered devices is available from the Sender, and the Printer under test is not included in the list.

4.3.3 Offline mode

Verify that the Printer supports Offline mode and can neither be discovered by nor connected to the Sender using General Inquiry or Limited Inquiry.

BPP/PR/DCS/BV-07-C [Inquiry, Offline]

- Test Purpose

Verify that the Printer is in Bluetooth Offline mode (not discoverable) and cannot be discovered by the Sender using the General Inquiry and/or Limited Inquiry procedure.

- Reference

[2] 3

- Initial Condition
 - The Printer is in Offline mode.
 - The Sender is in Idle mode.
- Test Procedure
 1. Set the Printer to Offline mode.
 2. Perform a General Inquiry to get a list of devices in the vicinity from the Sender.
 3. Perform a Limited Inquiry to get a list of devices in the vicinity from the Sender, if supported.

- Expected Outcome

Pass verdict

After the General Inquiry, a list of discovered devices is available from the Sender, and the Printer under test is not included in the list.

After the Limited Inquiry, a list of discovered devices is available from the Sender, and the Printer under test is not included in the list. (Not required if Limited Inquiry is not supported by the Sender.)



4.3.4 Bonding mode

Verify that the Printer and the Sender support Bonding mode and can be paired.

4.3.4.1 Bonding

- Test Purpose

Verify that the Printer can be bonded with the Sender and that the PIN codes are exchanged correctly.

Verify that the Sender can be bonded with the Printer and that the PIN codes are exchanged correctly.

- Reference

[2] 3

- Initial Condition

- The Printer is in Public Online mode and not currently bonded with the Sender device.
- The Sender is Ready.

- Test Case Configuration

Test Case
BPP/PR/DCS/BV-11-C [Bonding]
BPP/SD/DCS/BV-11-C [Bonding]

Table 4.7: Bonding test cases

- Test Procedure

1. Configure at least one of the devices (Sender or Printer) to require authentication.
2. Enter PIN codes (if required) (maximum of 16 digits) on both the Sender and the Printer, unless a fixed PIN code is used.
3. After the Bonding procedure executes, disconnect the Bluetooth baseband link (this can be accomplished by powering down, a disconnect function, or walking out of range). Note that some Senders may automatically disconnect the link after successful execution of the bonding function.
4. Re-establish the Bluetooth connection.
5. Send a job from the Sender to the Printer, and verify that no PIN is requested by either device as part of the transaction.

- Test Condition

The Printer can be made bondable.

The Sender provides a mechanism to enter a PIN in the case of a variable PIN.

- Expected Outcome

Pass verdict

Bonding was successful between the Printer and the Sender devices.

Once the second connection is established (following bonding and disconnecting), no request for a PIN code is made by either the Sender or the Printer.

4.4 OBEX Authentication

Verify that OBEX Authentication is employed correctly by the Printer and the Sender when the OBEX Printer is configured to issue an OBEX Authentication challenge to the Sender.

4.4.1 OBEX Authentication

Verify that the Printer (an OBEX Server) can successfully authenticate the Sender (an OBEX Client) during an OBEX Connect, Get, or Put operation. (Note that support for OBEX Authentication is optional on the Printer and mandatory on the Sender.)

4.4.1.1 OBEX Authentication, Printer Initiated

- Test Purpose

Verify that the Printer can successfully authenticate the OBEX Client during an OBEX Connect, Get, or Put operation when the Printer has been configured to do so.

Verify that the Sender (Client) can be authenticated by the OBEX Server.

- Reference

[2] 11.4.1.2

[5] Test S-AU-3

- Initial Condition

- The Printer is in Online mode and is configured to respond to an OBEX Connect, Get, or Put (see Notes, below) operation with an OBEX Authentication challenge.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/OA/BV-01-C [OBEX Authentication, Printer Initiated]
BPP/SD/OA/BV-01-C [OBEX Authentication, Printer Initiated]

Table 4.8: OBEX Authentication, Printer Initiated test cases

- Test Procedure

1. The Sender establishes active connection with the target Printer, if not already connected.
2. The Sender transmits an OBEX Connect/Get/Put as normal when sending a print job.
3. The Printer receives an OBEX Connect Request from the Sender.
4. The Printer responds to the Sender and issues an OBEX Authentication challenge.
5. The Sender indicates through the Upper Tester that the Printer is requesting Authentication, and accepts the Authentication Password from the user through the Upper Tester.
6. The Sender sends the requested Authentication information to the Printer.
7. Verify that the information from the Sender is correct and allows Connect/Get/Put to proceed in the Printer.

- Test Condition

The Printer is configured to issue an OBEX Authentication challenge.



- Expected Outcome

Pass verdict

The Sender accepts and transmits Authentication information to the Printer.

The print job completes as expected.

- Notes

This will require a Printer that can be configured, through a user interface or some other means, to enable an OBEX Authentication challenge.

The Sender device (Client) must have a user interface that allows the entry of authentication information (password, etc.).

4.4.2 OBEX Invalid Authentication

BPP/PR/OA/BI-01-C [OBEX Authentication, Invalid, Printer Initiated]

- Test Purpose

Verify that the Printer can successfully reject an OBEX Client that enters an invalid authentication code during an OBEX Connect, Get, or Put operation when the Printer has been configured to do OBEX Authentication.

- Reference

[2] 8.7

[5] Test S-AU-3

- Initial Condition

- The Printer is in Online mode and is configured to respond to an OBEX Connect, Get, or Put (see Notes, below) operation with an OBEX Authentication challenge.
- The Sender is in Idle mode or connected to target Printer.

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender transmits an OBEX Connect/Get/Put as normal when sending a print job.
3. The Printer receives an OBEX Connect Request from the Sender.
4. The Printer responds to the Sender and issues an OBEX Authentication challenge.
5. The Sender indicates through the UI that the Printer is requesting Authentication and accepts an Invalid Authentication Password from the user through the UI.
6. The Sender sends the Invalid Authentication information to the Printer.
7. Verify that the information from the Sender is invalid and disallows OBEX Connect/Get/Put from proceeding in the Printer.

- Test Condition

The Printer can be configured to perform an OBEX Authentication challenge.

If a Sender has no user interface and a Printer initiates OBEX Authentication, then interoperability cannot be guaranteed. The BPP specification [2] recommends that, in this case, OBEX Authentication is to be disabled on the Printer.



- Expected Outcome

Pass verdict

The Server does not allow OBEX Connect/Get/Put to proceed.

- Notes

This will require a printer that can be configured, through a user interface or some other means, to enable an OBEX Authentication challenge.

The Sender device (Client) must have a user interface that allows the entry of authentication information (password, etc.).

4.5 Direct Printing Services

Verify the Direct Printing Services and Job-Based Transfer features of the profile.

4.5.1 CreateJob

Verify that a print job is correctly configured.

4.5.1.1 Default Attributes, CreateJob

- Test Purpose

Verify that the Printer correctly prints a single document using its default settings when a CreateJob is used and that no attributes are included in the CreateJob operation.

Verify that the Sender properly configures and prints a default job using the CreateJob operation.

- Reference

[2] 7

- Initial Condition

- The Printer is in Online mode and is prepared to print.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/DPS/BV-01-C [Default Attributes, CreateJob]
BPP/SD/DPS/BV-01-C [Default Attributes, CreateJob]

Table 4.9: Default Attributes, CreateJob test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender sends single XHTML-Print document using the default Printer settings.
3. The Printer receives the document from the Sender, and prints using the default Printer configuration.

- Expected Outcome

Pass verdict

The document is printed according to the Printer's default configuration.

The Sender and the Printer return to the Ready State.



- Notes

It might not be possible to distinguish Simple Push printing and CreateJob with defaults, from a user perspective.

4.5.1.2 Supported Attributes, CreateJob

- Test Purpose

Verify that the Printer correctly prints a document with Printer-supported job attributes defined via a CreateJob operation.

Verify that the Sender can configure and print a job using the CreateJob operation.

- Reference

[2] 7

- Initial Condition

- The Printer is in Online mode and is prepared to print.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/DPS/BV-02-C [Supported Attributes, CreateJob]
BPP/SD/DPS/BV-02-C [Supported Attributes, CreateJob]

Table 4.10: Supported Attributes, CreateJob test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender sets some or all job attributes that are known to be fully supported by the Printer (see Notes, below) to values different from their default setting and then sends plain text (an XHTML print job can override the attribute values set by the Sender) document to the Printer.
3. The Printer receives the document from the Sender and prints using the Printer configuration set by the Sender.

- Expected Outcome

Pass verdict

The document is printed according to the configuration attributes set at the Sender.

The Sender and the Printer return to the Ready state.

- Notes

All attributes of the CreateJob request are mandatory for the Printer to, at a minimum, parse and interpret. However, the Printer manufacturer can choose which attributes are fully supported, in that they can be assigned values other than their default.

4.5.1.3 Unsupported Attributes, CreateJob

- Test Purpose

Verify that the Printer correctly prints a document when job Attributes not supported by the Printer are included in a CreateJob operation.

Verify that the Sender can configure and print a job using the CreateJob operation with any job parameters defined.

- Reference

[2] 7

- Initial Condition

- The Printer is in Online mode and is prepared to print.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/DPS/BV-03-C [Unsupported Attributes, CreateJob]
BPP/SD/DPS/BV-03-C [Unsupported Attributes, CreateJob]

Table 4.11: Unsupported Attributes, CreateJob test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender sends a single XHTML-Print document to the Printer.
3. The Sender sets at least one of the job parameters to a value different from the default value supported by the Printer. Include parameters (if any) that represent capabilities not fully supported by the Printer under test (see Notes, below).
4. The Printer receives the document from the Sender and prints using as much of the job configuration set by the Sender as possible.

- Expected Outcome

Pass verdict

The Sender and the Printer return to the Ready state.

The document is printed according to the configuration parameters set at the Sender, which are supported by the Printer.

- Notes

All attributes of the CreateJob request are mandatory for the Printer to, at a minimum, parse and interpret. However, the Printer manufacturer can choose which attributes are fully supported, in that they can be assigned values other than their default.

If all parameters are fully supported by the Printer, then this test can be omitted.

4.5.2 GetJobAttributes

Verify that the status of a print job is correctly requested and reported.

4.5.2.1 During printing, GetJobAttributes

- Test Purpose

Verify that the Printer correctly reports a complete job status while a job is printing.

Verify that the Sender correctly reports complete job status while a job is printing.

- Reference

[2] 7

- Initial Condition

- The Printer is in Online mode and is prepared to print.

- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/DPS/BV-04-C [During printing, GetJobAttributes]
BPP/SD/DPS/BV-04-C [During printing, GetJobAttributes]

Table 4.12: During printing, GetJobAttributes test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.

2. The Sender sends a multi-page XHTML-Print document to the Printer using default job configuration parameters.

3. While the Printer is printing, the Sender requests the default job status from the Printer.

4. The Printer receives the document from the Sender and prints using the Printer configuration set by the Sender.

- Expected Outcome

Pass verdict

The Sender and the Printer return to the Ready state.

The Printer completes the print job correctly.

The job status returned by the Printer accurately reports the observed status of the job.

4.5.2.2 Requested Attributes, GetJobAttributes

- Test Purpose

Verify that the Printer correctly reports only job status attributes that are explicitly requested by the Sender.

Verify that the Sender correctly requests and reports job status while a job is printing.

- Reference

[2] 7

- Initial Condition
 - The Printer is in Online mode and is prepared to print.
 - The Sender is in Idle mode or connected to the target Printer.
- Test Case Configuration

Test Case
BPP/PR/DPS/BV-05-C [Requested Attributes, GetJobAttributes]
BPP/SD/DPS/BV-05-C [Requested Attributes, GetJobAttributes]

Table 4.13: Requested Attributes, GetJobAttributes test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected. It sends a multi-page XHTML-Print document to the Printer using default job configuration attributes.
 2. While the Printer is printing, the Sender Upper Tester requests one or more job status attributes.
 3. The Printer receives the document from the Sender and prints using the Printer configuration set by the Sender.

- Expected Outcome

Pass verdict

The Sender and the Printer return to the Ready state.

The job status returned by the Printer includes only those status attributes requested by the Sender.

The Printer completes the print job correctly.

Each attribute returned is an accurate report of the observed status of the job.

- Notes

The Sender must make available, either via its UI or through a manufacturer-provided procedure, ALL the attributes that are returned.

The Printer's IXIT [11] supplies the list of attributes that it supports and the specific values of those attributes that it maintains and reports. All attributes of the GetJobAttributes request are mandatory for the Printer to the extent that the Printer is to respond with correctly formed and valid information. However, the Printer manufacturer can choose which values of specific attributes are supported and in what form they are reported.

The Sender's IXIT [11] supplies the list of attributes that it can request.

4.5.3 CancelJob

Verify that the Sender can cancel a print job via the JobID, and verify that the Printer returns the correct status-response attributes to the Sender under specific circumstances.

4.5.3.1 Normal Request, CancelJob

- Test Purpose

Verify that the Sender device can cancel a specific job, identified by its JobID, while the job is printing.

Verify that the Sender makes correct use of the CancelJob request while the Printer is printing the job.



- Reference
[2] 7
- Initial Condition
 - The Printer is in Online mode and is prepared to print.
 - The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/DPS/BV-06-C [Normal Request, CancelJob]
BPP/SD/DPS/BV-06-C [Normal Request, CancelJob]

Table 4.14: Normal Request, CancelJob test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender initiates a large multi-page XHTML-Print print job.
 3. The Sender sends a CancelJob request to thePrinter within a period of time following the initiation of the print job such that the Printer still has the ability to cancel the job. For example, do not send the CancelJob request while the last page is printing, since the Printer may not then be able to act on the request.
 4. It is recommended that the Printer manufacturer indicate in the IXIT [11] the minimum number of pages that are still to be printed before which a CancelJob can be sent for it to be successful.
 5. The Printer prints the large multi-page text job.
- Expected Outcome

Pass verdict

The Printer cancels the job.

The Sender and the Printer return to the Ready state.

4.5.4 GetPrinterAttributes

Verify that the Printer attributes are correctly passed to the Sender.

4.5.4.1 All Attributes, GetPrinterAttributes

- Test Purpose

Verify that the Printer correctly responds to a GetPrinterAttributes request.

Verify that the Sender properly configures a GetPrinterAttributes request operation.
- Reference
[2] 7
- Initial Condition
 - The Printer is in Online mode and is prepared to print.
 - The Sender is in Idle mode or connected to the target Printer.



- Test Case Configuration

Test Case
BPP/PR/DPS/BV-07-C [All Attributes, GetPrinterAttributes]
BPP/SD/DPS/BV-07-C [All Attributes, GetPrinterAttributes]

Table 4.15: All Attributes, GetPrinterAttributes test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender requests all Printer parameters by the Sender's Upper Tester or through a manufacturer-provided procedure.
 3. The Printer has no specific test actions necessary.

- Expected Outcome

Pass verdict

The Sender gets a complete list of Printer attributes.

The Sender and the Printer return to the Ready state.

4.5.4.2 RequestedAttributes, GetPrinterAttributes

- Test Purpose

Verify that the Printer correctly responds to a GetPrinterAttributes request with the attributes requested by the Sender.

Verify that the Sender properly configures a GetPrinterAttributes request operation and requests one or more arbitrarily selected attributes.

- Reference

[2] 7

- Initial Condition

- The Printer is in Online mode and is prepared to print.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/DPS/BV-08-C [RequestedAttributes, GetPrinterAttributes]
BPP/SD/DPS/BV-08-C [RequestedAttributes, GetPrinterAttributes]

Table 4.16: RequestedAttributes, GetPrinterAttributes test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender requests one or more Printer parameters.
 3. The Printer has no specific test actions necessary.



- Expected Outcome

Pass verdict

The Sender and the Printer return to the Ready state.

The partial list of Printer attributes is returned to the Sender. The contents of the partial list correspond to those selected by the Sender.

- Notes

This test can be performed only if the Sender can request, via its UI or a manufacturer-provided procedure, selected attributes that are supported by the Printer, and the Sender must make available, via its UI or manufacturer-provided procedure, all the attributes that are returned.

The Printer's IXIT [11] supplies the list of attributes that it supports.

The Sender's IXIT [11] supplies the list of attributes that it can request.

It may not be possible to differentiate between the results of this test and test [BPP/PR/DPS/BV-07-C \[All Attributes, GetPrinterAttributes\]](#) or [BPP/SD/DPS/BV-07-C \[All Attributes, GetPrinterAttributes\]](#) in Section 4.5.4.1, [All Attributes, GetPrinterAttributes](#), if, for example, a request for attributes will always return a predetermined set.

It is possible that the Sender will be able to request only a predetermined set of attributes.

4.5.5 GetEvent

Verify that the Printer can provide notification of changes in its status to the Sender. In the Basic Printing Profile, this is supported using a separate OBEX channel, the Status Channel.

4.5.5.1 Media Empty, GetEvent

- Test Purpose

Verify that the Printer can provide the status of a specific print job as Stopped when the Sender device provides a JobID and the Printer runs out of media.

Verify that the Sender makes correct use of the GetEvent request while the job is stopped.

- Reference

[2] 7

- Initial Condition

- When testing an IUT that is a Sender, a Spooling printer is not used.
- The Printer is in Online mode with paper in the printer input bins, but less than what will be required for the job to be printed.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/DPS/BV-09-C [Media Empty, GetEvent]
BPP/SD/DPS/BV-09-C [Media Empty, GetEvent]

Table 4.17: Media Empty, GetEvent test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender sends an XHTML-Print document to the Printer that requires more pages to print than there is paper in the input medium for the Printer.
 3. The Printer prints the simple, text-only XHTML-Print document.
 4. When the Printer runs out of paper, add sufficient paper to the input medium to allow completion of the print job, and indicate to the Printer that it should continue.

- Expected Outcome

Pass verdict

The Printer indicates that it is out of media.

The job prints correctly after media is supplied, but the Sender is allowed to disconnect the job channel when the Sender receives the “media empty” message from the Printer.

The Sender and the Printer return to the Ready state.

4.6 Object Formats

Verify that specified object formats are correctly printed. For submitting the different document formats, either the Simple Push Transfer Model or the Job Based Method may be chosen.

4.6.1 XHTML-Print

Verify that compliant devices correctly print objects formatted using XHTML-Print. Each of the tests below addresses a reasonable subset of the XHTML-Print tags in such a way as to keep the number of tests down and still allow the ability to identify causes of test failure. The set of tests is the primary vehicle for establishing printer compliance to XHTML-Print [6].

In support of the test procedures defined in Sections 4.6.1.1 – 4.6.1.5, below, specific tests have been designed and are available through the Bluetooth SIG [8]. These may not be applicable to all printers, in which case the manufacturer may generate comparable files for conformance testing. Tests are self-documented; that is, each test provides a mechanism for determining, through visual inspection, whether the test succeeds or fails. Note: Because of the indeterminate nature of XHTML formatting, pass/fail for interoperability is subjective.

4.6.1.1 Printer, XHTML-Print: Print Tags

- Test Purpose

Verify that a Printer can correctly print an XHTML-Print object that makes use of most of the tags and constructs defined in the XHTML-Print specification under Print Tags.

Verify that the Sender transmits the specified test file to the Printer. This test is not intended to test the Sender’s ability to generate XHTML-Print data.

- Reference

[2] 10

[6] 3.1, XHTML-Print



- Initial Condition
 - The Printer is in Online mode and is prepared to print.
 - The Sender is in Idle mode or connected to the target Printer. The documents to be printed are stored on the Sender device and have been generated manually on the Sender or retrieved from an external source.

- Test Case Configuration

Test Case
BPP/PR/OF/BV-01-C [Printer, XHTML-Print: Print Tags]
BPP/SD/OF/BV-01-C [Printer, XHTML-Print: Print Tags]

Table 4.18: Printer, XHTML-Print: Print Tags test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender sends these test files to the Printer:
 - OF-BV-01-I-A-v1.0
 - OF-BV-01-I-B-v1.0
 - OF-BV-01-I-C-v1.0
 3. The Printer receives and prints the test files.

- Expected Outcome

Pass verdict

All printed documents from the test will be evaluated, both from the standpoint of the stated expected results incorporated into a document itself, as well as external descriptions or samples of expected output or behavior. The test passes if all documents conform, within reason, to the expected output or behavior, as described.

- Notes

When qualifying a Printer, a Sender that can conform to the Test Procedure laid out above is employed.

4.6.1.2 Printer, XHTML-Print: CSS

- Test Purpose

Verify that a Printer can correctly print an XHTML-Print object that makes use of most constructs defined in the XHTML-Print specification under Cascading Style Sheets (CSSs).

Verify that the Sender transmits the specified test files to the Printer. This test is not intended to test the Sender's ability to generate XHTML-Print data.

- Reference

[2] 10

[6] 5.3.2, XHTML-Print

- Initial Condition
 - The Printer is in Online mode and is prepared to print.
 - The Sender is in Idle mode or connected to the target Printer. The documents to be printed are stored on the Sender device and have been generated manually on the Sender or retrieved from an external source.

- Test Case Configuration

Test Case
BPP/PR/OF/BV-02-C [Printer, XHTML-Print: CSS]
BPP/SD/OF/BV-02-C [Printer, XHTML-Print: CSS]

Table 4.19: Printer, XHTML-Print: CSS test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender sends these test files to the Printer:
 - OF-BV-02-I-A-v1.0
 - OF-BV-02-I-B-v1.0
 - OF-BV-02-I-C-v1.0
 - OF-BV-02-I-D-v1.0
 - OF-BV-02-I-E-v1.0
 - OF-BV-02-I-F-v1.0
 - OF-BV-02-I-G-v1.0
 - OF-BV-02-I-H-v1.0
 3. The Printer receives and prints the files from the Sender.

- Expected Outcome

Pass verdict

All printed documents from the test will be evaluated based on the stated expected results incorporated into the document itself. The test passes if it conforms to the expected output or behavior, as described.

- Notes

When qualifying a Printer, a Sender that can conform to the Test Procedure laid out above is employed.

4.6.1.3 Printer, XHTML-Print

- Test Purpose

Verify that the Printer receives and prints the specified test file.

Verify that the Sender generates acceptable printed output from applications that produce XHTML-Print files. This is the primary test of Sender compliance with XHTML-Print.

- Reference

[2] 10

[6] XHTML-Print



- Initial Condition
 - The Printer is in Online mode and is prepared to print.
 - The Sender is in Idle mode or connected to the target Printer.
- Test Case Configuration

Test Case
BPP/PR/OF/BV-03-C [Printer, XHTML-Print]
BPP/SD/OF/BV-03-C [Printer, XHTML-Print]

Table 4.20: Printer, XHTML-Print test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. For one Sender application that produces XHTML-Print files, prepare and send a print object to the Printer.
 3. The Printer accepts, renders, and prints the XHTML-Print files from the Sender.

- Expected Outcome

Pass verdict

Each printed document is judged to correspond in form and intent to the object sent by the sending application.

- Notes

This test verifies the full range of XHTML-Print capability supported by the Sender. Several generated objects using different settings or configurations of the Sender for each application may be required to cover all of the supported features of the Sender. The Printer is assumed to correctly render and print XHTML-Print files.

4.6.1.4 XHTML-Print: Referenced Images

- Test Purpose

Verify that a Printer can lay out and print XHTML-Print files that contain referenced images in JPEG format.

Verify that a Sender can correctly construct and cause to print a document that contains a referenced JPEG image.

- Reference

[2] 10

- Initial Condition

- The Printer is in Online mode and is prepared to print.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/OF/BV-04-C [XHTML-Print: Referenced Images]
BPP/SD/OF/BV-04-C [XHTML-Print: Referenced Images]

Table 4.21: XHTML-Print: Referenced Images test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender sends the Printer a file containing more than one referenced JPEG image.
3. The Printer accepts, renders, and prints the file and its referenced images sent from the Sender.

- Expected Outcome

Pass verdict

Printed output from tests contains the rendered images in a format consistent with the intent, given the constraints imposed by the particular Printer (i.e., the images that should be printed are printed).

4.6.1.5 XHTML-Print: Enhanced Layout Extension

- Test Purpose

Verify that a Printer can correctly print an XHTML-Print object that makes use of the additional style sheet properties and image formats required by the Enhanced Layout Extension of the XHTML-Print specification.

Verify that the Sender transmits the specified test file to the Printer. This test is not intended to test the Sender's ability to generate XHTML-Print data.

- Reference

[2] 10

[6] XHTML-Print, 6.4

- Initial Condition

- The Printer is in Online mode and is prepared to print.
- The Sender is in Idle mode or connected to the target Printer. The documents to be printed are stored on the Sender device and have been generated manually on the Sender or retrieved from an external source.

- Test Case Configuration

Test Case
BPP/PR/OF/BV-05-C [XHTML-Print: Enhanced Layout Extension]
BPP/SD/OF/BV-05-C [XHTML-Print: Enhanced Layout Extension]

Table 4.22: XHTML-Print: Enhanced Layout Extension test cases

- Test Procedure

1. The Sender sends the following test files to the Printer:
 - OF-BV-05-I-A-v1.0
 - OF-BV-05-I-B-v1.0
 - OF-BV-05-I-C-v1.0



- OF-BV-05-I-D-v1.0
 - OF-BV-05-I-E-v1.0
 - OF-BV-05-I-F-v1.0
 - OF-BV-05-I-G-v1.0
 - OF-BV-05-I-H-v1.0
2. The Printer receives and prints the files from the Sender.
- Expected Outcome
- Because of the indeterminate nature of XHTML formatting, pass/fail for interoperability is subjective.

Pass verdict

All printed documents from the test will be evaluated, both from the standpoint of the stated expected results incorporated into a document itself, as well as external descriptions or samples of expected output or behavior. The test will be said to have passed if it conforms, within reason, to the expected output or behavior, as described.

4.6.2 Other Document Formats

4.6.2.1 Document, Non-XHTML-Print

- Test Purpose
- Verify that the Printer correctly prints documents using formats that it claims to support, other than XHTML-Print.
- Verify that the Sender correctly sends non-XHTML-Print documents to the Printer.

- Reference

[2] 6, 10

- Initial Condition

- The Printer is in Online mode and is prepared to print.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/OF/BV-06-C [Document, Non-XHTML-Print]
BPP/SD/OF/BV-06-C [Document, Non-XHTML-Print]

Table 4.23: Document, Non-XHTML-Print test cases

- Test Procedure
1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender sends a single document using one or more of the formats, other than XHTML-Print, offered by the Printer.
 3. The Printer receives and prints the document from the Sender.
- Expected Outcome

Pass verdict

The document is printed correctly according to the Printer's default configuration.

The Sender and the Printer return to the Ready state.



- Notes

This test is performed once for at least one of the document types (other than XHTML-Print documents) supported by both the Printer and the Sender. Each document format to be tested is separately itemized in the ICS document.

4.6.3 vCard

Verify that compliant devices correctly print vCard version 2.1 objects.

4.6.3.1 Default, vCard

- Test Purpose

Verify that a Printer can correctly print vCard objects using default settings.

Verify that a Sender can correctly create and cause a vCard to be printed using default settings.

- Reference

[2] 10

- Initial Condition

- The Printer is in Online mode and is prepared to print.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/OF/BV-07-C [Default, vCard]
BPP/SD/OF/BV-07-C [Default, vCard]

Table 4.24: Default, vCard test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender selects a single vCard object and transmits it to the Printer.
3. The Printer accepts and prints the vCard object sent.

- Expected Outcome

Pass verdict

The output from the Printer is a recognizable representation of the selected vCard.

4.6.3.2 Cards per Page, vCard

- Test Purpose

Verify that a Printer can correctly print several vCard objects per page when requested to do so by the Sender.

Verify that a Sender can correctly designate a set or category of vCards, specify the number of vCards to print per page, and send the designated vCards to the Printer.

- Reference

[2] 10



- Initial Condition
 - The Printer is in Online mode and is prepared to print.
 - The Sender is in Idle mode or connected to the target Printer.
- Test Case Configuration

Test Case
BPP/PR/OF/BV-08-C [Cards per Page, vCard]
BPP/SD/OF/BV-08-C [Cards per Page, vCard]

Table 4.25: Cards per Page, vCard test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender selects a set of vCards or a category of vCards to send to the Printer.
 3. Specify, if the Sender's Upper Tester allows, the desired number of vCards to print per page.
 4. The Sender sends the selected vCards to the Printer. (This step is not required if the Sender has no Upper Tester or if the Upper Tester does not allow the number of vCards to be selected.)
 5. The Printer receives and prints the specified set of vCards.
- Expected Outcome

Pass verdict

The Printer prints the selected set or category of vCards.

The number of vCards per printed page is equal to the number of vCards per page selected, if selection was allowed. Subsequent to the first vCard printed on a page, any succeeding vCards that can fit on that page are printed on that page, taking margins into account. (Note that some variation here can occur and is allowed, based on whether the Printer's selection of fonts and symbols will allow the Printer to lay out a page with the requisite number of vCards.)

The number of vCards printed is equal to the number selected or in the category.

The output from the Printer is a reasonable representation of the selected set of vCards.

- Uncertainties

vCards can include nested image references. Whether to support such nesting is at the discretion of the manufacturer.
- Notes

How a set of vCards is selected depends on the application supplied by the Sender. In some cases, it is possible to select a series of individual cards; in others, only a category of vCards can be selected.

4.6.3.3 Card Layout, vCard

- Test Purpose

Verify that a Printer can correctly print vCard object(s) using an alternate layout when requested by the Sender.

Verify that a Sender can correctly create and request vCard object(s) to be printed using an alternate layout.

- Reference
[\[2\]](#) 10
- Initial Condition
 - The Printer is in Online mode and is prepared to print.
 - The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/OF/BV-09-C [Card Layout, vCard]
BPP/SD/OF/BV-09-C [Card Layout, vCard]

Table 4.26: Card Layout, vCard test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender selects an alternate layout, as specified in the ICS, e.g., business card, and one or more vCard objects and causes them to be sent to the Printer.
 3. If it is possible to send more than one vCard object from the Sender with a single operation, then more than one vCard object is sent.
 4. The Printer receives vCard object(s) and prints it (them) with the specified layout.

- Expected Outcome

Pass verdict

The Printer prints the requisite number of vCard objects in a form that preserves the intent of the layout selection, and the data values are correct.

- Notes

vCards can include image references. Whether to support such nesting is at the discretion of the manufacturer.

There is an underlying assumption that the header of an OBEX Put will be used to specify layout parameters.

4.6.4 vCalendar

Verify that compliant devices correctly print vCalendar version 1.0 objects.

4.6.4.1 Default, vCalendar

- Test Purpose

Verify that a Printer can correctly print one vCalendar object using default print parameter settings.

Verify that a Sender can correctly create and cause to print a vCalendar object using default print parameter settings.

- Reference

[\[2\]](#) 10

- Initial Condition
 - The Printer is in Online mode and is prepared to print.
 - The Sender is in Idle mode or connected to the target Printer.
- Test Case Configuration

Test Case
BPP/PR/OF/BV-10-C [Default, vCalendar]
BPP/SD/OF/BV-10-C [Default, vCalendar]

Table 4.27: Default, vCalendar test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender selects a vCalendar entry (event) from a vCalendar display and causes it to be transmitted to the Printer. Alternately, an application on the Sender device can send a predefined vCalendar file to the Printer.
 3. The Printer receives and prints the specified vCalendar file.
- Expected Outcome

Pass verdict

The Printer prints the selected vCalendar event, and all relevant information is intact and recognizable.

4.6.4.2 Alternate View, vCalendar

- Test Purpose

Verify that a Printer can correctly print a vCalendar object using a calendar layout (Single, Daily, Weekly, or Monthly) that is different from the default layout, when requested by the Sender.

Verify that a Sender can correctly create and cause to print a vCalendar object with a layout (Single, Daily, Weekly, or Monthly) that is different from the default layout.
- Reference

[\[2\]](#) 10
- Initial Condition
 - The Printer is in Online mode and is prepared to print.
 - The Sender is in Idle mode or connected to the target Printer.
- Test Case Configuration

Test Case
BPP/PR/OF/BV-11-C [Alternate View, vCalendar]
BPP/SD/OF/BV-11-C [Alternate View, vCalendar]

Table 4.28: Alternate View, vCalendar test cases



- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender selects a daily, weekly, or monthly view from the calendar interface and sends it to the Printer. The Sender transmits all events in the range of the selected view to ensure that all objects for that view are printed.
 3. The Printer receives and prints the specified vCalendar view.

- Expected Outcome

Pass verdict

The selected calendar format is printed so that the intent of the selection is observed and the data values are correct.

- Notes

This test is highly dependent on the manufacturer’s description of what the Printer will do when receiving this test. For example, a month view can come out as just a list of events from the beginning to the end of the month, or it could be in a formatted table. The starting day may vary, as well as the language in which the information is presented.

4.6.4.3 Several per page, vCalendar

- Test Purpose

Verify that a Printer can correctly print multiple vCalendar objects per page when requested by the Sender. That is, given a particular layout (e.g., “Weekly”), a starting point, and the number of such objects to print, verify that the specified number of successive instances of the specified object is printed on a page (assuming they will all fit).

Verify that a Sender can correctly create and cause to print several vCalendar objects per page.

- Reference

[2] 10

- Initial Condition

- The Printer is in Online mode and is prepared to print.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/OF/BV-12-C [Several per page, vCalendar]
BPP/SD/OF/BV-12-C [Several per page, vCalendar]

Table 4.29: Several per page, vCalendar test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender selects a layout and the number of objects per page to be printed, if possible, then sends the calendar data to the Printer.
3. The Printer receives and prints the specified vCalendar data.

- Expected Outcome

Pass verdict

The Printer prints the requisite number of selected calendar objects on a page in a form that preserves the intent of the selection, and the data values are correct. Subsequent to the first vCalendar object printed on a page, any succeeding vCalendar objects that can fit on that page are printed on that page, taking margins into account.

- Notes

Printer constraints may necessitate violating the page boundary to accommodate the number of objects requested.

4.6.5 vMessage

Verify that compliant devices correctly print vMessages (version 1.1).

4.6.5.1 Default, vMessage

- Test Purpose

Verify that the Printer can correctly print a vMessage (version 1.1) object.

Verify that the Sender can correctly create and cause a vMessage (version 1.1) to be printed.

- Reference

[2] 10

- Initial Condition

- The Printer is in Online mode and prepared to print.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/OF/BV-13-C [Default, vMessage]
BPP/SD/OF/BV-13-C [Default, vMessage]

Table 4.30: Default, vMessage test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender selects a message to be transmitted to the Printer and sends it.
3. The Printer receives and prints the specified vMessage.

- Expected Outcome

Pass verdict

The message is printed as expected on the receiving Printer.

- Uncertainties

vMessages may contain nested vCards. If the vMessage to be printed contains nested vCards, then they may or may not be printed; however, the message content is always printed.

4.6.6 Basic Text

Verify that compliant devices correctly print Basic Text.

4.6.6.1 Default, Basic Text

- Test Purpose

Verify that a Printer correctly prints a document formatted using only Basic Text as defined in the Basic Printing Profile Specification [2].

Verify that a Sender can correctly send a document formatted using only Basic Text as defined in the Basic Printing Profile Specification [2].

- Reference

[2] 10

- Initial Condition

- The Printer is in Online mode and is prepared to print.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/OF/BV-14-C [Default, Basic Text]
BPP/SD/OF/BV-14-C [Default, Basic Text]

Table 4.31: Default, Basic Text test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The user selects an appropriate application on the Sender that supports Basic Text, constructs a document, and sends it to the Printer. The document contains at least one paragraph with CRLF characters and at least one without CRLF characters.
3. The Printer receives and prints the specified document.

- Expected Outcome

Pass verdict

The Printer prints the text entered into the application and sent to the Printer.

The Printer preserves word boundaries.

The Printer wraps text in the paragraph without CRLF characters, and there is no missing text.

The Printer formats the paragraph with CRLF characters in compliance with the CRLF characters.

- Notes

The Basic Printing Profile Specification [2] states that CRLF characters be processed by the Printer to output preformatted text. In the absence of the CRLF characters in a data stream, the Printer appropriately wraps the text. Basic Text tests test these requirements by including at least one paragraph with CRLF characters and at least one without CRLF characters.

4.6.7 International

Verify that devices correctly print alternate character repertoires.

4.6.7.1 International

- Test Purpose

Verify that a Printer correctly prints a document formatted using any character repertoire it claims to support.

Verify that a Sender can correctly cause to print a document formatted using any character repertoire it claims to support.

- Reference

[2] 10, 12.2.3

- Initial Condition

- The Printer is in Online mode and is prepared to print.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/OF/BV-15-C [International]
BPP/SD/OF/BV-15-C [International]

Table 4.32: International test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender is configured to communicate in a language not supported by ISO 8859-1. The user selects an appropriate application on the Sender, constructs a document, and sends the document to the Printer under test.
3. The Printer receives the document from the Sender and prints it.

- Expected Outcome

Pass verdict

The document sent to the Printer is printed in the language sent by the Sender.

- Notes

Selected character repertoires need to be supported by both the Printer and the Sender for this test to be executed.

4.7 Simple Push Transfer Model

Verify the Simple Push Transfer Model for printing.

4.7.1 Simple Push

Verify that documents are correctly printed using the Simple Push model of printing.

4.7.1.1 XHTML-Print: Simple Push

- Test Purpose

Verify that the Printer correctly prints a single XHTML-Print document using its default settings when no CreateJob precedes the sending of print data to the Printer.

Verify that the Sender properly uses the Simple Push model for printing an XHTML-Print document.

- Reference

[2] 6

- Initial Condition

- The Printer is in Online mode and is prepared to print.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/SP/BV-01-C [XHTML-Print: Simple Push]
BPP/SD/SP/BV-01-C [XHTML-Print: Simple Push]

Table 4.33: XHTML-Print: Simple Push test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender selects the Printer and sends a single document using the Simple Push method.
3. The Printer receives the document from the Sender and prints using the default printer configuration.

- Expected Outcome

Pass verdict

The Printer prints the document correctly according to the Printer's default configuration.

The Sender and the Printer return to the Ready state.

- Notes

From the user's perspective, it might not be possible to distinguish Simple Push printing and CreateJob with defaults.

4.8 Enhanced Layout

Verify the Enhanced Layout capabilities.

4.8.1 CreatePreciseJob

Verify that an Enhanced Layout print job is correctly processed.

BPP/PR/EL/BV-01-C [CreatePreciseJob, Supported Attributes]

- Test Purpose

Verify that the Printer correctly processes a job initiated with a CreatePreciseJob operation. If all supplied attributes in the CreatePreciseJob request are fully supported by the Printer, then the Printer prints the document correctly (see Notes, below).

- Reference

[2] 7.2

- Initial Condition

- The Printer is in Online mode and is prepared to print.
- The Sender is in Idle mode or connected to the target Printer.

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender selects at least one of the attributes supported by the Printer for printing the document (see Notes).
3. The Sender sends an Enhanced Layout document to the Printer.
4. The Printer receives the document from the Sender and processes it using the printer configuration set by the Sender.

- Expected Outcome

Pass verdict

The Printer prints the document according to the configuration attributes specified by the Sender.

The Sender and the Printer return to the Ready state.

- Notes

All attributes of the CreatePreciseJob request are mandatory for the Printer to, at minimum, parse and interpret. However, the Printer manufacturer can choose which attributes are fully supported, in that they can be assigned values other than their default.

The manufacturer of the Printer is to provide via the IXIT [11] information regarding which attribute values the Printer supports.

4.8.1.1 CreatePreciseJob, Unsupported Attributes

- Test Purpose

Verify that the Printer correctly aborts printing a document when job attributes not fully supported by the Printer are included in a CreatePreciseJob operation (see Notes, below).

Verify that the Sender transmits a CreatePreciseJob with attributes known not to be fully supported by the Printer.



- Reference
[\[2\] 7.2](#)
- Initial Condition
 - The Printer is in Online mode and is prepared to print.
 - The Sender is in Idle mode or connected to the target Printer.
- Test Case Configuration

Test Case
BPP/PR/EL/BV-02-C [CreatePreciseJob, Unsupported Attributes]
BPP/SD/EL/BV-02-C [CreatePreciseJob, Unsupported Attributes]

Table 4.34: *CreatePreciseJob, Unsupported Attributes* test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender sends a job to the Printer that includes non-fully-supported attributes in the CreatePreciseJob operation.
 3. The Printer receives the document from the Sender and processes it using the printer configuration set by the Sender.
- Expected Outcome

Pass verdict

The Printer does not print the document.

The Sender and the Printer return to the Ready state.
- Notes

All attributes of the CreatePreciseJob request are mandatory for the Printer to, at minimum, parse and interpret. However, the Printer manufacturer can choose which attributes are fully supported, in that they can be assigned values other than their default.

When qualifying a Printer, a Sender with the ability to conform to the Test Procedure laid out above is employed.

4.8.2 GetMargins

Verify that margin information is correctly communicated from the Printer to the Sender.

4.8.2.1 Request, GetMargins

- Test Purpose

Verify that the Printer correctly reports margin information upon receipt of a GetMargins operation.

Verify that the Sender can request margin information from a Printer and display that information to the user.
- Reference
[\[2\] 7.2](#)



- Initial Condition
 - The Printer is in Online mode and is prepared to print.
 - The Sender is in Idle mode or connected to the target Printer.
- Test Case Configuration

Test Case
BPP/PR/EL/BV-03-C [Request, GetMargins]
BPP/SD/EL/BV-03-C [Request, GetMargins]

Table 4.35: Request, GetMargins test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. Using the Sender's user interface, the Sender requests margin information from the Printer.
 3. The Printer responds automatically (without user intervention) to the GetMargins request.
- Expected Outcome

Pass verdict

The Printer does not print a document.

The Sender's user interface correctly reports the Printer's margin information.

The Sender and the Printer return to the Ready state.

4.8.3 XHTML-Print Enhanced Layout

Verify that XHTML-Print Enhanced Layout documents are correctly created and interpreted.

4.8.3.1 XHTML-Print Enhanced Layout

- Test Purpose

Verify that a Printer can correctly print an XHTML-Print object that makes use of the additional style sheet properties and image formats required by the Enhanced Layout Extension of the XHTML-Print specification.

Verify that a Sender can correctly generate an XHTML-Print object that makes use of the additional style sheet properties and image formats required by the Enhanced Layout Extension of the XHTML-Print specification.
- Reference

[\[2\]](#) 7.2
- Initial Condition
 - The Printer is in Online mode and is prepared to print.
 - The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/EL/BV-04-C [XHTML-Print Enhanced Layout]
BPP/SD/EL/BV-04-C [XHTML-Print Enhanced Layout]

Table 4.36: XHTML-Print Enhanced Layout test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender sends the Printer an XHTML-Print job using Enhanced Layout constructs.
 3. The Printer renders the Enhanced Layout XHTML-Print job.

- Expected Outcome

Pass verdict

The Printer correctly prints the document.

The Sender and the Printer return to the Ready state.

4.9 Reflected User Interface (RUI)

Verify Reflected User Interface (RUI) capabilities.

The RUI test cases can only be performed if the Sender and the Printer support the same mark-up language (HTML, WML, etc). These test cases are performed for one markup language that is supported.

A Sender with the ability to conform to the procedures is employed in this set of tests.

The ability for a Sender to recognize that RUI is available from a Printer, perform a request for an RUI, and other RUI commands or procedures is product dependent.

4.9.1 Administrative Control

Verify that the Printer can present a user interface to the Sender and accept any control response provided by the Sender.

4.9.1.1 Administrative Reflected UI Service

- Test Purpose

Verify that the Printer can send an Administrative RUI to the Sender and can be controlled by the options selected.

Verify that the Sender can request and display an Administrative RUI and can return the form with selected options.

- Reference

[2] 9

- Initial Condition

- The Printer is in Public Online mode and can deliver an Administrative RUI.
- The Sender is in Idle mode or connected to the target Printer.
- The Sender can display an RUI and accept RUI input.



- Test Case Configuration

Test Case
BPP/PR/RUI/BV-01-C [Administrative Reflected UI Service]
BPP/SD/RUI/BV-01-C [Administrative Reflected UI Service]

Table 4.37: Administrative Reflected UI Service test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender discovers that the Printer supports RUI and requests the administrative RUI in a format that the Sender can understand and display.
 3. The Printer returns the administrative RUI to the Sender.
 4. The Sender displays the RUI and allows the user to make a selection. It sends the result of the selection to the Printer.
 5. The Printer performs the action selected through the RUI.

- Expected Outcome

Pass verdict

The Administrative RUI is displayed on the Sender.

The controlled feature on the Printer has changed to the expected state, or the action requested has been executed.

- Notes

The Administrative RUI page will contain an element whose selection will be verifiable.

4.9.2 Transactional Control

Verify that the Printer can present a user interface to the Sender and accept any control response provided by the Sender.

Verify that the Printer can forward a user interface generated by the Print Service (if supported).

Verify that the RUI works for both Bluetooth Print-By-Reference (PBR) and Bluetooth Direct Printing Service (DPS).

4.9.2.1 PBR Reflected UI Service

- Test Purpose

Verify that the Printer can send a user interface and forward to the Sender RUIs submitted by a Print Service. Once the RUI selections have been passed between the Printer, the Printer Service, and the Sender, the Printer will print the job offered by the Print Service.

Verify that the Sender can interactively control a print job when presented with an RUI submitted by the Printer and by a Print Service.

- Reference

[2] 9



- Initial Condition
 - The Printer is in Public Online mode and can deliver an RUI.
 - The Printer is in an active connection to a network.
 - The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/RUI/BV-02-C [PBR Reflected UI Service]
BPP/SD/RUI/BV-02-C [PBR Reflected UI Service]

Table 4.38: PBR Reflected UI Service test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender discovers that the Printer supports RUI. It submits a PBR job that can be controlled by an RUI that also requires an RUI from the Print Service, e.g., authentication.
 3. The Printer returns the PBR RUI to the Sender.
 4. The Sender displays the RUI and allows the user to make a selection. It sends the result of the selection to the Printer.
 5. The Printer forwards the request to the Print Service. It accepts the Print Service RUI and forwards it to the Sender.
 6. The Sender displays the RUI and allows the user to make a selection.
 7. The Sender sends the result of the selection to the Printer.
 8. The Printer forwards the RUI form to the Print Service.
 9. The Printer accepts the Print Job from the Print Service and sends the status to the Sender.

- Expected Outcome

Pass verdict

The job configuration RUI followed by the Print Service RUI are displayed, appropriately, on the Sender.

The Printer prints the information indicated by the reference according to the job configuration selected in the job configuration RUI.

4.9.2.2 DPS Reflected UI Service

- Test Purpose

Verify that the Printer can send an RUI and accept a print job generated by the Sender.

Verify that the Sender can initiate a print request for a local file. This is controlled by an RUI presented by the Printer.

- Reference

[2] 9

- Initial Condition

- The Printer is in Public Online mode and can deliver an RUI.
- The Sender is in Idle mode or connected to the target Printer.
- The Sender can display an RUI and accept RUI input.



- Test Case Configuration

Test Case
BPP/PR/RUI/BV-03-C [DPS Reflected UI Service]
BPP/SD/RUI/BV-03-C [DPS Reflected UI Service]

Table 4.39: DPS Reflected UI Service test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected. It discovers that the Printer supports RUI and submits a DPS job that is controlled by an RUI.
 2. The Printer returns the DPS RUI to the Sender.
 3. The Sender displays the RUI and allows the user to make a selection. It sends the result of the selection to the Printer.
 4. The Printer accepts the RUI form, retrieves the data, and generates a printout.

- Expected Outcome

Pass verdict

The RUI is displayed on the Sender.

The job is printed according to the job control parameters selected in the RUI.

4.9.3 RUI, CancelJob

Verify that the Sender can cancel a job through an RUI.

4.9.3.1 RUI Normal Request, CancelJob

- Test Purpose

Verify that a job initiated through an RUI on the Sender can be canceled by the Sender through the RUI.

Verify that the Sender can issue a job cancellation through a Printer-generated RUI.

- Reference

[2] 9

- Initial Condition

- The Printer is in Online mode and can deliver an RUI.
- The Printer is in an active connection to a network.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/RUI/BV-04-C [RUI Normal Request, CancelJob]
BPP/SD/RUI/BV-04-C [RUI Normal Request, CancelJob]

Table 4.40: RUI Normal Request, CancelJob test cases



- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected. It discovers that the Printer supports RUI and submits a multiple-page DPS job that is controlled by an RUI.
 2. The Printer returns the DPS RUI to the Sender.
 3. The Sender displays the RUI and allows the user to make a selection. It sends the result of the selection to the Printer. Once the Printer begins to print, the Sender issues a CancelJob from the RUI.
 4. The Printer accepts the RUI form. It receives the data and generates a printout. Upon receiving the CancelJob indication, it ceases printing. The Printer sends the status back to the Sender.
- Expected Outcome

Pass verdict

The RUI is displayed on the Sender.

The job starts to print according to the job control parameters selected in the RUI.

The job does not complete, the current page is ejected, and the Printer returns to its normal Ready state.
- Notes

This test assumes that the RUI presented to the user is capable of accepting and processing job control commands issued during the execution of a job.

4.9.4 RUI, Media Empty

Verify that the Printer can provide the status of a specific print job as Stopped through an RUI on the Sender.

4.9.4.1 RUI Media Empty

- Test Purpose

Verify that upon detecting a Media Empty condition on the Printer during the execution of a print job, the Printer can indicate a Printer Stopped condition on the Sender RUI, and that after the Media Empty condition has been corrected, the job completes printing, appropriately.

Verify that the Sender can display a status condition notification by the Printer on the Sender's Printer-generated RUI.
- Reference

[2] 9
- Initial Condition
 - The Printer is in Online mode, can deliver an RUI, and has paper in the input bins, but less than that required for the job to be printed.
 - The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/RUI/BV-05-C [RUI Media Empty]
BPP/SD/RUI/BV-05-C [RUI Media Empty]

Table 4.41: RUI Media Empty test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender discovers that the Printer supports RUI. It submits a DPS job that is controlled by an RUI and that consists of more pages than are in the Printer's input bins.
3. The Printer returns the DPS RUI to the Sender.
4. The Sender displays the RUI and allows the user to make a selection. It sends the result of the selection to the Printer.
5. The Printer accepts the RUI form. It receives the data and generates a printout. Upon determining that the paper in the input bins is depleted, it ceases printing. It sends the status back to the Sender.
6. The Sender displays the status returned from the Printer in the RUI. It allows the user to make a selection and sends the result to the Printer, as necessary.
7. The Printer repeats Accept RUI Form and send a new RUI to the Sender, as necessary. After correction of the Media Empty condition, the Printer completes printing the job.

- Expected Outcome

Pass verdict

The DPS job configuration RUI is displayed on the Sender.

The job starts to print according to the job control parameters selected in the RUI.

The job does not complete because the Printer has run out of paper.

The RUI on the Sender indicates that the Printer is stopped.

After the Media Empty condition is corrected, the job completes printing.

4.10 Print-By-Reference (PBR)

Verify that the Print-By-Reference features of the profile interoperate correctly.

The ability for the Sender to perform certain PBR actions may require product-dependent configuration settings.

4.10.1 Reference printing, various reference types

Verify that the target content of a reference is printed appropriately, using various styles of reference.

The Sender can use either Simple Push or job-based printing in the execution of this test.

4.10.1.1 Simple Reference, Default Parameters

- Test Purpose

Verify that the Printer correctly prints the target of a simple reference using its default settings. The document is accessible over HTTP and resides on a different physical machine from the Printer.

Verify that the Sender properly transmits a simple reference to the Printer.



- Reference

[2] 8

- Initial Condition

- The Printer is in Online mode, with PBR and Internet capability enabled, and is prepared to print. A document pointed to by the simple reference is accessible over HTTP and resides on a different physical machine from the Printer. The target document is in a format that the Printer supports.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/PBR/BV-01-C [Simple Reference, Default Parameters]
BPP/SD/PBR/BV-01-C [Simple Reference, Default Parameters]

Table 4.42: Simple Reference, Default Parameters test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected. It configures to send a simple reference pointing to the test document referred to in the Initial Condition. It sends the reference to the Printer.
2. The Printer receives a simple reference from the Sender and prints the target document using the default Printer configuration.

- Expected Outcome

Pass verdict

The Printer correctly prints the document pointed to by the reference. After the job completes, the Printer can accept a new print job.

4.10.1.2 XML Reference, Default Parameters

- Test Purpose

Verify that the Printer correctly prints the target of an XML reference using its default settings. The document is accessible over HTTP and resides on a different physical machine from the Printer.

Verify that the Sender properly transmits an XML reference to the Printer.

- Reference

[2] 8

- Initial Condition

- The Printer is in Online mode, with Internet and PBR enabled, and is prepared to print. A document pointed to by the XML reference is accessible over HTTP. The target document is in a format that the Printer supports.
- The Sender is in Idle mode or connected to the target Printer.



- Test Case Configuration

Test Case
BPP/PR/PBR/BV-02-C [XML Reference, Default Parameters]
BPP/SD/PBR/BV-02-C [XML Reference, Default Parameters]

Table 4.43: XML Reference, Default Parameters test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected. It configures to send an XML reference pointing to the target document. It sends the XML reference to the Printer.
2. The Printer receives an XML reference from the Sender and prints the target document using the default Printer configuration.

- Expected Outcome

Pass verdict

The document pointed to by the reference is correctly printed. After the job completes, the Printer can accept a new print job.

4.10.1.3 Reference List, Default Parameters

- Test Purpose

Verify that the Printer correctly prints all target documents in the reference list using its default settings. Each document in the list is accessible over HTTP and resides on a different physical machine from the Printer.

Verify that the Sender properly transmits a list of references to the Printer.

- Reference

[2] 8

- Initial Condition

- The Printer is in Online mode, with PBR and Internet enabled, and is prepared to print. The documents pointed to by the references are accessible over HTTP and reside on a different physical machine from the Printer. The target documents are in a format that the Printer supports.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/PBR/BV-03-C [Reference List, Default Parameters]
BPP/SD/PBR/BV-03-C [Reference List, Default Parameters]

Table 4.44: Reference List, Default Parameters test cases

- Test Procedure

1. The Sender establishes active connection with the target Printer, if not already connected. The Printer is selectable. The Sender sends the list of references to the Printer.
2. The Printer receives a list of references from the Sender and prints the target documents using the default Printer configuration.



- Expected Outcome

Pass verdict

The Printer correctly prints the documents pointed to by the references. After the job completes, the Printer can accept a new print job.

4.10.1.4 Simple Reference, HTTP Authentication Challenge

- Test Purpose

Verify that the Printer correctly prints the target document of a simple reference that points to a document that requires HTTP authentication to be retrieved. This test is done using default Printer settings. The document is accessible over HTTP and resides on a different physical machine from the Printer.

Verify that the Sender properly handles an HTTP authentication challenge received in the initial response from the Printer and retransmits a simple reference containing the authentication credentials (see Notes).

- Reference

[2] 8

- Initial Condition

- The Printer is in Online mode, with PBR enabled, and is prepared to print. A test document pointed to by the simple reference is, after authentication, be accessible over HTTP and resides on a different physical machine from the Printer. The target document is in a format that the Printer supports.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/PBR/BV-04-C [Simple Reference, HTTP Authentication Challenge]
BPP/SD/PBR/BV-04-C [Simple Reference, HTTP Authentication Challenge]

Table 4.45: Simple Reference, HTTP Authentication Challenge test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender configures to send a simple reference pointing to the test document. It sends the reference to the Printer with no credentials. Credentials may be submitted in the initial request or in a subsequent request pursuant to a challenge by the Printer. It is assumed that the credentials for the reference are either known by the Sender or entered by the user at the time of the challenge.
3. The Printer receives a simple reference from the Sender and retrieves the document using HTTP, responding to the Simple Reference submission with the HTTP header for the authentication challenge, if necessary.

- Expected Outcome

Pass verdict

The Printer correctly prints the document pointed to by the reference. After the job completes, the Printer can accept a new print job.



- Notes

The Sender may not provide the capability for the user to enter authentication credentials and resubmit the job with those credentials. Therefore, it is assumed that the Sender is either pre-programmed with the necessary authentication information, and submits it with the initial print request, or provides a sufficient UI for the user to enter the required authentication information.

It is sufficient to run this test with a non-proxy content provider authentication (on401) challenge.

4.10.1.5 XML Reference, HTTP Authentication Challenge

- Test Purpose

Verify that the Printer correctly prints the target document of an XML reference that points to a document requiring HTTP authentication to be retrieved (see Notes). This test is done using default Printer settings. The document is accessible over HTTP and resides on a different physical machine from the Printer.

Verify that the Sender properly handles an HTTP authentication challenge in the initial response from the Printer and retransmits an XML reference containing the authentication credentials.

- Reference

[2] 8

- Initial Condition

- The Printer is in Online mode, with Internet and PBR enabled, and is prepared to print. A document pointed to by the XML reference is, after authentication, accessible over HTTP and resides on a different physical machine from the Printer. The target document is in a format that the Printer supports.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/PBR/BV-05-C [XML Reference, HTTP Authentication Challenge]
BPP/SD/PBR/BV-05-C [XML Reference, HTTP Authentication Challenge]

Table 4.46: XML Reference, HTTP Authentication Challenge test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender configures to send an XML reference pointing to the test document referred to in the Initial Condition. The Sender initiates sending of the XML reference to the Printer. If service discovery is done, a Printer is selected from the presented list of available printers. The Sender sends the reference to the Printer.
3. When the authentication challenge is received, the Sender resubmits the XML Reference together with the HTTP credentials. It is assumed that the credentials for the reference are either known by the Sender or entered by the user at the time of the challenge.
4. The Printer receives an XML reference from the Sender and tries to retrieve the target document using HTTP. When receiving the HTTP authentication challenge from the web server, the Printer responds to the Sender of the initial XML reference with an OBEX-HTTP header for the authentication challenge.



5. The Printer receives the same XML reference in a new request with the credentials for the reference supplied in the XML-encoded reference. The Printer retrieves and prints the target document.

- Expected Outcome

Pass verdict

The document pointed to by the reference is fully printed. After the job completes, the Printer can accept a new print job.

- Notes

The Sender may not provide the capability for the user to enter authentication credentials and resubmit the job with those credentials. Therefore, it is assumed that the Sender is either preprogrammed with the necessary authentication information, and submits it with the initial print request, or provides a sufficient UI for the user to enter the required authentication information.

It is sufficient to run this test with a non-proxy content provider authentication (on401) challenge.

4.10.1.6 Reference List, HTTP Authentication Challenge

- Test Purpose

Verify that the Printer correctly prints all target documents of the reference list (HTTP) when more than one of the references requires authentication. This test is done using the default Printer settings.

Verify that the Sender properly handles HTTP authentication challenges in the initial response from the Printer and retransmits the reference list containing the authentication credentials for each reference that requires authentication in the XML encoding.

- Reference

[2] 8

- Initial Condition

- The Printer is in Online mode, with PBR and Internet enabled, and is prepared to print. Each document pointed to by the XML references is, after authentication, accessible over HTTP and resides on a different physical machine from the Printer. The target documents are in a format that the Printer supports.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/PBR/BV-06-C [Reference List, HTTP Authentication Challenge]
BPP/SD/PBR/BV-06-C [Reference List, HTTP Authentication Challenge]

Table 4.47: Reference List, HTTP Authentication Challenge test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender enables PBR and configures to send a list of XML references pointing to the test documents referred to in the Initial Condition.
3. The Sender initiates sending of the reference list to the Printer. If service discovery is done, a Printer is selected from the presented list of available printers. The Sender sends the reference list to the Printer.



4. The Printer receives the reference list from the Sender and tries to retrieve the first target document, using HTTP. When receiving the HTTP authentication challenge from the web server, the Printer responds to the request with the OBEX-HTTP header for authentication challenge for the challenged reference.
5. When the first authentication challenge is received, the Sender resubmits the request with the reference list and the HTTP credentials in the XML encoding for the challenged reference. It is assumed that the credentials for the challenged reference are either known by the Sender or entered by the user at the time of the challenge.
6. The Sender repeats the procedures above until no more references are challenged. The last transmitted request contains the credentials for all the challenged references.
7. The Printer receives the same reference list in a new request with the credentials for the challenged reference supplied in the XML encoding. It tests the provided credentials for the challenged reference but does not print the document until the other references in the list have been challenged and provided with credentials from the Sender.
8. When all the references in the list requiring authentication have supplied credentials, the Printer downloads and prints the target documents.

- Expected Outcome

- Pass verdict

- The documents pointed to by the references are fully printed. After the job completes, the Printer can accept a new print job.

- Notes

- The Sender may not provide the capability for the user to enter authentication credentials and resubmit the job with those credentials. Therefore, it is assumed that the Sender is either pre-programmed with the necessary authentication information for those documents requiring it, and submits them with each such document in the initial print request, or provides a sufficient UI for the user to enter the required authentication information, as needed.

- It is sufficient to run this test with a non-proxy content provider authentication (on401) challenge.

4.10.2 CreateJob with SendReference

4.10.2.1 Any Reference Type, CreateJob

- Test Purpose

- Verify that the Printer correctly prints the target of a reference using a preceding CreateJob operation. The document is accessible over HTTP and resides on a different physical machine from the Printer.

- Verify that the Sender properly transmits a reference to the Printer with a preceding CreateJob operation.

- Reference

- [\[2\]](#) 8

- Initial Condition

- The Printer is in Online mode, with PBR enabled, and is prepared to print. A document pointed to by the simple reference is accessible over HTTP and resides on a different physical machine from the Printer. The target document is in a format that the Printer supports.
 - The Sender is in Idle mode or connected to the target Printer.



- Test Case Configuration

Test Case
BPP/PR/PBR/BV-07-C [Any Reference Type, CreateJob]
BPP/SD/PBR/BV-07-C [Any Reference Type, CreateJob]

Table 4.48: Any Reference Type, CreateJob test cases

- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected.
 2. The Sender configures to send a simple reference pointing to the test document referred to in the Initial Condition.
 3. The Sender initiates a Print-By-Reference session by sending a CreateJob operation with a subsequent SendReference operation to the Printer. If service discovery is done, a Printer is selected from the presented list prior to initiating any operations. Note that at least one parameter is specified in the CreateJob that is different from the default value.
 4. The Printer receives a CreateJob operation with parameters and a SendReference with reference from the Sender and prints the target document using the specified parameters in CreateJob.

- Expected Outcome

Pass verdict

The Printer fully prints the document pointed to by the reference according to the parameter(s) specified in the CreateJob operation. After the job completes, the Printer can accept a new print job.

4.10.3 Error Cases

4.10.3.1 Any Reference Type, Target Not Present

- Test Purpose

Verify that the Printer correctly reports an error message when the reference target does not exist.

Verify that the Sender correctly processes the error condition, as reported by the Printer.

- Reference

[\[2\]](#) 8

- Initial Condition

- The Printer is in Online mode, with PBR enabled, and is prepared to print. A document pointed to by the simple reference is not accessible over HTTP.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/PBR/BI-01-C [Any Reference Type, Target Not Present]
BPP/SD/PBR/BI-01-C [Any Reference Type, Target Not Present]

Table 4.49: Any Reference Type, Target Not Present test cases



- Test Procedure
 1. The Sender establishes an active connection with the target Printer, if not already connected. PBR is enabled and configured to send an invalid simple reference. The Sender initiates sending of the invalid reference to the Printer. If service discovery is done, a Printer is selected from the presented list of available printers. The Sender sends the reference to the Printer.
 2. The Printer receives an invalid simple reference from the Sender and tries to retrieve it from the web server. When this fails, it responds with an error message back to the Sender.

- Expected Outcome

Pass verdict

The Printer does not print a document.

The Sender and the Printer report the error condition.

The Printer and the Sender can return to the Ready state.

4.10.3.2 Any Reference Type, General Error

- Test Purpose

Verify that the Printer correctly reports an error message when something goes wrong, for which there is no specific error message, e.g., the network connection disappears during a print job.

Verify that the Sender correctly processes a general error, as reported by the Printer.

- Reference

[2] 8

- Initial Condition

- The Printer is in Online mode, with PBR enabled, and is prepared to print. A document is accessible over HTTP and resides on a different physical machine from the Printer. The target document is in a format that the Printer supports. The document is of sufficient length to allow time for the test operator to establish the error condition while the document is still being downloaded. The Printer manufacturer specifies in the IXIT [11] the document length required for its Printer.
- The Sender is in Idle mode or connected to the target Printer.

- Test Case Configuration

Test Case
BPP/PR/PBR/BI-02-C [Any Reference Type, General Error]
BPP/SD/PBR/BI-02-C [Any Reference Type, General Error]

Table 4.50: Any Reference Type, General Error test cases

- Test Procedure

1. The Sender establishes an active connection with the target Printer, if not already connected.
2. The Sender enables PBR and configures to send a reference pointing to the test document referred to in the Initial Condition.
3. The Sender initiates sending of the reference to the Printer. If service discovery is done, a Printer is selected from the presented list of available printers. The Sender sends the reference to the Printer.



4. The Printer receives the reference from the Sender and starts to print the target document. While the Printer is downloading the document from the web server, the network connection is broken, e.g., by pulling out the network cable from the Printer. When the Printer realizes that the network connection is gone, it responds with a general error.

- Expected Outcome

Pass verdict

The Printer does not fully print the document.

The Printer and the Sender can return to the Ready state.

5 Test case mapping

The Test Case Mapping Table (TCMT) maps test cases to specific requirements in the ICS. The IUT is 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 logical expression based on specific entries from the associated ICS document. Contains a logical expression (using the operators AND, OR, NOT as needed) based on specific entries from the applicable ICS document(s). The entries are in the form of y/x references, where y corresponds to the table number and x corresponds to the feature number as defined in the ICS document for Basic Printing Profile (BPP) [10].

Feature: A brief, informal description of the feature being tested.

Test Case(s): The applicable test case identifiers are required for Bluetooth Qualification if the corresponding y/x references defined in the Item column are supported. Further details about the function of the TCMT are elaborated in [9].

For the purpose and structure of the ICS/IXIT, refer to [9].

Item	Feature	Test Case(s)
BPP 1/1	Printer Service Discovery	BPP/PR/SGSIT/SERR/BV-01-C BPP/PR/SGSIT/ATTR/BV-01-C BPP/PR/SGSIT/ATTR/BV-02-C BPP/PR/SGSIT/ATTR/BV-03-C BPP/PR/SGSIT/ATTR/BV-04-C BPP/PR/SGSIT/ATTR/BV-05-C BPP/PR/SGSIT/ATTR/BV-06-C BPP/PR/SGSIT/ATTR/BV-07-C BPP/PR/SGSIT/ATTR/BV-08-C BPP/PR/SGSIT/ATTR/BV-09-C BPP/PR/SGSIT/ATTR/BV-10-C BPP/PR/SGSIT/ATTR/BV-11-C BPP/PR/SGSIT/ATTR/BV-12-C BPP/PR/SGSIT/ATTR/BV-13-C BPP/PR/SGSIT/ATTR/BV-14-C BPP/PR/SGSIT/ATTR/BV-15-C BPP/PR/SGSIT/ATTR/BV-16-C BPP/PR/SGSIT/ATTR/BV-17-C BPP/PR/SGSIT/ATTR/BV-18-C BPP/PR/SGSIT/ATTR/BV-19-C BPP/PR/SGSIT/ATTR/BV-22-C BPP/PR/SGSIT/OFFS/BV-01-C
BPP 2/30	Printer Service Discovery – Reference Printing	BPP/PR/SGSIT/SERR/BV-02-C
BPP 2/33	Printer SDP attribute: Reference Printing Top URL	BPP/PR/SGSIT/ATTR/BV-20-C
BPP 2/34	Printer SDP attribute: Direct Printing Top URL	BPP/PR/SGSIT/ATTR/BV-21-C

Item	Feature	Test Case(s)
BPP 2/32	Printer Administrative UI Service Discovery	BPP/PR/SGSIT/SERR/BV-04-C BPP/PR/SGSIT/ATTR/BV-27-C BPP/PR/SGSIT/ATTR/BV-28-C BPP/PR/SGSIT/ATTR/BV-29-C BPP/PR/SGSIT/ATTR/BV-30-C BPP/PR/SGSIT/OFFS/BV-03-C
BPP 3/20	Referenced Objects Service Discovery	BPP/SD/SGSIT/SERR/BV-03-C BPP/SD/SGSIT/ATTR/BV-23-C BPP/SD/SGSIT/ATTR/BV-24-C BPP/SD/SGSIT/ATTR/BV-25-C BPP/SD/SGSIT/OFFS/BV-02-C
BPP 3/46	Referenced Objects SDP attribute: Additional Protocol Descriptor Lists	BPP/SD/SGSIT/ATTR/BV-26-C
BPP 3/7	Successful Connection with future SDP Record value – BPP Sender	BPP/SD/CGSIT/SFC/BV-01-C
BPP 2/1 AND BPP 2/2a	Public Online mode and General Inquiry	BPP/PR/DCS/BV-01-C
BPP 2/1 AND BPP 2/2b	Public Online mode and Limited Inquiry	BPP/PR/DCS/BV-02-C
BPP 2/1	Public Online mode and Device discovery	BPP/PR/DCS/BV-03-C
BPP 2/2	Private Online mode and General Inquiry or Limited Inquiry	BPP/PR/DCS/BV-05-C
BPP 2/3	Offline mode and General Inquiry or Limited Inquiry	BPP/PR/DCS/BV-07-C
BPP 2/4 OR BPP 2/5	Bonding	BPP/PR/DCS/BV-11-C
BPP 3/5 OR BPP 3/6	Bonding	BPP/SD/DCS/BV-11-C
BPP 2/7	OBEX Authentication	BPP/PR/OA/BV-01-C
BPP 3/8	OBEX Authentication	BPP/SD/OA/BV-01-C
BPP 2/7	OBEX Authentication, Invalid	BPP/PR/OA/BI-01-C
BPP 2/9 AND BPP 2/9a	CreateJob	BPP/PR/DPS/BV-01-C
BPP 3/11	CreateJob	BPP/SD/DPS/BV-01-C
BPP 2/9 AND BPP 2/9a	CreateJob, supported attributes	BPP/PR/DPS/BV-02-C
BPP 3/12	CreateJob, supported attributes	BPP/SD/DPS/BV-02-C
BPP 2/9 AND BPP 2/9a	CreateJob, unsupported attributes	BPP/PR/DPS/BV-03-C
BPP 3/12	CreateJob, unsupported attributes	BPP/SD/DPS/BV-03-C
BPP 2/10	Job attributes while printing	BPP/PR/DPS/BV-04-C
BPP 3/13	Job attributes while printing	BPP/SD/DPS/BV-04-C
BPP 2/10	Specific job attributes	BPP/PR/DPS/BV-05-C
BPP 3/13a	Specific job attributes	BPP/SD/DPS/BV-05-C

Item	Feature	Test Case(s)
BPP 2/12	Cancel job while printing	BPP/PR/DPS/BV-06-C
BPP 3/15 OR BPP 3/15a	Cancel job while printing	BPP/SD/DPS/BV-06-C
BPP 2/11	Complete set of printer attributes	BPP/PR/DPS/BV-07-C
BPP 3/14 OR BPP 3/14a	Complete set of printer attributes	BPP/SD/DPS/BV-07-C
BPP 2/11	Specific printer attributes	BPP/PR/DPS/BV-08-C
BPP 3/14b OR BPP 3/14c	Specific printer attributes	BPP/SD/DPS/BV-08-C
BPP 2/13	Error on media empty	BPP/PR/DPS/BV-09-C
BPP 3/16	Error on media empty	BPP/SD/DPS/BV-09-C
BPP 2/15	Printer compliance to XHTML-Print	BPP/PR/OF/BV-01-C BPP/PR/OF/BV-02-C
BPP 3/19	Printer compliance to XHTML-Print	BPP/SD/OF/BV-01-C BPP/SD/OF/BV-02-C
BPP 2/15	Sender compliance to XHTML-Print	BPP/PR/OF/BV-03-C
BPP 3/18	Sender compliance to XHTML-Print	BPP/SD/OF/BV-03-C
BPP 2/14	Support for referenced images	BPP/PR/OF/BV-04-C
BPP 3/17 AND BPP 3/20	Support for referenced images	BPP/SD/OF/BV-04-C
BPP 2/29	Support for Enhanced Layout Extension	BPP/PR/OF/BV-05-C
BPP 3/19	Support for Enhanced Layout Extension	BPP/SD/OF/BV-05-C
BPP 2/27	Print documents in formats other than XHTML-Print	BPP/PR/OF/BV-06-C
BPP 3/32	Print documents in formats other than XHTML-Print	BPP/SD/OF/BV-06-C
BPP 2/16	Support for vCard	BPP/PR/OF/BV-07-C
BPP 3/21	Support for vCard	BPP/SD/OF/BV-07-C
BPP 2/17	Ability to print several vCards per page	BPP/PR/OF/BV-08-C
BPP 3/22	Ability to print several vCards per page	BPP/SD/OF/BV-08-C
BPP 2/18	Ability to support alternate vCard layout	BPP/PR/OF/BV-09-C
BPP 3/23	Ability to support alternate vCard layout	BPP/SD/OF/BV-09-C
BPP 2/19	Support for vCalendar	BPP/PR/OF/BV-10-C
BPP 3/24	Support for vCalendar	BPP/SD/OF/BV-10-C
BPP 2/20 OR BPP 2/21 OR BPP 2/22 OR BPP 2/23	Support for alternate vCalendar views	BPP/PR/OF/BV-11-C
BPP 3/25 OR BPP 3/26 OR BPP 3/27 OR BPP 3/28	Support for alternate vCalendar views	BPP/SD/OF/BV-11-C
BPP 2/24	Several vCalendar layouts per page	BPP/PR/OF/BV-12-C

Item	Feature	Test Case(s)
BPP 3/29	Several vCalendar layouts per page	BPP/SD/OF/BV-12-C
BPP 2/25	Support for vMessage	BPP/PR/OF/BV-13-C
BPP 3/30	Support for vMessage	BPP/SD/OF/BV-13-C
BPP 2/26	Support for Basic Text format	BPP/PR/OF/BV-14-C
BPP 3/31	Support for Basic Text format	BPP/SD/OF/BV-14-C
BPP 2/28	Support for other character repertoires	BPP/PR/OF/BV-15-C
BPP 3/33	Support for other character repertoires	BPP/SD/OF/BV-15-C
BPP 2/8	Simple push of XHTML-Print document	BPP/PR/SP/BV-01-C
BPP 3/9	Simple push of XHTML-Print document	BPP/SD/SP/BV-01-C
BPP 2/29	CreatePreciseJob	BPP/PR/EL/BV-01-C
BPP 2/29	CreatePreciseJob, Unsupported Attributes	BPP/PR/EL/BV-02-C
BPP 3/34a	CreatePreciseJob, Unsupported Attributes	BPP/SD/EL/BV-02-C
BPP 2/29	Request printer margin information	BPP/PR/EL/BV-03-C
BPP 3/35	Request printer margin information	BPP/SD/EL/BV-03-C
BPP 2/29	XHTML-Print Enhanced Layout	BPP/PR/EL/BV-04-C
BPP 3/35a	XHTML-Print Enhanced Layout	BPP/SD/EL/BV-04-C
BPP 2/31 AND BPP 2/32 AND (BPP 2/37 OR BPP 2/38 OR BPP 2/39)	Administrative RUI control	BPP/PR/RUI/BV-01-C
BPP 3/43 AND BPP 3/44 AND (BPP 3/47 OR BPP 3/48 OR BPP 3/49)	Administrative RUI control	BPP/SD/RUI/BV-01-C
BPP 2/31 AND BPP 2/33 AND (BPP 2/37 OR BPP 2/38 OR BPP 2/39)	PBR reflected UI	BPP/PR/RUI/BV-02-C
BPP 3/43 AND BPP 3/45 AND (BPP 3/47 OR BPP 3/48 OR BPP 3/49)	PBR reflected UI	BPP/SD/RUI/BV-02-C
BPP 2/31 AND BPP 2/34 AND (BPP 2/37 OR BPP 2/38 OR BPP 2/39)	DPS reflected UI	BPP/PR/RUI/BV-03-C
BPP 3/43 AND BPP 3/46 AND (BPP 3/47 OR BPP 3/48 OR BPP 3/49)	DPS reflected UI	BPP/SD/RUI/BV-03-C
BPP 2/35 AND (BPP 2/37 OR BPP 2/38 OR BPP 2/39)	Cancel Job RUI	BPP/PR/RUI/BV-04-C

Item	Feature	Test Case(s)
BPP 3/46 AND BPP 3/50 AND (BPP 3/47 OR BPP 3/48 OR BPP 3/49)	Cancel Job RUI	BPP/SD/RUI/BV-04-C
BPP 2/36 AND (BPP 2/37 OR BPP 2/38 OR BPP 2/39)	Media empty RUI	BPP/PR/RUI/BV-05-C
BPP 3/46 AND (BPP 3/47 OR BPP 3/48 OR BPP 3/49)	Media empty RUI	BPP/SD/RUI/BV-05-C
BPP 2/30	Simple reference print	BPP/PR/PBR/BV-01-C
BPP 3/37 AND BPP 3/36 AND (BPP 3/41 OR BPP 3/42)	Simple reference print	BPP/SD/PBR/BV-01-C
BPP 2/30	XML reference print	BPP/PR/PBR/BV-02-C
BPP 3/38 AND BPP 3/36 AND (BPP 3/41 OR BPP 3/42)	XML reference print	BPP/SD/PBR/BV-02-C
BPP 2/30	List reference print	BPP/PR/PBR/BV-03-C
BPP 3/39 AND BPP 3/36 AND (BPP 3/41 OR BPP 3/42)	List reference print	BPP/SD/PBR/BV-03-C
BPP 2/30	Simple reference, HTTP Authentication	BPP/PR/PBR/BV-04-C
BPP 3/37 AND BPP 3/40 AND (BPP 3/41 OR BPP 3/42)	Simple reference, HTTP Authentication	BPP/SD/PBR/BV-04-C
BPP 2/30	XML reference, HTTP Authentication	BPP/PR/PBR/BV-05-C
BPP 3/38 AND BPP 3/40 AND (BPP 3/41 OR BPP 3/42)	XML reference, HTTP Authentication	BPP/SD/PBR/BV-05-C
BPP 2/30	List reference, HTTP Authentication	BPP/PR/PBR/BV-06-C
BPP 3/39 AND BPP 3/40 AND (BPP 3/41 OR BPP 3/42)	List reference, HTTP Authentication	BPP/SD/PBR/BV-06-C
BPP 2/30	Any Reference, CreateJob	BPP/PR/PBR/BV-07-C
BPP 3/42 AND (BPP 3/37 OR BPP 3/38 OR BPP 3/39)	Any Reference, CreateJob	BPP/SD/PBR/BV-07-C
BPP 2/30	Reference print, no target	BPP/PR/PBR/BI-01-C
(BPP 3/37 OR BPP 3/38 OR BPP 3/39) AND (BPP 3/41 OR BPP 3/42)	Reference print, no target	BPP/SD/PBR/BI-01-C
BPP 2/30	Reference print, general error	BPP/PR/PBR/BI-02-C
(BPP 3/37 OR BPP 3/38 OR BPP 3/39) AND (BPP 3/41 OR BPP 3/42)	Reference print, general error	BPP/SD/PBR/BI-02-C

Table 5.1: Test case mapping

6 Revision history and acknowledgments

Revision History

Publication Number	Revision Number	Date	Comments
0	1.0.2	2005-10-03	TSE 819 for TP/OA/BI-01-I in TMCT entry Correct Document no. and prepare for publication.
1	1.0.3	2006-04-06	TSE 905 for TP/DPS/BV-01-I in TCMT Editorial updates: formatting, removed 'Uncertainties'
2	1.2.0	2006-06-14	Prepare for publication.
3	1.2.1	2007-08-27	TSE 2006: TP/DCS/BV-11-I; publish.
	1.2.2r0	2008-02-01	TSE 2350: TP/DPS/BV-06-I, TCMT
4	1.2.2	2008-04-01	Prepare for publication.
	1.2.3r0	2009-04-28	TSE 2780: TP/DPS/BV-09-I: update Pass Verdict
5	1.2.3	2009-07-29	Prepare for publication.
	1.2.4r0	2011-10-14	TSE 3301: TP/OA/BV-01-I: Delete paragraph in test purpose.
6	1.2.4	2012-03-30	Prepare for publication
	1.2.5r00	2016-09-30	Converted to new Test Case ID conventions as defined in TSTO v4.1
	1.2.5r01	2016-11-15	Added overlooked conventions (sections 4.2 and 4,3) from the TSTO when 1.2.5r00 version was created.
7	1.2.5	2016-12-13	Approved by BTI. Prepared for TCRL 2016-2 publication.
	1.2.6r00	2017-04-06	TSE 8664: Updated Test Spec Template and updated test file names used in BPP/PR/OF/BV-01-I, BPP/PR/OF/BV-02-I and BPP/PR/OF/BV-05-I to match XHTML zip (used dashes instead of slashes).
	1.2.6r01	2017-05-10	TSE 8664: Applied TCID5 heading styles to Test Case IDs and updated TOC to show level 5 headings.
	1.2.6r02	2017-05-17	Editorial review and corrections throughout by Magnus
8	1.2.6	2017-07-03	Approved by BTI. Prepared for TCRL 2017-1 publication.

Publication Number	Revision Number	Date	Comments
	p9r00-r06	2023-08-17 – 2024-03-25	<p>TSE 23886 (rating 1): Converted -I tests to -C tests as appropriate; updated the TCMT and TCRL accordingly.</p> <p>TSE 24522 (rating 4): Added new GSIT section with new TCs BPP/PR/SGSIT/ATTR/BV-01-C – -22-C and -27-C – -30-C; BPP/PR/SGSIT/OFFS/BV-01-C – -03-C, BPP/PR/SGSIT/SERR/BV-01-C, -02-C, and -04-C; BPP/SD/CGSIT/SFC/BV-01-C; BPP/SD/SGSIT/ATTR/BV-23-C – -26-C; and BPP/SD/SGSIT/SERR/BV-03-C. Deleted the Service Discovery section, including TCs BPP/PR/SD/BV-01-I and BPP/SD/SD/BV-01-I. Updated the TCMT accordingly. Added the SDP TS to the references list and updated the Test Groups and TCID Conventions sections.</p> <p>Updated to align the document with the latest standards.</p>
9	p9	2024-07-01	Approved by BTI on 2024-05-22. Prepared for TCRL 2024-1 publication.

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