Dial-up Networking Profile (DUN)

***Bluetooth*® Test Suite**

- **Revision:** DUN.TS.p11
- **Revision Date:** 2024-07-01
- **Prepared By:** BTI
- **Published during TCRL:** TCRL.2024-1

Contents

1 Scope

This Bluetooth document contains the Test Suite Structure (TSS) and test cases to test the implementation of the Bluetooth Dial-up Networking Profile (DUN) 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 hereinafter. Additional definitions and abbreviations can be found in [4] and [5].

[1] Specification of the Bluetooth System, Volume 3, Part C (GAP Specification), Version 2.0 or later

[2] RFCOMM Specification

[3] Dial-up Networking Profile Specification (DUN)

[4] Bluetooth Specification, Version 2.0 or later

[5] Test Strategy and Terminology Overview

[6] ICS Proforma for DUN

[7] SDP Test Suite, SDP.TS

2.2 Definitions

In this Bluetooth document, the definitions from [4] and [5] apply.

2.3 Acronyms and abbreviations

In this Bluetooth document, the definitions, acronyms, and abbreviations from [4] and [5] apply.

3 Test Suite Structure (TSS)

3.1 Overview

The Dial-up Networking Profile is an application profile that defines the requirements for Bluetooth devices necessary for the support of the Dial-up Networking use case. The Dial-up Networking Profile is dependent on [1] and [2].

The Dial-up Networking Profile specifies two typical configurations of devices, roles, for this profile:

Gateway (GW) – This is the device that provides access to the public network.

Data Terminal (DT) – This is the device that uses that dial-up services of the gateway.

The Dial-up Networking Profile specifies (2) application services:

- Data call without audio feedback.
- Data call with audio feedback.

In addition to these services, the Dial-up Networking Profile specifies:

- Discovery and connection set up procedure.
- Termination.

3.2 Test Strategy

The test objectives are to verify the functionality of the Dial-up Networking Profile within a Bluetooth Host and enable interoperability between Bluetooth Hosts on different devices. The testing approach covers mandatory and optional requirements in the specification and matches these to the support of the IUT as described in the ICS. Any defined test herein is applicable to the IUT if the ICS logical expression defined in the Test Case Mapping Table (TCMT) evaluates to true.

The test equipment provides an implementation of the Radio Controller and the parts of the Host needed to perform the test cases defined in this Test Suite. A Lower Tester acts as the IUT's peer device and interacts with the IUT over-the-air interface. The configuration, including the IUT, needs to implement similar capabilities to communicate with the test equipment. For some test cases, it is necessary to stimulate the IUT from an Upper Tester. In practice, this could be implemented as a special test interface, a Man Machine Interface (MMI), or another interface supported by the IUT.

This Test Suite contains Valid Behavior (BV) tests complemented with Invalid Behavior (BI) tests where required. The test coverage mirrored in the Test Suite Structure is the result of a process that started with catalogued specification requirements that were logically grouped and assessed for testability enabling coverage in defined test purposes.

3.2.1 Application services test setup

The test setup that will be used to verify the application services of the Dial-up Networking is shown in Figure 3.1.

The Network terminal can be a computer of any kind connected to the existing network via a modem.

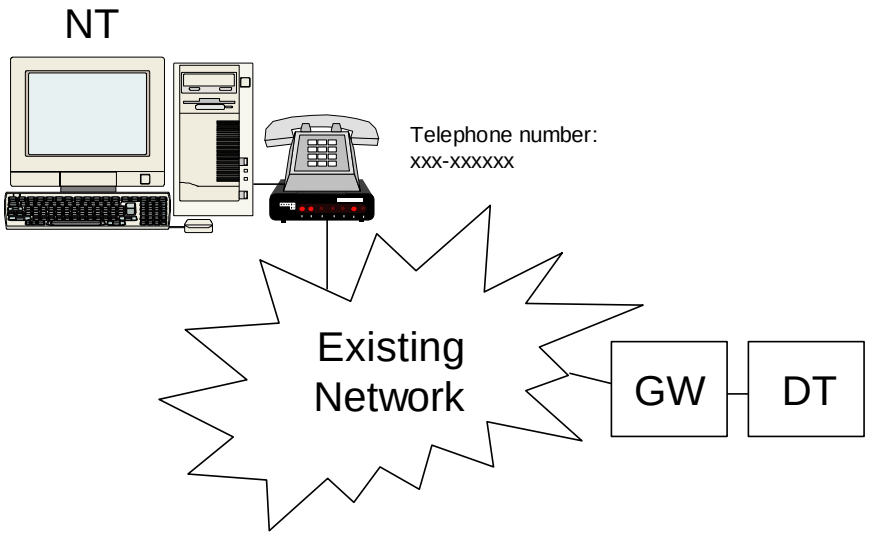

Figure 3.1: Dial-up Networking Test setup

Testing verifies that the DT can, via the GW, establish a data connection and then transmit and receive a data file greater than 64 Kbytes.

3.3 Test groups

The following test groups have been defined:

- Generic SDP Integrated Tests
- Discovery and Connection Setup
- Application Services
- Termination and Standby

4 Test cases (TC)

4.1 Introduction

4.1.1 Test case identification conventions

Test cases are assigned unique identifiers per the conventions in [5]. 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 [7] 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>**
DUN	Dial-up Networking Profile
Identifier Abbreviation	**Role Identifier <IUT role>**
DT	Data Terminal Role
GW	Gateway 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>**
APS	Application Services
DCS	Discovery and Connection Setup
TER	Termination and Standby

Table 4.1: DUN 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, the outcome of the test is a Fail verdict.

4.2 Generic SDP Integrated Tests

4.2.1 Server Generic SDP Integrated Tests

4.2.1.1 Dial-Up Networking Profile – Gateway

Execute the Generic SDP Integrated Tests defined in Section 6.3, Server test procedures (SGSIT), in [7] 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)
DUN/GW/SGSIT/SERR/BV-01-C [Service record GSIT – DUN GW]	[3] 5.3	ServiceClassIDList	Universal	“Dial-Up Networking” (UUID)	Present for GW
DUN/GW/SGSIT/SERR/BV-02-C [Service record GSIT – DUN GW Generic Networking]	[3] 5.3	ServiceClassIDList	Universal	“Generic Networking” (UUID)	Optionally present
DUN/GW/SGSIT/ATTR/BV-01-C [Attribute GSIT – Protocol Descriptor List]	[3] 5.3	ProtocolDescriptorList	Universal	“L2CAP” (UUID), “RFCOMM” (UUID): Server Channel – skip (Uint8)	Present for GW
DUN/GW/SGSIT/ATTR/BV-02-C [Attribute GSIT – Audio Feedback Support]	[3] 5.3	Audio Feedback Support	Profile	skip (Boolean)	Optionally present
DUN/GW/SGSIT/ATTR/BV-03-C [Attribute GSIT – Bluetooth Profile Descriptor List, DUN 1.1]	[3] 5.3	BluetoothProfileDescriptorList	Universal	“Dial-Up Networking” (UUID): Version – “0x0100” (Uint16)	TCMT defined
DUN/GW/SGSIT/ATTR/BV-04-C [Attribute GSIT – Bluetooth Profile Descriptor List, DUN 1.2]	[3] 5.3	BluetoothProfileDescriptorList	Universal	“Dial-Up Networking” (UUID): Version – “0x0102” (Uint16)	TCMT defined

Table 4.2: Input for the DUN Gateway SGSIT SDP test procedure

4.2.1.2 Dial-Up Networking Profile – Attribute ID Offset String tests

Execute the Generic SDP Integrated Tests defined in Section 6.3, Server test procedures (SGSIT), in [7] using Table 4.3 below as input:

TCID	Reference	ServiceSearchPattern	Attribute ID name	Attribute ID Offset	Attribute presence (Present/Present for [role], Optionally present, TCMT defined)
DUN/GW/SGSIT/OFFS/BV-01-C [Attribute ID Offset String GSIT – Service Name]	[3] 5.3	HDP Source	Dial-Up Networking	0x0000	Optionally present

Table 4.3: Input for the Dial-Up Networking 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 [7] using Table 4.4 below as input:

TCID	Reference	Service Record Service Class UUID description	Lower Tester SDP record initial conditions
DUN/DT/CGSIT/SFC/BV-01-C [SDP Future Compatibility – IUT is DUN DT]	[3] 5	DialupNetworking	The Lower Tester exposes a DUN GW SDP record. The version in the Bluetooth Profile Descriptor List is greater than the most recently adopted version.

Table 4.4: Input for the Client CGSIT SDP future compatibility tests

4.3 Discovery and Connection Setup

Verify that a DT and a GW can discover each other and connect prior to usage as DT and GW in the Bluetooth DUN Profile.

4.3.1 Device Discovery

- Test Purpose

  Verify that the DT correctly make use of the Device Discovery procedure when trying to discover the GW using the discoverable and connectable modes.

- Reference

  [3] 2.3, 2.4

- Initial Condition

  - Both the IUT and the Lower Tester are in idle mode.

- Test Case Configuration

Test Case ID
DUN/DT/DCS/BV-05-C [Initiate Device Discovery procedure]
DUN/GW/DCS/BV-05-C [Respond to Device Discovery procedure]

Table 4.5: Device discovery test cases

- Test Procedure

  1. The Upper Tester requests the GW be made discoverable and connectable.
  2. The DT uses the “Device Discovery” procedure to discover the GW.
  3. If the IUT is the GW, the Lower Tester discovers the name of the GW.

- Expected Outcome

  Pass verdict

  The DT successfully discovers the GW.

  If the IUT is the GW, the name of the IUT is discovered by the Lower Tester.

4.3.2 Bonding

- Test Purpose

  Verify that the DT correctly initiates bonding to the GW.

- Reference

  [3] 2.3, 2.4

- Initial Condition

  - Both the IUT and the Lower Tester are in idle mode.
  - The GW is in bondable mode and is discoverable and connectable.
  - Both the IUT and the Lower Tester support bonding.

- Test Case Configuration

Test Case ID
DUN/DT/DCS/BV-06-C [Initiate bonding]
DUN/GW/DCS/BV-06-C [Respond to bonding request]

Table 4.6: Bonding test cases

- Test Procedure

1. The DT establishes a connection to the GW.
2. The DT initiates bonding.
3. The GW accepts bonding.
4. The DT disconnects from the GW.
5. The DT reconnects to the GW.

- Expected Outcome

Pass verdict

Bonding between the IUT and the Lower Tester is successful.

A link key is created.

Reconnection is successful.

4.4 Application Services

Verify that the units support data calls, and where supported, audio feedback as well.

4.4.1 NT is busy

- Test Purpose

Verify that the DT accepts that the NT (or telephone line) is busy.

- Reference

[3] 3.2

- Initial Condition

  - The DT has connected to the GW using the manufacturer specific Bluetooth connection establishment procedure.
  - Bonding is completed.

- Test Case Configuration

Test Case ID
DUN/DT/APS/BV-02-C [NT is busy]
DUN/GW/APS/BV-02-C [NT is busy]

Table 4.7: NT is busy test cases

- Test Procedure

1. Make the NT busy, e.g., make sure that the modem of the NT (or telephone line) is busy (off hook).
2. The DT tries to connect to the NT via the GW by dialing the number to the NT.

- Expected Outcome

  Pass verdict

  The DT is alerted by the GW that the NT is busy.

4.4.2 Transfer of data

- Test Purpose

  Verify that the DT can transmit data (including IP data).

- Reference

  [3] 3.2

- Initial Condition

  - The DT and GW devices are paired with each other.
  - The GW is set up to establish a dial-up networking connection when requested by the DT.
  - The GW and DT use a Network Connection as specified in Table 4.8.
  - A data file greater than 64 Kbytes is used so that it is easy to verify that the file is not corrupted.

- Test Case Configuration

Test Case ID	Network Connection
DUN/DT/APS/BV-03-C [Transfer of data with circuit switched network]	Circuit switched
DUN/GW/APS/BV-03-C [Transfer of data with circuit switched network]	Circuit switched
DUN/DT/APS/BV-13-C [Transfer of data with packet switched network]	Packet switched
DUN/GW/APS/BV-13-C [Transfer of data with packet switched network]	Packet switched

Table 4.8: Transfer of data test cases

- Test Procedure

  1. The DT requests a dial-up connection establishment with the GW.
  2. The DT starts a data transfer over the established connection. Any IP-based protocol may be used.
  3. Verify that data is uncorrupted via validation of transferred file, engagement in a well-known IP protocol (PING, establishment of TCP connection) or directly by examining the IP packet at the receiving end.

- Expected Outcome

  Pass verdict

  The file is successfully transmitted to the GW from the DT.

  The received file is not corrupted.

4.4.3 Receive data

- Test Purpose

  Verify that the DT can receive data (including IP data).

- Reference

  [3] 3.2

- Initial Condition

  - The DT and GW devices are paired with each other.
  - The GW is set up to establish dial-up networking connection when requested by DT.
  - The GW and DT use a Network Connection as specified in Table 4.9.
  - A data file greater than 64 Kbytes is used so that it is easy to verify that the file is not corrupted.

- Test Case Configuration

Test Case ID	Network Connection
DUN/DT/APS/BV-04-C [Receive data with circuit switched network]	Circuit switched
DUN/GW/APS/BV-04-C [Receive data with circuit switched network]	Circuit switched
DUN/DT/APS/BV-14-C [Receive data with packet switched network]	Packet switched
DUN/GW/APS/BV-14-C [Receive data with packet switched network]	Packet switched

Table 4.9: Receive data test cases

- Test Procedure

  1. The DT requests a dial-up connection establishment with the GW.
  2. From any external network, start data transfer over the established connection. Any IP-based protocol may be used.
  3. Verify that data is received via validation of transferred file, engagement in a well-known IP protocol (PING, establishment of TCP connection) or directly by examining the IP packet at the receiving end.

- Expected Outcome

  Pass verdict

  It is possible to receive the file from the external network.

  When the file is received at the DT it is not corrupted.

4.4.4 Incoming alert on DT

- Test Purpose

  Verify that the DT gets an alert when a remote DT is connecting to it. The DT accepts the alert and a connection is established.

- Reference

  [3] 3.2

- Initial Condition

  - The IUT and the Lower Tester use a circuit switched network connection.
  - The DT has connected to the GW using the manufacturer-specific Bluetooth connection establishment procedure.
  - Bonding is completed.

- Test Case Configuration

Test Case ID
DUN/DT/APS/BV-05-C [Incoming alert on DT]
DUN/GW/APS/BV-05-C [Incoming alert on DT]

Table 4.10: Incoming alert on DT test cases

- Test Procedure

  1. On the remote DT, establish a connection to the DT under test via the GW by dialing the number to the GW, i.e., the number the GW is associated with.
  2. The DT accepts the connection. The DT may be configured to auto accept the incoming data call.

- Expected Outcome

  Pass verdict

  The DT is alerted about the incoming data call by the GW or the DT automatically accepts the incoming data call.

4.4.5 DT transfers data

- Test Purpose

  Verify that the DT can transmit data (including IP data).

- Reference

  [3] 3.2

- Initial Condition

  - The IUT and the Lower Tester use a circuit switched network connection.
  - The procedures described by DUN/DT/APS/BV-05-C [Incoming alert on DT] or DUN/GW/APS/BV-05-C [Incoming alert on DT] have been performed.
  - A data file greater than 64 Kbytes is used so that it is easy to verify that the file is not corrupted.

- Test Case Configuration

Test Case ID
DUN/DT/APS/BV-06-C [DT transfers data]
DUN/GW/APS/BV-06-C [DT transfers data]

Table 4.11: DT transfers data test cases

- Test Procedure

  1. The DT requests a dial-up connection establishment with the GW.
  2. The DT starts a data transfer over the established connection. Any IP-based protocol may be used.
  3. Verify that data is uncorrupted via validation of transferred file, engagement in a well-known IP protocol (PING, establishment of TCP connection) or directly by examining the IP packet at the receiving end.

- Expected Outcome

  Pass verdict

  It is possible to transmit the file from the DT.

  When the file is received at the remote side it is not corrupted.

4.4.6 DT receives data

- Test Purpose

  Verify that the DT can receive data file (including IP data).

- Reference

  [3] 3.2

- Initial Condition

  - The IUT and the Lower Tester use a circuit switched network connection.
  - The procedures described by DUN/DT/APS/BV-05-C [Incoming alert on DT] or DUN/GW/APS/BV-05-C [Incoming alert on DT] have been performed.
  - A data file greater than 64 Kbytes is used so that it is easy to verify that the file is not corrupted.

- Test Case Configuration

Test Case ID
DUN/DT/APS/BV-07-C [DT receives data]
DUN/GW/APS/BV-07-C [DT receives data]

Table 4.12: DT receives data test cases

- Test Procedure

  1. The DT requests a dial-up connection establishment with the GW.
  2. From any external network, start data transfer over the established connection. Any IP-based protocol may be used.
  3. Verify that data is received via validation of transferred file, engagement in a well-known IP protocol (PING, establishment of TCP connection) or directly by examining the IP packet at the receiving end.

- Expected Outcome

  Pass verdict

  It is possible to receive the file from the remote DT.

  When the file is received at the DT under test it is not corrupted.

4.4.7 Data call with audio Feedback - Outgoing call

- Test Purpose

  Verify that the GW can establish an audio connection to the DT so that audio feedback can be returned at dial-up to the external network.

- Reference

  [3] 4.2

- Initial Condition
  - The IUT and the Lower Tester are paired with each other.
  - The GW is set up to establish dial-up networking connection when requested by the DT.
  - The IUT and the Lower Tester use a circuit switched network connection.
  - The GW is configured to use audible alert during Bluetooth DUN connection establishment.
  - The external network is configured to accept the connection.
- Test Case Configuration

Test Case ID
DUN/DT/APS/BV-08-C [Data call with audio feedback - outgoing call]
DUN/GW/APS/BV-08-C [Data call with audio feedback - outgoing call]

Table 4.13: Data call with audio feedback - outgoing call test cases

- Test Procedure
  1. The DT connects to the external network via the GW by dialing the number to the external network.
  2. The external network accepts the connection.
- Expected Outcome

  Pass verdict

  The GW gives audio feedback to the DT during connection set up.

  There is a connection between the DT and the external network via the GW.

4.5 Termination and Standby

Verify that the units can terminate a data call in a correct manner and if applicable use the Bluetooth standby modes.

4.5.1 Termination by DT

- Test Purpose

  Verify that the DT can terminate a data call.
- Reference

  [3] 3.2
- Initial Condition
  - The external network is reachable by the GW over the Network Connection as specified in Table 4.14.
  - The DT has connected to the GW using the manufacturer-specific Bluetooth connection establishment procedure.
  - Bonding is completed.

- Test Case Configuration

Test Case ID	Network Connection
DUN/DT/TER/BV-01-C [DT terminates the data call with circuit switched network]	Circuit switched
DUN/GW/TER/BV-01-C [DT terminates the data call with circuit switched network]	Circuit switched
DUN/DT/TER/BV-11-C [DT terminates the data call with packet switched network]	Packet switched
DUN/GW/TER/BV-11-C [DT terminates the data call with packet switched network]	Packet switched

Table 4.14: DT terminates the data call test cases

- Test Procedure

  1. The DT terminates the data call.

- Expected Outcome

  Pass verdict

  The DT successfully terminates the data call.

4.5.2 Termination by GW

- Test Purpose

  Verify that the GW can terminate a data call.

- Reference

  [3] 3.2

- Initial Condition

  - The external network is reachable by the GW over the Network Connection as specified in Table 4.15.
  - The DT has connected to the GW using the manufacturer-specific Bluetooth connection establishment procedure.
  - Bonding is completed.

- Test Case Configuration

Test Case ID	Network Connection
DUN/DT/TER/BV-02-C [GW terminates the data call with circuit switched network]	Circuit switched
DUN/GW/TER/BV-02-C [GW terminates the data call with circuit switched network]	Circuit switched
DUN/DT/TER/BV-12-C [GW terminates the data call with packet switched network]	Packet switched
DUN/GW/TER/BV-12-C [GW terminates the data call with packet switched network]	Packet switched

Table 4.15: GW terminates the data call test cases

- Test Procedure

  1. The GW terminates the data call.

- Expected Outcome

  Pass verdict

  The GW successfully terminates the data call.

4.5.3 Termination by NT

- Test Purpose

  Verify that the data call can be closed from the NT side.

- Reference

  [3] 3.2

- Initial Condition

  - The external network is reachable by the GW over a circuit switched network.
  - The DT has connected to the GW using the manufacturer-specific Bluetooth connection establishment procedure.
  - Bonding is completed.

- Test Case Configuration

Test Case ID
DUN/DT/TER/BV-03-C [NT terminates the data call]
DUN/GW/TER/BV-03-C [NT terminates the data call]

Table 4.16: NT terminates the data call test cases

- Test Procedure

  1. The NT terminates the data call.

- Test Condition

  There must be an indication on the NT if there is a connection to the DT.

- Expected Outcome

  Pass verdict

  The DT is alerted that the data call is terminated.

  The connection between the NT and the DT is removed.

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 Dial-up Networking Profile (DUN) [6].

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

Test Case(s): The applicable test case identifiers, required for Bluetooth Qualification if the corresponding y/x references defined in the Item column are supported. Further details about the function of the TCMT are elaborated in [5].

For the purpose and structure of the ICS/IXIT, refer to [5].

Item	Feature	Test Case(s)
Discovery & Connection Setup		
DUN 1/1	Device Discovery – Gateway	DUN/GW/DCS/BV-05-C DUN/GW/SGSIT/SERR/BV-01-C DUN/GW/SGSIT/SERR/BV-02-C DUN/GW/SGSIT/ATTR/BV-01-C DUN/GW/SGSIT/ATTR/BV-02-C DUN/GW/SGSIT/OFFS/BV-01-C
DUN 0/1 AND DUN 1/1	Gateway SDP attribute: BluetoothProfileDescriptorList – DUN v1.1	DUN/GW/SGSIT/ATTR/BV-03-C
DUN 0/2 AND DUN 1/1	Gateway SDP attribute: BluetoothProfileDescriptorList – DUN v1.2	DUN/GW/SGSIT/ATTR/BV-04-C
DUN 1/2	Device Discovery – Data Terminal	DUN/DT/DCS/BV-05-C DUN/DT/CGSIT/SFC/BV-01-C
DUN 3/9	Bonding	DUN/DT/DCS/BV-06-C
DUN 2/9	Bonding	DUN/GW/DCS/BV-06-C
Application Services		
DUN 1b/1 AND DUN 3/10	Data call without audio Feedback - Outgoing call, circuit network	DUN/DT/APS/BV-02-C DUN/DT/APS/BV-03-C DUN/DT/APS/BV-04-C
DUN 2/10 AND DUN 1a/1	Data call without audio Feedback - Outgoing call, circuit network	DUN/GW/APS/BV-02-C DUN/GW/APS/BV-03-C DUN/GW/APS/BV-04-C
DUN 1b/2 AND DUN 3/10	Data call without audio Feedback - Outgoing call, packet network	DUN/DT/APS/BV-13-C DUN/DT/APS/BV-14-C
DUN 2/10 AND DUN 1a/2	Data call without audio Feedback - Outgoing call, packet network	DUN/GW/APS/BV-13-C DUN/GW/APS/BV-14-C

Item	Feature	Test Case(s)
DUN 3/11	Data call without audio Feedback - Incoming call circuit network	DUN/DT/APS/BV-05-C DUN/DT/APS/BV-06-C DUN/DT/APS/BV-07-C
DUN 2/11 AND DUN 1a/1	Data call without audio Feedback - Incoming call circuit network	DUN/GW/APS/BV-05-C DUN/GW/APS/BV-06-C DUN/GW/APS/BV-07-C
DUN 3/12	Data call with audio Feedback - Outgoing call circuit network	DUN/DT/APS/BV-08-C
DUN 2/12 AND DUN 1a/1	Data call with audio Feedback - Outgoing call circuit network	DUN/GW/APS/BV-08-C
Termination & Standby		
DUN 1b/1 AND DUN 3/13	Termination – DT, circuit network	DUN/DT/TER/BV-01-C
DUN 2/13 AND DUN 1a/1	Termination – DT, circuit network	DUN/GW/TER/BV-01-C
DUN 1b/1 AND DUN 3/14	Termination – GW, circuit network	DUN/DT/TER/BV-02-C
DUN 2/14a AND DUN 1a/1	Termination – GW, circuit network	DUN/GW/TER/BV-02-C
DUN 1b/1 AND DUN 3/15	Termination – NT, circuit network	DUN/DT/TER/BV-03-C
DUN 2/15 AND DUN 1a/1	Termination – NT, circuit network	DUN/GW/TER/BV-03-C
DUN 1b/2 AND DUN 3/13	Termination – DT, packet network	DUN/DT/TER/BV-11-C
DUN 2/13 AND DUN 1a/2	Termination – DT, packet network	DUN/GW/TER/BV-11-C
DUN 1b/2 AND DUN 3/14	Termination – GW, packet network	DUN/DT/TER/BV-12-C
DUN 2/14b AND DUN 1a/2	Termination – GW, packet network	DUN/GW/TER/BV-12-C

Table 5.1: Test case mapping

6 Revision history and acknowledgments

Revision History

Publication Number	Revision Number	Date	Comments
0	1.1	2001-04-19	First version for Specification 1.1
1	1.1.1	2005-03-10	Made editorial and format changes. Incorporate March, 2004, Addendum which included TSE 294 for changes to TP/TER/BV-01-I, TP/TER/BV-02-I, and TP/TER/BV-03-I, and included TSE 304 and TSE 454 with changes for the TCMT.
	1.2.1r0	2006-04-10	Editorial updates
2	1.2.1	2006-06-15	Prepare for publication.
	1.2.2r0	2006 11	TSE 1817: Update TCMT for TP/APS/BV-02-I & TP/TER/BV-03-I TSE 1892: Updates to TP/APS/BV-01-I, TP/APS/BV-03-I, TP/APS/BV-04-I, TP/TER/BV-01-I, TP/TER/BV-02-I, and updates to TCMT New tests cases TP/APS/BV-11-I, TP/SPS/BV-13-I, TP/APS/BV-14-I, TP/TER/BV-11-I, TP/TER/BV-12-I, and additions to TCMT Removed Sections 5.3.1.3, 5.3.2.3, 5.3.3.3, 5.3.4.3, 5.3.5.3, 5.3.6.3, 5.4.3.5, 5.4.2.9:and 5.4.4.3
	1.2.2r0	2006-11-01	Removed Sections 5.3.1.3, 5.3.2.3, 5.3.3.3, 5.3.4.3, 5.3.5.3, 5.3.6.3, 5.4.3.5, 5.4.2.9:and 5.4.4.3
3	1.2.2	2007-01-09	Prepare for publication.
	1.2.3r0	2007-03-08	TSE 1966: Remove TP/APS/BV-01-I and TP/APS/BV-11-I TSE 2206: TCMT changes for TP/TER/BV-02-I, TP/TER/BV-12-I
4	1.2.3	2007-08-03	Prepare for publication.
	1.2.4r0	2008-02-01	TSE 2379: TP/APS/BV-03-I, TP/APS/BV-04-I,TP/APS/BV-13-I,TP/APS/BV-14-I
5	1.2.4	2008-04-01	Prepare for publication.
	1.2.5r0-1	2008-07-29 - 2008-10-01	TSE 2478: TP/APS/BV-03-I, TP/APS/BV-13-I, TP/APS/BV-14-I, TP/APS/BV-08-I, TCMT per PICS changes 2569: TP/APS/BV-06-I, TP/APS/BV-07-I 2596: TP/DCS/BV-01-I: remove duplicate in TCMT (and TCRL) TSE 2679: TP/APS/BV-05-I, TP/APS/BV-06-I, TP/APS/BV-07/I, TP/APS/BV-08-I, TCMT Input reviewer's corrections for TP/APS/BV-06-I, 07-I
6	1.2.5r	2008-12-02	Prepare for publication.

Publication Number	Revision Number	Date	Comments
	1.2.6r0	2012-10-04	Version updated for specification version 1.2 Updated conformance section to match the updated TSTO doc language Editorial updates to align with current standards
	1.2.6r1	2012-10-04	Changes made according to reviewer comments, Magnus and Alicia. Removed redundant test group objective subgroup sections, 5.3.1.1, 5.3.2.1, 5.3.3.1, 5.3.4.1, 5.3.5.1, 5.3.6.1, 5.4.2.1, 5.4.3.1, 5.4.4.1, 5.5.2.1, 5.5.3.1, 5.5.4.1, as test purposes are already described. Removed DUN prefix from TCMT.
7	1.2.6	2012-11-13	Prepare for Publication
	1.2.7r1	2013-08-16	TCRL 2013-2 TSE 5271: Update TCMT section references to ICS tables, GW features should be 2/x and DT features should be 3/x.
8	1.2.7	2013-12-03	Prepare for Publication
	1.2.8r00	2016-11-07	Converted to new Test Case ID conventions as defined in TSTO v4.1.
	1.2.8r01	2016-11-07	Converted test specification template.
9	1.2.8	2016-12-13	Approved by BTI. Prepared for TCRL 2016-2 publication.
	p10r00	2022-11-02 – 2022-11-04	TSE 20467 (rating 1): Updated to align with current TS conventions/template. Changed the following test cases to table-driven tests: DUN/DT/DCS/BV-05-I and -06-I; DUN/GW/DCS/BV-05-I and -06-I; DUN/DT/APS/BV-03-I – -08-I, -13-I, and -14-I; DUN/DT/TER/BV-01-I – -03-I, -11-I, and -12-I; DUN/GW/APS/BV-03-I – -08-I, -13-I, and -14-I; DUN/GW/TER/BV-01-I – -03-I, -11-I, and -12-I. Deleted the following test cases: DUN/DT/DCS/BV-01-I, -02-I, and -04-I and DUN/GW/DCS/BV-01-I – -04-I. Updated the TCMT and the references list. Added a Publication Number column to the Revision History. Revised the document numbering convention, setting the last release publication of 1.2.8 as p9. TSE 20526 (rating 3): Updated the test procedure and expected outcome for DUN/DT/DCS/BV-06-I and DUN/GW/DCS/BV-06-I. Performed additional template-related formatting fixes. Replaced the Bluetooth logo in the footer and updated the copyright page to align with v2 of the DNMD.
10	p10	2023-02-07	Approved by BTI on 2022-12-19. Prepared for TCRL 2022-2 publication.

Publication Number	Revision Number	Date	Comments
	p11r00–r03	2023-10-19 – 2024-04-03	TSE 23887 (rating 1): Converted -I tests to -C tests as appropriate; updated the TCMT and TCRL accordingly. Updated the document to align with the latest TS template conventions. TSE 24524 (rating 4): Added new GSIT section with new TCs DUN/GW/SGSIT/SERR/BV-01-C and -02-C, DUN/GW/SGSIT/ATTR/BV-01-C – -04-C, DUN/DT/CGSIT/SFC/BV-01-C, and DUN/GW/SGSIT/OFFS/BV-01-C. Updated the TCMT accordingly. Added the SDP TS to the references list and updated the test groups list and the TC conventions section.
11	p11	2024-07-01	Approved by BTI on 2024-05-22. Prepared for TCRL 2024-1 publication.

Acknowledgments

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