Running Speed and Cadence Profile (RSCP)

***Bluetooth*® Test Suite**

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Contents

1 Scope

This Bluetooth document contains the Test Suite Structure (TSS) and test cases to test the implementation of the Bluetooth Running Speed and Cadence Profile Specification 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 [1] and [2].

[1] Test Strategy and Terminology Overview

[2] Bluetooth Core Specification, Version 4.0 or later

[3] Running Speed and Cadence Profile Specification, Version 1.0 or later

[4] ICS Proforma for Running Speed and Cadence Profile, RSCP.ICS

[5] GATT Test Suite, GATT.TS

[6] Running Speed and Cadence Service, Version 1.0 or later

[7] Running Speed and Cadence Service, Test Suite, RSCS.TS

[8] Device Information Service Specification, Version 1.1 or later

[9] IXIT Proforma for Running Speed and Cadence Profile

[10] Running Speed and Cadence Profile Specification, Version 1.0.1

2.2 Definitions

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

2.3 Acronyms and abbreviations

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

3 Test Suite Structure (TSS)

3.1 Overview

The Running Speed and Cadence Profile requires the presence of GAP, SM, and GATT. This is illustrated in Figure 3.1.

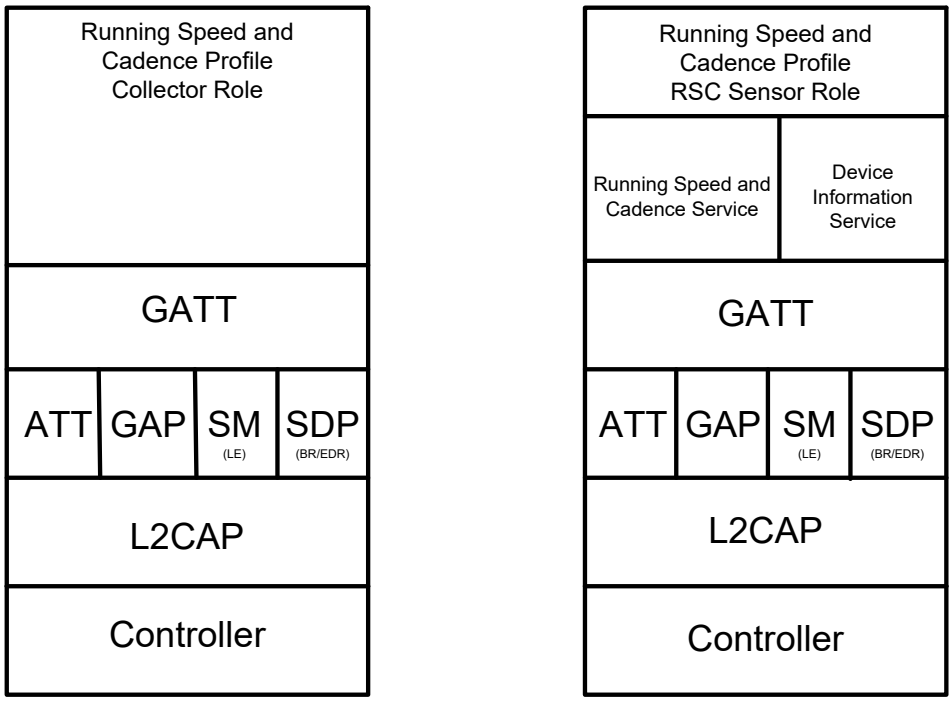

Figure 3.1: Running Speed and Cadence test model

3.2 Test Strategy

The test objectives are to verify the functionality of the Running Speed and Cadence 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 cases.

3.2.1 Test database requirements

The following requirements apply to the set of databases used by the Lower Tester for testing of GATT Client functionality:

- The Lower Tester includes one instantiation of each of the services used by this profile including all defined characteristics.
- Each service instantiation also contains two «future» characteristics.
  - If possible, with one inserted before the first characteristic defined
  - If possible, with one appended after the last characteristic defined
- Each «future» characteristic has a 16-bit UUID randomly selected from unassigned UUIDs at the time of the test.

3.3 Test groups

The following test groups have been defined:

- Generic GATT Integrated Tests
- Discovery of Services and Characteristics
- Features
- Service Procedures

4 Test cases (TC)

4.1 Introduction

4.1.1 Test case identification conventions

Test cases are assigned unique identifiers per the conventions in [1]. 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 GATT Test Suite [5] referred to as Generic GATT Integrated Tests (GGIT); when used, the test cases in GGIT are referred to through a TCID string using the following convention:
<spec abbreviation>/<IUT role>/<GGIT test group>/< GGIT class >/<xx>-<nn>-<y>.

Identifier Abbreviation	**Spec identifier <spec abbreviation>**
RSCP	Running Speed and Cadence Profile
Identifier Abbreviation	**Role Identifier <IUT role>**
COL	Collector Role
SEN	RSC Sensor Role
Identifier Abbreviation	**Reference Identifier <GGIT test group>**
CGGIT	Client Generic GATT Integrated Tests
SGGIT	Server Generic GATT Integrated Tests
Identifier Abbreviation	**Reference Identifier <GGIT class>**
CHA	Characteristic
ISFC	Indication Supported Features Characteristic
SDPNF	SDP Record Not Found
SER	Service
Identifier Abbreviation	**Features Identifier <feat>**
RSCD	Discovery of Services and Characteristics
RSCF	Features
SPC	Service Procedure – Start Sensor Calibration
SPE	Service Procedure – Error Handling
SPL	Service Procedure – Request Supported Sensor Locations
SPS	Service Procedure – Set Cumulative Value
SPU	Service Procedure – Update Sensor Location

Table 4.1: RSCP 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 Setup preambles

The procedures defined in this section are provided for information, as they are used by test equipment in achieving the initial conditions in certain tests.

4.2.1 ATT Bearer on LE Transport

- Preamble Procedure

1. Establish an LE transport connection between the IUT and the Lower Tester.
2. Establish an L2CAP channel 0x0004 between the IUT and the Lower Tester over that LE transport.

4.2.2 ATT Bearer on BR/EDR Transport

- Preamble Procedure

1. Establish a BR/EDR transport connection between the IUT and the Lower Tester.
2. Establish several L2CAP channels (PSM 0x001F) between the IUT and the Lower Tester over that BR/EDR transport.

4.2.3 Collector: Configure RSC Sensor for use with SC Control Point

- Preamble Purpose

  This preamble procedure specifies how the Collector IUT configures the RSC Sensor for use with SC Control Point and is valid for LE and BR/EDR transports.

- Preamble Procedure

  1. Establish an ATT Bearer connection between the Lower Tester and IUT as described in Section 4.2.1, if using an LE transport, or Section 4.2.2 if using a BR/EDR transport.
  2. The handles of the RSC Measurement characteristic, RSC Feature, Sensor Location and SC Control Point characteristic have been previously discovered by the Lower Tester during the test procedures in Section 4.3 or are known to the Lower Tester by other means.
  3. The handles of the Client Characteristic Configuration descriptor of the RSC Measurement characteristic, SC Control Point characteristic have been previously discovered by the Lower Tester during the test procedure in Section 4.3 or are known to the Lower Tester by other means.
  4. The Lower Tester may perform a bonding procedure. If previously bonded, enable encryption if not already enabled.
  5. The IUT configures the SC Control Point characteristic for indications, and if the test case requires notifications of the RSC Measurement characteristic, the IUT configures the RSC Measurement characteristic for notifications. These configurations may occur in any order.

4.2.4 LE Collector: Scan to detect Sensor Advertisements

- Preamble Purpose

  This LE preamble procedure specifies how the Collector IUT scans for RSC Sensor advertisements for the case when a Sensor has new data available.

- Reference

  [3] 5.2

  [2] GAP 9.3.3, 9.3.4

- Preamble Procedure

  1. Configure the Collector IUT to accept commands from the Upper Tester to receive RSC measurements.
  2. The Upper Tester commands the Collector IUT to initiate a connection and the IUT starts scanning.
  3. The RSC Sensor (Lower Tester) advertises to the Collector IUT either using:

     - ALT 1: GAP Directed Connectable Mode (send ADV_DIRECT_IND packets).

     or

     - ALT 2: GAP Undirected Connectable Mode (send ADV_IND packets).

  4. The Lower Tester waits for responses from the Collector IUT.
  5. The Collector IUT sends a CONNECT_REQ and an optionally empty PDU to the Lower Tester.

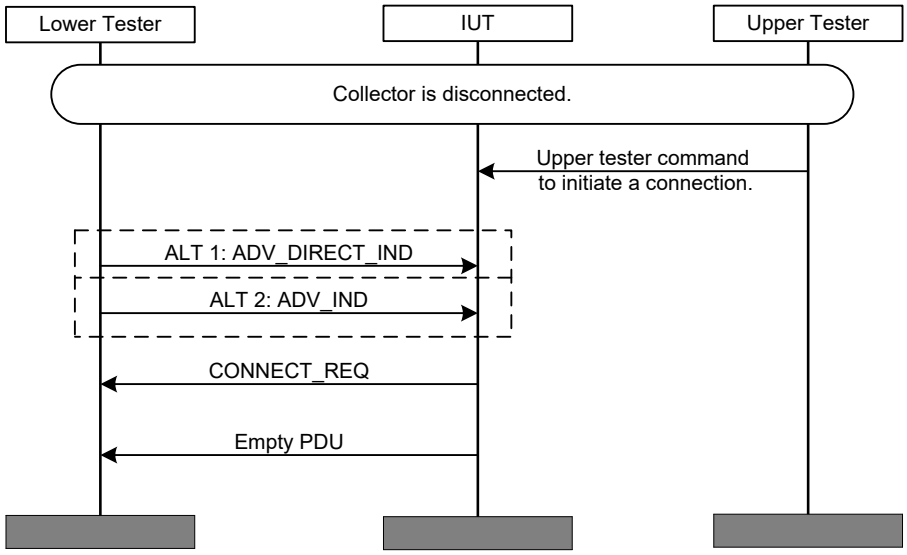

Figure 4.1: LE Collector: Scan to detect Sensor Advertisements preamble

4.2.5 BR/EDR Collector

4.2.5.1 Connection Establishment for Unbonded Devices

- Preamble Purpose

  This BR/EDR preamble procedure specifies how the Collector IUT scans for the RSC Sensor for the case when an RSC Sensor has new data available.

- Reference

  [3] 5.3

  [2] GAP 4.1, 4.2

- Preamble Procedure

  1. Configure the Collector IUT to accept commands to receive RSC measurements.
  2. Put the RSC Sensor in General Discoverable mode.
  3. The Upper Tester commands the Collector IUT to initiate a connection and the IUT starts scanning.
  4. The RSC Sensor (Lower Tester) exposes the SDP record for the Running Speed and Cadence Service.
  5. The Collector IUT validates the SDP record and establishes a connection to the RSC Sensor.
  6. The Collector uses the GAP General Discovery procedure to discover a RSC Sensor to establish a connection to a RSC Sensor.

4.2.5.2 Connection Establishment for Bonded Devices

- Preamble Purpose

  In case of BR/EDR, either an RSC Sensor or Collector could initiate connection when they are bonded. The device initiating the connection becomes a Central and is referred to here as the “paging device” and the device accepting the connection becomes a Peripheral and is referred to here as the “page scanning device”.

  This BR/EDR preamble procedure specifies how a paging device connects to a page scanning device.

- Reference

  [3] 5.3

  [2] GAP 4.1, 4.2

- Preamble Procedure

  1. Configure the Collector to accept commands to receive RSC measurements.
  2. Put the page scanning device in connectable mode to accept a connection from the paging device.
  3. The connection is initiated by the paging device.
  4. The Peripheral exposes the SDP record for the Running Speed and Cadence Service.
  5. The Central validates the SDP record and establishes a connection to the Peripheral.
  6. The Central uses the GAP Link Establishment Procedure to connect to any bonded device.

4.3 Generic GATT Integrated Tests

Execute the Generic GATT Integrated Tests defined in Section 6.3, Server test procedures (SGGIT), and Section 6.4, Client test procedures (CGGIT), in [5] using Table 4.2 as input:

TCID	Service / Characteristic / Descriptor	Reference	Properties	Value Length (Octets)	Service Type
RSCP/COL/CGGIT/SER/BV-01-C [Service GGIT – Running Speed and Cadence]	Running Speed and Cadence Service	[3] 4.2.1	-	-	Primary Service
RSCP/COL/CGGIT/SER/BV-02-C [Service GGIT – Device Information]	Device Information Service	[3] 4.2.2	-	-	Primary Service
RSCP/COL/CGGIT/CHA/BV-01-C [Characteristic GGIT – RSC Measurement]	RSC Measurement Characteristic	[3] 4.3.1.1	0x10 (Notify)	Skip	-
RSCP/COL/CGGIT/CHA/BV-02-C [Characteristic GGIT – RSC Feature]	RSC Feature Characteristic	[3] 4.3.1.2	0x22 (Read, Indicate)	2	-
RSCP/COL/CGGIT/CHA/BV-03-C [Characteristic GGIT – Sensor Location]	Sensor Location Characteristic	[3] 4.3.1.3	0x02 (Read)	1	-
RSCP/COL/CGGIT/CHA/BV-04-C [Characteristic GGIT – SC Control Point]	SC Control Point Characteristic	[3] 4.3.1.4	0x28 (Write, Indicate)	Skip	-
RSCP/SEN/SGGIT/SDPNF/BV-01-C [Not discoverable over BR/EDR – Running Speed and Cadence Service]	Running Speed and Cadence Service	[3] 2.5	-	-	-

Table 4.2: Input for the GGIT Server test procedure

4.3.1 Generic GATT Indication Supported Features Characteristic

Execute the Generic GATT Indication Supported Features Characteristic Tests defined in Section 6.4, Client test procedures (CGGIT), in [5] using Table 4.3 below as input:

TCID	Characteristic	Reference	TC Configuration
RSCP/COL/CGGIT/ISFC/BV-01-C [Characteristic GGIT – RSC Feature]	RSC Feature Characteristic	[10] 4.5	N/A

Table 4.3: Input for the GGIT Indication Supported Features Characteristic Tests

4.4 Discover Services and Characteristics

The procedures defined in this test group verify the IUT's ability to discover the services and characteristics exposed by an RSC Sensor (Lower Tester).

RSCP/COL/RSCD/BV-11-C [Discover Device Information Service Characteristics]

- Test Purpose

  Verify that a Collector IUT can discover all characteristics of a Device Information Service supported by the IUT.

- Reference

  [3] 4.3.2

- Initial Condition

  - Via IXIT [9] the IUT manufacturer specifies all characteristics of the Device Information Service supported by the IUT.
  - Run the preamble procedure to enable the Collector to initiate connection to a RSC Sensor included in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport.
  - The IUT has executed RSCP/COL/CGGIT/SER/BV-02-C [Service GGIT – Device Information] and has saved the handle range for an instantiation of the Device Information contained in the Lower Tester. The Device Information Service contains one or more characteristics.

- Test Procedure

  1. The Upper Tester issues a command to the IUT to discover all characteristics of the Device Information Service supported by the IUT.
  2. The IUT executes either alternative 2A or 2B.

  Alternative 2A (Discover All Characteristics of a Service sub-procedure):

  2A: Discover All Characteristics of a Service using the specified handle range, with the Lower Tester instantiating the database specified in Section 3.2.1.

  Alternative 2B (Discover Characteristics by UUID sub-procedure):

  2B: Discover Characteristics by UUID using each of the UUIDs for the characteristics of the Device Information Service supported by the IUT, with the Lower Tester instantiating the database specified in Section 3.2.1.

- Expected Outcome

  Pass verdict

  For each characteristic supported by the IUT contained in the Lower Tester's instantiation of the Device Information Service, the IUT reports an attribute handle/value pair for each characteristic specified in the IXIT [9] to the Upper Tester.

RSCP/COL/RSCD/BV-12-C [Read Device Information Service Characteristics]

- Test Purpose

  Verify that a Collector IUT can read all characteristics of a Device Information Service supported by the IUT.

- Reference

  [3] 3.2, 4.3.2

- Initial Condition

  - Via IXIT [9] the IUT manufacturer specifies all characteristics of the Device Information Service supported by the IUT.
  - Run the preamble procedure to enable the Collector to initiate connection to a RSC Sensor included in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport.
  - The Lower Tester includes one instantiation of the Device Information Service [8] including all defined characteristics.
  - The IUT has the handle/value pairs for all characteristics of the Device Information Service supported by the IUT.

- Test Procedure

  1. The Upper Tester issues a command to the IUT to read all characteristics of the Device Information Service supported by the IUT.
  2. For each characteristic of the Device Information Service supported by the IUT, the IUT sends an ATT_Read_Request to the Lower Tester containing the handle specified by the Upper Tester.
  3. The IUT receives an ATT_Read_Response and reports the value to the Upper Tester.
  4. Repeat steps 1–3 with the string-based characteristics changed to include character values outside the ASCII printable range.Expected Outcome

  Pass verdict

  For each characteristic contained in the Lower Tester's instantiation of the Device Information Service supported by the IUT, the IUT reports the characteristic value for all characteristics specified in the IXIT [9] to the Upper Tester, including any printable or non-printable ASCII values.

RSCP/COL/RSCD/BV-13-C [Read RSC Feature Characteristic with Bonding Enabled]

- Test Purpose

  Verify that, after the initial connection and bonding, the Collector IUT can read the RSC Feature characteristic.

- Reference

  [10] 4.5

- Initial Condition

  - Establish an ATT Bearer connection between the Lower Tester and the IUT as described in Section 4.2.1 if using an LE transport or Section 4.2.2 if using a BR/EDR transport.
  - The IUT is bonded with the Lower Tester.
  - The Upper Tester knows the handle of the RSC Feature characteristic contained in the Lower Tester.

- Test Procedure

  1. The Upper Tester commands the IUT to read the RSC Feature characteristic from the Lower Tester.
  2. The IUT sends an ATT_Read_Request to the Lower Tester containing the handle specified by the Upper Tester.
  3. The Lower Tester receives the ATT_Read_Request and then sends an ATT_Read_Response to the IUT containing the value of the characteristic.
  4. The IUT receives the ATT_Read_Response and reports the value to the Upper Tester.

- Expected Outcome

  Pass verdict

  The IUT reads the RSC Feature characteristic and reports its value to the Upper Tester.

  Reserved for future use bit values are ignored.

RSCP/COL/RSCD/BV-14-C [Enable RSC Feature Characteristic for Indication or Read Feature Characteristic Upon Reconnection]

- Test Purpose

  Verify that the Collector IUT can either enable the RSC Feature characteristic for indication or read the RSC Feature characteristic upon reconnection.

- Reference

  [10] 4.5

- Initial Condition

  - The handles of the RSC Feature characteristic and Client Characteristic Configuration descriptor have been previously discovered by the Upper Tester during the test procedures in Section 4.3 or are known to the Upper Tester by other means.
  - Establish an ATT Bearer connection between the Lower Tester and IUT as described in Section 4.2.1 if using an LE transport or Section 4.2.2 if using a BR/EDR transport.
  - The IUT is not paired and bonded with the Lower Tester.

- Test Procedure

  1. The Upper Tester orders the IUT to initiate pairing and bonding.
  2. The Upper Tester commands the IUT to perform either alternative 2A or 2B:

     Alternative 2A (Configure the RSC Feature characteristic for indication):

     2A.1 The IUT configures the RSC Feature characteristic for indication.

     Alternative 2B (Read the RSC Feature characteristic upon reconnection):

     2B.1 The Upper Tester commands the IUT to disconnect, and the IUT terminates the connection with the Lower Tester.

     2B.2 The Upper Tester commands the IUT to reconnect to the Lower Tester.

     2B.3 The IUT reads the RSC Feature characteristic from the Lower Tester and reports the value to the Upper Tester.

- Expected Outcome

  Pass verdict

  In step 1, the IUT successfully completes pairing and bonding.

  In step 2A.1, the IUT enables the RSC Feature characteristic for indication.

  In step 2B.3, the IUT reads the RSC Feature characteristic and reports its value to the Upper Tester.

  Reserved for future use bit values are ignored.

4.5 Running Speed and Cadence Features

The procedures defined in this test group verify Running Speed and Cadence Sensor IUT implementation of the Features defined in the Running Speed and Cadence Profile Specification [3] by an RSC Sensor IUT, and usage of the same features by a Collector IUT.

RSCP/SEN/RSCF/BV-01-C [Running Speed and Cadence Service UUID in AD]

- Test Purpose

  Verify that the Running Speed and Cadence Service UUID is included in AD (Advertising Data) from the RSC Sensor IUT when using the LE Transport.

- Reference

  [3] 3.1.1

- Initial Condition

  - The IUT is powered on in GAP Discoverable Mode.
  - The IUT is induced to generate Advertising Packets using the preamble in Section 4.2.3.

- Test Procedure

  The Lower Tester listens for Advertising Packets from the IUT.

- Expected Outcome

  Pass verdict

  At least one received Advertising Packet contains the defined Service UUID for «Running Speed and Cadence Service».

RSCP/SEN/RSCF/BV-02-C [Local Name included in AD or Scan Response]

- Test Purpose

  Verify that the Local Name is included in AD (Advertising Data) or Scan Response data from the RSC Sensor IUT when using the LE Transport.

- Reference

  [3] 3.1.1.2

- Initial Condition

  - The IUT is powered on.
  - The IUT is induced to generate Advertising Packets using the preamble in Section 4.2.3.

- Test Procedure

  1. The Lower Tester listens for Advertising Packets from the IUT. When the Lower Tester receives an Advertising Packet from IUT, it sends a Scan Request to the IUT. Then the Lower Tester listens for a Scan Response from the IUT.

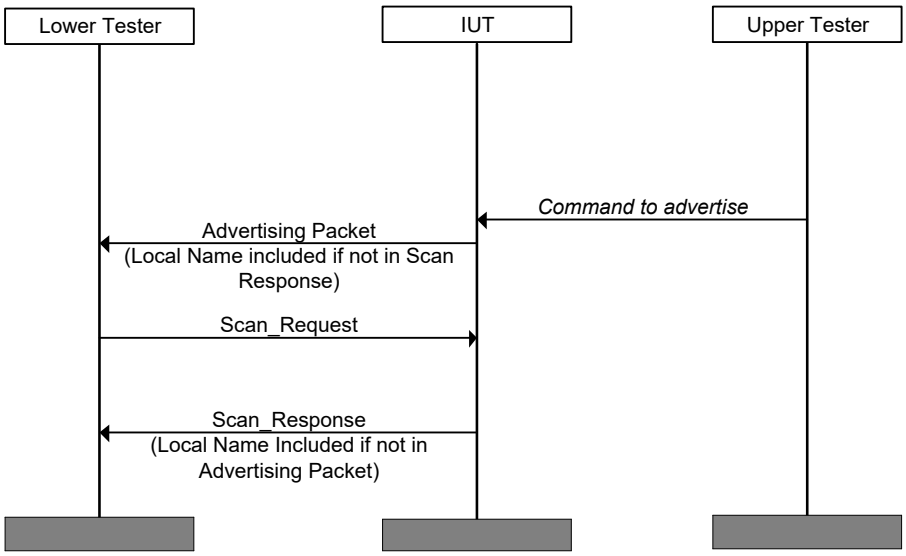

Figure 4.2: RSCP/SEN/RSCF/BV-02-C [Local Name included in AD or Scan Response]

- Expected Outcome

  Pass verdict

  The IUT sends an Advertising packet and a Scan Response packet.

  The IUT includes the Local Name in either the Advertising packet or Scan Response packet, but not both.

RSCP/SEN/RSCF/BV-03-C [Appearance included in AD or Scan Response]

- Test Purpose

  Verify that the Appearance characteristic value is included in AD (Advertising Data) or Scan Response data from the RSC Sensor IUT when using the LE Transport.

- Reference

  [3] 3.1.1.4

- Initial Condition

  - The IUT is powered on.
  - The IUT is induced to generate Advertising Packets using the preamble in Section 4.2.3.

- Test Procedure

  1. The Lower Tester listens for Advertising Packets from the IUT. When the Lower Tester receives an Advertising Packet from IUT, it sends a Scan Request to the IUT. Then the Lower Tester listens for a Scan Response from the IUT.

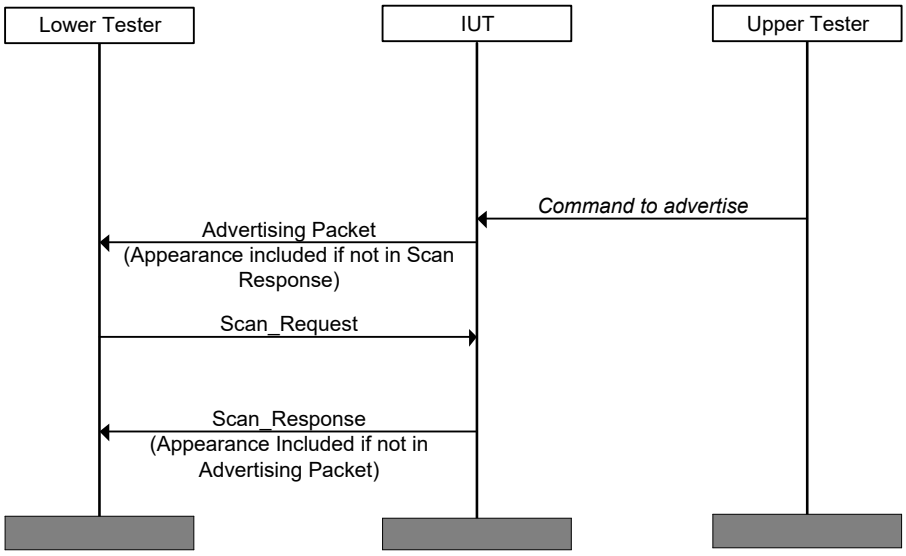

Figure 4.3: RSCP/SEN/RSCF/BV-03-C [Appearance included in AD or Scan Response]

- Expected Outcome

  Pass verdict

  The IUT sends an Advertising packet and a Scan Response packet.

  The IUT includes the Appearance characteristic value in either the Advertising packet or Scan Response packet, but not both.

RSCP/COL/RSCF/BV-04-C [Configure RSC Measurement for Notification]

- Test Purpose

  Verify that the Collector IUT can configure an RSC Sensor (Lower Tester) to notify RSC Measurement characteristics.

- Reference

  [3] 4.4

- Initial Condition

  - A preamble procedure defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport is used to setup the transport and L2CAP channel and initiate connection to a RSC Sensor.
  - The IUT has discovered the Client Configuration Descriptor for a RSC Measurement characteristic contained in the Lower Tester.

- Test Procedure

  1. The Upper Tester sends a command to the IUT to configure the RSC Sensor to receive RSC Measurement characteristics.

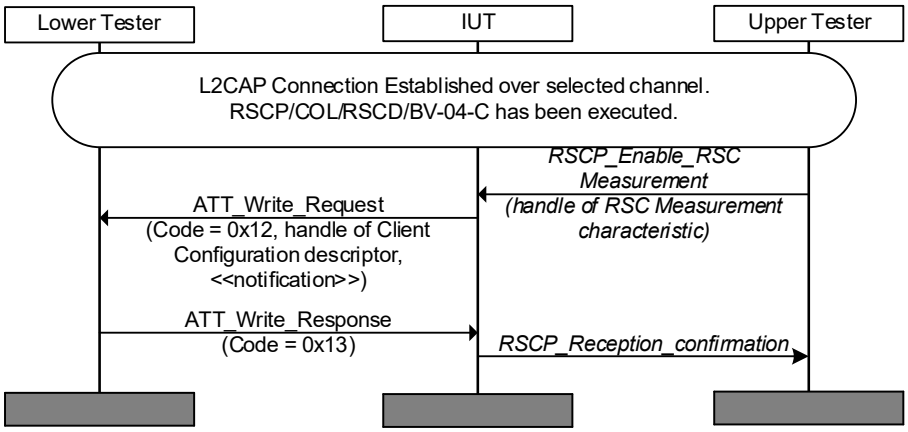

Figure 4.4: RSCP/COL/RSCF/BV-04-C [Configure RSC Measurement for Notification]

- Expected Outcome

  Pass verdict

  IUT sends a correctly formatted ATT_Write_Request (0x12) to the Lower Tester, with the handle set to that of the Client Configuration Descriptor for a RSC Measurement characteristic, and the value set to «notification».

RSCP/COL/RSCF/BV-05-C [Receive RSC Measurement for Notifications]

- Test Purpose

  Verify that the Collector IUT can receive notifications of the RSC Measurement Characteristic, including all variants.

- Reference

  [3] 4.4

- Initial Condition

  - A preamble procedure defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport is used to setup the transport and L2CAP channel and initiate connection to a RSC Sensor.
  - The IUT has executed the procedure included in RSCP/COL/RSCF/BV-04-C [Configure RSC Measurement for Notification], which configures it to expect RSC Measurement Notifications.
  - The IUT knows the handle of the RSC Measurement characteristic.

- Test Procedure

  1. The Lower Tester sends an ATT_Handle_Value_Notification containing a RSC Measurement characteristic value to the IUT.
  2. The Lower Tester sends one RSC Measurement characteristic notification for each Test Pattern shown in the following table. For each Test Pattern, the value of the Flags field is shown along with the corresponding pass criteria.

Test Pattern	Flags Field Value	Pass Criteria
1	000000000	No optional fields are present and Walking or Running Status indicates that the user is walking.
2	000000001	Only optional field present is Instantaneous Stride Length and the Walking or Running Status bit indicates that the user is walking.
3	000000010	Only optional field present is Total Distance and the Walking or Running Status bit indicates that the user is walking.
4	000000100	No optional fields are present and the Walking or Running Status bit indicates that the user is running.
5	000000111	All optional fields are present and the Walking or Running Status bit indicates that the user is running

Table 4.4: RSCP/COL/RSCF/BV-05-C [Receive RSC Measurement for Notifications]

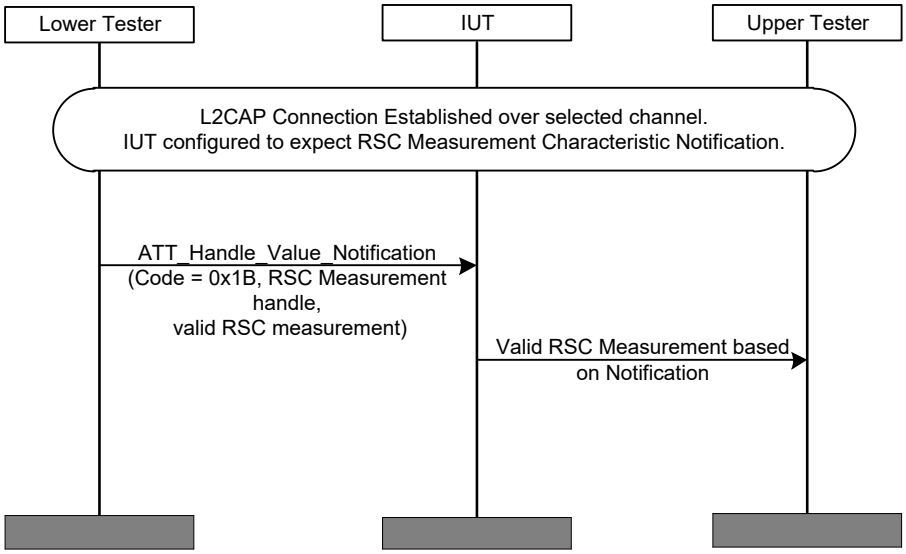

Figure 4.5: RSCP/COL/RSCF/BV-05-C [Receive RSC Measurement for Notifications]

- Expected Outcome

  Pass verdict

  IUT is able to correctly parse the received RSC Measurement values according to the pass criteria in the table above. The reported RSC Measurement field values match the ones sent by the Lower Tester.

RSCP/COL/RSCF/BI-01-C [Receive RSC Measurement Notifications with reserved flags]

- Test Purpose

  Verify that the Collector IUT can receive notifications of the RSC Measurement Characteristic from an RSC Sensor including reserved flags.

- Reference

  [3] 4.4

- Initial Condition
  - A preamble procedure defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport is used to setup the transport and L2CAP channel and initiate connection to a RSC Sensor.
  - The IUT has executed the procedure included in RSCP/COL/RSCF/BV-04-C [Configure RSC Measurement for Notification], which configures it to expect RSC Measurement Notifications.
  - The IUT knows the handle of the RSC Measurement characteristic.
- Test Procedure

  The Lower Tester sends an ATT_Handle_Value_Notification containing a RSC Measurement characteristic value to the IUT. There are many combinations of reserved flag settings. For this test use Flags = 0xFF. This includes reserved bits 7, 6, 5, 4 and 3 = 11111 and valid uses of the other flags: Instantaneous Stride Length Present bit = 1, Total Distance Present bit = 1, Walking or Running Status bit = 1.

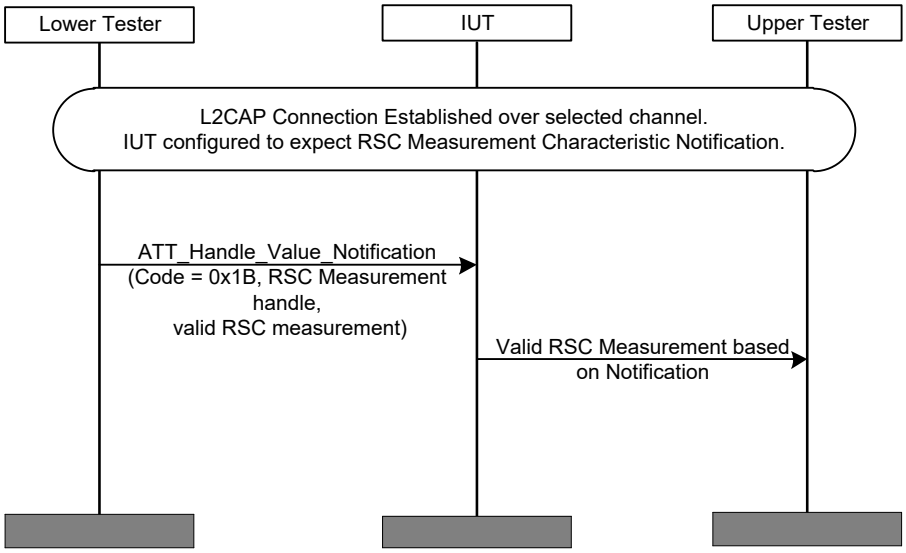

Figure 4.6: RSCP/COL/RSCF/BI-01-C [Receive RSC Measurement Notifications with reserved flags]

- Expected Outcome

  Pass verdict

  IUT reports the received RSC Measurement value to the Upper Tester. The reported RSC Measurement value matches the one sent by the Lower Tester, including the reserved bits of the Flags field.

RSCP/COL/RSCF/BI-02-C [Receive RSC Measurement Notifications with additional octets not represented in the flags field]

- Test Purpose

  Verify that the Collector IUT can receive notifications of the RSC Measurement Characteristic from an RSC Sensor including additional octets not represented in the flags field.

- Reference

  [3] 4.4

- Initial Condition
  - A preamble procedure defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport is used to setup the transport and L2CAP channel and initiate connection to a RSC Sensor.
  - The IUT has executed the procedure included in RSCP/COL/RSCF/BV-04-C [Configure RSC Measurement for Notification], which configures it to expect RSC Measurement Notifications.
  - The IUT knows the handle of the RSC Measurement characteristic.
- Test Procedure

  The Lower Tester sends an ATT_Handle_Value_Notification containing a RSC Measurement characteristic value to the IUT. That value contains: Flags = 0x00, Instantaneous Stride Length is not present, Total Distance is not present, and at least two additional octets not represented in the flags field. The total number of octets does not exceed the maximum MTU size.

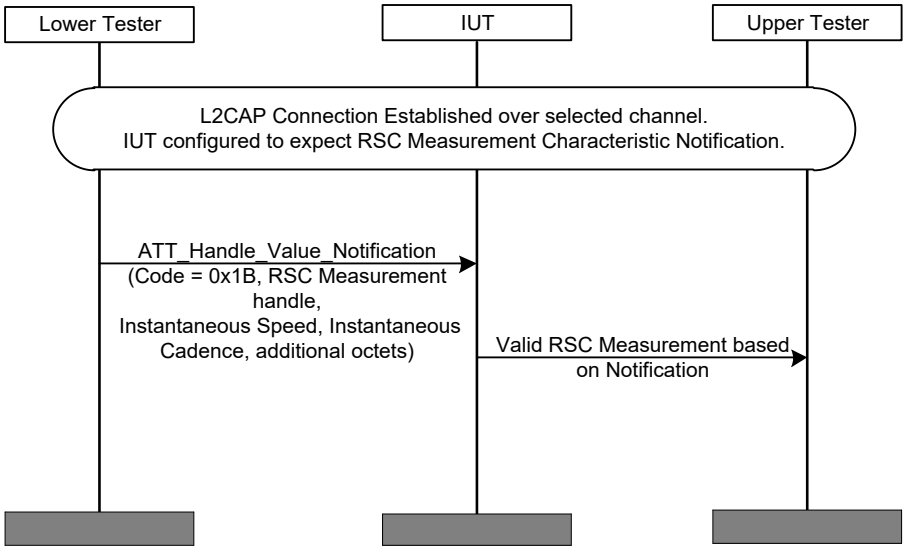

Figure 4.7: RSCP/COL/RSCF/BI-02-C [Receive RSC Measurement Notifications with additional octets not represented in the flags field]

- Expected Outcome

  Pass verdict

  IUT reports the received RSC Measurement value to the Upper Tester with no additional octets. The reported RSC Measurement value matches the one sent by the Lower Tester.

  Fail verdict

  Any of the pass verdicts fail to occur. In particular, if the additional octets are reported to the Upper Tester.

RSCP/COL/RSCF/BV-06-C [Receive multiple RSC Measurement Notifications]

- Test Purpose

  Verify that the collector IUT can receive multiple RSC Measurement notifications.

- Reference

  [3] 4.4, 4.5

- Initial Condition
  - A preamble procedure defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport is used to setup the transport and L2CAP channel and initiate connection to a RSC Sensor.
  - The IUT is configured to enable RSC Measurement Notification, by executing the procedure contained in RSCP/COL/RSCF/BV-04-C [Configure RSC Measurement for Notification].
  - The IUT knows the handle of the RSC Measurement characteristic.
- Test Procedure

  The Lower Tester sends two or more ATT_Handle_Value_Notifications to the IUT; each contains the RSC Measurement characteristic value.
- Expected Outcome

  Pass verdict

  For each ATT_Handle_Value_Notification sent to the IUT:
  - The IUT reports the received RSC Measurement value to the Upper Tester.
  - The reported RSC Measurement values match that sent by the Lower Tester.

RSCP/COL/RSCF/BI-03-C [Read RSC Feature characteristic with reserved value]

- Test Purpose

  Verify that the Collector IUT can read the RSC Feature characteristic from a RSC Sensor, and ignore reserved bits.
- Reference

  [3] 4.5
- Initial Condition
  - A preamble procedure defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport is used to setup the transport and L2CAP channel and initiate connection to a RSC Sensor.
  - The Upper Tester knows the handle of a RSC Feature characteristic contained in the Lower Tester.
- Test Procedure
  1. Send a command from Upper Tester to request the IUT to read a RSC Feature Characteristic from the Lower Tester e.g., RSCP_ReadRequest (handle, value).
  2. After receipt of the expected result by the Lower Tester from the IUT, send an ATT_Read_Response (0x0B) from the Lower Tester to the IUT containing values with some reserved bits set to 1.

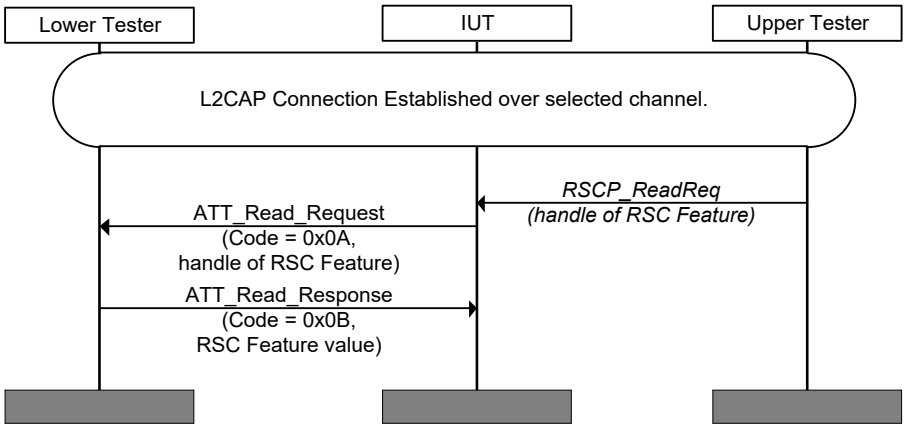

Figure 4.8: RSCP/COL/RSCF/BI-03-C [Read RSC Feature characteristic with reserved value]

- Expected Outcome

  Pass verdict

  The IUT sends a correctly formatted ATT_Read_Request (0x0A) to the Lower Tester, containing the handle specified by the Upper Tester.

  The IUT receives the response from the Lower Tester, ignores the reserved bits and continues to operate as if the reserved bits were not set.

RSCP/COL/RSCF/BI-04-C [Read Sensor Location characteristic with reserved value]

- Test Purpose

  Verify that the Collector IUT can read the Sensor Location characteristic from a RSC Sensor, and discard a reserved value or change it to 'Other'.

- Reference

  [3] 4.6

- Initial Condition

  - A preamble procedure defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport is used to setup the transport and L2CAP channel and initiate connection to a RSC Sensor.
  - The Upper Tester knows the handle of a Sensor Location characteristic contained in the Lower Tester.

- Test Procedure

  1. Send a command from Upper Tester to request IUT to read a Sensor Location characteristic from the Lower Tester e.g., RSCP_ReadRequest (handle, value).
  2. After receipt of the expected result by the Lower Tester from the IUT, send an ATT_Read_Response (0x0B) from the Lower Tester to the IUT containing a reserved.

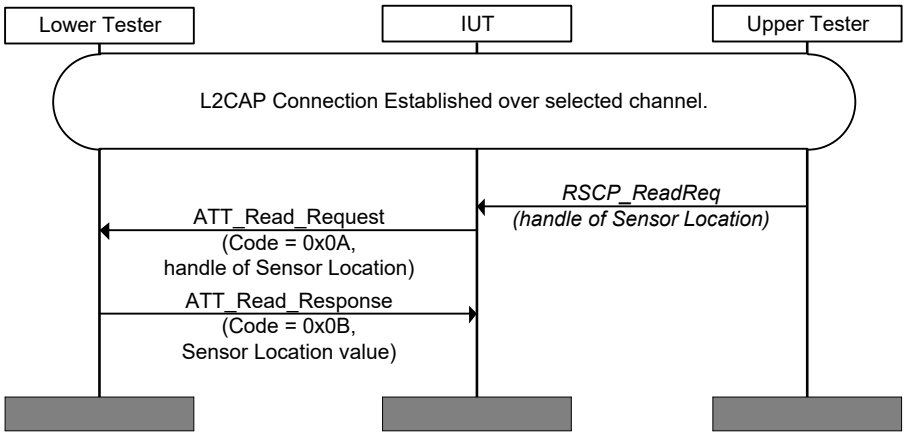

Figure 4.9: RSCP/COL/RSCF/BI-04-C [Read Sensor Location characteristic with reserved value]

- Expected Outcome

  Pass verdict

  The IUT sends a correctly formatted ATT_Read_Request (0x0A) to the Lower Tester, containing the handle specified by the Upper Tester.

  The IUT receives the response from the Lower Tester and discards it or changes it to 'Other'.

RSCP/COL/RSCF/BV-09-C [Lost Bond Procedure when using LE transport]

- Test Purpose

  Verify that the Collector IUT starts encryption with a bonded RSC Sensor on reconnection and rediscovers and reconfigures the RSC Sensor if bond is lost.

- Reference

  [3] 5.2.2

- Initial Condition

  - The IUT and the Lower Tester have previously bonded.
  - The IUT has configured the Lower Tester to enable notifications on the RSC Measurement characteristic of the Lower Tester's Running Speed and Cadence Service.
  - The Lower Tester has the «Service Changed» characteristic.
  - No connection is established between the IUT and Lower Tester.
  - The bond is deleted at the Lower Tester.

- Test Procedure

  1. The Lower Tester begins advertising using GAP undirected connectable mode.
  2. The IUT establishes a connection to the Lower Tester.
  3. The Lower Tester does not send any notifications to the IUT.
  4. Verify that the IUT starts encryption when the connection is established and rediscovers and reconfigures the RSC Sensor upon detection of the lost bond.

- Expected Outcome

  Pass verdict

  The IUT starts encryption when the connection is established.

  The IUT rediscovers the RSC Service.

  The IUT reconfigures the Client Characteristic Configuration descriptors of the RSC Measurement characteristic and the SC Control Point characteristic (if supported).

RSCP/COL/RSCF/BV-10-C [Lost Bond Procedure when using BR/EDR transport]

- Test Purpose

  Verify that the Collector IUT reconfigures the RSC Sensor if the bond is lost.

  In case of BR/EDR, either the Lower Tester or Collector IUT could initiate connection when they are bonded. The device initiating the connection becomes a Central and is referred here as the “paging device” and the device accepting the connection becomes a Peripheral and is referred here as the “page scanning device”. Verify that the paging device starts encryption with a bonded page scanning device on reconnection.

- Reference

  [3] 5.3.1.2

- Initial Condition

  - The IUT and the Lower Tester have previously bonded.
  - The IUT has configured the Lower Tester to enable notifications on the RSC Measurement characteristic of the Lower Tester's Running Speed and Cadence Service.
  - The Lower Tester has the «Service Changed» characteristic.
  - No connection is established between the IUT and Lower Tester.
  - The bond is deleted at the Lower Tester.

- Test Procedure

  1. The page scanning device is in connectable mode.
  2. The paging device establishes a connection to the page scanning device.
  3. The Lower Tester does not send any notifications to the IUT.
  4. The Central starts encryption when the connection is established.
  5. Verify that the IUT rediscovers and reconfigures the RSC Sensor upon detection of the lost bond.

- Expected Outcome

  Pass verdict

  The paging device starts encryption when the connection is established.

  The IUT rediscovers the RSC Service.

  The IUT reconfigures the Client Characteristic Configuration descriptors of the RSC Measurement characteristic and the SC Control Point characteristic (if supported).

4.6 Service Procedures – Set Cumulative Value

Verify compliant operation when the SC Control Point Set Cumulative Value procedure is used.

RSCP/COL/SPS/BV-01-C [Set Cumulative Value – Set to zero]

- Test Purpose

  Verify that the Collector IUT can perform the Set Cumulative Value procedure to set a zero value.

- Reference

  [3] 4.7.2.1

- Initial Condition

  - Perform the preamble described in Section 4.2.3.
  - The value of Total Distance in the Lower Tester is set to a known non-zero value.

- Test Procedure

  1. A connection is established between the IUT and Lower Tester using the Preamble defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport.
  2. The Lower Tester sends one or more notifications of the RSC Measurement characteristic with the Total Distance field set to a non-zero value.
  3. IUT writes the Set Cumulative Value Op Code (0x01) to the SC Control Point with a Parameter Value of 0x00000000.
  4. The Lower Tester sends an indication of the SC Control Point characteristic with the Response Code Op Code (0x10) and a Parameter representing Request Op Code (0x01) followed by the Response Code for ‘success’ (0x01).
  5. The Lower Tester sends a notification of the RSC Measurement characteristic with the Total Distance field set to 0 (or close to 0).
  6. Verify that thecharacteristic value meets the requirements of the service.

- Expected Outcome

  Pass verdict

  The IUT receives one or more notifications of the RSC Measurement characteristic with the Total Distance field set to a non-zero value.

  After setting the value to zero, the IUT receives the next notification of the RSC Measurement characteristic containing the Total Distance with the value of the Total Distance field set to 0 (or slightly higher in case of movement).

RSCP/COL/SPS/BV-02-C [Set Cumulative Value – Set to non-zero]

- Test Purpose

  Verify that the Collector IUT can perform the Set Cumulative Value procedure to set a non-zero value.

- Reference

  [3] 4.7.2.1

- Initial Condition

  - Perform the preamble described in Section 4.2.3.
  - The value of Total Distance in the Lower Tester is set to a known non-zero value.

- Test Procedure

  1. A connection is established between the IUT and Lower Tester using the Preamble defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport.
  2. The Lower Tester sends one or more notifications of the RSC Measurement characteristic with the Total Distance field set to any value.
  3. IUT writes the Set Cumulative Value Op Code (0x01) to the SC Control Point with a Parameter Value that is a different than the initial value (e.g., 0x0000FFFF).
  4. The Lower Tester sends an indication of the SC Control Point characteristic with the Response Code Op Code (0x10) and a Parameter representing Request Op Code (0x01) followed by the Response Code for ‘success’ (0x01).
  5. The Lower Tester sends a notification of the RSC Measurement characteristic with the Total Distance field set to the specified value (or close to the specified value).
  6. Verify that the characteristic value meets the requirements of the service.

- Expected Outcome

  Pass verdict

  The IUT receives one or more notifications of the RSC Measurement characteristic with the Total Distance field set to the specified non-zero value.

  After setting the value, the IUT receives the next notification of the RSC Measurement characteristic containing the Total Distance with the value of the Total Distance field set to the specified value (or slightly higher in case of movement).

4.7 Service Procedures – Start Sensor Calibration

Verify compliant operation when the SC Control Point Start Sensor Calibration procedure is used.

RSCP/COL/SPC/BV-01-C [Start Sensor Calibration]

- Test Purpose

  Verify that the Collector IUT can perform the Start Sensor Calibration procedure.

- Reference

  [3] 4.7.2.2

- Initial Condition

  - Perform the preamble described in Section 4.2.3.

- Test Procedure

  1. A connection is established between the IUT and Lower Tester using the Preamble defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport.
  2. IUT writes the Start Sensor Calibration Op Code (0x02) to the SC Control Point.
  3. The Lower Tester sends an indication of the SC Control Point characteristic with the Response Code Op Code (0x10) and a Parameter representing Request Op Code (0x02) followed by the Response Code for 'success' (0x01).
  4. Verify that the characteristic value meets the requirements of the service.

- Expected Outcome

  Pass verdict

  The IUT receives the Request Op Code ‘success’.

4.8 Service Procedures – Request Supported Sensor Locations

Verify compliant operation when the SC Control Point Start Sensor Calibration procedure is used.

RSCP/COL/SPL/BV-01-C [Request Supported Sensor Locations]

- Test Purpose

  Verify that the Collector IUT can perform the Request Supported Sensor Locations procedure.

- Reference

  [3] 4.7.2.4

- Initial Condition

  - Perform the preamble described in Section 4.2.3.

- Test Procedure

  1. A connection is established between the IUT and Lower Tester using the Preamble defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport.
  2. IUT writes the Request Supported Sensor Location Op Code (0x04) to the SC Control Point with no Parameter.
  3. The Lower Tester sends an indication of the SC Control Point characteristic with the Response Code Op Code (0x10) and a Parameter representing Request Op Code (0x04) followed by the Response Code for 'success' (0x01) and a list of supported sensor locations.
  4. Verify that the supported sensor locations values meet the requirements of the service.

- Expected Outcome

  Pass verdict

  The IUT receives a list of supported and valid sensor locations.

4.9 Service Procedures – Update Sensor Location

Verify compliant operation when the SC Control Point Update Sensor Location procedure is used.

RSCP/COL/SPU/BV-01-C [Update Sensor Location]

- Test Purpose

  Verify that the Collector IUT can perform the Update Sensor Location procedure.

- Reference

  [3] 4.7.2.3

- Initial Condition

  Perform the preamble described in Section 4.2.3.

- Test Procedure

  1. A connection is established between the IUT and Lower Tester using the Preamble defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport.
  2. IUT writes the Update Sensor Location Op Code (0x03) to the SC Control Point with the Parameter of this Control Point set to a location supported by the RSC Sensor.

3. The Lower Tester sends an indication of the SC Point characteristic with the Response Code Op Code (0x10) and a Parameter representing Request Op Code (0x03) followed by the Response Code for 'success' (0x01).
4. Verify that the characteristic value meets the requirements of the service.

- Expected Outcome

  Pass verdict

  The Sensor Location value is updated with the correct value.

  The IUT receives the Request Op Code ‘success’.

4.10 Service Procedures – General Error Handling

Verify compliant operation when an error is caused by the Server side.

RSCP/COL/SPE/BI-01-C [Unsupported Op Code]

- Test Purpose

  Verify that the Collector IUT behaves appropriately when it receives an ‘Op Code not supported’ SC Control Point Response Code.

- Reference

  [3] 3.7.3

- Initial Condition

  - Perform the preamble described in Section 4.2.3.

- Test Procedure

  1. A connection is established between the IUT and Lower Tester using the Preamble defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport.
  2. IUT writes any Op Code to the SC Control Point using an appropriate Parameter for the Op Code.
  3. The Lower Tester sends an indication of the SC Control Point characteristic with the Response Code Op Code (0x10) and a Parameter representing Request Op Code followed by the Response Code Value for 'Op Code not supported' (0x02) (i.e., the Lower Tester simulates an unsupported Op Code).
  4. Verify that the IUT considers the procedure to have failed.

- Expected Outcome

  Pass verdict

  The IUT returns to stable state and can process commands normally.

- Notes

  The test purpose is to verify the IUT’s capability to handle an Op Code not supported response by the Sensor. This Sensor response may be provoked by the IUT writing an Op Code that is not supported by the responding compliant Sensor, or where the Sensor response to the IUT may be yielded by a test system that emulates that it does not support an Op Code.

RSCP/COL/SPE/BI-02-C [Invalid Parameter]

- Test Purpose

  Verify that the Collector IUT behaves appropriately when it receives an ‘Invalid Parameter’ SC Control Point Response Code.

- Reference

  [3] 3.7.3

- Initial Condition

  Perform the preamble described in Section 4.2.3.

- Test Procedure

  1. A connection is established between the IUT and Lower Tester using the Preamble defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport.
  2. IUT writes the Update Sensor Location Op Code to the SC Control Point using any Sensor Location value.
  3. The Lower Tester sends an indication of the SC Control Point characteristic with the Response Code Op Code (0x10) and a Parameter representing Request Op Code (0x03) followed by the Response Code Value for 'Invalid Parameter' (0x03) (i.e., the Lower Tester simulates an unsupported value).

- Expected Outcome

  Pass verdict

  The IUT returns to stable state and can process commands normally.

RSCP/COL/SPE/BI-03-C [Operation Failed]

- Test Purpose

  Verify that the Collector IUT behaves appropriately when it receives an ‘Operation Failed’ SC Control Point Response Code.

- Reference

  [3] 3.7.3

- Initial Condition

  - Perform the preamble described in Section 4.2.3.

- Test Procedure

  1. A connection is established between the IUT and Lower Tester using the Preamble defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport.
  2. IUT writes any Op Code to the SC Control Point using an appropriate Parameter for the Op Code.
  3. The Lower Tester sends an indication of the SC Control Point characteristic with the Response Code Op Code (0x10) and a Parameter representing Request Op Code followed by the Response Code Value for 'Operation Failed' (0x04) (i.e., the Lower Tester simulates a failed operation).

- Expected Outcome

  Pass verdict

  The IUT returns to stable state and can process commands normally.

RSCP/COL/SPE/BI-04-C [SC Control Point Procedure Timeout]

- Test Purpose

  Verify that if the Collector IUT does not receive a response to an SC Control Point Op Code, it will time out after the Attribute Transaction Timeout.

- Reference

  [3] 4.7.4

- Initial Condition

  - Perform the preamble described in Section 4.2.3.

- Test Procedure

  1. A connection is established between the IUT and Lower Tester using the Preamble defined in Section 4.2.4, if using an LE transport, or Section 4.2.5 if using a BR/EDR transport.
  2. IUT writes any of the defined Op Codes (Set Cumulative Value or Start Calibration or Update Sensor Location or Request Supported Sensor Locations) to the SC Control Point using an appropriate Parameter for the Op Code.
  3. The Lower Tester does not send an indication of the SC Control Point characteristic for at least longer than the Attribute Protocol Timeout.
  4. After the specified timeout the IUT sends a notification of Attribute Transaction Timeout to the Upper Tester and the IUT considers the procedure to have failed.

- Expected Outcome

  Pass verdict

  The IUT returns to stable state and can process commands normally.

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 Running Speed and Cadence Profile (RSCP) [3].

If a test case is mandatory within the respective layer, then the y/x reference is omitted.

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 [1].

For the purpose and structure of the ICS/IXIT, refer to [1].

Item	Feature	Test Case(s)
RSCP 8/1	Discover Running Speed and Cadence Service	RSCP/COL/CGGIT/SER/BV-01-C
RSCP 9/1	Discover Device Information Service	RSCP/COL/CGGIT/SER/BV-02-C
(RSCP 2/2 AND NOT RSCP 2/1) AND RSCP 3/1 AND GATT 1a/4	Discover Running Speed and Cadence Service – Not Discoverable over BR/EDR	RSCP/SEN/SGGIT/SDPNF/BV-01-C
RSCP 8/2	RSC Measurement characteristic	RSCP/COL/CGGIT/CHA/BV-01-C
RSCP 8/4	RSC Feature characteristic	RSCP/COL/CGGIT/CHA/BV-02-C
RSCP 8/5	Sensor Location characteristic	RSCP/COL/CGGIT/CHA/BV-03-C
RSCP 8/6	SC Control Point characteristic	RSCP/COL/CGGIT/CHA/BV-04-C
RSCP 11a/1	Characteristic GGIT – RSC Feature indication	RSCP/COL/CGGIT/ISFC/BV-01-C
RSCP 11a/2 AND (RSCP 13/3 OR RSCP 13/7)	Read RSC Feature characteristic – Bonding enabled	RSCP/COL/RSCD/BV-13-C
(RSCP 11a/1 OR RSCP 11a/2) AND (RSCP 13/3 OR RSCP 13/7)	Enable RSC Feature characteristic for indication or read characteristic upon reconnection	RSCP/COL/RSCD/BV-14-C
RSCP 9/2 OR RSCP 9/4	Discover Manufacturer Name String Characteristic Discover Model Number String Characteristic	RSCP/COL/RSCD/BV-11-C
RSCP 9/3 OR RSCP 9/5	Read Manufacturer Name String Characteristic Read Model Number String Characteristic	RSCP/COL/RSCD/BV-12-C

Item	Feature	Test Case(s)
RSCP 2/2 AND RSCP 3/2	Running Speed and Cadence Service UUID in AD in GAP Discoverable Mode	RSCP/SEN/RSCF/BV-01-C
RSCP 2/2 AND RSCP 3/3	Local Name in AD or Scan Response	RSCP/SEN/RSCF/BV-02-C
RSCP 2/2 AND RSCP 3/4	Appearance in AD or Scan Response	RSCP/SEN/RSCF/BV-03-C
RSCP 11/1	Configure RSC Measurement characteristic for notifications	RSCP/COL/RSCF/BV-04-C
RSCP 11/2	Receive RSC Measurement characteristic notifications	RSCP/COL/RSCF/BV-05-C RSCP/COL/RSCF/BI-01-C RSCP/COL/RSCF/BI-02-C RSCP/COL/RSCF/BV-06-C
RSCP 11/3	Read RSC Feature characteristic	RSCP/COL/RSCF/BI-03-C
RSCP 11/4	Read Sensor Location characteristic	RSCP/COL/RSCF/BI-04-C
RSCP 2/2 AND RSCP 11/13	Verify Bond Status on Reconnection - LE	RSCP/COL/RSCF/BV-09-C
RSCP 2/1 AND RSCP 11/13	Verify Bond Status on Reconnection – BR/EDR	RSCP/COL/RSCF/BV-10-C
RSCP 10/1	Set Cumulative Value – Set to zero	RSCP/COL/SPS/BV-01-C
RSCP 10/2	Set Cumulative Value – Set to non-zero	RSCP/COL/SPS/BV-02-C
RSCP 10/3	Start Calibration	RSCP/COL/SPC/BV-01-C
RSCP 10/5	Request Supported Sensor Locations	RSCP/COL/SPL/BV-01-C
RSCP 10/4	Update Sensor Location	RSCP/COL/SPU/BV-01-C RSCP/COL/SPE/BI-02-C
RSCP 11/6 AND RSCP 11/7	Write to SC Control Point characteristic and Receive SC Control Point characteristic indications	RSCP/COL/SPE/BI-01-C RSCP/COL/SPE/BI-03-C
RSCP 11/12	SC Control Point Characteristic – Procedure Time Out	RSCP/COL/SPE/BI-04-C

Table 5.1: Test case mapping

6 Revision history and acknowledgments

Revision History

Publication Number	Revision Number	Date	Comments
0	1.0.0	2012-08-07	Prepare for Publication
	1.0.1r1	2013-04-23	TSE 5021: Revision of SC Control Point preamble TSE 5156: Change all the GATT Client Discovery test case references from -I to –C: TP/RSCD/CO/BV-01-I, TP/RSCD/CO/BV-02-I, TP/RSCD/CO/BV-05-I, TP/RSCD/CO/BV-06-I, TP/RSCD/CO/BV-07-I, TP/RSCD/CO/BV-08-I, TP/RSCD/CO/BV-09-I, TP/RSCD/CO/BV-10-I, TP/RSCD/CO/BV-11-I
1	1.0.1	2013-07-02	Prepare for Publication
	1.0.2r01	2013-09-30	TSE 5296: Updated first sentence of test procedure in TP/RSCD/CO/BV-12-I to add, “and a disconnection may occur between the two tests” for clarification.
2	1.0.2	2013-12-03	Prepare for Publication
	1.0.3r00	2015-05-10	TSE 6239: Corrected TCMT mapping for TP/RSCD/RSC/BV-04-I
	1.0.3r01	2015-05-27	Added Section 4.1.3 on verdict conventions. Deleted non-specific Fail verdicts throughout document.
	1.0.3r02	2015-06-03	Updated wording in Section 1 to reflect that the document contains both interoperability and conformance tests.
3	1.0.3	2015-07-14	Prepared for TCRL 2015-1 publication
	1.0.4r00	2016-05-26	Converted to new Test Case ID conventions as defined in TSTO v4.1.
	1.0.4r02	2016-06-10	Test Spec Template Conversion
4	1.0.4	2016-07-14	Prepared for TCRL 2016-1 publication.
	1.0.5r00-r01	2018-10-03 – 2018-11-05	TSE 10178 (rating 2): Updated TCMT for GLP/SEN/GLD/BV-03-I. Template update.
5	1.0.5	2018-11-21	Approved by BTI. Prepared for TCRL 2018-2 publication.
	p6r00–r02	2022-03-22 – 2022-05-19	TSE 17267 (rating 2): Converted the following test cases to GGIT: RSCP/COL/RSCD/BV-01-I – -03-I, -05-I – -10-I; RSCP/COL/RSCF/BV-07-I and -08-I; and RSCP/SEN/RSCD/BV-04-I. The new GGIT converted TCIDs are: RSCP/COL/CGGIT/SER/BV-01-C and -02-C, RSCP/COL/CGGIT/CHA/BV-01-C – -04-C, and RSCP/SEN/SGGIT/SDPNF/BV-01-C. Updated the TCMT accordingly. Inserted a test database requirements section. Updated the initial condition for RSCP/COL/RSCD/BV-11-I. Updated test groups and test case identification conventions section. TSE 18417 (rating 1): Removed direct references to GATT TS sections from the ATT Bearer preambles

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			and replaced them with preamble procedure text. Removed direct references to GATT test cases from the test procedures for RSCP/COL/RSCD/BV-11-I and -12-I. TSE 18422 (rating 1): Added test database requirements section. TSE 18724 (rating 1): Editorials to align the document with the latest TS template in anticipation of a future .Z release. Editorials, including assigning publication number 5 to previous v1.0.5 and aligning the copyright page with v2 of the DNMD.
6	p6	2022-06-28	Approved by BTI on 2022-05-31. Prepared for TCRL 2022-1 publication.
	p7r00	2022-08-19	TSE 19013 (rating 2): Corrected the properties for GGIT test RSCP/COL/CGGIT/CHA/BV-04-C.
7	p7	2023-02-07	Approved by BTI on 2022-12-28. Prepared for TCRL 2022-2 publication.
	p8r00	2023-11-02	TSE 23279 (rating 1): Converted -I tests to -C tests as appropriate; updated the TCMT and TCRL accordingly. Deleted draft revision history comments prior to p0.
8	p8	2024-07-01	Approved by BTI on 2024-04-21. Prepared for TCRL 2024-1 publication.
	p9r00	2024-08-02	TSE 17244 (rating 4): Per E16650, added new TCs RSCP/COL/CGGIT/ISFC/BV-01-C and RSCP/COL/RSCD/BV-13-C and -14-C. Updated the TCMT accordingly. Updated the Properties for RSCP/COL/CGGIT/CHA/BV-02-C. Updated the references list and the TCID conventions table. TSE 18592 (rating 1): Per E15810, made Appropriate Language changes per SIG guidelines.
9	p9	2024-10-08	Approved by BTI on 2024-09-11. RSCP v1.0.1 adopted by the BoD on 2024-10-01. Prepared for TCRL 2024-2-addition publication.
	p10r00	2025-07-18	TSE 27522 (rating 2): Removed reference to GAP 0/3 in the TCMT entry for RSCP/SEN/SGGIT/SDPNF/BV-01-C.
10	p10	2025-11-04	Approved by BTI on 2025-10-02. Prepared for TCRL pkg101 publication.

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