Indoor Positioning Service (IPS)

Bluetooth® **Implementation Conformance Statement (ICS) Proforma**

- **Revision:** IPS.ICS.p3
- **Revision Date:** 2026-02-17
- **Prepared By:** BTI
- **Published during TCRL:** TCRL.pkg102

Contents

1   General principles

1.1   Implementation Under Test (IUT) identification

Using the Bluetooth SIG qualification tool, the implementer is expected to declare details about what will be implemented.

1.2   Enforcement of inter-layer dependencies

This ICS includes one or more tables with inter-layer dependencies (ILDs). ILDs are used for specification requirements that are dependent on other supporting specifications. ILDs can refer to an individual ICS item in a separate layer (individual ILD), or it can refer to the full layer (full-layer ILD).

ILDs residing in an X2Core layer will be enforced from the Bluetooth SIG qualification tool in the following conditions, depending on where the referred ILD is residing:

Referred ILD resides in	Individual ILD	Full-layer ILD
Controller layer	Core-Complete configuration, or Referred layer is supported	N/A
Lower HCI layer	HCI is supported	N/A
Upper HCI layer	Core-Host configuration, or UHCI is supported	N/A
Host layer	Core-Host configuration, or Core-Complete configuration, or Referred layer is supported	N/A
X2Core layer	Core-Host configuration, or Core-Complete configuration, or Referred layer is supported	Core-Host configuration, or Core-Complete configuration

Table 1.1: Enforcement of an ILD within the Bluetooth SIG qualification tool

2   ICS declarations

2.1   Versions

Table 0: X.Y Versions

Item	Version	Reference	Status
1	IPS v1.0	[1]	M

Table 1: No longer used

Table 2: Features

Item	Feature	Reference	Status
1	Indoor Positioning Service Advertiser	[1] 2.2.2	C.1
2	Indoor Positioning Service Server	[1] 2	C.2

C.1:   Mandatory IF IPS 3/2 "Service supported over LE", otherwise Excluded.

C.2:   Mandatory IF IPS 3/1 "Service supported over BR/EDR", otherwise Optional.

2.2   Transports

Table 3: Transport Requirements

Item	Transport	Reference	Status
1	Service supported over BR/EDR	[1] 1.5	C.1, C.3
2	Service supported over LE	[1] 1.5	C.2, C.3

C.1:   Excluded for this Service IF CORE 41/2 "LE Core Configuration" OR CORE 40/1 "Core-Controller".

C.2:   Excluded for this Service IF CORE 41/1 "BR/EDR Core Configuration" OR CORE 40/1 "Core-Controller".

C.3:   Mandatory to support at least one.

2.3   Indoor Positioning Service - Advertiser Capabilities

Table 4: Advertisement Operations

Prerequisite: IPS 2/1 "Indoor Positioning Service Advertiser"

Item	Capability	Reference	Status
1	Advertising AD-type without data	[1] 2.2.2	C.1
2	Advertising AD-type with data	[1] 2.2.2	C.1

C.1:   Mandatory to support at least one.

Table 4a: Advertising Data Types

Prerequisite: IPS 2/1 "Indoor Positioning Service Advertiser"

Item	Capability	Reference	Status
1	AD Type – Indoor Positioning	[1] 2.2.2	M

2.4   Indoor Positioning Service - Server Capabilities

Table 5: Indoor Positioning Service Requirements

Prerequisite: IPS 2/2 "Indoor Positioning Service Server"

Item	Capability	Reference	Status
1	Indoor Positioning Configuration Characteristic	[1] 3.1	M
1b	Indoor Positioning Configuration, Extended Properties	[1] 3, 3.1	C.1
2	Global Coordinates (Latitude and Longitude Characteristics)	[1] 3.2, 3.3	M
2b	Global Coordinates (Latitude and Longitude Characteristics), Extended Properties	[1] 3, 3.2, 3.3	C.1
3	Local Coordinates (Local North Coordinate Characteristic and Local East Coordinate Characteristic)	[1] 3.4, 3,5	O
3b	Local Coordinates (Local North Coordinate Characteristic and Local East Coordinate Characteristic), Extended Properties	[1] 3, 3.4, 3.5	C.2
4	Floor Number Characteristic	[1] 3.6	O
4b	Floor Number Characteristic, Extended Properties	[1] 3, 3.6	C.3
5	Altitude Characteristic	[1] 3.7	O
5b	Altitude Characteristic, Extended Properties	[1] 3, 3.7	C.4
6	Uncertainty Characteristic	[1] 3.8	O
6b	Uncertainty Characteristic, Extended Properties	[1] 3, 3.8	C.5
7	Location Name Characteristic	[1] 3.9	O
7b	Location Name Characteristic, Extended Properties	[1] 3, 3.9	C.6
8	Location Name Characteristic longer than Min ATT_MTU	[1] 3.9	O

C.1:   Optional IF IPS 6/5 "Characteristic Value Reliable Writes", otherwise Excluded.

C.2:   Optional IF IPS 6/5 "Characteristic Value Reliable Writes" AND IPS 5/3 "Local Coordinates (Local North Coordinate Characteristic and Local East Coordinate Characteristic)", otherwise Excluded.

C.3:   Optional IF IPS 6/5 "Characteristic Value Reliable Writes" AND IPS 5/4 "Floor Number Characteristic", otherwise Excluded.

C.4:   Optional IF IPS 6/5 "Characteristic Value Reliable Writes" AND IPS 5/5 "Altitude Characteristic", otherwise Excluded.

C.5:   Optional IF IPS 6/5 "Characteristic Value Reliable Writes" AND IPS 5/6 "Uncertainty Characteristic", otherwise Excluded.

C.6:   Optional IF IPS 6/5 "Characteristic Value Reliable Writes" AND IPS 5/7 "Location Name Characteristic", otherwise Excluded.

2.5   GATT requirements

Table 6: GATT Requirements

Prerequisite: IPS 2/2 "Indoor Positioning Service Server"

Item	Capability	Reference	Status	Inter-Layer Dependency
1	No longer used	N/A	N/A	N/A
1a	GATT Server over BR/EDR	[1] 1.4	C.2	[2] GATT 1a/4
1b	GATT Server over LE	[1] 1.4	C.3	[2] GATT 1a/3
2	Read Multiple Characteristic Values	[1] 1.4	M	[2] GATT 4/11
3	Read Long Characteristic Value	[1] 1.4	C.1	[2] GATT 4/10
4	Write Characteristic Value	[1] 1.4	O	[2] GATT 4/14
5	Characteristic Value Reliable Writes	[1] 1.4	O	[2] GATT 4/16
6	Write Without Response	[1] 1.4	O	[2] GATT 4/12

C.1:   Mandatory IF IPS 5/8 "Location Name Characteristic longer than Min ATT_MTU", otherwise Optional.

C.2:   Mandatory IF IPS 3/1 "Service supported over BR/EDR", otherwise not defined.

C.3:   Mandatory IF IPS 3/2 "Service supported over LE", otherwise not defined.

2.6   SDP requirements

Table 7: SDP Requirements

Prerequisite: IPS 3/1 "Service supported over BR/EDR"

Item	Capability	Reference	Status
1	SDP record present for IPS	[1] 4	M

2.7   GAP requirements

Table 8: GAP Requirements

Prerequisite: IPS 2/1 "Indoor Positioning Service Advertiser"

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Broadcast mode	[1] 1.3	M	[3] GAP 10/1

3 References

[1] Indoor Positioning Service Specification, Version 1.0

[2] ICS Proforma for Generic Attribute Profile (GATT)

[3] ICS Proforma for Generic Access Profile (GAP)

4 Revision history and acknowledgments

Revision History

Publication Number	Revision Number	Date	Comments
0	1.0.0	2015-05-26	Prepared for publication
	1.0.1r00-r01	2018-05-26 – 2018-11-05	TSE 10894 (rating 3): Added 7 new items to the table 5 and 6 conditional statements. Template update.
1	1.0.1	2018-11-21	Approved by BTI. Prepared for TCRL 2018-2 publication.
	p2r00–r03	2022-10-25 – 2022-11-11	TSE 20347 (rating 1): Updated to align with current ICS conventions/template. Removed Support columns and "is supported" language. In Table 0, updated table title. Deleted Table 1 because it is no longer used. In Table 4, updated the prerequisite and C.1. Updated the references list. In Tables 4a and 5, updated the prerequisite. In Table 6, updated the prerequisite and references and added an ILD column. In Table 7, updated the Item 1 and deleted Items 2–4. In Table 8, updated the prerequisite and reference and added an ILD column. Added a Publication Number column to the Revision History. Revised the document numbering convention, setting the last release publication of 1.0.1 as p1. 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.
2	p2	2023-02-07	Approved by BTI on 2022-12-28. Prepared for TCRL 2022-2 publication.
	p2ed2 r00–r03	2025-02-12 – 2025-02-27	TSE 27077 (rating 1): Updated Table 0 title and status for 3/1 and 3/2. Updated Table 3 conditional C.1, and added C.2 and C.3. Updated Table 4 C.1. Added 6/1a and 6/1b and Table 6 C.2 and C.3. Deleted "Methods" heading. Applied the current ICS template. Marked Item 6/1 as no longer used.
	p2 edition 2	2025-03-14	Approved by BTI on 2025-03-11. Prepared for edition 2 publication.
	p3r00–r01	2025-12-04 – 2026-01-09	TSE 28169 (rating 1): Updated the conditions in the transport table to make sure the layer is excluded when the design is an implementation of the Core-Controller Configuration by adding "OR CORE 40/1 "Core-Controller"" to an already excluded transport based on Core Configuration support.
3	p3	2026-02-17	Approved by BTI on 2026-01-21. Prepared for TCRL pkg102 publication.

Acknowledgments

Name	Company
Victor Zhodzishsky	Broadcom
Juha Salokannel	Nokia Corporation

Name	Company
Rasmus Abildgren	Samsung Electronics Co., Ltd.