

# Link Loss Service (LLS)

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

---

- **Revision:** LLS.ICS.p2 edition 2
- **Revision Date:** 2025-03-14
- **Prepared By:** BTI
- **Published during TCRL:** TCRL.2022-2



This document, regardless of its title or content, is not a Bluetooth Specification as defined in the Bluetooth Patent/Copyright License Agreement (“PCLA”) and Bluetooth Trademark License Agreement. Use of this document by members of Bluetooth SIG is governed by the membership and other related agreements between Bluetooth SIG Inc. (“Bluetooth SIG”) and its members, including the PCLA and other agreements posted on Bluetooth SIG’s website located at [www.bluetooth.com](http://www.bluetooth.com).

THIS DOCUMENT IS PROVIDED “AS IS” AND BLUETOOTH SIG, ITS MEMBERS, AND THEIR AFFILIATES MAKE NO REPRESENTATIONS OR WARRANTIES AND DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY, TITLE, NON-INFRINGEMENT, FITNESS FOR ANY PARTICULAR PURPOSE, THAT THE CONTENT OF THIS DOCUMENT IS FREE OF ERRORS.

TO THE EXTENT NOT PROHIBITED BY LAW, BLUETOOTH SIG, ITS MEMBERS, AND THEIR AFFILIATES DISCLAIM ALL LIABILITY ARISING OUT OF OR RELATING TO USE OF THIS DOCUMENT AND ANY INFORMATION CONTAINED IN THIS DOCUMENT, INCLUDING LOST REVENUE, PROFITS, DATA OR PROGRAMS, OR BUSINESS INTERRUPTION, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, AND EVEN IF BLUETOOTH SIG, ITS MEMBERS, OR THEIR AFFILIATES HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

This document is proprietary to Bluetooth SIG. This document may contain or cover subject matter that is intellectual property of Bluetooth SIG and its members. The furnishing of this document does not grant any license to any intellectual property of Bluetooth SIG or its members.

This document is subject to change without notice.

Copyright © 2010–2025 by Bluetooth SIG, Inc. The Bluetooth word mark and logos are owned by Bluetooth SIG, Inc. Other third-party brands and names are the property of their respective owners.



## Contents

<b>1</b>	<b>General principles</b> .....	<b>4</b>
1.1	Implementation Under Test (IUT) identification .....	4
1.2	Enforcement of inter-layer dependencies .....	4
<b>2</b>	<b>ICS declarations</b> .....	<b>5</b>
2.1	Versions .....	5
2.2	Transports.....	5
2.3	Service requirements .....	5
2.4	GATT requirements .....	5
<b>3</b>	<b>References</b> .....	<b>7</b>
<b>4</b>	<b>Revision history and acknowledgments</b> .....	<b>8</b>



# 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	LLS v1.0	[1]	M
2	No longer used	N/A	N/A

Table 0a: X.Y.Z Versions

Item	Version	Reference	Status
1	LLS v1.0.1	[3]	C.1

C.1: Optional IF LLS 0/1 “LLS v1.0”, otherwise Excluded.

### 2.2 Transports

Table 1: Transport Requirements

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

C.1: Excluded for this Service.

C.2: Excluded for this Service IF CORE 41/1 “BR/EDR Core Configuration”.

C.3: Mandatory for this Service.

### 2.3 Service requirements

Table 2: Service Requirements

Item	Capability	Reference	Status
1	Link Loss Service	[1] 2	M
2	Alert Level Characteristic	[1] 3.1	M
3	Alert Level Characteristic, Read	[1] 3.1.1	M
4	Alert Level Characteristic, Write	[1] 3.1.1	M
5	Disconnection Behavior	[1] 4.1	M
6	No longer used	N/A	N/A

### 2.4 GATT requirements

Table 3: GATT Requirements

Item	Capability	Reference	Status	Inter-Layer Dependency
1	GATT Server over LE	[1] 1.4	M	[2] GATT 1a/3
2	Write Characteristic Value	[1] 1.4	M	[2] GATT 4/14



**Table 4: No longer used**



## 3 References

---

- [1] Link Loss Service Specification, Version 1.0 or later
- [2] ICS Proforma for Generic Attribute Profile (GATT)
- [3] Link Loss Service Specification, Version 1.0.1

## 4 Revision history and acknowledgments

### Revision History

Publication Number	Revision Number	Date	Comments
0	1.0.0	2011-06-26	Prepare for publication.
	1.0.1r0	2011-12-15	TSE 4634: Update Table 1 to reference GAP 0/3 to align with other GATT-based service
	1.0.1.0r00	2015-05-20	ESR08 update: Added Table 0 for Specification versions Added reference for LLS v1.0.1
	1.0.1.0r01	2015-06-04	Deleted Section 1.2 (Global Statement of Conformance) per current ICS template standards.
	1.0.1.0r02	2015-06-08	Reviewed by Alicia Courtney. Converted to current ICS document template.
	1.0.1.0r03	2015-06-10	Editorial review. Fixed broken references.
1	1.0.1.0	2015-07-14	Prepared for TCRL 2015-1 publication.
	1.0.1.0 edition 2r00	2018-11-26	Editorial changes only. Template updated. Revision History and contributors moved to the end of the document.
	1.0.1.0 edition 2	2020-01-07	Updated copyright page and confidentiality markings to support new Documentation Marking Requirements, performed minor formatting updates, and accepted all tracked changes to prepare for edition 2 publication.
	p2r00–r01	2022-10-20 – 2022-11-08	TSE 20349 (rating 3): Updated to align with current ICS conventions/template. Removed Support columns and added an Inter-Layer Dependency column where appropriate. In Table 0, updated table title, marked Item 2 as no longer used, and updated C.1. Added Table 0a. Updated references and C.1 in Table 1. In Table 2, marked Item 6 as no longer used and deleted C.1. In Table 3, updated the capability in Item 1 and references in Items 1 and 2 and added ILD column. Deleted Table 4 because no longer used. Updated the references list.  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.
	p2ed2r00	2025-02-12	TSE 27091 (rating 1): Updated Table 0 and Table 0a titles, 0/1 status, and 1/2 status. Deleted Table 0 conditional C.1. Added Table 1 C.2 and C.3. Updated 3/1. Applied the current ICS template.
	p2 edition 2	2025-03-14	Approved by BTI on 2025-03-11. Prepared for edition 2 publication.



***Acknowledgments***

<b>Name</b>	<b>Company</b>
Steve Davies	Nokia
Jason Hillyard	Wicentric

