

Published Audio Capabilities Service (PACS)

Bluetooth® Implementation Conformance Statement (ICS) Proforma

- **Revision:** PACS.ICS.p4
- **Revision Date:** 2025-02-18
- **Prepared By:** Generic Audio Working Group
- **Published during TCRL:** TCRL.2025-1



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.

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 © 2019–2025 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

1	General principles	4
1.1	Implementation Under Test (IUT) identification	4
1.2	Enforcement of inter-layer dependencies	4
2	ICS declarations.....	5
2.1	Versions	5
2.2	Transports.....	5
2.3	Service requirements	5
2.4	GAP requirements	6
2.5	GATT requirements	7
2.6	SDP requirements.....	7
3	References	8
4	Revision history and acknowledgments	9

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	PACS v1.0	[1]	C.1, C.2

C.1: Mandatory.

C.2: Can only be supported with an active X.Y.Z version after Deprecation or Withdrawal. Deprecated 2025-02-01. Withdrawn 2027-02-01.

Table 1: X.Y.Z Versions

Item	Version	Reference	Status
1	PACS v1.0.1	[4]	C.1
2	PACS v1.0.2	[5]	C.1

C.1: Mandatory to support one and only one.

2.2 Transports

Table 2: 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.1

C.1: Mandatory to support at least one.

2.3 Service requirements

Table 3: Published Audio Capabilities Service

Item	Characteristic	Reference	Status
1	Sink PAC Characteristic	[1] 3.1.1	C.1
2	Sink Audio Locations Characteristic	[1] 3.2.1	C.2
3	Source PAC Characteristic	[1] 3.3.1	C.1
4	Source Audio Locations Characteristic	[1] 3.4.1	C.3
5	Available Audio Contexts Characteristic	[1] 3.5.1	M
6	Supported Audio Contexts Characteristic	[1] 3.6.1	M

C.1: Mandatory to support at least one.

C.2: Optional IF PACS 3/1 "Sink PAC Characteristic", otherwise Excluded.

C.3: Optional IF PACS 3/3 "Source PAC Characteristic", otherwise Excluded.

Table 4: Service Requirements

Item	Feature	Reference	Status
1	Changeable Sink PAC Characteristic	[1] 3.1.1	C.1
2	Notifiable Sink PAC Characteristic	[1] 3.1.1	C.2

Item	Feature	Reference	Status
3	Changeable Sink Audio Locations Characteristic	[1] 3.2.1	C.3
4	Autonomous Sink Audio Locations Changes	[1] 3.2.1	C.4
5	Writable Sink Audio Locations Characteristic	[1] 3.2.1	C.4
6	Notifiable Sink Audio Locations Characteristic	[1] 3.2.1	C.5
7	Changeable Source PAC Characteristic	[1] 3.3.1	C.6
8	Notifiable Source PAC Characteristic	[1] 3.3.1	C.7
9	Changeable Source Audio Locations Characteristic	[1] 3.4.1	C.8
10	Autonomous Source Audio Locations Changes	[1] 3.4.1	C.9
11	Writable Source Audio Locations Characteristic	[1] 3.4.1	C.9
12	Notifiable Source Audio Locations Characteristic	[1] 3.4.1	C.10
13	Changeable Available Audio Contexts Characteristic	[1] 3.5.1	M
14	Notifiable Available Audio Contexts Characteristic	[1] 3.5.1	M
15	Changeable Supported Audio Contexts Characteristic	[1] 3.6.1	C.11
16	Notifiable Supported Audio Contexts Characteristic	[1] 3.6.1	C.12

- C.1: Optional IF PACS 3/1 “Sink PAC Characteristic”, otherwise Excluded.
- C.2: Mandatory IF PACS 4/1 “Changeable Sink PAC Characteristic”, otherwise Excluded.
- C.3: Optional IF PACS 3/2 “Sink Audio Locations Characteristic”, otherwise Excluded.
- C.4: Optional IF PACS 4/3 “Changeable Sink Audio Locations Characteristic”, otherwise Excluded.
- C.5: Mandatory IF PACS 4/3 “Changeable Sink Audio Locations Characteristic”, otherwise Excluded.
- C.6: Optional IF PACS 3/3 “Source PAC Characteristic”, otherwise Excluded.
- C.7: Mandatory IF PACS 4/7 “Changeable Source PAC Characteristic”, otherwise Excluded.
- C.8: Optional IF PACS 3/4 “Source Audio Locations Characteristic”, otherwise Excluded.
- C.9: Optional IF PACS 4/9 “Changeable Source Audio Locations Characteristic”, otherwise Excluded.
- C.10: Mandatory IF PACS 4/9 “Changeable Source Audio Locations Characteristic”, otherwise Excluded.
- C.11: Optional IF PACS 3/6 “Supported Audio Contexts Characteristic”, otherwise Excluded.
- C.12: Mandatory IF PACS 4/15 “Changeable Supported Audio Contexts Characteristic”, otherwise Excluded.

2.4 GAP requirements

Table 5: GAP Requirements

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Bondable mode (LE)	[1] 3	C.1	[2] GAP 24/2 OR GAP 34/2
2	Bondable mode (BR/EDR)	[1] 3	C.2	[2] GAP 1/7

- C.1: Optional IF PACS 2/2 “Service supported over LE”, otherwise not defined.
- C.2: Optional IF PACS 2/1 “Service supported over BR/EDR”, otherwise not defined.

2.5 GATT requirements

Table 6: GATT Requirements

Item	Feature	Reference	Status	Inter-Layer Dependency
1	Read Characteristic Descriptors	[1] 1.4	M	[3] GATT 4/19
2	Write Characteristic Descriptors	[1] 1.4	M	[3] GATT 4/21
3	Single Notification	[1] 1.4	M	[3] GATT 4/17
4	Write Characteristic Value	[1] 1.4	M	[3] GATT 4/14
5	Enhanced ATT bearer (BR/EDR or LE)	[1] 1.4	O	[3] GATT 2/3a OR GATT 2/3b
6	GATT Server over BR/EDR	[1] 1.4	C.1	[3] GATT 1a/4
7	GATT Server over LE	[1] 1.4	C.2	[3] GATT 1a/3

C.1: Mandatory IF PACS 2/1 “Service supported over BR/EDR”, otherwise not defined.

C.2: Mandatory IF PACS 2/2 “Service supported over LE”, otherwise not defined.

2.6 SDP requirements

Table 7: SDP Requirements

Prerequisite: PACS 2/1 “Service supported over BR/EDR”

Item	Feature	Reference	Status
1	SDP record present for PACS	[1] 4	M
2–5	No longer used	N/A	N/A

3 References

- [1] Published Audio Capabilities Service (PACS), Version 1.0 or later
- [2] ICS Proforma for Generic Access Profile (GAP)
- [3] ICS Proforma for Generic Attribute Profile (GATT)
- [4] Published Audio Capabilities Service (PACS), Version 1.0.1
- [5] Published Audio Capabilities Service (PACS), Version 1.0.2

4 Revision history and acknowledgments

Revision History

Publication Number	Revision Number	Date	Comments
0	p0	2021-09-21	Approved by BTI on 2021-08-19. Published Audio Capabilities Service (PACS) v1.0 adopted by the BoD on 2021-09-14. Prepared for initial publication.
	p1r00	2022-05-23	TSE 18998 (rating 1): Modified Versions tables globally to account for v1.0.1 and associated deprecation and withdrawal. Affected tables are: Tables 0 and 1. Updated C.1 of Table 2 to specify the defined transports. Updated PACS reference with “or later”. Editorials to align the document with the latest ICS template and conventions, including capitalization in section headings and removing “is supported” from conditionals. Aligned copyright page with v2 of the DNMD.
1	p1	2022-06-28	Approved by BTI on 2022-06-20. PACS v1.0.1 adopted by the BoD on 2022-06-21. Prepared for TCRL 2022-1 publication.
	p1ed2r00	2022-08-04	TSE 19317 (rating 1): Removed D&W information that was prematurely added during the .Z release until the dates are formally approved by the BoD. Editorials, including removing the draft revision history entries to align with current conventions.
	p1 edition 2	2022-08-22	Approved by BTI on 2022-08-22. Prepared for edition 2 publication.
	p1ed3r00	2023-02-15	TSE 22640 (rating 1): Replaced ILD references to GATT 2/3 with GATT 2/3a or GATT 2/3b in Table 6. Editorials to align the document with the latest ICS template.
	p1 edition 3	2023-03-15	Approved by BTI on 2023-03-13. Prepared for edition 3 publication.
	p2r00–r01	2023-10-04 – 2023-11-28	TSE 23673 (rating 2): To resolve GATT and SDP ILDs and align with the latest template conventions, updated the Version names for 0/1 and 1/1, removed the section heading for “Published Audio Capabilities Service”, added new items 6/6 and 6/7 and related conditionals C.1 and C.2, and removed the ILD column from Table 7, also updating the Feature name of 7/1 and deleting 7/2–7/5 and related C.1.
2	p2	2024-07-01	Approved by BTI on 2024-04-21. Prepared for TCRL 2024-1 publication.
	p3r00–r01	2024-08-14 – 2024-08-19	TCE 25565 (rating 1): Per E18854, E19094, E19104, E19232, E19309, E22298, E22299, E22952, and E23862, added new X.Y.Z version as part of the .Z release. Updated Tables 0 and 1. Added references to Published Audio Capabilities Service v1.0.1 and v1.0.2.

Publication Number	Revision Number	Date	Comments
3	p3	2024-10-08	Approved by BTI on 2024-09-11. PACS v1.0.2 adopted by the BoD on 2024-10-01. Prepared for TCRL 2024-2-addition publication.
	p4r00–r02	2024-11-11 – 2024-12-13	TSE 26367 (rating 1): Updated Table 0 to revise the Status column and add conditionals C.1 and C.2. Updated Table 1 to revise conditional C.1.
4	p4	2025-02-18	Approved by BTI on 2025-02-09. Prepared for TCRL 2025-1 publication.

Acknowledgments

Name	Company
Gene Chang	Bluetooth SIG, Inc.
Andrei Frincu	Bluetooth SIG, Inc.
Jim Harper	Bluetooth SIG, Inc.
Charlie Lenahan	Bluetooth SIG, Inc.
Jawid Mirani	Bluetooth SIG, Inc.