Constant Tone Extension Service (CTES)

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

- **Revision:** CTES.ICS.p3
- **Revision Date:** 2025-07-08
- **Prepared By:** DFWG
- **Published during TCRL:** TCRL.pkg100

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	CTES v1.0	[1]	M

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	Constant Tone Extension Service	[1] 2	M
2	Constant Tone Extension Enable Characteristic	[1] 3.1	M
3	Advertising Constant Tone Extension Minimum Length Characteristic	[1] 3.2	C.1
4	Advertising Constant Tone Extension Minimum Transmit Count Characteristic	[1] 3.3	C.1
5	Advertising Constant Tone Extension Transmit Duration Characteristic	[1] 3.4	C.1
6	Advertising Constant Tone Extension Interval Characteristic	[1] 3.5	C.1
7	Advertising Constant Tone Extension PHY Characteristic	[1] 3.6	C.1

C.1: Mandatory IF CTES 3/1 “CTE on Advertising Channels”, otherwise Excluded.

Table 2a: Constant Tone Extension Enable

Item	Capability	Reference	Status
1	Enable AoA Constant Tone Extension on the ACL connection with the client	[1] 3.1.1.1	O
2	Enable AoD Constant Tone Extension in advertising packets	[1] 3.1.1.1	O

Table 3: Advertising Requirements

Item	Capability	Reference	Status
1	CTE on Advertising Channels	[1] 3	O

2.4 GATT requirements

Table 4: 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

3 References

[1] Constant Tone Extension Service Specification, Version 1.0

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

4 Revision history and acknowledgments

Revision History

Publication Number	Revision Number	Date	Comments
0	p0	2021-01-19	Approved by BTI on 2020-12-06. CTES v1.0 adopted by BoD on 2021-01-12. Prepared for publication.
	p1r00–r01	2021-09-30 – 2021-12-03	TSE 17477 (rating 3): Added a new ICS table (Table 2a) for Constant Tone Extension Enable characteristic feature support. Incorporated minor consistency checker editorials. Performed template-related fixes. Updated copyright page to align with v2 of the DNMD.
1	p1	2022-01-25	Approved by BTI on 2022-01-06. Prepared for TCRL 2021-2 publication.
	p2r00	2023-09-12	TSE 23951 (rating 1): Resolved GATT inter-layer dependencies with updates to the Capability and ILD values in Table 4. Made editorial edits to align the document with the latest ICS template. Deleted draft revision history comments prior to p0.
2	p2	2024-07-01	Approved by BTI on 2024-04-21. Prepared for TCRL 2024-1 publication.
	p3r00	2025-04-30	TSE 27295 (rating 1): In Table 1, updated the Status value for CTES 1/2 and added conditions C.1 and C.2. Incorporated editorials to align the document with the latest ICS template, including updates to Section 1 and the addition of a section heading for the ICS declarations section.
3	p3	2025-07-08	Approved by BTI on 2025-06-15. Prepared for TCRL pkg100 publication.

Acknowledgments

Name	Company
Alexandru Andreescu	Bluetooth SIG, Inc.
Christopher Badder	Bluetooth SIG, Inc.
Jim Harper	Bluetooth SIG, Inc.
Alicia Courtney	Broadcom