Device Time Service (DTS)

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

- **Revision:** DTS.ICS.p2
- **Revision Date:** 2025-07-08
- **Prepared By:** Medical Devices Working Group
- **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	DTS 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, 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”.

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

C.3: Mandatory to support at least one.

2.3 Features

Table 2: Feature Requirements

Item	Capability	Reference	Status
1	E2E-CRC	[1] 3.1.1.2.1	O
2	Time Change Logging	[1] 3.1.1.2.2	O
3	Base Time Second-Fractions	[1] 3.1.1.2.3	O
4	Time or Date Displayed to User	[1] 3.1.1.2.4	O
5	Displayed Formats	[1] 3.1.1.2.5	C.1
6	Displayed Formats Changeable	[1] 3.1.1.2.6	C.2
7	Separate User Timeline	[1] 3.1.1.2.7	O
8	Authorization Required	[1] 3.1.1.2.8	O
9	RTC Drift Tracking	[1] 3.1.1.2.9	O
10	Epoch Year 1900	[1] 3.1.1.2.10.1	C.3
11	Epoch Year 2000	[1] 3.1.1.2.10.2	C.3
12	Propose Non-Logged Time Adjustment Limit	[1] 3.1.1.2.11	O
13	Retrieve Active Time Adjustments	[1] 3.1.1.2.12	O
14	Device Time Parameters characteristic indication	[1] 3, 3.2.1	C.4
15	Concurrent Access	[1] 3.2.1	O
16	Non-Logged Time Adjustment Limit value range includes zero	[1] 3.2.1.5, 3.7.2.4	C.5
17	Inducing a Time Fault state	[1] 3.4.1.1.2	O
18	Changing to a non UTC Aligned state	[1] 3.3.1.5.2	C.6
19	Base Time Range Limitation	[1] 3.3.1.2	O

Item	Capability	Reference	Status
20	Changeable DT Features value	[1] 3, 3.1.1	O
21	Device Time Feature characteristic indication	[1] 3, 3.1.1	C.7
22	Non-Logged Time Adjustment Limit value range is a subset of the full range of 0-65,535	[1] 3.2.1.5, 3.7.2.4	O

C.1: Mandatory IF DTS 2/4 “Time or Date Displayed to User”, otherwise Excluded.

C.2: Optional IF DTS 2/5 “Displayed Formats”, otherwise Excluded.

C.3: Mandatory to support at least one.

C.4: Mandatory IF DTS 2/6 “Displayed Formats Changeable” OR DTS 4/3 “Propose Non-Logged Time Adjustment Limit”, otherwise Optional.

C.5: Optional IF DTS 2/2 “Time Change Logging”, otherwise Excluded.

C.6: Mandatory IF NOT DTS 2/17 “Inducing a Time Fault state” OR NOT DTS 4/2 “Force Time Update”, otherwise Optional.

C.7: Mandatory IF DTS 2/20 “Changeable DT Features value”, otherwise Excluded.

2.4 Service requirements

Table 3: Service Requirements

Item	Capability	Reference	Status
1	Device Time Service	[1] 2.1	M
2	Device Time Feature characteristic	[1] 3.1	M
3	Device Time Parameters characteristic	[1] 3.2	M
4	Device Time characteristic	[1] 3.3	M
5	Device Time Control Point characteristic	[1] 3.7	M
6	Time Change Log Data characteristic	[1] 3.4	C.1
7	Record Access Control Point characteristic	[1] 3.8	C.1

C.1: Mandatory IF DTS 2/2 “Time Change Logging”, otherwise Excluded.

Table 4: Device Time Control Point procedures

Prerequisite: DTS 3/5 “Device Time Control Point characteristic”

Item	Capability	Reference	Status
1	Propose Time Update	[1] 3.7.2.2	M
2	Force Time Update	[1] 3.7.2.3	O
3	Propose Non-Logged Time Adjustment Limit	[1] 3.7.2.4	C.1
4	Retrieve Active Time Adjustments	[1] 3.7.2.5	C.2

C.1: Mandatory IF DTS 2/12 “Propose Non-Logged Time Adjustment Limit”, otherwise Excluded.

C.2: Mandatory IF DTS 2/13 “Retrieve Active Time Adjustments”, otherwise Excluded.

Table 5: Record Access Control Point procedures

Prerequisite: DTS 3/7 “Record Access Control Point characteristic”

Item	Capability	Reference	Status
1	Combined Report	[1] 3.8.3.2	M

Item	Capability	Reference	Status
2	Report Stored Records	[1] 3.8.3.3	O
3	Report Number of Stored Records	[1] 3.8.3.4	M
4	Abort Operation	[1] 3.8.3.5	O

2.5 GATT requirements

Table 6: GATT Requirements

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Write Characteristic Value	[1] 1.4	M	[2] GATT 4/14
2	Single Notification	[1] 1.4	C.1	[2] GATT 4/17
3	Indications	[1] 1.4	M	[2] GATT 4/18
4	Read Characteristic Descriptors	[1] 1.4	M	[2] GATT 4/19
5	Write Characteristic Descriptors	[1] 1.4	M	[2] GATT 4/21
6	Exchange MTU	[1] 1.4	C.1	[2] GATT 4/1
7	GATT Server over BR/EDR	[1] 1.4	C.2	[2] GATT 1a/4
8	GATT Server over LE	[1] 1.4	C.3	[2] GATT 1a/3

C.1: Mandatory IF DTS 2/2 “Time Change Logging”, otherwise Optional.

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

C.3: Mandatory IF DTS 1/2 “Service supported over LE”, otherwise not defined.

2.6 GAP requirements

Table 7: GAP Requirements

Prerequisite: DTS 1/2 “Service supported over LE”

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Bondable mode	[1] 3.2.1, 3.3.1	O	[3] GAP 24/2
2	Bonding procedure	[1] 3.2.1, 3.3.1	O	[3] GAP 24/3

2.7 SDP requirements

Table 8: SDP Requirements

Prerequisite: DTS 1/1 “Service supported over BR/EDR”

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

3 References

[1] Device Time 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	p0	2020-12-22	Approved by BTI on 2020-12-02. DTS v1.0 adopted by the BoD on 2020-12-15. Prepared for publication.
	p1r00	2023-09-21 – 2023-09-22	TSE 23663 (rating 2): Resolved GATT and SDP inter-layer dependencies. Made editorial edits to align the document with the latest ICS template, including updates to Section 1.1, the title of Tables 0, and removal of “is supported” language. In Table 6, added Items 7–8 and conditionals C.1–C.2. In Table 8, deleted the ILD column, updated the Capability value for Item 1, and marked Items 2–4 as no longer used. Updated the copyright page to align with v2 of the DNMD and updated the references. Deleted draft revision history comments prior to p0.
1	p1	2024-07-01	Approved by BTI on 2024-04-21. Prepared for TCRL 2024-1 publication.
	p2r00	2025-05-01	TSE 27325 (rating 1): In Table 1, updated the Status value for DTS 1/1 and DTS 1/2, added conditions C.1 and C.2, and renumbered C.1 as C.3. Updated the capability for DTS 6/2. 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.
2	p2	2025-07-08	Approved by BTI on 2025-06-15. Prepared for TCRL pkg100 publication.

Acknowledgments

Name	Company
Jörg Brakensiek	Bluetooth SIG, Inc.
Ismail Mohamud	Bluetooth SIG, Inc.
Craig Carlson	F. Hoffman-La Roche AG