

Volume Control Service (VCS)

Bluetooth® Implementation Conformance Statement (ICS) Proforma

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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 | VCS v1.0 | [1] | M |

Table 0a: X.Y.Z Versions

| Item | Version | Reference | Status |
|------|------------|-----------|--------|
| 1 | VCS v1.0.1 | [3] | O |

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” 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 Service requirements

Table 2: Volume Control Service

| Item | Capability | Reference | Status |
|------|------------------------------------------|-----------|--------|
| 1 | Volume State Characteristic | [1] 3.1 | M |
| 2 | Volume Control Point Characteristic | [1] 3.2 | M |
| 3 | Volume Flags Characteristic | [1] 3.3 | M |
| 4 | Volume Flags Characteristic Notification | [1] 3.3 | O |

Table 3: Volume Control Point Procedure Requirements

Prerequisite: VCS 2/2 “Volume Control Point Characteristic”

| Item | Capability | Reference | Status |
|------|-----------------------------------------|-------------|--------|
| 1 | Relative Volume Down Procedure | [1] 3.2.2.1 | M |
| 2 | Relative Volume Up Procedure | [1] 3.2.2.2 | M |
| 3 | Unmute / Relative Volume Down Procedure | [1] 3.2.2.3 | M |
| 4 | Unmute / Relative Volume Up Procedure | [1] 3.2.2.4 | M |
| 5 | Set Absolute Volume Procedure | [1] 3.2.2.5 | M |

| Item | Capability | Reference | Status |
|------|------------------|-------------|--------|
| 6 | Unmute Procedure | [1] 3.2.2.6 | M |
| 7 | Mute Procedure | [1] 3.2.2.7 | M |

2.4 GATT requirements

Table 4: GATT Requirements

| Item | Feature | Reference | Status | Inter-Layer Dependency |
|------|---------------------------------|-----------|--------|------------------------|
| 1 | Write Characteristic Value | [1] 1.4 | M | [2] GATT 4/14 |
| 2 | Single Notification | [1] 1.4 | M | [2] GATT 4/17 |
| 3 | Read Characteristic Descriptor | [1] 1.4 | M | [2] GATT 4/19 |
| 4 | Write Characteristic Descriptor | [1] 1.4 | M | [2] GATT 4/21 |
| 5 | GATT Server over BR/EDR | [1] 1.4 | C.1 | [2] GATT 1a/4 |
| 6 | GATT Server over LE | [1] 1.4 | C.2 | [2] GATT 1a/3 |

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

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

2.5 SDP requirements

Table 5: SDP Requirements

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

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

3 References

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

4 Revision history and acknowledgments

Revision History

| Publication Number | Revision Number | Date | Comments |
|--------------------|-----------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 | p0 | 2020-12-22 | Approved by BTI on 2020-11-29. VCS v1.0 adopted by the BoD on 2020-12-15. Prepared for publication. |
| | p1r00 | 2023-08-16 | TSE 23683 (rating 2): Removed GAP and SDP ICSs from the References section. Added 4/5 and 4/6 and associated C.1 and C.2. Updated Table 5 by removing the ILD column, revising the Feature description for 5/1, and deleting 5/2, 5/3, and 5/4. Editorials throughout to align the document with the latest ICS conventions. |
| 1 | p1 | 2024-07-01 | Approved by BTI on 2024-04-21. Prepared for TCRL 2024-1 publication. |
| | p2r00 | 2024-08-15 | TSE 25562 (rating 1): Per E19313, E23881, and E24664, added Table 0a to account for VCS v1.0.1 as part of the .Z release. Updated the references list. |
| 2 | p2 | 2024-10-08 | Approved by BTI on 2024-09-11. VCS v1.0.1 adopted by the BoD on 2024-10-01. Prepared for TCRL 2024-2-addition publication. |
| | p3r00 | 2025-04-10 | TSE 27339 (rating 1): Updated the Status value for VCS 1/1 and VCS 1/2. Added conditionals C.1 and C.2 to Table 1 and renumbered C.1 as C.3. |
| 3 | p3 | 2025-07-08 | Approved by BTI on 2025-05-30. Prepared for TCRL pkg100 publication. |
| | p4r00–r01 | 2025-12-05 – 2026-01-14 | TSE 28372 (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. |
| 4 | p4 | 2026-02-17 | Approved by BTI on 2026-01-26. Prepared for TCRL pkg102 publication. |

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