

# HID Over GATT Profile (HOGP)

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

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# 1 Identification of the implementation

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## 1.1 Implementation Under Test (IUT) identification

Identification of the Implementation Under Test (IUT) is to be filled in to provide as much detail as possible regarding version numbers and configuration options.

An ICS contact person to respond to queries regarding information supplied in this ICS proforma is named in the Declaration of Compliance: Summary of Selected Specifications in Implementation.

## 1.2 Versions

Table 0: X.Y Versions

Item	Version	Reference	Status
1	HOGP v1.0	[1] 1.0	M

## 1.3 Roles

Table 1: Role Requirements

Item	Role	Reference	Status
1	HID Device	[1] 2.1	C.1
2	Report Host	[1] 2.1	C.1
3	Boot Host	[1] 2.1	C.1

C.1: Mandatory to support at least one.

## 1.4 Transports

Table 2: Transport Requirements

Item	Transport	Reference	Status
1	Profile supported over BR/EDR	[1] 1	C.1
2	Profile supported over LE	[1] 1	M

C.1: Excluded for this Profile.

## 1.5 HID Device

### 1.5.1 Services – HID Device

Table 3: Services – HID Device

*Prerequisite: HOGP 1/1 “HID Device”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	HID Service	[1] 3.1	M	[2] HIDS 2/1
2	Multiple Service instances – HID Service	[1] 3.1	O	N/A
3	Battery Service	[1] 3.2	M	[5] BAS 2/1
4	Device Information Service	[1] 3.3	M	[6] DIS 2/1
5	Scan Parameters Service	[1] 3.4	O	[7] SCPS 2/1

## 1.5.2 Features – HID Device

**Table 4: Features – HID Device**

*Prerequisite: HOGP 1/1 “HID Device”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Include HID Service UUID in AD in GAP Discoverable Mode	[1] 3.1.3	O	N/A
2	Include Local Name in AD or Scan Response Data	[1] 3.1.4	O	N/A
3	Include Appearance in AD or Scan Response Data	[1] 3.1.5	O	N/A
4	PnP ID	[1] 3.3.2	M	[6] DIS 2/11
5	Report Characteristic	[1] 4.8	C.1	[2] HIDS 2/12
6	Non-HID Service characteristic described within Report Map characteristic	[1] 4.8.1	C.1	N/A
7	Report Map Characteristic - External Report Reference Characteristic descriptor	[1] 4.8.1	C.2	[2] HIDS 2/11a

C.1: Mandatory to support at least one.

C.2: Mandatory IF HOGP 4/6 “Non-HID Service characteristic described within Report Map characteristic”, otherwise not defined.

## 1.5.3 GAP requirements – HID Device

**Table 5: GAP Requirements – HID Device**

*Prerequisite: HOGP 1/1 “HID Device”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Peripheral	[1] 2.4	M	[4] GAP 5/3 OR GAP 38/3
2–3	No longer used	N/A	N/A	N/A
4	Bondable mode (Peripheral)	[1] 6.1	M	[4] GAP 24/2
5	Bonding procedure (Peripheral)	[1] 6.1	M	[4] GAP 24/3
6	LE security mode 1 (Peripheral)	[1] 6.1	M	[4] GAP 25/1
7	Unauthenticated Pairing (LE security mode 1 level 2) (Peripheral)	[1] 6.1	M	[4] GAP 25/8
8	Authenticated Pairing (LE security mode 1 level 3) (Peripheral)	[1] 6.1	O	[4] GAP 25/7

**Table 6: No longer used**



## 1.6 HID Host

### 1.6.1 Client Services Support – Report Host

**Table 7: No longer used**

**Table 7a: GATT based Profile Support – Report Host**

*Prerequisite: HOGP 1/2 “Report Host”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Scan Client	[1] 4.2	M	[8] SCPP 1/2

**Table 8: No longer used**

### 1.6.2 Discover Services and Characteristics – Report Host

**Table 9: Discover Service and Characteristics – Report Host**

*Prerequisite: HOGP 1/2 “Report Host”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Discover HID Service	[1] 4.5.1	M	N/A
2	Discover Battery Service	[1] 4.5.3	M	N/A
3	Discover Device Information Service	[1] 4.5.2	M	N/A
4	Discover Scan Parameters Service	[1] 4.2	M	[8] SCPP 7/1
5	Discover HID Service characteristic: Report Map	[1] 4.6.1.1	M	N/A
6	Discover HID Service characteristic: Report Map – External Report Reference characteristic descriptor	[1] 4.6.1.1	M	N/A
7	Discover HID Service characteristic: Report	[1] 4.6.1.2	M	N/A
8	Discover HID Service characteristic: Report – Client Characteristic Configuration characteristic descriptor	[1] 4.6.1.2	M	N/A
9	Discover HID Service characteristic: Report – Report Reference characteristic descriptor	[1] 4.6.1.2	M	N/A
10	Discover HID Service characteristic: HID Information	[1] 4.6.1.4	M	N/A
11	Discover HID Service characteristic: HID Control Point	[1] 4.6.1.3	M	N/A
12	Discover HID Service characteristic: Protocol Mode	[1] 4.6.1.5	O	N/A
13	Discover Battery Service characteristic: Battery Level	[1] 4.6.3.1	M	N/A

Item	Capability	Reference	Status	Inter-Layer Dependency
14	Discover Battery Service characteristic: Battery Level – Client Characteristic Configuration characteristic descriptor	[1] 4.6.3.1	M	N/A
15	Discover Device Information Service characteristic: PnP ID	[1] 4.6.2.1	M	N/A
16	Discover non-HID Service characteristic: Report Reference characteristic descriptor	[1] 4.8.1	M	N/A

### 1.6.3 Discover Services and Characteristics – Boot Host

**Table 10: Discover Service & Characteristics – Boot Host**

*Prerequisite: HOGP 1/3 “Boot Host”*

Item	Capability	Reference	Status
1	Discover HID Service	[1] 4.3.1	M
2	Discover Battery Service	[1] 4.3.3	O
3	Discover Device Information Service	[1] 4.3.2	O
4	Discover HID Service characteristic: Protocol Mode	[1] 4.4.1.1	M
5	Discover HID Service characteristic: Boot Keyboard Input Report	[1] 4.4.1.2	C.1, C.2
6	Discover HID Service characteristic: Boot Keyboard Input Report – Client Characteristic Configuration characteristic descriptor	[1] 4.4.1.2	C.3
7	Discover HID Service characteristic: Boot Keyboard Output Report	[1] 4.4.1.3	C.1, C.2
8	Discover HID Service characteristic: Boot Mouse Input Report	[1] 4.4.1.4	C.1
9	Discover HID Service characteristic: Boot Mouse Input Report – Client Characteristic Configuration characteristic descriptor	[1] 4.4.1.4	C.4
10	Discover Battery Service characteristic: Battery Level	[1] 4.4.3	O
11	Discover Battery Service characteristic: Battery Level – Client Characteristic Configuration characteristic descriptor	[1] 4.4.3.1	O
12	Discover Device Information Service characteristic: PnP ID	[1] 4.4.2.1	O

C.1: Mandatory to support at least one.

C.2: Mandatory to support none or all.

C.3: Mandatory IF HOGP 10/5 “Discover HID Service characteristic: Boot Keyboard Input Report”, otherwise Excluded.

C.4: Mandatory IF HOGP 10/8 “Discover HID Service characteristic: Boot Mouse Input Report”, otherwise Excluded.



## 1.6.4 Features – Report Host

**Table 11: Features – Report Host**

*Prerequisite: HOGP 1/2 “Report Host”*

Item	Capability	Reference	Status
1	Read Report Map characteristic	[1] 4.7	M
2	Read Report Map characteristic: External Report Reference characteristic descriptor	[1] 4.7	M
3	Read Report characteristic: Report Type: Input Report	[1] 4.8	C.2
4	Write Report characteristic: Report Type: Input Report	[1] 4.8	C.2
5	Read Report characteristic: Report Type: Output Report	[1] 4.8	C.3
6	Write - Report characteristic: Report Type: Output Report	[1] 4.8	C.3
7	Read - Report characteristic: Report Type: Feature Report	[1] 4.8	C.4
8	Write - Report characteristic: Report Type: Feature Report	[1] 4.8	C.4
9	Read Report characteristic: Report Reference characteristic descriptor	[1] 4.8	M
10	Read Report characteristic: Input Report: Client Characteristic Configuration characteristic descriptor	[1] 4.8	M
11	Report characteristic configuration: enable notifications	[1] 4.8	M
11a	Report characteristic configuration: disable notifications	[1] 4.8	C.2
12	Read HID Information characteristic	[1] 4.10	O
13	Suspend State	[1] 4.9	O
14	Exit Suspend State	[1] 4.9	C.1
15	Write HID Control Point characteristic: Suspend command	[1] 4.9	C.1
16	Write HID Control Point characteristic: Exit Suspend command	[1] 4.9	C.1
17	Read Protocol Mode characteristic: Get Protocol command	[1] 4.8	O
18	Write Protocol Mode characteristic: Set Report Protocol Mode command	[1] 4.8	O
19	Read Battery Level characteristic	[1] 4.15	C.5
20	Read Battery Level characteristic: Client Characteristic Configuration characteristic descriptor	[1] 4.15	C.6
21	Battery Level characteristic configuration: enable notifications	[1] 4.15	C.6
21a	Battery Level characteristic configuration: disable notifications	[1] 4.15	O
22	Read non-HID Service characteristic: Report Reference characteristic descriptor	[1] 4.8	M
23	Read PnP ID characteristic	[1] 4.16	M
24	Notify Report characteristic	[1] 4.8	M
25	Notify Battery Level characteristic	[1] 4.15	C.5
26	Report Characteristic: Input Report type supported	[1] 4.8	M
27	Report Characteristic: Output Report type supported	[1] 4.8	O
28	Report Characteristic: Feature Report type supported	[1] 4.8	O

C.1: Mandatory IF HOGP 11/13 “Suspend State”, otherwise Excluded.

C.2: Optional IF HOGP 11/26 “Report Characteristic: Input Report type supported”, otherwise Excluded.



- C.3: Optional IF HOGP 11/27 “Report Characteristic: Output Report type supported”, otherwise Excluded.
- C.4: Optional IF HOGP 11/28 “Report Characteristic: Feature Report type supported”, otherwise Excluded.
- C.5: Mandatory to support at least one.
- C.6: Mandatory IF HOGP 11/25 “Notify Battery Level characteristic”, otherwise Excluded.

## 1.6.5 Features – Boot Host

**Table 12: Features – Boot Host**

*Prerequisite: HOGP 1/3 “Boot Host”*

Item	Capability	Reference	Status
1	Read Protocol Mode characteristic: Get Protocol Mode command	[1] 4.11	M
2	Write Protocol Mode characteristic: Set Boot Protocol Mode command	[1] 4.11	M
3	Read HID Service characteristic: Boot Keyboard Input Report	[1] 4.12	C.1
4	Write HID Service characteristic: Boot Keyboard Input Report	[1] 4.12	C.1
5	Read Client Characteristic Configuration characteristic descriptor for Boot Keyboard Input Report	[1] 4.12	C.1
6	Boot Keyboard Input Report characteristic configuration: enable notifications	[1] 4.12	C.1
6a	Boot Keyboard Input Report characteristic configuration: disable notifications	[1] 4.12	O
7	Read HID Service characteristic: Boot Keyboard Output Report	[1] 4.13	C.1
8	Write HID Service characteristic: Boot Keyboard Output Report	[1] 4.13	C.1
9	Read HID Service characteristic: Boot Mouse Input Report	[1] 4.14	C.2
10	Write HID Service characteristic: Boot Mouse Input Report	[1] 4.14	C.2
11	Read Client Characteristic Configuration characteristic descriptor for Boot Mouse Input Report	[1] 4.14	C.2
12	Boot Mouse Input Report characteristic configuration: enable notifications	[1] 4.14	C.2
12a	Boot Mouse Input Report characteristic configuration: disable notifications	[1] 4.14	O
13	Notify Boot Keyboard Input Report characteristic	[1] 4.12	C.1
14	Notify Boot Mouse Input Report characteristic	[1] 4.14	C.2
15	Read Battery Level characteristic	[1] 4.15	O
16	Read Battery Level characteristic: Client Characteristic Configuration characteristic descriptor	[1] 4.15	O
17	Battery Level characteristic configuration: enable notifications	[1] 4.15	O
17a	Battery Level characteristic configuration: disable notifications	[1] 4.15	O
18	Notify Battery Level characteristic	[1] 4.15	O
19	Read PnP ID characteristic	[1] 4.16	O

- C.1: Mandatory IF HOGP 10/5 “Discover HID Service characteristic: Boot Keyboard Input Report” OR HOGP 10/7 “Discover HID Service characteristic: Boot Keyboard Output Report”, otherwise Excluded.
- C.2: Mandatory IF HOGP 10/8 “Discover HID Service characteristic: Boot Mouse Input Report”, otherwise Excluded.

### 1.6.6 GATT requirements – Report Host

**Table 13: GATT Requirements – Report Host**

*Prerequisite: HOGP 1/2 “Report Host”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	GATT Client over LE	[1] 4.1	M	[3] GATT 1a/1
2	No longer used	N/A	N/A	N/A
3	Discover All Primary Services	[1] 4.1	C.1	[3] GATT 3/2
4	Discover Primary Services by Service UUID	[1] 4.1	C.1	[3] GATT 3/3
5	Find Included Services	[1] 4.1	M	[3] GATT 3/4
6	Discover All Characteristics of a Service	[1] 4.1	C.2	[3] GATT 3/5
7	Discover Characteristics by UUID	[1] 4.1	C.2	[3] GATT 3/6
8	Discover All Characteristic Descriptors	[1] 4.1	M	[3] GATT 3/7
9	Read Characteristic Value	[1] 4.1	C.3	[3] GATT 3/8
10	Read Using Characteristic UUID	[1] 4.1	C.3	[3] GATT 3/9
11	Read Long Characteristic Values	[1] 4.1	C.4	[3] GATT 3/10
12	Read Characteristic Descriptors	[1] 4.1	M	[3] GATT 3/19
13	Write without Response	[1] 4.1	M	[3] GATT 3/12
14	Write Characteristic Value	[1] 4.1	M	[3] GATT 3/14
15	Write Characteristic Descriptors	[1] 4.1	M	[3] GATT 3/21
16	Notifications	[1] 4.1	M	[3] GATT 3/17
17	Exchange MTU	[1] 4.1	O	[3] GATT 3/1

- C.1: Mandatory to support at least one.
- C.2: Mandatory to support at least one.
- C.3: Mandatory to support at least one.
- C.4: Mandatory IF HOGP 13/9 “Read Characteristic Value” OR HOGP 13/10 “Read Using Characteristic UUID”, otherwise not defined.

## 1.6.7 GATT requirements – Boot Host

**Table 14: GATT Requirements – Boot Host**

*Prerequisite: HOGP 1/3 “Boot Host”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	GATT Client over LE	[1] 4.1	M	[3] GATT 1a/1
2	No longer used	N/A	N/A	N/A
3	Discover All Primary Services	[1] 4.1	C.1	[3] GATT 3/2
4	Discover Primary Services by Service UUID	[1] 4.1	C.1	[3] GATT 3/3
5	Discover All Characteristics of a Service	[1] 4.1	O	[3] GATT 3/5
6	Discover Characteristics by UUID	[1] 4.1	O	[3] GATT 3/6
7	Discover All Characteristic Descriptors	[1] 4.1	M	[3] GATT 3/7
8	Read Characteristic Value	[1] 4.1	M	[3] GATT 3/8
9	Read Using Characteristic UUID	[1] 4.1	M	[3] GATT 3/9
10	Read Characteristic Descriptors	[1] 4.1	M	[3] GATT 3/19
11	Write without Response	[1] 4.1	M	[3] GATT 3/12
12	Write Characteristic Value	[1] 4.1	M	[3] GATT 3/14
13	Write Characteristic Descriptors	[1] 4.1	M	[3] GATT 3/21
14	Notifications	[1] 4.1	M	[3] GATT 3/17

C.1: Mandatory to support at least one.

## 1.6.8 GAP requirements – HID Host

**Table 15: GAP Requirements – HID Host**

*Prerequisite: HOGP 1/2 “Report Host” OR HOGP 1/3 “Boot Host”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Central	[1] 2.4	M	[4] GAP 5/4 OR GAP 38/4
2	LE security mode 1 (Central)	[1] 6.2	M	[4] GAP 35/1
3	Unauthenticated Pairing (LE security mode 1 level 2) (Central)	[1] 6.2	M	[4] GAP 35/8
4	Authenticated Pairing (LE security mode 1 level 3) (Central)	[1] 6.2	O	[4] GAP 35/7

**Table 16: No longer used**



## 2 References

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- [1] HID over GATT Profile Specification, Version 1.0
- [2] ICS Proforma for HID Service (HIDS)
- [3] ICS Proforma for Generic Attribute Profile (GATT)
- [4] ICS Proforma for Generic Access Profile (GAP)
- [5] ICS Proforma for Battery Service (BAS)
- [6] ICS Proforma for Device Information Service (DIS)
- [7] ICS Proforma for Scan Parameters Service (SCPS)
- [8] ICS Proforma for Scan Parameters Profile (SCPP)

### 3 Revision history and acknowledgments

#### Revision History

Publication Number	Revision Number	Date	Comments
0	1.0.0	2011-12-27	Adopted by the Bluetooth SIG Board of Directors
	1.0.1r0	2012-06-05	TSE 4728: Add item 11a to Table 11.
1	1.0.1	2012-07-24	Prepare for publication.
	1.0.2r1	2012-09-04	TSE 4888: Removed conditionals in Table 1, Profile Roles.  TSE 4868: Table 13: GATT Requirements – Report Host, change item 10 from M to O.  Added Version table, Table 0 per BQRB decision.
2	1.0.2	2012-10-30	Prepare for Publication
	1.0.3r01	2013-09-30	TSE 5313: Addition of Table 7a
3	1.0.3	2013-12-03	Prepare for Publication
	1.0.4r00	2015-05-10	TSE 6257: Revised status of item 13/17 (Exchange MTU) to Optional
	1.0.4r01	2015-05-12	Updated to the current ICS template and revised per the standard conventions for items like conditionals and pre-requisites.
4	1.0.4	2015-07-14	Prepared for TCRL 2015-1 publication
	1.0.5r00	2015-10-01	TSE 6412: In Table 11 of Section 1.5.5 - updated conditionals; revised capability characteristics for items 11/6, 11/7, and 11/8; changed item 11/12 status to Optional; and added new items 11/26, 11/27, and 11/28. In Table 13 of Section 1.5.7 - updated conditionals. TSE 6653: Revised and added multiple capability characteristics in Section 1.5.5, Table 11 and Section 1.5.6, Table 12.
5	1.0.5	2015-12-22	Prepared for TCRL 2015-2 publication.
	1.0.6r00	2017-05-25	TSE 9148: Template conversion. Correct copy/paste table numbering errors (3 Table 5's).
6	1.0.6	2017-06-26	Approved by BTI. Prepared for TCRL 2017-1 publication.

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	p7r00–r05	2022-09-14 – 2022-11-15	<p>TSE 19166 (rating 2): Updated the ILD column for Table 4, Item 7. Other edits for this TSE made for TSE 19178.</p> <p>TSE 19178 (rating 1): Updated to align with current ICS conventions/template. Removed Support columns and added an Inter-Layer Dependency column where appropriate. Added a Publication Number column to the Revision History. Revised the document numbering convention, setting the last release publication of 1.0.6 as p6.</p> <p>Performed additional template-related formatting fixes. Replaced Bluetooth logo in footer and updated the copyright page to align with v2 of the DNMD.</p>
7	p7	2023-02-07	Approved by BTI on 2022-12-28. Prepared for TCRL 2022-2 publication.
	p8r00–r01	2023-10-27 – 2023-12-11	<p>TSE 23418 (rating 2): In Table 5 (GAP requirements), marked Items 2 and 3 as no longer used.</p> <p>Made editorial edits to align the document with the latest ICS template, including updates to the section titles. Deleted draft revision history comments prior to p0.</p>
8	p8	2024-07-01	Approved by BTI on 2024-04-21. Prepared for TCRL 2024-1 publication.

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