

# Hearing Access Profile (HAP)

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

---

- **Revision:** HAP.ICS.p3
- **Revision Date:** 2024-10-08
- **Prepared By:** Hearing Aid Working Group
- **Published during TCRL:** TCRL.2024-2-addition



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](http://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 © 2021–2024 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

|          |                                                               |          |
|----------|---------------------------------------------------------------|----------|
| <b>1</b> | <b>Identification of the implementation .....</b>             | <b>5</b> |
| 1.1      | Implementation Under Test (IUT) identification .....          | 5        |
| 1.2      | Roles .....                                                   | 6        |
| 1.3      | Transports .....                                              | 6        |
| 1.4      | Hearing Aid role .....                                        | 6        |
| 1.4.1    | Versions .....                                                | 6        |
| 1.4.2    | Features .....                                                | 7        |
| 1.4.3    | Profile and service dependencies .....                        | 7        |
| 1.4.4    | Feature requirements in dependent services .....              | 8        |
| 1.4.4.1  | CCP Client requirements .....                                 | 8        |
| 1.4.4.2  | VCP Volume Renderer requirements .....                        | 8        |
| 1.4.4.3  | MICP Microphone Device requirements .....                     | 8        |
| 1.4.4.4  | CSIP Set Member requirements .....                            | 8        |
| 1.4.4.5  | BAP Unicast Server requirements .....                         | 8        |
| 1.4.4.6  | CAP Acceptor requirements .....                               | 9        |
| 1.4.4.7  | Hearing Access Service requirements .....                     | 9        |
| 1.4.4.8  | Immediate Alert Service requirements .....                    | 9        |
| 1.4.4.9  | Coordinated Set Identification Service requirements .....     | 9        |
| 1.4.5    | Feature requirements in Core layers .....                     | 9        |
| 1.4.5.1  | GAP requirements .....                                        | 9        |
| 1.4.5.2  | Link Layer requirements .....                                 | 10       |
| 1.5      | Hearing Aid Unicast Client role .....                         | 10       |
| 1.5.1    | Versions .....                                                | 10       |
| 1.5.2    | Features .....                                                | 10       |
| 1.5.3    | Profile and service dependencies .....                        | 10       |
| 1.5.4    | Feature requirements in dependent profiles and services ..... | 11       |
| 1.5.4.1  | CCP Server requirements .....                                 | 11       |
| 1.5.4.2  | CSIP Set Coordinator requirements .....                       | 11       |
| 1.5.4.3  | BAP Unicast Client requirements .....                         | 11       |
| 1.5.4.4  | CAP Initiator .....                                           | 12       |
| 1.5.5    | Feature requirements in Core layers .....                     | 12       |
| 1.5.5.1  | GATT requirements .....                                       | 12       |
| 1.5.5.2  | Link Layer requirements .....                                 | 12       |
| 1.6      | Hearing Aid Remote Controller role .....                      | 12       |
| 1.6.1    | Versions .....                                                | 12       |
| 1.6.2    | Features .....                                                | 13       |
| 1.6.2.1  | Characteristic Discovery requirements .....                   | 13       |
| 1.6.2.2  | Preset Control Point requirements .....                       | 13       |
| 1.6.3    | Profile and service dependencies .....                        | 14       |
| 1.6.4    | Feature requirements in dependent profiles and services ..... | 14       |
| 1.6.4.1  | VCP Volume Controller requirements .....                      | 14       |
| 1.6.4.2  | MICP Microphone Controller requirements .....                 | 14       |
| 1.6.4.3  | CSIP Set Coordinator requirements .....                       | 14       |
| 1.6.4.4  | CAP Commander requirements .....                              | 14       |
| 1.6.4.5  | HAS Hearing Access Service Client requirements .....          | 15       |
| 1.6.5    | Feature requirements in Core layers .....                     | 15       |
| 1.6.5.1  | Link Layer requirements .....                                 | 15       |



---

|         |                                            |    |
|---------|--------------------------------------------|----|
| 1.6.5.2 | GAP requirements .....                     | 15 |
| 1.6.5.3 | GATT requirements .....                    | 15 |
| 1.7     | Immediate Alert Client role .....          | 15 |
| 1.7.1   | Versions.....                              | 15 |
| 1.7.2   | Service dependencies.....                  | 16 |
| 2       | References .....                           | 17 |
| 3       | Revision history and acknowledgments ..... | 18 |



# 1 Identification of the implementation

---

## 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 Roles

**Table 1: Role Requirements**

| Item | Role                                 | Reference | Status |
|------|--------------------------------------|-----------|--------|
| 1    | Hearing Aid (HA)                     | [1] 3     | C.1    |
| 2    | Hearing Aid Unicast Client (HAUC)    | [1] 4     | C.1    |
| 3    | Hearing Aid Remote Controller (HARC) | [1] 5     | C.1    |
| 4    | Immediate Alert Client (IAC)         | [1] 6     | C.2    |

C.1: Mandatory to support at least one.

C.2: Optional IF HAP 1/2 “Hearing Aid Unicast Client (HAUC)” OR HAP 1/3 “Hearing Aid Remote Controller (HARC)”, otherwise Excluded.

## 1.3 Transports

**Table 2: Transport Requirements**

| Item | Transport                     | Reference | Status |
|------|-------------------------------|-----------|--------|
| 1    | Profile supported over BR/EDR | [1] 2.5   | C.1    |
| 2    | Profile supported over LE     | [1] 2.5   | M      |

C.1: Excluded for this Profile.

## 1.4 Hearing Aid role

### 1.4.1 Versions

**Table 10: Hearing Aid, X.Y Versions**

*Prerequisite: HAP 1/1 “Hearing Aid (HA)”*

| Item | Version  | Reference | Status |
|------|----------|-----------|--------|
| 1    | HAP v1.0 | [1]       | M      |

**Table 11: Hearing Aid, X.Y.Z Versions**

*Prerequisite: HAP 1/1 “Hearing Aid (HA)”*

| Item | Version    | Reference | Status |
|------|------------|-----------|--------|
| 1    | HAP v1.0.1 | [14]      | O      |

## 1.4.2 Features

**Table 12: Hearing Aid, Features**

*Prerequisite: HAP 1/1 "Hearing Aid (HA)"*

| Item | Capability                   | Reference | Status |
|------|------------------------------|-----------|--------|
| 1    | Volume Balance               | [1] 3.1   | O      |
| 2    | Binaural Hearing Aid Set     | [1] 3.1   | C.1    |
| 3    | Banded Hearing Aid           | [1] 3.5   | C.1    |
| 4    | Monaural Hearing Aid         | [1] 3.5   | C.1    |
| 5    | Connected Isochronous Stream | [1] 3.2   | M      |
| 6    | Broadcast Isochronous Stream | [1] 3.2   | M      |
| 7    | 7.5 ms Transport Interval    | [1] 3.2   | O      |

C.1: Mandatory to support at least one.

## 1.4.3 Profile and service dependencies

**Table 13: Hearing Aid, Profile Dependencies**

*Prerequisite: HAP 1/1 "Hearing Aid (HA)"*

| Item | Service                   | Reference | Status | Inter-Layer Dependency |
|------|---------------------------|-----------|--------|------------------------|
| 1    | Call Control Client (CCP) | [1] 2.2   | O      | [9] CCP 1/2            |
| 2    | Volume Renderer (VCP)     | [1] 2.2   | M      | [5] VCP 1/1            |
| 3    | Microphone Device (MICP)  | [1] 2.2   | C.1    | [6] MICP 1/1           |
| 4    | Set Member (CSIP)         | [1] 2.2   | C.2    | [7] CSIP 1/1           |
| 5    | Unicast Server (BAP)      | [1] 2.2   | M      | [10] BAP 1/1           |
| 6    | Acceptor (CAP)            | [1] 2.2   | M      | [11] CAP 1/1           |
| 7    | Broadcast Sink (BAP)      | [1] 2.2   | M      | [10] BAP 1/4           |

C.1: Mandatory IF HAP 19/2 "Audio Source", otherwise not defined.

C.2: Mandatory IF HAP 12/2 "Binaural Hearing Aid Set", otherwise not defined.

**Table 14: Hearing Aid, Service Dependencies**

*Prerequisite: HAP 1/1 "Hearing Aid (HA)"*

| Item | Service                                       | Reference | Status | Inter-Layer Dependency |
|------|-----------------------------------------------|-----------|--------|------------------------|
| 1    | Hearing Access Service (HAS)                  | [1] 3.5.1 | M      | [12] HAS               |
| 2    | Immediate Alert Service (IAS)                 | [1] 3.5.3 | O      | [13] IAS               |
| 3    | Coordinated Set Identification Service (CSIS) | [1] 3.6   | C.1    | [8] CSIS               |

C.1: Mandatory IF HAP 12/2 "Binaural Hearing Aid Set", otherwise not defined.

## 1.4.4 Feature requirements in dependent services

### 1.4.4.1 CCP Client requirements

**Table 15: Hearing Aid, CCP Client Requirements**

Table number reserved but not yet in use

### 1.4.4.2 VCP Volume Renderer requirements

**Table 16: Hearing Aid, VCP Volume Renderer Requirements**

*Prerequisite: HAP 13/2 "Volume Renderer (VCP)"*

| Item | Capability                    | Reference | Status | Inter-Layer Dependency |
|------|-------------------------------|-----------|--------|------------------------|
| 1    | Volume Offset Control Service | [1] 3.8   | C.1    | [5] VCP 5/2            |
| 2    | Audio Input Control Service   | [1] 3.8   | O      | [5] VCP 5/3            |

C.1: Mandatory IF HAP 12/1 "Volume Balance", otherwise not defined.

### 1.4.4.3 MICP Microphone Device requirements

**Table 17: Hearing Access, MICP Microphone Device Requirements**

*Prerequisite: HAP 13/3 "Microphone Device (MICP)"*

| Item | Capability                 | Reference | Status | Inter-Layer Dependency |
|------|----------------------------|-----------|--------|------------------------|
| 1    | Microphone Control Service | [1] 3.9   | M      | [5] MICP 5/1           |

### 1.4.4.4 CSIP Set Member requirements

**Table 18: Hearing Aid, CSIP Set Member Requirements**

*Prerequisite: HAP 13/4 "Set Member (CSIP)"*

| Item | Capability                          | Reference | Status | Inter-Layer Dependency |
|------|-------------------------------------|-----------|--------|------------------------|
| 1    | Coordinated Set Size Characteristic | [1] 3.6   | M      | [8] CSIS 2/2           |

### 1.4.4.5 BAP Unicast Server requirements

**Table 19: Hearing Aid, BAP Unicast Server Requirements**

*Prerequisite: HAP 13/5 "Unicast Server (BAP)"*

| Item | Capability   | Reference | Status | Inter-Layer Dependency |
|------|--------------|-----------|--------|------------------------|
| 1    | Audio Sink   | [1] 3.7   | M      | [10] BAP 8/1           |
| 2    | Audio Source | [1] 3.7   | O      | [10] BAP 8/2           |

#### 1.4.4.6 CAP Acceptor requirements

**Table 20: Hearing Aid, CAP Acceptor Requirements**

Table number reserved but not yet in use

#### 1.4.4.7 Hearing Access Service requirements

**Table 21: Hearing Aid, Hearing Access Service Requirements**

Table number reserved but not yet in use

#### 1.4.4.8 Immediate Alert Service requirements

**Table 22: Hearing Access, Immediate Alert Service Requirements**

Table number reserved but not yet in use

#### 1.4.4.9 Coordinated Set Identification Service requirements

**Table 23: Hearing Access, Coordinated Set Identification Service Requirements**

Table number reserved but not yet in use

### 1.4.5 Feature requirements in Core layers

#### 1.4.5.1 GAP requirements

**Table 24: Hearing Aid, GAP Requirements**

*Prerequisite: HAP 1/1 "Hearing Aid (HA)"*

| Item | Capability                                                                                   | Reference | Status | Inter-Layer Dependency |
|------|----------------------------------------------------------------------------------------------|-----------|--------|------------------------|
| 1    | Unauthenticated Pairing (LE security mode 1 level 2) with LE Secure Connections Pairing only | [1] 9.1   | M      | [4] GAP 25/11          |
| 2    | Minimum 128 Bit entropy key                                                                  | [1] 9.1   | M      | [4] GAP 25/13          |
| 3    | Service UUID                                                                                 | [1] 3.3   | O      | [4] GAP 20a/1          |
| 4    | Appearance                                                                                   | [1] 3.4   | O      | [4] GAP 20a/11         |
| 5    | Resolvable private address generation procedure                                              | [1] 3.4   | O      | [4] GAP 26/3           |
| 6    | LE Secure Connections                                                                        | [1] 9.1   | M      | [4] GAP 27b/5          |

**Table 25: No longer used**

### 1.4.5.2 Link Layer requirements

**Table 26: Hearing Aid, LL Requirements**

*Prerequisite: HAP 1/1 “Hearing Aid (HA)”*

| Item | Capability | Reference | Status | Inter-Layer Dependency |
|------|------------|-----------|--------|------------------------|
| 1    | LE 2M PHY  | [1] 3.2   | M      | [3] LL 9/7             |

## 1.5 Hearing Aid Unicast Client role

### 1.5.1 Versions

**Table 40: Hearing Aid Unicast Client, X.Y Versions**

*Prerequisite: HAP 1/2 “Hearing Aid Unicast Client (HAUC)”*

| Item | Version  | Reference | Status |
|------|----------|-----------|--------|
| 1    | HAP v1.0 | [1]       | M      |

**Table 41: Hearing Aid Unicast Client, X.Y.Z Versions**

*Prerequisite: HAP 1/2 “Hearing Aid Unicast Client (HAUC)”*

| Item | Version    | Reference | Status |
|------|------------|-----------|--------|
| 1    | HAP v1.0.1 | [14]      | O      |

### 1.5.2 Features

**Table 42: Hearing Aid Unicast Client, Features**

Table number reserved but not yet in use

### 1.5.3 Profile and service dependencies

**Table 43: Hearing Aid Unicast Client, Profile Dependencies**

*Prerequisite: HAP 1/2 “Hearing Aid Unicast Client (HAUC)”*

| Item | Service                   | Reference | Status | Inter-Layer Dependency |
|------|---------------------------|-----------|--------|------------------------|
| 1    | Call Control Server (CCP) | [1] 2.2   | O      | [9] CCP 1/1            |
| 2    | Set Coordinator (CSIP)    | [1] 2.2   | M      | [7] CSIP 1/2           |
| 3    | Unicast Client (BAP)      | [1] 2.2   | M      | [10] BAP 1/2           |
| 4    | Initiator (CAP)           | [1] 2.2   | M      | [11] CAP 1/2           |

## 1.5.4 Feature requirements in dependent profiles and services

### 1.5.4.1 CCP Server requirements

**Table 44: Hearing Aid Unicast Client, CCP Server Requirements**

Table number reserved but not yet in use

### 1.5.4.2 CSIP Set Coordinator requirements

**Table 45: Hearing Aid Unicast Client, CCP Server Requirements**

Table number reserved but not yet in use

### 1.5.4.3 BAP Unicast Client requirements

**Table 46: Hearing Aid Unicast Client, BAP Unicast Client Requirements**

*Prerequisite: HAP 43/3 "Unicast Client (BAP)"*

| Item | Capability   | Reference | Status | Inter-Layer Dependency |
|------|--------------|-----------|--------|------------------------|
| 1    | Audio Source | [1] 5.3   | M      | [10] BAP 29/2          |
| 2    | Audio Sink   | [1] 5.3   | C.1    | [10] BAP 29/1          |

C.1: Mandatory IF HAP 43/1 "Call Control Server (CCP)", otherwise not defined.

**Table 47: Hearing Aid Unicast Client, Audio Source G.729A Codec Requirements**

*Prerequisite: HAP 46/1 "Audio Source"*

| Item | Capability                                                                                                                | Reference | Status |
|------|---------------------------------------------------------------------------------------------------------------------------|-----------|--------|
| 1    | G.729A Codec Capability Setting (Audio Source)                                                                            | [1] 7.1   | O      |
| 2    | G.729A QoS Config Setting – 30000 SDU Interval, unframed, 30 Max SDU Size, 1 RTN, 30 Max Transport Latency (Audio Source) | [1] 7.1   | C.1    |

C.1: Mandatory IF HAP 47/1 "G.729A Codec Capability Setting (Audio Source)", otherwise Excluded.

**Table 48: Hearing Aid Unicast Client, Audio Sink G.729A Codec Requirements**

*Prerequisite: HAP 46/2 "Audio Sink"*

| Item | Capability                                                                                                              | Reference | Status |
|------|-------------------------------------------------------------------------------------------------------------------------|-----------|--------|
| 1    | G.729A Codec Capability Setting (Audio Sink)                                                                            | [1] 7.1   | O      |
| 2    | G.729A QoS Config Setting – 30000 SDU Interval, unframed, 30 Max SDU Size, 1 RTN, 30 Max Transport Latency (Audio Sink) | [1] 7.1   | C.1    |

C.1: Mandatory IF HAP 48/1 "G.729A Codec Capability Setting (Audio Sink)", otherwise Excluded.

#### 1.5.4.4 CAP Initiator

**Table 49: Hearing Aid Unicast Client, CCP Server Requirements**

Table number reserved but not yet in use

### 1.5.5 Feature requirements in Core layers

#### 1.5.5.1 GATT requirements

**Table 50: GATT Requirements – Hearing Aid Unicast Client Role**

*Prerequisite: HAP 1/2 “Hearing Aid Unicast Client (HAUC)”*

| Item | Capability                                | Reference | Status | Inter-Layer Dependency |
|------|-------------------------------------------|-----------|--------|------------------------|
| 1    | Discover All Primary Services             | [1] 5.2   | C.1    | [2] GATT 3/2           |
| 2    | Discover Primary Services by Service UUID | [1] 5.2   | C.1    | [2] GATT 3/3           |

C.1: Mandatory to support at least one.

#### 1.5.5.2 Link Layer requirements

**Table 51: Hearing Aid Unicast Client, LL Requirements**

*Prerequisite: HAP 1/2 “Hearing Aid Unicast Client (HAUC)”*

| Item | Capability | Reference | Status | Inter-Layer Dependency |
|------|------------|-----------|--------|------------------------|
| 1    | LE 2M PHY  | [1] 5.1   | M      | [3] LL 9/7             |

## 1.6 Hearing Aid Remote Controller role

### 1.6.1 Versions

**Table 70: Hearing Aid Remote Controller, X.Y Versions**

*Prerequisite: HAP 1/3 “Hearing Aid Remote Controller (HARC)”*

| Item | Version  | Reference | Status |
|------|----------|-----------|--------|
| 1    | HAP v1.0 | [1]       | M      |

**Table 71: Hearing Aid Remote Controller, X.Y.Z Versions**

*Prerequisite: HAP 1/3 “Hearing Aid Remote Controller (HARC)”*

| Item | Version    | Reference | Status |
|------|------------|-----------|--------|
| 1    | HAP v1.0.1 | [14]      | O      |

## 1.6.2 Features

### 1.6.2.1 Characteristic Discovery requirements

**Table 72: Hearing Aid Remote Controller, Characteristic Discovery Requirements**

*Prerequisite: HAP 1/3 “Hearing Aid Remote Controller (HARC)”*

| Item | Capability                                         | Reference | Status |
|------|----------------------------------------------------|-----------|--------|
| 1    | Active Preset Index Characteristic                 | [1] 5.6   | O      |
| 2    | Hearing Aid Preset Control Point Characteristic    | [1] 5.5   | C.1    |
| 3    | Hearing Aid Features Characteristic                | [1] 5.4   | C.2    |
| 4    | Hearing Aid Features Characteristic, Notifications | [1] 5.4   | C.3    |

C.1: Mandatory IF HAP 72/1 “Active Preset Index Characteristic”, otherwise Optional.

C.2: Mandatory IF HAP 72/2 “Hearing Aid Preset Control Point Characteristic”, otherwise Excluded.

C.3: Optional IF HAP 72/3 “Hearing Aid Features Characteristic”, otherwise Excluded.

### 1.6.2.2 Preset Control Point requirements

**Table 73: Hearing Aid Remote Controller, Preset Control Point Requirements**

*Prerequisite: HAP 72/2 “Hearing Aid Preset Control Point Characteristic”*

| Item | Capability                                           | Reference  | Status |
|------|------------------------------------------------------|------------|--------|
| 1    | Write Preset Name Procedure                          | [1] 5.5.4  | O      |
| 2    | Set Active Preset Procedure                          | [1] 5.5.5  | C.3    |
| 3    | Set Next Preset Procedure                            | [1] 5.5.6  | C.3    |
| 4    | Set Previous Preset Procedure                        | [1] 5.5.7  | C.3    |
| 5    | Set Active Preset – Synchronized Locally Procedure   | [1] 5.5.8  | C.4    |
| 6    | Set Next Preset – Synchronized Locally Procedure     | [1] 5.5.9  | C.5    |
| 7    | Set Previous Preset – Synchronized Locally Procedure | [1] 5.5.10 | C.6    |
| 8    | Read Preset by Index Procedure                       | [1] 5.5.2  | C.2    |
| 9    | Preset Changed Procedure                             | [1] 5.5.3  | C.1    |

C.1: Mandatory IF HAP 73/1 “Write Preset Name Procedure” OR HAP 73/2 “Set Active Preset Procedure”, otherwise Optional.

C.2: Mandatory IF HAP 72/1 “Active Preset Index Characteristic”, otherwise Optional.

C.3: Mandatory to support at least one.

C.4: Mandatory IF HAP 73/2 “Set Active Preset Procedure”, otherwise Excluded.

C.5: Mandatory IF HAP 73/3 “Set Next Preset Procedure”, otherwise Excluded.

C.6: Mandatory IF HAP 73/4 “Set Previous Preset Procedure”, otherwise Excluded.

### 1.6.3 Profile and service dependencies

**Table 74: Hearing Aid Remote Controller, Profile Dependencies**

*Prerequisite: HAP 1/3 "Hearing Aid Remote Controller (HARC)"*

| Item | Service                      | Reference | Status | Inter-Layer Dependency |
|------|------------------------------|-----------|--------|------------------------|
| 1    | Volume Controller (VCP)      | [1] 2.2   | M      | [5] VCP 1/2            |
| 2    | Microphone Controller (MICP) | [1] 2.2   | O      | [6] MICP 1/2           |
| 3    | Set Coordinator (CSIP)       | [1] 2.2   | M      | [7] CSIP 1/2           |
| 4    | Commander (CAP)              | [1] 2.2   | M      | [11] CAP 1/3           |

**Table 75: Hearing Aid Remote Controller, Service Dependencies**

*Prerequisite: HAP 1/3 "Hearing Aid Remote Controller (HARC)"*

| Item | Service                             | Reference | Status | Inter-Layer Dependency |
|------|-------------------------------------|-----------|--------|------------------------|
| 1    | Hearing Access Service Client (HAS) | [1] 2.2   | M      | N/A                    |

### 1.6.4 Feature requirements in dependent profiles and services

#### 1.6.4.1 VCP Volume Controller requirements

**Table 76: Hearing Aid Remote Controller, VCP Volume Controller Requirements**

*Prerequisite: HAP 74/1 "Volume Controller (VCP)"*

| Item | Capability          | Reference | Status | Inter-Layer Dependency |
|------|---------------------|-----------|--------|------------------------|
| 1    | Set Absolute Volume | [1] 6.5   | M      | [5] VCP 12/6           |

#### 1.6.4.2 MICP Microphone Controller requirements

**Table 77: Hearing Aid Remote Controller, MICP Microphone Controller Requirements**

Table number reserved but not yet in use

#### 1.6.4.3 CSIP Set Coordinator requirements

**Table 78: Hearing Aid Remote Controller, CSIP Set Coordinator Requirements**

Table number reserved but not yet in use

#### 1.6.4.4 CAP Commander requirements

**Table 79: Hearing Aid Remote Controller, CAP Commander Requirements**

Table number reserved but not yet in use



### 1.6.4.5 HAS Hearing Access Service Client requirements

**Table 80: Hearing Aid Remote Controller, HAS Hearing Access Service Client Requirements**

Table number reserved but not yet in use

## 1.6.5 Feature requirements in Core layers

### 1.6.5.1 Link Layer requirements

**Table 81: Hearing Aid Remote Controller, LL Requirements**

*Prerequisite: HAP 1/3 "Hearing Aid Remote Controller (HARC)"*

| Item | Capability | Reference | Status | Inter-Layer Dependency |
|------|------------|-----------|--------|------------------------|
| 1    | LE 2M PHY  | [1] 3.2   | M      | [3] LL 9/7             |

### 1.6.5.2 GAP requirements

**Table 82: GAP Requirements – Immediate Alert Client Role**

*Prerequisite: HAP 1/3 "Hearing Aid Remote Controller (HARC)"*

| Item | Capability         | Reference | Status | Inter-Layer Dependency |
|------|--------------------|-----------|--------|------------------------|
| 1    | Bondable mode (LE) | [1] 9.4   | M      | [4] GAP 34/2           |

### 1.6.5.3 GATT requirements

**Table 83: GATT Requirements – Immediate Alert Client Role**

*Prerequisite: HAP 1/3 "Hearing Aid Remote Controller (HARC)"*

| Item | Capability                  | Reference | Status | Inter-Layer Dependency |
|------|-----------------------------|-----------|--------|------------------------|
| 1    | Enhanced ATT bearer over LE | [1] 5.5   | O      | [2] GATT 2/3a          |

## 1.7 Immediate Alert Client role

### 1.7.1 Versions

**Table 90: Immediate Alert Client, X.Y Versions**

*Prerequisite: HAP 1/4 "Immediate Alert Client (IAC)"*

| Item | Version  | Reference | Status |
|------|----------|-----------|--------|
| 1    | HAP v1.0 | [1]       | M      |

**Table 91: Immediate Alert Client, X.Y.Z Versions***Prerequisite: HAP 1/4 "Immediate Alert Client (IAC)"*

| Item | Version    | Reference            | Status |
|------|------------|----------------------|--------|
| 1    | HAP v1.0.1 | <a href="#">[14]</a> | O      |

## 1.7.2 Service dependencies

**Table 92: Immediate Alert Client, Service Dependencies***Prerequisite: HAP 1/4 "Immediate Alert Client (IAC)"*

| Item | Service                       | Reference               | Status | Inter-Layer Dependency   |
|------|-------------------------------|-------------------------|--------|--------------------------|
| 1    | Immediate Alert Service (IAS) | <a href="#">[1]</a> 6.1 | M      | <a href="#">[13]</a> IAS |

## 2 References

---

- [1] Hearing Access Profile, Version 1.0 or later
- [2] ICS Proforma for Generic Attribute Profile (GATT)
- [3] ICS Proforma for Bluetooth Low Energy Link Layer Protocol Specification
- [4] ICS Proforma for Generic Access Profile (GAP)
- [5] ICS Proforma for Volume Control Profile (VCP)
- [6] ICS Proforma for Microphone Control Profile (MICP)
- [7] ICS Proforma for Coordinated Set Identification Profile (CSIP)
- [8] ICS Proforma for Coordinated Set Identification Service (CSIS)
- [9] ICS Proforma for Call Control Profile (CCP)
- [10] ICS Proforma for Basic Audio Profile (BAP)
- [11] ICS Proforma for Common Audio Profile (CAP)
- [12] ICS Proforma for Hearing Access Service (HAS)
- [13] ICS Proforma for Immediate Alert Service (IAS)
- [14] Hearing Access Profile, Version 1.0.1

### 3 Revision history and acknowledgments

#### Revision History

| Publication Number | Revision Number | Date                    | Comments                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|-----------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0                  | p0              | 2022-06-14              | HAP v1.0 adopted by the BoD on 2022-06-07. Prepared for initial publication.                                                                                                                                                                                                                                                                                                                                                   |
|                    | p1r00–r01       | 2022-07-28 – 2022-11-21 | TSE 19154 (rating 2): Updated Status for 1/1 and updated C.1 and C.2 for Table 1. Consistency checker editorials.                                                                                                                                                                                                                                                                                                              |
| 1                  | p1              | 2023-02-07              | Approved by BTI on 2022-12-19. Prepared for TCRL 2022-2 publication.                                                                                                                                                                                                                                                                                                                                                           |
|                    | p2r00–r03       | 2023-08-25 – 2024-04-11 | TSE 23342 (rating 2): To resolve GAP/SM ILDs, removed the SM ICS from the References section and deleted the SM Requirements table (Table 25). Added 24/6. Other changes throughout to align with the latest ICS template conventions.<br>TSE 25097 (rating 2): Added new Table 83 “GATT Requirements – Immediate Alert Client Role” to account for GATT ILDs. Removed extra “Feature requirements in Core layers” subheading. |
| 2                  | p2              | 2024-07-01              | Approved by BTI on 2024-04-21. Prepared for TCRL 2024-1 publication.                                                                                                                                                                                                                                                                                                                                                           |
|                    | p3r00–r01       | 2024-08-09 – 2024-08-12 | TSE 25408 (rating 2): Per E19220, added item 7, Broadcast Sink (BAP) service, for Table 13.<br>TSE 25567 (rating 1): Per E19220, E23132, and E23815, added new X.Y.Z version as part of the .Z release. Added Tables 11, 41, 71, and 91. Added a reference to Hearing Access Profile, Version 1.0.1.                                                                                                                           |
| 3                  | p3              | 2024-10-08              | Approved by BTI on 2024-09-11. HAP v1.0.1 adopted by the BoD on 2024-10-01. Prepared for TCRL 2024-2-addition publication.                                                                                                                                                                                                                                                                                                     |

#### Acknowledgments

| Name        | Company             |
|-------------|---------------------|
| Dejan Berec | Bluetooth SIG, Inc. |
| Gene Chang  | Bluetooth SIG, Inc. |