Voice Assistant Profile

Bluetooth® Profile Specification

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Abstract

The Voice Assistant Profile (VAP) adds Voice Assistant (VA) functionality to Bluetooth® Low Energy (LE). This specification enables a client device to control and configure VA functionality.

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1 Introduction

A Voice Assistant (VA) is an intelligent tool that responds to spoken commands and helps users perform tasks or get information. This specification provides the ability for a Voice Assistant Terminal (VAT) (e.g., earbuds, a car kit, or a non-audio Bluetooth device) to control and interact with one or more VAs on a Voice Assistant Gateway (VAG) (e.g., a smartphone or a laptop) that implements a Generic Voice Assistant Service (GVAS) and, optionally, one or more Voice Assistant Services (VASes). GVAS provides a VAT easy access to a default VA on a VAG. A VAG that provides access to multiple VAs may expose a VAS for each VA to enable a richer VAT to pick its preferred VA for each interaction.

1.1 Language

1.1.1 Language conventions

In the development of a specification, the Bluetooth SIG has established the following conventions for use of the terms "*shall*", "*mandatory*", "*shall not*", "*should*", "*should not*", "*may*", "*optional*", "*must*", and "*can*". In this Bluetooth specification, the terms in Table 1.1 have the specific meanings given in that table, irrespective of other meanings that exist.

Term	Definition
shall *or* mandatory	—used to express what is required by the specification and is to be implemented exactly as written without deviation
shall not	—used to express what is forbidden by the specification
should *or* may *or* optional	— not mandatory. Used to express either: 1. what is recommended by the specification without forbidding anything ("should") 2. what is permissible within the limits of the specification ("may" or "optional")
should not	—used to indicate that something is discouraged but not forbidden by the specification
must	—used to indicate either: 1. an indisputable statement of fact that is always true regardless of the circumstances 2. an implication or natural consequence if a separately-stated requirement is followed
can	—used to express a statement of possibility or capability

Table 1.1: Language conventions terms and definitions

Where more than one item is permitted but not required, the choices to include or support those items are independent from one another unless the specification explicitly states otherwise. Each item that is implemented shall be implemented exactly as written without deviation.

1.1.1.1 Implementation alternatives

When specification content indicates that there are multiple alternatives to satisfy specification requirements, if one alternative is explained or illustrated in an example it is not intended to limit other alternatives that the specification requirements permit.

1.1.1.2 Discrepancies

It is the goal of Bluetooth SIG that specifications are clear, unambiguous, and do not contain discrepancies. However, members can report any perceived discrepancy by filing an erratum and can request a test case waiver as appropriate.

1.1.2 Reserved for Future Use

Where a field in a packet, Protocol Data Unit (PDU), or other data structure is described as "Reserved for Future Use" (irrespective of whether in uppercase or lowercase), the device creating the structure shall set its value to zero unless otherwise specified. Any device receiving or interpreting the structure shall ignore that field; in particular, it shall not reject the structure because of the value of the field.

Where a field, parameter, or other variable object can take a range of values, and some values are described as "Reserved for Future Use," a device sending the object shall not set the object to those values. A device receiving an object with such a value should reject it, and any data structure containing it, as being erroneous; however, this does not apply in a context where the object is described as being ignored or it is specified to ignore unrecognized values.

When a field value is a bit field, unassigned bits can be marked as Reserved for Future Use and shall be set to 0. Implementations that receive a message that contains a Reserved for Future Use bit that is set to 1 shall process the message as if that bit was set to 0, except where specified otherwise.

The acronym RFU is equivalent to Reserved for Future Use.

1.1.3 Prohibited

When a field value is an enumeration, unassigned values can be marked as “Prohibited.” These values shall never be used by an implementation, and any message received that includes a Prohibited value shall be ignored and shall not be processed and shall not be responded to.

Where a field, parameter, or other variable object can take a range of values, and some values are described as “Prohibited,” devices shall not set the object to any of those Prohibited values. A device receiving an object with such a value should reject it, and any data structure containing it, as being erroneous.

“Prohibited” is never abbreviated.

1.2 Requirements in Tables

Requirements in this specification are defined as "Mandatory" (M), "Optional" (O), "Excluded" (E), “Not Applicable” (N/A), or "Conditional" (C.#). Conditional statements (C.#) are listed directly below the table in which they appear.

- "M” for mandatory. See Table 1.1.
- "O” for optional. See Table 1.1.

- "E" for excluded. "Excluded" means not permitted in this context; cannot be supported or included for this purpose. The item can still be supported or included if allowed for some other purpose (e.g., a feature can be mandatory for one role and excluded for another; a device that supports both roles must support this feature).
- "C.#" for conditional. "Conditional" means that an item is required, optional, or prohibited based on whether one or more other items are supported or included (# represents any number). Within the definition of the condition, if those other items mean that "not permitted" applies, it has the same meaning as "E".

1.2.1 Table requirements for unused cells

An unused cell is a table cell without a value or content, which is indicated with either the word "none" (without quotation marks) or a hyphen (i.e., a "minus" sign).

1.3 Conformance

Each capability of this specification shall be supported in the specified manner. This specification may provide options for design flexibility, because, for example, some products do not implement every portion of the specification. For each implementation option that is supported, it shall be supported as specified.

2 Configuration

2.1 Roles

VAP defines two roles:

- **Voice Assistant Terminal (VAT):** A device that controls and manages VA sessions. Example devices implementing the VAT role include audio devices such as headphones, earbuds, car kits, and non-audio devices such as remote controls.
- **Voice Assistant Gateway (VAG):** A device that exposes VA controls, configuration, and information, and is associated with one or more VA applications with operations, functions, and methods specified by the implementer. Example devices implementing the VAG role include smartphones and laptops.

This specification establishes no requirements on the VA itself or the Audio Streams that devices may use to carry verbal requests and responses.

As an example, Figure 2.1 shows a person speaking into a wireless headset device that has a button to control and interact with the VA, implementing the VAT role. The person provides commands and instructions to one or more VAGs. The VAGs can have a local or remote VA.

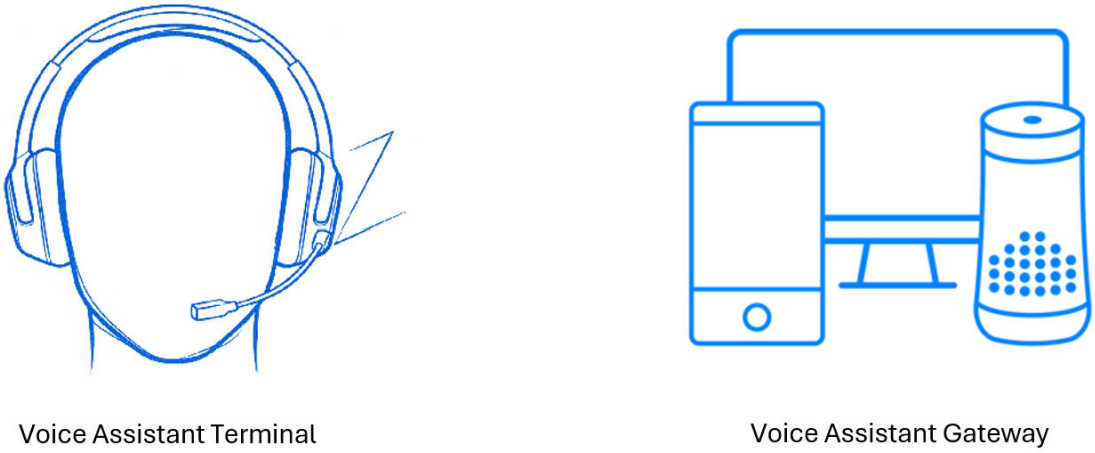

Figure 2.1: Use case scenario for VAP

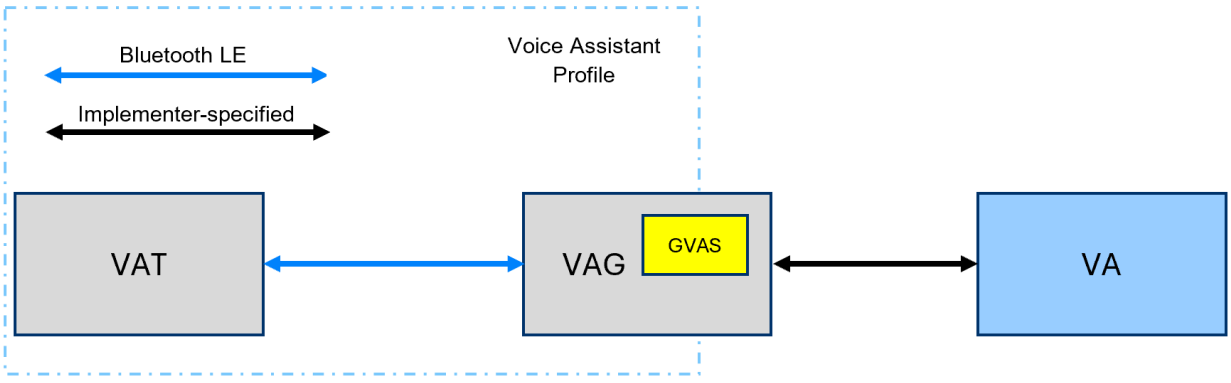

Figure 2.2: Device roles for VAP

The following steps list the actions taken by each device in the example shown in Figure 2.2:

1. The user takes an action on their VAT to initiate a VA (e.g., presses a button, performs a gesture).
2. The VAT detects the user action and triggers the VA in the VAG.
3. The VAG starts receiving and processing the voice command.
4. The VAG responds (e.g., with actions or audio responses).

Figure 2.3 shows how multiple VAG devices expose the same VA provider. VAT 1 can connect to one of the VAG devices to use VA 1 at any given time.

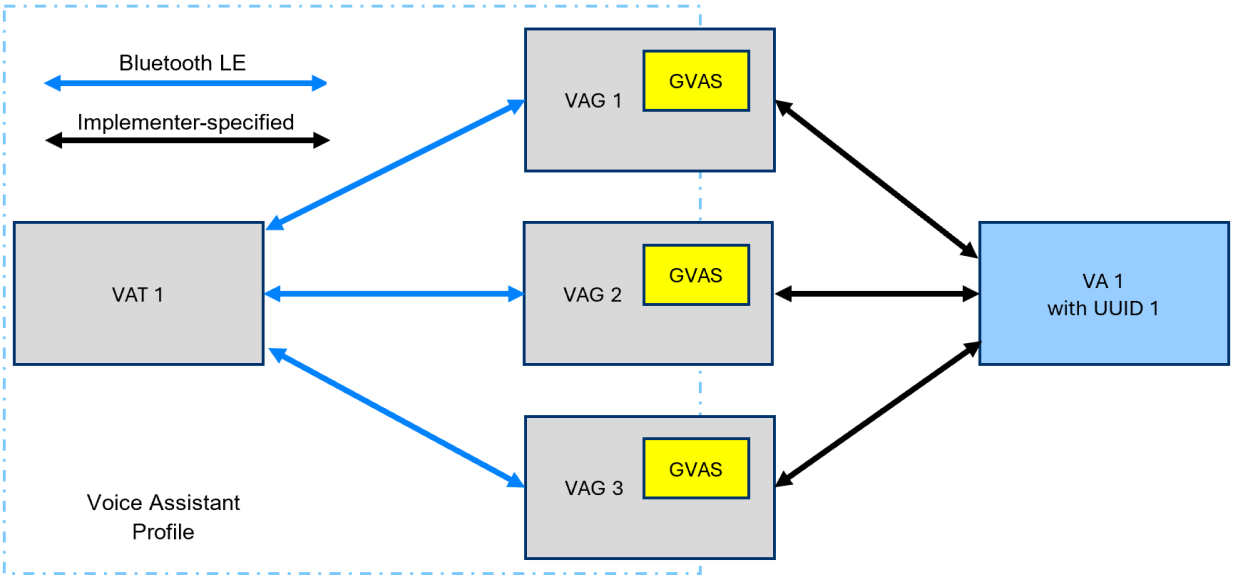

Figure 2.3: Multiple VAG devices with a single VA

The Voice Assistant Service (VAS) enables a VAT device to control and configure VA functionality on a VAG. For more capable VAT devices, VAS provides the necessary methods to find and connect to a specific VA through any connected VAG.

Figure 2.4 shows how the user can interact with multiple devices implementing the VAG role and VA services from a single VAT. In this example, VAT 1 is connected to two devices implementing the VAG role, with each device having one GVAS and two VAS instances, and VA 1 available to both VAG devices. VA 1 has the same VA Name and VA UUID regardless of which VAG the VAT uses to access it. VA 2 and VA 3 have their own unique VA Names and VA UUIDs.

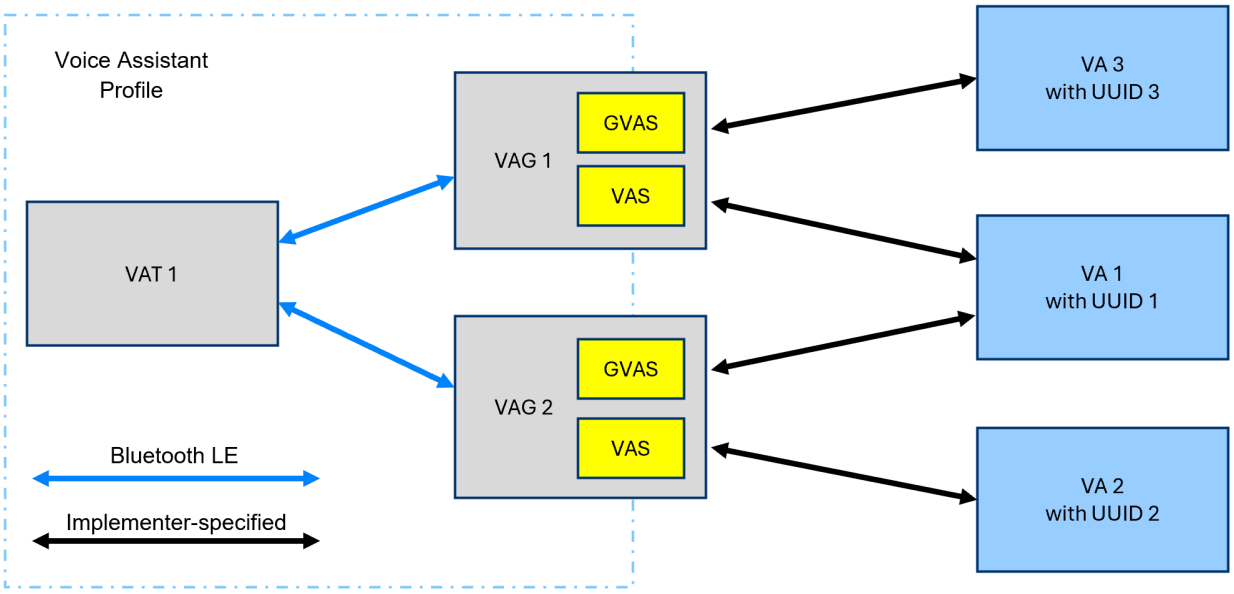

Figure 2.4: Common VAs across multiple VAGs

2.1.1 Profile role support requirements

Devices that implement this profile shall implement at least one profile role as specified in Table 2.1.

Profile Role	Requirement
VAG	C.1
VAT	C.1

Table 2.1: Role requirements for devices implementing VAP

C.1: Mandatory to support at least one role

2.2 Role and service relationships

The following profile role and service relationships apply:

- The VAG shall be a Generic Attribute Profile (GATT) Server that implements the VAS.
- The VAT shall be a GATT Client.

Figure 2.5 shows the relationship between services and profile roles, where profile roles are represented by gray boxes and services by yellow boxes. VA applications are represented by blue boxes.

In this example, the VAT is connected to a device implementing the VAG role that has two VAs, with one GVAS and two VAS instances, and VA 1 being the default VA.

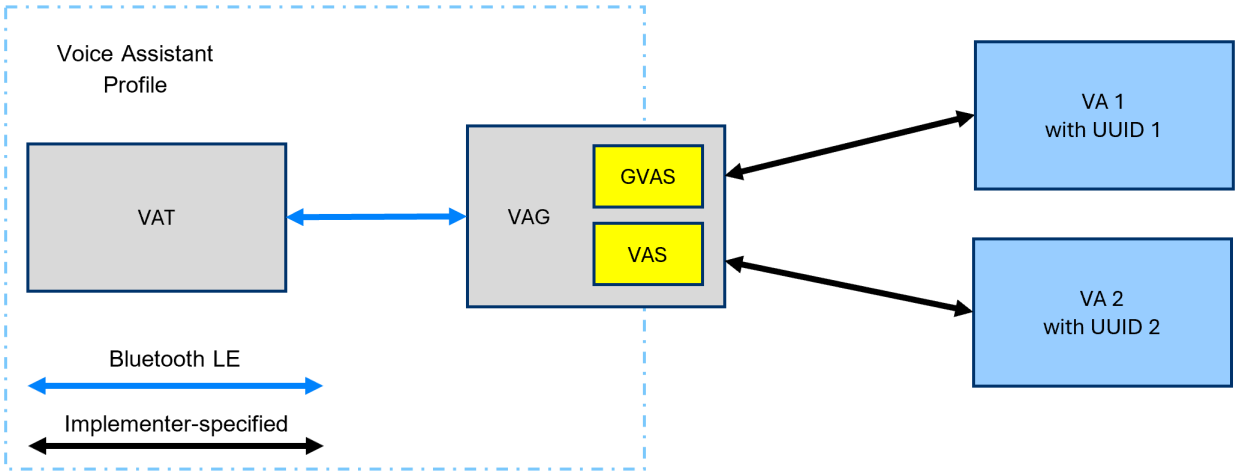

Figure 2.5: Relationship between services and profile roles

VATs can access all instances of VAS and GVAS on a VAG. A lightweight VAT implementation that does not need to access and control each individual VAS on a VAG can use GVAS to provide a single point of access for the default VA. Richer VAT implementations that provide more control for choosing specific VAs can access and control each VAS individually, if exposed by the VAG. For detailed descriptions of the characteristics referenced in this profile, see VAS [2].

2.3 Concurrency limitations and restrictions

There are no concurrency limitations or restrictions for the VAG or VAT imposed by VAP. A device may implement the VAG or VAT roles together with other profiles.

2.4 GAP: Topology limitations and/or restrictions defined by GAP

There are no topology limitations or restrictions.

The Generic Access Profile (GAP) roles for the VAG and VAT may be defined by a higher-layer specification.

2.5 Core Configuration dependencies

An implementation of this profile requires an implementation of a Core Configuration that supports the LE transport. The Basic Rate/Enhanced Data Rate (BR/EDR) transport is not supported by VAP.

2.5.1 Core feature inter-layer dependencies

Devices that implement this profile shall support the Link Layer (LL) features specified in Table 2.2.

LL	VAP Role	
	VAG	**VAT**
LE Encryption (see Volume 6, Part B, Section 4.6.1 in the Bluetooth Core Specification [3])	M	M
LL Privacy (see Volume 6, Part B, Section 4.6.7 in [3])	M	M
LE Extended Advertising (see Volume 6, Part B, Section 4.6.12 in [3])	M	M

Table 2.2: Core feature inter-layer dependencies

2.6 Dependencies on other specifications external to the Core

There are no dependencies on other specifications external to the Bluetooth Core Specification [3].

3 VAG role requirements

This section describes the service requirements for a VAG.

Service/role	Support in VAG	Section for additional requirements
Generic Voice Assistant Service	M	3.1
Voice Assistant Service	O	3.2

Table 3.1: Requirements for VAG

3.1 Incremental Generic Voice Assistant Service requirements

The VAG shall instantiate one and only one instance of GVAS as stated in Table 3.1. GVAS shall be instantiated as a «Primary Service».

3.2 Incremental Voice Assistant Service requirements

The VAG may instantiate one or more instances of VAS as stated in Table 3.1. VAS shall be instantiated as a «Primary Service». VAGs that provide a VAT access to more than one VA should instantiate a VAS for each of their VAs.

3.3 VAG procedures

This section defines mandatory procedures for the enablement of GVAS and VAS features. These procedures describe common user scenarios and specify the implementation sequences required to support the respective scenarios.

3.3.1 VAG-triggered VA Session Start

Both the VAT and the VAG can trigger the VA Session Start procedure to start an interactive session with the VA. The VAT-triggered VA Session Start procedure is described in Section 4.3.3.

When the request to start a VA Session originates from the VAG (e.g., the user taps on the VA icon on their smartphone), then the VAG shall update the Voice Assistant Session State characteristic to the Session Active state and send a notification about the new state to the VAT.

If the GVAS or VAS supports the Voice Assistant Session Flag characteristic and notifications have been enabled by the VAT, then the VAG shall send notifications for the Voice Assistant Session Flag characteristic while the VA is in the Session Active state.

Figure 3.1 shows the VAG-triggered VA Session Start procedure sequence (in MSCs in this document, “Voice Assistant" in characteristic names is abbreviated to “VA”).

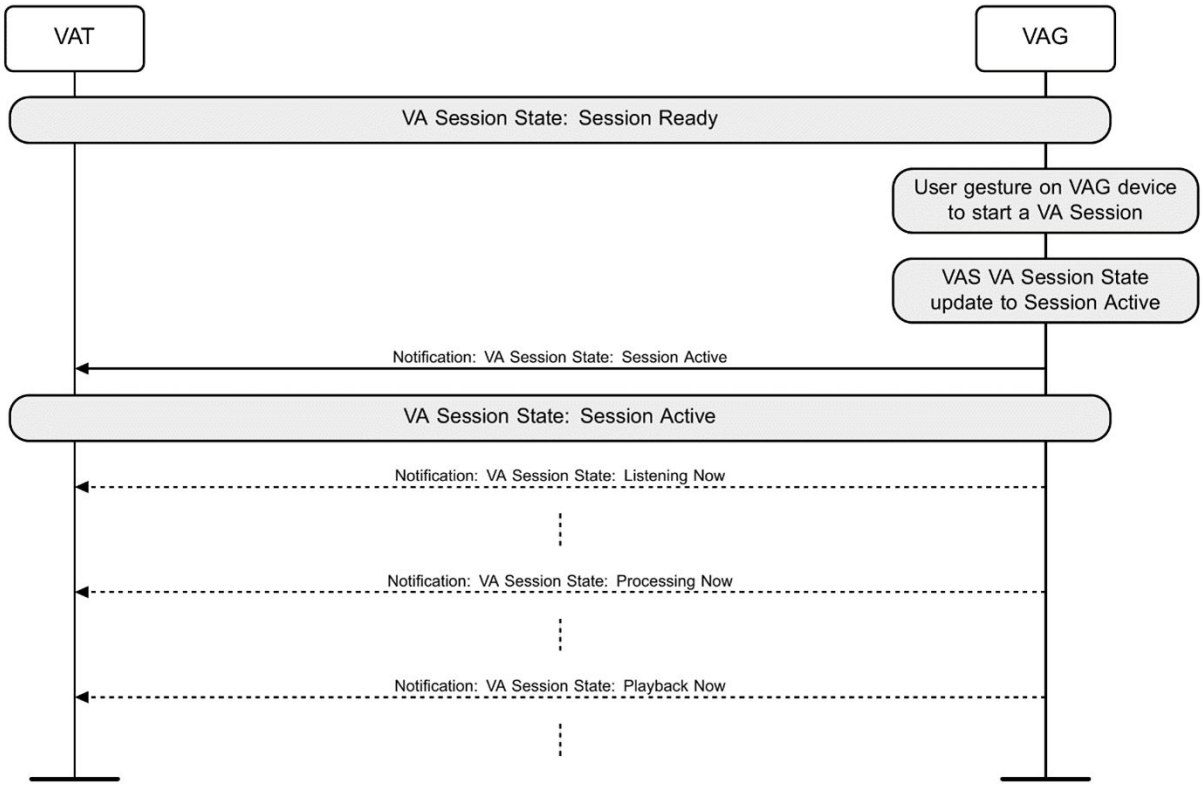

Figure 3.1: VAG-triggered VA Session Start procedure sequence

3.3.2 VAG-triggered VA Session End

Both the VAT and the VAG can trigger the VA Session End procedure to terminate an ongoing interactive session with the VA. The VAT-triggered VA Session End procedure is described in Section 4.3.4.

When the request to stop an ongoing VA Session originates from the VAG (e.g., the VA completed the command or answered the question), then the VAG shall update the Voice Assistant Session State characteristic to the Session Ready state and send a notification about the new state to the VAT.

Figure 3.2 shows the VAG-triggered VA Session Stop procedure sequence (in MSCs in this document, “Voice Assistant" in characteristic names is abbreviated to “VA”).

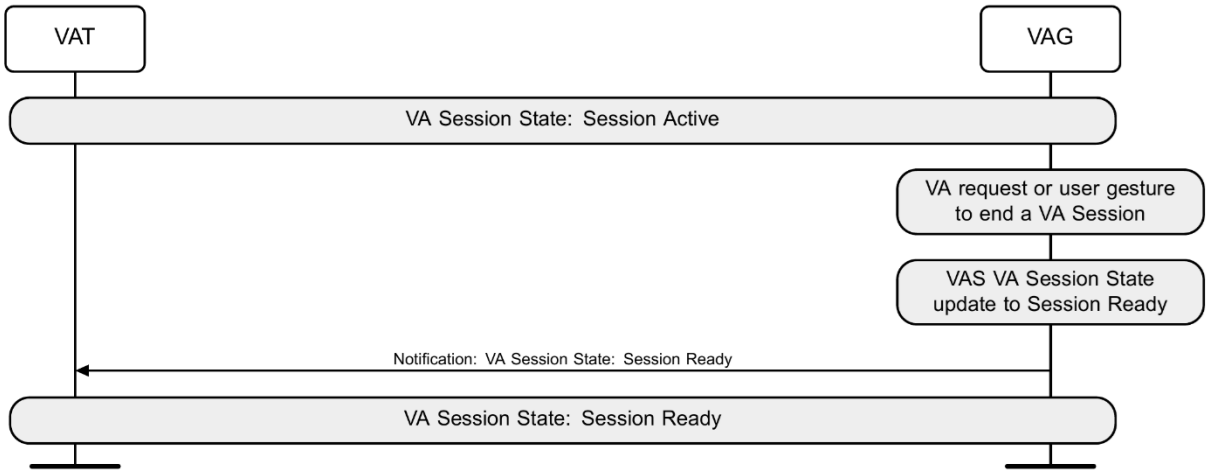

Figure 3.2: VAG-triggered VA Session Stop procedure sequence

4 VAT role requirements

This section lists the VAT role requirements in Table 4.1. A higher-layer profile may specify additional profile role requirements.

Requirement	Support in VAT	Section
GATT sub-procedures	M	4.4
Service discovery	M	4.1
Characteristic discovery	M	4.1.1
Characteristic notifications	M	4.2
VAT procedures	M	4.3

Table 4.1: Requirements for VAT

4.1 Service discovery

The VAT shall use either the GATT Discover All Primary Services sub-procedure or the GATT Discover Primary Service by Service UUID sub-procedure to discover an instance of GVAS.

To discover instances of VAS, the VAT may use either the GATT Discover All Primary Services sub-procedure or the GATT Discover Primary Service by Service UUID sub-procedure.

4.1.1 Characteristic discovery

The VAT shall use either the GATT Discover All Characteristics of a Service sub-procedure or the GATT Discover Characteristics by UUID sub-procedure to discover the characteristics of the services that it uses. In particular, the VAT shall discover the VAS Control Point and VA Session State characteristics.

The VAT shall use the GATT Discover All Characteristic Descriptors sub-procedure to discover any required characteristic descriptors.

The VAT shall accept additional optional characteristics in the service records of GVAS and VAS.

4.2 Receipt of characteristic notifications

The VAT shall enable notifications for the VA Control Point and VA Session State characteristics exposed by GVAS or VAS by writing the notification bits to the VA Control Point and VA Session State Client Characteristic Configuration Descriptors (CCCDs) (see Volume 3, Part G, Section 3.3.3.3 in [3]).

4.3 VAT procedures

This section defines mandatory procedures for the enablement of GVAS and VAS features. These procedures describe common user scenarios and specify the implementation sequences required to support the respective scenarios.

4.3.1 VA Discovery

A VAG has one instance of GVAS and zero or more instances of VAS.

The VAT can discover and read characteristics that provide additional information about the default VA exposed by GVAS.

The VAT may continue this procedure for each instance of VAS. The VAT can discover and read characteristics that provide additional information about the VA.

Figure 4.1 shows the VA Discovery procedure sequence (in MSCs in this document, “Voice Assistant" in characteristic names is abbreviated to “VA”).

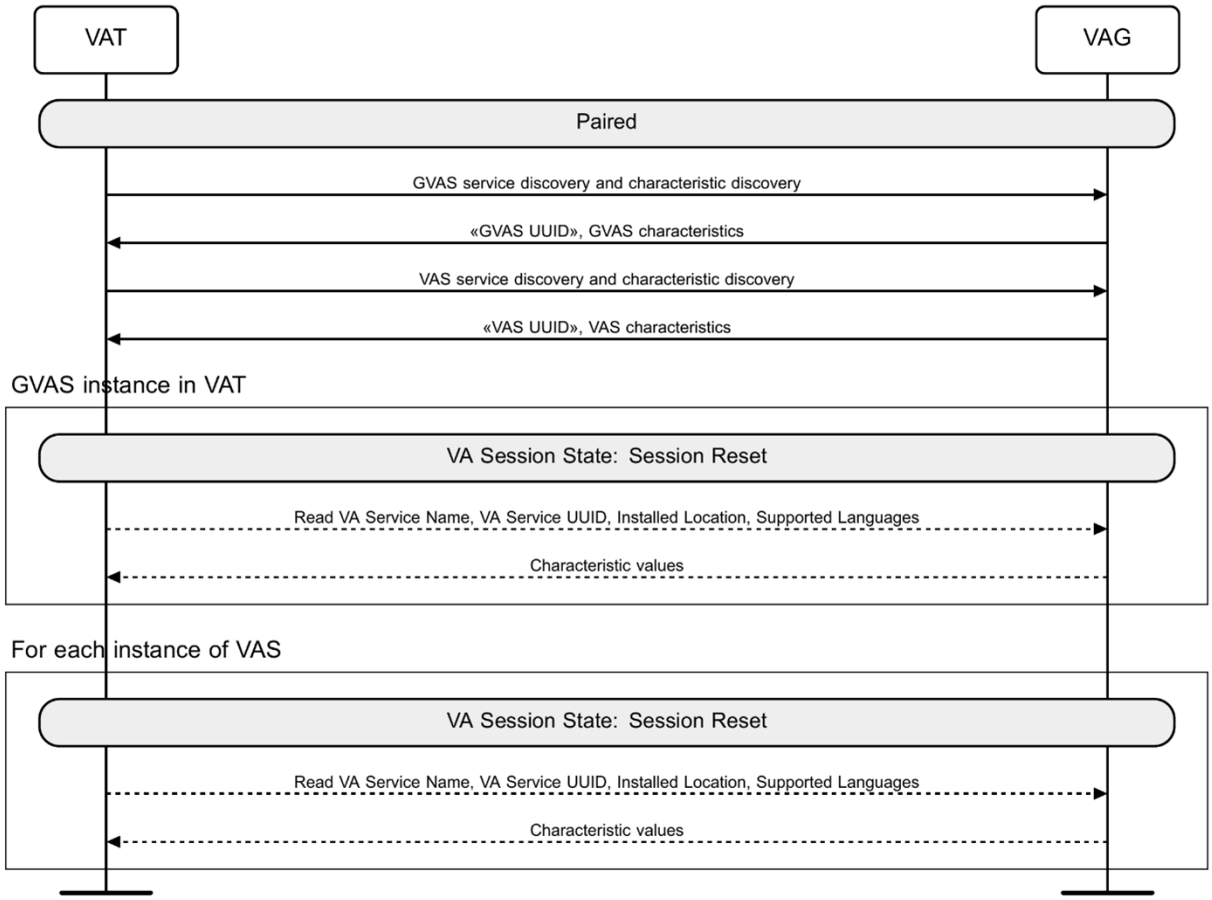

Figure 4.1: VA Discovery procedure sequence

4.3.2 VA Session Initialization

The VAT shall read the Voice Assistant Session State characteristic to determine the current VA Session state. If the Voice Assistant Session State characteristic indicates that the VA is in the Session Unavailable state, then the VAT shall terminate the procedure for this GVAS or VAS instance. The VAT shall resume the procedure for this GVAS or VAS instance only when the Voice Assistant Session State characteristic is in the Session Reset state.

After confirming that the Voice Assistant Session State characteristic is not in the Session Unavailable state, the VAT shall write the VA Control Point opcode Initialize VA Session to initialize and prepare the VA for future

operations. If the operation completes successfully, then the Voice Assistant Session State characteristic is updated to the Session Ready state, and the VAG sends a notification about the new state to the VAT.

Figure 4.2 shows the VA Session Initialization procedure sequence (in MSCs in this document, “Voice Assistant" in characteristic names is abbreviated to “VA”).

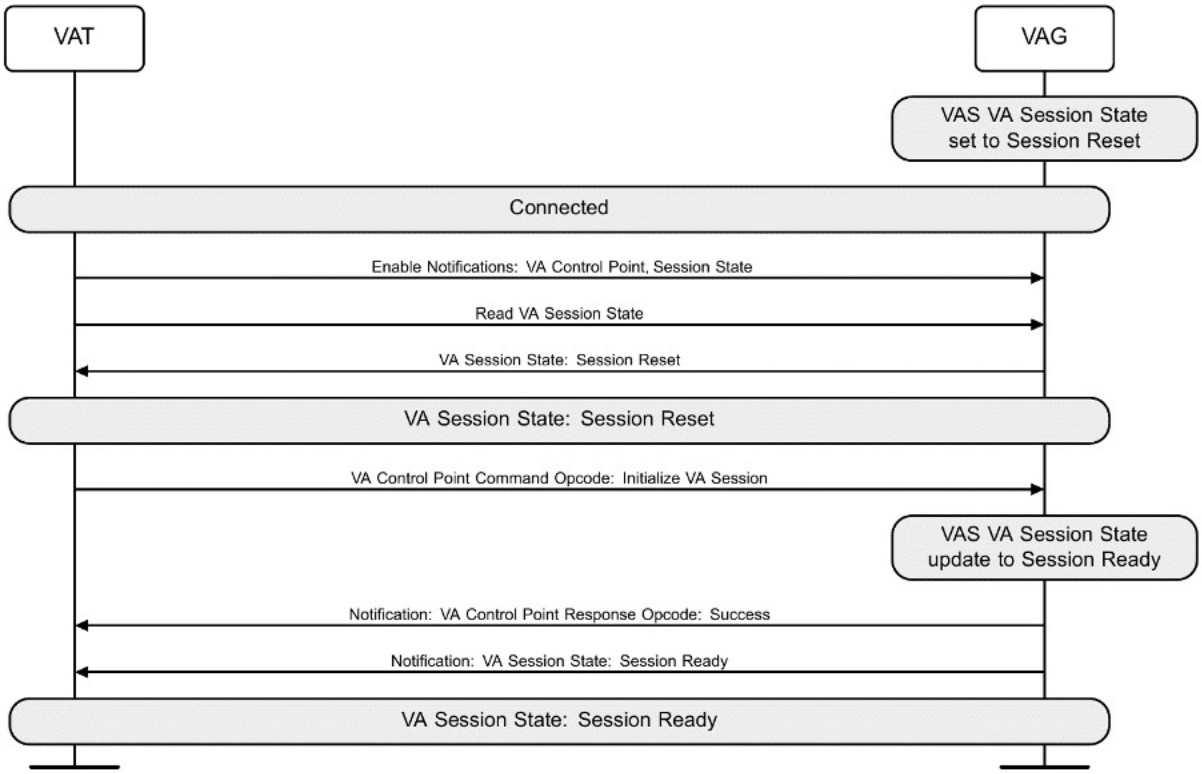

Figure 4.2: VA Session Initialization procedure sequence

4.3.3 VAT-triggered VA Session Start

Both the VAT and the VAG can trigger the VA Session Start procedure to start an interactive session with the VA. The VAG-triggered procedure is described in Section 3.3.1.

When the request to start a VA Session originates from the VAT (e.g., the user taps on their earbud), then the VAT shall write the VA Control Point opcode Start VA Session to request the VA to get ready for an interactive VA session. If the operation completes successfully, then the VAG shall update the Voice Assistant Session State characteristic to the Session Active state and send a notification about the new state to the VAT. The VAT may convey the VA Session Start event via its user interface (e.g., by emitting a sound or displaying an icon). If the operation results in an error, for example due to an invalid prior state, then the VAT may follow the VA Session Initialization procedure and try again.

If the GVAS or VAS supports the Voice Assistant Session Flag characteristic and the VAT has enabled notifications for the Voice Assistant Session Flag characteristic, then the VAG shall send notifications for the Voice Assistant Session Flag characteristic while the VA is in the Session Active state. The VAT may convey the VA Session Flag values via its user interface.

Figure 4.3 shows the VAT-triggered VA Session Start procedure sequence (in MSCs in this document, “Voice Assistant" in characteristic names is abbreviated to “VA”).

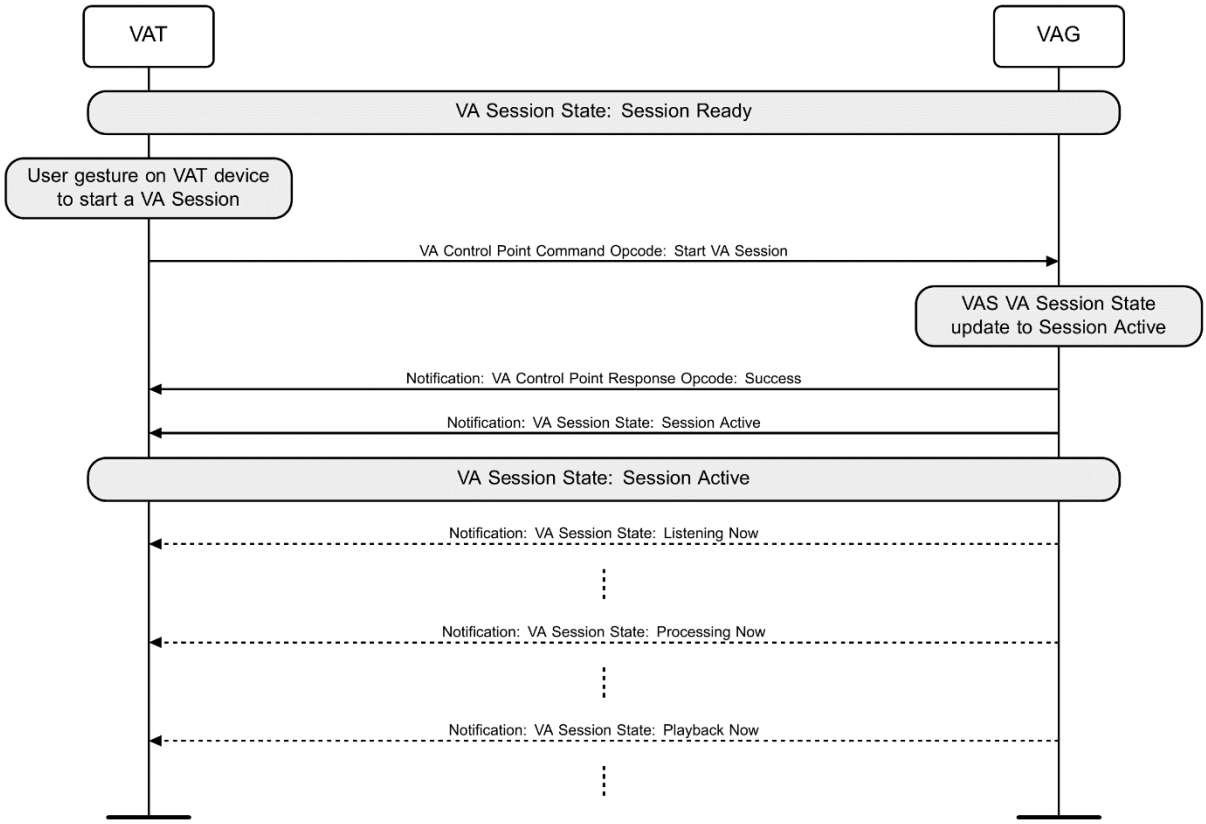

Figure 4.3: VAT-triggered VA Session Start procedure sequence

4.3.4 VAT- triggered VA Session End

Both the VAT and the VAG can trigger the VA Session End procedure to terminate an ongoing interactive session with the VA. The VAG-triggered procedure is described in Section 3.3.2.

When the request to stop an ongoing VA Session originates from the VAT (e.g., the user taps on their right earbud), then the VAT shall write the VA Control Point opcode Stop VA Session to request the VA to terminate the ongoing interactive VA session. If the operation completes successfully, then the VAG shall update the Voice Assistant Session State characteristic to the Session Ready state and send a notification about the new state to the VAT. If the operation fails, the VAT can follow the VA Session Initialization procedure.

Figure 4.4 describes the VAT-triggered VA Session Stop procedure sequence (in MSCs in this document, “Voice Assistant" in characteristic names is abbreviated to “VA”).

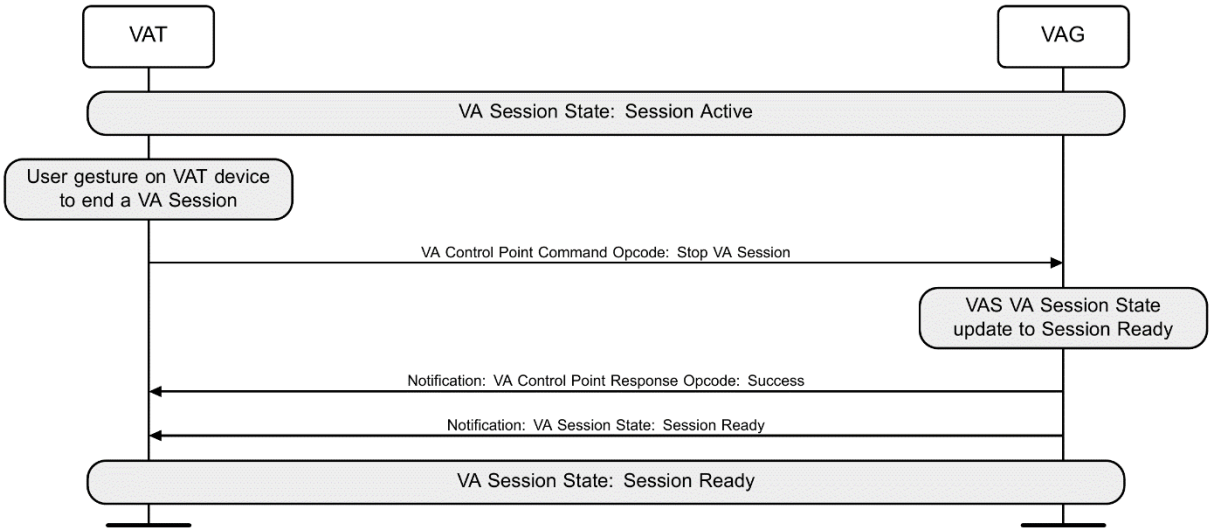

Figure 4.4: VAT-triggered VA Session Stop procedure sequence

4.4 Summary of GATT inter-layer dependencies for VAT

Dependencies in this section represent a minimum set of capabilities for a client. Other GATT inter-layer dependencies may be used if supported by both the GATT Client and the GATT Server.

Table 4.2 summarizes GATT inter-layer dependencies as specified in [3].

GATT Inter-Layer Dependency	Support
Discover All Primary Services (see Volume 3, Part G, Section 4.4.1 in [3])	C.1
Discover Primary Service by Service UUID (see Volume 3, Part G, Section 4.4.2 in [3])	C.1
Discover All Characteristics of a Service (see Volume 3, Part G, Section 4.6.1 in [3])	C.2
Discover Characteristics by UUID (see Volume 3, Part G, Section 4.6.2 in [3])	C.2
Discover All Characteristic Descriptors (see Volume 3, Part G, Section 4.7.1 in [3])	M
Characteristic Value Notification (see Volume 3, Part G, Section 4.10 in [3])	M
Read Characteristic Value (see Volume 3, Part G, Section 4.8.1 in [3])	M
Read Long Characteristic Value (see Volume 3, Part G, Section 4.8.3 in [3])	M

GATT Inter-Layer Dependency	Support
Write Without Response (see Volume 3, Part G, Section 4.9.1 in [3])	M
Read Characteristic Descriptor (see Volume 3, Part G, Section 4.12.1 in [3])	M
Write Characteristic Descriptor (see Volume 3, Part G, Section 4.12.3 in [3])	M

Table 4.2: GATT inter-layer dependencies

C.1: Mandatory to support at least one of these sub-procedures.

C.2: Mandatory to support at least one of these sub-procedures.

5 Connection establishment procedures

This section describes the device discovery and LE Asynchronous Connection-oriented logical (ACL) connection establishment procedures that are used by a client and a server. These procedures are described in terms of the following roles:

- Peripheral role (defined in Volume 3, Part C, Section 2.2.2 in [3])
- Central role (defined in Volume 3, Part C, Section 2.2.2 in [3])

5.1 Peripheral connection establishment

5.1.1 Connection procedure to non-bonded devices

The connection procedure to non-bonded devices is used for device discovery and connection establishment when the Peripheral accepts a connection from a Central to which it is not bonded. The connection procedure to non-bonded devices is triggered by user interaction, for example, activating a device by inserting a battery or pushing buttons. To notify the Central that the Peripheral is available for connection establishment, the Peripheral enters one of the following GAP discoverable modes:

- Limited Discoverable mode (as defined in Volume 3, Part C, Section 9.2.3 in [3])
- General Discoverable mode (as defined in Volume 3, Part C, Section 9.2.4 in [3])

The Peripheral shall transmit extended advertising PDUs and, unless defined by higher-layer specifications, should include the following Advertising Data (AD) data types:

- If the Peripheral is in the Voice Assistant Terminal role, then the Service Solicitation data type to invite Centrals that expose the GVAS to connect (as defined in Part A, Section 1.10 in the Bluetooth Core Specification Supplement [1]). In the Service Solicitation Data Type [1], the «GVAS UUID» in its list of Service Solicitation UUIDs, as described in [4]
- If the Peripheral is in the Voice Assistant Gateway role and supports GVAS over LE, then the Service UUID AD data type (as defined in Part A, Section 1.1 in [1]) containing the «GVAS UUID», as described in [4]

  The Peripheral should include the Appearance Value AD Type with a value that identifies the type of device it implements as described in [4].

5.1.2 Connection procedure to bonded devices

The connection procedure to bonded devices is used by a Peripheral in the Connectable mode only if the Peripheral has previously bonded with a Central.

When available for a connection to a bonded device, a Peripheral enters one of the following GAP connectable modes:

- Directed Connectable mode (as defined in Volume 3, Part C, Section 9.3.3 in [3])
- Undirected Connectable mode (as defined in Volume 3, Part C, Section 9.3.4 in [3])

The Peripheral should use the advertising filter policy that was configured when bonded using the connection procedure to non-bonded devices in Section 5.1.1, unless the Peripheral is in the Directed Connectable mode.

5.1.3 Link loss reconnection procedure

When a connection is terminated because of link loss, a Peripheral should attempt to reconnect to the Central by using the procedures described in Section 5.1.1 or Section 5.1.2.

5.2 Central connection establishment

5.2.1 Device discovery

To discover one or more Peripherals, the Central shall use one of the following GAP discovery procedures:

- Limited Discovery procedure (as defined in Volume 3, Part C, Section 9.2.5 in [3])
- General Discovery procedure (as defined in Volume 3, Part C, Section 9.2.6 in [3])

5.2.2 Connection procedure

A Central shall use one of the following GAP connection establishment procedures based on its connectivity requirements:

- Auto Connection Establishment procedure (as defined in Volume 3 Part C, Section 9.3.5 in [3])
- General Connection Establishment procedure (as defined in Volume 3, Part C, Section 9.3.6 in [3])
- Selective Connection Establishment procedure (as defined in Volume 3, Part C, Section 9.3.7 in [3])
- Direct Connection Establishment procedure (as defined in Volume 3, Part C, Section 9.3.8 in [3])

5.2.3 Link loss reconnection procedure

When a connection is terminated because of link loss, a Central should attempt to reconnect to the Peripheral by using any of the GAP connection establishment procedures described in Section 5.2.2.

5.2.4 Connection interval

The connection interval can affect the latency of VAT procedures. Therefore, to reduce the latency when acting as a VAT, a connection interval should be selected in the range provided in Table 5.1 while in the Session Active state.

Parameter	Value
Range for Connection Interval	10 to 30 milliseconds

Table 5.1: Recommended range for connection interval values

6 Security requirements

6.1 Security requirements for Low Energy

This section describes the security requirements for devices implementing the VAT and the VAG roles for the LE transport.

Except for service and characteristic discovery (as allowed by the Bluetooth Core Specification, see Volume 3, Part G, Section 8.1 in [3]), all access to characteristics defined in the Voice Assistant Service shall require an encryption key with at least 128 bits of entropy, derived from either:

- LE Secure Connections
- If cross-transport key derivation (CTKD) is used, from BR/EDR Secure Connections
- Out-of-band (OOB) method

Link Layer Privacy, defined in Volume 6, Part B, Section 6 in [3], should be used.

Authenticated link with Man-in-the-Middle (MITM) protection should be implemented.

6.1.1 Connection security – Authenticated link

LE Security Mode 1 Level 4 or stronger should be required for access to all services used by this profile, except for service and characteristic discovery (as defined in Volume 3, Part G, Section 8.1 in [3]).

6.1.2 Connection security – Unauthenticated link

If the authenticated link security option specified in Section 6.1.1 is not possible, then the LE Security Mode 1 Level 2 or stronger, with LE Secure Connections pairing (see Volume 3, Part H, Section 2.3.5.6 in [3]) shall be required.

Legacy pairing methods and key sizes less than 128 bits shall be rejected.

6.1.3 Privacy

The Privacy feature (see Volume 3, Part C, Section 10.7 in [3]) shall be supported and enabled:

- After bonding, and when attempting to reconnect to a bonded Central, advertising PDUs (including scan responses) should not contain the device name or any other static data.
- The advertising PDU content shall change at the same time as the private address.

7 Acronyms and abbreviations

Acronym/Abbreviation	Meaning
ACL	Asynchronous Connection-oriented logical
AD	Advertising Data
BR/EDR	Basic Rate/Enhanced Data Rate
CCCD	Client Characteristic Configuration Descriptor
CTKD	cross-transport key derivation
GAP	Generic Access Profile
GATT	Generic Attribute Profile
GVAS	Generic Voice Assistant Service
LE	Low Energy
LL	Link Layer
MITM	Man-in-the-Middle
OOB	out-of-band
PDU	Protocol Data Unit
RFU	Reserved for Future Use
UUID	universally unique identifier
VA	Voice Assistant
VAG	Voice Assistant Gateway
VAP	Voice Assistant Profile
VAS	Voice Assistant Service
VAT	Voice Assistant Terminal

Table 7.1: Acronyms and abbreviations

8 References

[1] Bluetooth Core Specification Supplement, Version 13 or later

[2] Voice Assistant Service Specification, Version 1.0 or later

[3] Bluetooth Core Specification, Version 6.1 or later

[4] Bluetooth Assigned Numbers, https://www.bluetooth.com/specifications/assigned-numbers/