Common Audio Service

***Bluetooth*® Service Specification**

- **Revision:** v1.0
- **Revision Date:** 2022-03-22
- **Prepared By:** Generic Audio Working Group

Abstract:

The Common Audio Service (CAS) is used to identify a server supporting the Common Audio Profile (CAP) Acceptor role [1]. If an instance of Coordinated Set Identification Service (CSIS) is included in the CAS definition, CAS identifies that the device is part of a Coordinated Set.

Revision History

Revision Number	Date (yyyy-mm-dd)	Comments
v1.0	2022-03-22	Adopted by the Bluetooth SIG Board of Directors.

Acknowledgments

Name	Company
Andrew Estrada	Sony Corporation
Masahiko Seki	Sony Corporation
Akio Tanaka	Sony Corporation
Himanshu Bhalla	Intel Corporation
Oren Haggai	Intel Corporation
Rasmus Abildgren	Bose Corporation
Daniel Sisolak	Bose Corporation
Tim Reilly	Bose Corporation
Michael Rougeux	Bose Corporation
Nick Hunn	GN Hearing A/S
Chris Church	Qualcomm Technologies International, Ltd
Jeff Solum	Starkey Hearing Technologies
Georg Dickmann	Sonova AG
Frank Yerrace	Microsoft Corporation
Asbjørn Sæbø	Nordic Semiconductor ASA
Scott Walsh	Plantronics Inc
Bjarne Klemmensen	Demant A/S
Jonathan Tanner	Qualcomm Technologies International, Ltd
Riccardo Cavallari	WS Audiology Denmark A/S
Kanji Kerai	WS Audiology
Sherry Smith	Broadcom
Siegfried Lehmann	Apple

Contents

1 Introduction

The Common Audio Service (CAS) allows for the Coordinated Set Identification Service (CSIS) [2] to be an included service where the device is part of a Coordinated Set.

1.1 Language

1.1.1 Language conventions

The Bluetooth SIG has established the following conventions for use of the words ***shall***, ***must***, ***will***, ***should***, ***may***, ***can***, and ***note*** in the development of specifications:

shall	is required to – used to define requirements.
must	is used to express: a natural consequence of a previously stated mandatory requirement. OR an indisputable statement of fact (one that is always true regardless of the circumstances).
will	it is true that – only used in statements of fact.
should	is recommended that – used to indicate that among several possibilities one is recommended as particularly suitable, but not required.
may	is permitted to – used to allow options.
can	is able to – used to relate statements in a causal manner.
note	Text that calls attention to a particular point, requirement, or implication or reminds the reader of a previously mentioned point. It is useful for clarifying text to which the reader ought to pay special attention. It shall not include requirements. A note begins with “Note:” and is set off in a separate paragraph. When interpreting the text, the relevant requirement shall take precedence over the clarification.

If there is a discrepancy between the information in a figure and the information in other text of the specification, the text prevails. Figures are visual aids including diagrams, message sequence charts (MSCs), tables, examples, sample data, and images. When specification content shows one of many alternatives to satisfy specification requirements, the alternative shown is not intended to limit implementation options. Other acceptable alternatives to satisfy specification requirements may also be possible.

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 Table requirements

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

1.3 Conformance

If conformance to this specification is claimed, all capabilities indicated as mandatory for this specification shall be supported in the specified manner (process-mandatory). This also applies for all optional and conditional capabilities for which support is indicated.

1.4 Byte transmission order

All characteristics used with this service shall be transmitted with the least significant octet (LSO) first (i.e., little endian). Where the format is described in tables in this document, the LSO is the first octet in the topmost field of the table; the most significant octet (MSO) is the last octet in the bottommost field of the table.

2 Service

2.1 Service dependencies

CAS depends on CSIS [2].

2.2 Bluetooth Core Specification release compatibility

This specification is compatible with the Bluetooth Core Specification, Version 5.3 [3] or later.

2.3 Transport dependencies

There are no transport-related dependencies for CAS.

2.4 Attribute Profile error codes

This service does not define or reference any Attribute Profile error codes.

2.5 GATT sub-procedure requirements

This service does not require any additional GATT sub-procedures beyond those required by all GATT Servers.

2.6 Declaration

There shall be no more than one CAS instance on a server.

The CAS shall be instantiated as a «Primary Service» and may be included by other services. The service universally unique identifier (UUID) shall be set to «Common Audio Service» as defined in Bluetooth Assigned Numbers [4].

If the device implementing CAS is a member of a Coordinated Set, the CAS instance shall include the CSIS instance that identifies the Coordinated Set as an included service.

The CAS shall include no more than one instance of CSIS.

2.7 Behavior

There is no behavior defined for this service.

3 Service characteristics

There are no characteristics in CAS.

4 SDP interoperability

If this service is exposed over BR/EDR, then it shall have the SDP record as shown in Table 4.1.

Item	Definition	Type	Value	Status
Service Class ID List	–	–	–	M
Service Class #0	–	UUID	«Common Audio Service»	M
Protocol Descriptor List	–	Data Element Sequence	–	M
Protocol #0	–	UUID	L2CAP	M
Parameter #0 for Protocol #0	Protocol/Service Multiplexer (PSM)	uint16	PSM = ATT	M
Protocol #1	–	UUID	ATT	M
Additional Protocol Descriptor List	–	Data Element Sequence	–	C.1
Protocol Descriptor List	–	Data Element Sequence	–	C.1
Protocol #0	–	UUID	L2CAP	C.1
Parameter #0 for Protocol #0	PSM	uint16	PSM = EATT	C.1
Protocol #1	–	UUID	ATT	C.1
BrowseGroupList	–	–	PublicBrowseRoot*	M

Table 4.1: SDP Record

* PublicBrowseRoot shall be present; however, other browse UUIDs may also be included in the list.

C.1: Mandatory to support if EATT is supported, otherwise Excluded.

5 Acronyms and abbreviations

Acronym/Abbreviation	Meaning
ATT	Attribute Protocol
BR/EDR	Basic Rate/Enhanced Data Rate
CAP	Common Audio Profile
CAS	Common Audio Service
CSIS	Coordinated Set Identification Service
EATT	Enhanced ATT
GATT	Generic Attribute Profile
L2CAP	Logical Link Control and Adaption Protocol
LSO	least significant octet
MSO	most significant octet
PDU	Protocol Data Unit
PSM	Protocol/Service Multiplexer
RFU	Reserved for Future Use
SDP	Service Discovery Protocol
UUID	universally unique identifier

Table 5.1: Acronyms and abbreviations

6 References

[1] Common Audio Profile Specification, Version 1

[2] Coordinated Set Identification Service Specification, Version 1 with Errata Correction 17454

[3] Bluetooth Core Specification, Version 5.3 and later

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