

# Authorization Control Profile (ACP)

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

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# 1 General principles

## 1.1 Implementation Under Test (IUT) identification

Using the Bluetooth SIG qualification tool, the implementer is expected to declare details about what will be implemented.

## 1.2 Enforcement of inter-layer dependencies

This ICS includes one or more tables with inter-layer dependencies (ILDs). ILDs are used for specification requirements that are dependent on other supporting specifications. ILDs can refer to an individual ICS item in a separate layer (individual ILD), or it can refer to the full layer (full-layer ILD).

ILDs residing in an X2Core layer will be enforced from the Bluetooth SIG qualification tool in the following conditions, depending on where the referred ILD is residing:

Referred ILD resides in	Individual ILD	Full-layer ILD
Controller layer	Core-Complete configuration, or Referred layer is supported	N/A
Lower HCI layer	HCI is supported	N/A
Upper HCI layer	Core-Host configuration, or UHCI is supported	N/A
Host layer	Core-Host configuration, or Core-Complete configuration, or Referred layer is supported	N/A
X2Core layer	Core-Host configuration, or Core-Complete configuration, or Referred layer is supported	Core-Host configuration, or Core-Complete configuration

Table 1.1: Enforcement of an ILD within the Bluetooth SIG qualification tool

## 2 ICS declarations

### 2.1 Roles

Table 1: Role Requirements

Item	Role	Reference	Status
1	AC Server	[1] 2.1	C.1
2	AC Client	[1] 2.1	C.1

C.1: Mandatory to support at least one.

### 2.2 Transports

Table 2: Transport Requirements

Item	Transport	Reference	Status
1	Profile supported over BR/EDR	[1] 2.5	C.1, C.3
2	Profile supported over LE	[1] 2.5	C.2, C.3

C.1: Excluded for this Profile IF CORE 41/2 “LE Core Configuration” OR CORE 40/1 “Core-Controller”.

C.2: Excluded for this Profile IF CORE 41/1 “BR/EDR Core Configuration” OR CORE 40/1 “Core-Controller”.

C.3: Mandatory to support at least one.

### 2.3 Authorization Control Server role

#### 2.3.1 Versions

Table 3: X.Y Versions

Prerequisite: ACP 1/1 “AC Server”

Item	Version	Reference	Status
1	ACP v1.0	[1]	M

Table 4: X.Y.Z Versions

Table number reserved but not yet in use.

#### 2.3.2 Service and Features requirements

Table 5: Service and Features Requirement

Prerequisite: ACP 1/1 “AC Server”

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Authorization Control Service	[1] 4	M	[4] ACS
1a	ECDH Key Exchange	[1] 4	C.4	[4] ACS 3/7
1b	Confidentiality	[1] 4	C.5	[4] ACS 4/1
1c	Integrity	[1] 4	C.6	[4] ACS 4/2



Item	Capability	Reference	Status	Inter-Layer Dependency
1d	Authentication	[1] 4	C.7	[4] ACS 4/3
2	Elliptic Curve Diffie Hellman (ECDH) key agreement scheme with Curve P-256 and key derivation function HKDF SHA-256 128-bit	[1] 4.1.1.1	C.1	N/A
3	Authentication encryption using Galois/Counter Mode (GCM)	[1] 4.1.1.2	C.2	N/A
4	Authentication messaging using Galois/Counter Mode Message Authentication Code (GMAC)	[1] 4.1.1.2	C.3	N/A

- C.1: Mandatory IF ACP 5/1a “ECDH Key Exchange”, otherwise Optional.
- C.2: Mandatory IF ACP 5/1b “Confidentiality” AND ACP 5/1c “Integrity” AND ACP 5/1d “Authentication”, otherwise Optional.
- C.3: Mandatory IF ACP 5/1c “Integrity” AND ACP 5/1d “Authentication” AND NOT ACP 5/1b “Confidentiality”, otherwise Optional.
- C.4: (Reverse ILD) Mandatory IF ACS 3/7 “ECDH Key Exchange”, otherwise Excluded.
- C.5: (Reverse ILD) Mandatory IF ACS 4/1 “Confidentiality”, otherwise Excluded.
- C.6: (Reverse ILD) Mandatory IF ACS 4/2 “Integrity”, otherwise Excluded.
- C.7: (Reverse ILD) Mandatory IF ACS 4/3 “Authentication”, otherwise Excluded.

**Table 6: No longer used**

## 2.4 Authorization Control Client role

### 2.4.1 Versions

**Table 7: X.Y Versions**

*Prerequisite: ACP 1/2 “AC Client”*

Item	Version	Reference	Status
1	ACP v1.0	[1]	M

**Table 8: X.Y.Z Versions**

Table number reserved but not yet in use.

### 2.4.2 Services and Characteristics

**Table 9: Discovery of Services and Characteristics Requirements**

*Prerequisite: ACP 1/2 “AC Client”*

Item	Capability	Reference	Status
1	No longer used	N/A	N/A
2	Discover Authorization Control Service	[1] 5.2	M



Item	Capability	Reference	Status
3	Discover ACS Status characteristic and Client Characteristic Configuration Descriptor	[1] 5.3, 5.3.1	M
4	Discover ACS Data In characteristic	[1] 5.3, 5.3.2	M
5	Discover ACS Data Out Notify characteristic and Client Characteristic Configuration Descriptor	[1] 5.3, 5.3.3	M
6	Discover ACS Data Out Indicate characteristic and Client Characteristic Configuration Descriptor	[1] 5.3, 5.3.4	M
7	Discover ACS Control Point characteristic and Client Characteristic Configuration Descriptor	[1] 5.3, 5.3.5	M

**Table 10: Features**

*Prerequisite: ACP 1/2 “AC Client”*

Item	Capability	Reference	Status
1	ECDH key agreement scheme	[1] 5.4.1	M
2	ECDH key agreement scheme with Curve P-256 and key derivation function HKDF SHA-256 128-bit	[1] 5.4.1.1	M
3	Galois/Counter Mode (GCM)	[1] 5.4.2	M
4	Galois/Counter Mode Message Authentication Code (GMAC)	[1] 5.4.2	M
5	Read ACS Status	[1] 5.5.2	O
6	Configure ACS Status characteristic for indication	[1] 5.5.2	O
7	Write to ACS Data In characteristic	[1] 5.5.3	M
8	Read ACS Data In characteristic	[1] 5.5.3	M
9	Configure ACS Data Out Notify characteristic for notifications	[1] 5.5.3	M
10	Configure ACS Data Out Indicate characteristic for indications	[1] 5.5.3	M
11	Configure ACS Control Point characteristic for indications	[1] 5.5.4	M
12	Write to ACS Control Point characteristic	[1] 5.5.4	O
13	Multiple Restriction Maps	[1] 5.5.4.1.7	O
14	Key Exchange	[1] 5.5.4.1.7	O
15	Set Security Controls Switch	[1] 5.5.4.1.7	O
16	OOB Key Exchange	[1] 5.5.4.1.7	O
17	Key URI	[1] 5.5.4.1.7	O

**Table 11: ACS Control Point Procedures**

*Prerequisite: ACP 1/2 “AC Client”*

Item	Capability	Reference	Status
1	Get All Active Descriptors	[1] 5.5.4.2	M
2	Get Restriction Map Descriptor	[1] 5.5.4.3	M
3	Get Restriction Map ID List	[1] 5.5.4.4	M
4	Activate Restriction Map	[1] 5.5.4.5	C.1
5	Get Resource Handle To UUID Map	[1] 5.5.4.6	M



Item	Capability	Reference	Status
6	Get Service And Characteristic UUIDs For Characteristic Resource Handle	[1] 5.5.4.7	M
7	Get Information Security Configuration Descriptor	[1] 5.5.4.8	M
8	Get Key Descriptor	[1] 5.5.4.9	M
9	Get Current Key List	[1] 5.5.4.10	C.2
10	Start Key Exchange	[1] 5.5.4.11	C.2
11	Invalidate All Established Security	[1] 5.5.4.12	O
12	Invalidate Key	[1] 5.5.4.13	C.2
13	Abort	[1] 5.5.4.14	M
14	Set Security Controls Switch	[1] 5.5.4.15	C.3
15	Get Key URI	[1] 5.5.4.16	C.4
16	Get ACS Feature	[1] 5.5.4.17	M
17	Key Exchange ECDH	[1] 5.5.4.18.1.1	C.2
18	Key Exchange ECDH Confirmation Code	[1] 5.5.4.18.1.2	C.2
19	Key Exchange ECDH Confirmation Random Number	[1] 5.5.4.18.1.3	C.2
20	Key Exchange KDF	[1] 5.5.4.18.2.1	C.2
21	Set AC Client Nonce Fixed	[1] 5.5.4.19	C.2
22	Get ATT_MTU	[1] 5.5.4.20	O
23	Initiate Pairing	[1] 5.5.4.21	O

C.1: Mandatory IF ACP 10/13 “Multiple Restriction Maps”, otherwise Excluded.

C.2: Mandatory IF ACP 10/14 “Key Exchange”, otherwise Excluded.

C.3: Mandatory IF ACP 10/15 “Set Security Controls Switch”, otherwise Excluded.

C.4: Mandatory IF ACP 10/16 “OOB Key Exchange” AND ACP 10/17 “Key URI”, otherwise Excluded.

### 2.4.3 GATT requirements

**Table 12: GATT Requirements**

*Prerequisite: ACP 1/2 “AC Client”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	No longer used	N/A	N/A	N/A
1a	GATT Client over BR/EDR	[1] 2.1	C.3	[2] GATT 1a/2
1b	GATT Client over LE	[1] 2.1	C.4	[2] GATT 1a/1
2	Discover All Primary Services	[1] 5.1, 5.2	C.1	[2] GATT 3/2
3	Discover Primary Service by Service UUID	[1] 5.1, 5.2	C.1	[2] GATT 3/3
4	Discover All Characteristics of a Service	[1] 5.1, 5.3	C.2	[2] GATT 3/5
5	Discover Characteristics by UUID	[1] 5.1, 5.3	C.2	[2] GATT 3/6
6	Discover All Characteristic Descriptors	[1] 5.1, 5.3	M	[2] GATT 3/7
7	Single Notification	[1] 5.1	M	[2] GATT 3/17
8	Indication	[1] 5.1	M	[2] GATT 3/18



Item	Capability	Reference	Status	Inter-Layer Dependency
9	Read Characteristic Value	[1] 5.1	M	[2] GATT 3/8
10	Write Characteristic Value	[1] 5.1	M	[2] GATT 3/14
11	Write Long Characteristic Value	[1] 5.1	O	[2] GATT 3/15
12	Read Characteristic Descriptor	[1] 5.1	M	[2] GATT 3/19
13	Write Characteristic Descriptor	[1] 5.1	M	[2] GATT 3/21

C.1: Mandatory to support at least one.

C.2: Mandatory to support at least one.

C.3: Mandatory IF ACP 2/1 “Profile supported over BR/EDR”, otherwise not defined.

C.4: Mandatory IF ACP 2/2 “Profile supported over LE”, otherwise not defined.

## 2.4.4 GAP requirements

**Table 13: GAP Requirements**

*Prerequisite: ACP 1/2 “AC Client”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Central	[1] 6	M	[3] GAP 5/4
2	Bondable mode	[1] 7.2	C.1	[3] GAP 34/2
3	LE security mode 1	[1] 7.2	C.2	[3] GAP 35/1

C.1: Optional IF ACP 2/2 “Profile supported over LE”, otherwise not defined.

C.2: Mandatory IF ACP 2/2 “Profile supported over LE”, otherwise not defined.

## 3 References

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- [1] Authorization Control Profile (ACP) Specification, Version 1.0
- [2] ICS Proforma for Generic Attribute Profile (GATT)
- [3] ICS Proforma for Generic Access Profile (GAP)
- [4] ICS Proforma for Authorization Control Service (ACS)

## 4 Revision history and acknowledgments

### Revision History

Publication Number	Revision Number	Date	Comments
0	p0	2022-09-20	Approved by BTI on 2022-08-31. ACP v1.0 adopted by the BoD on 2022-09-13. Prepared for initial publication.
	p1r00–r01	2025-02-04 – 2025-02-18	TSE 27101 (rating 2): Updated Table 1 conditional C.1. Updated Table 2 Status values and C.1, and added C.2 and C.3. Marked Table 6, 9/1, and 12/1 as no longer used, and added 12/1a and 12/1b. Updated 12/7. Updated C.1 and C.2 and added C.3 and C.4 for Table 12. Updated formatting for the Inter-Layer Dependency value for 13/1.
1	p1	2025-07-08	Approved by BTI on 2025-05-30. Prepared for TCRL pkg100 publication.
	p2r00	2025-07-14	TSE 27528 (rating 1): Removed GAP 38/4 as an ILD from ACP 13/1.
2	p2	2025-11-04	Approved by BTI on 2025-10-02. Prepared for TCRL pkg101 publication.
	p3r00–r02	2025-12-04 – 2025-12-16	TSE 28125 (rating 1): Added Items 5/1a, 5/1b, 5/1c, and 5/1d, with Reverse ILDs to ACS 3/7 and ACS 4/1–3, respectively. Updated conditions ACP 5:C.1–C.3 to use the Reverse ILD items ACP 5/1a–1d instead. TSE 28169 (rating 1): Updated the conditions in the transport table to make sure the layer is excluded when the design is an implementation of the Core-Controller Configuration by adding "OR CORE 40/1 "Core-Controller"" to an already excluded transport based on Core Configuration support.
3	p3	2026-02-17	Approved by BTI on 2026-01-21. Prepared for TCRL pkg102 publication.

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