

# Gaming Audio Profile (GMAP)

## **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	Inter-Layer Dependency
1	Unicast Game Gateway (UGG)	[1] 2.2	C.1	N/A
2	Unicast Game Terminal (UGT)	[1] 2.2	C.1	N/A
3	Broadcast Game Sender (BGS)	[1] 2.2	C.1	N/A
4	Broadcast Game Receiver (BGR)	[1] 2.2	C.1	N/A
5	GMA Client	[1] 3.8	C.2	N/A
6	GMA Server	[1] 3.8	C.3, C.4	N/A

- C.1: Mandatory to support at least one.
- C.2: Mandatory IF GMAP 1/1 “Unicast Game Gateway (UGG)”, otherwise Optional.
- C.3: Mandatory IF GMAP 1/1 “Unicast Game Gateway (UGG)” OR GMAP 1/2 “Unicast Game Terminal (UGT)” OR GMAP 1/4 “Broadcast Game Receiver (BGR)”, otherwise Optional.
- C.4: (Reverse ILD) Mandatory IF GMAP 1/3 “Broadcast Game Sender (BGS)” AND GATT 1/2 “Generic Attribute Profile (GATT) Server”, otherwise Optional.

### 2.2 Transports

**Table 2: Transport Requirements**

Item	Transport	Reference	Status
1	Profile supported over BR/EDR	[1] 2.4	C.1
1a	Service GMAS supported over BR/EDR	[1] 4.3	C.2
2	Profile supported over LE	[1] 2.4	C.3, C.4
2a	Service GMAS supported over LE	[1] 4.3	C.3, C.5

- C.1: Excluded for this Profile.
- C.2: Optional IF (GMAP 1/5 “GMA Client” OR GMAP 1/6 “GMA Server”) AND NOT CORE 41/2 “LE Core Configuration” AND NOT CORE 40/1 “Core-Controller”, otherwise Excluded.
- C.3: Excluded for this Profile IF CORE 41/1 “BR/EDR Core Configuration” OR CORE 40/1 “Core-Controller”.
- C.4: Mandatory for this Profile.
- C.5: Mandatory IF GMAP 1/5 “GMA Client” OR GMAP 1/6 “GMA Server”, otherwise Excluded.

## 2.3 UGG role

### 2.3.1 UGG versions

**Table 10: X.Y Versions**

*Prerequisite: GMAP 1/1 “Unicast Game Gateway (UGG)”*

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

**Table 11: X.Y.Z Versions**

*Prerequisite: GMAP 1/1 “Unicast Game Gateway (UGG)”*

Item	Version	Reference	Status
1	GMAP v1.0.1	[8]	O

### 2.3.2 UGG features

**Table 12: Feature Requirements (UGG)**

*Prerequisite: GMAP 1/1 “Unicast Game Gateway (UGG)”*

Item	Capability	Reference	Status
1	UGG Multiplex	[1] 3.1	O
2	UGG 96 kbps Source	[1] 3.1	O
3	UGG Multisink	[1] 3.1	O

**Table 13: Discovery Requirements (UGG)**

*Prerequisite: GMAP 1/1 “Unicast Game Gateway (UGG)”*

Item	Capability	Reference	Status
1	Advertise Unicast Game Gateway Role Support	[1] 3.4	O

**Table 14: QoS Parameters (UGG)**

*Prerequisite: GMAP 1/1 “Unicast Game Gateway (UGG)”*

Item	QoS Configuration	Reference	Status
1	16_1_gs LC3: 7500 SDU Interval, unframed, 30 Max SDU Size, 1 RTN, 15 Max_Transport_Latency	[1] 3.5.1.3.2	M
2	16_2_gs LC3: 10000 SDU Interval, unframed, 40 Max SDU Size, 1 RTN, 20 Max_Transport_Latency	[1] 3.5.1.3.2	M
3	32_1_gs LC3: 7500 SDU Interval, unframed, 60 Max SDU Size, 1 RTN, 15 Max_Transport_Latency	[1] 3.5.1.3.2	M
4	32_2_gs LC3: 10000 SDU Interval, unframed, 80 Max SDU Size, 1 RTN, 20 Max_Transport_Latency	[1] 3.5.1.3.2	M

Item	QoS Configuration	Reference	Status
5	48_1_gs LC3: 7500 SDU Interval, unframed, 75 Max SDU Size, 1 RTN, 15 Max_Transport_Latency	[1] 3.5.1.3.2	M
6	48_2_gs LC3: 10000 SDU Interval, unframed, 100 Max SDU Size, 1 RTN, 20 Max_Transport_Latency	[1] 3.5.1.3.2	M
7	32_1_gr LC3: 7500 SDU Interval, unframed, 60 Max SDU Size, 1 RTN, 15 Max_Transport_Latency	[1] 3.5.1.3.2	M
8	32_2_gr LC3: 10000 SDU Interval, unframed, 80 Max SDU Size, 1 RTN, 20 Max_Transport_Latency	[1] 3.5.1.3.2	M
9	48_1_gr LC3: 7500 SDU Interval, unframed, 75 Max SDU Size, 1 RTN, 15 Max_Transport_Latency	[1] 3.5.1.3.2	M
10	48_2_gr LC3: 10000 SDU Interval, unframed, 100 Max SDU Size, 1 RTN, 20 Max_Transport_Latency	[1] 3.5.1.3.2	M
11	48_3_gr LC3: 7500 SDU Interval, unframed, 90 Max SDU Size, 1 RTN, 15 Max_Transport_Latency	[1] 3.5.1.3.2	C.1
12	48_4_gr LC3: 10000 SDU Interval, unframed, 120 Max SDU Size, 1 RTN, 20 Max_Transport_Latency	[1] 3.5.1.3.2	C.1

C.1: Mandatory IF GMAP 12/2 “UGG 96 kbps Source”, otherwise Excluded.

**Table 15: External Audio Input/Output Capabilities (UGG)**

*Prerequisite: GMAP 1/1 “Unicast Game Gateway (UGG)”*

Item	Capability	Reference	Status
1	External Audio In	[1] 3.6	O
2	External Audio Out	[1] 3.6	O

### 2.3.3 UGG profile and service dependencies

**Table 16: Inter-Layer Dependency Role Requirements (UGG)**

*Prerequisite: GMAP 1/1 “Unicast Game Gateway (UGG)”*

Item	Role/Service	Reference	Status	Inter-Layer Dependency
1	CAP Initiator	[1] 3.1	M	[2] CAP 1/2
2	CAP Commander	[1] 3.1	M	[2] CAP 1/3
3	Audio Source (CAP)	[1] 3.1	M	[2] CAP 18/1
4	Audio Sink (CAP)	[1] 3.1	M	[2] CAP 18/2
5	VCP Volume Controller (CAP)	[1] 3.1	M	[2] CAP 26/4
6	MICP Microphone Controller (CAP)	[1] 3.1	O	[2] CAP 26/5

## 2.3.4 UGG feature requirements in dependent profiles and services

### 2.3.4.1 BAP Unicast Client is Audio Sink requirements

**Table 17: Unicast Client Audio Capability Support Requirements (UGG)**

*Prerequisite: GMAP 1/1 “Unicast Game Gateway (UGG)” AND GMAP 16/4 “Audio Sink (CAP)”*

Item	Codec Capability Setting	Reference	Status	Inter-Layer Dependency
1	16_1 LC3: 16 kHz Sampling Frequency, 7.5 ms Frame Duration, 30 Octets	[1] 3.5.1.3.1	M	[3] BAP 36/3
2	16_2 LC3: 16 kHz Sampling Frequency, 10 ms Frame Duration, 40 Octets	[1] 3.5.1.3.1	M	[3] BAP 36/4
3	32_1 LC3: 32 kHz Sampling Frequency, 7.5 ms Frame Duration, 60 Octets	[1] 3.5.1.3.1	M	[3] BAP 36/7
4	32_2 LC3: 32 kHz Sampling Frequency, 10 ms Frame Duration, 80 Octets	[1] 3.5.1.3.1	M	[3] BAP 36/8
5	48_1 LC3: 48 kHz Sampling Frequency, 7.5 ms Frame Duration, 75 Octets	[1] 3.5.1.3.1	M	[3] BAP 36/11
6	48_2 LC3: 48 kHz Sampling Frequency, 10 ms Frame Duration, 100 Octets	[1] 3.5.1.3.1	M	[3] BAP 36/12

### 2.3.4.2 BAP Unicast Client is Audio Source requirements

**Table 18: Unicast Client Audio Capability Support Requirements (UGG)**

*Prerequisite: GMAP 1/1 “Unicast Game Gateway (UGG)” AND GMAP 16/3 “Audio Source (CAP)”*

Item	Codec Capability Setting	Reference	Status	Inter-Layer Dependency
1	32_1 LC3: 32 kHz Sampling Frequency, 7.5 ms Frame Duration, 60 Octets	[1] 3.5.1.3.1	M	[3] BAP 37/7
2	32_2 LC3: 32 kHz Sampling Frequency, 10 ms Frame Duration, 80 Octets	[1] 3.5.1.3.1	M	[3] BAP 37/8
3	48_1 LC3: 48 kHz Sampling Frequency, 7.5 ms Frame Duration, 75 Octets	[1] 3.5.1.3.1	M	[3] BAP 37/11
4	48_2 LC3: 48 kHz Sampling Frequency, 10 ms Frame Duration, 100 Octets	[1] 3.5.1.3.1	M	[3] BAP 37/12
5	48_3 LC3: 48 kHz Sampling Frequency, 7.5 ms Frame Duration, 90 Octets	[1] 3.5.1.3.2	C.1	[3] BAP 37/13
6	48_4 LC3: 48 kHz Sampling Frequency, 10 ms Frame Duration, 120 Octets	[1] 3.5.1.3.2	C.1	[3] BAP 37/14

C.1: Mandatory IF GMAP 12/2 “UGG 96 kbps Source”, otherwise not defined.



### 2.3.4.3 BAP Unicast Client requirements

**Table 19: Audio Channel Allocation Values (UGG)**

Prerequisite: GMAP 1/1 “Unicast Game Gateway (UGG)”

Item	Audio Channel Allocation Bit Values	Reference	Status
1	Front Left Sink Audio Location	[1] 3.5.1.3.1	M
2	Front Right Sink Audio Location	[1] 3.5.1.3.1	M
3	Front Right and Front Left Sink Audio Locations	[1] 3.5.1.3.1	C.1

C.1: Mandatory IF GMAP 12/1 “UGG Multiplex”, otherwise Excluded.

**Table 20: Concurrent Config QoS Requirements (UGG)**

Prerequisite: GMAP 1/1 “Unicast Game Gateway (UGG)”

Item	Audio and QoS Configurations	Reference	Status
1	AC 1, 32_1_gr	[1] 3.5.1.4	M
2	AC 1, 32_2_gr	[1] 3.5.1.4	M
3	AC 1, 48_1_gr	[1] 3.5.1.4	M
4	AC 1, 48_2_gr	[1] 3.5.1.4	M
5	AC 1, 48_3_gr	[1] 3.5.1.4	C.1
6	AC 1, 48_4_gr	[1] 3.5.1.4	C.1
7	AC 2, 16_1_gs	[1] 3.5.1.4	M
8	AC 2, 16_2_gs	[1] 3.5.1.4	M
9	AC 2, 32_1_gs	[1] 3.5.1.4	M
10	AC 2, 32_2_gs	[1] 3.5.1.4	M
11	AC 2, 48_1_gs	[1] 3.5.1.4	M
12	AC 2, 48_2_gs	[1] 3.5.1.4	M
13	AC 3, 32_1_gr, 16_1_gs	[1] 3.5.1.4	M
14	AC 3, 32_2_gr, 16_2_gs	[1] 3.5.1.4	M
15	AC 3, 48_1_gr, 16_1_gs	[1] 3.5.1.4	M
16	AC 3, 48_2_gr, 16_2_gs	[1] 3.5.1.4	M
17	AC 3, 32_1_gr, 32_1_gs	[1] 3.5.1.4	M
18	AC 3, 32_2_gr, 32_2_gs	[1] 3.5.1.4	M
19	AC 3, 48_1_gr, 32_1_gs	[1] 3.5.1.4	M
20	AC 3, 48_2_gr, 32_2_gs	[1] 3.5.1.4	M
21	AC 3, 48_1_gr, 48_1_gs	[1] 3.5.1.4	M
22	AC 3, 48_2_gr, 48_2_gs	[1] 3.5.1.4	M
23	AC 3, 48_3_gr, 32_1_gs	[1] 3.5.1.4	C.1
24	AC 3, 48_4_gr, 32_2_gs	[1] 3.5.1.4	C.1
25	AC 3, 48_3_gr, 48_1_gs	[1] 3.5.1.4	C.1
26	AC 3, 48_4_gr, 48_2_gs	[1] 3.5.1.4	C.1
27	AC 4, 32_1_gr	[1] 3.5.1.4	C.2
28	AC 4, 32_2_gr	[1] 3.5.1.4	C.2

Item	Audio and QoS Configurations	Reference	Status
29	AC 4, 48_1_gr	[1] 3.5.1.4	C.2
30	AC 4, 48_2_gr	[1] 3.5.1.4	C.2
31	AC 4, 48_3_gr	[1] 3.5.1.4	C.3
32	AC 4, 48_4_gr	[1] 3.5.1.4	C.3
33	AC 5, 32_1_gr, 16_1_gs	[1] 3.5.1.4	C.2
34	AC 5, 32_2_gr, 16_2_gs	[1] 3.5.1.4	C.2
35	AC 5, 48_1_gr, 16_1_gs	[1] 3.5.1.4	C.2
36	AC 5, 48_2_gr, 16_2_gs	[1] 3.5.1.4	C.2
37	AC 5, 32_1_gr, 32_1_gs	[1] 3.5.1.4	C.2
38	AC 5, 32_2_gr, 32_2_gs	[1] 3.5.1.4	C.2
39	AC 5, 48_1_gr, 32_1_gs	[1] 3.5.1.4	C.2
40	AC 5, 48_2_gr, 32_2_gs	[1] 3.5.1.4	C.2
41	AC 5, 48_1_gr, 48_1_gs	[1] 3.5.1.4	C.2
42	AC 5, 48_2_gr, 48_2_gs	[1] 3.5.1.4	C.2
43	AC 5, 48_3_gr, 32_1_gs	[1] 3.5.1.4	C.3
44	AC 5, 48_4_gr, 32_2_gs	[1] 3.5.1.4	C.3
45	AC 6(i), 32_1_gr	[1] 3.5.1.4	M
46	AC 6(i), 32_2_gr	[1] 3.5.1.4	M
47	AC 6(i), 48_1_gr	[1] 3.5.1.4	M
48	AC 6(i), 48_2_gr	[1] 3.5.1.4	M
49	AC 6(i), 48_3_gr	[1] 3.5.1.4	C.1
50	AC 6(i), 48_4_gr	[1] 3.5.1.4	C.1
51	AC 6(ii), 32_1_gr	[1] 3.5.1.4	M
52	AC 6(ii), 32_2_gr	[1] 3.5.1.4	M
53	AC 6(ii), 48_1_gr	[1] 3.5.1.4	M
54	AC 6(ii), 48_2_gr	[1] 3.5.1.4	M
55	AC 6(ii), 48_3_gr	[1] 3.5.1.4	C.1
56	AC 6(ii), 48_4_gr	[1] 3.5.1.4	C.1
57	AC 7(ii), 32_1_gr, 16_1_gs	[1] 3.5.1.4	M
58	AC 7(ii), 32_2_gr, 16_2_gs	[1] 3.5.1.4	M
59	AC 7(ii), 48_1_gr, 16_1_gs	[1] 3.5.1.4	M
60	AC 7(ii), 48_2_gr, 16_2_gs	[1] 3.5.1.4	M
61	AC 7(ii), 32_1_gr, 32_1_gs	[1] 3.5.1.4	M
62	AC 7(ii), 32_2_gr, 32_2_gs	[1] 3.5.1.4	M
63	AC 7(ii), 48_1_gr, 32_1_gs	[1] 3.5.1.4	M
64	AC 7(ii), 48_2_gr, 32_2_gs	[1] 3.5.1.4	M
65	AC 7(ii), 48_1_gr, 48_1_gs	[1] 3.5.1.4	M
66	AC 7(ii), 48_2_gr, 48_2_gs	[1] 3.5.1.4	M
67	AC 7(ii), 48_3_gr, 32_1_gs	[1] 3.5.1.4	C.1
68	AC 7(ii), 48_4_gr, 32_2_gs	[1] 3.5.1.4	C.1
69	AC 7(ii), 48_3_gr, 48_1_gs	[1] 3.5.1.4	C.1

Item	Audio and QoS Configurations	Reference	Status
70	AC 7(ii), 48_4_gr, 48_2_gs	[1] 3.5.1.4	C.1
71	AC 8(i), 32_1_gr, 16_1_gs	[1] 3.5.1.4	M
72	AC 8(i), 32_2_gr, 16_2_gs	[1] 3.5.1.4	M
73	AC 8(i), 48_1_gr, 16_1_gs	[1] 3.5.1.4	M
74	AC 8(i), 48_2_gr, 16_2_gs	[1] 3.5.1.4	M
75	AC 8(i), 32_1_gr, 32_1_gs	[1] 3.5.1.4	M
76	AC 8(i), 32_2_gr, 32_2_gs	[1] 3.5.1.4	M
77	AC 8(i), 48_1_gr, 32_1_gs	[1] 3.5.1.4	M
78	AC 8(i), 48_2_gr, 32_2_gs	[1] 3.5.1.4	M
79	AC 8(i), 48_1_gr, 48_1_gs	[1] 3.5.1.4	M
80	AC 8(i), 48_2_gr, 48_2_gs	[1] 3.5.1.4	M
81	AC 8(i), 48_3_gr, 32_1_gs	[1] 3.5.1.4	C.1
82	AC 8(i), 48_4_gr, 32_2_gs	[1] 3.5.1.4	C.1
83	AC 8(ii), 32_1_gr, 16_1_gs	[1] 3.5.1.4	M
84	AC 8(ii), 32_2_gr, 16_2_gs	[1] 3.5.1.4	M
85	AC 8(ii), 48_1_gr, 16_1_gs	[1] 3.5.1.4	M
86	AC 8(ii), 48_2_gr, 16_2_gs	[1] 3.5.1.4	M
87	AC 8(ii), 32_1_gr, 32_1_gs	[1] 3.5.1.4	M
88	AC 8(ii), 32_2_gr, 32_2_gs	[1] 3.5.1.4	M
89	AC 8(ii), 48_1_gr, 32_1_gs	[1] 3.5.1.4	M
90	AC 8(ii), 48_2_gr, 32_2_gs	[1] 3.5.1.4	M
91	AC 8(ii), 48_1_gr, 48_1_gs	[1] 3.5.1.4	M
92	AC 8(ii), 48_2_gr, 48_2_gs	[1] 3.5.1.4	M
93	AC 8(ii), 48_3_gr, 32_1_gs	[1] 3.5.1.4	C.1
94	AC 8(ii), 48_4_gr, 32_2_gs	[1] 3.5.1.4	C.1
95	AC 11(i), 32_1_gr, 16_1_gs	[1] 3.5.1.4	C.4
96	AC 11(i), 32_2_gr, 16_2_gs	[1] 3.5.1.4	C.4
97	AC 11(i), 48_1_gr, 16_1_gs	[1] 3.5.1.4	C.4
98	AC 11(i), 48_2_gr, 16_2_gs	[1] 3.5.1.4	C.4
99	AC 11(i), 32_1_gr, 32_1_gs	[1] 3.5.1.4	C.4
100	AC 11(i), 32_2_gr, 32_2_gs	[1] 3.5.1.4	C.4
101	AC 11(i), 48_1_gr, 32_1_gs	[1] 3.5.1.4	C.4
102	AC 11(i), 48_2_gr, 32_2_gs	[1] 3.5.1.4	C.4
103	AC 11(i), 48_3_gr, 32_1_gs	[1] 3.5.1.4	C.5
104	AC 11(i), 48_4_gr, 32_2_gs	[1] 3.5.1.4	C.5
105	AC 11(ii), 32_1_gr, 16_1_gs	[1] 3.5.1.4	C.4
106	AC 11(ii), 32_2_gr, 16_2_gs	[1] 3.5.1.4	C.4
107	AC 11(ii), 48_1_gr, 16_1_gs	[1] 3.5.1.4	C.4
108	AC 11(ii), 48_2_gr, 16_2_gs	[1] 3.5.1.4	C.4
109	AC 11(ii), 32_1_gr, 32_1_gs	[1] 3.5.1.4	C.4
110	AC 11(ii), 32_2_gr, 32_2_gs	[1] 3.5.1.4	C.4

Item	Audio and QoS Configurations	Reference	Status
111	AC 11(ii), 48_1_gr, 32_1_gs	[1] 3.5.1.4	C.4
112	AC 11(ii), 48_2_gr, 32_2_gs	[1] 3.5.1.4	C.4
113	AC 11(ii), 48_3_gr, 32_1_gs	[1] 3.5.1.4	C.5
114	AC 11(ii), 48_4_gr, 32_2_gs	[1] 3.5.1.4	C.5

C.1: Mandatory IF GMAP 12/2 “UGG 96 kbps Source”, otherwise Excluded.

C.2: Mandatory IF GMAP 12/1 “UGG Multiplex”, otherwise Excluded.

C.3: Mandatory IF GMAP 12/1 “UGG Multiplex” AND GMAP 12/2 “UGG 96 kbps Source”, otherwise Excluded.

C.4: Mandatory IF GMAP 12/3 “UGG Multisink”, otherwise Excluded.

C.5: Mandatory IF GMAP 12/2 “UGG 96 kbps Source” AND GMAP 12/3 “UGG Multisink”, otherwise Excluded.

#### 2.3.4.4 CAP requirements

**Table 21: Context Type Support Requirements (UGG)**

*Prerequisite: GMAP 1/1 “Unicast Game Gateway (UGG)”*

Item	Context Type	Reference	Status	Inter-Layer Dependency
1	Game	[1] 3.5.1.1	M	[2] CAP 22/4
2	Unicast Audio Updating procedure with Game Context Type	[8] 3.5.2.1	C.1	N/A

C.1: Mandatory IF GMAP 11/1 “GMAP v1.0.1”, otherwise Excluded.

#### 2.3.5 Feature requirements in Core layers

##### 2.3.5.1 LL requirements

**Table 22: LL Requirements (UGG)**

*Prerequisite: GMAP 1/1 “Unicast Game Gateway (UGG)”*

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

## 2.4 UGT role

### 2.4.1 UGT versions

**Table 30: X.Y Versions**

*Prerequisite: GMAP 1/2 “Unicast Game Terminal (UGT)”*

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

**Table 31: X.Y.Z Versions**

*Prerequisite: GMAP 1/2 “Unicast Game Terminal (UGT)”*

Item	Version	Reference	Status
1	GMAP v1.0.1	[8]	O

### 2.4.2 UGT features

**Table 32: Feature Requirements (UGT)**

*Prerequisite: GMAP 1/2 “Unicast Game Terminal (UGT)”*

Item	Capability	Reference	Status
1	UGT Source	[1] 3.1	C.1
2	UGT 80 kbps Source	[1] 3.1	C.2
3	UGT Sink	[1] 3.1	C.1
4	UGT 64 kbps Sink	[1] 3.1	C.3
5	UGT Multiplex	[1] 3.1	C.4
6	UGT Multisink	[1] 3.1	C.3
7	UGT Multisource	[1] 3.1	C.2

C.1: Mandatory to support at least one.

C.2: Optional IF GMAP 32/1 “UGT Source”, otherwise Excluded.

C.3: Optional IF GMAP 32/3 “UGT Sink”, otherwise Excluded.

C.4: Mandatory IF GMAP 72/2 “BGR Multiplex” AND GMAP 32/3 “UGT Sink”, otherwise Optional IF GMAP 32/3 “UGT Sink”, otherwise Excluded.

**Table 33: Discovery Requirements (UGT)**

*Prerequisite: GMAP 1/2 “Unicast Game Terminal (UGT)”*

Item	Capability	Reference	Status
1	Advertise Unicast Game Terminal Role Support	[1] 3.4	O

**Table 34: Multi-Stream Sync Configurations (UGT)**

*Prerequisite: GMAP 1/2 “Unicast Game Terminal (UGT)” AND GMAP 32/3 “UGT Sink”*

Item	Configuration	Reference	Status
1	Case 1: Multiple UGT audio sink devices each with a single ASE	[1] 3.7	C.1
2	AC 6(ii) in Coordinated Set	[1] 3.7	C.2
3	AC 8(ii) in Coordinated Set	[1] 3.7	C.3
4	AC 11(ii) in Coordinated Set	[1] 3.7	C.3
5	Case 2: A single UGT audio sink device with multiple ASEs	[1] 3.7	C.1, C.4

C.1: Mandatory to support at least one.

C.2: Mandatory IF GMAP 34/1 “Case 1: Multiple UGT audio sink devices each with a single ASE”, otherwise Excluded.

C.3: Mandatory to support at least one IF GMAP 34/1 “Case 1: Multiple UGT audio sink devices each with a single ASE” AND GMAP 32/1 “UGT Source”, otherwise Excluded.

C.4: Mandatory IF GMAP 32/5 “UGT Multiplex” OR GMAP 32/6 “UGT Multisink”, otherwise Excluded.

**Table 35: QoS Parameters (UGT)**

*Prerequisite: GMAP 1/2 “Unicast Game Terminal (UGT)”*

Item	QoS Configuration	Reference	Status
1	16_1_gs LC3: 7500 SDU Interval, unframed, 30 Max SDU Size, 1 RTN, 15 Max_Transport_Latency	[1] 3.5.1.3.2	C.1
2	16_2_gs LC3: 10000 SDU Interval, unframed, 40 Max SDU Size, 1 RTN, 20 Max_Transport_Latency	[1] 3.5.1.3.2	C.1
3	32_1_gs LC3: 7500 SDU Interval, unframed, 60 Max SDU Size, 1 RTN, 15 Max_Transport_Latency	[1] 3.5.1.3.2	C.1
4	32_2_gs LC3: 10000 SDU Interval, unframed, 80 Max SDU Size, 1 RTN, 20 Max_Transport_Latency	[1] 3.5.1.3.2	C.1
5	48_1_gs LC3: 7500 SDU Interval, unframed, 75 Max SDU Size, 1 RTN, 15 Max_Transport_Latency	[1] 3.5.1.3.2	C.2
6	48_2_gs LC3: 10000 SDU Interval, unframed, 100 Max SDU Size, 1 RTN, 20 Max_Transport_Latency	[1] 3.5.1.3.2	C.2
7	32_1_gr LC3: 7500 SDU Interval, unframed, 60 Max SDU Size, 1 RTN, 15 Max_Transport_Latency	[1] 3.5.1.3.2	C.4
8	32_2_gr LC3: 10000 SDU Interval, unframed, 80 Max SDU Size, 1 RTN, 20 Max_Transport_Latency	[1] 3.5.1.3.2	C.4
9	48_1_gr LC3: 7500 SDU Interval, unframed, 75 Max SDU Size, 1 RTN, 15 Max_Transport_Latency	[1] 3.5.1.3.2	C.3
10	48_2_gr LC3: 10000 SDU Interval, unframed, 100 Max SDU Size, 1 RTN, 20 Max_Transport_Latency	[1] 3.5.1.3.2	C.3
11	48_3_gr LC3: 7500 SDU Interval, unframed, 90 Max SDU Size, 1 RTN, 15 Max_Transport_Latency	[1] 3.5.1.3.2	C.3
12	48_4_gr LC3: 10000 SDU Interval, unframed, 120 Max SDU Size, 1 RTN, 20 Max_Transport_Latency	[1] 3.5.1.3.2	C.3

C.1: Mandatory IF GMAP 32/1 “UGT Source”, otherwise Excluded.

C.2: Mandatory IF GMAP 32/2 “UGT 80 kbps Source”, otherwise Excluded.



- C.3: Mandatory IF GMAP 32/3 “UGT Sink”, otherwise Excluded.  
 C.4: Mandatory IF GMAP 32/4 “UGT 64 kbps Sink”, otherwise Excluded.

### 2.4.3 UGT profile and service dependencies

**Table 36: UGT Inter-Layer Dependency Role Requirements (UGT)**

*Prerequisite: GMAP 1/2 “Unicast Game Terminal (UGT)”*

Item	Role/Service	Reference	Status	Inter-Layer Dependency
1	CAP Acceptor	[1] 3.1	M	[2] CAP 1/1
2	BAP Audio Source	[1] 3.1	C.1	[3] BAP 8/2
3	BAP Audio Sink	[1] 3.1	C.2	[3] BAP 8/1
4	VCP Volume Renderer (CAP)	[1] 3.1	C.2	[2] CAP 6/5
5	MICP Microphone Device (CAP)	[1] 3.1	C.3	[2] CAP 6/6
6	CSIP Set Member (CAP)	[1] 3.5.3	O	[2] CAP 6/1

- C.1: Mandatory IF GMAP 32/1 “UGT Source”, otherwise not defined.  
 C.2: Mandatory IF GMAP 32/3 “UGT Sink”, otherwise not defined.  
 C.3: Optional IF GMAP 32/1 “UGT Source”, otherwise not defined.

### 2.4.4 UGT feature requirements in dependent profiles and services

#### 2.4.4.1 BAP Unicast Server is Audio Source requirements

**Table 37: Unicast Server Audio Capability Support Requirements (UGT)**

*Prerequisite: GMAP 1/2 “Unicast Game Terminal (UGT)”*

Item	Codec Capability Setting	Reference	Status	Inter-Layer Dependency
1	16_1 LC3: 16 kHz Sampling Frequency, 7.5 ms Frame Duration, 30 Octets	[1] 3.5.1.1	C.1	[3] BAP 13/3
2	16_2 LC3: 16 kHz Sampling Frequency, 10 ms Frame Duration, 40 Octets	[1] 3.5.1.1	C.1	[3] BAP 13/4
3	32_1 LC3: 32 kHz Sampling Frequency, 7.5 ms Frame Duration, 60 Octets	[1] 3.5.1.1	C.1	[3] BAP 13/7
4	32_2 LC3: 32 kHz Sampling Frequency, 10 ms Frame Duration, 80 Octets	[1] 3.5.1.1	C.1	[3] BAP 13/8
5	48_1 LC3: 48 kHz Sampling Frequency, 7.5 ms Frame Duration, 75 Octets	[1] 3.5.1.1	C.2	[3] BAP 13/11
6	48_2 LC3: 48 kHz Sampling Frequency, 10 ms Frame Duration, 100 Octets	[1] 3.5.1.1	C.2	[3] BAP 13/12

- C.1: Mandatory IF GMAP 32/1 “UGT Source”, otherwise not defined.  
 C.2: Mandatory IF GMAP 32/2 “UGT 80 kbps Source”, otherwise not defined.

### 2.4.4.2 BAP Unicast Server is Audio Sink requirements

**Table 38: Unicast Server Audio Capability Support Requirements (UGT)**

Prerequisite: GMAP 1/2 “Unicast Game Terminal (UGT)”

Item	Codec Capability Setting	Reference	Status	Inter-Layer Dependency
1	32_1 LC3: 32 kHz Sampling Frequency, 7.5 ms Frame Duration, 60 Octets	[1] 3.5.1.1	C.1	[3] BAP 12/7
2	32_2 LC3: 32 kHz Sampling Frequency, 10 ms Frame Duration, 80 Octets	[1] 3.5.1.1	C.1	[3] BAP 12/8
3	48_1 LC3: 48 kHz Sampling Frequency, 7.5 ms Frame Duration, 75 Octets	[1] 3.5.1.1	C.2	[3] BAP 12/11
4	48_2 LC3: 48 kHz Sampling Frequency, 10 ms Frame Duration, 100 Octets	[1] 3.5.1.1	C.2	[3] BAP 12/12
5	48_3 LC3: 48 kHz Sampling Frequency, 7.5 ms Frame Duration, 90 Octets	[1] 3.5.1.1	C.2	[3] BAP 12/13
6	48_4 LC3: 48 kHz Sampling Frequency, 10 ms Frame Duration, 120 Octets	[1] 3.5.1.1	C.2	[3] BAP 12/14

C.1: Mandatory IF GMAP 32/4 “UGT 64 kbps Sink”, otherwise not defined.

C.2: Mandatory IF GMAP 32/3 “UGT Sink”, otherwise not defined.

### 2.4.4.3 UGT feature requirements in dependent profiles

**Table 39: Context Type Support Requirements (UGT)**

Prerequisite: GMAP 1/2 “Unicast Game Terminal (UGT)”

Item	Context Type	Reference	Status	Inter-Layer Dependency
1	Game	[1] 3.5.1.1	M	[2] CAP 11/4

### 2.4.4.4 BAP Unicast Server requirements

**Table 40: Concurrent Config QoS Requirements (UGT)**

Prerequisite: GMAP 1/2 “Unicast Game Terminal (UGT)”

Item	Audio and QoS Configurations	Reference	Status
1	AC 1, 32_1_gr	[1] 3.5.1.4	C.11
2	AC 1, 32_2_gr	[1] 3.5.1.4	C.11
3	AC 1, 48_1_gr	[1] 3.5.1.4	C.1
4	AC 1, 48_2_gr	[1] 3.5.1.4	C.1
5	AC 1, 48_3_gr	[1] 3.5.1.4	C.1
6	AC 1, 48_4_gr	[1] 3.5.1.4	C.1
7	AC 2, 16_1_gs	[1] 3.5.1.4	C.1
8	AC 2, 16_2_gs	[1] 3.5.1.4	C.1
9	AC 2, 32_1_gs	[1] 3.5.1.4	C.2
10	AC 2, 32_2_gs	[1] 3.5.1.4	C.2



Item	Audio and QoS Configurations	Reference	Status
11	AC 2, 48_1_gs	[1] 3.5.1.4	C.3
12	AC 2, 48_2_gs	[1] 3.5.1.4	C.3
13	AC 3, 32_1_gr, 16_1_gs	[1] 3.5.1.4	C.4
14	AC 3, 32_2_gr, 16_2_gs	[1] 3.5.1.4	C.4
15	AC 3, 48_1_gr, 16_1_gs	[1] 3.5.1.4	C.4
16	AC 3, 48_2_gr, 16_2_gs	[1] 3.5.1.4	C.4
17	AC 3, 32_1_gr, 32_1_gs	[1] 3.5.1.4	C.12
18	AC 3, 32_2_gr, 32_2_gs	[1] 3.5.1.4	C.12
19	AC 3, 48_1_gr, 32_1_gs	[1] 3.5.1.4	C.4
20	AC 3, 48_2_gr, 32_2_gs	[1] 3.5.1.4	C.4
21	AC 3, 48_1_gr, 48_1_gs	[1] 3.5.1.4	C.5
22	AC 3, 48_2_gr, 48_2_gs	[1] 3.5.1.4	C.5
23	AC 3, 48_3_gr, 32_1_gs	[1] 3.5.1.4	C.4
24	AC 3, 48_4_gr, 32_2_gs	[1] 3.5.1.4	C.4
25	AC 3, 48_3_gr, 48_1_gs	[1] 3.5.1.4	C.5
26	AC 3, 48_4_gr, 48_2_gs	[1] 3.5.1.4	C.5
27	AC 4, 32_1_gr	[1] 3.5.1.4	C.13
28	AC 4, 32_2_gr	[1] 3.5.1.4	C.13
29	AC 4, 48_1_gr	[1] 3.5.1.4	C.6
30	AC 4, 48_2_gr	[1] 3.5.1.4	C.6
31	AC 4, 48_3_gr	[1] 3.5.1.4	C.6
32	AC 4, 48_4_gr	[1] 3.5.1.4	C.6
33	AC 5, 32_1_gr, 16_1_gs	[1] 3.5.1.4	C.15
34	AC 5, 32_2_gr, 16_2_gs	[1] 3.5.1.4	C.15
35	AC 5, 48_1_gr, 16_1_gs	[1] 3.5.1.4	C.15
36	AC 5, 48_2_gr, 16_2_gs	[1] 3.5.1.4	C.15
37	AC 5, 32_1_gr, 32_1_gs	[1] 3.5.1.4	C.14
38	AC 5, 32_2_gr, 32_2_gs	[1] 3.5.1.4	C.14
39	AC 5, 48_1_gr, 32_1_gs	[1] 3.5.1.4	C.15
40	AC 5, 48_2_gr, 32_2_gs	[1] 3.5.1.4	C.15
41	AC 5, 48_1_gr, 48_1_gs	[1] 3.5.1.4	C.7
42	AC 5, 48_2_gr, 48_2_gs	[1] 3.5.1.4	C.7
43	AC 5, 48_3_gr, 32_1_gs	[1] 3.5.1.4	C.15
44	AC 5, 48_4_gr, 32_2_gs	[1] 3.5.1.4	C.15
45	AC 6(i), 32_1_gr	[1] 3.5.1.4	C.16
46	AC 6(i), 32_2_gr	[1] 3.5.1.4	C.16
47	AC 6(i), 48_1_gr	[1] 3.5.1.4	C.8
48	AC 6(i), 48_2_gr	[1] 3.5.1.4	C.8
49	AC 6(i), 48_3_gr	[1] 3.5.1.4	C.8
50	AC 6(i), 48_4_gr	[1] 3.5.1.4	C.8
51	AC 8(i), 32_1_gr, 16_1_gs	[1] 3.5.1.4	C.18

Item	Audio and QoS Configurations	Reference	Status
52	AC 8(i), 32_2_gr, 16_2_gs	[1] 3.5.1.4	C.18
53	AC 8(i), 48_1_gr, 16_1_gs	[1] 3.5.1.4	C.18
54	AC 8(i), 48_2_gr, 16_2_gs	[1] 3.5.1.4	C.18
55	AC 8(i), 32_1_gr, 32_1_gs	[1] 3.5.1.4	C.17
56	AC 8(i), 32_2_gr, 32_2_gs	[1] 3.5.1.4	C.17
57	AC 8(i), 48_1_gr, 32_1_gs	[1] 3.5.1.4	C.18
58	AC 8(i), 48_2_gr, 32_2_gs	[1] 3.5.1.4	C.18
59	AC 8(i), 48_1_gr, 48_1_gs	[1] 3.5.1.4	C.9
60	AC 8(i), 48_2_gr, 48_2_gs	[1] 3.5.1.4	C.9
61	AC 8(i), 48_3_gr, 32_1_gs	[1] 3.5.1.4	C.18
62	AC 8(i), 48_4_gr, 32_2_gs	[1] 3.5.1.4	C.18
63	AC 11(i), 32_1_gr, 16_1_gs	[1] 3.5.1.4	C.10
64	AC 11(i), 32_2_gr, 16_2_gs	[1] 3.5.1.4	C.10
65	AC 11(i), 48_1_gr, 16_1_gs	[1] 3.5.1.4	C.10
66	AC 11(i), 48_2_gr, 16_2_gs	[1] 3.5.1.4	C.10
67	AC 11(i), 32_1_gr, 32_1_gs	[1] 3.5.1.4	C.19
68	AC 11(i), 32_2_gr, 32_2_gs	[1] 3.5.1.4	C.19
69	AC 11(i), 48_1_gr, 32_1_gs	[1] 3.5.1.4	C.10
70	AC 11(i), 48_2_gr, 32_2_gs	[1] 3.5.1.4	C.10
71	AC 11(i), 48_3_gr, 32_1_gs	[1] 3.5.1.4	C.10
72	AC 11(i), 48_4_gr, 32_2_gs	[1] 3.5.1.4	C.10

- C.1: Mandatory IF GMAP 32/3 “UGT Sink”, otherwise Excluded.
- C.2: Mandatory IF GMAP 32/1 “UGT Source”, otherwise Excluded.
- C.3: Mandatory IF GMAP 32/2 “UGT 80 kbps Source”, otherwise Excluded.
- C.4: Mandatory IF GMAP 32/1 “UGT Source” AND GMAP 32/3 “UGT Sink”, otherwise Excluded.
- C.5: Mandatory IF GMAP 32/2 “UGT 80 kbps Source” AND GMAP 32/3 “UGT Sink”, otherwise Excluded.
- C.6: Mandatory IF GMAP 32/5 “UGT Multiplex”, otherwise Excluded.
- C.7: Mandatory IF GMAP 32/2 “UGT 80 kbps Source” AND GMAP 32/5 “UGT Multiplex”, otherwise Excluded.
- C.8: Mandatory IF GMAP 32/6 “UGT Multisink”, otherwise Excluded.
- C.9: Mandatory IF GMAP 32/2 “UGT 80 kbps Source” AND GMAP 32/6 “UGT Multisink”, otherwise Excluded.
- C.10: Mandatory IF GMAP 32/6 “UGT Multisink” AND GMAP 32/7 “UGT Multisource”, otherwise Excluded.
- C.11: Mandatory IF GMAP 32/3 “UGT Sink” AND GMAP 32/4 “UGT 64 kbps Sink”, otherwise Excluded.
- C.12: Mandatory IF GMAP 32/1 “UGT Source” AND GMAP 32/3 “UGT Sink” AND GMAP 32/4 “UGT 64 kbps Sink”, otherwise Excluded.
- C.13: Mandatory IF GMAP 32/4 “UGT 64 kbps Sink” AND GMAP 32/5 “UGT Multiplex”, otherwise Excluded.
- C.14: Mandatory IF GMAP 32/1 “UGT Source” AND GMAP 32/4 “UGT 64 kbps Sink” AND GMAP 32/5 “UGT Multiplex”, otherwise Excluded.
- C.15: Mandatory IF GMAP 32/1 “UGT Source” AND GMAP 32/5 “UGT Multiplex”, otherwise Excluded.



- C.16: Mandatory IF GMAP 32/4 “UGT 64 kbps Sink” AND GMAP 32/6 “UGT Multisink”, otherwise Excluded.
- C.17: Mandatory IF GMAP 32/1 “UGT Source” AND GMAP 32/4 “UGT 64 kbps Sink” AND GMAP 32/6 “UGT Multisink”, otherwise Excluded.
- C.18: Mandatory IF GMAP 32/1 “UGT Source” AND GMAP 32/6 “UGT Multisink”, otherwise Excluded.
- C.19: Mandatory IF GMAP 32/4 “UGT 64 kbps Sink” AND GMAP 32/6 “UGT Multisink” AND GMAP 32/7 “UGT Multisource”, otherwise Excluded.

#### 2.4.4.5 CSIP requirements

**Table 41: CSIP Support Requirements (UGT)**

*Prerequisite: GMAP 1/2 “Unicast Game Terminal (UGT)”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Authenticated Pairing (LE security mode 1 level 3) with LE Secure Connections Pairing only	[1] 3.5.3	C.1	[4] CSIP 6/7

- C.1: Optional IF GMAP 36/6 “CSIP Set Member (CAP)”, otherwise not defined.

#### 2.4.5 Feature requirements in Core layers

##### 2.4.5.1 LL requirements

**Table 42: LL Requirements (UGT)**

*Prerequisite: GMAP 1/2 “Unicast Game Terminal (UGT)”*

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

## 2.5 BGS role

### 2.5.1 BGS versions

**Table 50: X.Y Versions**

*Prerequisite: GMAP 1/3 “Broadcast Game Sender (BGS)”*

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

**Table 51: X.Y.Z Versions**

*Prerequisite: GMAP 1/3 “Broadcast Game Sender (BGS)”*

Item	Version	Reference	Status
1	GMAP v1.0.1	[8]	O

### 2.5.2 BGS features

**Table 52: Feature Requirements (BGS)**

*Prerequisite: GMAP 1/3 “Broadcast Game Sender (BGS)”*

Item	Capability	Reference	Status
1	BGS 96 kbps	[1] 3.1	O

**Table 53: Discovery Requirements (BGS)**

*Prerequisite: GMAP 1/3 “Broadcast Game Sender (BGS)”*

Item	Capability	Reference	Status
1	Advertise Broadcast Game Sender Role Support	[1] 3.4	O

**Table 54: QoS Parameters (BGS)**

*Prerequisite: GMAP 1/3 “Broadcast Game Sender (BGS)”*

Item	QoS Configuration	Reference	Status
1	48_1_g LC3: 7500 SDU Interval, unframed, 75 Max SDU Size, 2 RTN, 8 Max_Transport_Latency	[1] 3.5.2.3	M
2	48_2_g LC3: 10000 SDU Interval, unframed, 100 Max SDU Size, 2 RTN, 10 Max_Transport_Latency	[1] 3.5.2.3	M
3	48_3_g LC3: 7500 SDU Interval, unframed, 90 Max SDU Size, 2 RTN, 8 Max_Transport_Latency	[1] 3.5.2.3	C.1
4	48_4_g LC3: 10000 SDU Interval, unframed, 120 Max SDU Size, 2 RTN, 10 Max_Transport_Latency	[1] 3.5.2.3	C.1

C.1: Mandatory IF GMAP 52/1 “BGS 96 kbps”, otherwise Excluded.



**Table 55: External Audio Input Capability (BGS)***Prerequisite: GMAP 1/3 “Broadcast Game Sender (BGS)”*

Item	Capability	Reference	Status
1	External Audio In	[1] 3.6	O

### 2.5.3 BGS profile and service dependencies

**Table 56: Inter-Layer Dependency Role Requirements (BGS)***Prerequisite: GMAP 1/3 “Broadcast Game Sender (BGS)”*

Item	Role/Service	Reference	Status	Inter-Layer Dependency
1	CAP Initiator	[1] 3.1	M	[2] CAP 1/2
2	CAP Commander	[1] 3.1	M	[2] CAP 1/3
3	BAP Broadcast Source (CAP)	[1] 3.1	M	[2] CAP 16/2
4	BAP Broadcast Assistant	[1] 3.1	M	[2] CAP 26/2

### 2.5.4 BGS feature requirements in dependent profiles and services

#### 2.5.4.1 BAP Broadcast Source requirements

**Table 57: Broadcast Source Audio Capability Support Requirements (BGS)***Prerequisite: GMAP 1/3 “Broadcast Game Sender (BGS)”*

Item	Codec Capability Setting	Reference	Status	Inter-Layer Dependency
1	48_1 LC3: 48 kHz Sampling Frequency, 7.5 ms Frame Duration, 75 Octets	[1] 3.5.2.1	M	[3] BAP 54/11
2	48_2 LC3: 48 kHz Sampling Frequency, 10 ms Frame Duration, 100 Octets	[1] 3.5.2.1	M	[3] BAP 54/12
3	48_3 LC3: 48 kHz Sampling Frequency, 7.5 ms Frame Duration, 90 Octets	[1] 3.5.2.1	C.1	[3] BAP 54/13
4	48_4 LC3: 48 kHz Sampling Frequency, 10 ms Frame Duration, 120 Octets	[1] 3.5.2.1	C.1	[3] BAP 54/14

C.1: Mandatory IF GMAP 52/1 “BGS 96 kbps”, otherwise not defined.

#### 2.5.4.2 BGS feature requirements in dependent profiles

**Table 58: Audio Channel Allocation Audio Location Values (BGS)***Prerequisite: GMAP 1/3 “Broadcast Game Sender (BGS)”*

Item	Audio Location Values	Reference	Status
1	Front Left Audio Location	[1] 3.5.2.2	M
2	Front Right Audio Location	[1] 3.5.2.2	M



**Table 59: Concurrent Config QoS Requirements (BGS)***Prerequisite: GMAP 1/3 "Broadcast Game Sender (BGS)"*

Item	Audio and QoS Configurations	Reference	Status
1	AC 12, 48_1_g	[1] 3.5.2.4	M
2	AC 12, 48_2_g	[1] 3.5.2.4	M
3	AC 12, 48_3_g	[1] 3.5.2.4	C.1
4	AC 12, 48_4_g	[1] 3.5.2.4	C.1
5	AC 13, 48_1_g	[1] 3.5.2.4	M
6	AC 13, 48_2_g	[1] 3.5.2.4	M
7	AC 13, 48_3_g	[1] 3.5.2.4	C.1
8	AC 13, 48_4_g	[1] 3.5.2.4	C.1
9	AC 14, 48_1_g	[1] 3.5.2.4	O
10	AC 14, 48_2_g	[1] 3.5.2.4	O
11	AC 14, 48_3_g	[1] 3.5.2.4	O
12	AC 14, 48_4_g	[1] 3.5.2.4	O

C.1: Mandatory IF GMAP 52/1 "BGS 96 kbps", otherwise Excluded.

**Table 60: Context Type Support Requirements (BGS)***Prerequisite: GMAP 1/3 "Broadcast Game Sender (BGS)"*

Item	Context Type	Reference	Status	Inter-Layer Dependency
1	Game	[1] 3.5.2.1	M	[2] CAP 22/4
2	Unicast Audio Updating procedure with Game Context Type	[8] 3.5.2.1	C.1	N/A

C.1: Mandatory IF GMAP 51/1 "GMAP v1.0.1", otherwise Excluded.

### 2.5.4.3 CAP requirements

**Table 61: CAP Feature Support Requirements (BGS)**

Table number reserved but not yet in use.

## 2.5.5 Feature requirements in Core layers

### 2.5.5.1 LL requirements

**Table 62: LL Requirements (BGS)***Prerequisite: GMAP 1/3 "Broadcast Game Sender (BGS)"*

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

## 2.6 BGR role

### 2.6.1 BGR versions

**Table 70: X.Y Versions**

*Prerequisite: GMAP 1/4 “Broadcast Game Receiver (BGR)”*

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

**Table 71: X.Y.Z Versions**

*Prerequisite: GMAP 1/4 “Broadcast Game Receiver (BGR)”*

Item	Version	Reference	Status
1	GMAP v1.0.1	[8]	O

### 2.6.2 BGR features

**Table 72: Feature Requirements (BGR)**

*Prerequisite: GMAP 1/4 “Broadcast Game Receiver (BGR)”*

Item	Capability	Reference	Status
1	BGR Multisink	[1] 3.1	O
2	BGR Multiplex	[1] 3.1	C.1

C.1: Mandatory IF GMAP 32/5 “UGT Multiplex”, otherwise Optional.

**Table 73: Discovery Requirements (BGR)**

*Prerequisite: GMAP 1/4 “Broadcast Game Receiver (BGR)”*

Item	Capability	Reference	Status
1	Advertise Broadcast Game Receiver Role Support	[1] 3.4	O

**Table 74: QoS Parameters (BGR)**

*Prerequisite: GMAP 1/4 “Broadcast Game Receiver (BGR)”*

Item	QoS Configuration	Reference	Status
1	48_1_g LC3: 7500 SDU Interval, unframed, 75 Max SDU Size, 2 RTN, 8 Max_Transport_Latency	[1] 3.5.2.3	M
2	48_2_g LC3: 10000 SDU Interval, unframed, 100 Max SDU Size, 2 RTN, 10 Max_Transport_Latency	[1] 3.5.2.3	M
3	48_3_g LC3: 7500 SDU Interval, unframed, 90 Max SDU Size, 2 RTN, 8 Max_Transport_Latency	[1] 3.5.2.3	M
4	48_4_g LC3: 10000 SDU Interval, unframed, 120 Max SDU Size, 2 RTN, 10 Max_Transport_Latency	[1] 3.5.2.3	M

**Table 75: Multi-Stream Sync Configurations (BGR)**

Prerequisite: GMAP 1/4 “Broadcast Game Receiver (BGR)”

Item	Configuration	Reference	Status
1	Case 1: Multiple BGR devices, each synchronized to a single BIS	[1] 3.7	C.1
2	Case 2: A single BGR device synchronized to multiple BISes	[1] 3.7	C.1, C.2

C.1: Mandatory to support at least one.

C.2: Mandatory IF GMAP 72/1 “BGR Multisink”, otherwise Excluded.

### 2.6.3 BGR profile and service dependencies

**Table 76: Inter-Layer Dependency Role Requirements (BGR)**

Prerequisite: GMAP 1/4 “Broadcast Game Receiver (BGR)”

Item	Role/Service	Reference	Status	Inter-Layer Dependency
1	CAP Acceptor	[1] 3.1	M	[2] CAP 1/1
2	BAP Broadcast Sink (CAP)	[1] 3.1	M	[2] CAP 6/3
3	VCP Volume Renderer (CAP)	[1] 3.1	M	[2] CAP 6/5
4	CSIP Set Member	[1] 3.5.3	O	[2] CAP 6/1

### 2.6.4 BGR feature requirements in dependent profiles and services

#### 2.6.4.1 BAP Broadcast Sink requirements

**Table 77: BAP Broadcast Sink Audio Capability Support Requirements (BGR)**

Prerequisite: GMAP 1/4 “Broadcast Game Receiver (BGR)”

Item	Codec Capability Setting	Reference	Status	Inter-Layer Dependency
1	48_1 LC3: 48 kHz Sampling Frequency, 7.5 ms Frame Duration, 75 Octets	[1] 3.5.2.1	M	[3] BAP 68/11
2	48_2 LC3: 48 kHz Sampling Frequency, 10 ms Frame Duration, 100 Octets	[1] 3.5.2.1	M	[3] BAP 68/12
3	48_3 LC3: 48 kHz Sampling Frequency, 7.5 ms Frame Duration, 90 Octets	[1] 3.5.2.1	M	[3] BAP 68/13
4	48_4 LC3: 48 kHz Sampling Frequency, 10 ms Frame Duration, 120 Octets	[1] 3.5.2.1	M	[3] BAP 68/14

**Table 78: Audio Location Values (BGR)***Prerequisite: GMAP 1/4 “Broadcast Game Receiver (BGR)”*

Item	Audio Location Values	Reference	Status
1	Front Left Audio Location	[1] 3.5.2.2	C.1
2	Front Right Audio Location	[1] 3.5.2.2	C.1
3	Front Right and Front Left Audio Locations	[1] 3.5.2.2	C.1

C.1: Mandatory to support at least one.

**Table 79: Concurrent Config QoS Requirements (BGR)***Prerequisite: GMAP 1/4 “Broadcast Game Receiver (BGR)”*

Item	Audio and QoS Configurations	Reference	Status
1	AC 12, 48_1_g	[1] 3.5.2.4	M
2	AC 12, 48_2_g	[1] 3.5.2.4	M
3	AC 12, 48_3_g	[1] 3.5.2.4	M
4	AC 12, 48_4_g	[1] 3.5.2.4	M
5	AC 13, 48_1_g	[1] 3.5.2.4	C.1
6	AC 13, 48_2_g	[1] 3.5.2.4	C.1
7	AC 13, 48_3_g	[1] 3.5.2.4	C.1
8	AC 13, 48_4_g	[1] 3.5.2.4	C.1
9	AC 13, 48_1_g, 2 BGR Devices	[1] 3.5.2.4	C.2
10	AC 13, 48_2_g, 2 BGR Devices	[1] 3.5.2.4	C.2
11	AC 13, 48_3_g, 2 BGR Devices	[1] 3.5.2.4	C.2
12	AC 13, 48_4_g, 2 BGR Devices	[1] 3.5.2.4	C.2
13	AC 14, 48_1_g	[1] 3.5.2.4	C.3
14	AC 14, 48_2_g	[1] 3.5.2.4	C.3
15	AC 14, 48_3_g	[1] 3.5.2.4	C.3
16	AC 14, 48_4_g	[1] 3.5.2.4	C.3

C.1: Mandatory IF GMAP 72/1 “BGR Multisink”, otherwise Excluded.

C.2: Mandatory IF GMAP 75/1 “Case 1: Multiple BGR devices, each synchronized to a single BIS”, otherwise Excluded.

C.3: Mandatory IF GMAP 72/2 “BGR Multiplex”, otherwise Excluded.

**2.6.4.2 BGR feature requirements in dependent profiles****Table 111: Context Type Support Requirements (BGR)***Prerequisite: GMAP 1/4 “Broadcast Game Receiver (BGR)”*

Item	Context Type	Reference	Status	Inter-Layer Dependency
1	Game	[8] 3.5.2.1	C.1	[2] CAP 11/4

C.1: Mandatory IF GMAP 71/1 “GMAP v1.0.1”, otherwise not defined.



### 2.6.4.3 CAP requirements

**Table 80: CAP Support Requirements (BGR)**

Table number reserved but not yet in use.

### 2.6.4.4 CSIP requirements

**Table 81: CSIP Support Requirements (BGR)**

*Prerequisite: GMAP 1/4 "Broadcast Game Receiver (BGR)"*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Authenticated Pairing (LE security mode 1 level 3) with LE Secure Connections Pairing only	[1] 3.5.3	C.1	[4] CSIP 6/7

C.1: Optional IF GMAP 76/4 "CSIP Set Member", otherwise not defined.

## 2.6.5 Feature requirements in Core layers

### 2.6.5.1 LL requirements

**Table 82: LL Requirements (BGR)**

*Prerequisite: GMAP 1/4 "Broadcast Game Receiver (BGR)"*

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

## 2.7 GMA Client

### 2.7.1 GMA Client versions

**Table 90: X.Y Versions**

*Prerequisite: GMAP 1/5 “GMA Client”*

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

**Table 91: X.Y.Z Versions**

*Prerequisite: GMAP 1/5 “GMA Client”*

Item	Version	Reference	Status
1	GMAP v1.0.1	[8]	O

### 2.7.2 Service requirements (GMA Client)

**Table 92: GMA Service Characteristic Support Requirements (GMA Client)**

*Prerequisite: GMAP 1/5 “GMA Client”*

Item	Capability	Reference	Status
1	GMAP Role Characteristic	[1] 3.8.1.2	O
2	UGG Features Characteristic	[1] 3.8.1.2	O
3	UGT Features Characteristic	[1] 3.8.1.2	O
4	BGS Features Characteristic	[1] 3.8.1.2	O
5	BGR Features Characteristic	[1] 3.8.1.2	O

### 2.7.3 GATT requirements

**Table 93: GATT Requirements (GMA Client)**

*Prerequisite: GMAP 1/5 “GMA Client”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	GATT Client over LE	[1] 3.8.1.3	M	[5] GATT 1a/1
1a	GATT Client over BR/EDR	[1] 3.8.1.3	C.4	[5] GATT 1a/2
2	Discover All Primary Services	[1] 3.8.1.3	C.1	[5] GATT 3/2
3	Discover Primary Service by Service UUID	[1] 3.8.1.3	C.1	[5] GATT 3/3
4	Discover All Characteristics of a Service	[1] 3.8.1.3	C.2	[5] GATT 3/5
5	Discover Characteristics by UUID	[1] 3.8.1.3	C.2	[5] GATT 3/6



Item	Capability	Reference	Status	Inter-Layer Dependency
6	Read Characteristic Value	[1] 3.8.1.3	C.3	[5] GATT 3/8
7	Read Using Characteristic UUID	[1] 3.8.1.3	C.3	[5] GATT 3/9

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 GMAP 2/1a “Service GMAS supported over BR/EDR”, otherwise not defined.

## 2.7.4 GAP requirements

**Table 94: GAP Requirements (GMA Client)**

*Prerequisite: GMAP 1/5 “GMA Client”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	LE security mode 1	[1] 4.8.1	M	[6] GAP 25/1 OR GAP 35/1
2	Security mode 4, level 2	[1] 4.8.3	C.1	[6] GAP 2/7c

C.1: Mandatory IF GMAP 2/1a “Service GMAS supported over BR/EDR”, otherwise not defined.

## 2.8 GMA Server

### 2.8.1 GMA Server versions

**Table 100: X.Y Versions**

*Prerequisite: GMAP 1/6 “GMA Server”*

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

**Table 101: X.Y.Z Versions**

*Prerequisite: GMAP 1/6 “GMA Server”*

Item	Version	Reference	Status
1	GMAP v1.0.1	[8]	O

### 2.8.2 Service requirements

**Table 102: Service Characteristic (GMA Server)**

*Prerequisite: GMAP 1/6 “GMA Server”*

Item	Capability	Reference	Status
1	GMAP Role Characteristic	[1] 4.7.1	M
2	UGG Features Characteristic	[1] 4.7.2	C.1
3	UGT Features Characteristic	[1] 4.7.3	C.2
4	BGS Features Characteristic	[1] 4.7.4	C.3
5	BGR Features Characteristic	[1] 4.7.5	C.4

- C.1: Mandatory IF GMAP 1/1 “Unicast Game Gateway (UGG)”, otherwise Excluded.  
 C.2: Mandatory IF GMAP 1/2 “Unicast Game Terminal (UGT)”, otherwise Excluded.  
 C.3: Mandatory IF GMAP 1/3 “Broadcast Game Sender (BGS)”, otherwise Excluded.  
 C.4: Mandatory IF GMAP 1/4 “Broadcast Game Receiver (BGR)”, otherwise Excluded.

**Table 103: GMAP Role Support (GMA Server)**

*Prerequisite: GMAP 102/1 “GMAP Role Characteristic”*

Item	Profile Role Support	Reference	Status
1	Unicast Game Gateway Support	[1] 4.7.1.2	C.1
2	Unicast Game Terminal Support	[1] 4.7.1.2	C.2
3	Broadcast Game Sender Support	[1] 4.7.1.2	C.3
4	Broadcast Game Receiver Support	[1] 4.7.1.2	C.4

- C.1: Mandatory IF GMAP 1/1 “Unicast Game Gateway (UGG)”, otherwise Excluded.  
 C.2: Mandatory IF GMAP 1/2 “Unicast Game Terminal (UGT)”, otherwise Excluded.  
 C.3: Mandatory IF GMAP 1/3 “Broadcast Game Sender (BGS)”, otherwise Excluded.  
 C.4: Mandatory IF GMAP 1/4 “Broadcast Game Receiver (BGR)”, otherwise Excluded.



**Table 104: UGG Features Support (GMA Server)***Prerequisite: GMAP 102/2 “UGG Features Characteristic”*

Item	Profile Role Support	Reference	Status
1	UGG Multiplex Feature Support	[1] 4.7.2.2	C.1
2	UGG 96 kbps Source Feature Support	[1] 4.7.2.2	C.2
3	UGG Multisink Feature Support	[1] 4.7.2.2	C.3

C.1: Mandatory IF GMAP 12/1 “UGG Multiplex”, otherwise Excluded.

C.2: Mandatory IF GMAP 12/2 “UGG 96 kbps Source”, otherwise Excluded.

C.3: Mandatory IF GMAP 12/3 “UGG Multisink”, otherwise Excluded.

**Table 105: UGT Features Support (GMA Server)***Prerequisite: GMAP 102/3 “UGT Features Characteristic”*

Item	Profile Role Support	Reference	Status
1	UGT Source Feature Support	[1] 4.7.3.2	C.1
2	UGT 80 kbps Source Feature Support	[1] 4.7.3.2	C.2
3	UGT Sink Feature Support	[1] 4.7.3.2	C.3
4	UGT 64 kbps Sink Feature Support	[1] 4.7.3.2	C.4
5	UGT Multiplex Feature Support	[1] 4.7.3.2	C.5
6	UGT Multisink Feature Support	[1] 4.7.3.2	C.6
7	UGT Multisource Feature Support	[1] 4.7.3.2	C.7

C.1: Mandatory IF GMAP 32/1 “UGT Source”, otherwise Excluded.

C.2: Mandatory IF GMAP 32/2 “UGT 80 kbps Source”, otherwise Excluded.

C.3: Mandatory IF GMAP 32/3 “UGT Sink”, otherwise Excluded.

C.4: Mandatory IF GMAP 32/4 “UGT 64 kbps Sink”, otherwise Excluded.

C.5: Mandatory IF GMAP 32/5 “UGT Multiplex”, otherwise Excluded.

C.6: Mandatory IF GMAP 32/6 “UGT Multisink”, otherwise Excluded.

C.7: Mandatory IF GMAP 32/7 “UGT Multisource”, otherwise Excluded.

**Table 106: BGS Features Support (GMA Server)***Prerequisite: GMAP 102/4 “BGS Features Characteristic”*

Item	Profile Role Support	Reference	Status
1	BGS 96 kbps Feature Support	[1] 4.7.4.2	C.1

C.1: Mandatory IF GMAP 52/1 “BGS 96 kbps”, otherwise Excluded.

**Table 107: BGR Features Support (GMA Server)***Prerequisite: GMAP 102/5 “BGR Features Characteristic”*

Item	Profile Role Support	Reference	Status
1	BGR Multisink Feature Support	[1] 4.7.5.2	C.1
2	BGR Multiplex Feature Support	[1] 4.7.5.2	C.2

C.1: Mandatory IF GMAP 72/1 “BGR Multisink”, otherwise Excluded.

C.2: Mandatory IF GMAP 72/2 “BGR Multiplex”, otherwise Excluded.

### 2.8.3 GATT requirements

**Table 108: GATT Requirements (GMA Server)***Prerequisite: GMAP 1/6 “GMA Server”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	GATT Server over LE	[1] 4.8	M	[5] GATT 1a/3
2	GATT Server over BR/EDR	[1] 4.8	C.1	[5] GATT 1a/4

C.1: Mandatory IF GMAP 2/1a “Service GMAS supported over BR/EDR”, otherwise not defined.

### 2.8.4 SDP requirements

**Table 109: SDP Requirements (GMA Server)***Prerequisite: GMAP 1/6 “GMA Server” AND GMAP 2/1a “Service GMAS supported over BR/EDR”*

Item	Feature	Reference	Status
1	SDP record present for GMAP	[1] 4.9	M

### 2.8.5 GAP requirements

**Table 110: GAP Requirements (GMA Server)***Prerequisite: GMAP 1/6 “GMA Server”*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	LE security mode 1	[1] 4.8.2	M	[6] GAP 25/1 OR GAP 35/1
2	Security mode 4, level 2	[1] 4.8.3	C.1	[6] GAP 2/7c

C.1: Mandatory IF GMAP 2/1a “Service GMAS supported over BR/EDR”, otherwise not defined.

## 3 References

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- [1] Gaming Audio Profile (GMAP) Specification, Version 1.0 or later
- [2] ICS Proforma for Common Audio Profile (CAP)
- [3] ICS Proforma for Basic Audio Profile (BAP)
- [4] ICS Proforma for Coordinated Set Identification Profile (CSIP)
- [5] ICS Proforma for Generic Attribute Profile (GATT)
- [6] ICS Proforma for Generic Access Profile (GAP)
- [7] ICS Proforma for Link Layer (LL)
- [8] Gaming Audio Profile (GMAP) Specification, Version 1.0.1

## 4 Revision history and acknowledgments

### Revision History

Publication Number	Revision Number	Date	Comments
0	p0	2023-11-14	Approved by BTI on 2023-10-22. GMAP v1.0 adopted by the BoD on 2023-11-14. Prepared for initial publication.
	p1r00–r07	2024-11-11 – 2025-03-31	<p>TSE 25654 (rating 2): Per E25416, updated condition C.1 of Table 78.</p> <p>TSE 25884 (rating 4): Per E25789, added Item 21/2 and C.1 to Table 21 and added Item 60/2 and C.1 to Table 60.</p> <p>TSE 26076 (rating 1): In Table 79, added conditional C.2, changed the existing C.2 to C.3, and updated the status value for Items 9–16.</p> <p>TSE 26402 (rating 2): Per E25767, added Item 56/4 to account for BAP Broadcast Assistant. TSE 26434 (rating 1): In Table 2, added Items 2/1a and 2/2a, updated the reference and status values for Items 2/1 and 2/2, and added conditionals C.1–C.5. Updated the heading for the GATT requirements section. In Table 93, added Item 93/1a and conditional C.4. In Tables 94, 108, and 110, updated conditional C.1. Updated the prerequisite for Table 109.</p> <p>TSE 26909 (rating 1): Per E25416, E25641, E25767, E25789, and E25921, added Tables 11, 31, 51, 71, 91, and 101 to account for GMAP v1.0.1 as part of the .Z release. Updated the references list.</p> <p>TSE 27218 (rating 4): Per E25641, added new section and table (Table 111) for BGR feature requirements in dependent profiles.</p>
1	p1	2025-05-06	Approved by BTI on 2025-04-07. GMAP v1.0.1 adopted by the BoD on 2025-05-05. Prepared for TCRL 2025-1-addition publication.
	p2r00–r02	2025-12-05 – 2026-01-13	<p>TSE 28121 (rating 1): Added Item GAP 1/7, condition C.4, and an ILD column to Table 1. Also updated Table 1/C.3.</p> <p>TSE 28372 (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.</p>
2	p2	2026-02-17	Approved by BTI on 2026-01-26. Prepared for TCRL pkg102 publication.

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