Interoperable Product Testing (IOPT)

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

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Contents

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 Auto-fill tables

This ICS includes one or more tables that are defined as auto-fill tables. Auto-fill tables are defined to allow for less-complex conditions within other tables. Auto-fill tables are distinguished from regular ICS tables by the addition of “(auto-fill)” after the table number, prior to the colon “:”.

An auto-fill table is automatically populated based on selected capabilities elsewhere in the ICS. The populated settings in the auto-fill table are not user editable.

2 ICS declarations

2.1 Traditional Profiles

The “Inter-Layer Prerequisite” column used in the table below specifies a prerequisite for each item. Thus, for example, Table 1, Item 2a (Source (A2DP)), is excluded unless A2DP 1/1 is true; otherwise, the item is mandatory.

Table 1 (auto-fill): Traditional Profiles

Item	Feature	Reference	Inter-Layer Prerequisite	Status
1	3D Synchronization Profile (3DSP)	[1]	[1] 3DSP	M
1a	3DD – 3D Display	[1]	[1] 3DSP 1/1	M
1b	3DG – 3D Glasses	[1]	[1] 3DSP 1/2	M
2	Advanced Audio Distribution Profile (A2DP)	[2]	[2] A2DP	M
2a	Source (A2DP)	[2]	[2] A2DP 1/1	M
2b	Sink (A2DP)	[2]	[2] A2DP 1/2	M
3	Audio/Video Remote Control Profile (AVRCP)	[3]	[3] AVRCP	M
3a	Controller	[3]	[3] AVRCP 1/1	M
3b	Target	[3]	[3] AVRCP 1/2	M
4	Basic Imaging Profile (BIP)	[4]	[4] BIP	M
4a	Image Push Responder	[4]	[4] BIP 1/2	M
4b	Image Pull Responder	[4]	[4] BIP 1/4	M
4c	Advanced Image Printing Responder (= Printer)	[4]	[4] BIP 1/6	M
4d	Automatic Archive Responder	[4]	[4] BIP 1/8	M
4e	Remote Camera Responder	[4]	[4] BIP 1/10	M
4f	Remote Display Responder	[4]	[4] BIP 1/12	M
5	Basic Printing Profile (BPP)	[5]	[5] BPP	M
5a	Printer (Pr)	[5]	[5] BPP 1/1	M
5b	Sender Device (SD)	[5]	[5] BPP 1/2	M
6	Calendar, Tasks and Notes Profile (CTN)	[6]	[6] CTN	M
6a	CTN Client Equipment	[6]	[6] CTN 1/1	M
6b	CTN Server Equipment	[6]	[6] CTN 1/2	M
7	Device Identification (DID)	[7]	[7] DID	M
8	Dial-up Networking Profile (DUN)	[8]	[8] DUN	M
8a	Gateway (GW)	[8]	[8] DUN 1/1	M
9	File Transfer Profile (FTP)	[9]	[9] FTP	M
9a	File Transfer Server	[9]	[9] FTP 1/1	M
10	Global Navigation Satellite Systems Profile (GNSS)	[10]	[10] GNSS	M
10a	Server (GNSS)	[10]	[10] GNSS 1/1	M
11	Hardcopy Cable Replacement Profile (HCRP)	[11]	[11] HCRP	M

Item	Feature	Reference	Inter-Layer Prerequisite	Status
11a	Server (HCRP)	[11]	[11] HCRP 1/1	M
11b	Client (HCRP)	[11]	[11] HCRP 1/2	M
12	Health Device Profile (HDP)	[12]	[12] HDP	M
12a	Source (HDP)	[12]	[12] HDP 1/1	M
12b	Sink (HDP)	[12]	[12] HDP 1/2	M
13	Hands-Free Profile (HFP)	[13]	[13] HFP	M
13a	Audio Gateway (AG) (HFP)	[13]	[13] HFP 1/1	M
13b	Hands-Free (HF)	[13]	[13] HFP 1/2	M
14	Human Interface Device v1.0 (HID)	[14]	[14] HID	M
14a	Device	[14]	[14] HID 1/2	M
15	Human Interface Device v1.1 or later (HID11)	[15]	[15] HID11	M
15a	HID Device Role	[15]	[15] HID11 1/4	M
16	Headset Profile (HSP)	[16]	[16] HSP	M
16a	Audio Gateway (AG) (HSP)	[16]	[16] HSP 1/1	M
16b	Headset (HS)	[16]	[16] HSP 1/2	M
17	Message Access Profile (MAP)	[17]	[17] MAP	M
17a	Messaging Server Equipment	[17]	[17] MAP 1/1	M
17b	Notification (MCE)	[17]	[17] MAP 2/1	M
18	Multi-Profile Specification (MPS)	[18]	[18] MPS	M
19	Object Push Profile (OPP)	[19]	[19] OPP	M
19a	Object Push Server	[19]	[19] OPP 1/2	M
20	Personal Area Networking (PAN)	[20]	[20] PAN	M
20a	Network Access Point	[20]	[20] PAN 1/1	M
20b	Group Ad-hoc Network	[20]	[20] PAN 1/2	M
20c	PANU Service Record	[20]	[20] PAN 4/15	M
21	Phone Book Access Profile (PBAP)	[21]	[21] PBAP	M
21a	PCE	[21]	[21] PBAP 1/1	M
21b	PSE	[21]	[21] PBAP 1/2	M
22	SIM Access Profile (SAP)	[22]	[22] SAP	M
22a	SIM Access Server (Server)	[22]	[22] SAP 1/2	M
23	Serial Port Profile (SPP)	[23]	[23] SPP	M
23a	SPP as a standalone profile – Device B (DevB)	[23]	[23] SPP 2/1b	M
24	Synchronization Profile (SYNC)	[24]	[24] SYNC	M
24a	IrMC Server	[24]	[24] SYNC 1/2	M
24b	Sync command (IrMC Client)	[24]	[24] SYNC 2/10	M
25	Video Distribution Profile (VDP)	[25]	[25] VDP	M
25a	Source (VDP)	[25]	[25] VDP 1/1	M
25b	Sink (VDP)	[25]	[25] VDP 1/2	M

Table 1a (auto-fill): Implementation of at Least One Traditional Profile

Item	Feature	Reference	Inter-Layer Prerequisite	Status
1	Implementation of at least one traditional profile	N/A	N/A	C.1

C.1: Mandatory IF at least one Traditional Profile in Table 1 is supported, otherwise Excluded.

2.2 GATT-based Services

All GATT-based services defined in the Assigned Numbers document [87] are listed in Table 2.

The “Inter-Layer Prerequisite” column used in the table below specifies a prerequisite for each item. Thus, for example, Table 2, Item 2a (Audio Input Control Service (AICS) over BR/EDR), is excluded unless AICS 1/1 is true; otherwise, the item is mandatory. Furthermore, in those instances where the Status column has a condition that excludes the item, the reference in the “Inter-Layer Prerequisite” column must be false.

Table 2 (auto-fill): GATT-Based Services

Item	Feature*	Reference	Inter-Layer Prerequisite	Status
1a	Authorization Control Service (ACS) over BR/EDR	[26]	[26] ACS 2/1	M
1b	Authorization Control Service (ACS) over LE	[26]	[26] ACS 2/2	M
2a	Audio Input Control Service (AICS) over BR/EDR	[27]	[27] AICS 1/1	M
2b	Audio Input Control Service (AICS) over LE	[27]	[27] AICS 1/2	M
3a	Automation IO Service (AIOS) over BR/EDR	[28]	[28] AIOS 1/1	M
3b	Automation IO Service (AIOS) over LE	[28]	[28] AIOS 1/2	M
4a	Alert Notification Service (ANS) over BR/EDR	[29]	[29] ANS 1/1	C.1
4b	Alert Notification Service (ANS) over LE	[29]	[29] ANS 1/2	M
5a	Audio Stream Control Service (ASCS) over BR/EDR	[30]	[30] ASCS 2/1	M
5b	Audio Stream Control Service (ASCS) over LE	[30]	[30] ASCS 2/2	M
6a	Battery Service (BAS) over BR/EDR	[31]	[31] BAS 1/1	M
6b	Battery Service (BAS) over LE	[31]	[31] BAS 1/2	M
7a	Broadcast Audio Scan Service (BASS) over BR/EDR	[32]	[32] BASS 2/1	M
7b	Broadcast Audio Scan Service (BASS) over LE	[32]	[32] BASS 2/2	M
8a	Body Composition Service (BCS) over BR/EDR	[33]	[33] BCS 2/1	M
8b	Body Composition Service (BCS) over LE	[33]	[33] BCS 2/2	M
9a	Blood Pressure Service (BLS) over BR/EDR	[34]	[34] BLS 1/1	C.1
9b	Blood Pressure Service (BLS) over LE	[34]	[34] BLS 1/2	M
10a	Bond Management Service (BMS) over BR/EDR	[35]	[35] BMS 2/1	M

Item	Feature*	Reference	Inter-Layer Prerequisite	Status
10b	Bond Management Service (BMS) over LE	[35]	[35] BMS 2/2	M
11a	Binary Sensor Service (BSS) over BR/EDR	[36]	[36] BSS 2/1	C.1
11b	Binary Sensor Service (BSS) over LE	[36]	[36] BSS 2/2	M
12a	Common Audio Service (CAS) over BR/EDR	[37]	[37] CAS 2/1	M
12b	Common Audio Service (CAS) over LE	[37]	[37] CAS 2/2	M
13a	Continuous Glucose Monitoring Service (CGMS) over BR/EDR	[38]	[38] CGMS 1/1	M
13b	Continuous Glucose Monitoring Service (CGMS) over LE	[38]	[38] CGMS 1/2	M
14a	Cycling Power Service (CPS) over BR/EDR	[39]	[39] CPS 1/1	M
14b	Cycling Power Service (CPS) over LE	[39]	[39] CPS 1/2	M
15a	Cycling Speed and Cadence Service (CSCS) over BR/EDR	[40]	[40] CSCS 1/1	M
15b	Cycling Speed and Cadence Service (CSCS) over LE	[40]	[40] CSCS 1/2	M
16a	Coordinated Set Identification Service (CSIS) over BR/EDR	[41]	[41] CSIS 1/1	M
16b	Coordinated Set Identification Service (CSIS) over LE	[41]	[41] CSIS 1/2	M
17a	Constant Tone Extension Service (CTES) over BR/EDR	[42]	[42] CTES 1/1	C.1
17b	Constant Tone Extension Service (CTES) over LE	[42]	[42] CTES 1/2	M
18a	Current Time Service (CTS) over BR/EDR	[43]	[43] CTS 1/1	M
18b	Current Time Service (CTS) over LE	[43]	[43] CTS 1/2	M
65a	Cookware Service (CWS) over BR/EDR	[89]	[89] CWS 2/1	M
65b	Cookware Service (CWS) over LE	[89]	[89] CWS 2/2	M
19a	Device Information Service (DIS) over BR/EDR	[44]	[44] DIS 1/1	M
19b	Device Information Service (DIS) over LE	[44]	[44] DIS 1/2	M
20a	Device Time Service (DTS) over BR/EDR	[45]	[45] DTS 1/1	M
20b	Device Time Service (DTS) over LE	[45]	[45] DTS 1/2	M
21a	Emergency Configuration Service (EMCS) over BR/EDR	[46]	[46] EMCS 2/1	C.1
21b	Emergency Configuration Service (EMCS) over LE	[46]	[46] EMCS 2/2	M
22a	Electronic Shelf Label Service (ESLS) over BR/EDR	[47]	[47] ESLS 2/1	C.1
22b	Electronic Shelf Label Service (ESLS) over LE	[47]	[47] ESLS 2/2	M
23a	Environmental Sensing Service (ESS) over BR/EDR	[48]	[48] ESS 2/1	M

Item	Feature*	Reference	Inter-Layer Prerequisite	Status
23b	Environmental Sensing Service (ESS) over LE	[48]	[48] ESS 2/2	M
24a	Elapsed Time Service (ETS) over BR/EDR	[49]	[49] ETS 2/1	M
24b	Elapsed Time Service (ETS) over LE	[49]	[49] ETS 2/2	M
63a	Gaming Audio Service (GMAS) over BR/EDR	[86]	[86] GMAP 108/2	M
63b	Gaming Audio Service (GMAS) over LE	[86]	[86] GMAP 108/1	M
25a	Fitness Machine Service (FTMS) over BR/EDR	[50]	[50] FTMS 2/1	M
25b	Fitness Machine Service (FTMS) over LE	[50]	[50] FTMS 2/2	M
26a	Generic Health Sensor Service (GHSS) over BR/EDR	[51]	[51] GHSS 2/1	M
26b	Generic Health Sensor Service (GHSS) over LE	[51]	[51] GHSS 2/2	M
66a	Generic Voice Assistant Service (GVAS) over BR/EDR	[90]	[90] VAS 2/1	C.1
66b	Generic Voice Assistant Service (GVAS) over LE	[90]	[90] VAS 2/2	M
27a	Glucose Service (GLS) over BR/EDR	[52]	[52] GLS 1/1	C.1
27b	Glucose Service (GLS) over LE	[52]	[52] GLS 1/2	M
28a	Generic Media Control Service (GMCS) over BR/EDR	[64]	[64] MCS 21/1	M
28b	Generic Media Control Service (GMCS) over LE	[64]	[64] MCS 21/2	M
29a	Generic Telephone Bearer Service (GTBS) over BR/EDR	[76]	[76] TBS 21/1	M
29b	Generic Telephone Bearer Service (GTBS) over LE	[76]	[76] TBS 21/2	M
30a	Hearing Access Service (HAS) over BR/EDR	[53]	[53] HAS 2/1	C.1
30b	Hearing Access Service (HAS) over LE	[53]	[53] HAS 2/2	M
64a	HID ISO Service over BR/EDR (HOGP)	[88]	[88] HOGP 2/1	C.1
64b	HID ISO Service over LE (HOGP)	[88]	[88] HOGP 3/6	M
31a	HID Service (HIDS) over BR/EDR	[54]	[54] HIDS 1/1	C.1
31b	HID Service (HIDS) over LE	[54]	[54] HIDS 1/2	M
32a	HTTP Proxy Service (HPS) over BR/EDR	[55]	[55] HPS 1/1	M
32b	HTTP Proxy Service (HPS) over LE	[55]	[55] HPS 1/2	M
33a	Heart Rate Service (HRS) over BR/EDR	[56]	[56] HRS 1/1	C.1
33b	Heart Rate Service (HRS) over LE	[56]	[56] HRS 1/2	M
34a	Health Thermometer Service (HTS) over BR/EDR	[57]	[57] HTS 1/1	C.1
34b	Health Thermometer Service (HTS) over LE	[57]	[57] HTS 1/2	M
35a	Immediate Alert Service (IAS) over BR/EDR	[58]	[58] IAS 1/1	C.1
35b	Immediate Alert Service (IAS) over LE	[58]	[58] IAS 1/2	M

Item	Feature*	Reference	Inter-Layer Prerequisite	Status
61a	Industrial Measurement Device Service (IMDS) over BR/EDR	[84]	[84] IMDS 2/1	M
61b	Industrial Measurement Device Service (IMDS) over LE	[84]	[84] IMDS 2/2	M
36a	Insulin Delivery Service (IDS) over BR/EDR	[59]	[59] IDS 1/1	C.1
36b	Insulin Delivery Service (IDS) over LE	[59]	[59] IDS 1/2	M
37a	Indoor Positioning Service (IPS) over BR/EDR	[60]	[60] IPS 3/1	M
37b	Indoor Positioning Service (IPS) over LE	[60]	[60] IPS 3/2	M
38a	IP Support Service Declaration (Internet Protocol Support Service (IPSS)) over BR/EDR	[61]	[61] IPSP 2/2 AND IPSP 3/1	C.1
38b	IP Support Service Declaration (Internet Protocol Support Service (IPSS)) over LE	[61]	[61] IPSP 2/1 AND IPSP 3/1	M
39a	Link Loss Service (LLS) over BR/EDR	[62]	[62] LLS 1/1	C.1
39b	Link Loss Service (LLS) over LE	[62]	[62] LLS 1/2	M
40a	Location and Navigation Service (LNS) over BR/EDR	[63]	[63] LNS 1/1	M
40b	Location and Navigation Service (LNS) over LE	[63]	[63] LNS 1/2	M
41a	Media Control Service (MCS) over BR/EDR	[64]	[64] MCS 1/1	M
41b	Media Control Service (MCS) over LE	[64]	[64] MCS 1/2	M
42a	Microphone Control Service (MICS) over BR/EDR	[65]	[65] MICS 1/1	M
42b	Microphone Control Service (MICS) over LE	[65]	[65] MICS 1/2	M
43a	Next DST Change Service (NDCS) over BR/EDR	[66]	[66] NDCS 1/1	C.1
43b	Next DST Change Service (NDCS) over LE	[66]	[66] NDCS 1/2	M
44a	Object Transfer Service (OTS) over BR/EDR	[67]	[67] OTS 2/2	M
44b	Object Transfer Service (OTS) over LE	[67]	[67] OTS 2/1	M
45a	Published Audio Capabilities Service (PACS) over BR/EDR	[68]	[68] PACS 2/1	M
45b	Published Audio Capabilities Service (PACS) over LE	[68]	[68] PACS 2/2	M
46a	Physical Activity Monitor Service (PAMS) over BR/EDR	[69]	[69] PAMS 1/1	M
46b	Physical Activity Monitor Service (PAMS) over LE	[69]	[69] PAMS 1/2	M
47a	Phone Alert Status Service (PASS) over BR/EDR	[70]	[70] PASS 1/1	C.1
47b	Phone Alert Status Service (PASS) over LE	[70]	[70] PASS 1/2	M
48a	Pulse Oximeter Service (PLXS) over BR/EDR	[71]	[71] PLXS 1/1	M
48b	Pulse Oximeter Service (PLXS) over LE	[71]	[71] PLXS 1/2	M

Item	Feature*	Reference	Inter-Layer Prerequisite	Status
62a	Ranging Service (RAS) over BR/EDR	[85]	[85] RAS 1/1	C.1
62b	Ranging Service (RAS) over LE	[85]	[85] RAS 1/2	M
49a	Reconnection Configuration Service (RCS) over BR/EDR	[72]	[72] RCS 2/2	C.1
49b	Reconnection Configuration Service (RCS) over LE	[72]	[72] RCS 2/1	M
50a	Running Speed and Cadence Service (RSCS) over BR/EDR	[73]	[73] RSCS 1/1	M
50b	Running Speed and Cadence Service (RSCS) over LE	[73]	[73] RSCS 1/2	M
51a	Reference Time Update Service (RTUS) over BR/EDR	[74]	[74] RTUS 1/1	C.1
51b	Reference Time Update Service (RTUS) over LE	[74]	[74] RTUS 1/2	M
52a	Scan Parameters Service (SCPS) over BR/EDR	[75]	[75] SCPS 1/1	C.1
52b	Scan Parameters Service (SCPS) over LE	[75]	[75] SCPS 1/2	M
53a	Telephone Bearer Service (TBS) over BR/EDR	[76]	[76] TBS 1/1	M
53b	Telephone Bearer Service (TBS) over LE	[76]	[76] TBS 1/2	M
54a	Transport Discovery Service (TDS) over BR/EDR	[77]	[77] TDS 2/2	M
54b	Transport Discovery Service (TDS) over LE	[77]	[77] TDS 2/1	M
55a	Telephony and Media Audio Service (TMAS) over BR/EDR	[78]	[78] TMAP 154/2	M
55b	Telephony and Media Audio Service (TMAS) over LE	[78]	[78] TMAP 154/1	M
56a	Tx Power Service (TPS) over BR/EDR	[79]	[79] TPS 1/1	C.1
56b	Tx Power Service (TPS) over LE	[79]	[79] TPS 1/2	M
57a	User Data Service (UDS) over BR/EDR	[80]	[80] UDS 2/1	M
57b	User Data Service (UDS) over LE	[80]	[80] UDS 2/2	M
67a	Voice Assistant Service (VAS) over BR/EDR	[90]	[90] VAS 11/1	C.1
67b	Voice Assistant Service (VAS) over LE	[90]	[90] VAS 11/2	M
58a	Volume Control Service (VCS) over BR/EDR	[81]	[81] VCS 1/1	M
58b	Volume Control Service (VCS) over LE	[81]	[81] VCS 1/2	M
59a	Volume Offset Control Service (VOCS) over BR/EDR	[82]	[82] VOCS 1/1	M
59b	Volume Offset Control Service (VOCS) over LE	[82]	[82] VOCS 1/2	M

Item	Feature*	Reference	Inter-Layer Prerequisite	Status
60a	Weight Scale Service (WSS) over BR/EDR	[83]	[83] WSS 2/1	M
60b	Weight Scale Service (WSS) over LE	[83]	[83] WSS 2/2	M

C.1: Excluded for this Service.

* Table is ordered alphabetically by Feature.

Table 2a (auto-fill): Implementation of at Least One GATT-Based Service

Item	Feature	Reference	Inter-Layer Prerequisite	Status
1	Implementation of at least one GATT-based service over BR/EDR	N/A	N/A	C.1
2	Implementation of at least one GATT-based service over LE	N/A	N/A	C.2

C.1: Mandatory IF at least one GATT-Based Service supported over BR/EDR in Table 2 is supported, otherwise Excluded.

C.2: Mandatory IF at least one GATT-Based Service supported over LE in Table 2 is supported, otherwise Excluded.

2.3 MESH Protocol

The “Inter-Layer Prerequisite” column used in the table below specifies a prerequisite for each item. Thus, for example, Table 3, Item 1 (MESH over BR/EDR), is excluded unless MESH 1a/1 is true; otherwise, the item is mandatory.

Table 3 (auto-fill): MESH Protocol

Item	Feature*	Reference	Inter-Layer Prerequisite	Status
1	MESH over BR/EDR	[92]	[92] MESH 1a/1	M
2	MESH over LE	[92]	[92] MESH 1a/2	M

3 Inter-layer dependencies in the X2Core layers (informational)

X2Core layer may have dependencies on Core layers or on X2Core layers. Inter-layer dependencies (ILDs) are used to express that a feature in a higher layer depends on supporting features in lower layers. Reverse ILDs express that a lower-layer feature triggers or requires support from a corresponding higher-layer feature. While the objective is to handle these dependencies via (Reverse) ILDs, a few X2Core layers still reference other Core layers in their ICS conditions and Test Case Mapping Tables (TCMTs). Details about ILDs can be found in [91].

Table 3.1 shows the references for LE Audio and GATT-based Profiles and Services, as defined in TCRL pkg101, using the latest version of the test documents (ICS and TS).

Layer	Transport	ILD to Core	TCMT Logic	ICS Condition	Reverse ILD	ILD to X2Core
ACP	BR/EDR, LE	GAP, GATT	GATT	ACS		ACS
ACS	BR/EDR, LE	GATT				
AICS	BR/EDR, LE	GATT				
AIOP	BR/EDR, LE	GAP, GATT	GATT			AIOS
AIOS	BR/EDR, LE	GATT				
ANP	LE	GAP, GATT				ANS
ANS	LE	GATT				
ASCS	BR/EDR, LE	GATT				PACS
ATP	LE	**LL**, GAP, GATT				CTES
BAP	BR/EDR, LE	**LL**, GAP, GATT				LC3, ASCS, PACS, BASS
BAS	BR/EDR, LE	GAP, GATT				
BASS	BR/EDR, LE	GAP, GATT				
BCS	BR/EDR, LE	GAP, GATT				
BLP	LE	GAP, GATT	GATT			BLS, DIS, DTP, UDS
BLS	LE	GAP, GATT				
BMS	BR/EDR, LE	GATT				
BSP	LE	GAP, GATT				BSS
BSS	LE	GATT				

Layer	Transport	ILD to Core	TCMT Logic	ICS Condition	Reverse ILD	ILD to X2Core
CAP	LE	GAP, GATT				CSIP, BAP, VCP, MICP, CCP, MCP, CAS, VCS, VOCS, MICS, AICS, CSIS, ASCS, BASS, PACS
CAS	BR/EDR, LE	GATT				
CCP	BR/EDR, LE	**LL**, GAP, GATT	GATT			TBS
CGMP	BR/EDR, LE	GAP, GATT				CGMS, DIS, BMS
CGMS	BR/EDR, LE	GATT				
CHP	BR/EDR, LE	GAP, GATT				TDS
CPP	BR/EDR, LE	GAP, GATT	GATT			BAS, CPS, DIS
CPS	BR/EDR, LE	GAP, GATT				
CSCP	BR/EDR, LE	GAP, GATT	GATT			CSCS, DIS
CSCS	BR/EDR, LE	GAP, GATT				
CSIP	BR/EDR, LE	GAP, GATT	GATT			CSIS
CSIS	BR/EDR, LE	GAP, GATT				
CTES	LE	GATT				
CTS	BR/EDR, LE	GATT				
CWP	BR/EDR, LE	GAP, GATT				BAS, CWS, DIS
CWS	BR/EDR, LE	GATT				
DIS	BR/EDR, LE	GATT				
DTP	BR/EDR, LE	GAP, GATT	GATT			DTS
DTS	BR/EDR, LE	GAP, GATT				
EMCS	LE	GATT				
EMP	LE	GAP[1]				EMCS
ESLP	LE	GAP, GATT			ESLS	DIS, ESLS, OTP, OTS
ESLS	LE	GATT				
ESP	BR/EDR, LE	GAP, GATT	GATT			BAS, DIS, ESS

[1] EMP does not have GATT.

Layer	Transport	ILD to Core	TCMT Logic	ICS Condition	Reverse ILD	ILD to X2Core
ESS	BR/EDR, LE	GATT				
ETS	BR/EDR, LE	GATT				
FMP	LE	GAP, GATT				IAS
FTMP	BR/EDR, LE	GAP, GATT	GATT			DIS, FTMS, UDS
FTMS	BR/EDR, LE	GAP, GATT				
GHSP	BR/EDR, LE	GAP, GATT	GATT			BAS, DIS, ETS, GHSS, RCP, RCS, UDS
GHSS	BR/EDR, LE	GAP, GATT				
GLP	LE	GAP, GATT	GATT			DIS, GLS
GLS	LE	GAP, GATT				
GMAP	LE	**LL**, GAP, GATT		GATT		BAP, CAP, CSIP
HAP	LE	**LL**, GAP, GATT				BAP, CAP, CCP, CSIP, CSIS, IAS, MICP, HAS, VCP
HAS	LE	GATT				
HIDS	LE	GATT				
HOGP	LE	GAP, GATT				BAS, DIS, HIDS, SCPP, SCPS
HPS	BR/EDR, LE	GAP, GATT				
HRP	LE	GAP, GATT	GATT			DIS, HRS
HRS	LE	GATT				
HTP	LE	GAP, GATT	GATT			DIS, HTS
HTS	LE	GAP, GATT				
IAS	LE	GATT				
IDP	LE	GAP, GATT		IDS		BAS, BMS, CTS, DIS, IAS, IDS
IDS	LE	GAP, GATT				
IMDP	BR/EDR, LE	GAP, GATT				BAS, DIS, ETS, IMDS
IMDS	BR/EDR, LE	GATT				
IPS	BR/EDR, LE	GAP, GATT				

Layer	Transport	ILD to Core	TCMT Logic	ICS Condition	Reverse ILD	ILD to X2Core
IPSP	LE	GAP, GATT, L2CAP				[2]
LLS	LE	GATT				
LNP	BR/EDR, LE	GAP, GATT	GATT			BAS, DIS, LNS
LNS	BR/EDR, LE	GAP, GATT				
MCP	BR/EDR, LE	**LL**, GAP, GATT	GATT			MCS, OTP, OTS
MCS	BR/EDR, LE	GATT				OTS
MICP	BR/EDR, LE	GAP, GATT	GATT			AICS, MICS
MICS	BR/EDR, LE	GATT				
NDCS	LE	GATT				
OTP	BR/EDR, LE	GATT, L2CAP[3]	GATT			OTS
OTS	BR/EDR, LE	GATT				
PACS	BR/EDR, LE	GAP, GATT				
PAMP	BR/EDR, LE	GAP, GATT	GATT	PAMS		PAMS, DIS, UDS, DTP
PAMS	BR/EDR, LE	GATT				
PASP	LE	GAP, GATT				PASS
PASS	LE	GATT				
PBP	LE	**LL**[4]				CAP, BAP
PLXP	BR/EDR, LE	GAP, GATT	GATT			BAS, BMS, CTS, DIS, PLXS
PLXS	BR/EDR, LE	GATT				
PXP	LE	GAP, GATT				IAS, LLS, TPS
RAP	LE	GAP, GATT				RAS
RAS	LE	GATT				
RCP	LE	GAP, GATT		RCS		BMS, RCS

[2] IPSP does not define a Service.

[3] GAP defined in higher layer.

[4] GATT and GAP defined in lower layer.

Layer	Transport	ILD to Core	TCMT Logic	ICS Condition	Reverse ILD	ILD to X2Core
RCS	LE	GAP, GATT				
RSCP	BR/EDR, LE	GAP, GATT	GATT			DIS, RSCS
RSCS	BR/EDR, LE	GAP, GATT				
RTUS	LE	GATT				
SCPP	LE	GAP, GATT				SCPS
SCPS	LE	GATT				
TBS	BR/EDR, LE	GATT				
TDS	BR/EDR, LE	GAP, GATT				
TIP	LE	GAP, GATT				CTS, NDCS, RTUS
TMAP	LE	**LL**, GAP, GATT		GATT		BAP, CAP, CCP, MCP, MCS
TPS	LE	GATT				
UDS	BR/EDR, LE	GATT				
VAP	LE	**LL**, GAP, GATT				VAS
VAS	LE	GATT				
VCP	BR/EDR, LE	**LL**, GAP, GATT	GATT			AICS, VCS, VOCS
VCS	BR/EDR, LE	GATT				
VOCS	BR/EDR, LE	GATT				
WSP	BR/EDR, LE	GAP, GATT	GATT			BAS, BCS, CTS, DIS, UDS, WSS
WSS	BR/EDR, LE	GAP, GATT				

Table 3.1: Transport configuration and ILDs and other references between layers (LE Audio and GATT-based Profiles and Services)

Table 3.2 shows the references for MESH Profiles and Protocols, as defined in TCRL pkg101, using the latest version of the test documents (ICS and TS).

Layer	Transport	ILD to Core	TCMT Logic	ICS Condition	Reverse ILD	ILD to X2Core
ALSNLCP	LE					MESH, MMDL
BLCNLCP	LE					MESH, MMDL
BSSNLCP	LE					MESH, MMDL
DFUM	LE			MESH		MBTM

Layer	Transport	ILD to Core	TCMT Logic	ICS Condition	Reverse ILD	ILD to X2Core
DICNLCP	LE					MESH, MMDL
ENMNLCP	LE					MESH, MMDL
HVINLCP	LE					MESH, MMDL
MBTM	LE					
MCDB	LE					
MESH	LE	GAP, GATT				
MMDL	LE					
OCSNLCP	LE					MMDL, MESH

Table 3.2: Transport configuration and ILDs and other references between layers (MESH)

Table 3.3 shows the references for Traditional Profiles and Protocols, as defined in TCRL pkg101, using the latest version of the test documents (ICS and TS).

Layer	Transport	ILD to Core	TCMT Logic	ICS Condition	Reverse ILD	ILD to X2Core
3DSP	BR/EDR	**BB**, GAP, L2CAP, SDP				
A2DP	BR/EDR	SDP				AVDTP, GAVDP
AVCTP	BR/EDR					
AVDTP	BR/EDR	L2CAP				
AVRCP	BR/EDR	GAP				
BIP	BR/EDR	GAP				
BNEP	BR/EDR					
BPP	BR/EDR	GAP				
CTN	BR/EDR	GAP, SDP				
DID	BR/EDR	SDP				
DUN	BR/EDR	GAP, SDP				RFCOMM
FTP	BR/EDR	GAP				
GAVDP	BR/EDR					AVDTP
GNSS	BR/EDR	GAP, SDP				RFCOMM

Layer	Transport	ILD to Core	TCMT Logic	ICS Condition	Reverse ILD	ILD to X2Core
GOEP	BR/EDR					
GPP	BR/EDR					
HCRP	BR/EDR	GAP, SDP				
HDP	BR/EDR	**BB**, GAP, L2CAP, SDP				DID, MCAP
HFP	BR/EDR	**BB**, GAP, L2CAP				LC3, RFCOMM
HID	BR/EDR	LMP, SDP	GAP			
HID11	BR/EDR		GAP			DID
HSP	BR/EDR	GAP, SDP				RFCOMM
MAP	BR/EDR	GAP, SDP				
MCAP	BR/EDR	L2CAP				
MPS	BR/EDR	SDP		A2DP, AVRCP, DUN, HFP, PAN, PBAP		AVRCP, GAVDP, HFP, PBAP
OPP	BR/EDR	GAP				
PAN	BR/EDR	GAP, SDP				BNEP
PBAP	BR/EDR	GAP, SDP				
RFCOMM	BR/EDR		SPP			
SAP	BR/EDR	GAP				
SPP	BR/EDR	SDP				
SYNC	BR/EDR	GAP				
VDP	BR/EDR	**BB**, GAP, SDP				GAVDP

Table 3.3: Transport configuration and ILDs and other references between layers (Traditional Profiles and Protocol)

4 References

[1] ICS Proforma for 3D Synchronization Profile (3DSP)

[2] ICS Proforma for Advanced Audio Distribution Profile (A2DP)

[3] ICS Proforma for Audio/Video Remote Control Profile (AVRCP)

[4] ICS Proforma for Basic Imaging Profile (BIP)

[5] ICS Proforma for Basic Printing Profile (BPP)

[6] ICS Proforma for Calendar, Tasks and Notes Profile (CTN)

[7] ICS Proforma for Device ID (DID)

[8] ICS Proforma for Dial-up Networking Profile (DUN)

[9] ICS Proforma for File Transfer Profile (FTP)

[10] ICS Proforma for Global Navigation Satellite System Profile (GNSS)

[11] ICS Proforma for Hardcopy Cable Replacement Profile (HCRP)

[12] ICS Proforma for Health Device Profile (HDP)

[13] ICS Proforma for Hands-Free Profile (HFP)

[14] ICS Proforma for Human Interface Device Profile 1.0 (HID)

[15] ICS Proforma for Human Interface Device Profile 1.1 or later (HID11)

[16] ICS Proforma for Headset Profile (HSP)

[17] ICS Proforma for Message Access Profile (MAP)

[18] ICS Proforma for Multi-Profile Specification (MPS)

[19] ICS Proforma for Object Push Profile (OPP)

[20] ICS Proforma for Personal Area Networking Profile (PAN)

[21] ICS Proforma for Phone Book Access Profile (PBAP)

[22] ICS Proforma for SIM Access Profile (SAP)

[23] ICS Proforma for Serial Port Profile (SPP)

[24] ICS Proforma for Synchronization Profile (SYNC)

[25] ICS Proforma for Video Distribution Profile (VDP)

[26] ICS Proforma for Authorization Control Service (ACS)

[27] ICS Proforma for Audio Input Control Service (AICS)

[28] ICS Proforma for Automation IO Service (AIOS)

[29] ICS Proforma for Alert Notification Service (ANS)

[30] ICS Proforma for Audio Stream Control Service (ASCS)

[31] ICS Proforma for Battery Service (BAS)

[32] ICS Proforma for Broadcast Audio Scan Service (BASS)

[33] ICS Proforma for Body Composition Service (BCS)

[34] ICS Proforma for Blood Pressure Service (BLS)

[35] ICS Proforma for Bond Management Service (BMS)

[36] ICS Proforma for Binary Sensor Service (BSS)

[37] ICS Proforma for Common Audio Service (CAS)

[38] ICS Proforma for Continuous Glucose Monitoring Service (CGMS)

[39] ICS Proforma for Cycling Power Service (CPS)

[40] ICS Proforma for Cycling Speed and Cadence Service (CSCS)

[41] ICS Proforma for Coordinated Set Identification Service (CSIS)

[42] ICS Proforma for Constant Tone Extension Service (CTES)

[43] ICS Proforma for Current Time Service (CTS)

[44] ICS Proforma for Device Information Service (DIS)

[45] ICS Proforma for Device Time Service (DTS)

[46] ICS Proforma for Emergency Configuration Service (EMCS)

[47] ICS Proforma for Electronic Shelf Label Service (ESLS)

[48] ICS Proforma for Environmental Sensing Service (ESS)

[49] ICS Proforma for Elapsed Time Service (ETS)

[50] ICS Proforma for Fitness Machine Service (FTMS)

[51] ICS Proforma for Generic Health Sensor Service (GHSS)

[52] ICS Proforma for Glucose Service (GLS)

[53] ICS Proforma for Hearing Access Service (HAS)

[54] ICS Proforma for HID Service (HIDS)

[55] ICS Proforma for HTTP Proxy Service (HPS)

[56] ICS Proforma for Heart Rate Service (HRS)

[57] ICS Proforma for Health Thermometer Service (HTS)

[58] ICS Proforma for Immediate Alert Service (IAS)

[59] ICS Proforma for Insulin Delivery Service (IDS)

[60] ICS Proforma for Indoor Positioning Service (IPS)

[61] ICS Proforma for Internet Protocol Support Profile (IPSP)

[62] ICS Proforma for Link Loss Service (LLS)

[63] ICS Proforma for Location and Navigation Service (LNS)

[64] ICS Proforma for Media Control Service (MCS)

[65] ICS Proforma for Microphone Control Service (MICS)

[66] ICS Proforma for Next DST Change Service (NDCS)

[67] ICS Proforma for Object Transfer Service (OTS)

[68] ICS Proforma for Published Audio Capabilities Service (PACS)

[69] ICS Proforma for Physical Activity Monitor Service (PAMS)

[70] ICS Proforma for Phone Alert Status Service (PASS)

[71] ICS Proforma for Pulse Oximeter Service (PLXS)

[72] ICS Proforma for Reconnection Configuration Service (RCS)

[73] ICS Proforma for Running Speed and Cadence Service (RSCS)

[74] ICS Proforma for Reference Time Update Service (RTUS)

[75] ICS Proforma for Scan Parameters Service (SCPS)

[76] ICS Proforma for Telephone Bearer Service (TBS)

[77] ICS Proforma for Transport Discovery Service (TDS)

[78] ICS Proforma for Telephony and Media Audio Profile (TMAP)

[79] ICS Proforma for Tx Power Service (TPS)

[80] ICS Proforma for User Data Service (UDS)

[81] ICS Proforma for Volume Control Service (VCS)

[82] ICS Proforma for Volume Offset Control Service (VOCS)

[83] ICS Proforma for Weight Scale Service (WSS)

[84] ICS Proforma for Industrial Measurement Device (IMDS)

[85] ICS Proforma for Ranging Service (RAS)

[86] ICS Proforma for Gaming Audio Profile (GMAP)

[87] Bluetooth SIG Assigned Numbers

[88] ICS Proforma for HID Over GATT Profile (HOGP)

[89] ICS Proforma for Cookware Service (CWS)

[90] ICS Proforma for Voice Assistant Service (VAS)

[91] Test Strategy and Terminology Overview

[92] ICS Proforma for Mesh Protocol (MESH)

5 Revision history and acknowledgments

Revision History

Publication Number	Revision Number	Date	Comments
	p0r00–r04	2023-08-16 – 2023-12-20	TSE 18945 (rating 2): New document to cover IOPT ICS needs. TSE 24239 (rating 4): Added IOPT ICS items 1a/1 and 2a/1 to simplify the TCMT for IOPT tests that apply when at least one SDP record or GATT service is present in the database. Updated the document to align with latest standards.
0	p0	2024-07-01	Approved by BTI on 2024-05-22. Prepared for TCRL 2024-1 publication.
	p1r00	2024-10-02	Incorporated IOPT-related CR supporting the IMDS v1.0 adoption.
1	p1	2024-10-22	Approved by BTI on 2024-10-13. IMDS v1.0 adopted by the BoD on 2024-10-15. Prepared for supporting publication.
	p2r00	2024-10-30	Incorporated IOPT-related CR supporting the RAS v1.0 adoption.
2	p2	2024-11-19	Approved by BTI on 2024-11-10. RAS v1.0 adopted by the BoD on 2024-11-12. Prepared for supporting publication.
	p2ed2r00	2024-12-05	TSE 26787 (rating 1): Relocated Tables 1a and 2a to follow Tables 1 and 2, respectively, to enable proper Qualification Workspace operation. In Table 1, updated the feature value for Items 1/7, 1/10, 1/14, 1/15, and 1/20. In Table 2, updated the introductory text; updated the status value for Items 2/4a, 2/4b, 2/9a, 2/9b, 2/11a, 2/11b, 2/17a, 2/17b, 2/21a, 2/21b, 2/22a, 2/22b, 2/27a, 2/27b, 2/30a, 2/30b, 2/31a, 2/31b, 2/33a, 2/33b, 2/34a, 2/34b, 2/35a, 2/35b, 2/36a, 2/36b, 2/38a, 2/38b, 2/39a, 2/39b, 2/43a, 2/43b, 2/47a, 2/47b, 2/49a, 2/49b, 2/51a, 2/51b, 2/52a, 2/52b, 2/56a, and 2/56b; updated the inter-layer prerequisite values for 2/38a, 2/38b, 2/44a, 2/44b, 2/49a, 2/49b, 2/54a, 2/54b, 2/55a, 2/55b, and 2/59b; deleted Items 2/55c and 2/55d; and added Items 2/63a and 2/63b. Swapped Items 1 and 2 in Table 2a. Updated the references list. Editorial updates to align the document with the latest ICS template.
	p2 edition 2	2025-01-08	Approved by BTI on 2025-01-08. Prepared for edition 2 publication.
	p3r00	2025-07-14	TSE 27956 (rating 4): Updated Table 2 to include HID ISO Service over BR/EDR and LE. Updated the references list.
3	p3	2025-08-12	Approved by BTI on 2025-07-14. HOGP v1.1 adopted by the BoD on 2025-08-11. Prepared for supporting publication.
	p4r00	2025-09-26	Incorporated IOPT-related CR supporting the CWS v1.0 adoption. Updated the references list.

Publication Number	Revision Number	Date	Comments
4	p4	2025-11-04	Approved by BTI on 2025-10-16. CWP v1.0, CWS v1.0, CSIS v1.1, and CSIP v1.1 adopted by the BoD on 2025-11-03. Prepared for supporting publication.
	p5r00	2025-11-10	Incorporated IOPT-related CR supporting the VAS v1.0 adoption. Added Items 2/66a, 2/66b, 2/67a, and 2/67b. Updated the references list.
5	p5	2025-12-16	Approved by BTI on 2025-11-24. VAS v1.0 adopted by the BoD on 2025-12-15. Prepared for supporting publication.
	p6r00–r01	2025-12-16 – 2025-01-08	TSE 28134 (rating 1): Added informational section to show the inter-layer dependencies between the X2Core layers. Updated the references list.
6	p6	2026-02-17	Approved by BTI on 2026-01-21. Prepared for TCRL pkg102 publication.
	p7r00	2026-04-17	TSE 28927 (rating 2): Added MESH Protocol, Section 2.3, to ICS declarations. New section includes auto-fill Table 3 for MESH Protocol. Table addition includes MESH over BR/EDR feature (3/1), with Inter-Layer Prerequisite reference to ICS Proforma for MESH Protocol (MESH 1a/1), Mandatory status. Table also includes MESH over LE feature (3/2), with Inter-Layer Prerequisite reference to ICS Proforma for MESH Protocol (MESH 1a/2), Mandatory status. Also added ICS Proforma for MESH Protocol to references.
7	p7	2026-06-23	Approved by BTI on 2026-05-27. Prepared for TCRL pkg104 publication.

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