Personal Area Networking (PAN)

Bluetooth® Implementation Conformance Statement (ICS) Proforma

- **Revision:** PAN.ICS.p15
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Contents

1 Identification of the implementation

1.1 Implementation Under Test (IUT) identification

Identification of the Implementation Under Test (IUT) is to be filled in to provide as much detail as possible regarding version numbers and configuration options.

An ICS contact person to respond to queries regarding information supplied in this ICS proforma is named in the Declaration of Compliance: Summary of Selected Specifications in Implementation.

1.2 Roles

Table 1: Role Requirements

Item	Role	Reference	Status
1	Network Access Point	[1] 2.4	C.1
2	Group Ad-hoc Network	[1] 2.4	C.1
3	PAN User	[1] 2.4	C.1

C.1:   Mandatory to support at least one.

1.3 Network Access Point Role

Network Access Point Application Features

Table 2: NAP Application Features

Prerequisite: PAN 1/1 "Network Access Point"

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Bluetooth Network Encapsulation Protocol	[1] 1, 2.3	M	[2] BNEP
2	Support BNEP Forwarding	[1] 5.4	M	N/A
3	Support Layer 2-Bridging between PAN and External Network	[1] 5.4	C.1	N/A
4	Support IP Forwarding between PAN and External Network	[1] 5.4	C.1	N/A
5	Support BNEP Packet Filtering	[1] 5.1, 5.2, 5.4	O	N/A
6	Support IPv4	[1] 6.1.1	C.2	N/A
6a	Supports operable routable IPv4 address	[1] 6.3.1	O	N/A
6b	Support link-local address configuration for IPv4	[1] 6.3.1	C.4	N/A
7	Support ping client for IPv4	[1] 6.1.1	O	N/A
8	Support DHCP Server for IPv4	[1] 6.2.1	O	N/A
9	Support DNS Resolver for IPv4	[1] 6.2.1	O	N/A
9a	Support LLMNR Sender for IPv4	[1] 6.4	C.5	N/A
9b	Support LLMNR Responder for IPv4	[1] 6.4	O	N/A
10	Support HTTP Client for IPv4	[1] N/A	O	N/A
11	Support WAP Client for IPv4	[1] N/A	O	N/A
12	Support IPv6	[1] 6.1.2	C.3	N/A
13	Support ping client for IPv6	[1] 6.1.2	O	N/A
14	Support DNS Resolver for IPv6	[1] 6.2.2	O	N/A
14a	Support LLMNR Sender for IPv6	[1] 6.4	C.6	N/A
14b	Support LLMNR Responder for IPv6	[1] 6.4	O	N/A
15	Support HTTP Client for IPv6	[1] N/A	O	N/A
16	Support WAP Client for IPv6	[1] N/A	O	N/A

Item	Capability	Reference	Status	Inter-Layer Dependency
17	Supports Connectable Mode	[1] 11.4	M	N/A
18	NAP Service Record	[1] 8.1.1	M	N/A
19	Support at least three PANUs	[1] 12.2	O	N/A
20	Support at least two PANUs	[1] 12.2	O	N/A

C.1: Mandatory to support at least one.

C.2: Mandatory IF PAN 2/7 "Support ping client for IPv4" OR PAN 2/8 "Support DHCP Server for IPv4" OR PAN 2/9 "Support DNS Resolver for IPv4" OR PAN 2/9a "Support LLMNR Sender for IPv4" OR PAN 2/9b "Support LLMNR Responder for IPv4" OR PAN 2/10 "Support HTTP Client for IPv4" OR PAN 2/11 "Support WAP Client for IPv4", otherwise Optional.

C.3: Mandatory IF PAN 2/13 "Support ping client for IPv6" OR PAN 2/14 "Support DNS Resolver for IPv6" OR PAN 2/14a "Support LLMNR Sender for IPv6" OR PAN 2/14b "Support LLMNR Responder for IPv6" OR PAN 2/15 "Support HTTP Client for IPv6" OR PAN 2/16 "Support WAP Client for IPv6", otherwise Optional.

C.4: Mandatory IF PAN 2/6 "Support IPv4" AND NOT PAN 2/6a "Supports operable routable IPv4 address", otherwise Optional.

C.5: Optional IF PAN 2/6 "Support IPv4", otherwise Excluded.

C.6: Optional IF PAN 2/12 "Support IPv6", otherwise Excluded.

1.4　　Group Ad-Hoc network Role

1.4.1　　Group Ad-Hoc Network Application Features

Table 3: GN Application Features

Prerequisite: PAN 1/2 "Group Ad-hoc Network"

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Bluetooth Network Encapsulation Protocol	[1] 1, 2.3	M	[2] BNEP
2	Support BNEP Forwarding	[1] 5.4	M	N/A
3	Support BNEP Packet Filtering	[1] 5.1, 5.2, 5.4	O	N/A
4	Support IPv4	[1] 6.1.1	C.1	N/A
5	Support ping client for IPv4	[1] 6.1.1	O	N/A
6	Item no longer used	N/A	N/A	N/A
7	Item no longer used	N/A	N/A	N/A
7a	Support LLMNR Sender for IPv4	[1] 6.4	C.3	N/A
7b	Support LLMNR Responder for IPv4	[1] 6.4	O	N/A
8	Support HTTP Client for IPv4	[1] N/A	O	N/A
9	Support WAP Client for IPv4	[1] N/A	O	N/A
10	Support IPv6	[1] 6.1.2	C.2	N/A
11	Support ping client for IPv6	[1] 6.1.2	O	N/A
12	Item no longer used	N/A	N/A	N/A
12a	Support LLMNR Sender for IPv6	[1] 6.4	C.4	N/A

Item	Capability	Reference	Status	Inter-Layer Dependency
12b	Support LLMNR Responder for IPv6	[1] 6.4	O	N/A
13	Support HTTP Client for IPv6	[1] N/A	O	N/A
14	Support WAP Client for IPv6	[1] N/A	O	N/A
15	Supports Connectable Mode	[1] 11.4	M	N/A
16	GN Service Record	[1] 8.1.1	M	N/A
17	Support at least three PANUs	[1] 12.2	O	N/A
18	Support at least two PANUs	[1] 12.2	O	N/A

C.1: Mandatory IF PAN 3/5 "Support ping client for IPv4" OR PAN 3/7a "Support LLMNR Sender for IPv4" OR PAN 3/7b "Support LLMNR Responder for IPv4" OR PAN 3/8 "Support HTTP Client for IPv4" OR PAN 3/9 "Support WAP Client for IPv4", otherwise Optional.

C.2: Mandatory IF PAN 3/11 "Support ping client for IPv6" OR PAN 3/12a "Support LLMNR Sender for IPv6" OR PAN 3/12b "Support LLMNR Responder for IPv6" OR PAN 3/13 "Support HTTP Client for IPv6" OR PAN 3/14 "Support WAP Client for IPv6", otherwise Optional.

C.3: Optional IF PAN 3/4 "Support IPv4", otherwise Excluded.

C.4: Optional IF PAN 3/10 "Support IPv6", otherwise Excluded.

1.5   PAN User Role

1.5.1   PAN User Application Features

Table 4: PANU Application Features

Prerequisite: PAN 1/3 "PAN User"

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Bluetooth Network Encapsulation Protocol	[1] 1, 2.3	M	[2] BNEP
2	Support IPv4	[1] 6.1.1	C.1	N/A
3	Support ping client for IPv4	[1] 6.1.1	O	N/A
4	Support DHCP Client for IPv4	[1] 6.2.1	O	N/A
5	Support DNS Requester for IPv4	[1] 6.2.1	O	N/A
5a	Support LLMNR Sender for IPv4	[1] 6.4	C.2	N/A
5b	Support LLMNR Responder for IPv4	[1] 6.4	O	N/A
6	Support HTTP Client for IPv4	[1] N/A	O	N/A
7	Support WAP Client for IPv4	[1] N/A	O	N/A
8	Support IPv6	[1] 6.1.2	C.1	N/A
9	Support ping client for IPv6	[1] 6.1.2	O	N/A
10	Support DNS Requester for IPv6	[1] 6.2.2	O	N/A
10a	Support LLMNR Sender for IPv6	[1] 6.4	C.3	N/A
10b	Support LLMNR Responder for IPv6	[1] 6.4	O	N/A
11	Support HTTP Client for IPv6	[1] N/A	O	N/A
12	Support WAP Client for IPv6	[1] N/A	O	N/A

Item	Capability	Reference	Status	Inter-Layer Dependency
13	Support connections to multi-user NAPs/GNs	[1] 10.3	O	N/A
14	Supports Connectable Mode	[1] 11.4	O	N/A
15	PANU Service Record	[1] 8.1.1	O	N/A

C.1: Mandatory to support at least one.

C.2: Optional IF PAN 4/2 "Support IPv4", otherwise Excluded.

C.3: Optional IF PAN 4/8 "Support IPv6", otherwise Excluded.

1.6 GAP requirements

Table 5: GAP Requirements

Item	Capability	Reference	Status	Inter-Layer Dependency
1	General discoverable mode	[1] 3.2	C.1	[3] GAP 1/3

C.1: Mandatory IF PAN 1/1 "Network Access Point" OR PAN ½ "Group Ad-hoc Network", otherwise Optional.

1.7 SDP requirements

Table 6: SDP Requirements

Item	Capability	Reference	Status	Inter-Layer Dependency
1	SDP record present for PAN	[1] 8.1	C.1	N/A
2	Server	[1] 8.1	C.2	[4] SDP 1b/1
3	ProtocolDescriptorList	[1] 8.1	C.2	[4] SDP 9/2
4	LanguageBaseAttributeIdList	[1] 8.1	C.2	[4] SDP 9/6
5	BluetoothProfileDescriptorList	[1] 8.1	C.2	[4] SDP 9/14
6	ServiceName	[1] 8.1	C.2	[4] SDP 9/9
7	ServiceDescription	[1] 8.1	C.2	[4] SDP 9/10

C.1: Mandatory IF PAN 1/1 "Network Access Point" OR PAN 1/2 "Group Ad-hoc Network", otherwise Optional.

C.2: Mandatory IF PAN 6/1 "SDP record present for PAN", otherwise not defined.

2   References

[1] Personal Area Networking (PAN) Profile Specification

[2] ICS Proforma for Bluetooth Network Encapsulation Protocol (BNEP)

[3] ICS Proforma for Generic Access Profile (GAP)

[4] ICS Proforma for Service Discovery Protocol (SDP)

3   Revision history and acknowledgments

Revision History

Publication Number	Revision Number	Date	Comments
	0.0	2000-04-04	Original Document Started
	0.9	2001-02-06	Separated ICS and Test Case from the PAN Profile document into two separate documents
	1.0	2002-07-23	Errata and feedback incorporated. Interoperability testing completed
	1.0c	2002-11-13	Transferred information contained in test case matrix, and added a separate section and ICS table for BNEP; updated references.
0	1.0	2003-02-14	ICS Adopted
	1.0.1r1	2005-02-11	Editorial and format changes. Change document numbering.
1	1.0.1	2005-02-18	Prepare for publication.
	1.0.2r0	2005-09-29	TSE 823: Tables 2&3 to optionally support > 1 PANU
2	1.0.2	2005-10-12	Prepare for publication.
	1.0.3r0-2	2006-11-16- 2007-01-08	TSE 1796: Table 2: Add 2 rows 6a and 6b, and footnote C4 for 6b. TSE 1894: Changes Tables 2, 3, and 4 to show LLMNR Sender and Responder support for IPv4 for IPv6 Changed adopted spec version from 1.1 to 1.0 Removed redundant reference section (MS)
3	1.0.3	2007-01-08	Prepare for publication.
	1.0.4r0	2008-02-01	TSE 2159: Table 3, 4, 5: Support for LLMNR Sender conditional
4	1.0.4	2008-04-01	Prepare for publication.
5	1.0.4a	2008-07-01	TSE 2632: Removed table number from first table introduced in v1.0.3
	1.0.5r0-1	2008-09-01 – 2008-12-01	TSE 2637; Table 2/9a, 14a: change footnotes, re-implement TSE 2632 with correct table numbering.
6	1.0.5	2008-12-01	Prepare for publication.
	1.0.6r0-1	2009-04-29 – 2009-06-04	TSE 2722: Clarification to TSE 2159 Tables 2, 3, 4 Correction to Table 4, C.2
7	1.0.6	2009-08-10	Prepare for publication.
	1.0.7r0	2011-11-10	TSE 4473: Table 1a; Add rows 3a, 3b TSE 4519: Table 2/8: modify, Table 3/6: remove
8	1.0.7	2012-03-30	Prepare for publication.
	1.0.8r01	2015-01-26	Update to current ICS template and conventions. TSE 6196: Add pre-requisites to tables.
	1.0.8r02	2015-06-01	Updated terminology from "PICS" to "ICS"
9	1.0.8	2015-07-14	Prepared for TCRL 2015-1 publication

Publication Number	Revision Number	Date	Comments
	1.0.9r00	2015-10-05	TSE 6489: Added new item 1a/3c (BNEP Compressed Packet Transmission Destination Only); updated conditionals for items 1/3 and 1/3a.
10	1.0.9	2015-12-22	Prepared for TCRL 2015-2 publication.
	1.0.10r00	2018-04-04	TSE 10573 (rating 1): Template Conversion.
11	1.0.10	2018-07-01	Approved by BTI. Prepared for TCRL 2018-1 publication.
	1.0.11r00	2018-10-03	TSE 10899 (rating 4): ICS: Revised Capability for Items 2/9, 2/14, 4/5, and 4/10. Deleted Items 3/7 and 3/12.
12	1.0.11	2018-11-21	Approved by BTI. Prepared for TCRL 2018-2 publication.
	1.0.12r00	2019-09-16	TSE 4382 (rating 2): Updated items in Tables 2, 3, and 4 to reflect that LLMNR is only an informational RFC. Updated template and copyright/legal info.
13	1.0.12	2020-01-07	Approved by BTI on 2019-11-17. Prepared for TCRL 2019-2 publication.
	p14r00–r01	2021-08-10 – 2021-12-06	TSE 17303 (rating 1): Split the BNEP ICS (Table 1a) from the PAN ICS into a separate document. Performed template-related editorials and formatting fixes. Performed consistency checker editorials. Updated copyright page to align with v2 of the DNMD.
14	p14	2022-01-25	Approved by BTI on 2021-12-19. Prepared for TCRL 2021-2 publication.
	p15r00	2023-10-19	TSE 23952 (rating 2): To address missing GAP and SDP ILDs, added the GAP and SDP ICSs to and removed the BNEP spec from the References section and updated the cross-refs throughout the doc. Removed "note" text at the beginning of the Network Access Point Role section. Updated conditional language throughout to current conventions. Added new Table 5 with new item 5/1, and new Table 6 with new items 6/1–6/7.
15	p15	2024-07-01	Approved by BTI on 2024-05-22. Prepared for TCRL 2024-1 publication.

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