

# Object Transfer Profile (OTP)

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

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# 1 Identification of the implementation

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## 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 Version Requirements

**Table 0: Versions**

Item	Version	Reference	Status
1	OTP 1.0	[1]	M

**Table 1: No longer used**

## 1.3 Profile Roles

**Table 2: Profile Roles**

Item	Version	Reference	Status
1	Object Server	[1] 2.1	C.1
2	Object Client	[1] 2.1	C.1

C.1: Mandatory to support at least one of OTP 2/1 “Object Server” OR OTP 2/2 “Object Client”.

## 1.4 Transport Requirements

**Table 3: Transport Requirements**

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

C.1: Mandatory to support at least one of OTP 3/1 “Profile supported over BR/EDR” OR OTP 3/2 “Profile supported over LE”.

## 1.5 Object Server Role

### 1.5.1 Services – Object Server Role

**Table 4: Service Requirements – Object Server Role**

*Prerequisite: OTP 2/1 “Object Server”*

Item	Service Requirements	Reference	Status
1	Object Transfer Service	[1] 3	M
2	Object Transfer Service UUID in AD Type field of Advertising Data	[1] 3.1.1	C.1

C.1: Optional IF OTP 3/2 “Profile supported over LE”, otherwise Excluded.

## 1.6 Object Client Role

### 1.6.1 Service Support - Object Client Role

**Table 5: Service Support - Object Client Role**

*Prerequisite: OTP 2/2 "Object Client"*

Item	Service	Reference	Status
1	Discover Object Transfer Service	[1] 4.2	M

### 1.6.2 Discover Characteristics - Object Client Role

**Table 6: Discover Object Transfer Characteristics – Object Client Role**

*Prerequisite: OTP 2/2 "Object Client"*

Item	Characteristic / Descriptor	Reference	Status
1	Discover OTS Feature characteristic(s)	[1] 4.3	M
2	Discover Object Name characteristic	[1] 4.3	M
3	Discover Object Type characteristic	[1] 4.3	M
4	Discover Object Size characteristic	[1] 4.3	C.1
5	Discover Object First-Created characteristic	[1] 4.3	O
6	Discover Object Last-Modified characteristic	[1] 4.3	C.2
7	Discover Object ID characteristic	[1] 4.3	C.3
8	Discover Object Properties characteristic	[1] 4.3	O
9	Discover Object Action Control Point (OACP) characteristic	[1] 4.3	M
10	Discover Object Action Control Point (OACP) - Client Configuration Characteristic Descriptor	[1] 4.3	M
11	Discover Object List Control Point (OLCP) characteristic	[1] 4.3	M
12	Discover Object List Control Point (OLCP) - Client Configuration Characteristic Descriptor	[1] 4.3	M
13	Discover Object List Filter characteristic	[1] 4.3	M
14	Discover Object Changed characteristic	[1] 4.3	O

C.1: Mandatory IF OTP 8/19 "Read Object – Read Object Contents" OR OTP 8/21 "Write Object – Write Object Contents", otherwise Optional.

C.2: Mandatory, IF OTP 8/21 "Write Object – Write Object Contents", otherwise Optional.

C.3: Mandatory, IF OTP 8/17 "Select Object – Select by Object ID", otherwise Optional.

### 1.6.3 Property Features - Object Client Role

**Table 7: Object Transfer Service Property Feature Requirements- Object Client Role**

*Prerequisite: OTP 2/2 "Object Client"*

Item	Property Feature	Reference	Status
1	Read OTS Feature characteristic	[1] 4.5.1	M
2	Read Object Name characteristic	[1] 4.5.4.1	M
3	Read Long Object Name characteristic	[1] 4.5.4.1	M

Item	Property Feature	Reference	Status
4	Write Object Name characteristic	[1] 4.5.5.1	C.1
5	Write Long Object Name characteristic	[1] 4.5.5.1	O
6	Read Object Type characteristic	[1] 4.5.4.1	M
7	Read Object Size characteristic	[1] 4.5.4.2	C.2
8	Read Object First-Created characteristic	[1] 4.5.4.1	O
9	Write Object First-Created characteristic	[1] 4.5.5.1, 4.5.7	O
10	Read Object Last-Modified characteristic	[1] 4.4.3	O
11	Write Object Last-Modified characteristic	[1] 4.5.5.1	O
12	Read Object ID characteristic	[1] 4.5.7	C.3
13	Read Object Properties characteristic	[1] 4.5.4.1	O
14	Write Object Properties characteristic	[1] 4.5.5.1	O
15	Write Object Action Control Point (OACP) characteristic	[1] 4.4.1	M
16	Object Action Control Point (OACP) - Client Configuration Characteristic Descriptor	[1] 4.4.1	M
17	Write Object List Control Point (OLCP) characteristic	[1] 4.4.2	M
18	Object List Control Point (OLCP) - Client Configuration Characteristic Descriptor	[1] 4.4.2	M
19	Read Object List Filter characteristic	[1] 4.5.2.1, 4.5.2.2	M
20	Write Object List Filter characteristic	[1] 4.5.2.1, 4.5.2.2	M
21	Write Long Object List Filter characteristic	[1] 4.5.2.2	O
22	Read Long Object List Filter characteristic	[1] 4.5.2.2	O
23	Object Changed characteristic	[1] 4.4.3	O
24	Object Changed characteristic - Client Configuration Characteristic Descriptor	[1] 4.4.3	O

C.1: Mandatory IF OTP 8/25 “Create Object”, otherwise Optional.

C.2: Mandatory IF OTP 8/19 “Read Object – Read Object Contents” OR OTP 8/21 “Write Object – Write Object Contents”, otherwise Optional.

C.3: Mandatory IF OTP 8/17 “Select Object – Select by Object ID”, otherwise Optional.

## 1.6.4 Procedures - Object Client Role

**Table 8: Object Transfer Service Procedure Requirements- Object Client Role**

*Prerequisite: OTP 2/2 “Object Client”*

Item	Procedure	Reference	Status
1	Feature Discovery	[1] 4.5.1	M
2	Object Discovery – Discover All Objects	[1] 4.5.2.1	C.1
3	Object Discovery – Search for Specific Object	[1] 4.5.2.3	C.1
4	Object Discovery – Discover by Filter	[1] 4.5.2.2	C.1
5	Object Discovery - Discover by Filter - Name Starts With	[1] 4.5.2.2	C.2
6	Object Discovery - Discover by Filter - Name Ends With	[1] 4.5.2.2	C.2

Item	Procedure	Reference	Status
7	Object Discovery - Discover by Filter - Name Contains	[1] 4.5.2.2	C.2
8	Object Discovery - Discover by Filter - Name is Exactly	[1] 4.5.2.2	C.2
9	Object Discovery - Discover by Filter - Object Type	[1] 4.5.2.2	C.2
10	Object Discovery - Discover by Filter - Created between	[1] 4.5.2.2	C.2
11	Object Discovery - Discover by Filter - Modified between	[1] 4.5.2.2	C.2
12	Object Discovery - Discover by Filter - Current Size between	[1] 4.5.2.2	C.2
13	Object Discovery - Discover by Filter - Allocated Size between	[1] 4.5.2.2	C.2
14	Object Discovery - Discover by Filter - Marked Objects	[1] 4.5.2.2	C.2
15	Object Discovery – Discover by Directory Listing Object	[1] 4.5.2.4	O
16	Select Object – Select by Object Discovery	[1] 4.5.3.1	C.3
17	Select Object – Select by Object ID	[1] 4.5.3.2	C.3
18	Read Object – Read Object Metadata	[1] 4.5.4.1	M
19	Read Object – Read Object Contents	[1] 4.5.4.2	C.4
20	Write Object – Write Object Metadata	[1] 4.5.5.1	C.5
21	Write Object – Write Object Contents	[1] 4.5.5.2	C.4
22	Resume Reading Object Contents	[1] 4.5.6.1	O
23	Resume Writing Object Contents – Current Size Method	[1] 4.5.6.2.1	O
24	Resume Writing Object Contents – Data Integrity Method	[1] 4.5.6.2.2	O
25	Create Object	[1] 4.5.7	O
26	Delete Object	[1] 4.5.8	O
27	Calculate Checksum	[1] 4.5.9	C.6
28	Execute Object	[1] 4.5.9	O
29	Abort Object Read	[1] 4.5.4.2	C.7
30	Open Object Transfer Channel	[1] 4.5.10	M
31	Truncate Object Contents	[1] 4.5.5.2	O

C.1: Mandatory to support at least one of OTP 8/2 “Object Discovery – Discover All Objects” OR OTP 8/3 “Object Discovery – Search for Specific Object” OR OTP 8/4 “Object Discovery – Discover by Filter”.

C.2: Optional IF OTP 8/4 “Object Discovery – Discover by Filter”, otherwise Excluded.

C.3: Mandatory to support at least one of OTP 8/16 “Select Object – Select by Object Discovery” OR OTP 8/17 “Select Object – Select by Object ID”.

C.4: Mandatory to support at least one of OTP 8/19 “Read Object – Read Object Contents” OR OTP 8/21 “Write Object – Write Object Contents”.

C.5: Mandatory IF OTP 8/25 “Create Object”, otherwise Optional.

C.6: Mandatory IF OTP 8/22 “Resume Reading Object Contents” OR OTP 8/24 “Resume Writing Object Contents – Data Integrity Method”, otherwise Optional.

C.7: Optional IF OTP 8/19 “Read Object – Read Object Contents”, otherwise Excluded.



## 1.6.5 GATT Requirements - Object Client Role

**Table 9: GATT Requirements - Object Client Role**

*Prerequisite: OTP 2/2 "Object Client"*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	Generic Attribute Profile (GATT) Client	[1] 2.1	M	[2] GATT 1/1
2	Attribute Protocol Supported over BR/EDR (L2CAP fixed channel support)	[1] 4.2	C.1	[2] GATT 2/1
3	Attribute Protocol Supported over LE	[1] 4.2	C.2	[2] GATT 2/2
4	Discover All Primary Services	[1] 4.2	C.3	[2] GATT 3/2
5	Discover Primary Services by Service UUID	[1] 4.2	C.3	[2] GATT 3/3
6	Find Included Services	[1] 4.2	C.3	[2] GATT 3/4
7	Discover GATT Services using Service Discovery Profile	[1] 4.2	C.1	[2] GATT 6/2
8	Discover All Characteristics of a Service	[1] 4.3	C.4	[2] GATT 3/5
9	Discover Characteristics by UUID	[1] 4.3	C.4	[2] GATT 3/6
10	Discover All Characteristic Descriptors	[1] 4.3	M	[2] GATT 3/7
11	Read Characteristic Value	[1] 4.1	M	[2] GATT 3/8
12	Write Characteristic Value	[1] 4.1	M	[2] GATT 3/14
13	Read Characteristic Descriptors	[1] 4.1, 4.4.1, 4.4.2, 4.4.3	M	[2] GATT 3/19
14	Write Characteristic Descriptors	[1] 4.1, 4.4.1, 4.4.2, 4.4.3	M	[2] GATT 3/21
15	Indications	[1] 4.4.1, 4.4.2, 4.4.3	M	[2] GATT 3/18
16	Read Long Characteristic Values	[1] 4.1	C.5	[2] GATT 3/10
17	Write Long Characteristic Values	[1] 4.1	C.6	[2] GATT 3/15
18	Service Changed Characteristic	[1] 4.6	M	[2] GATT 3/23

C.1: Mandatory IF OTP 3/1 "Profile supported over BR/EDR", otherwise not defined.

C.2: Mandatory IF OTP 3/2 "Profile supported over LE", otherwise not defined.

C.3: Mandatory to support at least one of OTP 9/4 "Discover All Primary Services" OR OTP 9/5 "Discover Primary Services by Service UUID" OR OTP 9/6 "Find Included Services".

C.4: Mandatory to support at least one of OTP 9/8 "Discover All Characteristics of a Service" OR OTP 9/9 "Discover Characteristics by UUID".

C.5: Mandatory IF OTP 7/3 "Read Long Object Name characteristic" OR OTP 7/22 "Read Long Object List Filter characteristic", otherwise Optional.

C.6: Mandatory IF OTP 7/5 "Write Long Object Name characteristic" OR OTP 7/21 "Write Long Object List Filter characteristic", otherwise Optional.

## 1.6.6 L2CAP Requirements - Object Client Role

**Table 10: L2CAP Requirements - Object Client Role**

*Prerequisite: OTP 2/2 "Object Client"*

Item	Capability	Reference	Status	Inter-Layer Dependency
1	LE Credit Based Flow Control Mode	[1] 2.1	C.1	[6] L2CAP 2/46

C.1: Mandatory IF OTP 3/2 "Profile supported over LE", otherwise Optional.

## 2 References

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- [1] Object Transfer Profile Specification, Version 1.0
- [2] ICS Proforma for Generic Attribute Profile (GATT.ICS)
- [3] ICS Proforma for Generic Access Profile (GAP.ICS)
- [4] Bluetooth Core Specification, Version 4.0 or later
- [5] Object Transfer Service Specification, Version 1.0
- [6] ICS Proforma for Logical Link Control and Adaptation Protocol (L2CAP.ICS)

### 3 Revision history and acknowledgments

#### Revision History

Publication Number	Revision Number	Date	Comments
0	1.0.0	2015-11-17	Specification adopted by BoD; prepared for publication.
	1.0.0 edition 2r00	2018-11-26	Editorial changes only. Template updated. Revision History and contributors moved to the end of the document.
	1.0.0 edition 2	2020-01-07	Updated copyright page and confidentiality markings to support new Documentation Marking Requirements, performed minor formatting updates, and accepted all tracked changes to prepare for edition 2 publication.
	p1r00–r02	2022-03-23 – 2022-05-02	TSE 18596 (rating 2): Removed the Core spec table and updated 3/2 and C.2 of Table 3 to remove reference to the Core spec. Corrected C.2 of Table 7. TSE 18722 (rating 1): Editorials to align the document with the latest ICS template in anticipation of a future .Z release. Editorials, including assigning publication number 0 to previous v1.0.0 and aligning the copyright page with v2 of the DNMD.
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