ZigBee Cluster Library
On/Off Cluster (0x0006)
Test Specification
Version 1.0

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April 18th, 2016	
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Accepted by	This document has been accepted for release by the ZigBee Alliance Board of Directors
Abstract	This document describes the certification tests for devices which implement the ZCL On/Off cluster.
Keywords	ZCL, On/Off, cluster

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Revision history

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00	April, 2015	Created from ZHA and ZLL test specifications.	Phil Jamieson
01	August 12th, 2015	Resolved comments received since the Hull test event in June 2015.	Phil Jamieson
02	September 29th, 2105	Added a startup test case and the new mandatory global attribute.	Phil Jamieson
03	October 30th, 2015	Addressed comments from the v0.9 ballot.	Phil Jamieson
04	March 1st, 2016	Addressed comments from the ZigBee 3.0 SVEs.	Phil Jamieson
05	April 18th, 2016	Changed status to “approved” and version to 1.0.	Phil Jamieson

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1 Introduction

This document contains the PICS, test specification and PICS/test case cross reference for the ZCL *on/off* cluster.

1.1 Conformance levels

The key words "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED" and "MAY" in this document are to be interpreted as described in [R5].

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2 References

2.1 ZigBee Alliance documents

[R1] ZigBee Cluster Library Specification, ZigBee Alliance document 07-5123.
[R2] ZCL General Test Specification, ZigBee Alliance document 15-0xxx.
[R3] ZCL On/Off Cluster XML PICS, ZigBee Alliance document 15-0xxx.
[R4] ZigBee Lighting & Occupancy Device Specification, ZigBee Alliance document 15-0014.

2.2 IETF documents

[R5] S. Bradner, Key words for use in RFCs to Indicate Requirement Levels, IETF RFC 2119, March 1997.

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99 # 3 PICS

100 All references are for the ZigBee Cluster Library specification [R1] unless otherwise indicated.
101 An XML version of these PICS is also available in [R3].

102 ## 3.1 Usage

Item number	Feature	Reference	Status	Support
OO.S	Does the device implement the *on/off* cluster as a server?	3.8.2	O	Yes
OO.C	Does the device implement the *on/off* cluster as a client?	3.8.3	O	No

103

104 ## 3.2 Server

105 ### 3.2.1 Attributes

Item number	Feature	Reference	Status	Support
OO.S.A0000	Does the device implement the *OnOff* attribute?	Table 3.42, 3.8.2.2.1	OO.S: M	Yes
OO.S.A0000.Scene	Does the device implement receiving and responding to the scene cluster commands for the *OnOff* attribute?	3.8.2.6	(OO.S.A0000 & S.S): M	Yes
OO.S.A0000.Report.Tx	Does the device implement receiving and responding to the global report attribute commands for the *OnOff* attribute and sending reports?	3.8.2.7	OO.S.A0000: M	Yes
OO.S.A4000	Does the device implement the *GlobalSceneControl* attribute?	Table 3.42, 3.8.2.2.2	OO.S: O	Yes
OO.S.A4001	Does the device implement the *OnTime* attribute?	Table 3.42, 3.8.2.2.3	OO.S: O	Yes
OO.S.A4002	Does the device implement the *OffWaitTime* attribute?	Table 3.42, 3.8.2.2.4	OO.S: O	Yes
OO.S.A4003	Does the device implement the *StartUpOnOff* attribute?	[R4] Table 70, 27.3.1.1.1	OO.S: O	Yes
OO.S.Afffd	Does the device implement the *ClusterRevision* global attribute?	Table 2-1, 2.3.5.1.1	OO.S: M	Yes

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3.2.2 Commands received

Item number	Feature	Reference	Status	Support
OO.S.C00.Rsp	Does the device implement receiving the *Off* command?	Table 3.43, 3.8.2.3.1	OO.S: M	Yes
OO.S.C01.Rsp	Does the device implement receiving the *On* command?	Table 3.43, 3.8.2.3.2	OO.S: M	Yes
OO.S.C02.Rsp	Does the device implement receiving the *Toggle* command?	Table 3.43, 3.8.2.3.3	OO.S: M	Yes
OO.S.C40.Rsp	Does the device implement receiving the *Off with effect* command?	Table 3.43, 3.8.2.3.4	OO.S: O	Yes
OO.S.C41.Rsp	Does the device implement receiving the *On with recall global scene* command?	Table 3.43, 3.8.2.3.5	OO.S: O	Yes
OO.S.C42.Rsp	Does the device implement receiving the *On with timed off* command?	Table 3.43, 3.8.2.3.6	OO.S: O	Yes

3.3 Client

3.3.1 Attributes

Item number	Feature	Reference	Status	Support
OO.C.A0000.Report.Rsp	Does the device implement sending global report attribute command requests and receiving reports for the *OnOff* attribute?	3.8.2.7	OO.C: O	N/A
OO.C.Afffd	Does the device implement the *ClusterRevision* global attribute?	Table 2-1, 2.3.5.1.1	OO.C: M	N/A

3.3.2 Commands generated

Item number	Feature	Reference	Status	Support
OO.C.C00.Tx	Does the device implement sending the *Off* command?	Table 3.43, 3.8.2.3.1	OO.C: O	N/A
OO.C.C01.Tx	Does the device implement sending the *On* command?	Table 3.43, 3.8.2.3.2	OO.C: O	N/A
OO.C.C02.Tx	Does the device implement sending the *Toggle* command?	Table 3.43, 3.8.2.3.3	OO.C: O	N/A
OO.C.C40.Tx	Does the device implement sending the *Off with effect* command?	Table 3.43, 3.8.2.3.4	OO.C: O	N/A

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Item number	Feature	Reference	Status	Support
OO.C.C41.Tx	Does the device implement sending the *On with recall global scene* command?	Table 3.43, 3.8.2.3.5	OO.C: O	N/A
OO.C.C42.Tx	Does the device implement sending the *On with timed off* command?	Table 3.43, 3.8.2.3.6	OO.C: O	N/A

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4 Test specification

4.1 Introduction

4.1.1 Test case overview

The following test cases are available for the *on/off* cluster:

Test ID	Description	Reference
Global tests		
OO-TC-01G	Global attributes	4.2.1
Server side tests		
OO-TC-01S	Attributes with server as DUT	4.3.1
OO-TC-02S	Primary functionality with server as DUT	4.3.2
OO-TC-03S	Secondary functionality with server as DUT	4.3.3
OO-TC-04S	Scenes functionality with server as DUT	4.3.4
OO-TC-05S	Reporting functionality with server as DUT	4.3.5
OO-TC-06S	Startup functionality with server as DUT	4.3.6
Client side tests		
OO-TC-01C	Functionality with client as DUT	4.4.1

4.1.2 Testing tolerances

In test cases where a change in an attribute value is tested over time, it is permitted for the devices involved in the test to be within a tolerance of ±15% of the expected value. As such, these test cases indicate that the attribute value must be approximately equal to an expected value, to which the ±15% tolerance should then be applied. All other attribute values presented are expected to be exact.

4.1.3 Client DUTs

For client test cases only test steps that pertain to commands that are supported on the DUT are required to be executed. All commands in this cluster for which support is indicated in the PICS shall be exercised, using valid, application achievable values.

Note that for the client attribute test case, it is permissible for the client not to be able to execute any of the test steps.

The client SHALL ensure that an application link, e.g. a binding link, exists between itself and the test harness. This should be configured before starting the test.

4.1.4 Test steps manipulating attributes

In test case steps that require more than one attribute to be manipulated (e.g. read), the tester may decide whether it is appropriate or practical to send a single attribute manipulation

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136 command, containing multiple attributes, or multiple attribute manipulation commands, each
137 containing a single attribute. The test case is designed to verify the behavior of the device
138 supporting the attribute rather that verifying the attribute manipulation command in question.
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4.2 Generic test cases

4.2.1 OO-TC-01G: Global attributes

This test case verifies the behavior of the global attributes of the *on/off* cluster client and server.

In this test, the PICS notation OO.S.A*gm* and OO.C.A*gm* represents the list of global attributes that are specified as being mandatory for either the server or client, respectively. Similarly, the PICS notation OO.S.A*go* and OO.C.A*go* represents the list of global attributes that are specified as being optional for either the server or client, respectively.

4.2.1.1 Scope

General:

- *Read attributes* command (0x00)
- *Read attributes response* command (0x01)
- *Write attributes* command (0x02)
- *Write attributes response* command (0x04)

Basic cluster (0x0000):

- All global attributes

PICS:

- OO.S, OO.C
- OO.S.A*gm*, OO.C.A*gm*, OO.S.A*go*, OO.C.A*go*

4.2.1.2 Required devices

Designation	Symbol	Description
DUT		Device under test implementing: • The *on/off* cluster server or client.
TH		Test harness implementing: • The *on/off* cluster client or server, i.e. the opposite cluster instantiation as implemented on the DUT.

4.2.1.3 Initial conditions

Item	Initial Conditions
1	A packet sniffer shall be observing the communication over the air interface.
2	All devices are factory new and powered off until used.

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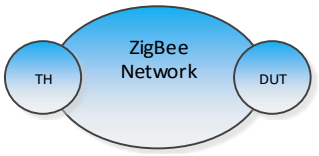
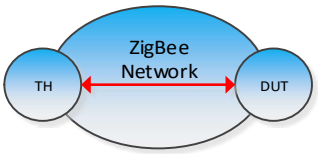
164 #### 4.2.1.4 Test preparation

Link TH CLIENT with DUT SERVER	
	
Before	*After*

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OO-TC-01G: Global attributes		
Item	**Preparation Step**	**Observation**
P1	Form a ZigBee network.	Observe appropriate command frame to form the network.
P2	Power on TH and DUT.	TH and DUT are powered on.
P3	Join TH and DUT to a ZigBee network.	Observe appropriate communication between TH, DUT and any other relevant node on the ZigBee network.

--- End of test case OO-TC-01G preparation ---

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167 #### 4.2.1.5 Test procedure

OO-TC-01G: Global attributes			
Item	**PICS**	**Test Harness Step**	**DUT pass Verification**
1	OO.S.A*gm*, OO.C.A*gm*	TH unicasts a ZCL *read attributes* command frame to DUT to read each mandatory global attribute of this cluster one at a time.	DUT unicasts a ZCL *read attributes response* command frame to TH containing each requested attribute. The data type in each command must match the value listed in the specification(s). The data value in each command for the attribute must fall within the valid range described in the specification(s).
2a	OO.S.A*gm*, OO.C.A*gm*	TH unicasts a ZCL *write attributes* command frame to DUT to write the respective default value to each mandatory global attribute of this cluster one at a time.	DUT unicasts a ZCL *write attributes response* command frame to TH for each attribute. If the access control of DUT is set to READ, the DUT response will indicate that the attribute write command was not a SUCCESS. If the access control of DUT is set to READ/WRITE, the DUT response will indicate that the write command was a SUCCESS.
2b	OO.S.A*gm*, OO.C.A*gm*	TH unicasts a ZCL *read attributes* command frame to DUT to read back each attribute written in step 2a.	DUT unicasts a ZCL *read attributes response* command frame to TH containing the requested attribute. If the *Status* field of the *write attributes response* command frame was equal to SUCCESS, the updated value is read back. If the *Status* field of the *write attributes response* command frame was not equal to SUCCESS the value is not updated when read back.

Continued…

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OO-TC-01G: Global attributes			
Item	**PICS**	**Test Harness Step**	**DUT pass Verification**
3	OO.S.A*go*, OO.C.A*go*	TH unicasts a ZCL *read attributes* command frame to DUT to read each optional global attribute of this cluster one at a time.	DUT unicasts a ZCL *read attributes response* command frame to TH containing each attribute. If the DUT implements the attribute, the *Status* field will be equal to SUCCESS and the command will contain the requested attribute. If the DUT does not implement the attribute, the *Status* field will not be equal to SUCCESS. The data type in each command must match the value listed in the specification(s). The data value in each command for the attribute must fall within the valid range described in the specification(s).
4a	OO.S.A*go*, OO.C.A*go*	TH unicasts a ZCL *write attributes* command frame to DUT to write the respective default value to each optional global attribute of this cluster one at a time.	DUT unicasts a ZCL *write attributes response* command frame to TH for each attribute. If the attribute is not implemented or the access control of DUT is set to READ, the DUT response will indicate that the attribute write command was not a SUCCESS. If the attribute is implemented and the access control of DUT is set to READ/WRITE, the DUT response will indicate that the write command was a SUCCESS.
4b	OO.S.A*go*, OO.C.A*go*	TH unicasts a ZCL *read attributes* command frame to DUT to read back each attribute written in step 4a.	DUT unicasts a ZCL *read attributes response* command frame to TH containing the requested attribute. If the *Status* field of the *write attributes response* command frame was equal to SUCCESS, the updated value is read back. If the *Status* field of the *write attributes response* command frame was not equal to SUCCESS the value is not updated when read back.

--- End of test case OO-TC-01G ---

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4.3 Server test cases

4.3.1 OO-TC-01S: Attributes with server as DUT

This test case verifies the behavior of the non-global attributes of the *on/off* cluster server.

In this test, the PICS notation OO.S.A*m* represents the list of non-global attributes that are specified as being mandatory. Similarly, the PICS notation OO.S.A*o* represents the list of non-global attributes that are specified as being optional.

4.3.1.1 Scope

General:

- *Read attributes* command (0x00)
- *Read attributes response* command (0x01)
- *Write attributes* command (0x02)
- *Write attributes response* command (0x04)

On/off cluster (0x0006):

- All non-global attributes

PICS:

- OO.S,
- OO.S.A*m*, OO.S.A*o*

4.3.1.2 Required devices

Designation	Symbol	Description
TH CLIENT		Test harness client implementing: • The *on/off* cluster client.
DUT SERVER		Device under test server: • The *on/off* cluster server.

4.3.1.3 Initial conditions

Item	Initial Conditions
1	A packet sniffer shall be observing the communication over the air interface.
2	All devices are factory new and powered off until used.

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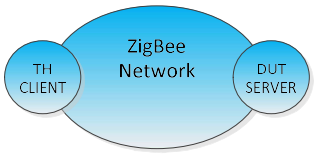
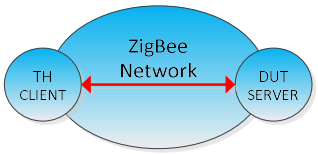
191 #### 4.3.1.4 Test preparation

Link TH CLIENT with DUT SERVER	
	
Before	*After*

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OO-TC-01S: Attributes with server as DUT		
Item	**Preparation Step**	**Observation**
P1	Form a ZigBee network.	Observe appropriate command frame to form the network.
P2	Power on TH CLIENT and DUT SERVER.	TH CLIENT and DUT SERVER are powered on.
P3	Join TH CLIENT and DUT SERVER to a ZigBee network.	Observe appropriate communication between TH CLIENT, DUT SERVER and any other relevant node on the ZigBee network.

--- End of test case OO-TC-01C preparation ---

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194 #### 4.3.1.5 Test procedure

OO-TC-01S: Attributes with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT pass Verification**
1	OO.S.A*m*	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read each mandatory attribute of this cluster one at a time.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT containing each requested attribute. The data type in each command must match the value listed in the specification(s). The data value in each command for the attribute must fall within the valid range described in the specification(s).
2a	OO.S.A*m*	TH CLIENT unicasts a ZCL *write attributes* command frame to DUT SERVER to write the respective default value to each mandatory attribute of this cluster one at a time.	DUT SERVER unicasts a ZCL *write attributes response* command frame to TH CLIENT for each attribute. If the access control of DUT SERVER is set to READ, the DUT SERVER response will indicate that the attribute write command was not a SUCCESS. If the access control of DUT SERVER is set to READ/WRITE, the DUT SERVER response will indicate that the write command was a SUCCESS.
2b	OO.S.A*m*	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read back each attribute written in step 2a.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT containing the requested attribute. If the *Status* field of the *write attributes response* command frame was equal to SUCCESS, the updated value is read back. If the *Status* field of the *write attributes response* command frame was not equal to SUCCESS the value is not updated when read back.

Continued…

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OO-TC-01S: Attributes with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT pass Verification**
3	OO.S.A*o*	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read each optional attribute of this cluster one at a time.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT containing each attribute. If the DUT SERVER implements the attribute, the *Status* field will be equal to SUCCESS and the command will contain the requested attribute. If the DUT SERVER does not implement the attribute, the *Status* field will not be equal to SUCCESS. The data type in each command must match the value listed in the specification(s). The data value in each command for the attribute must fall within the valid range described in the specification(s).
4a	OO.S.A*o*	TH CLIENT unicasts a ZCL *write attributes* command frame to DUT SERVER to write the respective default value to each optional attribute of this cluster one at a time.	DUT SERVER unicasts a ZCL *write attributes response* command frame to TH CLIENT for each attribute. If the attribute is not implemented or the access control of DUT SERVER is set to READ, the DUT SERVER response will indicate that the attribute write command was not a SUCCESS. If the attribute is implemented and the access control of DUT SERVER is set to READ/WRITE, the DUT response will indicate that the write command was a SUCCESS.

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OO-TC-01S: Attributes with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT pass Verification**
4b	OO.S.A*o*	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read back each attribute written in step 4a.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT containing the requested attribute. If the *Status* field of the *write attributes response* command frame was equal to SUCCESS, the updated value is read back. If the *Status* field of the *write attributes response* command frame was not equal to SUCCESS the value is not updated when read back.

--- End of test case OO-TC-01S ---

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197 ### 4.3.2 OO-TC-02S: Primary functionality with server as DUT

198 This test case verifies the primary functionality of the *on/off* cluster server.

199 #### 4.3.2.1 Scope

200 General:

201 - *Read attributes* command (0x00)
202 - *Read attributes response* command (0x01)
203 - *Default response* command (0x0b)

204 *On/off* cluster (0x0006):

205 - *OnOff* attribute (0x0000)
206 - *Off* command (0x00)
207 - *On* command (0x01)
208 - *Toggle* command (0x02)

209 PICS:

210 - OO.S
211 - OO.S.A0000
212 - OO.S.C00.Rsp – OO.S.C02.Rsp

213 #### 4.3.2.2 Required devices

Designation	Symbol	Description
TH CLIENT		Test harness client implementing: • The *on/off* cluster client.
DUT SERVER		Device under test server implementing: • The *on/off* cluster server.

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215 #### 4.3.2.3 Initial conditions

Item	Initial Conditions
1	A packet sniffer shall be observing the communication over the air interface.
2	All devices are factory new and powered off until used.

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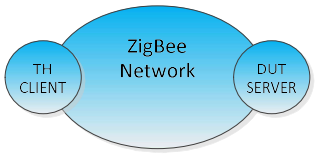
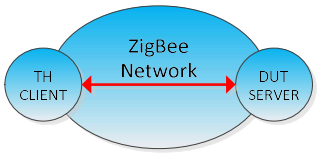
220 #### 4.3.2.4 Test preparation

Link TH CLIENT with DUT SERVER	
 *Before*	 *After*

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OO-TC-02S: Primary functionality with server as DUT		
Item	**Preparation Step**	**Observation**
P1	Form a ZigBee network.	Observe appropriate command frame to form the network.
P2	Power on TH CLIENT and DUT SERVER.	TH CLIENT and DUT SERVER are powered on.
P3	Join TH CLIENT and DUT SERVER to a ZigBee network.	Observe appropriate communication between TH CLIENT, DUT SERVER and any other relevant node on the ZigBee network.

--- End of test case OO-TC-02S preparation ---

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224 #### 4.3.2.5 Test procedure

OO-TC-02S: Primary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
0	CC.S.C00.Rsp	TH CLIENT unicasts a ZCL *off* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns off.
1	CC.S.A0000	After 2s, TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* attribute.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00.
2a	CC.S.C01.Rsp	TH CLIENT unicasts a ZCL *on* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on.
2b	CC.S.A0000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* attribute.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01.
3a	CC.S.C00.Rsp	TH CLIENT unicasts a ZCL *off* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns off.
3b	CC.S.A0000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* attribute.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00.
4a	CC.S.C02.Rsp	TH CLIENT unicasts a ZCL *toggle* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on.

Continued…

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OO-TC-02S: Primary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
4b	CC.S.A0000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* attribute.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01.
4c	CC.S.C02.Rsp	TH CLIENT unicasts a ZCL *toggle* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns off.
4d	CC.S.A0000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* attribute.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00.

--- End of test case OO-TC-02S ---

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4.3.3 OO-TC-03S: Secondary functionality with server as DUT

This test case verifies the secondary functionality of the *on/off* cluster server.

Note that if this test case is executed after a test that uses the *Groups* cluster, *remove all groups* command then the DUT MAY need to be reset in order to restore the global scene.

4.3.3.1 Scope

General:

- *Read attributes* command (0x00)
- *Read attributes response* command (0x01)
- *Default response* command (0x0b)

On/off cluster (0x0006):

- *OnOff* attribute (0x0000)
- *GlobalSceneControl* attribute (0x4000)
- *OnTime* attribute (0x4001)
- *OffWaitTime* attribute (0x4002)
- *Off* command (0x00)
- *On* command (0x01)
- *Off with effect* command (0x40)
- *On with recall global scene* command (0x41)
- *On with timed off* command (0x42)

Level control cluster (0x0008), if supported on the same endpoint:

- *Move to level (with on/off)* command (0x04)

PICS:

- OO.S
- OO.S.A0000, OO.S.A4000 – OO.S.A4002
- OO.S.C00.Rsp, OO.S.C01.Rsp, OO.S.C40.Rsp – OO.S.C42.Rsp

4.3.3.2 Required devices

Designation	Symbol	Description
TH CLIENT		Test harness client implementing: • The *on/off* cluster client.
DUT SERVER		Device under test server implementing: • The *on/off* cluster server.

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254 #### 4.3.3.3 Initial conditions

Item	Initial Conditions
1	A packet sniffer shall be observing the communication over the air interface.
2	All devices are factory new and powered off until used.

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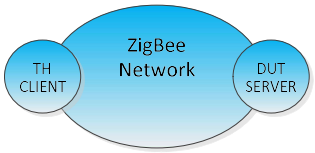
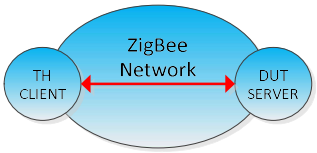
257 #### 4.3.3.4 Test preparation

Link DUT CLIENT with TH SERVER	
	
Before	*After*

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OO-TC-03S: Secondary functionality with server as DUT		
Item	**Preparation Step**	**Observation**
P1	Form a ZigBee network.	Observe appropriate command frame to form the network.
P2	Power on TH CLIENT and DUT SERVER.	TH CLIENT and DUT SERVER are powered on.
P3	Join TH CLIENT and DUT SERVER to a ZigBee network.	Observe appropriate communication between TH CLIENT, DUT SERVER and any other relevant node on the ZigBee network.

--- End of test case OO-TC-03S preparation ---

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261 #### 4.3.3.5 Test procedure

OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
1a	OO.S.C01.Rsp	TH CLIENT unicasts a ZCL *on* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on.
1b	OO.S.A0000, OO.S.A4000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* and *GlobalSceneControl* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01. *GlobalSceneControl* attribute has the value TRUE.
2a	OO.S.C40.Rsp	TH CLIENT unicasts a ZCL *off with effect* command frame to DUT SERVER with the *effect identifier* and *effect variant* fields both set to 0x00 (delayed all off).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns off.
2b	OO.S.A0000, OO.S.A4000	After 5s, TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* and *GlobalSceneControl* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *GlobalSceneControl* attribute has the value FALSE.
3a	OO.S.C41.Rsp	TH CLIENT unicasts a ZCL *on with recall global scene* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on.
3b	OO.S.A0000, OO.S.A4000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* and *GlobalSceneControl* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01. *GlobalSceneControl* attribute has the value TRUE.

Continued…

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OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
4a	OO.S.C40.Rsp	TH CLIENT unicasts a ZCL *off with effect* command frame to DUT SERVER with the *effect identifier* and *effect variant* fields both set to 0x00 (delayed all off).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns off.
4b	OO.S.A0000, OO.S.A4000	After 2s, TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* and *GlobalSceneControl* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *GlobalSceneControl* attribute has the value FALSE.
4c	OO.S.C01.Rsp	TH CLIENT unicasts a ZCL *on* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on.
4d	OO.S.A0000, OO.S.A4000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* and *GlobalSceneControl* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01. *GlobalSceneControl* attribute has the value TRUE.
5a	OO.S.C40.Rsp	TH CLIENT unicasts a ZCL *off with effect* command frame to DUT SERVER, with the *effect identifier* and *effect variant* fields set to 0x01 (dying light) and 0x00, respectively.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns off.
5b	OO.S.A0000, OO.S.A4000	After 2s, TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* and *GlobalSceneControl* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *GlobalSceneControl* attribute has the value FALSE.

Continued…

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OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
6a	OO.S.C01.Rsp	TH CLIENT unicasts a ZCL *on* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on.
6b	OO.S.A0000, OO.S.A4000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* and *GlobalSceneControl* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01. *GlobalSceneControl* attribute has the value TRUE.
6c	OO.S.C41.Rsp	TH CLIENT unicasts a ZCL *on with recall global scene* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER remains on.
6d	OO.S.A0000, OO.S.A4000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* and *GlobalSceneControl* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01. *GlobalSceneControl* attribute has the value TRUE.
7	OO.S.A4001, OO.S.A4002	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has the value 0x0000.
8a	OO.S.C42.Rsp	TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 1, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER remains on. [DUT SERVER moves into the *timed on* state.]

Continued…

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OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
8b	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01. *OnTime* attribute has a value approximately equal to 0x012c. *OffWaitTime* attribute has the value 0x012c.
9a	OO.S.C42.Rsp	TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 1, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER remains on. [DUT SERVER remains in the *timed on* state.]
9b	OO.S.C42.Rsp	After 10s, TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 1, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER remains on. [DUT SERVER remains in the *timed on* state.]
9c	OO.S.C42.Rsp	After 10s, TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 1, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER remains on. [DUT SERVER remains in the *timed on* state.]

Continued…

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OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
9d	OO.S.C42.Rsp	After 10s, TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 1, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER remains on. [DUT SERVER remains in the *timed on* state.]
9e	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01. *OnTime* attribute has a value approximately equal to 0x012c. *OffWaitTime* attribute has the value 0x012c.
10a	OO.S.C40.Rsp	After 10s, TH CLIENT unicasts a ZCL *off with effect* command frame to DUT SERVER, with the *effect identifier* and *effect variant* fields both set to 0x00 (delayed all off).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns off. [DUT SERVER moves into the *delayed off* state.]
10b	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has a value approximately equal to 0x012c.

Continued…

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OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
11a	OO.S.C42.Rsp	After 10s, TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 1, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame[1] to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER remains off. [DUT SERVER remains in the *delayed off* state.]
11b	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has a value approximately equal to 0x00c8.
12a	OO.S.C01.Rsp	After 10s, TH CLIENT unicasts a ZCL *on* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on. [DUT SERVER moves into the *on* state.]
12b	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has the value 0x0000.

Continued…

[1] A ZCL *default response* command frame is sent if requested, regardless of the value of the *accept only when on* sub-field of the *on/off control* field.

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OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
13a	OO.S.C42.Rsp	After 10s, TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 1, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER remains on. [DUT SERVER moves into the *timed on* state.]
13b	OO.S.C00.Rsp	After 10s, TH CLIENT unicasts a ZCL *off* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns off. [DUT SERVER moves into the *delayed off* state.]
13c	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has a value approximately equal to 0x012c.
14	OO.S.A0000, OO.S.A4001, OO.S.A4002	After 30s, TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	[DUT SERVER has moved into the *off* state.] DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has the value 0x0000.

Continued…

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OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
15a	OO.S.C42.Rsp	TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 1, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER remains off. [DUT SERVER remains in the *off* state.]
15b	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has the value 0x0000.
16a	OO.S.C01.Rsp	TH CLIENT unicasts a ZCL *on* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on. [DUT SERVER moves into the *on* state.]
16b	OO.S.C42.Rsp	After 10s, TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 1, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER remains on. [DUT SERVER moves into the *timed on* state.]

Continued…

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OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
16c	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01. *OnTime* attribute has a value approximately equal to 0x012c. *OffWaitTime* attribute has the value 0x012c.
16d	OO.S.A0000, OO.S.A4001, OO.S.A4002	After 40s, TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER has turned off. [Note: DUT SERVER has moved into the *off* state.] DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has the value 0x0000.
17a	OO.S.C42.Rsp	TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 0, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on. [DUT SERVER moves into the *timed on* state.]
17b	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01. *OnTime* attribute has a value approximately equal to 0x012c. *OffWaitTime* attribute has the value 0x012c.

Continued…

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OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
18a	OO.S.C42.Rsp	TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 0, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER remains on. [DUT SERVER remains in the *timed on* state.]
18b	OO.S.C42.Rsp	After 10s, TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 0, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER remains on. [DUT SERVER remains in the *timed on* state.]
18c	OO.S.A0000, OO.S.A4001, OO.S.A4002	After 10s, TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01. *OnTime* attribute has a value approximately equal to 0x00c8. *OffWaitTime* attribute has the value 0x012c.
19a	OO.S.C00.Rsp	TH CLIENT unicasts a ZCL *off* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns off. [DUT SERVER moves into the *delayed off* state.]

Continued…

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OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
19b	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has a value approximately equal to 0x012c.
20a	OO.S.C42.Rsp	TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 0, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER remains off. [DUT SERVER remains in the *delayed off* state.]
20b	OO.S.A0000, OO.S.A4001, OO.S.A4002	After 10s, TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has a value approximately equal to 0x00c8.
21a	OO.S.C01.Rsp	TH CLIENT unicasts a ZCL *on* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on. [DUT SERVER moves into the *on* state.]

Continued…

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OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
21b	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has the value 0x0000.
22a	OO.S.C42.Rsp	After 10s, TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 0, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER remains on. [DUT SERVER moves into the *timed on* state.]
22b	OO.S.C00.Rsp	TH CLIENT unicasts a ZCL *off* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns off. [DUT SERVER moves into the *delayed off* state.]
22c	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has a value approximately equal to 0x012c.

Continued…

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OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
22d	OO.S.A0000, OO.S.A4001, OO.S.A4002	After 40s, TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	[DUT SERVER has moved into the *off* state.] DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has the value 0x0000.
23a	OO.S.C42.Rsp	After 10s, TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 0, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on. [DUT SERVER moves into the *timed on* state.]
23b	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01. *OnTime* attribute has a value approximately equal to 0x012c. *OffWaitTime* attribute has the value 0x012c.
23c	OO.S.A0000, OO.S.A4001, OO.S.A4002	After 40s, TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER has turned off. [DUT SERVER has moved into the *off* state.] DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has the value 0x0000.

Continued…

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OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
24a	OO.S.C42.Rsp	TH CLIENT unicasts a ZCL *on with timed off* command frame to DUT SERVER, with the *accept only when on* sub-field of the *on/off control* field set to 0, the *on time* field set to 0x012c (30s) and the *off wait time* field set to 0x012c (30s).	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on. [DUT SERVER moves into the *timed on* state.]
24b	LC.S.C04.Rsp	**If the *level control* cluster is supported on the same endpoint as the *on/off* cluster:** After 10s, TH CLIENT unicasts a ZCL *move to level with (on/off)* command frame to DUT SERVER, with the *level* field set to 0x00. **Otherwise:** After 10s, TH CLIENT unicasts a ZCL *off* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns off. [DUT SERVER moves into the *delayed off* state.]
24c	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has a value approximately equal to 0x012c.

Continued…

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OO-TC-03S: Secondary functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
25a	LC.S.C04.Rsp	**If the *level control* cluster is supported on the same endpoint as the *on/off* cluster:** After 10s, TH CLIENT unicasts a ZCL *move to level with (on/off)* command frame to DUT SERVER, with the *level* field set to 0xfe. **Otherwise:** After 10s, TH CLIENT unicasts a ZCL *on* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on. [DUT SERVER moves into the *on* state.]
25b	OO.S.A0000, OO.S.A4001, OO.S.A4002	TH CLIENT immediately unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff*, *OnTime* and *OffWaitTime* attributes.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01. *OnTime* attribute has the value 0x0000. *OffWaitTime* attribute has the value 0x0000.

--- End of test case OO-TC-03S ---

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4.3.4 OO-TC-04S: Scenes functionality with server as DUT

This test case verifies the scenes functionality of the *on/off* cluster server.

4.3.4.1 Scope

General:

- *Read attributes* command (0x00)
- *Read attributes response* command (0x01)
- *Default response* command (0x0b)

Groups cluster (0x0004):

- *Add group* command (0x00)
- *Add group response* command (0x00)
- *Get group membership* command (0x02)
- *Get group membership response* command (0x02)
- *Remove all groups* command (0x04)

Scenes cluster (0x0005):

- *Remove all scenes* command (0x03)
- *Remove all scenes response* command (0x03)
- *Store scene* command (0x04)
- *Store scene response* command (0x04)
- *Recall scene* command (0x05)

On/off cluster (0x0006):

- *OnOff* attribute (0x0000)
- *Off* command (0x00)
- *On* command (0x01)

PICS:

- G.S, S.S, OO.S
- G.S.C00.Rsp, G.S.C02.Rsp-G.S.C04.Rsp
- G.S.C00.Tx, G.S.C02.Tx, G.S.C03.Tx
- S.S.C04.Rsp, S.S.C05.Rsp
- S.S.C04.Tx
- OO.S.A0000, OO.S.A0000.Scene
- OO.S.C00.Rsp, OO.S.C01.Rsp

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295 #### 4.3.4.2 Required devices

Designation	Symbol	Description
TH CLIENT		Test harness client implementing: • The *groups* cluster client, • The *scenes* cluster client and • The *on/off* cluster client.
DUT SERVER		Device under test server implementing: • The *groups* cluster server, • The *scenes* cluster server and • The *on/off* cluster server.

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297 #### 4.3.4.3 Initial conditions

Item	Initial Conditions
1	A packet sniffer shall be observing the communication over the air interface.
2	All devices are factory new and powered off until used.

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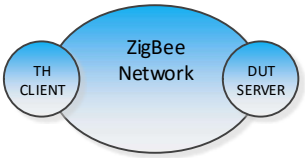
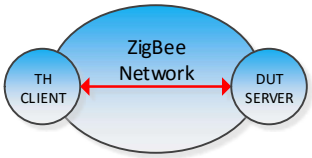
300 #### 4.3.4.4 Test preparation

Link TH CLIENT with DUT SERVER	
 *Before*	 *After*

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OO-TC-04S: Scenes functionality with server as DUT		
Item	**Preparation Step**	**Observation**
P1	Form a ZigBee network.	Observe appropriate command frame to form the network.
P2	Power on TH CLIENT and DUT SERVER.	TH CLIENT and DUT SERVER are powered on.
P3	Join TH CLIENT and DUT SERVER to a ZigBee network.	Observe appropriate communication between TH CLIENT, DUT SERVER and any other relevant node on the ZigBee network.

--- End of test case OO-TC-04S preparation ---

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304 #### 4.3.4.5 Test procedure

OO-TC-04S: Scene functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
1a	G.S.C04.Rsp	TH CLIENT unicasts a ZCL *remove all groups* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS).
1b	G.S.C02.Rsp, G.S.C02.Tx	TH CLIENT unicasts a ZCL *get group membership* command frame to DUT SERVER with the *group count* field set to 0x00.	DUT SERVER unicasts a ZCL *get group membership response* command frame with the *group count* field equal to 0x00.
1c	G.S.C00.Rsp, G.S.C00.Tx	TH CLIENT unicasts ZCL *add group* command to DUT SERVER, with the *group ID* field set to 0x0001.	DUT SERVER unicasts a ZCL *add group response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS) and the *group ID* field equal to 0x0001.
2	S.S.C03.Rsp, S.S.C03.Tx	TH CLIENT unicasts a ZCL *remove all scenes* command frame to DUT SERVER with the *group ID* field set to 0x0001.	DUT SERVER unicasts a ZCL *remove all scenes response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS) and the *group ID* field equal to 0x0001.
3a	OO.S.C01.Rsp	TH CLIENT unicasts a ZCL *on* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on.
3b	OO.S.A0000. Scene, S.S.C04.Rsp, S.S.C04.Tx	TH CLIENT unicasts a ZCL *store scene* command frame to DUT SERVER with the *group ID* field set to 0x0001 and the *scene ID* field set to 0x01.	DUT SERVER unicasts a ZCL *store scene response* command frame to TH CLIENT with the *status* field set to 0x00 (SUCCESS), the *group ID* field set to 0x0001 and the *scene ID* field set to 0x01.
3c	OO.S.A0000	TH CLIENT unicasts a ZCL *read attributes* command frame for the *OnOff* attribute to DUT SERVER.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01.

Continued…

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OO-TC-04S: Scene functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
3d	OO.S.C00.Rsp	TH CLIENT unicasts a ZCL *off* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns off.
3e	OO.S.A0000	After 2s, TH CLIENT unicasts a ZCL *read attributes* command frame for the *OnOff* attribute to DUT SERVER.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00.
3f	OO.S.A0000. Scene, S.S.C05.Rsp	TH CLIENT unicasts a ZCL *recall scene* command frame to DUT SERVER with the *group ID* field set to 0x0001 and the *scene ID* field set to 0x01.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on.
3g	OO.S.A0000	TH CLIENT unicasts a ZCL *read attributes* command frame for the *OnOff* attribute to DUT SERVER.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. Verify that the value of the *OnOff* attribute is the same as was returned in step 3c.

--- End of test case OO-TC-04S ---

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4.3.5 OO-TC-05S: Reporting functionality with server as DUT

This case test verifies the attribute reporting behavior of the *on/off* cluster server.

4.3.5.1 Scope

General:

- *Read attributes* command (0x00)
- *Read attributes response* command (0x01)
- *Configure reporting* command (0x06)
- *Configure reporting response* command (0x07)
- *Report attributes* command (0x0a)
- *Default response* command (0x0b)

On/off cluster (0x0006):

- *OnOff* attribute (0x0000)
- *Off* command (0x00)
- *On* command (0x01)

PICS:

- OO.S
- OO.S.A0000
- OO.S.A0000.Report.Tx
- OO.S.C00.Rsp, OO.S.C01.Rsp

4.3.5.2 Required devices

Designation	Symbol	Description
TH CLIENT		Test harness client implementing: • The *on/off* cluster client.
DUT SERVER		Device under test server implementing: • The *on/off* cluster server.

4.3.5.3 Initial conditions

Item	Initial Conditions
1	A packet sniffer shall be observing the communication over the air interface.
2	All devices are factory new and powered off until used.

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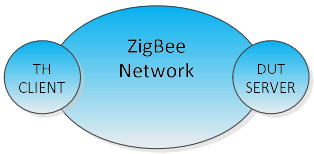
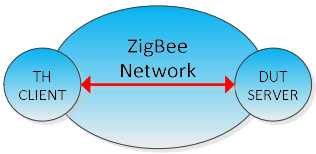
332 #### 4.3.5.4 Test preparation

Link TH CLIENT with DUT SERVER	
	
Before	*After*

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OO-TC-05S: Reporting functionality with server as DUT		
Item	**Preparation Step**	**Observation**
P1	Form a ZigBee network.	Observe appropriate command frame to form the network.
P2	Power on TH CLIENT and DUT SERVER.	TH CLIENT and DUT SERVER are powered on.
P3	Join TH CLIENT and DUT SERVER to a ZigBee network.	Observe appropriate communication between TH CLIENT, DUT SERVER and any other relevant node on the ZigBee network.
P5	Establish a binding link in the reverse direction from an endpoint on DUT SERVER to a corresponding endpoint on TH CLIENT that both support the *on/off* cluster.	Observe appropriate communication between DUT SERVER, TH CLIENT and any other relevant node on the ZigBee network.

--- End of test case OO-TC-05S preparation ---

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336 #### 4.3.5.5 Test procedure

OO-TC-05S: Reporting functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
1a	OO.S.A0000, OO.S.A0000.Report.Tx	TH CLIENT unicasts a ZCL *configure reporting* command frame to DUT SERVER for the *OnOff* attribute with a *direction* field set to 0x00, the *minimum reporting interval* field set to 0x001e (30 seconds) and the *maximum reporting interval* field set to 0x003c (60 seconds).	DUT SERVER unicasts a ZCL *configure reporting response* command frame to TH CLIENT, confirming the configured attributes and with the *status* field set to SUCCESS.
1b	OO.S.A0000, OO.S.A0000.Report.Tx	None	At a time ≤ 62s after step 1a, DUT SERVER unicasts a ZCL *report attributes* command frame to TH CLIENT with the *OnOff* attribute.
2a	OO.S.C01.Rsp	TH CLIENT unicasts a ZCL *on* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on.
2b	OO.S.A0000, OO.S.A0000.Report.Tx	None	At a time ≤ 32s after sending the report in step 1b, DUT SERVER unicasts a ZCL *report attributes* command frame to TH CLIENT with the *OnOff* attribute.
2c	OO.S.A0000, OO.S.A0000.Report.Tx	None	At a time ≤ 62s after sending the report in step 2b, DUT SERVER unicasts a ZCL *report attributes* command frame to TH CLIENT with the *OnOff* attribute.

Continued…

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OO-TC-05S: Reporting functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
3a	OO.S.C00.Rsp	TH CLIENT unicasts a ZCL *off* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns off.
3b	OO.S.A0000, OO.S.A0000.Report .Tx	None	At a time ≤ 32s after sending the report in step 2c, DUT SERVER unicasts a ZCL *report attributes* command frame to TH CLIENT with the *OnOff* attribute.
3c	OO.S.A0000, OO.S.A0000.Report .Tx	None	At a time ≤ 62s after sending the report in step 3b, DUT SERVER unicasts a ZCL *report attributes* command frame to TH CLIENT with the *OnOff* attribute.
4a	OO.S.A0000, OO.S.A0000.Report .Tx	TH CLIENT unicasts a ZCL *configure reporting* command frame to DUT SERVER for the *OnOff* attribute and the *maximum reporting interval* field set to 0xffff (do not send reports).	DUT SERVER unicasts a ZCL *configure reporting response* command frame to TH CLIENT, confirming the configured attributes and with the *status* field set to SUCCESS.
4b	OO.S.A0000.Report .Tx	Wait for 62s after the report sent in step 3c.	DUT SERVER does not send any further reports.

--- End of test case OO-TC-05S ---

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339 ### 4.3.6 OO-TC-06S: Startup functionality with server as DUT

340 This test case verifies the startup functionality of the *on/off* cluster server.

341 #### 4.3.6.1 Scope

342 General:

343 - *Read attributes* command (0x00)
344 - *Read attributes response* command (0x01)
345 - *Write attributes* command (0x02)
346 - *Write attributes response* command (0x04)
347 - *Default response* command (0x0b)

348 *On/off* cluster (0x0006):

349 - *OnOff* attribute (0x0000)
350 - *StartUpOnOff* attribute (0x4003)
351 - *Off* command (0x00)
352 - *On* command (0x01)

353 PICS:

354 - OO.S
355 - OO.S.A0000, OO.S.A4003
356 - OO.S.C00.Rsp, OO.S.C01.Rsp

357 #### 4.3.6.2 Required devices

Designation	Symbol	Description
TH CLIENT		Test harness client implementing: • The *on/off* cluster client.
DUT SERVER		Device under test server implementing: • The *on/off* cluster server.

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359 #### 4.3.6.3 Initial conditions

Item	Initial Conditions
1	A packet sniffer shall be observing the communication over the air interface.
2	All devices are factory new and powered off until used.

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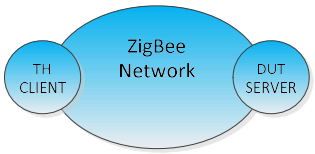
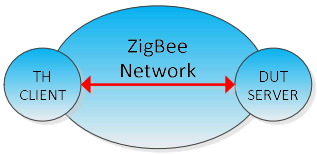
362 #### 4.3.6.4 Test preparation

Link DUT CLIENT with TH SERVER	
	
Before	*After*

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OO-TC-06S: Startup functionality with server as DUT		
Item	**Preparation Step**	**Observation**
P1	Form a ZigBee network.	Observe appropriate command frame to form the network.
P2	Power on TH CLIENT and DUT SERVER.	TH CLIENT and DUT SERVER are powered on.
P3	Join TH CLIENT and DUT SERVER to a ZigBee network.	Observe appropriate communication between TH CLIENT, DUT SERVER and any other relevant node on the ZigBee network.

--- End of test case OO-TC-06S preparation ---

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366 #### 4.3.6.5 Test procedure

OO-TC-06S: Startup functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
1	OO.S.C01.Rsp	TH CLIENT unicasts a ZCL *on* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns on.
2a	OO.S.A4003	TH CLIENT unicasts a ZCL *write attributes* command frame to DUT SERVER to write the value 0x00 (startup in the off state) to the *StartUpOnOff* attribute.	DUT SERVER unicasts a ZCL *write attributes response* command frame to TH CLIENT.
2b	-	Power off DUT SERVER.	None.
2c	-	Power on DUT SERVER.	DUT SERVER is powered on in the off state.
2d	OO.S.A0000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* attribute.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00.
3a	OO.S.A4003	TH CLIENT unicasts a ZCL *write attributes* command frame to DUT SERVER to write the value 0x01 (startup in the on state) to the *StartUpOnOff* attribute.	DUT SERVER unicasts a ZCL *write attributes response* command frame to TH CLIENT.
3b	-	Power off DUT SERVER.	None.
3c	-	Power on DUT SERVER.	DUT SERVER is powered on in the on state.
3d	OO.S.A0000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* attribute.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01.
4a	OO.S.A4003	TH CLIENT unicasts a ZCL *write attributes* command frame to DUT SERVER to write the value 0x02 (toggle the previous state) to the *StartUpOnOff* attribute.	DUT SERVER unicasts a ZCL *write attributes response* command frame to TH CLIENT.

Continued…

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OO-TC-06S: Startup functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
4b	-	Power off DUT SERVER.	None.
4c	-	Power on DUT SERVER.	DUT SERVER is powered on in the off state.
4d	OO.S.A0000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* attribute.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00.
4e	-	Power off DUT SERVER.	None.
4f	-	Power on DUT SERVER.	DUT SERVER is powered on in the on state.
4g	OO.S.A0000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* attribute.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01.
5a	OO.S.A4003	TH CLIENT unicasts a ZCL *write attributes* command frame to DUT SERVER to write the value 0xff (startup in the previous state) to the *StartUpOnOff* attribute.	DUT SERVER unicasts a ZCL *write attributes response* command frame to TH CLIENT.
5b	-	Power off DUT SERVER.	None.
5c	-	Power on DUT SERVER.	DUT SERVER is powered on in the on state.
5d	OO.S.A0000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* attribute.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x01.
5e	OO.S.C00.Rsp	TH CLIENT unicasts a ZCL *off* command frame to DUT SERVER.	If requested, DUT SERVER unicasts a ZCL *default response* command frame to TH CLIENT with the *status* field equal to 0x00 (SUCCESS). DUT SERVER turns off.
5f	-	Power off DUT SERVER.	None.

Continued…

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OO-TC-06S: Startup functionality with server as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
5g	-	Power on DUT SERVER.	DUT SERVER is powered on in the off state.
5h	OO.S.A0000	TH CLIENT unicasts a ZCL *read attributes* command frame to DUT SERVER to read the *OnOff* attribute.	DUT SERVER unicasts a ZCL *read attributes response* command frame to TH CLIENT. *OnOff* attribute has the value 0x00.

--- End of test case OO-TC-06S ---

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4.4 Client test cases

4.4.1 OO-TC-01C: Functionality with client as DUT

This case test verifies the functionality of the *on/off* cluster client.

The DUT client SHALL be on the same network as a suitable server, provided by the user, and this device SHALL be used by the client to exercise its functionality. The test case uses the test harness to prompt the user, based on the declared PICS, to exercise the functionality of the *basic* cluster client and to verify the results. A sniffer tool SHALL be used to log the exercised functionality and to determine its validity.

In this test case, the PICS notation OO.C.C*d*Tx represents the list of commands that are declared as being transmitted by the DUT.

4.4.1.1 Scope

On/off cluster (0x0006):

- *Off* command (0x00)
- *On* command (0x01)
- *Toggle* command (0x02)
- *Off with effect* command (0x40)
- *On with recall global scene* command (0x41)
- *On with timed off* command (0x42)

PICS:

- OO.C
- OO.C.C00.Tx – OO.C.C02.Tx, OO.C.C40.Tx – OO.C.C42.Tx

4.4.1.2 Required devices

Designation	Symbol	Description
DUT CLIENT		Device under test client implementing: • The *on/off* cluster client.
SERVER		Suitable server device implementing: • The *on/off* cluster server.

4.4.1.3 Initial conditions

Item	Initial Conditions
1	A packet sniffer shall be observing the communication over the air interface.
2	All devices are factory new and powered off until used.

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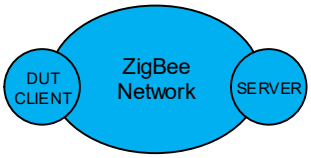
394 #### 4.4.1.4 Test preparation

Link DUT CLIENT with SERVER	
	
Before	*After*

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OO-TC-01C: Functionality with client as DUT		
Item	**Preparation Step**	**Observation**
P1	Power on the DUT CLIENT device and the SERVER device.	DUT CLIENT and SERVER are powered on.
P2	Ensure the DUT CLIENT device and the SERVER device are on the same ZigBee network.	Observe appropriate communication between DUT CLIENT, SERVER and any other relevant node on the ZigBee network.

--- End of test case OO-TC-01C preparation ---

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398 #### 4.4.1.5 Test procedure

OO-TC-01C: Functionality with client as DUT			
Item	**PICS**	**Test Harness Step**	**DUT Pass Verification**
1	-	Test harness prompts the user with a list of commands, based on the declared PICS, which the DUT CLIENT indicates it can transmit.	None.
2	OO.C.C*d*.Tx	None.	DUT CLIENT transmits correctly formed commands in any order and with application achievable values. This is verified using the sniffer log.
3	-	Prompt the user to verify that the cluster commands listed in step 1 were transmitted during step 2.	During step 2, DUT CLIENT has transmitted every command listed by the test harness in step 1.
4	-	Prompt the user to verify that the cluster commands not listed in step 1 were not transmitted during step 2.	During step 2, DUT CLIENT has not transmitted any commands from this cluster that were not listed by the test harness in step 1.

--- End of test case OO-TC-01C ---

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401 # 5 Annex A: PICS to test case cross reference

402 ## 5.1 Server

	Test case						
PICS	OO-TC-01G	OO-TC-01S	OO-TC-02S	OO-TC-03S	OO-TC-04S	OO-TC-05S	OO-TC-06S
OO.S	X	X	X	X	X	X	X
OO.S.A0000		X	X	X	X	X	X
OO.S.A0000.Scene					X		
OO.S.A0000.Report.Tx						X	
OO.S.A4000		X		X			
OO.S.A4001		X		X			
OO.S.A4002		X		X			
OO.S.A4003		X					X
OO.S.Afffd	X						
OO.S.C00.Rsp			X	X	X	X	X
OO.S.C01.Rsp			X	X	X	X	X
OO.S.C02.Rsp			X				
OO.S.C40.Rsp				X			
OO.S.C41.Rsp				X			
OO.S.C42.Rsp				X			

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404 ## 5.2 Client

	Test case	
PICS	OO-TC-01G	OO-TC-01C
OO.C	X	X
OO.C.A0000.Report.Rsp		X
OO.C.Afffd	X	
OO.C.C00.Tx		X
OO.C.C01.Tx		X
OO.C.C02.Tx		X
OO.C.C40.Tx		X
OO.C.C41.Tx		X
OO.C.C42.Tx		X

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