



Project	ZigBee Alliance		
Title	<b>ZigBee RS Profile: Protocol Implementation Conformance (PICS) Pro Forma</b>		
Date Submitted	[August 30, 2011]		
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Re:	ZigBee PICS for the ZigBee Retail Services Profile		
Abstract	As a part of formal conformance testing, manufacturers will be asked to submit a statement of protocol conformance with respect to the appropriate ZigBee devices required by the application profile under test. This document is intended to provide the form of that statement of conformance for the RS profile.		
Purpose	This document, after review by the relevant working groups, should provide a form whereby developers can proffer a statement of protocol conformance to be tested under profile testing.		
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Submission	Page 1	Leslie Mulder, Exegin Technologies	

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## **References**

The following standards contain provisions, which, through reference in this document, constitute provisions of this standard. All the standards listed are normative references. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

### **1.1 ZigBee Alliance documents**

- [R1] ZigBee document 053474r18: ZigBee Specification 2007
- [R2] ZigBee document 08006r03, ZigBee-2007 Layer PICS and Stack Profiles
- [R3] ZigBee document 106165r05: ZigBee Retail Services Profile Specification
- [R4] ZigBee document 075123r03, ZigBee Cluster Library Specification
- [R5] ZigBee document 064113r08: ZigBee Cluster Library PICS
- [R6] ZigBee document 095304r00: ZigBee Health Care Profile Specification – Part2, Security Clusters
- [R7] ZigBee document 095217r01: ZigBee Health Care Profile: Protocol Implementation Conformance (PICS) Pro Forma

### **1.2 IEEE documents**

- [R8] IEEE Standard for Part 15.4: Wireless Medium Access Control (MAC) and Physical Layer (PHY) specifications for Low Rate Wireless Personal Area Networks (LR-WPANS), 2003.

### **1.3 ISO documents**

- [R9] ISO/IEC 9646-1:1991, Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts.
- [R10] ISO/IEC 9646-7:1995, Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7. Implementation conformance statements.

**Change history**

The following table shows the change history for this specification.

**Revision 1.0 (October, 2013)****Table 1 – Revision change history for revision 0**

<b>Revision</b>	<b>Version</b>	<b>Description</b>
R00	-	Initial draft
R01	-	Heavily modified
R02		Minor updates
R03		Added Temperature Sensor and minor editorial changes
R04	1.0	Updated to reflect approval by the ZigBee Alliance Board of Directors

## **2 Introduction**

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a given standard. Such a statement is called a protocol implementation conformance statement (PICS).

### **2.1 Scope**

This document provides the protocol implementation conformance statement (PICS) pro forma for the ZigBee specifications cited in Reference R4 in compliance with the relevant requirements, and in accordance with the relevant guidance, given in ISO/IEC 9646-7.

This document addresses the ZigBee Retail Services Profile.

### **2.2 Purpose**

The supplier of a protocol implementation claiming to conform to the ZigBee Retail Services Profile shall complete the following PICS pro forma and accompany it with the information necessary to identify fully both the supplier and the implementation.

The PICS is in the form of answers to a set of questions in the PICS pro forma. The questions in a pro forma consist of a systematic list of protocol capabilities and options as well as their implementation requirements. The implementation requirement indicates whether implementation of a capability is mandatory, optional, or conditional depending on options selected. When a protocol implementer answers questions in a PICS pro forma, they would indicate whether an item is implemented or not, and provide explanations if an item is not implemented.

### 3 Abbreviations and special symbols

Notations for requirement status:

M	Mandatory
O	Optional
O.n	Optional, but support of at least one of the group of options labeled O.n is required.
N/A	Not applicable
X	Prohibited
<i>Item Number:</i> <i>:Status</i>	Status is conditional on support of item number

“*Item Number*”: Conditional, status dependent upon the support marked for the “*Item Number*”.

For example, FD1: O.1 indicates that the status is optional but at least one of the features described in FD1 is required to be implemented, if this implementation is to follow the standard of which this PICS Pro Forma is a part.

#### **4 Instructions for completing the PICS pro forma**

If a given implementation is claimed to conform to this standard, the actual PICS pro forma to be filled in by a supplier shall be technically equivalent to the text of the PICS pro forma in this annex, and shall preserve the numbering and naming and the ordering of the PICS pro forma.

A PICS which conforms to this document shall be a conforming PICS pro forma completed in accordance with the instructions for completion given in this annex.

The main part of the PICS is a fixed-format questionnaire, divided into five tables. Answers to the questionnaire are to be provided in the rightmost column, either by simply marking an answer to indicate a restricted choice (such as Yes or No), or by entering a value, set, or range of values.

**5 Identification of the implementation**

**Implementation under test (IUT) identification**

IUT name: \_\_\_\_\_  
IUT version: \_\_\_\_\_  
\_\_\_\_\_

**System under test (SUT) identification**

SUT name:  
TEMP TAG  
Software Version: \_\_\_\_\_  
Hardware Version:  
REV D  
Operating system (optional): \_\_\_\_\_

**Specification Version Numbers at time of certification**

ZigBee Retail Services Specification Revision: ZigBee Document 10-6165r17 version 1.0  
Approved Errata Text to the ZigBee Retail Services Specification (if any): \_\_\_\_\_  
ZigBee Retail Services Test Plan Revision: ZigBee Document 12-3006-09 version 1.0  
Approved Errata Text to the ZigBee Retail Services Test Plan (if any): \_\_\_\_\_

**Product supplier**

Name: \_\_\_\_\_



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**Client**

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Additional information: \_\_\_\_\_

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**PICS/System conformance statement**

## **6 Identification of the protocol**

This PICS pro forma applies to ZigBee Retail Services Profile, cited in Reference [R3].

**7 Global statement of conformance**

The implementation described in this PICS pro forma meets all of the mandatory requirements of the referenced standards:

Application Profile: ZigBee Retail Services – 106165r17,

Yes

No

Note -- Answering ‘No’ indicates non-conformance to the specified protocol standard. Non-supported mandatory capabilities are to be identified in the following tables, with an explanation by the implementer explaining why the implementation is non-conforming.

The supplier will have fully complied with the requirements for a statement of conformance by completing the statement contained in this subclause. That means, by clicking the above, the statement of conformance is complete.

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## 8 PICS pro forma tables

The following tables are composed of the detailed questions to be answered, which make up the PICS pro forma.

### 8.1 ZigBee Device Types

Table 2 - Functional device types

Item number	Item description	Reference	Status	Support
FDT1	Is this device capable of acting as a ZigBee coordinator?	[R1]/2.5.5.5.1	O.1 <sup>1</sup>	
FDT2	Is this device capable of acting as a ZigBee router?	[R1]/2.5.5.5.2	O.1	
FDT3	Is this a ZigBee end device?	[R1]/2.5.5.5.3	O.1	<u>x</u>

### 8.2 Stack Profile

Table 3 –Stack Profile

Item number	Item description	Reference	Status	Support
ZSP1	Is the device built on a ZigBee Compliant Platform certified for the ZigBee stack profile	<b>Error! Reference source not found.</b> [R3]/5.2	O.2 <sup>2</sup>	
ZSP2	Is the device built on a ZigBee PRO Compliant Platform certified for the ZigBee PRO stack profile <b>Error! Reference source not found.</b> <b>Reference source not found.</b> ?	[R3]/5.2	O.2	<u>x</u>

<sup>1</sup> O.1 – Device under test must select only one of these options. Devices under test supporting multiple ZigBee device types must serially re-test using each supported ZigBee device type.

<sup>2</sup> O.2 – Device under test must be deployed on either of the ZigBee or ZigBee PRO stack profiles.

<sup>3</sup> O.3 – Device under test must be deployed on either of the ZigBee or ZigBee PRO stack profiles. If

**8.3 RS general requirements support**

Table 4 – RS general requirements support

Item number	Item description	Reference	Status	Support
RSG1	Does the device support the ZigBee Cluster Library?	[R3]/5.5, 5.6 [R4]	M	<u>x</u>
RSG2	Does the device support the ZigBee Cluster Library List specified for RS including the mandatory/optional clusters detailed in the ZCL PICs?	[R3]/5.6 [R5]	M	<u>x</u>
RSG4	Does the device support commissioning cluster?	[R3]/5.1	O	
RSG5	Does the device support the compatible Startup Attribute Set, Join Parameters, Security Parameters, End Device Parameters, Link Status Parameters, Concentrator Parameters, APS Transport Parameters and Binding Parameters?	[R3]/5.3, 5.3.1, 5.3.2, 5.3.3, 5.3.4, 5.3.5, 5.3.6, 5.3.7, 5.3.8, 5.3.9	M	<u>x</u>
RSG6	Does the device support joining with pre-installed link keys?	[R3]/5.3.3	O	
RSG7	Does the device support joining using the security cluster?	[R3]/5.3.3	O	

**8.4 ZigBee RS device description support**

Table 5 – RS device description support

Item number	Item description	Reference	Status	Support
RSD1	Is the product programmed as a ZigBee Handheld device (HHD)	[R3]/7.3.1	O.3 <sup>3</sup>	

<sup>3</sup> O.3 – Device under test must select at least one and may select more than one of the RS device descriptions. If multiple RS device descriptions are supported in the same device then each of the supported device descriptions must be deployed on individual endpoints within the device under test.

Item number	Item description	Reference	Status	Support
RSD2	Is the product programmed as a Intelligent Shopping Cart (ISC)	[R3]\7.3.2	O.3	
RSD3	Is the product programmed as a Electronic Shelf Label (ESL)	[R3]\7.3.3	O.3	
RSD4	Is the product programmed as a Customer Information Point	[R3]\7.3.4	O.3	
RSD5	Is the product programmed as a Customer Card (CC)	[R3]\7.3.5	O.3	
RSD6	Is the product programmed as a ZigBee Mobile Terminal	[R3]\7.4.1	O.3	
RSD7	Is the product programmed as a Configuration Tool	[R3]\7.4.2	O.3	
RSD8	Is the product programmed as a Range Extender	[R3]\7.4.3	O.3	
RSD9	Is the product programmed as a ZigBee Access Point	[R3]\7.4.4	O.3	
RSD10	Is the product programmed as a ZigBee Information Nodes	[R3]\7.4.5	O.3	
RSD11	Is the product programmed as a ZigBee Information Terminal	[R3]\7.4.6	O.3	
RSD12	Is the product programmed as a Point of Sale	[R3]\7.4.7	O.3	
RSD13	Is the product programmed as a RSSI Anchor Node	[R3]\7.4.8	O.3	
RSD14	Is the product programmed as a RSSI Location Node	[R3]\7.4.9	O.3	
RSD15	Is the product programmed as a RSSI Location Gateway	[R3]\7.4.10	O.3	
RSD16	Is the product programmed as a Temperature Sensor	[R3]\7.4.11	O.3	<a href="#">x</a>

**8.5 RS common clusters**

The common cluster ZCL PICs restrictions/requirements in [Table 6](#) are obtained from [R3]/5.11.

**Table 6 – Common cluster ZCL PICs restrictions/requirements**

ZCL PICs Item number [R5]	Status	Additional Constraints	Support
FC100	M	ZCL Cluster ID enumeration is mandatory	<u>x</u>
FC1	M	General ZCL Frame Format is mandatory	<u>x</u>
BCS1	M	Does the device support the Basic Cluster as a server?	<u>x</u>
CCS1	M	Does the device support the Commissioning Cluster as a server?	<u>x</u>
OTAS1	O	Does the device support the Over The Air upgrade as a server?	
GCS1	O	Does the device support the Groups Cluster as a server?	<u>x</u>

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**Table 7 – Common cluster support**

Item number	Item description	Reference	Status	Support
RSCC1	Are any manufacture-specific cluster(s) supported?	[R3]/7.1	O	

**8.6 ZigBee RS Device Description Capabilities**

Tables in the following sub-clauses detail the capabilities specific to a device description.

8.6.1 ZigBee Handheld device (HHD) functions



**Table 8 – ZigBee Handheld device (HHD) ZCL PICS restrictions/requirements**

ZCL PICS Item number [R5]	Status	Additional Constraints	Support
BCC1	M	Basic Cluster client is mandatory.	
ICC1	M	Identify Cluster client is mandatory.	
GTCS1	M	Generic Tunneling Cluster server is mandatory.	
GTCC1	M	Generic Tunneling Cluster client is mandatory.	
LCS1	O	RSSI Location Cluster server is optional.	

| [Table 9](#), provides the RS PICS restrictions based on requirements in [R3]/7.3.1.1.

**Table 9 – ZigBee Handheld device (HHD) RS PICS restrictions/requirements**

RS PICS Item number	Status	Additional Constraints	Support
RTCS1	M	Retail Tunneling Cluster server is mandatory.	
RTCC1	M	Retail Tunneling Cluster client is mandatory.	
RNGCS1	M	Nearest Gateway Cluster Server	
RMDCS1	M	Mobile Device Configuration cluster server	

| [Table 10](#), provides the TA PICS restrictions based on requirements in [R3]/7.3.1.1.

**Table 10 – ZigBee Handheld device (HHD) TA PICS restrictions/requirements**

TAPICS Item number	Status	Additional Constraints	Support
TIDCS1	O	Information Cluster server is optional.	
TIDCS1	O	Information Cluster server is optional.	

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8.6.2 Intelligent Shopping Cart (ISC) device functions

Table 11 Intelligent Shopping Cart (ISC) ZCL PICS restrictions/requirements

ZCL PICS Item number [R5]	Status	Additional Constraints	Support
BCC1	M	Basic Cluster client is mandatory.	
ICC1	M	Identify Cluster client is mandatory.	
GTCS1	M	Generic Tunneling Cluster server is mandatory.	
GTCC1	M	Generic Tunneling Cluster client is mandatory.	
LCS1	O	RSSI Location Cluster server is optional.	

Table 12 provides the RS PICS restrictions based on requirements in [R3]/7.3.2.1.

Table 12 – Intelligent Shopping Cart (ISC) RS PICS restrictions/requirements

RS PICS Item number	Status	Additional Constraints	Support
RTCS1	M	Retail Tunneling Cluster server is mandatory.	
RTCC1	M	Retail Tunneling Cluster client is mandatory.	
RNGCS1	M	Nearest Gateway Cluster Server	
RMDCS1	M	Mobile Device Configuration cluster server	

Table 13 provides the TA PICS restrictions based on requirements in [R3]/7.3.2.1.

Table 13 – Intelligent Shopping Cart (ISC) RS PICS restrictions/requirements

TA PICS Item number	Status	Additional Constraints	Support
TIDCC1	O	Information Cluster client is optional	

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TA PICS Item number	Status	Additional Constraints	Support
TIDCS1	O	Information Cluster server is optional.	

8.6.3 Electronic Shelf Label (ESL)

Table 14 provides the RS PICS restrictions based on requirements in [R3]/7.3.3.1.

Table 14 – Electronic Shelf Label (ESL) RS PICS restrictions/requirements

RS PICS Item number	Status	Additional Constraints	Support
TIDCS1	O	Information Cluster server is optional.	
	O	Alpha Security Cluster server is optional.	

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8.6.4 Customer Information Point (CIP)

Table 15 - Customer Information Point (CIP) ZCL PICS restrictions/requirements

ZCL PICS Item number [R5]	Status	Additional Constraints	Support
GTCS1	M	Generic Tunneling Cluster server is mandatory.	
GTCC1	M	Generic Tunneling Cluster client is mandatory.	

Table 16 provides the RS PICS restrictions based on requirements in [R3]/7.3.4.1.

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**Table 16 – Customer Information Point (CIP) RS PICS restrictions/requirements**

RS PICS Item number	Status	Additional Constraints	Support
RTCS1	M	Retail Tunneling Cluster server is mandatory.	
RTCC1	M	Retail Tunneling Cluster client is mandatory.	
RNGCC1	M	Nearest Gateway Cluster Client	
RNCCS1	M	Neighbor Cleaning Cluster server	

| [Table 17](#), provides the TA PICS restrictions based on requirements in [R3]/7.3.4.1.

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**Table 17 – Customer Information Point (CIP) RS PICS restrictions/requirements**

TA PICS Item number	Status	Additional Constraints	Support
TIDCS1	O	Information Cluster server is optional.	

8.6.5 Customer Card (CC)

**Table 18 Customer Card (CC) ZCL PICS restrictions/requirements**

ZCL PICS Item number [R5]	Status	Additional Constraints	Support
BCC1	M	Basic Cluster client is mandatory.	
ICC1	M	Identify Cluster client is mandatory.	
LCS1	O	RSSI Location Cluster server is optional.	

| [Table 19](#), provides the RS PICS restrictions based on requirements in [R3]/7.3.5.1.

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Table 19 – Customer Card (CC) RS PICS restrictions/requirements

RS PICS Item number	Status	Additional Constraints	Support
RNGCC1	M	Nearest Gateway Cluster Client	
RMDCS1	M	Mobile Device Configuration cluster server	

Table 20 provides the RS PICS restrictions based on requirements in [R3]/7.3.5.1.

Table 20 – Customer Card (CC) RS PICS restrictions/requirements

TA PICS Item number	Status	Additional Constraints	Support
TTCC1	M	ISO7816 Tunneling Cluster client is mandatory.	
TIDCC1	O	Information Cluster client is optional	
TIDCS1	O	Information Cluster server is optional.	
TPYCS1	O	Payment Cluster server is optional.	
TPYCC1	O	Payment Cluster client is optional.	
TTCS1	O	ISO7816 Tunneling Cluster server is mandatory.	

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8.6.6 ZigBee Mobile Terminal functions

Table 21 – ZigBee Mobile Terminal ZCL PICS restrictions/requirements

ZCL PICS Item number [R5]	Status	Additional Constraints	Support
BCC1	M	Basic Cluster client is mandatory.	
ICC1	M	Identify Cluster client is mandatory.	

ZCL PICS Item number [R5]	Status	Additional Constraints	Support
GTCS1	M	Generic Tunneling Cluster server is mandatory.	
GTCC1	M	Generic Tunneling Cluster client is mandatory.	
LCS1	O	RSSI Location Cluster server is optional.	

Table 22 provides the RS PICS restrictions based on requirements in [R3]/7.4.1.1.

Table 22 – ZigBee Mobile Terminal RS PICS restrictions/requirements

RS PICS Item number	Status	Additional Constraints	Support
RNGCS1	M	Nearest Gateway Cluster Server mandatory	
RMDCS1	M	Mobile Device Configuration cluster server	

Table 23 provides the TA PICS restrictions based on requirements in [R3]/7.4.1.1.

Table 23 – ZigBee Mobile Terminal TA PICS restrictions/requirements

TA PICS Item number	Status	Additional Constraints	Support
RNGCS1	M	Nearest Gateway Cluster Server mandatory	
RMDCS1	M	Mobile Device Configuration cluster server	
TIDCS1	O	Information Cluster server is optional.	
TIDCC1	O	Information Cluster client is optional.	
TPYCS1	O	Payment Cluster server is optional.	
TPYCC1	O	Payment Cluster client is optional.	
TBCC1	O	Billing Cluster client is optional.	
TDSS1	O	Data Sharing Cluster server is optional.	

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TA PICS Item number	Status	Additional Constraints	Support
TDSC1	O	Data Sharing Cluster client is optional.	
TVZS1	O	Voice over ZigBee Cluster server is optional.	
TVZC1	O	Voice over ZigBee Cluster client is optional.	
TDCS1	O	Data Rate Control Cluster server is optional.	
TDCC1	O	Data Rate Control Cluster client is optional.	
TGCS1	O	Gaming Cluster server is optional.	
TGCC1	O	Gaming Cluster client is optional.	
TCCS1	O	Chatting Cluster server is optional.	
TCCC1	O	Chatting Cluster client is optional.	
TTCS1	O	ISO7816 Tunneling Cluster server is optional.	
TTCC1	O	ISO7816 Tunneling Cluster client is optional.	
TPCS1	O	Partition Cluster server is optional.	
TPCC1	O	Partition Cluster client is optional.	

8.6.7 Configuration tool device functions

Table 24 Configuration tool ZCL PICS restrictions/requirements

ZCL PICS Item number [R5]	Status	Additional Constraints	Support
BCC1	M	Basic Cluster client is mandatory.	
ICC1	M	Identify Cluster client is mandatory.	
GTCS1	M	Generic Tunneling Cluster server is mandatory.	
GTCC1	M	Generic Tunneling Cluster client is mandatory.	

ZCL PICS Item number [R5]	Status	Additional Constraints	Support
LCC1	O	RSSI Location Cluster client is optional.	

Table 25 provides the RS PICS restrictions based on requirements in [R3]/7.4.2.1.

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Table 25 Configuration tool RS PICS restrictions/requirements

RS PICS Item number	Status	Additional Constraints	Support
RTCS1	M	Retail Tunneling Cluster server is mandatory.	
RTCC1	M	Retail Tunneling Cluster client is mandatory.	

Table 26 provides the TA PICS restrictions based on requirements in [R3]/7.4.2.1.

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Table 26 Configuration tool TA PICS restrictions/requirements

TA PICS Item number	Status	Additional Constraints	Support
TIDCC1	O	Information Cluster client is optional.	
TPYCC1	O	Payment Cluster client is optional.	
TBCC1	O	Billing Cluster client is optional.	
ASKECS1	O	Does the device support the Alpha Secure Key Establishment cluster as a server?	
ASACCS1	O	Does the device support Alpha Secure Access Control cluster as a server?	
ASKECC1	O	Does the device support Alpha Secure Key Establishment cluster as a client?	
ASACCC1	O	Does the device support Alpha Secure Access Control cluster as a client?	



TA PICS Item number	Status	Additional Constraints	Support
TDSC1	O	Data Sharing Cluster client is optional.	
TVZC1	O	Voice over ZigBee Cluster client is optional.	
TDCC1	O	Data Rate Control Cluster client is optional.	
TPCC1	O	Partition Cluster client is optional.	

8.6.8 Range Extender device functions

Table 27 – Range Extender ZCL PICS restrictions/requirements

ZCL PICS Item number [R5]	Status	Additional Constraints	Support

Table 28 provides the TA PICS restrictions based on requirements in [R3]/7.4.3.1.

Table 28 – Range Extender TA PICS restrictions/requirements

RS PICS Item number	Status	Additional Constraints	Support
TREX1	M	Does the range extender act as a router both for ZigBee and ZigBee Pro feature set networks even if its feature set does not correspond to one used within the network?	

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8.6.9 ZigBee Access Point device functions

Table 29 ZigBee Access Point ZCL PICS restrictions/requirements

ZCL PICS Item number [R5]	Status	Additional Constraints	Support
GTCS1	M	Generic Tunneling Cluster server is mandatory.	
GTCC1	M	Generic Tunneling Cluster client is mandatory.	

Table 30 provides the RS PICS restrictions based on requirements in [R3]/7.4.4.1.

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Table 30 –ZigBee Access Point RS PICS restrictions/requirements

TA PICS Item number	Status	Additional Constraints	Support
RTCS1	M	Retail Tunneling Cluster server is mandatory.	
RTCC1	M	Retail Tunneling Cluster client is mandatory.	
RNCCS1	M	Neighbor Cleaning Cluster Server mandatory	
RMDCS1	M	Mobile Device Configuration cluster server	
RNGCS1	M	Nearest Gateway Cluster Server	

Table 31 provides the TA PICS restrictions based on requirements in [R3]/7.4.4.1.

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Table 31 –ZigBee Access Point TA PICS restrictions/requirements

TA PICS Item number	Status	Additional Constraints	Support
TIDCS1	M	Information Cluster server is mandatory.	
TIDCC1	M	Information Cluster client is mandatory.	
TBCS1	O	Billing Cluster server is mandatory.	
TBCC1	O	Billing Cluster client is mandatory.	

TA PICS Item number	Status	Additional Constraints	Support
ASKECS1	O	Does the device support the Alpha Secure Key Establishment cluster as a server?	
ASACCS1	O	Does the device support Alpha Secure Access Control cluster as a server?	
ASKECC1	O	Does the device support Alpha Secure Key Establishment cluster as a client?	
ASACCC1	O	Does the device support Alpha Secure Access Control cluster as a client?	
TPYCS1	O	Payment Cluster server is optional.	
TPYCC1	O	Payment Cluster client is optional.	

8.6.10 ZigBee Information Node device functions

| [Table 32](#), provides the TA PICS restrictions based on requirements in [R3]/7.4.5.1.

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**Table 32 –Information Node TA PICS restrictions/requirements**

TA PICS Item number	Status	Additional Constraints	Support
TIDCS1	M	Information Cluster server is mandatory.	
TIDCC1	O	Information Cluster client is optional.	
TBCS1	O	Billing Cluster server is optional.	
ASKECS1	O	Does the device support the Alpha Secure Key Establishment cluster as a server?	
ASACCS1	O	Does the device support Alpha Secure Access Control cluster as a server?	
ASKECC1	O	Does the device support Alpha Secure Key Establishment cluster as a client?	

TA PICS Item number	Status	Additional Constraints	Support
ASACCC1	O	Does the device support Alpha Secure Access Control cluster as a client?	

8.6.11 ZigBee Information Terminal device functions

| [Table 33](#), provides the RS PICS restrictions based on requirements in [R3]/7.4.6.1.

**Table 33 –Information Node TA PICS restrictions/requirements**

TA PICS Item number	Status	Additional Constraints	Support
TIDCC1	M	Information Cluster client is mandatory.	
TZIT1	O	Is the human machine interface to allow the users to interact implemented on the device?	

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8.6.12 ZigBee Point of Sale device functions

| [Table 34](#), provides the RS PICS restrictions based on requirements in [R3]/7.4.7.1

**Table 34 – ZigBee Point of Sale RS PICS restrictions/requirements**

TA PICS Item number	Status	Additional Constraints	Support
TIDCS1	M	Information Cluster server is mandatory.	
TPYCS1	M	Payment Cluster server is mandatory.	

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8.6.13 RSSI Anchor Node device functions

Table 35 – RSSI Anchor Node ZCL PICS restrictions/requirements

ZCL PICS Item number	Status	Additional Constraints	Support
LCC1	M	RSSI Location Cluster client is mandatory.	

Table 36 provides the RS PICS restrictions based on requirements in [R3]/7.4.8.1

Table 36 – RSSI Anchor Node RS PICS restrictions/requirements

RS PICS Item number	Status	Additional Constraints	Support
RNCCS1	M	Neighbor Cleaning Cluster Server mandatory	
RMDCC1	M	Mobile Device Configuration cluster Client	
RNGCC1	M	Nearest Gateway Cluster Client	

Table 37 provides the RS PICS restrictions based on requirements in [R3]/7.4.8.1

Table 37 – RSSI Anchor Node TA PICS restrictions/requirements

TA PICS Item number	Status	Additional Constraints	Support
TRAN1	O	Is the human machine interface to allow the users to interact implemented on the device?	

8.6.14 RSSI Location Node device functions

Table 38 provides the RS PICS restrictions based on requirements in [R3]/7.4.9.1

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Table 38 – RSSI Location Node RS PICS restrictions/requirements

RS PICS Item number	Status	Additional Constraints	Support
LCS1	M	RSSI Location Cluster server is mandatory.	

8.6.15 RSSI Location Gateway device functions

Table 39 provides the RS PICS restrictions based on requirements in [R3]/7.4.10.1.

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Table 39 – RSSI Location Gateway ZCL PICS restrictions/requirements

ZCL PICS Item number	Status	Additional Constraints	Support
LCC1	M	RSSI Location Cluster client is mandatory.	

8.6.16 Temperature sensor device functions

Table 40 – Temperature Sensor device ZCL PICS restrictions/requirements

ZCL PICS Item number [R5]	Status	Additional Constraints	Support
TMCS1	M	Temperature Measurement Server is mandatory.	<u>x</u>
ICS1	O	Identify Cluster server is Optional.	<u>x</u>

**Retail Services Specific Cluster function capabilities**

8.6.17 Retail Tunnel (MSP tunnel) Cluster attributes and functions

**Table 41 – Retail Tunnel (MSP tunnel) server capabilities**

Item number	Item description	Reference	Status	Support
RTCS1	Is the Retail Tunnel (MSP tunnel) Cluster supported as a server?	[R3]/8.1.2	O.4	
RTCS2	Is the ManufacturerCode attribute supported?		RTCS1:M	
RTCS3	Is the MSPprofile attribute supported??		RTCS1:M	
RTCS4	Is the reception of Transfer APDU command supported?		RTCS1:M	
RTCS5	Is the “APDU” supported in the reception of Transfer APDU command?		RTCS1:M	
RTCS6	Is the “Octet string” supported as APDU data?		RTCS1:M	

**Table 42 – Retail Tunnel (MSP tunnel) cluster client capabilities**

Item number	Item description	Reference	Status	Support
RTCC1	Is the Retail Tunnel (MSP tunnel) Cluster supported as a client?	[R3]/8.1.3	O.4	
RTCC2	Is the generation of Transfer APDU command supported?		RTCS1:M	
RTCC3	Is the “APDU” supported in the generation of Transfer APDU command?		RTCS1:M	
RTCC4	Is the “Octet string” supported as APDU data?		RTCS1:M	

8.6.18 Mobile Device Configuration Cluster attributes and functions

Table 43 – Mobile Device Configuration cluster server capabilities

Item number	Item description	Reference	Status	Support
RMDCCS1	Is the Mobile Device Configuration Cluster supported as a server?	[R3]/8.2.2	O.5	
RMDCCS2	Is the KeepAliveTime attribute supported?		RMDCCS1:M	
RMDCCS3	Is the RejoinTimeout attribute supported??		RMDCCS1:M	
RMDCCS4	Is the generation of Keep Alive Notification command supported?		RMDCCS1:M	
RMDCCS5	Is the “KeepAliveTimeout” supported in the generation of Keep Alive Notification command?		RMDCCS1:M	
RMDCCS6	Is the “Unsigned 16-bit integer” supported as KeepAliveTimeout data?		RMDCCS1:M	
RMDCCS7	Is the “RejoinTimeout” supported in the generation of Keep Alive Notification command?		RMDCCS1:M	
RMDCCS8	Is the “Unsigned 16-bit integer” supported as RejoinTimeout data?		RMDCCS1:M	

Table 44 – Mobile Device Configuration cluster client capabilities

Item number	Item description	Reference	Status	Support
RMDCCC1	Is the Mobile Device Configuration Cluster supported as a client?	[R3]/8.2.3	O.5	
RMDCCC2	Is the reception of Keep Alive Notification command supported?		RMDCCC1:M	
RMDCCC3	Is the “KeepAliveTimeout” supported in the reception of Keep Alive Notification command?		RMDCCC1:M	
RMDCCC4	Is the “Unsigned 16-bit integer” supported as KeepAliveTimeout data?		RMDCCC1:M	
RMDCCC5	Is the “RejoinTimeout” supported in the reception of Keep Alive Notification command?		RMDCCC1:M	



Item number	Item description	Reference	Status	Support
RMDCCC6	Is the "Unsigned 16-bit integer" supported as RejoinTimeout data?		RMDCCC1:M	

### 8.6.19 Neighbor Cleaning Cluster attribute and functions

**Table 45 – Neighbor Cleaning cluster server capabilities**

Item number	Item description	Reference	Status	Support
RNCCS1	Is the Neighbor Cleaning supported as a server?	[R3]/8.3.2	O.6	
RNCCS2	Is the NeighborCleaningTimeout attribute supported?		RNCCS1:M	
RNCCS3	Is the reception of PurgeEntries command supported?		RNCCS1:M	

**Table 46 – Neighbor Cleaning cluster client capabilities**

Item number	Item description	Reference	Status	Support
RNCCC1	Is the Neighbor Cleaning Cluster supported as a client?	[R3]/8.3.3	O.6	
RNCCC2	Is the generation of PurgeEntries command supported?		RNCCC1:M	

### 8.6.20 Nearest Gateway Cluster attribute and functions

**Table 47 – Nearest Gateway cluster server capabilities**

Item number	Item description	Reference	Status	Support
RNGCS1	Is the Nearest Gateway Cluster supported as a server?	[R4]/8.4.2	O	

Item number	Item description	Reference	Status	Support
RNGCS2	Is the <i>NearestGateway</i> attribute supported?		RNGCS1:M	
RNGCS3	Is the <i>NewMobile Node</i> attribute supported?		RNGCS1:M	