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| Project | ZigBee Alliance | | |
|---|---|---|---|
| Title | **SEP 1.1 PICS R18 Draft** | | |
| Date Submitted | [5 April 2011] | | |
| Source | [Rob Alexander]<br>[Ember, Inc.]<br>[25 Thomson Place<br>Boston, MA 02210] | Voice:<br>Fax:<br>E-mail: | [ 617-951-1244  ]<br>[   ]<br>[rob.alexander@ember.com  ] |
| Re: | [115559r00 (PICS) and 095312r30 (Test)] | | |
| Abstract | [This document lists PICS for Smart Energy Profile] | | |
| Purpose | [Provides a list of changes that are applied to the ZigBee SE 1.1 Profile Specification revision 16, PICS and Test specification. The changes will be incorporated into a future release of the specification.] | | |
| Notice | This document has been prepared to assist the ZigBee Alliance.  It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein. | | |
| Release | The contributor acknowledges and accepts that this contribution will be posted in the member area of the ZigBee web site. | | |

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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 105638r09: ZigBee Smart Energy Profile Specification Revision 16

[R3]    ZigBee document 075123r03, ZigBee Cluster Library Specification

[R4]    ZigBee document 04300r08:  ZigBee Network Layer PICS

[R5]    ZigBee document 064147r07:  ZigBee Application Layer PICS

[R6]    ZigBee document 043171r04:  ZigBee Security Layer PICS

[R7]    ZigBee document 064113r07: ZigBee Cluster Library PICS

[R8]    ZigBee document 08006r03: ZigBee 2007 Layer PICS and Stack Profiles

[R9]    ZigBee document number 095264r03: ZigBee OTA Upgrade Cluster Specification

[R10]   ZigBee document number 095284r06: ZigBee OTA Upgrade Cluster PICS

## 1.2   IEEE documents

[R11]   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

[R12]   ISO/IEC 9646-1:1991, Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts.

[R13]   ISO/IEC 9646-7:1995, Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7. Implementation conformance statements.

# 1   Change history

2     The following table shows the change history for this specification.

# 1 Revision 0 (November, 2007)

2                                      **Table 1 – Revision change history for revision 0**

| Revision | Version | Description |
|---|---|---|
| R00 | - | Initial draft |
| R01 | - | Updated to Revision 12 of the SE specification and Errata. |
| R02 | - | Updated to Revision 14 of the SE specification |
| R03 | - | Fix typo. Update SE specification reference to r14. |
| R04 |  | Update SE specification reference to r15.<br>Update section references. |
| R05 | - | Use 2009 ZB template<br>Change AMI to SE item numbers and headings<br>R15 CCBs:<br>CCB 940 Rename Simple Metering to Metering<br>CCB 1011Update reference<br>CCB 1012 Time cluster optional for Range Extender<br>CCB 1013 Clarify AMG3<br>CCB 1042 PICS item number conflict between SE and ZCL<br>CCB 1120 Install Codes<br>CCB 1130 Binding and Service Discovery |
| R06 | 0.7 | 0.7 LB Passed |
| R07 | 0.9 | Initial 0.9 draft<br>Develco CCBs 1179 and 1181<br>Merge r15 Errata CCBs |
| R08 |  |  |
| R09 | 0.9 | Update  from SE 1.1 CCB Review |
| R11 | 0.9 | Added Request Fast Polling Items<br>Added Publish Block Period Items<br>Added Get Block Period(s) Items<br>Replaced out of date tunneling Items<br>Marked SEG27 as Mandatory. |
| R12 | 0.9 | Removed outdated common clusters.<br>Updated Document reference [R2]<br>Add Trust Center Swap-Out parameter, unified item number format |
| R13 |  | Suggested new wording in Tables 8, 10, 14, 16, 18, 22 & 24<br>Changes to Price Cluster entries (8.8.10) |

| R14 | 0.9 | Removed references to DIAG and CM clusters.<br>Clarified SEG3 requirement regarding attribute reporting. |
|---|---|---|
| R15 | 0.9 | Add changes from SE1.1 Inter-op event<br>Add editorial changes:<br>Title change to SEP 1.1 Intermediate Release PICS Draft<br>Header - Change date to Oct 6 2010<br>Header - change release to R15 (to include these changes and Jeff's below)<br>Date Submitted Oct 6 2010<br>Source - Ben and Ben's address<br>Remove Footer – Author and replace with company name submitting PICS<br>Update [R2] Reference to latest SE1.1 Spec - 105638r09 or r10 if you are going to release r09 with changes.<br>Add reference [R10] 095284r06 OTA Upgrade Cluster PICS<br><br>Page 57 line 6 - If supporting OTA upgrade cluster client or server, need to complete OTA Upgrade Cluster PICS document in addition to this document for certification. |
| R16 | 1.0 | Add change to support multiple instances of cluster functions via multiple end point tracking<br>Add tracking by end point in replies for clusters supported<br>Add support for non SE clusters to allow tracking in PICS plus certification |
| R17 | 1.1 | Title changed to remove "Intermediate" and "Draft".<br>Document format changed from WBK to DOC.  Updated Document numbers and revision number. |
| R18 | 1.1.1 | CCB Updates<br>1430 -  PICS requirement (Table 38 - item MCC1) wrong<br>1431 - PICS requirement (Table 5 - item SEG25) wrong<br>1432 - PICS requirement (KES1 and KECS1) Mismatch<br>1437 - DeviceClass is marked read-writeable but write may not be allowed |

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## 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) proforma for the ZigBee specifications cited in Reference [R2] in compliance with the relevant requirements, and in accordance with the relevant guidance, given in ISO/IEC 9646-7.

This document addresses the ZigBee SE Application Profile.

### 2.2 Purpose

The supplier of a protocol implementation claiming to conform to the ZigBee SE Application Profile shall complete the following PICS proforma 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 proforma. The questions in a proforma 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 proforma, 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 |
| *Item* | Status is conditional on support of item number |
| *Number:* :*Status* | |

"*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 Proforma is a part.

## 4   Instructions for completing the PICS proforma

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

A PICS which conforms to this document shall be a conforming PICS proforma 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:
NA_____

IUT version:
NA_____


_____


**System under test (SUT) identification**

SUT name：Renesas ZB Smart Energy Solution
_____

Software Version: 1.00
_____

Hardware Version:  1.00 (Radio: M16C/6B)
_____

Operating system (optional):
_____


**Product supplier**

Name:  Renesas Electronics Corporation

Address:  Nippon Bldg. 2-6-2, Ote-machi, Chiyoda-ku, Tokyo, 100-0004, Japan

Telephone number: +81-3-5201-5249

Facsimile number: +81-3-3270-5144

Email address: fumio.sato.xk@renesas.com

Additional information: _____

**Client**

Name: _____Renesas Electronics Corporation _____

Address: __Nippon Bldg. 2-6-2, Ote-machi, Chiyoda-ku, Tokyo, 100-0004, Japan
_____

_____

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Email address:
___fumio.sato.xk@renesas.com_____
_

Additional information: _____


**PICS contact person**

Name: Takashi Asai

Address: 4-1, Mizuhara, Itami-shi, Hyogo, 664-0005, Japan

Telephone number: +81-72-787-5757

Facsimile number: +81-72-789-3004

Email address: takashi.asai.ub@renesas.com

Additional information:
_____


**PICS/System conformance statement**

1  **6    Identification of the protocol**

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3   This PICS proforma applies to ZigBee SE Application Profile, cited in Reference [R2].

## 7   Global statement of conformance

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

Application Profile:  ZigBee SE – 075356r16

☑ 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 sub-clause. That means, by clicking the above, the statement of conformance is complete.

# 8   PICS proforma tables

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

## 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 | [1]O.1 | [Y] |
| FDT2 | Is this device capable of acting as a ZigBee router? | [R1]/2.5.5.5.2 | O.1 | [Y] |
| FDT3 | Is this a ZigBee end device? | [R1]/2.5.5.5.3 | O.1 | [Y] |

## 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 [R8]? | [R4] [R2]/5.2 | O.2[2] | [N] |
| ZSP2 | Is the device built on a ZigBee PRO Compliant Platform certified for the ZigBee PRO stack profile [R8]? | [R8] [R2]/5.2 | O.2 | [Y] |

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[1] 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.

[2] O.2 – Device under test must be deployed on either of the ZigBee or ZigBee PRO stack profiles.

1  ## 8.3   Stack Profile extensions for SE

2                      **Table 4 – Stack profile extensions for SE**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| SPE1 | Does the device support Application Link Keys? | [R2]/5.2 [R6]/ASLS6 | M | [Y] |
| SPE2 | Does this device use a stack that supports fragmentation? | [R2]/5.2 [R5]/ADF5, ADF6 | M | [Y] |
| SPE3 | Does this device use any SE Profile Commands that require the use of Fragmentation? | [R2]/5.2 [R5]/ADF5, ADF6 | MC1: M MS1: M | [Y] |
| SPE4 | Does the device adhere to the polling rate specifications given in [R2]/5.2 (i.e. Does your application poll equal to or less often as called out in the specification)? | [R2]/5.2 | FDT3:M | [Y] |
| SPE5 | Does this devices support reception of fragmented messages? | | M | [Y] |
| SPE6 | Does this device support generation of fragmented messages? | | O | [Y] |

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4  ## 8.4   SE general requirements support

5  In the below tables please answer Yes / No for supported , number of instances supported, and
6  end point for each instance. In support one instance can just provide end point number without
7  instance number.

8                      **Table 5 – SE general requirements support**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| SEG1 | Does the device support the ZigBee Cluster Library? | [R2]/5.10, 5.11 [R3] | M | [Y] |
| SEG2 | Does the device support the ZigBee Cluster Library List specified for SE including the mandatory/optional clusters detailed in the ZCL | [R2]/5.10, 5.11 [R7] | M | [Y] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | PICs? | | | |
| SEG3 | Does the device support the ZigBee Cluster Library with the parameters for attribute reporting, reporting configuration and read reporting configuration as detailed in the SE Profile clusters?<br><br>Editor's Note: Reporting interval constraints and other parameters are mandatory where attribute reporting is used. Support of attribute reporting may be optional or mandatory based on clusters implemented. | [R2]/5.11<br><br>[R3] | M | [Y] |
| SEG4 | Is the device capable of joining a ZigBee SE network and does it interact with a consumer ZigBee Home Area Network only through a bridge device? | [R2]/5.1 | FDT2: M<br><br>FDT3: M | [Y] |
| SEG5 | Does the device support "E-Mode" commissioning?<br><br>SE Profile requirement: Those devices that will join an existing network must support button pushes or simple documented user interfaces to initiate the joining process. | [R2]/5.1 | FDT2: M<br><br>FDT3: M<br><br>For joining devices | [Y] |
| SEG6 | Deleted | [R2]/5.1 | | N/A |
| SEG7 | 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? | [R2]/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 | [Y] |
| SEG8 | Does the device support joining with pre-installed link keys?<br><br>Note: SE specifies use of Install Codes to derive the link key. | [R2]/5.4.1 | FDT2: M<br><br>FDT3: M | [Y] |
| SEG9 | Does the device support joining using the key establishment cluster? | [R2]/5.4.7 | FDT2: M<br><br>FDT3: M | [Y] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| SEG10 | Deleted | [R2]/5.5 | | NA |
| SEG11 | Does the device support the list of SE preferred channels? | [R2]/5.8.1 | O | [Y] |
| SEG12 | Does the device support the SE broadcast policy? | [R2]/5.8.2 | O | [Y] |
| SEG13 | Does the device support the SE frequency agility policy? | [R2]/5.8.3 | O | [Y] |
| SEG14 | Does the device support the security key update policies for SE networks? | [R2]/5.8.4 | M | [Y] |
| SEG15 | Does the device support the ZCL Time Cluster and SE time synchronization? Editor's Note: Support of the ZCL Time Cluster is not mandatory for all SE devices. The SE device descriptions define the required Time cluster support. | [R2]/5.12.1.1 | O | [Y] |
| SEG16 | Does the device support discovery of optional attributes? | [R2]/5.12 | M | [Y] |
| SEG17 | Does the device application discover and handle unsupported attributes in other devices? | [R2]/5.12 | M | [Y] |
| SEG18 | Does the device support an indication to the user that the network has formed properly? | [R2]/5.5.1 | O . | [Y] |
| SEG19 | Does the device support an indication to the user that a device has joined a network successfully? | [R2]/5.5.1 | O | [Y] |
| SEG20 | Does the device support the commissioning modes and provide supporting commissioning documentation according to network type? | [R2]/5.5.2, 5.5.3, 5.5.4 | M | [Y] |
| SEG21 | Does the device use the appropriate security key per cluster? | [R2]/5.4.6 | M | [Y] |
| SEG22 | Does the device support the SE Mirrored Device Capacity – Service Discovery? | [R4]/D.3.3.4.1 | O | [N] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| SEG23 | Does one of the device support the SE Install Code Formats: 48, 64, 96, or 128 bit number and 16 bit CRC? | [R4]/5.4.8.1.1 | O | [Y] |
| SEG24 | Does the device expect to receive unsolicited messages from the DRLC, Messaging, Metering or Pricing clusters? | [R4]/5.4.5.1 | O | [Y] |
| SEG25 | Does the device support rejoining a secured network? | [R4]/5.4.2 | FDT2:M FDT3:M[3] | [Y] |
| SEG26 | Does the device support devices leaving its network? | [R4]/5.4.3 | FDT1:M | [Y] |
| SEG27 | Does the device support updating the Network Key? | [R4]/5.4.4 | M | [Y] |
| SEG28 | Does the device support updating the Link Key? | [R4]/5.4.5 | M | [Y] |

1 ## 8.5   ZigBee SE device description support

2 **Table 6 – SE device description support**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| SED1 | Is the product programmed as an Energy Service Interface? | [R2]/6.3.1 | O.3[4] | [Y] [Int: EP# x] |
| SED2 | Is the product programmed as a Metering Device? | [R2]/6.3.2 | O.3 | [N] [Int: EP# x] |
| SED3 | Is the product programmed as an In-Premises Display? | [R2]/6.3.3 | O.3 | [N] [Int: EP# x] |
| SED4 | Is the product programmed as a Programmable Communicating Thermostat (PCT)? | [R2]/6.3.4 | O.3 | [N] [Int: EP# x] |

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[3] CCB 1431

[4] O.3 – Device under test must select at least one and may select more than one of the SE device descriptions.  If multiple SE 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 |
|---|---|---|---|---|
| SED5 | Is the product programmed as a Load Control? | [R2]/6.3.5 | O.3 | [N] <br> [Int: EP# x] |
| SED6 | Is the product programmed as a Range Extender? | [R2]/6.3.6 | O.3 | [N] <br> [Int: EP# x] |
| SED7 | Is the product programmed as a Smart Appliance? | [R2]/6.3.7 | O.3 | [N] <br> [Int: EP# x] |
| SED8 | Is the product programmed as a Prepayment Terminal? | [R2]/6.3.8 | O.3 | [N] <br> [Int: EP# x] |

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## 8.6   SE common clusters

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5 The common cluster ZCL PICs restrictions/requirements are obtained from [R2]/5.11, 5.12.

6                    **Table 7 – Common cluster ZCL PICS restrictions/requirements**

| ZCL PICS Item number [R7] | Status | Additional Constraints | Support |
|---|---|---|---|
| FC100 | M | ZCL Cluster ID enumeration is mandatory | [Y] |
| FC1 | M | General ZCL Frame Format is mandatory | [Y] |
| BCC1 | O | Does the device support the Basic Cluster as a client? | [Y] <br> [Int: EP# x] |
| BCS1 | M | Does the device support the Basic Cluster as a server? | [Y] <br> [Int: EP# x] |
| GCC1 | O | Deleted | NA |
| GCS1 | O | Deleted | NA |
| ACC1 | O | Does the device support the Alarms Cluster as a client? | [N] <br> [Int: EP# x] |

| ZCL PICS Item number [R7] | Status | Additional Constraints | Support |
|---|---|---|---|
| ACS1 | O | Does the device support the Alarms Cluster as a server? | [N]<br>[Int: EP# x] |
| TCS1 | | Deleted | NA |
| TCC1 | | Deleted | NA |

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2                                    **Table 8 – Common cluster support**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| ASDC1 | Deleted | [R2]/5.10 | | NA |
| ASDC2 | Deleted | [R2]/5.10 | | NA |
| ASDC3 | Deleted | [R2]/5.10 | | NA |
| ASDS1 | Deleted | | O | NA |
| ASDS2 | Does the device support the server Price Cluster sent via the Anonymous Inter-PAN transmission mechanism? | [R2]/Annex D.4 | O | [N]<br>[Int: EP# x] |
| ASDS3 | Does the device support the server Messaging Cluster sent via the Anonymous Inter-PAN transmission mechanism? | [R2]/Annex D.5 | O | [N]<br>[Int: EP# x] |
| KEC1 | Does the device support the Key Establishment cluster as a client? | [R2]/Annex C.3.1 | M | [Y]<br>[Int: EP# x] |
| KES1 | Does the device support the Key Establishment cluster as a server? | [R2]/Annex C.3.1 | M[5] | [Y]<br>[Int: EP# x] |
| PC1 | Does the device support the Price cluster as a client? | [R2]/6.1 | O | [Y]<br>[Int: EP# x] |
| PS1 | Does the device support the Price cluster as a | [R2]/ 6.1 | O | [Y] |

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[5] CCB 1432

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | server? | | | [Int: EP# x] |
| DRLC1 | Does the device support the Demand Response and Load Control cluster as a client? | [R2]/ 6.1 | O | [Y]<br>[Int: EP# x] |
| DRLS1 | Does the device support the Demand Response and Load Control cluster as a server? | [R2]/ 6.1 | O | [Y]<br>[Int: EP# x] |
| SMC1 | Does the device support the Metering cluster as a client? | [R2]/ 6.1 | O | [Y]<br>[Int: EP# x] |
| SMS1 | Does the device support the Metering cluster as a server? | [R2]/ 6.1 | O | [Y]<br>[Int: EP# x] |
| MC1 | Does the device support the Messaging cluster as a client? | [R2]/ 6.1 | O | [Y]<br>[Int: EP# x] |
| MS1 | Does the device support the Messaging cluster as a server? | [R2]/ 6.1 | O | [Y]<br>[Int: EP# x] |
| PPC1 | Does the device support the Prepayment cluster as a client? | [R2]/ 6.1 | O | [N]<br>[Int: EP# x] |
| PPS1 | Does the device support the Prepayment cluster as a server? | [R2]/ 6.1 | O | [N]<br>[Int: EP# x] |
| SECC1 | Does the device support clusters with Reporting Capability? | [R2]/6.1.1 | O | [N]<br>[Int: EP# x] |
| SECC2 | Are any manufacturer-specific cluster(s) supported? | [R2]/6.1.2 | O | [N]<br>[Int: EP# x] |
| SECC3 | Are any non-SE ZCL or other application cluster(s) supported? | [R2]/6.1.3 | O | [N]<br>[Int: EP# x] |
| ICS1 | Does the device support the Identify cluster? | [R2]/ 6.1 | O | [Y]<br>[Int: EP# x] |
| PCCS1 | Does the device support the Power | [R2]/ 6.1 | O | [N] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | Configuration cluster? | | | [Int: EP# x] |
| SMC2 | Does the device support the Block Tariffs Metering cluster attributes as a client? | [R2]/ 6.1 | O | [Y] [Int: EP# x] |
| SMS2 | Does the device support the Block Tariffs Metering cluster attributes as a server? | [R2]/ 6.1 | O | [Y] [Int: EP# x] |
| TUC1 | Does the device support the Tunneling cluster as a client? | [R2]/ 6.1 | O | [N] [Int: EP# x] |
| TUS1 | Does the device support the Tunneling cluster as a server? | [R2]/ 6.1 | O | [N] [Int: EP# x] |
| TCSW1 | Does the device support Trust Center Swap-out ? | [R2]/ 6.1 | O | [N] [Int: EP# x] |
| OTAC1 | Does the device support the OTA Upgrade cluster as a client? | [R2]/ 6.1 | O | [N] [Int: EP# x] |
| OTAS1 | Does the device support the OTA Upgrade cluster as a server? | [R2]/ 6.1 | O | [N] [Int: EP# x] |
| ALM1 | Does the device support the Alarms as a server? | [R2]/ 6.1 | O | [N] [Int: EP# x] |

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1  ## 8.7   ZigBee SE Device Description Capabilities

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

3  ### Energy Service Interface device functions

4

5  **Table 9 – Energy Service Interface ZCL PICS restrictions/requirements**

| ZCL PICS Item number [R7] | Status | Additional Constraints | Support |
|---|---|---|---|
| TCS1 | M | Time Cluster server is mandatory | [Y] [Int: EP# x] |

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8  Table 10 provides the SE PICs restrictions based on requirements in [R2]/6.3.1.1.

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10  **Table 10 – Energy Service Interface SE PICS restrictions/requirements**

| SE PICS Item number | Status | Additional Constraints | Support |
|---|---|---|---|
| SMC1 | O | Metering Cluster client is optional | [Y] [Int: EP# x] |
| SMS1 | O | Metering Cluster server is optional | [Y] [Int: EP# x] |
| MS1 | M | Messaging Cluster server is mandatory | [Y] [Int: EP# x] |
| PS1 | M | Price Cluster server is mandatory | [Y] [Int: EP# x] |
| DRLS1 | M | Demand Response and Load Cluster server is mandatory | [Y] [Int: EP# x] |
| PC1 | O | Price Cluster client is optional | [Y] [Int: EP# x] |

| SE PICS Item number | Status | Additional Constraints | Support |
|---|---|---|---|
| MS1 | O | Messaging Cluster client is optional | [N]<br>[Int: EP# x] |
| PPC1 | O | Prepayment Cluster client is optional | [N]<br>[Int: EP# x] |
| PPS1 | O | Prepayment Cluster server is optional | [N]<br>[Int: EP# x] |
| TUS1 | O | Tunneling Cluster server is optional | [N]<br>[Int: EP# x] |
| TCSW1 | O | Trust Center Swap-out is optional | [N]<br>[Int: EP# x] |
| OTAS1 | O | OTA Upgrade Cluster server is optional | [N]<br>[Int: EP# x] |
| TUC1 | O | Tunneling Cluster client is optional | [N]<br>[Int: EP# x] |
| OTAC1 | O | OTA Upgrade Cluster client is optional | [N]<br>[Int: EP# x] |

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4    ## Metering device functions

5    **Table 11 – Metering device ZCL PICS restrictions/requirements**

| ZCL PICS Item number [R7] | Status | Additional Constraints | Support |
|---|---|---|---|
| TCC1 | O | Time Cluster client is optional | [N/A]<br>[Int: EP# x] |

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2    Table 12 provides the SE PICs restrictions based on requirements in [R2]/6.3.2.1.

3

4                      **Table 12 – Metering device SE PICS restrictions/requirements**

| SE PICS Item number | Status | Additional Constraints | Support |
|---|---|---|---|
| SMS1 | M | Metering Cluster server is mandatory | [N/A] [Int: EP# x] |
| PPS1 | O | Prepayment Cluster server is optional | [N/A] [Int: EP# x] |
| PC1 | O | Price Cluster client is optional | [N/A] [Int: EP# x] |
| MC1 | O | Messaging Cluster client is optional | [N/A] [Int: EP# x] |
| SMS2 | O | Block Tariffs Metering cluster server attributes are optional | [N/A] [Int: EP# x] |
| TUC1 | O | Tunneling Cluster client is optional | [N/A] [Int: EP# x] |
| TUS1 | O | Tunneling Cluster server is optional | [N/A] [Int: EP# x] |
| TCSW1 | O | Trust Center Swap-out is optional | [N/A] [Int: EP# x] |
| OTAC1 | O | OTA Upgrade Cluster client is optional | [N/A] [Int: EP# x] |
| OTAS1 | O | OTA Upgrade Cluster server is optional | [N/A] [Int: EP# x] |

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2 **In-Premises display device functions**

3 **Table 13 – In-Premises display device ZCL PICS restrictions/requirements**

| ZCL PICS Item number [R7] | Status | Additional Constraints | Support |
|---|---|---|---|
| TCC1 | O | Time Cluster client is optional | [N/A] [Int: EP# x] |

4

5 Table 14 provides the SE PICs restrictions based on requirements in [R2]/6.3.3.1.

6

7 **Table 14 – In-Premises display device SE PICS restrictions/requirements**

| SE PICS Item number | Status | Additional Constraints | Support |
|---|---|---|---|
| DRLC1 | O | Demand Response and Load Cluster client is optional | [N/A] [Int: EP# x] |
| PC1 | O | Price Cluster client is optional | [N/A] [Int: EP# x] |
| SMC1 | O | Metering Cluster client is optional | [N/A] [Int: EP# x] |
| PPC1 | O | Pre-payment Cluster client is optional | [N/A] [Int: EP# x] |
| MC1 | O | Messaging Cluster client is optional | [N/A] [Int: EP# x] |
| TUC1 | O | Tunneling Cluster client is optional | [N/A] [Int: EP# x] |
| TCSW1 | O | Trust Center Swap-out is optional | [N/A] [Int: EP# x] |
| OTAC1 | O | OTA Upgrade Cluster client is optional | [N/A] [Int: EP# x] |

| SE PICS Item number | Status | Additional Constraints | Support |
|---|---|---|---|
| OTAS1 | O | OTA Upgrade Cluster server is optional | [N/A] [Int: EP# x] |

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## Programmable Communicating Thermostat (PCT) device functions

**Table 15 Programmable Communicating Thermostat (PCT) ZCL PICS restrictions/requirements**

| ZCL PICS Item number [R7] | Status | Additional Constraints | Support |
|---|---|---|---|
| TCC1 | M | Time Cluster client is mandatory | [N/A] [Int: EP# x] |

6

7    Table 16 provides the SE PICs restrictions based on requirements in [R2]/6.3.4.1.

8

9    **Table 16 Programmable Communicating Thermostat (PCT) SE PICS restrictions/requirements**

| SE PICS Item number | Status | Additional Constraints | Support |
|---|---|---|---|
| DRLC1 | M | Demand Response and Load Cluster client is mandatory | [N/A] [Int: EP# x] |
| PPC1 | O | Prepayment Cluster client is optional | [N/A] [Int: EP# x] |
| PPC1 | O | Pre-payment Cluster client is optional | [N/A] [Int: EP# x] |
| PC1 | O | Price Cluster client is optional | [N/A] [Int: EP# x] |
| SMC1 | O | Metering Cluster client is optional | [N/A] [Int: EP# x] |

| SE PICS Item number | Status | Additional Constraints | Support |
|---|---|---|---|
| MC1 | O | Messaging Cluster client is optional | [N/A] [Int: EP# x] |
| TUC1 | O | Tunneling Cluster client is optional | [N/A] [Int: EP# x] |
| TCSW1 | O | Trust Center Swap-out is optional | [N/A] [Int: EP# x] |
| OTAC1 | O | OTA Upgrade Cluster client is optional | [N/A] [Int: EP# x] |
| OTAS1 | O | OTA Upgrade Cluster server is optional | [N/A] [Int: EP# x] |

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2    **Load Control device functions**

3          **Table 17 – Load Control ZCL PICS restrictions/requirements**

| ZCL PICS Item number [R7] | Status | Additional Constraints | Support |
|---|---|---|---|
| TCC1 | M | Time Cluster client is mandatory | [N/A] [Int: EP# x] |

4

5 Table 18 provides the SE PICs restrictions based on requirements in [R2]/6.3.5.1.

6

7          **Table 18 – Load Control SE PICS restrictions/requirements**

| SE PICS Item number | Status | Additional Constraints | Support |
|---|---|---|---|
| DRLC1 | M | Demand Response and Load Cluster client is mandatory | [N/A] [Int: EP# x] |
| PC1 | O | Price Cluster client is optional | [N/A] [Int: EP# x] |

| SE PICS Item number | Status | Additional Constraints | Support |
|---|---|---|---|
| TUC1 | O | Tunneling Cluster client is optional | [N/A] [Int: EP# x] |
| TCSW1 | O | Trust Center Swap-out is optional | [N/A] [Int: EP# x] |
| OTAC1 | O | OTA Upgrade Cluster client is optional | [N/A] [Int: EP# x] |
| OTAS1 | O | OTA Upgrade Cluster server is optional | [N/A] [Int: EP# x] |

1

2    **Range Extender device functions**

3                 **Table 19 – Range Extender ZCL PICS restrictions/requirements**

| ZCL PICS Item number [R7] | Status | Additional Constraints | Support |
|---|---|---|---|
| TCC1 | O | Time Cluster client is optional. | [N/A] [Int: EP# x] |

4

5    Table 20 provides the SE PICs restrictions based on requirements in [R2]/6.3.6.1.

6

7                 **Table 20 –Range Extender SE PICS restrictions/requirements**

| SE PICS Item number | Status | Additional Constraints | Support |
|---|---|---|---|
| TCSW1 | O | Trust Center Swap-out is optional | [N/A] [Int: EP# x] |
| OTAC1 | O | OTA Upgrade Cluster client is optional | [N/A] [Int: EP# x] |
| OTAS1 | O | OTA Upgrade Cluster server is optional | [N/A] [Int: EP# x] |

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## 2      Smart Appliance device functions

3             **Table 21 – Smart Appliance ZCL PICS restrictions/requirements**

| ZCL PICS Item number [R7] | Status | Additional Constraints | Support |
|---|---|---|---|
| TCC1 | M | Time Cluster client is mandatory | [N/A] [Int: EP# x] |

4

5    Table 22 provides the SE PICs restrictions based on requirements in [R2]/6.3.7.1.

6

7             **Table 22 –Smart Appliance SE PICS restrictions/requirements**

| SE PICS Item number | Status | Additional Constraints | Support |
|---|---|---|---|
| PPC1 | O | Prepayment Cluster client is optional | [N/A] [Int: EP# x] |
| DRLC1 | O | Demand Response and Load Cluster client is optional | [N/A] [Int: EP# x] |
| PC1 | M | Price Cluster client is mandatory | [N/A] [Int: EP# x] |
| SMC1 | O | Metering Cluster client is optional  ED NOTE:  This is not listed in the specification – should it be? | [N/A] [Int: EP# x] |
| MC1 | O | Messaging Cluster client is optional | [N/A] [Int: EP# x] |
| TUC1 | O | Tunneling Cluster client is optional | [N/A] [Int: EP# x] |
| TCSW1 | O | Trust Center Swap-out is optional | [N/A] [Int: EP# x] |
| OTAC1 | O | OTA Upgrade Cluster client is optional | [N/A] [Int: EP# x] |

| SE PICS Item number | Status | Additional Constraints | Support |
|---|---|---|---|
| OTAS1 | O | OTA Upgrade Cluster server is optional | [N/A] [Int: EP# x] |

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3    **Prepayment Terminal device functions**

4             **Table 23 – Prepayment Terminal ZCL PICS restrictions/requirements**

| ZCL PICS Item number [R7] | Status | Additional Constraints | Support |
|---|---|---|---|
| TCC1 | M | Time Cluster client is mandatory | [N/A] [Int: EP# x] |

5

6    Table 24 provides the SE PICs restrictions based on requirements in [R2]/6.3.8.1.

7

8             **Table 24 – Per-payment Terminal SE PICS restrictions/requirements**

| SE PICS Item number | Status | Additional Constraints | Support |
|---|---|---|---|
| DRLC1 | O | Demand Response and Load Cluster client is optional | [N/A] [Int: EP# x] |
| PC1 | M | Price Cluster client is mandatory | [N/A] [Int: EP# x] |
| SMC1 | O | Metering Cluster client is optional | [N/A] [Int: EP# x] |
| MC1 | O | Messaging Cluster client is optional | [N/A] [Int: EP# x] |
| TUC1 | O | Tunneling Cluster client is optional | [N/A] [Int: EP# x] |
| TCSW1 | O | Trust Center Swap-out is optional | [N/A] [Int: EP# x] |

| SE PICS Item number | Status | Additional Constraints | Support |
|---|---|---|---|
| OTAC1 | O | OTA Upgrade Cluster client is optional | [N/A] [Int: EP# x] |
| OTAS1 | O | OTA Upgrade Cluster server is optional | [N/A] [Int: EP# x] |

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## 8.8 Smart Energy Application Specific Cluster function capabilities

3       Basic Cluster

4                          **Table 25 – Basic cluster server capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| BCS1 | Is the Basic Cluster supported as a server? | [R3] | M | [Y] [Int: EP# x] |
| BCS2 | Is the *ZCLversion* attribute supported? | | BCS1:M | [Y] [Int: EP# x] |
| BCS3 | Is the *Powersource* attribute supported? | | BCS1:M | [Y] [Int: EP# x] |
| BCS4 | Is the *PhysicalEnvironment* attribute supported? | | SEG22:M BCS1:O | [Y] [Int: EP# x] |

5

6                          **Table 26 – Basic cluster client capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| BCC1 | Is the Basic Cluster supported as a client? | [R3] | O | [Y] [Int: EP# x] |

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1      **Identify**
2
3

4      **Alarms**
5
6

7      **Commissioning**
8
9

10      **Power Configuration**
11
12

13      **Time Cluster attributes and functions**

14              **Table 27 – Time cluster server capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| TICS1 | Is the Time Cluster supported as a server? | [R3] | O | [Y]<br>[Int: EP# x] |
| TICS2 | Is the Time attribute supported? | | TICS1:M | [Y]<br>[Int: EP# x] |
| TICS3 | Is the TimeStatus attribute supported? | | TICS1:M | [Y]<br>[Int: EP# x] |
| TICS4 | Is the TimeZone attribute supported? | | TICS1:O | [Y]<br>[Int: EP# x] |
| TICS5 | Is the DstStart attribute supported? | | TICS1:O | [Y]<br>[Int: EP# x] |
| TICS6 | Is the DstEnd attribute supported? | | TICS1:O | [Y]<br>[Int: EP# x] |
| TICS7 | Is the DstShift attribute supported? | | TICS1:O | [Y]<br>[Int: EP# x] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| TICS8 | Is the StandardTime attribute supported? | | TICS1:O | [Y]<br>[Int: EP# x] |
| TICS9 | Is the LocalTime attribute supported? | | TICS1:O | [Y]<br>[Int: EP# x] |

1                        **Table 28 – Time cluster client capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| TICC1 | Is the Time Cluster supported as a client? | [R3] | O | [Y]<br>[Int: EP# x] |

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4        **Key Establishment Cluster attributes and functions**

5            **Table 29 – Key Establishment cluster server capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| KECS1 | Is the Key Establishment Cluster supported as a server? | [R2]/C.3.1 | M | [Y]<br>[Int: EP# x] |
| KECS2 | Is the KeyEstablishmentSuite attribute supported? | | KECS1:M | [Y]<br>[Int: EP# x] |
| KECS3 | Is the reception of Initiate Key Establishment Request command supported? | | KECS1:M | [Y]<br>[Int: EP# x] |
| KECS4 | Is the reception of Ephemeral Data Request command supported? | | KECS1:M | [Y]<br>[Int: EP# x] |
| KECS5 | Is the reception of Confirm Key Data Request command supported? | | KECS1:M | [Y]<br>[Int: EP# x] |
| KECS6 | Is the reception of Terminate Key Establishment command supported? | | KECS1:M | [Y]<br>[Int: EP# x] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| KECS7 | Is the generation of Initiate Key Establishment Response command supported? | | KECS1:M | [Y]<br>[Int: EP# x] |
| KECS8 | Is the generation of Ephemeral Data Response command supported? | | KECS1:M | [Y]<br>[Int: EP# x] |
| KECS9 | Is the generation of Confirm Key Data Response command supported? | | KECS1:M | [Y]<br>[Int: EP# x] |

1    **Table 30 – Key Establishment cluster client capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| KECC1 | Is the Key Establishment Cluster supported as a client? | [R2]/C.3.1 | M | [Y]<br>[Int: EP# x] |
| KECC2 | Is the KeyEstablishmentSuite attribute supported? | | KECC1:M | [Y]<br>[Int: EP# x] |
| KECC3 | Is the reception of Initiate Key Establishment Response command supported? | | KECC1:M | [Y]<br>[Int: EP# x] |
| KECC4 | Is the reception of Ephemeral Data Response command supported? | | KECC1:M | [Y]<br>[Int: EP# x] |
| KECC5 | Is the reception of Confirm Key Data Response command supported? | | KECC1:M | [Y]<br>[Int: EP# x] |
| KECC6 | Is the reception of Terminate Key Establishment command supported? | | KECC1:M | [Y]<br>[Int: EP# x] |
| KECC7 | Is the generation of Initiate Key Establishment Request command supported? | | KECC1:M | [Y]<br>[Int: EP# x] |
| KECC8 | Is the generation of Ephemeral Data Request command supported? | | KECC1:M | [Y]<br>[Int: EP# x] |
| KECC9 | Is the generation of Confirm Key Data Request command supported? | | KECC1:M | [Y] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | | | | [Int: EP# x] |
| KECC10 | Is the generation of Terminate Key Establishment command supported? | | KECC1:M | [Y] [Int: EP# x] |

1

2    ## Demand Response and Load Control Cluster attributes and functions

3    **Table 31 – Demand Response and Load Control cluster server capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| DRLCCS1 | Is the Demand Response and Load Control Cluster supported as a server? | [R2]/D.2 | O | [Y] [Int: EP# x] |
| DRLCCS2 | Is the reception of Report Event Status command supported? | | DRLCCS1:M | [Y] [Int: EP# x] |
| DRLCCS3 | Is the reception of Get Scheduled Events command supported? | | DRLCCS1:M | [Y] [Int: EP# x] |
| DRLCCS4 | Is the generation of Load Control Event command supported? | | DRLCCS1:M | [Y] [Int: EP# x] |
| DRLCCS5 | Is the generation of Cancel Load Control Event command supported? | | DRLCCS1:M | [Y] [Int: EP# x] |
| DRLCCS6 | Is the generation of Cancel All Load Control Events command supported? | | DRLCCS1:M | [Y] [Int: EP# x] |

4    **Table 32 – Demand Response and Load Control cluster client capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| DRLCCC1 | Is the Demand Response and Load Control Cluster supported as a client? | [R2]/D.2 | O | [Y] [Int: EP# x] |
| DRLCCC2 | Is the UtilityEnrolmentGroup attribute supported? | | DRLCCC1:M | [Y] [Int: EP# x] |
| DRLCCC3 | Is the StartRandomizeMinutes attribute | | DRLCCC1:M | [Y] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | supported? | | | [Int: EP# x] |
| DRLCCC4 | Is the StopRandomizeMinutes attribute supported? | | DRLCCC1:M | [Y]<br>[Int: EP# x] |
| DRLCCC5 | Is the DeviceClassValue attribute supported? | | DRLCCC1:M | [Y]<br>[Int: EP# x] |
| DRLCCC5.1 | Is it permitted to externally write the DeviceClassValue attribute?[6] | | DRLCCC1:O | [Y]<br>[Int: EP# x] |
| DRLCCC6 | Is the reception of Load Control Event command supported? | | DRLCCC1:M | [Y]<br>[Int: EP# x] |
| DRLCCC7 | Is the reception of Cancel Load Control Event command supported? | | DRLCCC1:M | [Y]<br>[Int: EP# x] |
| DRLCCC8 | Is the reception of Cancel All Load Control Events command supported? | | DRLCCC1:M | [Y]<br>[Int: EP# x] |
| DRLCCC9 | Is the generation of Report Event Status command supported? | | DRLCCC1:M | [Y]<br>[Int: EP# x] |
| DRLCCC10 | Is the generation of Get Scheduled Events command supported? | | DRLCCC1:M | [Y]<br>[Int: EP# x] |

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3    **Metering Cluster attributes and functions**

4               **Table 33 – Metering cluster server capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| MECS1 | Is the Metering Cluster supported as a server? | [R2]/D.3 | O | [Y]<br>[Int: EP# x] |
| MECS2 | Is the CurrentSummationDelivered attribute | | MECS1:M | [Y] |

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| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | supported? | | | [Int: EP# x] |
| MECS3 | Is the CurrentSummationReceived attribute supported? | | MECS1:O | [Y]<br>[Int: EP# x] |
| MECS4 | Is the CurrentMaxDemandDelivered attribute supported? | | MECS1:O | [Y]<br>[Int: EP# x] |
| MECS5 | Is the CurrentMaxDemandReceived attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS6 | Is the DFTSummation attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS7 | Is the DailyFreezeTime attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS8 | Is the PowerFactor attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS9 | Is the ReadingSnapShotTime attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS10 | Is the CurrentMaxDemandDeliveredTime attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS11 | Is the CurrentMaxDemandReceivedTime attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS12 | Is the DefaultUpdatePeriod attribute supported? | | MECS1:O | [Y]<br>[Int: EP# x] |
| MECS13 | Is the FastPollUpdatePeriod attribute supported? | | MECS1:O | [Y]<br>[Int: EP# x] |
| MECS14 | Is the CurrentBlockPeriodConsumptionDelivered attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS15 | Is the DailyConsumptionTarget attribute | | MECS1:O | [N] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | supported? | | | [Int: EP# x] |
| MECS16 | Is the CurrentBlock attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS17 | Is the CurrentTier1SummationDelivered attribute supported? | | MECS1:O | [Y]<br>[Int: EP# x] |
| MEC18 | Is the CurrentTier1SummationReceived attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS19 | Is the CurrentTier2SummationDelivered attribute supported? | | MECS1:O | [Y]<br>[Int: EP# x] |
| MECS20 | Is the CurrentTier2SummationReceived attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS21 | Is the CurrentTier3SummationDelivered attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS22 | Is the CurrentTier3SummationReceived attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS23 | Is the CurrentTier4SummationDelivered attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS24 | Is the CurrentTier4SummationReceived attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS25 | Is the CurrentTier5SummationDelivered attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS26 | Is the CurrentTier5SummationReceived attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS27 | Is the CurrentTier6SummationDelivered attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS28 | Is the CurrentTier6SummationReceived attribute | | MECS1:O | [N] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | supported? | | | [Int: EP# x] |
| MECS29 | Is the CurrentTier7SummationDelivered attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS30 | Is the CurrentTier7SummationReceived attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS31 | Is the CurrentTier8SummatioDelivered attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS32 | Is the CurrentTier8SummationReceived attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS33 | Is the CurrentTier9SummationDelivered attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS34 | Is the CurrentTier9SummationReceived attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS35 | Is the CurrentTier10SummationDelivered attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS36 | Is the CurrentTier10SummationReceived attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS37 | Is the CurrentTier11SummationDelivered attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS38 | Is the CurrentTier11SummationReceived attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS39 | Is the CurrentTier12SummationDelivered attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS40 | Is the CurrentTier12SummationReceived attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS41 | Is the CurrentTier13SummationDelivered | | MECS1:O | [N] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | attribute supported? | | | [Int: EP# x] |
| MECS42 | Is the CurrentTier13SummationReceived attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS43 | Is the CurrentTier14SummationDelivered attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS44 | Is the CurrentTier14SummationReceived attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS45 | Is the CurrentTier15SummationDelivered attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS46 | Is the CurrentTier15SummationReceived attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS47 | Is the Meter Status attribute supported? | | MECS1:M | [Y]<br>[Int: EP# x] |
| MECS48 | Is the UnitofMeasure attribute supported? | | MECS1:M | [Y]<br>[Int: EP# x] |
| MECS49 | Is the Multiplier attribute supported? | | MECS1:O | [Y]<br>[Int: EP# x] |
| MECS50 | Is the Divisor attribute supported? | | MECS1:O | [Y]<br>[Int: EP# x] |
| MECS51 | Is the SummationFormatting attribute supported? | | MECS1:M | [Y]<br>[Int: EP# x] |
| MECS52 | Is the DemandFormatting attribute supported? | | MECS1:O | [Y]<br>[Int: EP# x] |
| MECS53 | Is the HistoricalConsumptionFormatting attribute supported? | | MECS1:O | [Y]<br>[Int: EP# x] |
| MECS54 | Is the MeteringDeviceType attribute supported? | | MECS1:M | [Y] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | | | | [Int: EP# x] |
| MECS54a | Is the MeteringDeviceType: Electric Metering? | | MECS54:O.1 | [Y] <br> [Int: EP# x] |
| MECS54b | Is the MeteringDeviceType: Gas Metering? | | MECS54:O.1 | [Y] <br> [Int: EP# x] |
| MECS54c | Is the MeteringDeviceType: Water Metering? | | MECS54:O.1 | [Y] <br> [Int: EP# x] |
| MECS54d | Is the MeteringDeviceType: Pressure Metering? | | MECS54:O.1 | [Y] <br> [Int: EP# x] |
| MECS54e | Is the MeteringDeviceType: Heat Metering? | | MECS54:O.1 | [Y] <br> [Int: EP# x] |
| MECS54f | Is the MeteringDeviceType: Cooling Metering? | | MECS54:O.1 | [Y] <br> [Int: EP# x] |
| MECS55 | Is the SiteID attribute supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS56 | Is the MeterSerialNumber attribute supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS57 | Is the InstantaneousDemand attribute supported? | | MECS1:O | [Y] <br> [Int: EP# x] |
| MECS58 | Is the CurrentDayConsumptionDelivered attribute supported? | | MECS1:O | [Y] <br> [Int: EP# x] |
| MECS59 | Is the CurrentDayConsumptionReceived attribute supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS60 | Is the PreviousDayConsumptionDelivered attribute supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS61 | Is the PreviousDayConsumptionReceived | | MECS1:O | [N] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | attribute supported? | | | [Int: EP# x] |
| MECS62 | Is the CurrentPartialProfileIntervalStartTimeDelivered attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS63 | Is the CurrentPartialProfileIntervalStartTimeReceived attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS64 | Is the CurrentPartialProfileIntervalValueDelivered attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS65 | Is the CurrentPartialProfileIntervalValueReceived attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS66 | Is the MaxNumberOfPeriodsDelivered attribute supported? | | MECS1:O | [Y] [Int: EP# x] |
| MECS67 | Is the CurrentDemandDelivered attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS68 | Is the DemandLimit attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS69 | Is the DemandIntegrationPeriod attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS70 | Is the NumberOfDemandSubintervals attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS71 | Is the reception of Get Profile command supported? | | MECS1:O | [Y] [Int: EP# x] |
| MECS72 | Is the reception of Request Mirror Response command supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS73 | Is the reception of Mirror Removed command supported? | | MECS1:O | [N] [Int: EP# x] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| MECS74 | Is the generation of Get Profile Response command supported? | | MECS1:O | [Y]<br>[Int: EP# x] |
| MECS75 | Is the generation of Request Mirror command supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS76 | Is the generation of Remove Mirror command supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS77 | Is the ProfileIntervalPeriod attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS78 | Is the IntervalReadReportingPeriod attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS79 | Is the PresetReadingTime attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS80 | Is the VolumePerReport attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS81 | Is the FlowRestriction attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS82 | Is the Supply Status attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS83 | Is the CurrentDayMaxPressure attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS84 | Is the CurrentDayMinPressure attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS85 | Is the PreviousDayMaxPressure attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS86 | Is the PreviousDayMinPressure attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| MECS87 | Is the CurrentDayMaxDemand attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS88 | Is the PreviousDayMaxDemand attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS89 | Is the Meter Status (Gas) attribute supported? | | MECS1:O | [Y]<br>[Int: EP# x] |
| MECS90 | Is the Meter Status (Water) attribute supported? | | MECS1:O | [Y]<br>[Int: EP# x] |
| MECS91 | Is the RemainingBatteryLife attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS92 | Is the Block Information attribute set supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS93 | Is the CurrentInletEnergyCarrierSummation attribute supported? | | MECS54e:M<br>MECS54f:M<br>MECS1:O | [Y]<br>[Int: EP# x] |
| MECS94 | Is the CurrentOutletEnergyCarrierSummation attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS95 | Is the InletTemperature attribute supported? | | MECS54e:M<br>MECS54f:M<br>MECS1:O | [Y]<br>[Int: EP# x] |
| MECS96 | Is the OutletTemperature attribute supported? | | MECS54e:M<br>MECS54f:M<br>MECS1:O | [Y]<br>[Int: EP# x] |
| MECS97 | Is the ControlTemperature attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS98 | Is the CurrentInletEnergyCarrierDemand attribute supported? | | MECS1:O | [N]<br>[Int: EP# x] |
| MECS99 | Is the CurrentOutletEnergyCarrierDemand attribute supported? | | MECS1:O | [N] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | | | | [Int: EP# x] |
| MECS100 | Is the EnergyCarrierUnitOfMeasure attribute supported? | | MECS54e:M MECS54f:M MECS1:O | [Y] [Int: EP# x] |
| MECS101 | Is the EnergyCarrierSummationFormatting attribute supported? | | MECS93:M MECS94:M | [Y] [Int: EP# x] |
| MECS102 | Is the EnergyCarrierDemandFormatting attribute supported? | | MECS98:M MECS99:M MECS107:M MECS108:M MECS109:M MECS110:M MECS111:M MECS112:M | [N] [Int: EP# x] |
| MECS103 | Is the TemperatureUnitOfMeasure attribute supported? | | MECS54e:M MECS54f:M | [Y] [Int: EP# x] |
| MECS104 | Is the TemperatureFormatting attribute supported? | | MECS54e:M MECS54f:M | [Y] [Int: EP# x] |
| MECS105 | Is the CurrentMonthMaxDemand attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS106 | Is the CurrentYearMaxDemand attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS107 | Is the CurrentDayMaxEnergyCarrierDemand attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS108 | Is the PreviousDayMaxEnergyCarrierDemand attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS109 | Is the CurrentMonthMaxEnergyCarrierDemand attribute supported? | | MECS1:O | [N] [Int: EP# x] |
| MECS110 | Is the CurrentMonthMinEnergyCarrierDemand attribute supported? | | MECS1:O | [N] [Int: EP# x] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| MECS111 | Is the CurrentYearMaxEnergyCarrierDemand attribute supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS112 | Is the CurrentYearMinEnergyCarrierDemand attribute supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS113 | Is the HoursInOperation attribute supported? | | MECS54e:M <br> MECS54f:M | [Y] <br> [Int: EP# x] |
| MECS114 | Is the HoursInFault attribute supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS115 | Is the Generic AlarmMask attribute supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS116 | Is the Electricity AlarmMask attribute supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS117 | Is the GenericFlow/Pressure AlarmMask attribute supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS118 | Is the Water Specific AlarmMask attribute supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS119 | Is the Heating Specific AlarmMask attribute supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS120 | Is the Cooling Specific AlarmMask attribute supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS121 | Is the Gas Specific AlarmMask attribute supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS122 | Is the reception of Request Fast Poll Mode command supported? | | MECS1:O | [N] <br> [Int: EP# x] |
| MECS123 | Is the generation of Request Fast Poll Mode Response supported? | | MECS1:O | [N] <br> [Int: EP# x] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| MECS124 | Is the Mapping of the Status Attribute (Electricity) supported? | [R2]/D.3.2.2.3.1 Table D.16 | MECS54a:M | [Y]<br>[Int: EP# x] |
| MECS125 | Is the Meter Status Attribute (Gas) mapping supported? | [R2]/D.3.2.2.3.1 Table D.17 | MECS54b:M | [Y]<br>[Int: EP# x] |
| MECS126 | Is the Meter Status Attribute (Water) mapping supported? | [R2]/D.3.2.2.3.1 Table D.18 | MECS54c:M | [Y]<br>[Int: EP# x] |
| MECS127 | RESERVED | | | [NA] |
| MECS128 | Is the Meter Status Attribute (Heat and Cooling) mapping? | [R2]/D.3.2.2.3.1 Table D.19 | MECS54e:M MECS54f:M | [Y]<br>[Int: EP# x] |
| MECS129 | RESERVED | | | [NA] |
| MECS130 | Does the device generate fragmented Get Profile Response commands? | | MECS74:O | [Y]<br>[Int: EP# x] |

1                        **Table 34 – Metering cluster client capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| MECC1 | Is the Metering Cluster supported as a client? | [R2]/D.3 | O | [Y]<br>[Int: EP# x] |
| MECC2 | Is the reception of Get Profile Response command supported? | | MECC1:O | [Y]<br>[Int: EP# x] |
| MECC3 | Is the reception of Request Mirror command supported? | | MECC1:O | [N]<br>[Int: EP# x] |
| MECC4 | Is the reception of Remove Mirror command supported? | | MECC1:O | [N]<br>[Int: EP# x] |
| MECC5 | Is the generation of Get Profile command supported? | | MECC1:O | [Y]<br>[Int: EP# x] |
| MECC6 | Is the generation of Request Mirror Response | | MECC1:O | [N] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | command supported? | | | [Int: EP# x] |
| MECC7 | Is the generation of Mirror Removed command supported? | | MECC1:O | [N] [Int: EP# x] |
| MECC8 | Is the reception of Request Fast Poll Mode Response command supported? | | MECC1:O | [N] [Int: EP# x] |
| MECC9 | Is the generation of Request Fast Poll Mode command supported? | | MECC1:O | [N] [Int: EP# x] |
| MECC10 | Does the device support reception of fragmented Get Profile Response commands? | | MECC5:M | [Y] [Int: EP# x] |

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3 ## Price Cluster attributes and functions
4 **Table 35 – Price cluster server capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| PCS1 | Is the Price Cluster supported as a server? | [R2]/D.4 | O | [Y] [Int: EP# x] |
| PCS2 | Is the Tier1PriceLabel attribute supported? | | PCS1:O | [Y] [Int: EP# x] |
| PCS3 | Is the Tier2PriceLabel attribute supported? | | PCS1:O | [Y] [Int: EP# x] |
| PCS4 | Is the Tier3PriceLabel attribute supported? | | PCS1:O | [N] [Int: EP# x] |
| PCS5 | Is the Tier4PriceLabel attribute supported? | | PCS1:O | [N] [Int: EP# x] |
| PCS6 | Is the Tier5PriceLabel attribute supported? | | PCS1:O | [N] [Int: EP# x] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| PCS7 | Is the Tier6PriceLabel attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS8 | Is the reception of Get Current Price command supported? | | PCS1:M | [Y]<br>[Int: EP# x] |
| PCS9 | Is the reception of Get Scheduled Prices command supported? | | PCS1:O | [Y]<br>[Int: EP# x] |
| PCS10 | Is the generation of Publish Price command supported? | | PCS1:M | [Y]<br>[Int: EP# x] |
| PCS11 | Is the Tier7PriceLabel attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS12 | Is the Tier8PriceLabel attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS13 | Is the Tier9PriceLabel attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS14 | Is the Tier10PriceLabel attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS15 | Is the Tier11PriceLabel attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS16 | Is the Tier12PriceLabel attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS17 | Is the Tier13PriceLabel attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS18 | Is the Tier14PriceLabel attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS19 | Is the Tier15PriceLabel attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| PCS20 | Is the Block Threshold attribute set supported? | | PCS1:O | [Y]<br>[Int: EP# x] |
| PCS25 | Is the reception of Price Acknowledgement command supported? | | PCS1:O | [Y]<br>[Int: EP# x] |
| PCS26 | Is the generation of Publish Block Period command supported? | | PCS1:O | [Y]<br>[Int: EP# x] |
| PCS27 | Is the reception of Get Block Period(s) command support? | | PCS1:O | [Y]<br>[Int: EP# x] |
| PCS28 | Is the Commodity Type (server) attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS29 | Is the Standing Charge attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS30 | Is the *ConversionFactor* attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS31 | Is the *ConversionFactorTrailingDigit* supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS32 | Is the *CalorificValue* attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS33 | Is the *CalorificValueUnit* attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS34 | Is the *CalorificValueTrailingDigit* attribute supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS35 | Is the Block Price Information attribute set supported? | | PCS1:O | [Y]<br>[Int: EP# x] |
| PCS36 | Is the reception of the *GetConversionFactor* command supported? | | PCS1:O | [N]<br>[Int: EP# x] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| PCS37 | Is the reception of the *GetCalorificValue* command supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS38 | Is the generation of the *Publish Conversion Factor* command supported? | | PCS1:O | [N]<br>[Int: EP# x] |
| PCS39 | Is the generation of the *Publish Calorific Value* command supported? | | PCS1:O | [N]<br>[Int: EP# x] |

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**Table 36 – Price cluster client capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| PCC1 | Is the Price Cluster supported as a client? | [R2]/D.4 | O | [Y]<br>[Int: EP# x] |
| PCC2 | Is the reception of Publish Price command supported? | | PCC1:M | [Y]<br>[Int: EP# x] |
| PCC3 | Is the generation of Get Current Price command supported? | | PCC1:M | [Y]<br>[Int: EP# x] |
| PCC4 | Is the generation of Get Scheduled Prices command supported? | | PCC1:O | [Y]<br>[Int: EP# x] |
| PCC5 | Is the PriceIncreaseRandomizeMinutes attribute supported? | | PCC1:O | [N]<br>[Int: EP# x] |
| PCC6 | Is the PriceDecreaseRandomizeMinutes attribute supported? | | PCC1:O | [N]<br>[Int: EP# x] |
| PCC7 | Is the Commodity Type (client) attribute supported? | | PCC1:O | [N]<br>[Int: EP# x] |
| PCC8 | Is the generation of Price Acknowledgement command supported? | | PCC1:O | [Y]<br>[Int: EP# x] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| PCC9 | Is the reception of Publish Block Period command supported? | | PCC1:O | [Y]<br>[Int: EP# x] |
| PCC10 | Is the generation of Get Block Period(s) command supported? | | PCC1:O | [Y]<br>[Int: EP# x] |
| PCC11 | Is the Block Tariffs TOU charging behavior supported? | [R2]/D.4.4.3.1 | PCC10:M | [Y]<br>[Int: EP# x] |
| PCC12 | Is the Block Tariffs Block Charging behavior supported? | [R2]/D.4.4.3.2 | PCC10:M | [Y]<br>[Int: EP# x] |
| PCC13 | Is the Block Tariffs Block/TOU Combination Charging supported? | [R2]/D.4.4.3.3 | PCC10:M | [Y]<br>[Int: EP# x] |
| PCC14 | Is the Block Tariffs guideline for extended non-communication supported? | [R2]/D.4.4.3.4 | PCC10:O | [Y]<br>[Int: EP# x] |
| PCC15 | Is the Block Tariffs guideline for meter installation or swap-out supported? | [R2]/D.4.4.3.4 | PCC10:O | [Y]<br>[Int: EP# x] |
| PCC16 | Is the generation of the *GetConversionFactor* command supported? | | PCC1:O | [N]<br>[Int: EP# x] |
| PCC17 | Is the generation of the *GetCalorificValue* command supported? | | PCC1:O | [N]<br>[Int: EP# x] |
| PCC18 | Is the reception of the *Publish Conversion Factor* command supported? | | PCC1:O | [N]<br>[Int: EP# x] |
| PCC19 | Is the reception of the *Publish Calorific Value* command supported? | | PCC1:O | [N]<br>[Int: EP# x] |

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1      **Messaging Cluster attributes and functions**

2                       **Table 37 – Messaging cluster server capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| MCS1 | Is the Messaging Cluster supported as a server? | [R2]/D.5 | O | [Y] <br> [Int: EP# x] |
| MCS2 | Is the reception of Get Last Message command supported? | | MCS1:M | [Y] <br> [Int: EP# x] |
| MCS2 | Is the reception of Message Confirmation command supported? | | MCS1:M | [Y] <br> [Int: EP# x] |
| MCS3 | Is the generation of Display Message command supported? | | MCS1:M | [Y] <br> [Int: EP# x] |
| MCS4 | Is the generation of Cancel Message command supported? | | MCS1:M | [Y] <br> [Int: EP# x] |

3                       **Table 38 – Messaging cluster client capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| MCC1 | Is the Messaging Cluster supported as a client? | [R2]/D.5 | O[7] | [Y] <br> [Int: EP# x] |
| MCC2 | Is the reception of Display Message command supported? | | MCC1:M | [Y] <br> [Int: EP# x] |
| MCC3 | Is the reception of Cancel Message command supported? | | MCC1:M | [Y] <br> [Int: EP# x] |
| MCC4 | Is the generation of Get Last Message command supported? | | MCC1:M | [Y] <br> [Int: EP# x] |
| MCC5 | Is the generation of Message Confirmation command supported? | | MCC1:M | [Y] <br> [Int: EP# x] |

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2    Tunneling Cluster attributes and functions

3    **Table 39 – Tunneling cluster server capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| TUS1 | Is the Tunneling Cluster supported as a server? | [R2]/D.6 | O | [N]<br>[Int: EP# x] |
| TUS2 | Is the reception of RequestTunnel command supported? | [R2]/D.6.2.4 | TUS1:M | [N]<br>[Int: EP# x] |
| TUS3 | Is the reception of CloseTunnel command supported? | [R2]/D.6.2.4 | TUS1:M | [N]<br>[Int: EP# x] |
| TUS4 | Is the reception of TransferData command supported? | [R2]/D.6.2.4 | TUS1:M | [N]<br>[Int: EP# x] |
| TUS5 | Is the reception of TransferDataError command supported? | [R2]/D.6.2.4 | TUS1:M | [N]<br>[Int: EP# x] |
| TUS6 | Is the reception of AckTransferData command supported? | [R2]/D.6.2.4 | TUS1:O | [N]<br>[Int: EP# x] |
| TUS7 | Is the reception of ReadyData command supported? | [R2]/D.6.2.4 | TUS1:O | [N]<br>[Int: EP# x] |
| TUS8 | Is the generation of RequestTunnelResponse command supported? | [R2]/D.6.2.5 | TUS1:M | [N]<br>[Int: EP# x] |
| TUS9 | Is the generation of TransferData command supported? | [R2]/D.6.2.5 | TUS1:M | [N]<br>[Int: EP# x] |
| TUS10 | Is the generation of TransferDataError command supported? | [R2]/D.6.2.5 | TUS1:M | [N]<br>[Int: EP# x] |
| TUS11 | Is the generation of AckTransferData command supported? | [R2]/D.6.2.5 | TUS1:O | [N]<br>[Int: EP# x] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| TUS12 | Is the generation of ReadyData command supported? | [R2]/D.6.2.5 | TUS1:O | [N]<br>[Int: EP# x] |
| TUS13 | Is the reception of the *GetSupportedTunnelProtocols* supported? | [R2]/D.6.2.4 | TUS1:O | [N]<br>[Int: EP# x] |
| TUS14 | Is the generation of the *Supported Tunnel Protocols Response* command supported? | [R2]/D.6.2.5 | TUS1:O | [N]<br>[Int: EP# x] |
| TUS15 | Is the generation of the *TunnelClosureNotification* command supported? | [R2]/D.6.2.5 | TUS1:O | [N]<br>[Int: EP# x] |

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**Table 40 – Tunneling cluster client capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| TUC1 | Is the Tunneling Cluster supported as a client? | [R2]/D.6 | O | [N]<br>[Int: EP# x] |
| TUC2 | Is the reception of RequestTunnelResponse command supported? | [R2]/D.6.3.3 | TUC1:M | [N]<br>[Int: EP# x] |
| TUC3 | Is the reception of TransferData command supported? | [R2]/D.6.3.3 | TUC1:M | [N]<br>[Int: EP# x] |
| TUC4 | Is the reception of TransferDataError command supported? | [R2]/D.6.3.3 | TUC1:M | [N]<br>[Int: EP# x] |
| TUC5 | Is the reception of AckTransferData command supported? | [R2]/D.6.3.3 | TUC1:O | [N]<br>[Int: EP# x] |
| TUC6 | Is the generation of ReadyData command supported? | [R2]/D.6.3.3 | TUC1:O | [N]<br>[Int: EP# x] |
| TUC7 | Is the generation of RequestTunnel command supported? | [R2]/D.6.3.4 | TUC1:M | [N]<br>[Int: EP# x] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| TUC8 | Is the generation of CloseTunnel command supported? | [R2]/D.6.3.4 | TUC1:M | [N]<br>[Int: EP# x] |
| TUC9 | Is the generation of TransferData command supported? | [R2]/D.6.3.4 | TUC1:M | [N]<br>[Int: EP# x] |
| TUC10 | Is the generation of TransferDataError command supported? | [R2]/D.6.3.4 | TUC1:M | [N]<br>[Int: EP# x] |
| TUC11 | Is the generation of AckTransferData command supported? | [R2]/D.6.3.4 | TUC1:O | [N]<br>[Int: EP# x] |
| TUC12 | Is the generation of ReadyData command supported? | [R2]/D.6.3.4 | TUC1:O | [N]<br>[Int: EP# x] |
| TUC13 | Is the generation of the *GetSupportedTunnelProtocols* supported? | [R2]/D.6.2.4 | TUC1:O | [N]<br>[Int: EP# x] |
| TUC14 | Is the reception of the *Supported Tunnel Protocols Response* command supported? | [R2]/D.6.2.5 | TUC1:O | [N]<br>[Int: EP# x] |
| TUC15 | Is the reception of the *TunnelClosureNotification* command supported? | [R2]/D.6.2.5 | TUC1:O | [N]<br>[Int: EP# x] |

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2  **Prepayment Cluster attributes and functions**

3  **Table 41 – Prepayment cluster server capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| PPCS1 | Is the Prepayment Cluster supported as a server? | [R2]/D.7 | O | [N]<br>[Int: EP# x] |
| PPCS2 | Is the reception of Select Available Emergency Credit command supported? | [R2]/D.7.2.3 | PPCS1:O | [N]<br>[Int: EP# x] |
| PPCS3 | Is the reception of Change Supply command | [R2]/D.7.2.3 | PPCS1:O | [N] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | supported? | | | [Int: EP# x] |
| PPCS4 | Is the generation of Supply Status Response command supported? | [R2]/D.7.2.4 | PPCS1:O | [N] [Int: EP# x] |
| PPCS7 | Is the Payment Control attribute supported? | [R2]/D.7.2.2.1 | PPCS1:M | [N] [Int: EP# x] |
| PPCS8 | Is the Credit Remaining attribute supported? | [R2]/D.7.2.2.1 | PPCS1:O | [N] [Int: EP# x] |
| PPCS9 | Is the Emergency Credit Remaining attribute supported? | [R2]/D.7.2.2.1 | PPCS1:O | [N] [Int: EP# x] |
| PPCS10 | Is the Credit Status attribute supported? | [R2]/D.7.2.2.1 | PPCS1:O | [N] [Int: EP# x] |
| PPCS11 | Are the Top up Date/Time attributes supported? If so, list supported attributes #1-5. | [R2]/D.7.2.2.2 | PPCS1:O | [N] [Int: EP# x] |
| PPCS12 | Are the Top up Amount attributes supported? If so, list supported attributes #1-5. | [R2]/D.7.2.2.2 | PPCS1:O | [N] [Int: EP# x] |
| PPCS13 | Are the Originating Device attributes supported? If so, list supported attributes #1-5. | [R2]/D.7.2.2.2 | PPCS1:O | [N] [Int: EP# x] |
| PPCS14 | Is the Fuel Debt Remaining attribute supported? | [R2]/D.7.2.2.3 | PPCS1:O | [N] [Int: EP# x] |
| PPCS15 | Is the Fuel Debt Recovery Rate attribute supported? | [R2]/D.7.2.2.3 | PPCS1:O | [N] [Int: EP# x] |
| PPCS16 | Is the Fuel Debt Recovery Period attribute supported? | [R2]/D.7.2.2.3 | PPCS1:O | [N] [Int: EP# x] |
| PPCS17 | Is the Non Fuel Debt Remaining attribute supported? | [R2]/D.7.2.2.3 | PPCS1:O | [N] [Int: EP# x] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| PPCS18 | Is the Non Fuel Debt Recovery Rate attribute supported? | [R2]/D.7.2.2.3 | PPCS1:O | [N]<br>[Int: EP# x] |
| PPCS19 | Is the Non Fuel Debt Recovery Period attribute supported? | [R2]/D.7.2.2.3 | PPCS1:O | [N]<br>[Int: EP# x] |
| PPCS20 | Is the Proposed Change Provider ID attribute supported? | [R2]/D.7.2.2.4 | PPCS1:O | [N]<br>[Int: EP# x] |
| PPCS21 | Is the Proposed Change Implementation Time attribute supported? | [R2]/D.7.2.2.4 | PPCS1:O | [N]<br>[Int: EP# x] |
| PPCS22 | Is the Proposed Change Supply Status attribute supported? | [R2]/D.7.2.2.4 | PPCS1:O | [N]<br>[Int: EP# x] |
| PPCS23 | Is the Delayed Supply Interrupt – Value Remaining attribute supported? | [R2]/D.7.2.2.4 | PPCS1:O | [N]<br>[Int: EP# x] |
| PPCS24 | Is the Delayed Supply Interrupt – Value Type attribute supported? | [R2]/D.7.2.2.4 | PPCS1:O | [N]<br>[Int: EP# x] |

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**Table 42 – Prepayment cluster client capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| PPCC1 | Is the Prepayment Cluster supported as a client? | [R2]/D.7 | O | [N]<br>[Int: EP# x] |
| PPCC2 | Is the generation of Select Available Emergency Credit command supported? | [R2]/D.7.3.4 | PPCC1:O | [N]<br>[Int: EP# x] |
| PPCC3 | Is the generation of Change Supply command supported? | [R2]/D.7.3.4 | PPCC1:O | [N]<br>[Int: EP# x] |
| PPCC4 | Is the reception of Supply Status Response command supported? | [R2]/D.7.3.3 | PPCC1:O | [N]<br>[Int: EP# x] |

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2    **Trust Center Swap-out**

3                                    **Table 43 – Trust Center Swap-out capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| TCSW1 | Is the device a Trust Center supporting Trust Center Swap-out? | [R2]/5.4.2.2.3 | O | [N]<br>[Int: EP# x] |
| TCSW2 | Is the generation of Trust Center keep-alive command supported? | | TCSW1:M<br>FDT1:M<br>FDT2:M | [N]<br>[Int: EP# x] |
| TCSW3 | Is the backup of the Extended PAN ID to an off-chip device supported? | | TCSW1:M<br>FDT1:M | [N]<br>[Int: EP# x] |
| TCSW4 | Is the backup of the registered device EUI-64 to an off-chip device supported? | | TCSW1:M<br>FDT1:M | [N]<br>[Int: EP# x] |
| TCSW5 | Is the backup of the registered device Install Code to an off-chip device supported? | | TCSW1:M<br>FDT1:M | [N]<br>[Int: EP# x] |
| TCSW6 | Is the backup of the registered device hashed CBKE derived link key to an off-chip device supported? | | TCSW1:M<br>FDT1:M | [N]<br>[Int: EP# x] |
| TCSW7 | Is the restore of the Extended PAN ID from an off-chip device supported? | | TCSW1:M<br>FDT1:M | [N]<br>[Int: EP# x] |
| TCSW8 | Is the restore of the registered device EUI-64 from an off-chip device supported? | | TCSW1:M<br>FDT1:M | [N]<br>[Int: EP# x] |
| TCSW9 | Is the restore of the registered device Install Code from an off-chip device supported? | | TCSW1:M<br>FDT1:M | [N]<br>[Int: EP# x] |
| TCSW10 | Is the restore of the registered device hashed CBKE derived link key from an off-chip device supported? | | TCSW1:M<br>FDT1:M | [N]<br>[Int: EP# x] |
| TCSW11 | Is the discovery of the new Trust Center based on the Extended PAN ID supported? | | TCSW1:M<br>FDT2:M | [N]<br>[Int: EP# x] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| TCSW12 | Is the rejoin using the CBKE derived link key supported? | | TCSW1:M <br> FDT2:M | [N] <br> [Int: EP# x] |
| TCSW13 | Is the Recommision of device supported? | | FDT1:M <br> FDT2:M <br> FDT3:M | [N] <br> [Int: EP# x] |
| TCSW14 | Does the device support the Trust Center Swap-Out parameters? | [R2] 5.4.2.2.3.7 | TCSW1:M <br> FDT1:M | [N] <br> [Int: EP# x] |

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2 **Multiple ESI**

3 **Table 44 – Multiple ESI Client capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| MESC1 | Is Multiple ESI supported? | [R2]/5.7 | O | [N] <br> [Int: EP# x] |
| MESC2 | Is the discovery of all ESIs in a HAN supported? | | MESC1:M | [N] <br> [Int: EP# x] |
| MESC3 | Is the generation of bindings on discovered ESIs supported? | | MESC1:M | [N] <br> [Int: EP# x] |
| MESC4 | Is determination of the authoritative ESI supported? | | MESC1:M | [N] <br> [Int: EP# x] |
| MESC5 | Is processing of events from multiple ESIs supported? | | MESC1:M | [N] <br> [Int: EP# x] |
| MESC6 | Is resolution of conflicting events received from multiple ESIs supported? | | MESC1:M | [N] <br> [Int: EP# x] |
| MESC7 | Is the notification message for an event sent to at least one ESI that sent the event? | | MESC1:M | [N] <br> [Int: EP# x] |
| MESC8 | Is the event processing based on the | | MESC1:M | [N] |

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| | authoritative time? | | | [Int: EP# x] |

**Table 45 – Multiple ESI Server capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| MESS1 | Is Multiple ESI supported? | [R2]/5.7 | O | [N] [Int: EP# x] |
| MESS2 | Is the *TimeStatus* attribute supported? | | MESS1:M | [N] [Int: EP# x] |
| DELETED MESS3 | Is the *LastSynchronizedTime* attribute supported? | | MESS1:M | [NA or Y/N] [Int: EP# x] |
| MESS4 | Is the *ValidUntilTime* attribute supported? | | MESS1:M | [N] [Int: EP# x] |

## OTA Upgrade Cluster attributes and functions

**Table 46 – OTA Upgrade cluster server capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| OTAS1 | Is the OTA Upgrade Cluster supported as a server? | [R9] | O | [N] [Int: EP# x] |

**Table 47 – OTA Upgrade cluster client capabilities**

| Item number | Item description | Reference | Status | Support |
|---|---|---|---|---|
| OTAC1 | Is the OTA Upgrade Cluster supported as a client? | [R9] | O | [N] [Int: EP# x] |

If supporting OTA upgrade cluster client or server, need to complete OTA Upgrade Cluster PICS document in addition to this document for certification.
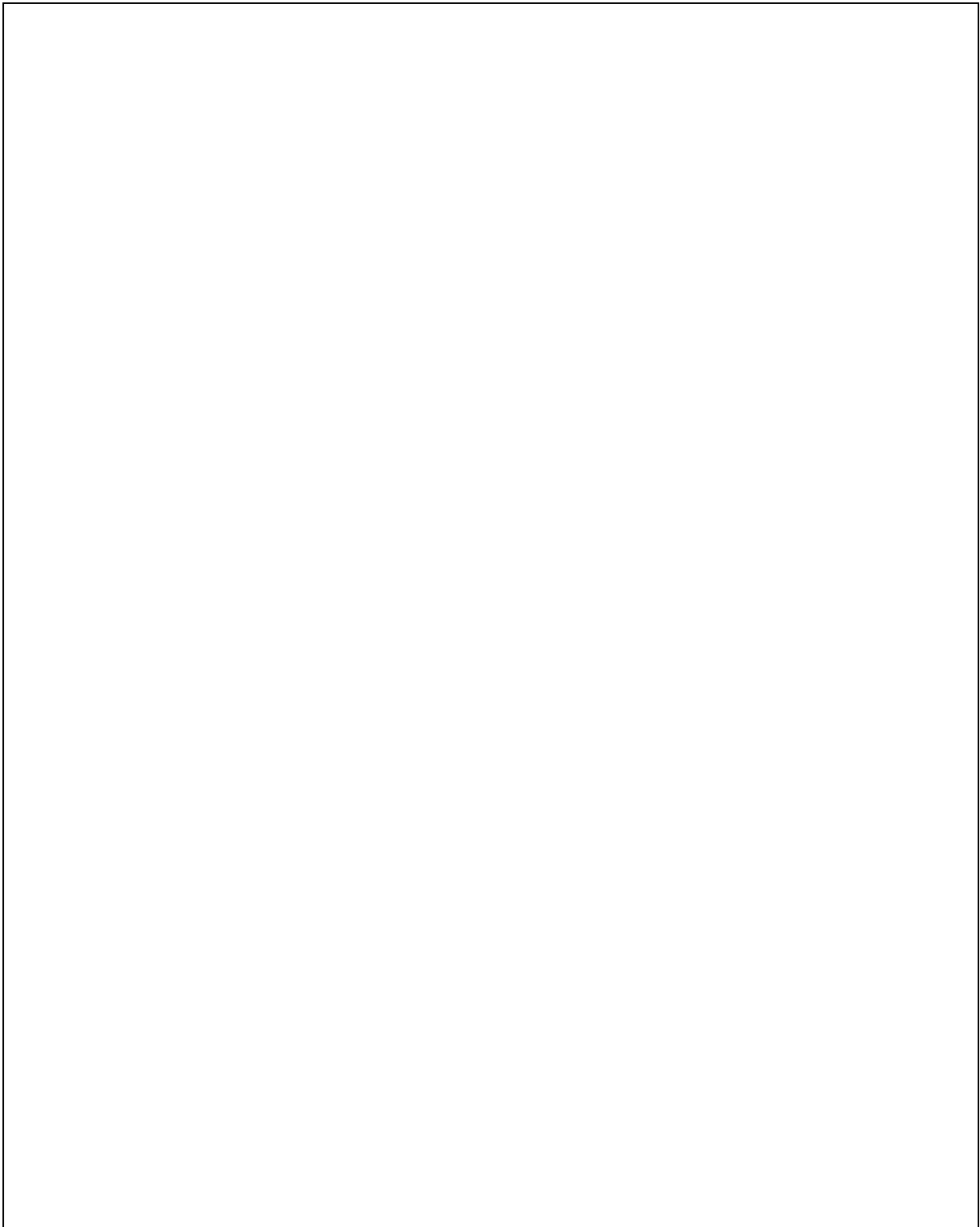
1 **Support on Non SE clusters**

2
3 List in the below section all non SE clusters supported on the submitted product:
4

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