

# DCC User Gateway Interface Design Specification

## Annex - Service Request Definitions 7 – Supply Management Service

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## 7 Supply Management Service (7 – SMS)

This section sets out the full content of the DCC Supply Management Service by providing the overarching service content that includes: service request and response message types, data content items and User access roles.

Service Name	SupplyManagement	Service Id	7
Service Objective	To enable an authorised DCC Service User to remotely manage the energy at a consumer premises without the need for local interaction, such that the meter can confirm that the operation has either completed or the reason for its failure.		
Business Context Statement	The DCC Service User requires an immediate change to the availability of energy for a specified meter without user interaction, e.g. to restore the electricity supply at a consumer's premises or switch the load on an auxiliary (e.g. heating) circuit.		
User Roles	<p>The following user roles have access to the list of service requests which make up the Supply Management Service:</p> <ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Electricity Export Supplier (EES)</li> <li>Gas Import Supplier (GIS)</li> <li>Supplier Nominated Agent (SNA)</li> <li>Electricity Network Operator (ENO)</li> <li>Gas Network Operator (GNO)</li> <li>Other User (OU)</li> </ul>		

**Table 1 Overview of Supply Management Service**

The mapping between the Supply Management Services and the Devices they apply to is defined as follows:

Service Reference	Service Reference Variant	Name	Business Target ID
7.1	7.1	Enable Supply	ESME
7.2	7.2	Disable Supply	ESME GSME
7.3	7.3	Arm Supply	ESME GSME
7.4	7.4	Read Supply Status	ESME GPF GSME
7.5	7.5	Activate Auxiliary Load	ESME
7.6	7.6	Deactivate Auxiliary Load	ESME
7.7	7.7	Read Auxiliary Load Control Switch Configuration	ESME
7.8	7.8	Reset Auxiliary Load	ESME
7.9	7.9	Add Auxiliary Load To Boost Button	ESME
7.10	7.10	Remove Auxiliary Load From Boost Button	ESME
7.11	7.11	Read Boost Button Details	ESME

Service Reference	Service Reference Variant	Name	Business Target ID
7.12	7.12	Set Randomised Offset Limit	ESME
7.13	7.13	Set Auxiliary Controller State	ESME
7.14	7.14	Read Auxiliary Controller Configuration Data	ESME
7.15	7.15	Read Auxiliary Controller Operational Data	ESME
7.16	7.16	Limit APC Level	ESME

**Table 2 SMS - Service Requests / Devices**

For each of the SMS Service Requests supported by the DCC User Gateway, this section details:

- the reference to the appropriate section of the XML Schema (see XML Schema – document 3 of this documentation set)
- the structure of each Service Request and Response with examples (if specific to the Service Request)
- if applicable, Service Request specific Validation and Response Codes

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema – document 3 of this documentation set).

## 7.1 Enable Supply (7.1)

Service Request Name	EnableSupply
Service Reference	7.1
Service Request Variant Name	EnableSupply
Service Reference Variant	7.1
Service Request Objective	To enable a DCC Service User to remotely close the Load Switch on an Electricity Smart Meter to enable electricity supply through the device.
Business Context Statement	The DCC Service User requires that power is immediately enabled to a specified device without physical user interaction, e.g. to restore electricity supply remotely to (or within) the consumer's premises.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> </ul>
Security Classification	<p>Critical and non-sensitive</p> <p>SMETS2 or later:</p> <p>GBCS XREF: SME.C.C</p>

Service Request Narrative (SMETS2 or later)	<p>Enable Supply in the context of ESME is the act of restoring the flow of electricity to the Premises by closing the Load Switch.</p> <p>This Service Request updates the <i>Supply State</i> on the device to 'Enabled' as defined by SMETS.</p> <p>Enable Supply in the context of GSME is the act of restoring the flow of gas to the Premises by opening the Valve. This action cannot be performed remotely by design, hence why this use case is not available to DCC Service Users.</p>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x004F	N/A
GBCS Use Case	ECS42	N/A
GBCS Use Case Name	Remotely Close the Load Switch on the ESME	N/A
SMETS1 Availability	Yes	N/A
Service Request Narrative (SMETS1)	<p>The behaviour of DCC for this Service Request with regard to SMETS1 Devices is equivalent to the behaviour for SMETS2 or later Devices except:</p> <ol style="list-style-type: none"> <li>1. This command in SMETS1 is unconditional unlike in SMETS2. Therefore, the Service Request may result in supply being enabled on a SMETS1 Smart Meter when it would not be enabled on a SMETS2 Smart Meter which is in the same state.</li> </ol>	

Table 3 Enable Supply Service Request

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.1.1 Service Request

### 7.1.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its EnableSupply XML element defines this Service Request and it doesn't contain any data items.



Figure 1 Enable Supply Service Request Structure

### 7.1.1.2 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Service	Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
SMETS2 or later	Yes	Yes	No	No	No
SMETS1	No	Yes	No	No	No

**Table 4 Enable Supply Modes of Operation**

#### 7.1.1.3 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

Service	CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
SMETS2 or later	No	No	No	Yes	Yes	Yes	Yes	No
SMETS1	No	No	No	Yes	No	No	No	No

**Table 5 Enable Supply Command Variant Values**

#### 7.1.1.4 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks.

#### 7.1.1.5 Sample Request

There are three versions applicable to this Service Request

- Transform Service Request
- Signed Pre-command
- SMETS1 Service Request. Same format as Transform Service Request

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

<EnableSupply/>

**Figure 2 Enable Supply Transform Request (Body) Format**

### 7.1.2 Responses

The Service Response messages for an “Enable Supply” Request follow the generic format for all “Device” response messages. The generic responses applicable to this Service Request are;

- Pre-command
- Acknowledgement
- Service Response (from Device) - GBCSPayload
- Command for Local Delivery
- Parse Output / SMETS1 Response

Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

### 7.1.2.1 Parse Output / SMETS1 Response Format

The response to this request returns only status without any substantial payload. The XML type is EnableSupplyRsp.

Parse Responses: Please see Annex section 18.9 for a description of how status-only responses are represented in the MMC XML schema.

SMETS1 Responses: Please see Annex section 19.7 for a description of how status-only responses are represented in the DUIS XML schema.

#### 7.1.2.1.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessage Code	004F
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS42</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Remotely Close the Load Switch on the ESME</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 6 - Enable Supply Parse Response Header Data Items

## 7.2 Disable Supply (7.2)

Service Request Name	DisableSupply
Service Reference	7.2
Service Request Variant Name	DisableSupply
Service Reference Variant	7.2
Service Request Objective	To enable a DCC Service User to disable electricity/gas supply through a specified Electricity or Gas Smart Meter by remotely opening the Load Switch on the ESME or closing the Valve on the GSME.
Business Context Statement	The DCC Service User requires that energy consumption is immediately disabled to a specified device without user interaction.

User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> </ul>	
Security Classification	Critical and non-sensitive SMETS2 or later:: GBCS XREF: SME.C.C	
Service Request Narrative (SMETS2 or later)	1. This Service Request is applicable to: <ul style="list-style-type: none"> <li>Electricity Smart Meters</li> <li>Gas Smart Meters that include a valve</li> </ul> 2. This Service Request updates the <i>Supply State</i> on the device to 'Disabled' as defined by SMETS.	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x0050	0x0081
GBCS Use Case	ECS43	GCS32
GBCS Use Case Name	Remotely Open the Load Switch on the ESME	Remotely close the valve in the GSME
SMETS1 Applicability	Yes	Yes
Service Request Narrative (SMETS1)	The behaviour of DCC for this Service Request with regard to SMETS1 Devices is equivalent to the behaviour for SMETS2 or later Devices.	

Table 7 Disable Supply Service Request

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.2.1 Service Request

### 7.2.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its DisableSupply XML element defines this Service Request and doesn't contain any data items.

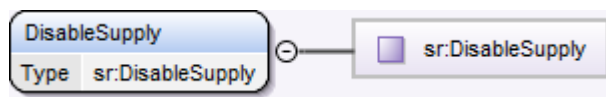


Figure 3 Disable Supply Service Request Structure

### 7.2.1.2 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Service	Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
SMETS2 or later	Yes	Yes	No	No	No
SMETS1	No	Yes	No	No	No

**Table 8 Disable Supply Modes of Operation**

### 7.2.1.3 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

Service	CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
SMETS2 or later	No	No	No	Yes	Yes	Yes	Yes	No
SMETS1	No	No	No	Yes	No	No	No	No

**Table 9 Disable Supply Command Variant Values**

### 7.2.1.4 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks.

### 7.2.1.5 Sample Request

There are three versions applicable to this Service Request

- Transform Service Request
- Signed Pre-command
- SMETS1 Service Request. Same format as Transform Service Request

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

<DisableSupply/>

**Figure 4 Disable Supply Transform Request (Body) Format**

## 7.2.2 Responses

The Service Response messages for a “Disable Supply” Request follow the generic format for all “Device” response messages. The generic responses applicable to this Service Request are;

- Pre-command
- Acknowledgement
- Service Response (from Device) - GBCSPayload
- Command for Local Delivery
- Parse Output / SMETS1 Response

Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

### 7.2.2.1 Parse Output / SMETS1 Response Format

The response to this request returns only status without any substantial payload. The XML type is DisableSupplyRsp.

Parse Responses: Please see Annex section 18.9 for a description of how status-only responses are represented in the MMC XML schema.

SMETS1 Responses: Please see Annex section 19.7 for a description of how status-only responses are represented in the DUIS XML schema.

#### 7.2.2.1.1 Specific Header Data Items

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	0050	0081
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS43</i>	<i>GCS32</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Remotely Open the Load Switch on the ESME</i>	<i>Remotely close the valve in the GSME</i>
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

Table 10 - Disable Supply Parse Response Header Data Items

## 7.3 Arm Supply (7.3)

Service Request Name	ArmSupply
Service Reference	7.3
Service Request Variant Name	ArmSupply
Service Reference Variant	7.3
Service Request Objective	To enable a DCC Service User to remotely arm the supply to a specified Electricity of Gas Smart Meter such that it can be enabled by local interaction through that Electricity of Gas Smart Meter.
Business Context Statement	A DCC Service User has previously disabled the supply through an Electricity of Gas Smart Meter and wishes to safely re-establish the supply by arming the supply through the device. Once armed, supply is only restored when the consumer undertakes a defined, on site action (such as pressing a specific button on the meter), having been notified of the armed status via the response to this Service Request.

User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> </ul>	
Security Classification	Critical and non-sensitive SMETS2 or later:: GBCS XREF: SME.C.C	
Service Request Narrative (SMETS2 or later)	1. This Service Request is applicable to: <ul style="list-style-type: none"> <li>Electricity Smart Meters</li> <li>Gas Smart Meters that include a valve</li> </ul> 2. This Service Request updates the <i>Supply State</i> on the device to 'Armed' as defined by SMETS.	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x0051	0x0085
GBCS Use Case	ECS44	GCS39
GBCS Use Case Name	Arm Load Switch in ESME	Arm Valve in GSME
SMETS1 Applicability	Yes	Yes
Service Request Narrative (SMETS1)	The behaviour of DCC for this Service Request with regard to SMETS1 Devices is equivalent to the behaviour for SMETS2 or later Devices except: <ol style="list-style-type: none"> <li>This Service Request shall result in a SMETS1 Arm Valve (for GSME) or a SMETS1 Arm Load Switch (for ESME) command. For clarity, these commands in SMETS1 are unconditional unlike the equivalent command in SMETS2. Therefore, the Service Request may result in supply being armed on a SMETS1 Smart Meter when it would not be armed on a SMETS2 Smart Meter which is in the same state.</li> </ol>	

Table 11 Arm Supply Service Request

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.3.1 Service Request

### 7.3.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its ArmSupply XML element defines this Service Request and doesn't contain any data items.



Figure 5 Arm Supply Service Request Structure

### 7.3.1.2 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Service	Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
SMETS2 or later	Yes	Yes	No	No	No
SMETS1	No	Yes	No	No	No

Table 12 Arm Supply Modes of Operation

### 7.3.1.3 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

Service	CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
SMETS2 or later	No	No	No	Yes	Yes	Yes	Yes	No
SMETS1	No	No	No	Yes	No	No	No	No

Table 13 Arm Supply Command Variant Values

### 7.3.1.4 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks.

### 7.3.1.5 Sample Request

There are three versions applicable to this Service Request

- Transform Service Request
- Signed Pre-command
- SMETS1 Service Request. Same format as Transform Service Request

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

<ArmSupply/>

Figure 6 Arm Supply Transform Request (Body) Format

## 7.3.2 Responses

The Service Response messages for an “Arm Supply” Request follow the generic format for all “Device” response messages. The generic responses applicable to this Service Request are;

- Pre-command
- Acknowledgement
- Service Response (from Device) - GBCSPayload
- Command for Local Delivery

- Parse Output / SMETS1 Response

Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

### 7.3.2.1 Parse Output / SMETS1 Response Format

The response to this request returns only status without any substantial payload. The XML type is ArmSupplyRsp.

Parse Responses: Please see Annex section 18.9 for a description of how status-only responses are represented in the MMC XML schema.

SMETS1 Responses: Please see Annex section 19.7 for a description of how status-only responses are represented in the DUIS XML schema.

#### 7.3.2.1.1 Specific Header Data Items

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	0051	0085
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS44</i>	<i>GCS39</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Arm Load Switch in ESME</i>	<i>Arm Valve in GSME</i>
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

Table 14 - Arm Supply Parse Response Header Data Items

## 7.4 Read Supply Status (7.4)

Service Request Name	ReadSupplyStatus
Service Reference	7.4
Service Request Variant Name	ReadSupplyStatus
Service Reference Variant	7.4
Service Request Objective	To enable a DCC Service User to read the current supply status at a specified Electricity or Gas Smart Meter and additionally on the Gas Smart Meter the remaining battery capacity.

<b>Business Context Statement</b>	The DCC Service User needs to know whether the Valve of a Gas Smart Meter or the Load Switch of an Electricity Smart Meter is armed, open or closed, for example in order to respond to a customer query.	
<b>User Role Access</b>	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Electricity Export Supplier (EES)</li> <li>Gas Import Supplier (GIS)</li> <li>Supplier Nominated Agent (SNA)</li> <li>Electricity Network Operator (ENO)</li> <li>Gas Network Operator (GNO)</li> </ul>	
<b>Security Classification</b>	Non-critical and non-sensitive SMETS2 or later:: GBCS XREF: SME.C.NC	
<b>Service Request Narrative (SMETS2 or later)</b>	<ol style="list-style-type: none"> <li>This Service Request reads the <i>Supply State</i> on the specified device as defined by SMETS.</li> <li>The Supply State on a device can be one of 'Enabled', 'Disabled' or 'Armed' as defined by SMETS.</li> <li>For GSME only, the remaining battery capacity result is returned to a DCC Service User with the remaining battery life in days returned.</li> <li>For reading the <i>Supply Status</i> value from the GSME, the DCC Service User should wherever possible request this to be read from the GPF as the primary use case. Only when the GPF is not available for query should this Service Request be targeted to the GSME. This will save battery life on the GSME for all Users.</li> </ol>	
<b>GBCS Cross Reference</b>	Electricity	Gas
<b>GBCS Message Code</b>	0x0052	0x0082
<b>GBCS Use Case</b>	ECS45	GCS33
<b>GBCS Use Case Name</b>	Read Status of Load Switch in the ESME	Read GSME Valve Status
<b>SMETS1 Applicability</b>	Yes	Yes
<b>Service Request Narrative (SMETS1)</b>	The behaviour of DCC for this Service Request with regard to SMETS1 Devices is equivalent to the behaviour for SMETS2 or later Devices.	

**Table 15 Read Supply Status Service Request**

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.4.1 Service Request

### 7.4.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its ReadSupplyStatus XML element defines this Service Request and doesn't contain any data items.



Figure 7 Read Supply Status Service Request Structure

### 7.4.1.2 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Service	Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
SMETS2 or later	No	Yes	No	No	No
SMETS1	No	Yes	No	No	No

Table 16 Read Supply Status Modes of Operation

### 7.4.1.3 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

Service	CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
SMETS2 or later	Yes	Yes	Yes	No	No	No	No	No
SMETS1	Yes	No	No	No	No	No	No	No

Table 17 Read Supply Status Command Variant Values

### 7.4.1.4 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks.

### 7.4.1.5 Sample Request

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

```
<ReadSupplyStatus/>
```

Figure 8 Read Supply Status Service Request (Body) Format

## 7.4.2 Responses

The Service Response messages for a "Read Supply Status" Request follow the generic format for all "Device" response messages. The generic responses applicable to this Service Request are;

- Acknowledgement

- Service Response (from Device) - GBCSPayload. Service Response Specific Payload
- Command for Local Delivery
- Parse Output / SMETS1 Response

Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

## 7.4.2.1 Parse Output / SMETS1 Response Format

### 7.4.2.1.1 Format - ReadSupplyStatusRsp

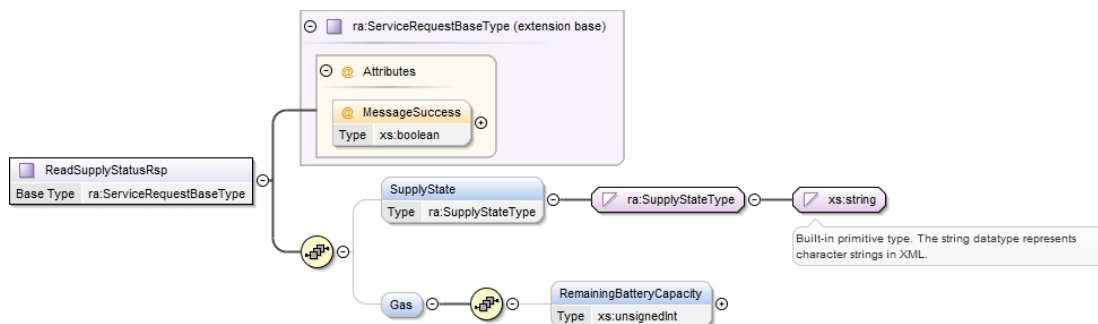


Figure 9 - Read Supply Status Parse Response / SMETS1 Response Structure

### 7.4.2.1.2 Specific Header Data Items

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	0052	0082
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS45</i>	<i>GCS33</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read Status of Load Switch in the ESME</i>	<i>Read GSME Valve Status</i>
SupplementaryRemotePartyID	Present where originator is a URP	Present where originator is a URP
SupplementaryRemotePartyCounter	Present where originator is a URP	Present where originator is a URP
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

Table 18 - Read Supply Parse Response Header Data Items

See DUGIDS main document sections 8.1.1 and 4 for circumstances in which Users are a KRP or URP to a Device.

### 7.4.2.1.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
SupplyState	The state of the Supply, being Enabled, Disabled or Armed.	ra:SupplyStateType restriction of xs:string (Enumeration)	None	N/A	Non-Sensitive
RemainingBatteryCapacity	Remaining battery life. Applicable to gas only.	xs:unsignedInt	None	Days	Non-Sensitive

Table 19 - Read Supply Parse Response / SMETS1 Response Body Data Items

#### 7.4.2.1.4 Sample Response

```
<ra:ReadSupplyStatusRsp MessageSuccess="true">
  <ra:SupplyState>Enabled</ra:SupplyState>
  <ra:Gas>
    <ra:RemainingBatteryCapacity>10</ra:RemainingBatteryCapacity>
  </ra:Gas>
</ra:ReadSupplyStatusRsp>
```

Figure 10 - Read Supply Status Parse Response Sample

## 7.5 Activate Auxiliary Load (7.5)

Service Request Name	ActivateAuxiliaryLoad
Service Reference	7.5
Service Request Variant Name	ActivateAuxiliaryLoad
Service Reference Variant	7.5
Service Request Objective	To enable a DCC Service User to control, by closing, either, an Auxiliary Load Control Switch (ALCS) within a specified Electricity Smart Meter or a specified HAN connected Auxiliary Load Control Switch (HCALCS).
Business Context Statement	The DCC Service User requires that an Auxiliary Load Control Switch is immediately closed e.g. to switch on a consumer's electric storage heating remotely.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> </ul>
Security Classification	Critical and non-sensitive: GBCS XREF: SME.C.C

Service Request Narrative	<div>1. For Devices with GBCS version prior to v4.0 this Service Request sets the value of the <i>Auxiliary Load Control Switch [n]</i> – <i>Status</i> as defined by SMETS. The current status being “open” or “closed”.</div> <div>2. This Service Request is applicable to an ESME connected to ALCS and / or HCALCS. The Business Target ID = ESME Device ID.</div> <div>3. An Electricity Smart Meter can be connected to a maximum of 5 switches, each of which can be ALCS or HCALCS. The switch labels are defined via Service Request 6.14.1 (see Annex section 6.14.1) and the switch types, Device IDs (HCALCS only) and Calendar (schedule) are defined via Service Request 6.14.2 (see Annex section 6.14.2).</div> <div>4. This Service Request causes the specified <i>Auxiliary Load Control Switch [n]</i> to close immediately. The Service Request shall include a time period. When this time period has elapsed, ESME shall be capable of causing the switch to open or remain closed as defined in the <i>Auxiliary Load Control Switch Calendar</i> as defined by SMETS.</div> <div>5. A command to close an <i>Auxiliary Load Control Switch [n]</i> shall be executed by the ESME only if the Supply is Enabled. If the Supply is Armed or Disabled, the Command shall be executed when the Supply is Enabled.</div> <div>6. For Devices with GBCS version 4.0 or later this Service Request is not applicable and Users should instead use the later equivalent 7.13 Set Auxiliary Controller State</div>	
	GBCS Cross Reference	<div>Electricity</div> <div>Gas</div>
	GBCS Message Code prior to v4.0	<div>0x0055</div> <div>N/A</div>
	GBCS Use Case prior to v4.0	<div>ECS47</div> <div>N/A</div>
	GBCS Use Case Name prior to v4.0	<div>Set or Reset HC ALCS or ALCS State</div> <div>N/A</div>
	GBCS v4.0 or later	<div>N/A – feature not supported by Device</div> <div>N/A</div>
SMETS1 Availability	<div>No</div> <div>N/A</div>	
GBCS Commands - Versioning Details		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations		
Device Type	ESME	

DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS prior to v4.0	GBCS v4.0 or later
DEFAULT - No specific XML criteria	ECS47	Response Code - E57

Table 20 Activate Auxiliary Load Service Request

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.5.1 Service Request

### 7.5.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its ActivateAuxiliaryLoad XML element defines this Service Request and contains the Switch (1, 2, 3, 4 or 5) to be closed (activated) and the activation duration.

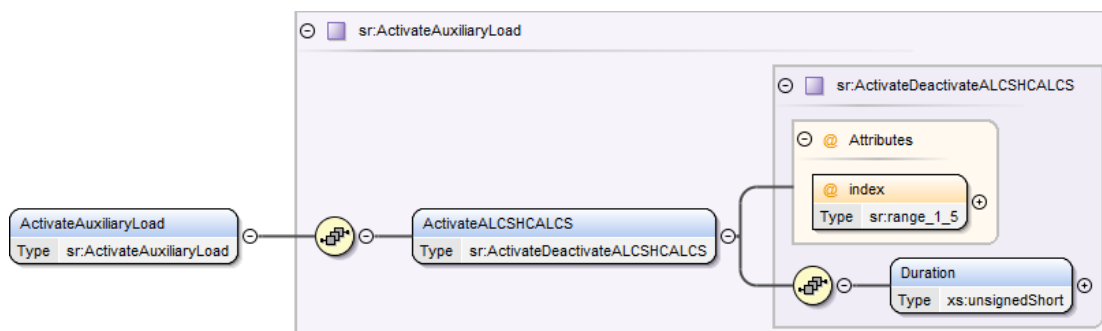


Figure 11 Activate Auxiliary Load Service Request Structure

### 7.5.1.2 Specific Data Items Definition

The data items contained in the Service Request are defined as:

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ActivateALCSHCALCS	The Switch (ALC or HCALCS) to be activated and the activation duration  The index is the Switch Identifier	sr:ActivateDeactivateALCSHCALCS (see section 7.5.1.3)	Yes	None	N/A	Non-Sensitive
index (attribute of ActivateALCSHCALCS)	The identifier associated with the ALCS / HCALCS	sr:range_1_5 (Restriction of xs:positiveInteger minInclusive = 1, maxInclusive = 5)	Yes	None	N/A	Non-Sensitive

Table 21 Activate Auxiliary Load Service Request Data Items

### 7.5.1.3 ActivateDeactivateALCSHCALCS Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
Duration	The time period during which the switch is to remain closed (activated)	xs:unsignedShort	Yes	None	Minutes	Non-Sensitive

**Table 22 Activate Auxiliary Load Service Request – ActivateDeactivateALCSHCALS Data Items**

#### 7.5.1.4 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
Yes	Yes	No	No	No

**Table 23 Activate Auxiliary Load Modes of Operation**

#### 7.5.1.5 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
No	No	No	Yes	Yes	Yes	Yes	No

**Table 24 Activate Auxiliary Load Command Variant Values**

#### 7.5.1.6 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks.

#### 7.5.1.7 Sample Request

There are two versions applicable to this Service Request

- Transform Service Request
- Signed Pre-command

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

```
<ActivateAuxiliaryLoad>
  <ActivateALCSHCALCS index="3">
    <Duration>60</Duration>
  </ActivateALCSHCALCS>
</ActivateAuxiliaryLoad>
```

**Figure 12 Activate Auxiliary Load Transform Request (Body) Format**

### 7.5.2 Responses

The Service Response messages for an "Activate Auxiliary Load" Request follow the generic format for all "Device" response messages. The generic responses applicable to this Service Request are;

- Pre-command
- Acknowledgement

- Service Response (from Device) - GBCSPayload
- Command for Local Delivery
- Parse Output

Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

### 7.5.2.1 Parse Output Format

The response to this request returns only status without any substantial payload. The XML type is ActivateAuxiliaryLoadRsp.

Please see Annex section 18.9 for a description of how status-only responses are represented in the MMC XML schema.

#### 7.5.2.1.1 Specific Header Data Items

Data Item	Electricity Response (HC ALCS or ALCS)
GBCSHexadecimalMessageCode	0055
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS47</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set or Reset HC ALCS or ALCS State</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 25 – Activate Auxiliary Load Parse Response Header Data Items

## 7.6 Deactivate Auxiliary Load (7.6)

Service Request Name	DeactivateAuxiliaryLoad
Service Reference	7.6
Service Request Variant Name	DeactivateAuxiliaryLoad
Service Reference Variant	7.6

Service Request Objective	To enable a DCC Service User to control, by opening, either, an Auxiliary Load Control Switch (ALCS) within a specified Electricity Smart Meter or a specified HAN connected Auxiliary Load Control Switch (HCALCS).	
Business Context Statement	The DCC Service User requires that an Auxiliary Load Control Switch is immediately opened e.g. to switch off a consumer's electric storage heating remotely.	
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> </ul>	
Security Classification	Critical and non-sensitive: <i>GBCS XREF: SME.C.C</i>	
Service Request Narrative	<ol style="list-style-type: none"> <li>For Devices with GBCS version prior to v4.0 this Service Request sets the value of the <i>Auxiliary Load Control Switch [n] - Status</i> as defined by SMETS. The current status being "open" or "closed".</li> <li>This Service Request is applicable to an ESME connected to ALCS and / or HCALCS. The Business Target ID = ESME Device ID.</li> <li>An Electricity Smart Meter can be connected to a maximum of 5 switches, each of which can be ALCS or HCALCS. The switch labels are defined via Service Request 6.14.1 (see Annex section 6.14.1) and the switch types, Device IDs (HCALCS only) and Calendar (schedule) are defines via Service Request 6.14.2 (see Annex section 6.14.2).</li> <li>This Service Request causes the specified <i>Auxiliary Load Control Switch [n]</i> to open immediately. The Service Request shall include a time period. When this time period has elapsed, the ESME shall be capable of causing the switch to close or remain open as defined in the <i>Auxiliary Load Control Switch Calendar</i>, as defined in SMETS.</li> <li>For Devices with GBCS version 4.0 or later this Service Request is not applicable and Users should instead use the later equivalent 7.13 Set Auxiliary Controller State</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code prior to v4.0	0x0055	N/A
GBCS Use Case prior to v4.0	ECS47	N/A
GBCS Use Case Name prior to v4.0	Set or Reset HC ALCS or ALCS State	N/A
GBCS v4.0 or later	N/A – feature not supported by Device	N/A
SMETS1 Availability	No	N/A

GBCS Commands - Versioning Details		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations		
Device Type	ESME	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS prior to v4.0	GBCS v4.0 or later
DEFAULT - No specific XML criteria	ECS47	Response Code - E57

Table 26 Deactivate Auxiliary Load Service Request

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.6.1 Service Request

### 7.6.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its DeactivateAuxiliaryLoad XML element defines this Service Request and contains the Switch (1, 2, 3, 4 or 5) to be opened (deactivated) and the deactivation duration.

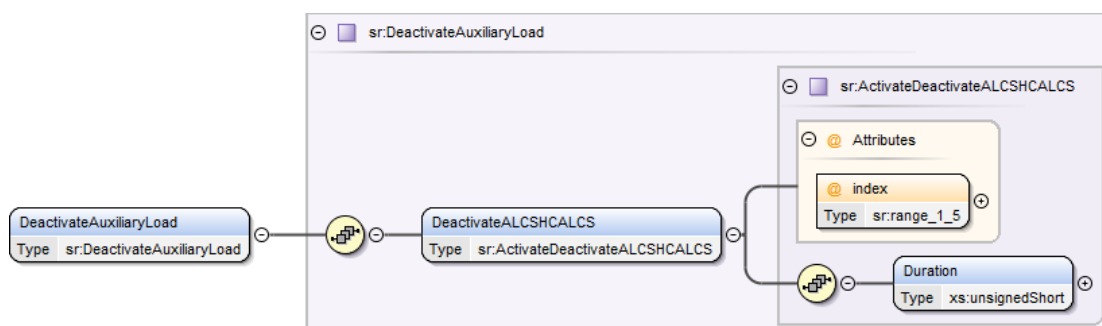


Figure 13 Deactivate Auxiliary Load Service Request Structure

### 7.6.1.2 Specific Data Items Definition

The data items contained in the Service Request are defined as:

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DeactivateALCSHCALCS	The Switch (ALC or HCALCS) to be deactivated and the deactivation duration  The index is the Switch Identifier	sr: ActivateDeactivateALCSHCALCS (see section 7.6.1.3)	Yes	None	N/A	Non-Sensitive
index (attribute of DeactivateALCSHCALCS)	The identifier associated with the ALCS / HCALCS	sr:range_1_5 (Restriction of xs:positiveInteger minInclusive = 1, maxInclusive = 5)	Yes	None	N/A	Non-Sensitive

Table 27 Deactivate Auxiliary Load Service Request Data Items

### 7.6.1.3 ActivateDeactivateALCSHCALCS Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
Duration	The time period during which the switch is to remain open (deactivated)	xs:unsignedShort	Yes	None	Minutes	Non-Sensitive

Table 28 Deactivate Auxiliary Load Service Request – ActivateDeactivateALCSHCALCS Data Items

### 7.6.1.4 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
Yes	Yes	No	No	No

Table 29 Deactivate Auxiliary Load Modes of Operation

### 7.6.1.5 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
No	No	No	Yes	Yes	Yes	Yes	No

Table 30 Deactivate Auxiliary Load Command Variant Values

### 7.6.1.6 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks.

### 7.6.1.7 Sample Request

There are two versions applicable to this Service Request

- Transform Service Request
- Signed Pre-command

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

```
<DeactivateAuxiliaryLoad>
  <DeactivateALCSHCALCS index="3">
    <Duration>60</Duration>
  </DeactivateALCSHCALCS>
</DeactivateAuxiliaryLoad>
```

Figure 14 Deactivate Auxiliary Load Transform Request (Body) Format

## 7.6.2 Responses

The Service Response messages for a “Deactivate Auxiliary Load” Request follow the generic format for all “Device” response messages. The generic responses applicable to this Service Request are;

- Pre-command
- Acknowledgement
- Service Response (from Device) - GBCSPayload
- Command for Local Delivery
- Parse Output

Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

### 7.6.2.1 Parse Output Format

The response to this request returns only status without any substantial payload. The XML type is DeactivateAuxiliaryLoadRsp.

Please see Annex section 18.9 for a description of how status-only responses are represented in the MMC XML schema.

#### 7.6.2.1.1 Specific Header Data Items

Data Item	Electricity Response (HC ALCS or ALCS)
GBCSHexadecimalMessageCode	0055
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS47</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set or Reset HC ALCS or ALCS State</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 31 – Deactivate Auxiliary Load Parse Response Header Data Items

## 7.7 Read Auxiliary Load Control Switch Data (7.7)

Service Request Name	ReadAuxiliaryLoadControlSwitchData
Service Reference	7.7
Service Request Variant Name	ReadAuxiliaryLoadControlSwitchData
Service Reference Variant	7.7

Service Request Objective	To enable a DCC Service User to read the configuration data of Auxiliary Load Control Switches (ALCS or HCALCS) for a specified Device.
Business Context Statement	The DCC Service User wishes to check configuration data for an ALCS or HCALCS, for example to ensure that activation / deactivation is applied to the correct circuit.
User Role Access	<ul style="list-style-type: none"><li>• Electricity Import Supplier (EIS)</li><li>• Electricity Network Operator (ENO)</li><li>• Other User (OU)</li></ul>
Security Classification	Non-critical and non-sensitive: <i>GBCS XREF: SME.C.NC</i>

Service Request Narrative	<ol style="list-style-type: none"> <li>For Devices with GBCS version prior to v4.0 this Service Request reads: <ul style="list-style-type: none"> <li>The <i>Auxiliary Load Control Switch Calendar</i> as defined by SMETS. This is a Switching Table containing a set of rules for setting the commanded state of each Auxiliary Load Control Switches or HAN Connected Auxiliary Load Control Switches.</li> <li>For each switch: <ol style="list-style-type: none"> <li>The Label, Type (ALCS or HCALCS) and Device ID (HCALCS only)</li> <li>The status (Open or Closed)</li> </ol> </li> </ul> </li> <li>This Service Request is applicable to an ESME connected to ALCS and / or HCALCS. The Business Target ID = ESME Device ID.</li> <li>An Electricity Smart Meter can be connected to a maximum of 5 switches, each of which can be ALCS or HCALCS. The switch labels are defined via Service Request 6.14.1 (see Annex section 6.14.1) and the switch types, Device IDs (HCALCS only) and Calendar (schedule) are defines via Service Request 6.14.2 (see Annex section 6.14.2).</li> <li>The Electricity Smart Meter also includes an HCALCS Event Log, which is read via Service Request 6.13 (see Annex section 6.13).</li> <li>This Service Request will return data from all the ALCS / HCALCS connected to the Electricity Smart Meter</li> <li>Please note, if the switch label being read refers to an HCALCS then the value of the switch label has no meaning (since an ESME cannot be certain of the status of an HC ALCS)</li> <li>This Service Request is applicable to User Role ENO, irrespective of the ESME's GBCS version. Even though the ENOs are not URP to the Device, the Command will be forwarded to the Device by the DSP Access Control Broker using the URP interaction type, because GBCS Use Case ECS61a is only applicable to the Supplier and ACB roles.</li> <li>For Devices with GBCS version 4.0 or later this Service Request is not applicable and for equivalent functionality Users should instead use a combination of 7.14 Read Auxiliary Controller Configuration Data and 7.15 Read Auxiliary Controller Operational Data.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code prior to v4.0	0x00BB	N/A
GBCS Use Case prior to v4.0	ECS61a	N/A

GBCS Use Case Name prior to v4.0	Read HC ALCS and ALCS Data from ESME	N/A
GBCS v4.0 or later	N/A – feature not supported by Device	N/A
SMETS1 Availability	No	N/A
<b>GBCS Commands - Versioning Details</b>		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations		
Device Type	ESME	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS prior to v4.0	GBCS v4.0 or later
DEFAULT - No specific XML criteria	ECS61a	Response Code - E57

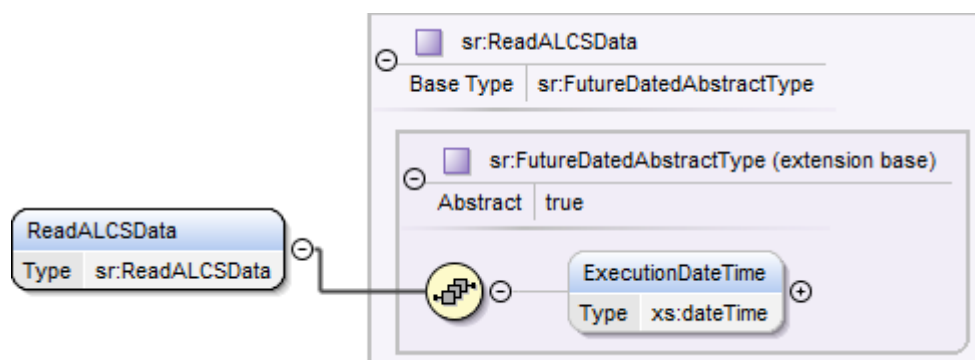
**Table 32 Read Auxiliary Load Control Switch Data Service Request**

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.7.1 Service Request

### 7.7.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its ReadALCSData XML element defines this Service Request and, for Future Dated Requests, it contains the Execution Date and Time.



**Figure 15 Read Auxiliary Load Control Switch Data Service Request Structure**

### 7.7.1.2 Specific Data Items Definition

The data items contained in the Service Request are defined as:

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ExecutionDateTime	The UTC date and time the DCC User requires the command to be executed on the Device ID Valid set: <ul style="list-style-type: none"> <li>Date-time in the future that is either &lt;= current date + 30 days or the date = 31/12/3000</li> </ul>	xs:dateTime	No	None	UTC Date-Time	Non-Sensitive

Table 33 Read Auxiliary Load Control Switch Data Service Request Data Items

### 7.7.1.3 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
No	Yes	No	DSP	No

Table 34 Read Auxiliary Load Control Switch Data Modes of Operation

### 7.7.1.4 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
Yes	Yes	Yes	No	No	No	No	No

Table 35 Read Auxiliary Load Control Switch Data Command Variant Values

### 7.7.1.5 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Execution Date Time validation.

### 7.7.1.6 Sample Request

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

<ReadALCSDData/>

Figure 16 Read Auxiliary Load Control Switch Data Service Request (Body) Format

## 7.7.2 Responses

The Service Response messages for a "Read Auxiliary Load Control Switch Data" Request follow the generic format for all "Device" response messages. The generic responses applicable to this Service Request are;

- Acknowledgement
- Service Response (from Device) - GBCSPayload. Service Response Specific Payload

- Command for Local Delivery
- Parse Output

Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

### 7.7.2.1 Parse Output Format

#### 7.7.2.1.1 Format - ReadALCSDataRsp

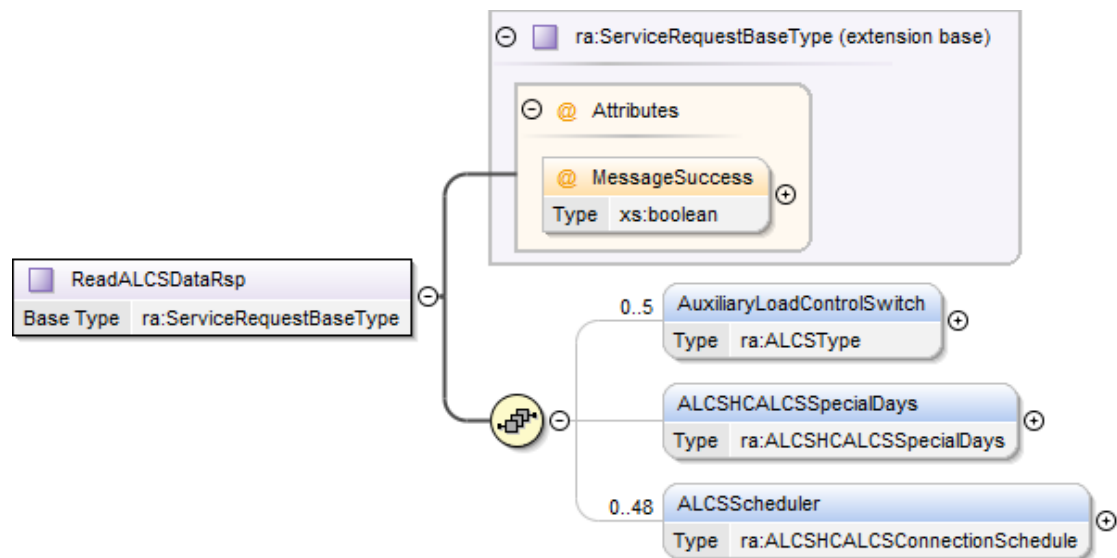


Figure 17 - Read ALCS Data Response Structure

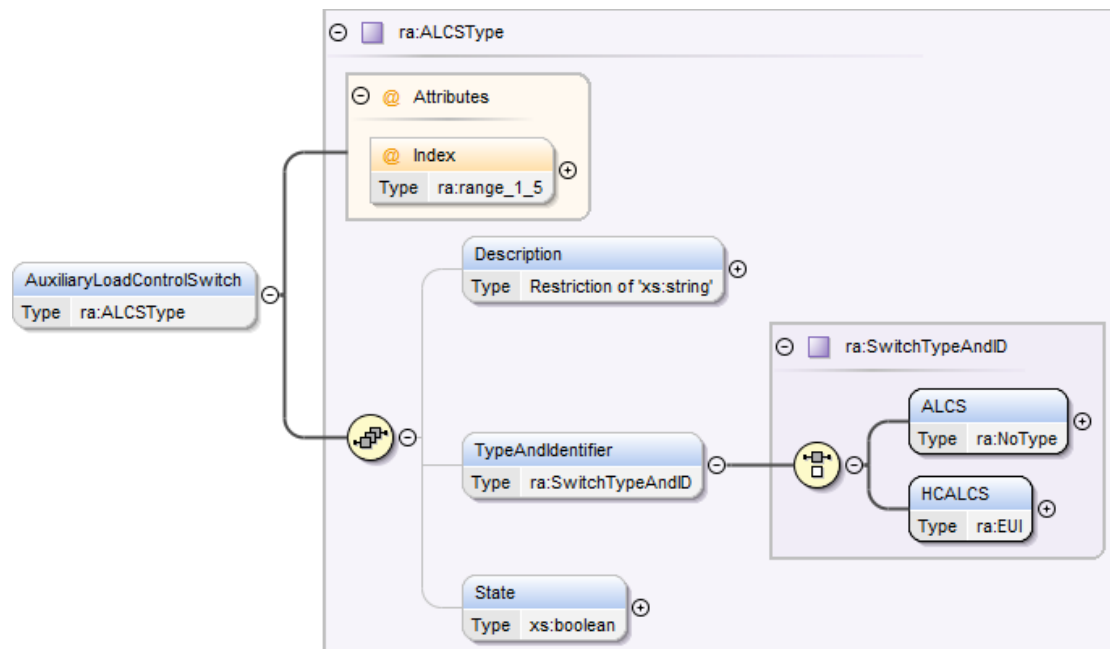


Figure 18 - AuxiliaryLoadControlSwitch Structure

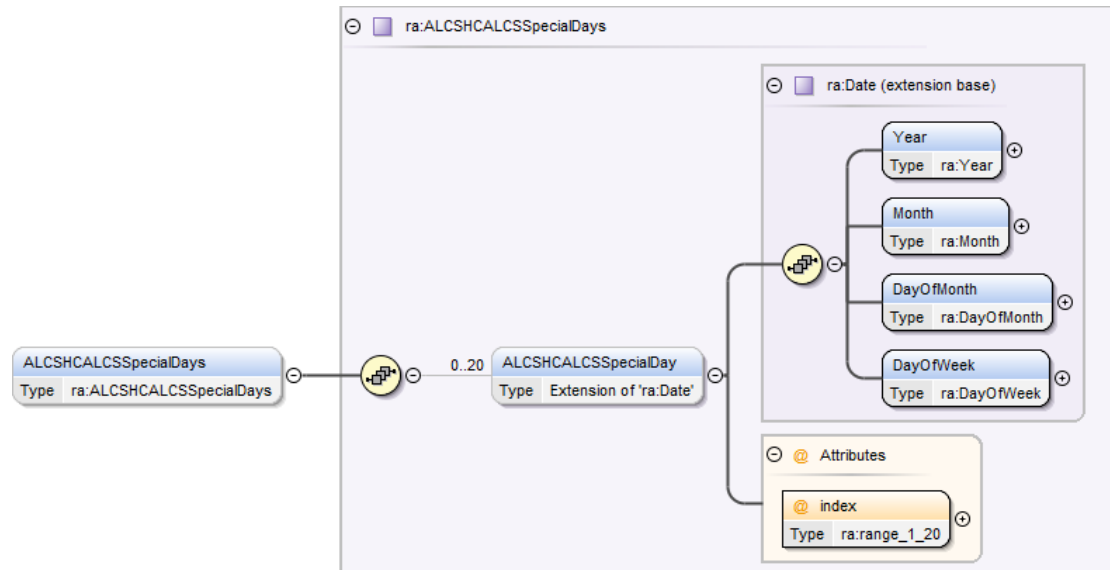


Figure 19 - ALCSHCALCSSpecialDays Structure

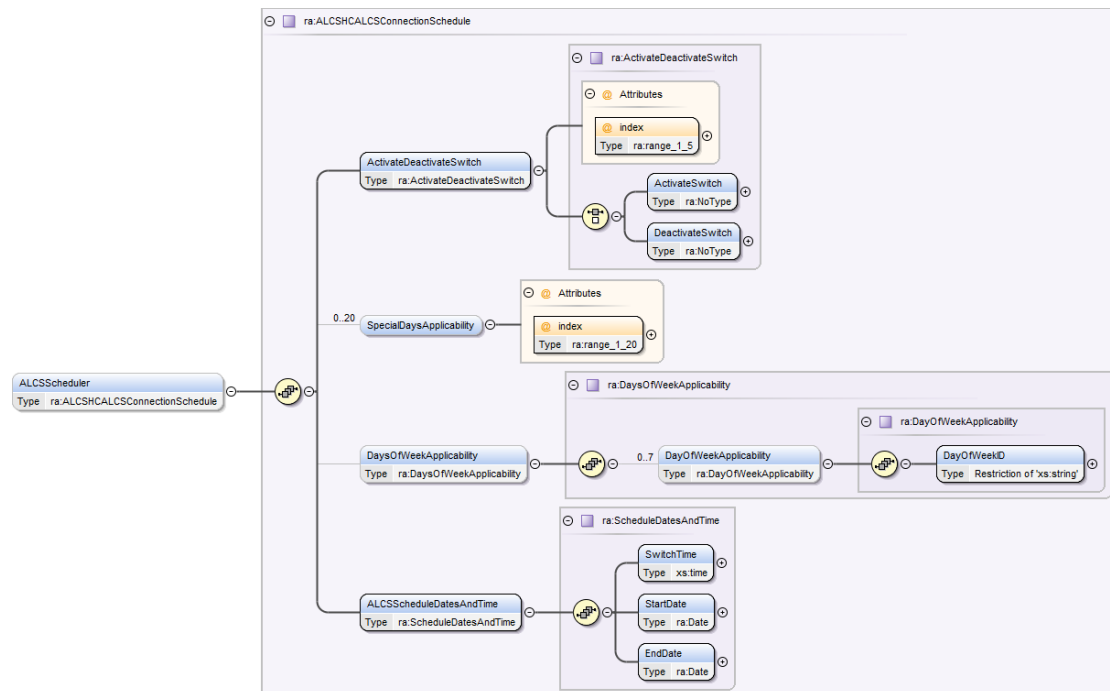


Figure 20 - ALCSScheduler Structure

#### 7.7.2.1.2 Specific Header Data Items

Data Item	Electricity Response (HC ALCS and ALCS)
GBCSHexadecimalMessageCode	00BB
GBCS Use Case Number (for information only - not in header)	ECS61a

Data Item	Electricity Response (HC ALCS and ALCS)
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read HC ALCS and ALCS Data from ESME</i>
SupplementaryRemotePartyID	Present where originator is a URP or the originator's User Role is ENO
SupplementaryRemotePartyCounter	Present where originator is a URP or the originator's User Role is ENO
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

**Table 36 – Read ALCS Data Parse Response Header Data Items**

See DUGIDS main document sections 8.1.1 and 4 for circumstances in which Users are a KRP or URP to a Device.

#### 7.7.2.1.3 Specific Body Data Items

The main XML sub-elements under the XML element ReadALCSDataRsp are listed in this table.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
Description	For each Auxiliary Load Control Switch or HAN Connected Auxiliary Load Control Switch, a description of the type of controlled load connected and the switch type.	xs:string (maxLength=22)	None	N/A	Non-Sensitive
TypeAndIdentifier	The Switch Type (ALCS or HC ALCS) and, for HCALCS, the Device ID	ra:SwitchTypeAndID (see section 7.7.2.1.4)	None	N/A	Non-sensitive
State	The current status (being "open"/false or "closed"/true) of Auxiliary Load Control Switch [n] as commanded by ESME.  Please note, if the state refers to an HCALCS then the value returned has no meaning (since an ESME cannot be certain of the status of an HC ALCS)	xs:boolean	None	N/A	Non-Sensitive
ALCSHCALCSSpecialDay	The date (or set of dates if wildcards are used) of the corresponding special day.  Includes an index attribute denoting the day identifier.	ra:Date (see the similar sr:Date in Annex section 17)	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
SwitchTime	The trigger points in the calendar, specified in terms of the time of day when the schedule is to be activated.	xs:time	None	N/A	Non-Sensitive
ActivateDeactivateSwitch	Identifier of the Switch to be Activated or Deactivated. The index is the Switch Identifier. Valid set: <ul style="list-style-type: none"> <li>ActivateSwitch. To close the Switch identified by the index</li> <li>DeactivateSwitch. To open the Switch identified by the index</li> </ul>	ra:ActivateDeactivateSwitch (choice of: ActivateSwitch DeactivateSwitch)	None	N/A	Non-Sensitive
DaysOfWeekApplicability	The days of the week to which the schedule applies defined as an array of 7 Day IDs Valid set: <ul style="list-style-type: none"> <li>Monday</li> <li>Tuesday</li> <li>Wednesday</li> <li>Thursday</li> <li>Friday</li> <li>Saturday</li> <li>Sunday</li> </ul>	ra:DayOfWeekID restriction of xs:string (Enumeration)	Yes (min 1 day)	N/A	Non-Sensitive
SpecialDaysApplicability	Defines special days on which the entry is valid by linking to the special days table.	xs:integer	None	N/A	Non-Sensitive
StartDate	Start of the date period in which the entry is valid.	ra:Date (see the similar sr:Date in Annex section 17)	None	N/A	Non-Sensitive
EndDate	End of the date period in which the entry is valid.	ra:Date (see the similar sr:Date in Annex section 17)	None	N/A	Non-Sensitive

Table 37 - Read ALCS Data Parse Response Body Data Items

#### 7.7.2.1.4 SwitchTypeAndId Data Items Definition

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
ALCS	Identifies Switch Type as ALCS	ra:NoType (see Annex 17)	None	N/A	Non-Sensitive
HCALCS	Identifies Switch Type as HCALCS and it defines its Device ID	ra:EUI	None	N/A	Non-Sensitive

Table 38 Read ALCS Data – SwitchTypeAndId Data Items

#### 7.7.2.1.5 Sample Response

```

<ra:ReadALCSDDataRsp MessageSuccess="true">
  <ra:AuxiliaryLoadControlSwitch Index="1">
    <ra:Description>Description1</ra:Description>
    <ra:TypeAndIdentifier><ra:ALCS/></ra:TypeAndIdentifier>
    <ra:State>false</ra:State>
  </ra:AuxiliaryLoadControlSwitch>
  <ra:AuxiliaryLoadControlSwitch Index="2">
    <ra:Description>Description2</ra:Description>
    <ra:TypeAndIdentifier>
      <ra:HCALCS>00-00-00-00-00-00-00</ra:HCALCS>
    </ra:TypeAndIdentifier>
    <ra:State>true</ra:State>
  </ra:AuxiliaryLoadControlSwitch>
  <ra:ALCSHCALCSSpecialDays>
    <ra:ALCSHCALCSSpecialDay index="1">
      <ra:Year>
        <ra:SpecifiedYear>2015</ra:SpecifiedYear>
      </ra:Year>
      <ra:Month>
        <ra:SpecifiedMonth>6</ra:SpecifiedMonth>
      </ra:Month>
      <ra:DayOfMonth>
        <ra:SpecifiedDayOfMonth>16</ra:SpecifiedDayOfMonth>
      </ra:DayOfMonth>
      <ra:DayOfWeek>
        <ra:SpecifiedDayOfWeek>4</ra:SpecifiedDayOfWeek>
      </ra:DayOfWeek>
    </ra:ALCSHCALCSSpecialDay>
    <ra:ALCSHCALCSSpecialDay index="2">
      <ra:Year>
        <ra:SpecifiedYear>2015</ra:SpecifiedYear>
      </ra:Year>
      <ra:Month>
        <ra:SpecifiedMonth>7</ra:SpecifiedMonth>
      </ra:Month>
      <ra:DayOfMonth>
        <ra:SpecifiedDayOfMonth>12</ra:SpecifiedDayOfMonth>
      </ra:DayOfMonth>
      <ra:DayOfWeek>
        <ra:SpecifiedDayOfWeek>5</ra:SpecifiedDayOfWeek>
      </ra:DayOfWeek>
    </ra:ALCSHCALCSSpecialDay>
  </ra:ALCSHCALCSSpecialDays>
  <ra:ALCSScheduler>
    <ra:ActivateDeactivateSwitch index="1"><ra:DeactivateSwitch/></ra:ActivateDeactivateSwitch>
    <ra:SpecialDaysApplicability index="1"/>
    <ra:SpecialDaysApplicability index="2"/>
    <ra:DaysOfWeekApplicability>
      <ra:DayOfWeekApplicability>
        <ra:DayOfWeekID>Monday</ra:DayOfWeekID>
      </ra:DayOfWeekApplicability>
      <ra:DayOfWeekApplicability>
        <ra:DayOfWeekID>Tuesday</ra:DayOfWeekID>
      </ra:DayOfWeekApplicability>
    </ra:DaysOfWeekApplicability>
    <ra:ALCSScheduleDatesAndTime>
      <ra:SwitchTime>06:00:00.00</ra:SwitchTime>
      <ra:StartDate>
        <ra:Year><ra:NonSpecifiedYear/></ra:Year>
        <ra:Month><ra:SpecifiedMonth>01</ra:SpecifiedMonth></ra:Month>
        <ra:DayOfMonth><ra:SpecifiedDayOfMonth>01</ra:SpecifiedDayOfMonth></ra:DayOfMonth>
        <ra:DayOfWeek><ra:NonSpecifiedDayOfWeek/></ra:DayOfWeek>
      </ra:StartDate>
      <ra:EndDate>
        <ra:Year><ra:NonSpecifiedYear/></ra:Year>
        <ra:Month><ra:SpecifiedMonth>03</ra:SpecifiedMonth></ra:Month>
        <ra:DayOfMonth><ra:SpecifiedDayOfMonth>31</ra:SpecifiedDayOfMonth></ra:DayOfMonth>
        <ra:DayOfWeek><ra:NonSpecifiedDayOfWeek/></ra:DayOfWeek>
      </ra:EndDate>
    </ra:ALCSScheduleDatesAndTime>
  </ra:ALCSScheduler>
</ra:ReadALCSDDataRsp>

```

Figure 21 - Read ALCS Data Response Sample

## 7.8 Reset Auxiliary Load (7.8)

Service Request Name	ResetAuxiliaryLoad	
Service Reference	7.8	
Service Request Variant Name	ResetAuxiliaryLoad	
Service Reference Variant	7.8	
Service Request Objective	To enable a DCC Service User to reset the specified Auxiliary Load Control Switch or Han Connected Auxiliary Load Control Switch to the state determined by the calendar for a specified ESME.	
Business Context Statement	The DCC Service User requires that an auxiliary load control switch to an additional circuit, controlled by the specified device, is reset to the normal state it would be in (as determined by the ALCS's calendar). This would typically be following prior commands from the DCC Service Users to Activate or Deactivate the ALCS / HCALCS.	
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> </ul>	
Security Classification	Critical and non-sensitive: <i>GBCS XREF: SME.C.C</i>	
Service Request Narrative	<ol style="list-style-type: none"> <li>For Devices with GBCS version prior to v4.0 this Service Request resets the value of the <i>Auxiliary Load Control Switch [n] - Status</i> to open, close or maintain its state, as defined in the <i>Auxiliary Load Control Switch Calendar</i> as defined by SMETS.</li> <li>This Service Request is applicable to an ESME connected to ALCS and / or HCALCS. The Business Target ID = ESME Device ID.</li> <li>An Electricity Smart Meter can be connected to a maximum of 5 switches, each of which can be ALCS or HCALCS. The switch labels are defined via Service Request 6.14.1 (see Annex section 6.14.1) and the switch types, Device IDs (HCALCS only) and Calendar (schedule) are defines via Service Request 6.14.2 (see Annex section 6.14.2).</li> <li>For Devices with GBCS version 4.0 or later this Service Request is not applicable. There is no direct equivalent of this Service Request for Devices with GBCS version 4.0 or later.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code prior to v4.0	0x0055	N/A
GBCS Use Case prior to v4.0	ECS47	N/A
GBCS Use Case Name prior to v4.0	Set or Reset HC ALCS or ALCS State	N/A

GBCS v4.0 or later	N/A – feature not supported by Device	N/A
SMETS1 Availability	No	N/A
GBCS Commands - Versioning Details		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations		
Device Type	ESME	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS prior to v4.0	GBCS v4.0 or later
DEFAULT - No specific XML criteria	ECS47	Response Code - E57

Table 39 Reset Auxiliary Load Service Request

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.8.1 Service Request

### 7.8.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its ResetAuxiliaryLoad XML element defines this Service Request and contains the Switch (1, 2, 3, 4 or 5) to be reset.

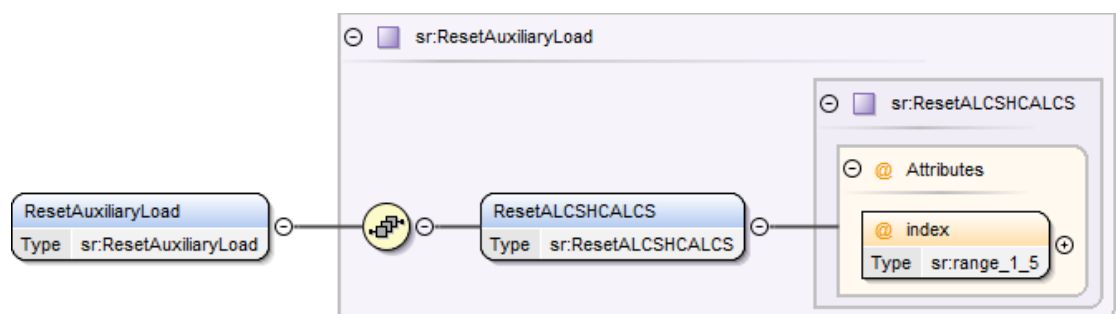


Figure 22 Reset Auxiliary Load Service Request Structure

### 7.8.1.2 Specific Data Items Definition

The data items contained in the Service Request are defined as:

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ResetALCSHCALCS	Switch (ALCS or HCALCS) to be reset  The index is the Switch Identifier	sr:ResetALCSHCALCS (N/A)	Yes	None	N/A	Non-Sensitive
index (attribute of ResetALCSHCALCS)	The identifier associated with the ALCS / HCALCS	sr:range_1_5 (Restriction of xs:positiveInteger minInclusive = 1, maxInclusive = 5)	Yes	None	N/A	Non-Sensitive

Table 40 Reset Auxiliary Load Service Request Data Items

### 7.8.1.3 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
Yes	Yes	No	No	No

Table 41 Reset Auxiliary Load Modes of Operation

### 7.8.1.4 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
No	No	No	Yes	Yes	Yes	Yes	No

Table 42 Reset Auxiliary Load Command Variant Values

### 7.8.1.5 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks.

### 7.8.1.6 Sample Request

There are two versions applicable to this Service Request

- Transform Service Request
- Signed Pre-command

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

```
<ResetAuxiliaryLoad>
  <ResetALCSHCALCS index="3" />
</ResetAuxiliaryLoad>
```

Figure 23 Reset Auxiliary Load Transform Request (Body) Format

## 7.8.2 Responses

The Service Response messages for a “Reset Auxiliary Load” Request follow the generic format for all “Device” response messages. The generic responses applicable to this Service Request are;

- Pre-command
- Acknowledgement
- Service Response (from Device) - GBCSPayload
- Command for Local Delivery
- Parse Output

Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

### 7.8.2.1 Parse Output Format

The response to this request returns only status without any substantial payload. The XML type is ResetAuxiliaryLoadRsp.

Please see Annex section 18.9 for a description of how status-only responses are represented in the MMC XML schema.

#### 7.8.2.1.1 Specific Header Data Items

Data Item	Electricity Response (HC ALCS or ALCS)
GBCSHexadecimalMessageCode	0055
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS47</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set or Reset HC ALCS or ALCS State</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 43 – Reset Auxiliary Load Configuration Parse Response Header Data Items

## 7.9 Add Auxiliary Load To Boost Button (7.9)

Service Request Name	AddAuxiliaryLoadToBoostButton
Service Reference	7.9
Service Request Variant Name	AddAuxiliaryLoadToBoostButton
Service Reference Variant	7.9

Service Request Objective	To enable a DCC Service User to associate an Auxiliary Load Control (ALCS prior to GBCS v4.0, ALCS or APC for GBCS v4.0 or later) with a boost button by placing the Switch under the control of the Boost button on a specified Electricity Smart Meter.	
Business Context Statement	The DCC Service User requires that an Electricity Smart Meter connected auxiliary load control switch or APC is placed under the control of the Boost Button on the electricity meter.	
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> </ul>	
Security Classification	Non-critical and non-sensitive: <i>GBCS XREF: SME.C.NC</i>	
Service Request Narrative	<ol style="list-style-type: none"> <li>This Service Request sets the <i>Boost Function Control [n]</i> as defined by SMETS.</li> <li>An Electricity Smart Meter can be connected to a maximum of 5 switches, each of which can be ALCS or HCALCS, or additionally APC from GBCS v4.0. For Devices prior to GBCS v4.0, the switch labels are defined via Service Request 6.14.1 (see Annex section 6.14.1) and the switch types, Device IDs (HCALCS only) and Calendar (schedule) are defined via Service Request 6.14.2 (see Annex section 6.14.2). For Devices with GBCS v4.0 or later the labels are defined via Service Request 6.14.1 (see Annex section 6.14.1) and the Calendar (schedule) is defined via Service Request 6.14.3 (see Annex section 6.14.3).</li> <li>This Service Request has to include 5 switches, even if the ESME is connected to less than 5. <ol style="list-style-type: none"> <li>Those 'n' switches already controlled by the Boost Button or to be controlled by it have to be set to true.</li> <li>The other 5 – 'n' switches, if any, have to be set to false. Note that if the switch was previously controlled by the Boost Button, this Request will result in the switch no longer being controlled by it. If ESME connected to less than 5 switches, this applies to those switches that don't exist.</li> </ol> </li> <li>This Service Request is treated by the DCC Data Systems with the same priority as a Service Request with a Target Response Time of 30 seconds.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x005F	N/A
GBCS Use Case	ECS62	N/A
GBCS Use Case Name	Set ALCS and Boost Button Association (prior to GBCS v4.0)	N/A

	Set ALCS/APC and Boost Button Association (GBCS v4.0 or later)	
SMETS1 Availability	No	N/A

Table 44 Add Auxiliary Load To Boost Button Service Request

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.9.1 Service Request

### 7.9.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its AddAuxiliaryLoadToBoostButton XML element defines this Service Request and contains 5 switches and for each one whether it is to be controlled by the Boost Button or not and, for Future Dated Requests, the date-time when the association between switches and the Boost Button is to be changed.

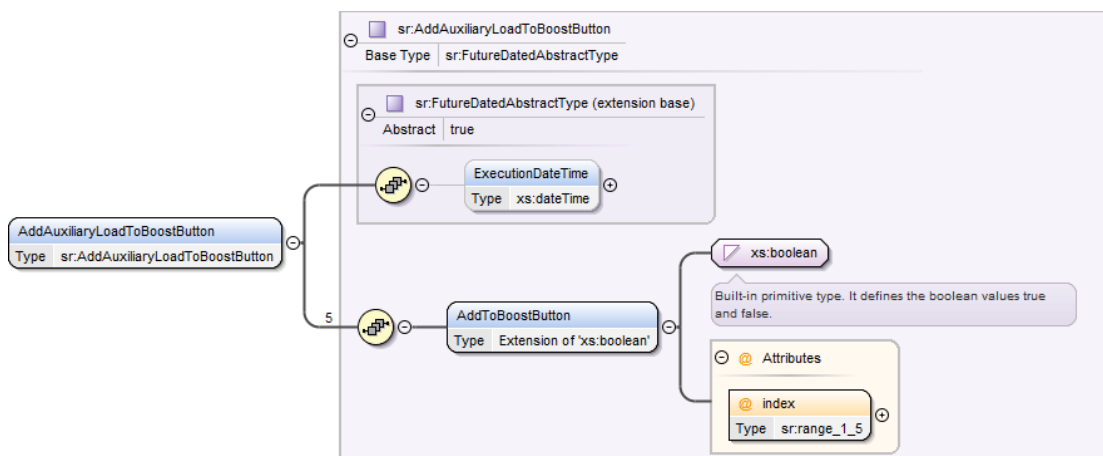


Figure 24 Add Auxiliary Load To Boost Button Service Request Structure

### 7.9.1.2 Specific Data Items Definition

The data items contained in the Service Request are defined as:

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ExecutionDateTime	The UTC date and time the DCC User requires the command to be executed on the Device ID Valid set: <ul style="list-style-type: none"> <li>Date-time in the future that is either &lt;= current date + 30 days or the date = 31/12/3000</li> </ul>	xs:dateTime	No	None	UTC Date-Time	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
AddToBoostButton	Identifies the Auxiliary Load Control Switches to be controlled by the boost button.  The index is the Switch Identifier  Valid set: <ul style="list-style-type: none"><li>true. Switch to be controlled by the boost button</li><li>false. Switch not to be controlled by the boost button</li></ul>	xs:boolean	Yes <sup>1</sup>	None	N/A	Non-Sensitive
index (attribute of AddToBoostButton)	The value of the index identifies the switch that is associated with the button.	sr:range_1_5 (Restriction of xs:positiveInteger minInclusive = 1, maxInclusive = 5)	Yes	None	N/A	Non-Sensitive

Table 45 Add Auxiliary Load To Boost Button Service Request Data Items

<sup>1</sup> A minimum of 5 and a maximum of 5

### 7.9.1.3 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
No	Yes	No	DSP	No

Table 46 Add Auxiliary Load To Boost Button Modes of Operation

### 7.9.1.4 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
Yes	Yes	Yes	No	No	No	No	No

Table 47 Add Auxiliary Load To Boost Button Command Variant Values

### 7.9.1.5 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Execution Date Time validation.

### 7.9.1.6 Sample Request

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

```
<AddAuxiliaryLoadToBoostButton>
  <AddToBoostButton index="1">false</AddToBoostButton>
  <AddToBoostButton index="2">true</AddToBoostButton>
  <AddToBoostButton index="3">false</AddToBoostButton>
  <AddToBoostButton index="4">false</AddToBoostButton>
  <AddToBoostButton index="5">false</AddToBoostButton>
</AddAuxiliaryLoadToBoostButton>
```

**Figure 25 Add Auxiliary Load To Boost Button Service Request (Body) Format**

In this example switch 2 is being set to controlled by the Boost Button and 1, 3, 4 and 5 are being set to not controlled by the Boost Button

## 7.9.2 Responses

The Service Response messages for an “Add Auxiliary Load To Boost Button” Request follow the generic format for all “Device” response messages. The generic responses applicable to this Service Request are;

- Acknowledgement
- Service Response (from Device) - GBCSPayload
- Command for Local Delivery
- Parse Output

Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

### 7.9.2.1 Parse Output Format

The response to this request returns only status without any substantial payload. The XML type is AddAuxiliaryLoadToBoostButtonRsp.

Please see Annex section 18.9 for a description of how status-only responses are represented in the MMC XML schema.

#### 7.9.2.1.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	005F
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS62</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set ALCS and Boost Button Association (prior to GBCS v4.0) Set ALCS/APC and Boost Button Association (GBCS v4.0 or later)</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

**Table 48 – Add Auxiliary Load To Boost Button Parse Response Header Data Items**

## 7.10 Remove Auxiliary Load From Boost Button (7.10)

Service Request Name	RemoveAuxiliaryLoadFromBoostButton
Service Reference	7.10
Service Request Variant Name	RemoveAuxiliaryLoadFromBoostButton
Service Reference Variant	7.10
Service Request Objective	To enable a DCC Service User to remove an Auxiliary Load Control (ALCS prior to GBCS v4.0, ALCS or APC for GBCS v4.0 or later) with a boost button by removing the Switch under the control of the Boost button on a specified Electricity Smart Meter.
Business Context Statement	The DCC Service User requires that an Electricity Smart Meter connected auxiliary load control switch or APC is removed from the control of the Boost Button on the electricity meter.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> </ul>
Security Classification	Non-critical and non-sensitive: <i>GBCS XREF: SME.C.NC</i>
Service Request Narrative	<ol style="list-style-type: none"> <li>This Service Request sets the <i>Boost Function Control [n]</i> as defined by SMETS.</li> <li>An Electricity Smart Meter can be connected to a maximum of 5 switches, each of which can be ALCS or HCALCS, or additionally APC from GBCS v4.0. For Devices prior to GBCS v4.0, the switch labels are defined via Service Request 6.14.1 (see Annex section 6.14.1) and the switch types, Device IDs (HCALCS only) and Calendar (schedule) are defined via Service Request 6.14.2 (see Annex section 6.14.2). For Devices with GBCS v4.0 or later the labels are defined via Service Request 6.14.1 (see Annex section 6.14.1) and the Calendar (schedule) is defined via Service Request 6.14.3 (see Annex section 6.14.3).</li> <li>This Service Request has to include 5 switches, even if the ESME is connected to less than 5. <ol style="list-style-type: none"> <li>Those 'n' switches not controlled by the Boost Button or to be removed from the Boost Button control have to be set to true. If ESME connected to less than 5 switches, this applies to those switches that don't exist.</li> <li>The other 5 – 'n' switches, if any, have to be set to false. Note that if the switch wasn't previously controlled by the Boost Button, this Request will result in the switch being controlled by it.</li> </ol> </li> </ol>

GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x005F	N/A
GBCS Use Case	ECS62	N/A
GBCS Use Case Name	Set ALCS and Boost Button Association (prior to GBCS v4.0) Set ALCS/APC and Boost Button Association (GBCS v4.0 or later)	N/A
SMETS1 Availability	No	N/A

Table 49 Remove Auxiliary Load From Boost Button Service Request

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.10.1 Service Request

### 7.10.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its RemoveAuxiliaryLoadFromBoostButton XML element defines this Service Request and contains 5 switches and for each one whether it is to be controlled by the Boost Button or not and, for Future Dated Requests, the date-time when the association between switches and the Boost Button is to be changed.

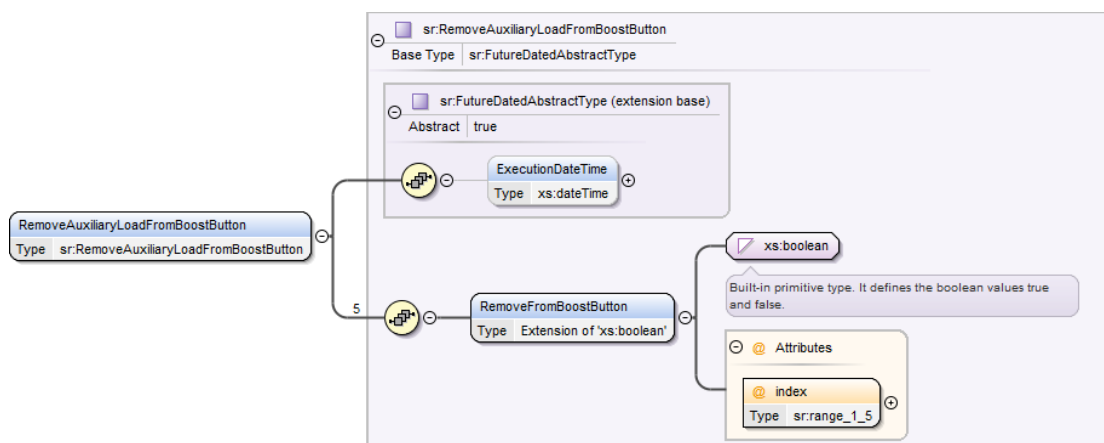


Figure 26 Remove Auxiliary Load From Boost Button Service Request Structure

### 7.10.1.2 Specific Data Items Definition

The data items contained in the Service Request are defined as:

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ExecutionDateTime	The UTC date and time the DCC User requires the command to be executed on the Device ID Valid set: <ul style="list-style-type: none"> <li>Date-time in the future that is either &lt;= current date + 30 days or the date = 31/12/3000</li> </ul>	xs:dateTime	No	None	UTC Date-Time	Non-Sensitive
RemoveFromBoostButton	Identifies the Auxiliary Load Control Switches to be controlled by the boost button.  The index is the Switch Identifier  Valid set: <ul style="list-style-type: none"> <li>true. Switch not to be controlled by the boost button</li> <li>false. Switch to be controlled by the boost button</li> </ul>	xs:boolean	Yes <sup>1</sup>	None	N/A	Non-Sensitive
index (attribute of RemoveFromBoostButton)	The value of the index identifies the switch that is associated with the button.	sr:range_1_5 (Restriction of xs:positiveInteger minInclusive = 1, maxInclusive = 5)	Yes	None	N/A	Non-Sensitive

**Table 50 Remove Auxiliary Load From Boost Button Service Request Data Items**

<sup>1</sup> A minimum of 5 and a maximum of 5

### 7.10.1.3 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
No	Yes	No	DSP	No

**Table 51 Remove Auxiliary Load From Boost Button Modes of Operation**

### 7.10.1.4 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
Yes	Yes	Yes	No	No	No	No	No

**Table 52 Remove Auxiliary Load From Boost Button Command Variant Values**

### 7.10.1.5 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Execution Date Time validation.

### 7.10.1.6 Sample Request

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

```
<RemoveAuxiliaryLoadFromBoostButton>
  <RemoveFromBoostButton index="1">true</RemoveFromBoostButton>
  <RemoveFromBoostButton index="2">false</RemoveFromBoostButton>
  <RemoveFromBoostButton index="3">true</RemoveFromBoostButton>
  <RemoveFromBoostButton index="4">true</RemoveFromBoostButton>
  <RemoveFromBoostButton index="5">true</RemoveFromBoostButton>
</RemoveAuxiliaryLoadFromBoostButton>
```

**Figure 27 Remove Auxiliary Load From Boost Button Service Request (Body) Format**

In this example switch 2 is being set to controlled by the Boost Button and 1, 3, 4 and 5 are being set to not controlled by the Boost Button

## 7.10.2 Responses

The Service Response messages for a "Remove Auxiliary Load From Boost Button" Request follow the generic format for all "Device" response messages. The generic responses applicable to this Service Request are;

- Acknowledgement
- Service Response (from Device) - GBCSPayload
- Command for Local Delivery
- Parse Output

Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

### 7.10.2.1 Parse Output Format

The response to this request returns only status without any substantial payload. The XML type is RemoveAuxiliaryLoadFromBoostButtonRsp.

Please see Annex section 18.9 for a description of how status-only responses are represented in the MMC XML schema.

#### 7.10.2.1.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	005F
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS62</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set ALCS and Boost Button Association (prior to GBCS v4.0) Set ALCS/APC and Boost Button Association (GBCS v4.0 or later)</i>

Data Item	Electricity Response
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 53 – Remove Auxiliary Load From Boost Button Parse Response Header Data Items

## 7.11 Read Boost Button Details (7.11)

Service Request Name	ReadBoostButtonDetails	
Service Reference	7.11	
Service Request Variant Name	ReadBoostButtonDetails	
Service Reference Variant	7.11	
Service Request Objective	To enable a DCC Service User to read the details of the Boost Button on a specified Electricity Smart Meter.	
Business Context Statement	This may be required which the DCC Service User is taking on a customer who has a meter which has a boost button installed	
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Other User (OU)</li> </ul>	
Security Classification	Non-critical and non-sensitive: GBCS XREF: SME.C.NC	
Service Request Narrative	<p>This Service Request reads the following as defined by SMETS;</p> <ul style="list-style-type: none"> <li>- <i>Boost Function Availability</i></li> <li>- <i>Boost Function Control [n]</i> - A data item to identify whether Auxiliary Controller [n] is to be controlled by the Boost Function. For a Device with GBCS v4.0 or later an Auxiliary Controller may be an APC or ALCS, and prior to GBCS v4.0 it can only refer to an ALCS.</li> <li>- <i>Boost Function Event Log</i> - A single log capable of storing entries for the most recent 25 Boost Periods including the UTC date and time of the beginning and end of the Boost Period.</li> </ul> <p>For Service User Roles to which registration checks apply, the Service Request sender needs to be registered for that Device for the entire date-time period for which the Boost Function Event Log is requested. If the sender is not authorised to read data for the entire period requested, an error will be returned.</p>	
GBCS Cross Reference	Electricity	Gas

GBCS Message Code	0x005E	N/A
GBCS Use Case	ECS61c	N/A
GBCS Use Case Name	Read Boost Button Data from ESME	N/A
SMETS1 Availability	No	N/A

Table 54 Read Boost Button Details Service Request

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.11.1 Service Request

### 7.11.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its ReadBoostButtonDetails XML element defines this Service Request and it contains the date-time period for which the Boost Button Function Event Log is to be read and, for Future Dated Requests, the Execution Date and Time.

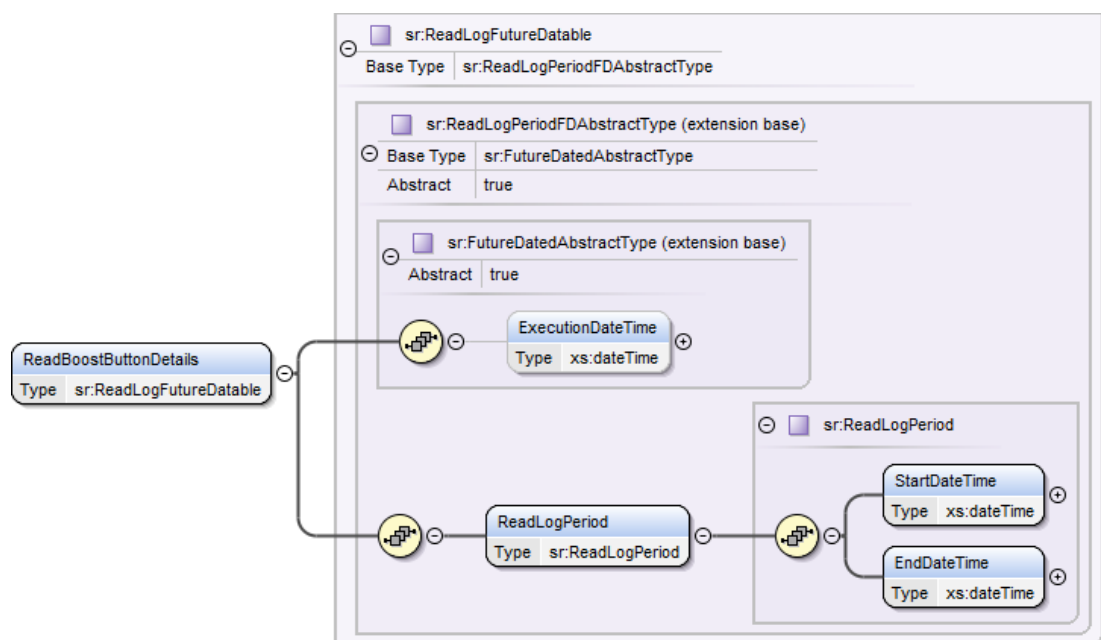


Figure 28 Read Boost Button Details Service Request Structure

### 7.11.1.2 Specific Data Items Definition

The data items contained in the Service Request are defined as:

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ExecutionDateTime	The UTC date and time the DCC User requires the command to be executed on the Device ID <ul style="list-style-type: none"> <li>Date-time in the future that is either &lt;= current date + 30 days or the date = 31/12/3000</li> </ul>	xs:dateTime	No	None	UTC Date-Time	Non-Sensitive
ReadLogPeriod	The Start and / or End Date-Times for which the Boost Button Event Log data is required	sr:ReadLogPeriod (see Annex section 17 for details)	Yes	None	N/A	Non-Sensitive

Table 55 Read Boost Button Details Service Request Data Items

### 7.11.1.3 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
No	Yes	No	DSP	No

Table 56 Read Boost Button Details Modes of Operation

### 7.11.1.4 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
Yes	Yes	Yes	No	No	No	No	No

Table 57 Read Boost Button Details Command Variant Values

### 7.11.1.5 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Execution Date Time and Read Log Period validation.

### 7.11.1.6 Sample Request

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

```
<ReadBoostButtonDetails>
  <ReadLogPeriod>
    <StartDateTime>2013-12-01T00:00:00.00Z</StartDateTime>
    <EndDateTime>2013-12-31T23:59:59.00Z</EndDateTime>
  </ReadLogPeriod>
</ReadBoostButtonDetails>
```

Figure 29 Read Boost Button Details Service Request (Body) Format

## 7.11.2 Responses

The Service Response messages for a “Read Boost Button Details” Request follow the generic format for all “Device” response messages. The generic responses applicable to this Service Request are;

- Acknowledgement

- Service Response (from Device) - GBCSPayload. Service Response Specific Payload
- Command for Local Delivery
- Parse Output

See Main Document of this documentation set section 4 for Response IDs returned to DCC Service Users that are Known Remote Parties (KRP) or Unknown Remote Parties (URP) to the Device.

Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

### 7.11.2.1 Parse Output Format

#### 7.11.2.1.1 Format - ReadBoostButtonDetailsRsp

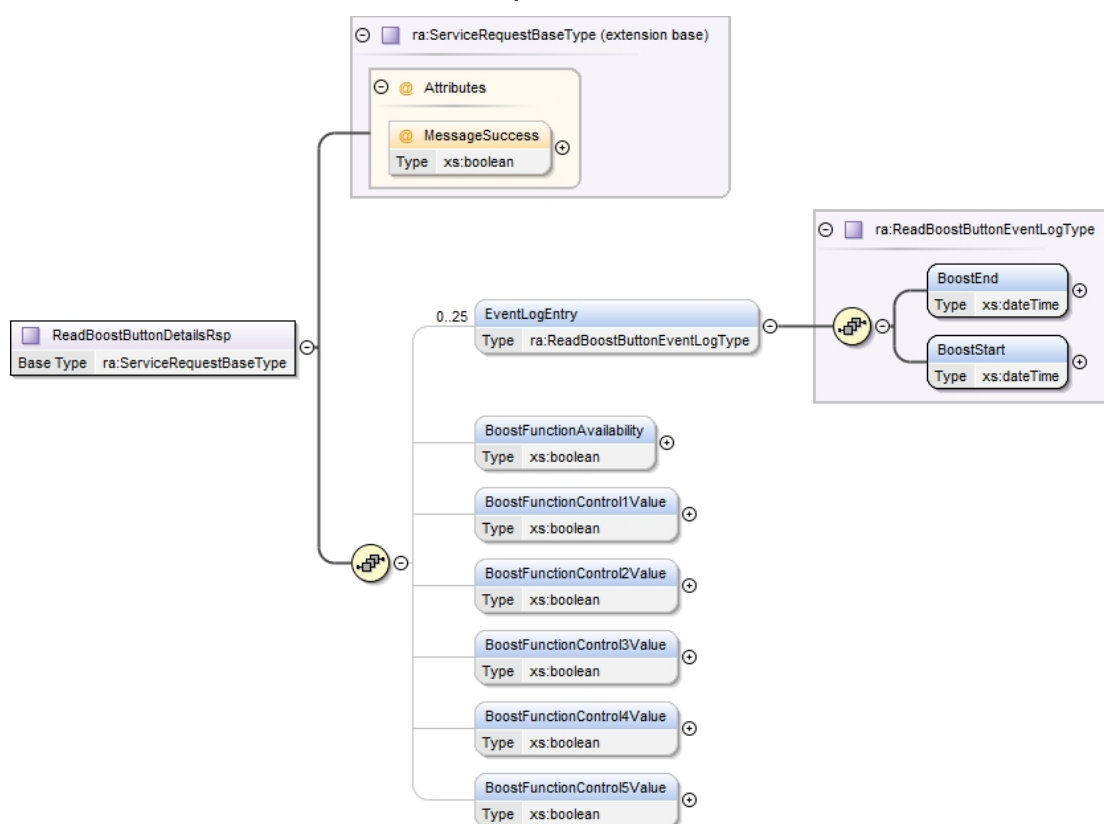


Figure 30 - Read Boost Button Details Response Structure

#### 7.11.2.1.2 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	005E
GBCS Use Case Number (for information only - not in header)	ECS61c
GBCS Use Case Name (for information only - not in header)	Read Boost Button Data from ESME

Data Item	Electricity Response
SupplementaryRemotePartyID	Present where originator is a URP
SupplementaryRemotePartyCounter	Present where originator is a URP
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

**Table 58 – Read Boost Button Details Parse Response Header Data Items**

See DUGIDS main document sections 8.1.1 and 4 for circumstances in which Users are a KRP or URP to a Device.

#### 7.11.2.1.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
BoostEnd	End of boost period.	xs:dateTime	None	N/A	Non-Sensitive
BoostStart	Start of boost period.	xs:dateTime	None	N/A	Non-Sensitive
BoostFunctionAvailability	Identifies if ESME has a configured boost function. Fixed at manufacture to represent presence (true) or absence (false) of boost function.	xs:boolean	None	N/A	Non-Sensitive
BoostFunctionControl1Value	Identifies whether Auxiliary Load Control Switch [1] is to be controlled by the Boost Function.	xs:boolean	None	N/A	Non-Sensitive
BoostFunctionControl2Value	Identifies whether Auxiliary Load Control Switch [2] is to be controlled by the Boost Function.	xs:boolean	None	N/A	Non-Sensitive
BoostFunctionControl3Value	Identifies whether Auxiliary Load Control Switch [3] is to be controlled by the Boost Function.	xs:boolean	None	N/A	Non-Sensitive
BoostFunctionControl4Value	Identifies whether Auxiliary Load Control Switch [4] is to be controlled by the Boost Function.	xs:boolean	None	N/A	Non-Sensitive
BoostFunctionControl5Value	Identifies whether Auxiliary Load Control Switch [5] is to be controlled by the Boost Function.	xs:boolean	None	N/A	Non-Sensitive

**Table 59 - Read Boost Button Details Parse Response Body Data Items**

#### 7.11.2.1.4 Sample Response

```
<ra:ReadBoostButtonDetailsRsp MessageSuccess="true">
  <ra:EventLogEntry>
    <ra:BoostEnd>2006-05-04T18:13:51.0</ra:BoostEnd>
    <ra:BoostStart>2006-05-04T18:16:51.0</ra:BoostStart>
  </ra:EventLogEntry>
  <ra:EventLogEntry>
    <ra:BoostEnd>2006-05-07T18:13:51.0</ra:BoostEnd>
    <ra:BoostStart>2006-05-07T19:21:51.0</ra:BoostStart>
  </ra:EventLogEntry>
  <ra:BoostFunctionAvailability>false</ra:BoostFunctionAvailability>
  <ra:BoostFunctionControl1Value>false</ra:BoostFunctionControl1Value>
  <ra:BoostFunctionControl2Value>false</ra:BoostFunctionControl2Value>
  <ra:BoostFunctionControl3Value>false</ra:BoostFunctionControl3Value>
  <ra:BoostFunctionControl4Value>false</ra:BoostFunctionControl4Value>
  <ra:BoostFunctionControl5Value>false</ra:BoostFunctionControl5Value>
</ra:ReadBoostButtonDetailsRsp>
```

Figure 31 - Read Boost Button Details Response Sample

## 7.12 Set Randomised Offset Limit (7.12)

Service Request Name	SetRandomisedOffsetLimit	
Service Reference	7.12	
Service Request Variant Name	SetRandomisedOffsetLimit	
Service Reference Variant	7.12	
Service Request Objective	To enable a DCC Service User to set the Randomised Offset limit on a specified Electricity Smart Meter.	
Business Context Statement	For example, the DCC Service User requires that, on installation, the Randomised Offset Limit is set on the meter, to put a bound on the randomised offset applied by the meter when switching tariffs and auxiliary load control switches.	
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> </ul>	
Security Classification	Critical and non-sensitive: GBCS XREF: SME.C.C	
Service Request Narrative	<p>This Service Request sets the <i>Randomised Offset Limit</i> value as defined in SMETS.</p> <p>The product of the <i>Randomised Offset Limit</i> and the <i>Randomised Offset Number</i> as defined in SMETS (a randomly generated value between 0 and 1) rounded to the nearest second creates a Randomised Offset value for a Device. This value is used to delay the Tariff Switching Table times, the Auxiliary Load Control Switch switching times, and HAN Connected Auxiliary Load Control Switch switching times.</p>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x004B	N/A

GBCS Use Case	ECS38	N/A
GBCS Use Case Name	Update Randomised Offset Limit	N/A
SMETS1 Availability	No	N/A

Table 60 Set Randomised Offset Limit Service Request

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.12.1 Service Request

### 7.12.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its RandomisedOffsetLimit XML element defines this Service Request and contains the Randomised Offset Limit.

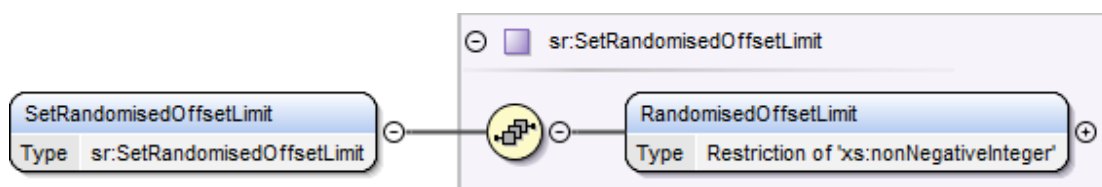


Figure 32 Randomised Offset Limit Service Request Structure

### 7.12.1.2 Specific Data Items Definition

The data items contained in the Service Request are defined as:

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
RandomisedOffsetLimit	A value in seconds in the range 0 to 1799	Restriction of xs:nonNegativeInteger (minInclusive = 0, maxInclusive = 1799)	Yes	None	Seconds	Non-Sensitive

Table 61 Randomised Offset Limit Service Request Data Items

### 7.12.1.3 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
Yes	Yes	No	No	No

Table 62 Randomised Offset Limit Modes of Operation

### 7.12.1.4 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
No	No	No	Yes	Yes	Yes	Yes	No

**Table 63 Randomised Offset Limit Command Variant Values**

### 7.12.1.5 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks.

### 7.12.1.6 Sample Request

There are two versions applicable to this Service Request

- Transform Service Request
- Signed Pre-command

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

```
<SetRandomisedOffsetLimit>
  <RandomisedOffsetLimit>1250</RandomisedOffsetLimit>
</SetRandomisedOffsetLimit>
```

**Figure 33 Randomised Offset Limit Transform Request (Body) Format**

## 7.12.2 Responses

The Service Response messages for a “Randomised Offset Limit” Request follow the generic format for all “Device” response messages. The generic responses applicable to this Service Request are;

- Pre-command
- Acknowledgement
- Service Response (from Device) - GBCSPayload
- Command for Local Delivery
- Parse Output

Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

### 7.12.2.1 Parse Output Format

The response to this request returns only status without any substantial payload. The XML type is SetRandomisedOffsetLimitRsp.

Please see Annex section 18.9 for a description of how status-only responses are represented in the MMC XML schema.

#### 7.12.2.1.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	004B

Data Item	Electricity Response
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS38</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Update Randomised Offset Limit</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 64 – Set Randomised Offset Limit Parse Response Header Data Items

### 7.13 Set Auxiliary Controller State (7.13)

Service Request Name	SetAuxiliaryControllerState
Service Reference	7.13
Service Request Variant Name	SetAuxiliaryControllerState
Service Reference Variant	7.13
Service Request Objective	<p>To enable a DCC Service User to define a period for a single Auxiliary Controller during which the state that is specified in this Service Request will override the configuration defined in the Auxiliary Controller Calendar.</p> <p>The Auxiliary Controller may be an Auxiliary Proportional Controller (APC) or Auxiliary Load Control Switch (ALCS) within a specified ESME (including SAPC), or an ALCS switch in a specified HAN connected Auxiliary Load Control Switch (HCALCS).</p>
Business Context Statement	The DCC Service User requires that for a defined period an Auxiliary Load Control Switch is closed or opened e.g. to switch on or off a consumer's electric storage heating remotely, or that the level of an Auxiliary Proportional Controller is set to an input or output level from 0-100%.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> </ul>
Security Classification	<p>Critical and non-sensitive:</p> <p>GBCS XREF: SME.C.C</p>

Service Request Narrative	<ol style="list-style-type: none"> <li>1. This Service Request is applicable only to ESME Devices with GBCS v4.0 or later. Service Requests 7.5 and 7.6 provide equivalent functionality for Devices with GBCS versions prior to v4.0.</li> <li>2. This Service Request is applicable to an ESME (including SAPC) with APC, ALCS and / or HCALCS capabilities. The Business Target ID = ESME Device ID.</li> <li>3. An ESME (including SAPC) can be connected to a maximum of 5 Auxiliary Controllers, each of which can be APC, ALCS or HCALCS. This Service Request will set one of the 5 Auxiliary Controllers as specified by the attribute auxiliaryControllerN in the request.</li> <li>4. This Service Request defines a period during which the value of the <i>Auxiliary Controller [n] State</i> as defined by SMETS is intended to be set to the state specified in the Service Request. The period is defined in SMETS as <i>APC [n] Setting Period</i> for an APC, <i>ALCS [n] Setting Period</i> for an ALCS and <i>HCALCS [n] Setting Period</i> for an HCALCS.</li> <li>5. The state of an Auxiliary Controller is expressed as the percentage to which its commanded state level is to be set. Where the Auxiliary Controller is an ALCS or HCALCS, 100 shall be interpreted by the Device as meaning closure of the switch (allowing energy to flow) and any other number shall be interpreted as meaning opening of the switch (not allowing energy to flow).</li> <li>6. The default direction of energy flow is to output energy to the controlled load. Where an Auxiliary Controller is an APC it is possible for the commanded state to command that the direction of energy flow shall be to input from the controlled load device.</li> <li>7. If the Device applies the Command successfully then the Device may generate a Device Alert 0x8F88 when the operational state of the Auxiliary Controller changes. A Device Alert 0x8F88 may be sent to the Device's Import Supplier, Network Operator, or Load Controller, or any two of them. Note that in this context Load Controller means the DCC Service User with organisation certificates in the Load Controller trust anchor cells, which in this version of the interface can be only an Electricity Import Supplier.</li> <li>8. Only one setting period may be defined for an Auxiliary Controller at any one time.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS prior to v4.0	N/A – feature not supported by Device	N/A
GBCS v4.0 Message Code	0x011E	N/A
GBCS v4.0 Use Case	ECS47a	N/A
GBCS v4.0 Use Case Name	Set Auxiliary Controller [n] State	N/A

SMETS1 Availability	No	N/A
GBCS Commands - Versioning Details		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations		
Device Type	ESME	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS prior to v4.0	GBCS v4.0 or later
DEFAULT - No specific XML criteria	Response Code - E57	ECS47a

Table 65 Set Auxiliary Controller State Service Request

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.13.1 Service Request

### 7.13.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its SetAuxiliaryControllerState XML element defines this Service Request and contains the index of the specific Auxiliary Controller to which the Service Request shall apply.

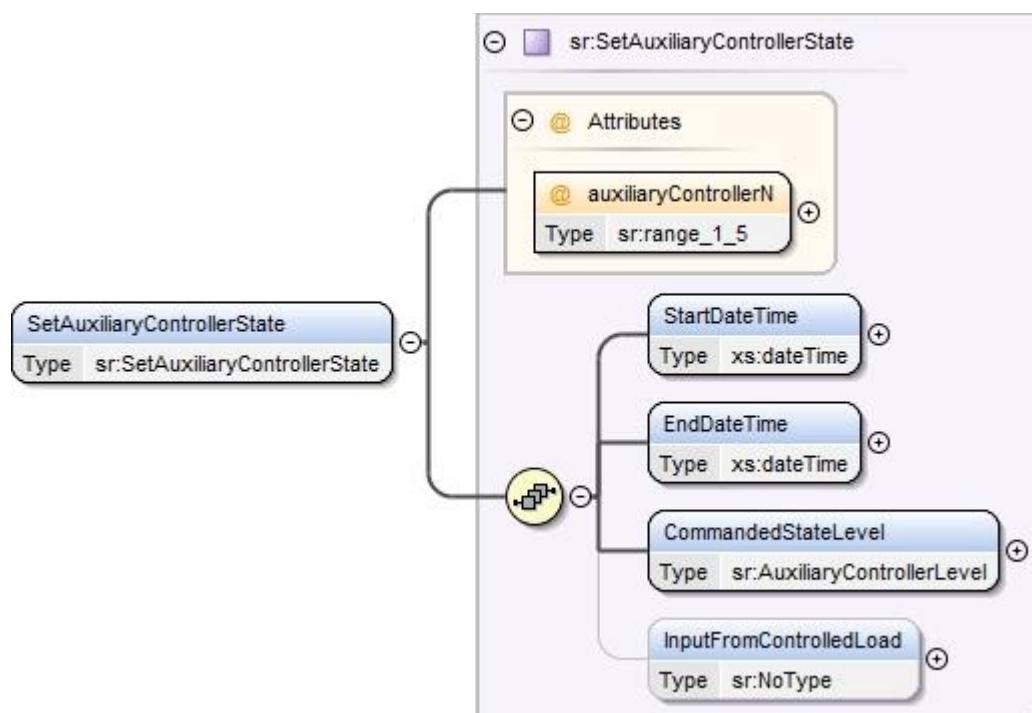


Figure 34 Set Auxiliary Controller State Service Request Structure

### 7.13.1.2 Specific Data Items Definition

The data items contained in the Service Request are defined as:

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
auxiliaryControllerN (Attribute of SetAuxiliaryControllerState)	The value of this attribute indicates which one of the Auxiliary Controllers on the Device is to have the state commanded. An ESME supports up to 5 Auxiliary Controllers.	sr:range_1_5 (xs:positiveInteger from 1 to 5)	Yes	None	N/A	Non-Sensitive
StartDateTime	The UTC date and time at which the DCC Service User requires the Device to start the Auxiliary Controller's setting period, in order to set the required commanded state of the specified Auxiliary Controller.	xs:dateTime	Yes	None	UTC Date-Time	Non-Sensitive
EndDateTime	The UTC date and time at which the DCC Service User requires the Device to the end the Auxiliary Controller's setting period.  As stated in SMETS, a Command where the specified setting period has a duration of more than 24 hours will not be accepted by the Device.	xs:dateTime	Yes	None	UTC Date-Time	Non-Sensitive
CommandedStateLevel	An integer indicating the required state of the Auxiliary Controller.  Where the Auxiliary Controller is an APC, the number reflects the percentage to which its commanded state level is to be set.  Where the Auxiliary Controller is an ALCS or HCALCS, 100 shall be interpreted by the Device as meaning closure of the switch (allowing energy to flow) and any other number shall be interpreted as meaning opening of the switch (not allowing energy to flow).  Where the Auxiliary Controller is an APC, the commanded direction of energy flow is determined by the presence or absence of an InputFromControlledLoad element.  Valid set: <ul style="list-style-type: none"> <li>Integer in the range 0 to 100</li> </ul>	sr:AuxiliaryControllerLevel (Restriction of xs:unsignedShort minInclusive = 0, maxInclusive = 100)	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
InputFromControlledLoad	<p>This element is only relevant to an APC, and will be ignored where the Auxiliary Controller is not an APC.</p> <p>If present, this element specifies that the direction of energy flow in the commanded state of the APC shall be to input energy from the controlled load device.</p> <p>If the InputFromControlledLoad element is not present, then the energy flow shall default to output of energy to the controlled load.</p>	sr:NoType (see Annex 17)	No	None	N/A	Non-Sensitive

Table 66 Set Auxiliary Controller State Service Request Data Items

### 7.13.1.3 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
Yes	Yes	No	No	No

Table 67 Set Auxiliary Controller State Modes of Operation

### 7.13.1.4 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
No	No	No	Yes	Yes	Yes	Yes	No

Table 68 Set Auxiliary Controller State Command Variant Values

### 7.13.1.5 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks.

### 7.13.1.6 Sample Request

There are two versions applicable to this Service Request

- Transform Service Request
- Signed Pre-command

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

```
<SetAuxiliaryControllerState auxiliaryControllerN="1">
  <StartDateTime>2021-12-01T17:00:00.00Z</StartDateTime>
  <EndDateTime>2021-12-01T18:59:59.00Z</EndDateTime>
  <CommandedStateLevel>50</CommandedStateLevel>
  <InputFromControlledLoad/>
</SetAuxiliaryControllerState>
```

Figure 35 Set Auxiliary Controller State Transform Request (Body) Format

## 7.13.2 Responses

The Service Response messages for a “Set Auxiliary Controller State” Request follow the generic format for all “Device” response messages. The generic responses applicable to this Service Request are;

- Pre-command
- Acknowledgement
- Service Response (from Device) - GBCSPayload
- Command for Local Delivery
- Parse Output

Sample responses are given in Annex Introduction Appendix 1; response specific information details are given below.

### 7.13.2.1 Parse Output Format

The response to this request returns only status without any substantial payload. The XML type is SetAuxiliaryControllerStateResp.

Please see Annex section 18.9 for a description of how status-only responses are represented in the MMC XML schema.

#### 7.13.2.1.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	0x011E
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS47a</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Auxiliary Controller [n] State</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 69 – Set Auxiliary Controller State Parse Response Header Data Items

## 7.14 Read Auxiliary Controller Configuration Data (7.14)

Service Request Name	ReadAuxiliaryControllerConfigurationData
Service Reference	7.14
Service Request Variant Name	ReadAuxiliaryControllerConfigurationData

Service Reference Variant	7.14
Service Request Objective	To enable a DCC Service User to read the configuration data of Auxiliary Controller load control positions (each of which may be APC, ALCS or HCALCS) for a specified Device.
Business Context Statement	The DCC Service User wishes to check configuration data for all the Auxiliary Controller positions of an ESME (including SAPC), for example to ensure that activation / deactivation is applied to the correct circuit.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Electricity Network Operator (ENO)</li> <li>Other User (OU)</li> </ul>
Security Classification	Non-critical and non-sensitive: <i>GBCS XREF: SME.C.NC</i>
Service Request Narrative	<ol style="list-style-type: none"> <li>This Service Request is applicable only to ESME Devices with GBCS v4.0 or later. Service Request 7.7 returns corresponding configuration data for Devices with GBCS versions prior to v4.0.</li> <li>This Service Request reads the Auxiliary Controller Calendar as defined by SMETS. This is a Switching Table containing a set of rules for setting the commanded state of each Auxiliary Controller.</li> <li>The commanded state level is stored as a value between 0 and 100 inclusive and the interpretation depends on the type of Auxiliary Controller. As the type of Auxiliary Controller is not returned by this Service Request, the Response provides only the number defined in the configuration, and the DCC Service User must interpret the response according to any knowledge they may have of the type of Auxiliary Controller. <ul style="list-style-type: none"> <li>Where the Auxiliary Controller is an APC the value indicates the percentage of energy flow to which its commanded state level will be set</li> <li>Where the Auxiliary Controller is an ALCS or HCALCS, 100 shall be interpreted by the Device as meaning closure of the switch (allowing energy to flow) and any other number shall be interpreted as meaning opening of the switch (not allowing energy to flow)</li> </ul> </li> <li>This Service Request is applicable to an ESME (including SAPC) connected with Auxiliary Controller capability. The Business Target ID = ESME Device ID.</li> <li>An ESME (including SAPC) can be connected to a maximum of 5 Auxiliary Controllers, each of which can be APC, ALCS or HCALCS. For Devices from GBCS v4.0 the descriptions (labels) are defined via Service Request 6.14.1 (see Annex section 6.14.1) and the calendar schedules and actions are defined via Service Request 6.14.3 (see Annex section 6.14.3).</li> <li>This Service Request will return data from all the Auxiliary Controllers connected to the ESME (including SAPC).</li> </ol>

GBCS Cross Reference	Electricity	Gas
GBCS prior to v4.0	N/A – feature not supported by Device	N/A
GBCS v4.0 Message Code	0x011C	N/A
GBCS v4.0 Use Case	ECS61d	N/A
GBCS v4.0 Use Case Name	Read Auxiliary Controller Configuration Data	N/A
SMETS1 Availability	No	N/A
<b>GBCS Commands - Versioning Details</b>		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations		
Device Type	ESME	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS prior to v4.0	GBCS v4.0 or later
DEFAULT - No specific XML criteria	Response Code - E57	ECS61d

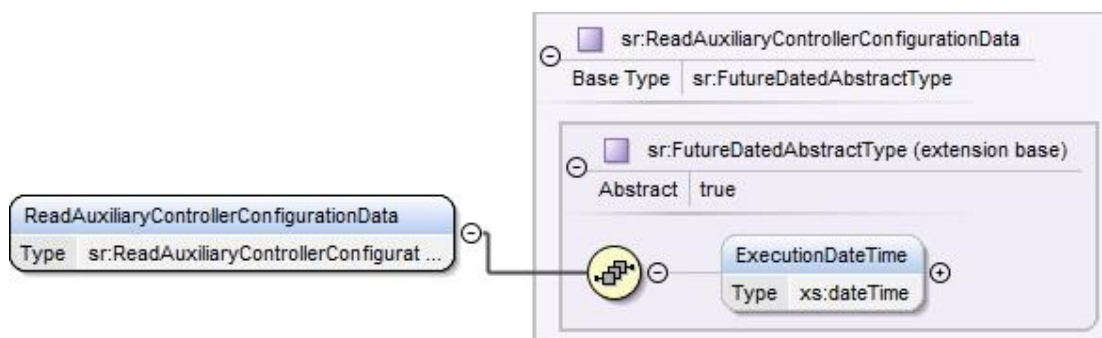
**Table 70 Read Auxiliary Controller Configuration Data Service Request**

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.14.1 Service Request

### 7.14.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its ReadAuxiliaryControllerConfigurationData XML element defines this Service Request and, for Future Dated Requests, it contains the Execution Date and Time.



**Figure 36 Read Auxiliary Controller Configuration Data Service Request Structure**

### 7.14.1.2 Specific Data Items Definition

The data items contained in the Service Request are defined as:

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ExecutionDateTime	The UTC date and time the DCC Service User requires the command to be executed on the Device ID Valid set: <ul style="list-style-type: none"> <li>Date-time in the future that is either &lt;= current date + 30 days or the date = 31/12/3000</li> </ul>	xs:dateTime	No	None	UTC Date-Time	Non-Sensitive

Table 71 Read Auxiliary Controller Configuration Data Service Request Data Items

### 7.14.1.3

### 7.14.1.4 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
No	Yes	No	DSP	No

Table 72 Read Auxiliary Controller Configuration Data Modes of Operation

### 7.14.1.5 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
Yes	Yes	Yes	No	No	No	No	No

Table 73 Read Auxiliary Controller Configuration Data Command Variant Values

### 7.14.1.6 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Execution Date Time validation.

### 7.14.1.7 Sample Request

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

```
<ReadAuxiliaryControllerConfigurationData/>
```

Figure 37 Read Auxiliary Controller Configuration Data Service Request (Body) Format

## 7.14.2 Responses

The Service Response messages for a "Read Auxiliary Controller Configuration Data" Request follow the generic format for all "Device" response messages. The generic responses applicable to this Service Request are;

- Acknowledgement
- Service Response (from Device) - GBCSPayload. Service Response Specific Payload
- Command for Local Delivery
- Parse Output

Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

### 7.14.2.1 Parse Output Format

#### 7.14.2.1.1 Format – ReadAuxiliaryControllerConfigurationDataRsp

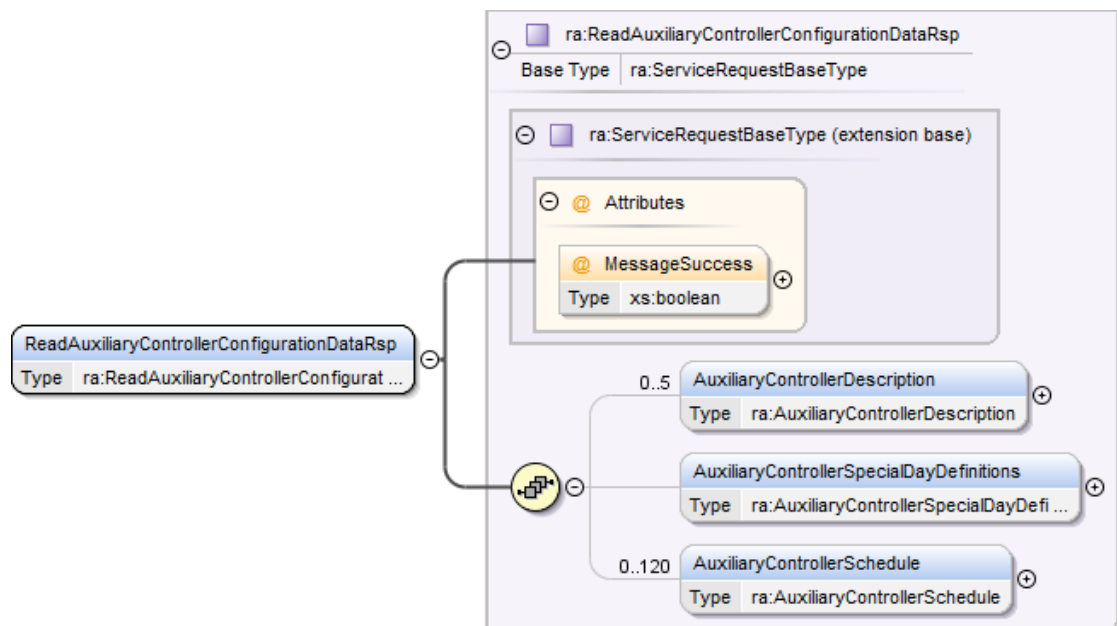


Figure 38 – Read Auxiliary Controller Configuration Data Response Structure

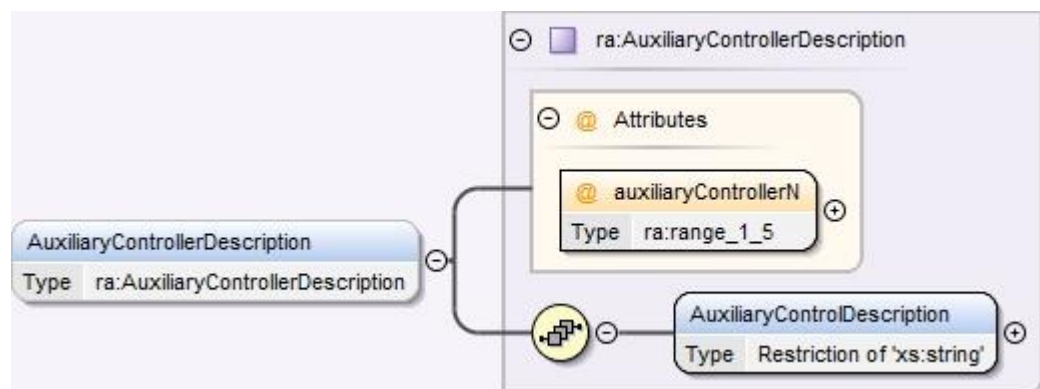


Figure 39 – AuxiliaryControllerDescription Structure

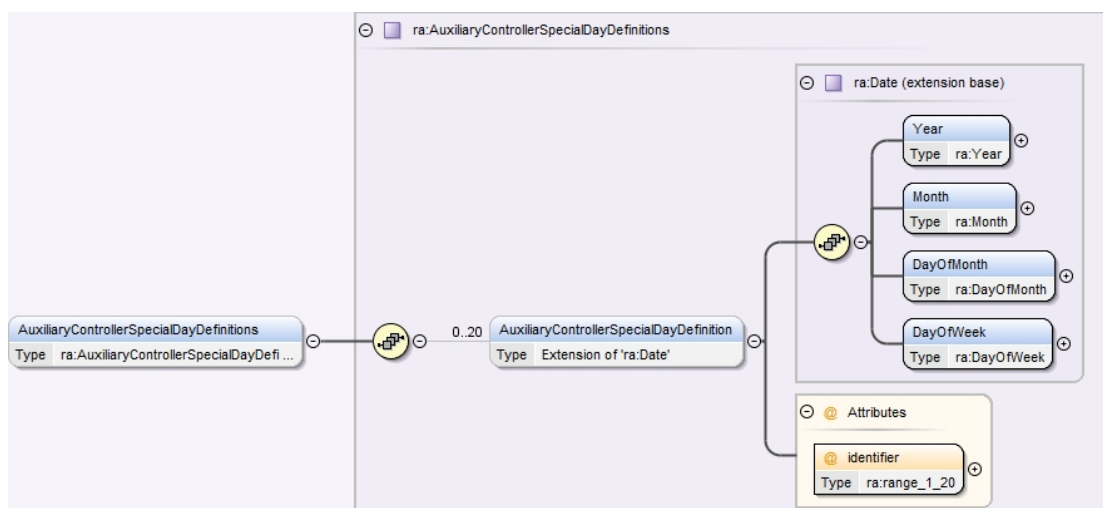


Figure 40 – AuxiliaryControllerSpecialDayDefinitions Structure

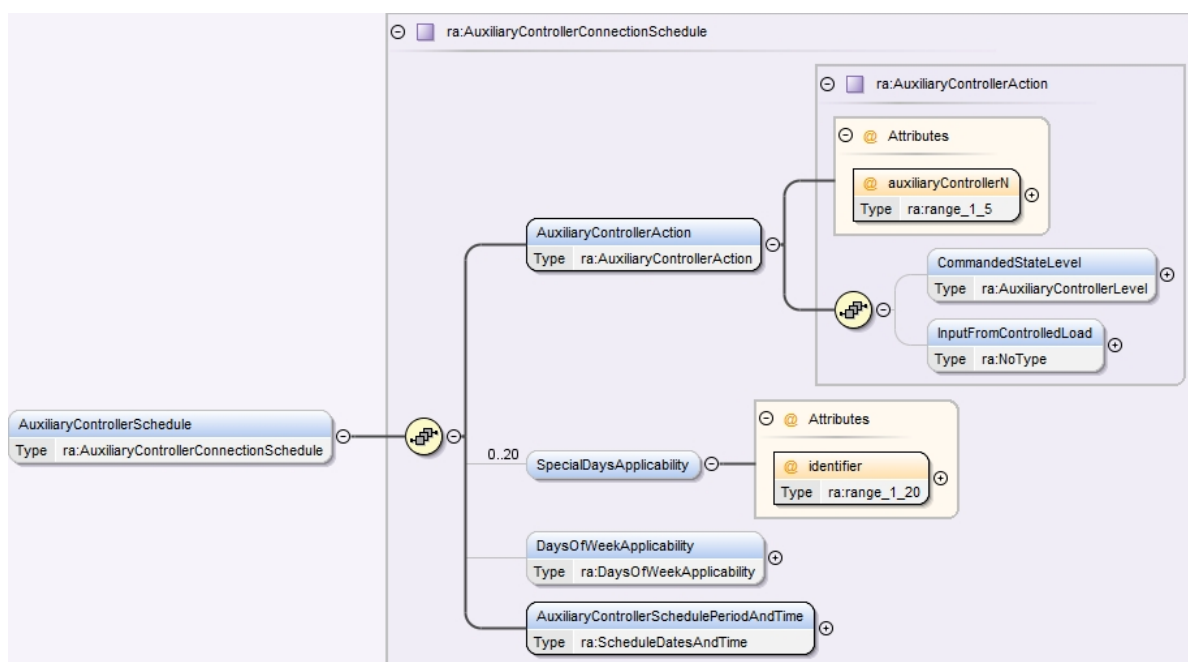


Figure 41 – AuxiliaryControllerConnectionSchedule Structure

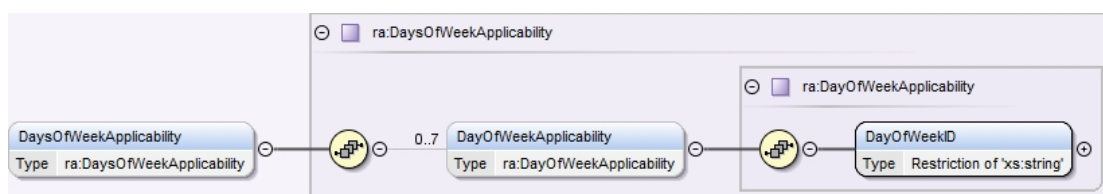


Figure 42 – DaysOfWeekApplicability Structure

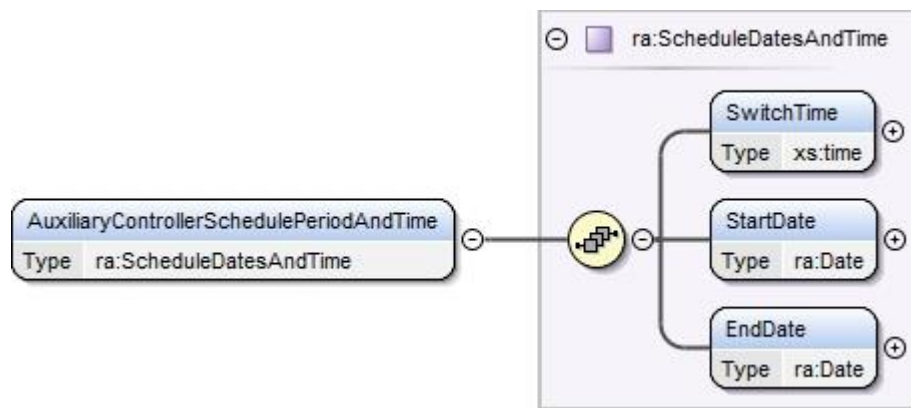


Figure 43 – ScheduleDatesAndTime Structure

#### 7.14.2.1.2 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	0x011C
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS61d</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read Auxiliary Controller Configuration Data</i>
SupplementaryRemotePartyID	Present where originator is a URP
SupplementaryRemotePartyCounter	Present where originator is a URP
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 74 – Read Auxiliary Controller Configuration Data Response Header Data Items

#### 7.14.2.1.3 Specific Body Data Items

The main XML sub-elements under the XML element ReadAuxiliaryControllerConfigurationDataRsp are listed in this table.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
AuxiliaryControllerDescription	<p>For one of up to 5 Auxiliary Controller positions in an ESME (including SAPC), a description of the type of controlled load connected, as defined by a Supplier via Service Request 6.14.1 (see Annex section 6.14.1).</p> <p>Up to 5 positions may be present. The index of an individual Auxiliary Controller position is included as attribute auxiliaryControllerN in the AuxiliaryControllerDescription</p>	xs:string (maxLength=22)	None	N/A	Non-sensitive
AuxiliaryControllerSpecialDayDefinitions	<p>This enables the definition of up to 20 special days which may be used in load control schedules, e.g. enabling the definition of different rules on public holidays such as Christmas Day.</p> <p>These definitions are used in Auxiliary Controller Schedule definitions.</p>	ra:AuxiliaryControllerSpecialDayDefinitions (see section 7.14.2.1.4)	None	N/A	Non-Sensitive
AuxiliaryControllerSchedule	<p>Information defining up to 120 load control changes, each including a schedule definition, which one of the 5 Auxiliary Controller positions in an ESME is to be commanded, and the new commanded state.</p> <p>A new commanded state includes the level which is a value between 0 and 100 inclusive, and will be interpreted as a percentage to which its commanded state level is to set, or a command to open or close the switch, according to whether the type of Auxiliary Controller in the position is an APC, ALCS or HCALCS.</p> <p>For an APC the commanded state also includes the direction of energy flow.</p> <p>Up to 120 schedules may be present. The index of an individual Auxiliary Controller schedules is included as an attribute of AuxiliaryControllerSchedule</p>	ra: AuxiliaryControllerSchedule (see section 7.14.2.1.5)	None	N/A	Non-sensitive

Table 75 - Read Auxiliary Controller Configuration Data Response Body Data Items

#### 7.14.2.1.4 AuxiliaryControllerSpecialDayDefinitions Data Items Definition

This table provides information about a set of special day definitions which may be used in Auxiliary Controller schedules in an ESME (including SAPC).

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
AuxiliaryControllerSpecialDayDefinition	The date (or set of dates if wildcards are used) of a special day definition. This may define a single day or repeating set of days, e.g. 25 <sup>th</sup> December or the last day of every month	ra:Date (see the similar sr:Date in Annex section 17)	None	N/A	Non-Sensitive
identifier (attribute of AuxiliaryControllerSpecialDayDefinition)	The identifier associated with one special day definition. This identifier is used in SpecialDaysApplicability of an Auxiliary Controller schedule definition	ra:range_1_20 (Restriction of xs:positiveInteger minInclusive = 1, maxInclusive = 20)	None	N/A	Non-Sensitive

**Table 76 AuxiliaryControllerSpecialDayDefinitions Data Items**

#### 7.14.2.1.5 AuxiliaryControllerSchedule Data Items Definition

This table provides information about a single Auxiliary Controller schedule definition, defining a schedule for changing the commanded state of one of the 5 Auxiliary Controller positions in an ESME (including SAPC).

There may be up to 120 of these in a single ReadAuxiliaryControllerConfigurationDataRsp.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
AuxiliaryControllerAction	This specifies the Auxiliary Controller and the instruction to set the commanded state, which may be a percentage load (for an APC) or an on or off instruction (for an ALCS or HCALCS).	ra: AuxiliaryControllerAction (see section 7.14.2.1.6)	None	N/A	Non-Sensitive
identifier (attribute of SpecialDaysApplicability)	Specifies any special days on which the entry is valid by linking to the special days table, i.e. the data is an index into the AuxiliaryControllerSpecialDayDefinitions (see section 7.14.2.1.4)	ra:range_1_20 (Restriction of xs:positiveInteger minInclusive = 1, maxInclusive = 20)	None	N/A	Non-Sensitive
DaysOfWeekApplicability	The days of the week to which the schedule applies defined as an array of up to 7 Day IDs Valid set: <ul style="list-style-type: none"> <li>Monday</li> <li>Tuesday</li> <li>Wednesday</li> <li>Thursday</li> <li>Friday</li> <li>Saturday</li> <li>Sunday</li> </ul>	ra:DayOfWeekID restriction of xs:string (Enumeration)	None	N/A	Non-Sensitive
AuxiliaryControllerSchedulePeriodAndTime	Definition of the date, or set of dates, and time of execution, of a single schedule definition	ra: ScheduleDatesAndTime (see Annex Section 17 for details of the equivalent sr: type)	None	N/A	Non-Sensitive

**Table 77 AuxiliaryControllerTypeIDAndState Data Items**

#### 7.14.2.1.6 AuxiliaryControllerAction Data Items Definition

This table indicates the definition of a single action to set the commanded state of an Auxiliary Controller in an ESME (including SAPC).

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
auxiliaryControllerN (attribute of AuxiliaryControllerTypeIDAndState)	The identifier associated with the Auxiliary Controller	ra:range_1_5 (Restriction of xs:positiveInteger minInclusive = 1, maxInclusive = 5)	None	N/A	Non-Sensitive
CommandedStateLevel	<p>The commanded state level is stored as a value between 0 and 100 inclusive and the interpretation depends on the type of Auxiliary Controller. As the type is not returned by this Service Request, the Response provides only the number, and the DCC Service User must interpret the response according to any knowledge they may have of the type of Auxiliary Controller.</p> <p>Where the Auxiliary Controller is an APC, the commanded state includes the percentage to which its commanded state level is to be set, where 0 means no energy flow.</p> <p>Where used for an Auxiliary Controller that is an ALCS or HCALCS, 100 will cause the Device to close (activate) the switch i.e. enable energy to flow, and any number other than 100 will cause the Device to open (deactivate) the switch i.e. prevent energy flow.</p> <p>Valid set: Integer in the range 0 to 100</p>	ra:AuxiliaryControllerLevel (Restriction of xs:unsignedShort minInclusive = 0, maxInclusive = 100)	None	N/A	Non-Sensitive
InputFromControlledLoad	<p>This element is only relevant to an APC, and will not be present where the Auxiliary Controller is not an APC.</p> <p>If present, this element indicates that the direction of energy flow in the commanded state of an APC is to input energy from the controlled load Device.</p> <p>If the InputFromControlledLoad element is not present for an APC, that indicates that the direction of energy flow in the commanded state of an APC is to output energy to the controlled load Device</p>	ra:NoType (see Annex 17)	No	None	N/A

Table 78 AuxiliaryControllerAction Data Items

#### 7.14.2.1.7 ScheduleDatesAndTime Data Items Definition

This table provides information about a date or set of dates, and time of execution, of a single schedule definition. The definition allows a single date or a range of dates to be specified.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
SwitchTime	The time of day trigger point in the calendar.	xs:time	None	N/A	Non-Sensitive
StartDate	Start of the date period in which the entry is valid.	ra:Date (see the similar sr:Date in Annex section 17)	None	N/A	Non-Sensitive
EndDate	End of the date period in which the entry is valid.	ra:Date (see the similar sr:Date in Annex section 17)	None	N/A	Non-Sensitive

Table 79 ScheduleDatesAndTime Data Items

#### 7.14.2.1.8 Sample Response

The following sample shows configuration of an ESME (including SAPC) with an ALCS and an APC, with one schedule for the ALCS and one for the APC.

```

<ra:ReadAuxiliaryControllerConfigurationDataRsp MessageSuccess="true">
  <ra:AuxiliaryControllerDescription auxiliaryControllerN="1">
    <ra:AuxiliaryControlDescription>Description1</ra:AuxiliaryControlDescription>
  </ra:AuxiliaryControllerDescription>
  <ra:AuxiliaryControllerDescription auxiliaryControllerN="2">
    <ra:AuxiliaryControlDescription>Description2</ra:AuxiliaryControlDescription>
  </ra:AuxiliaryControllerDescription>
  <ra:AuxiliaryControllerSpecialDayDefinitions>
    <ra:AuxiliaryControllerSpecialDayDefinition identifier="1">
      <ra:Year>
        <ra:SpecifiedYear>2021</ra:SpecifiedYear>
      </ra:Year>
      <ra:Month>
        <ra:SpecifiedMonth>6</ra:SpecifiedMonth>
      </ra:Month>
      <ra:DayOfMonth>
        <ra:SpecifiedDayOfMonth>16</ra:SpecifiedDayOfMonth>
      </ra:DayOfMonth>
      <ra:DayOfWeek>
        <ra:SpecifiedDayOfWeek>4</ra:SpecifiedDayOfWeek>
      </ra:DayOfWeek>
    </ra:AuxiliaryControllerSpecialDayDefinition>
    <ra:AuxiliaryControllerSpecialDayDefinition identifier="2">
      <ra:Year>
        <ra:SpecifiedYear>2021</ra:SpecifiedYear>
      </ra:Year>
      <ra:Month>
        <ra:SpecifiedMonth>7</ra:SpecifiedMonth>
      </ra:Month>
      <ra:DayOfMonth>
        <ra:SpecifiedDayOfMonth>12</ra:SpecifiedDayOfMonth>
      </ra:DayOfMonth>
      <ra:DayOfWeek>
        <ra:SpecifiedDayOfWeek>5</ra:SpecifiedDayOfWeek>
      </ra:DayOfWeek>
    </ra:AuxiliaryControllerSpecialDayDefinition>
  </ra:AuxiliaryControllerSpecialDayDefinitions>
  <ra:AuxiliaryControllerSchedule>
    <ra:AuxiliaryControllerAction auxiliaryControllerN="1">
      <ra:CommandedStateLevel>100</ra:CommandedStateLevel>
      <ra:InputFromControlledLoad/>
    </ra:AuxiliaryControllerAction>
    <ra:SpecialDaysApplicability identifier="1"/>
    <ra:SpecialDaysApplicability identifier="2"/>
    <ra:DaysOfWeekApplicability>
      <ra:DayOfWeekApplicability>
        <ra:DayOfWeekID>Monday</ra:DayOfWeekID>
      </ra:DayOfWeekApplicability>
      <ra:DayOfWeekApplicability>
        <ra:DayOfWeekID>Tuesday</ra:DayOfWeekID>
      </ra:DayOfWeekApplicability>
    </ra:DaysOfWeekApplicability>
    <ra:AuxiliaryControllerSchedulePeriodAndTime>
      <ra:SwitchTime>06:00:00.00</ra:SwitchTime>
      <ra:StartDate>
        <ra:Year><ra:NonSpecifiedYear/></ra:Year>
        <ra:Month><ra:SpecifiedMonth>01</ra:SpecifiedMonth></ra:Month>
        <ra:DayOfMonth><ra:SpecifiedDayOfMonth>01</ra:SpecifiedDayOfMonth></ra:DayOfMonth>
        <ra:DayOfWeek><ra:NonSpecifiedDayOfWeek/></ra:DayOfWeek>
      </ra:StartDate>
      <ra:EndDate>
        <ra:Year><ra:NonSpecifiedYear/></ra:Year>
        <ra:Month><ra:SpecifiedMonth>03</ra:SpecifiedMonth></ra:Month>
        <ra:DayOfMonth><ra:SpecifiedDayOfMonth>31</ra:SpecifiedDayOfMonth></ra:DayOfMonth>
        <ra:DayOfWeek><ra:NonSpecifiedDayOfWeek/></ra:DayOfWeek>
      </ra:EndDate>
    </ra:AuxiliaryControllerSchedulePeriodAndTime>
  </ra:AuxiliaryControllerSchedule>
  <ra:AuxiliaryControllerSchedule>
    <ra:AuxiliaryControllerAction auxiliaryControllerN="2">
      <ra:CommandedStateLevel>50</ra:CommandedStateLevel>
    </ra:AuxiliaryControllerAction>
    <ra:SpecialDaysApplicability identifier="3"/>
    <ra:DaysOfWeekApplicability>
      <ra:DayOfWeekApplicability>
        <ra:DayOfWeekID>Saturday</ra:DayOfWeekID>
      </ra:DayOfWeekApplicability>
      <ra:DayOfWeekApplicability>
        <ra:DayOfWeekID>Sunday</ra:DayOfWeekID>
      </ra:DayOfWeekApplicability>
    </ra:DaysOfWeekApplicability>
    <ra:AuxiliaryControllerSchedulePeriodAndTime>
      <ra:SwitchTime>06:00:00.00</ra:SwitchTime>
    </ra:AuxiliaryControllerSchedulePeriodAndTime>
  </ra:AuxiliaryControllerSchedule>
</ra:ReadAuxiliaryControllerConfigurationDataRsp>

```

```
<ra:StartDate>
  <ra:Year><ra:NonSpecifiedYear/></ra:Year>
  <ra:Month><ra:SpecifiedMonth>04</ra:SpecifiedMonth></ra:Month>
  <ra:DayOfMonth><ra:SpecifiedDayOfMonth>01</ra:SpecifiedDayOfMonth></ra:DayOfMonth>
  <ra:DayOfWeek><ra:NonSpecifiedDayOfWeek/> </ra:DayOfWeek>
</ra:StartDate>
<ra:EndDate>
  <ra:Year><ra:NonSpecifiedYear/></ra:Year>
  <ra:Month><ra:SpecifiedMonth>04</ra:SpecifiedMonth></ra:Month>
  <ra:DayOfMonth><ra:SpecifiedDayOfMonth>30</ra:SpecifiedDayOfMonth></ra:DayOfMonth>
  <ra:DayOfWeek><ra:NonSpecifiedDayOfWeek/></ra:DayOfWeek>
</ra:EndDate>
</ra:AuxiliaryControllerSchedulePeriodAndTime>
</ra:AuxiliaryControllerSchedule>
</ra:ReadAuxiliaryControllerConfigurationDataRsp>
```

Figure 44 - Read Auxiliary Controller Configuration Data Response Sample

## 7.15 Read Auxiliary Controller Operational Data (7.15)

Service Request Name	ReadAuxiliaryControllerOperationalData
Service Reference	7.15
Service Request Variant Name	ReadAuxiliaryControllerOperationalData
Service Reference Variant	7.15
Service Request Objective	To enable a DCC Service User to read the operational data of all the Auxiliary Controllers on a Device. Each Auxiliary Controller may be an Auxiliary Proportional Controller (APC) or Auxiliary Load Control Switch (ALCS) within a specified ESME (including SAPC) or associated with a specified HAN connected Auxiliary Load Control Switch (HCALCS).
Business Context Statement	The DCC Service User wishes to check whether an Auxiliary Controller (APC, ALCS or HCALCS) is present in each position of an ESME (including SAPC), and the type and the current state of the controller where present.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Electricity Network Operator (ENO)</li> <li>Other User (OU)</li> </ul>
Security Classification	Non-critical and non-sensitive: <i>GBCS XREF: SME.C.NC</i>

Service Request Narrative	<ol style="list-style-type: none"> <li>1. This Service Request is applicable only to ESME Devices with GBCS v4.0 or later. Service Request 7.7 returns corresponding operational data for Devices with GBCS versions prior to v4.0.</li> <li>2. This Service Request reads the values of the <i>Auxiliary Controller [n] Type</i> and <i>Auxiliary Controller [n] State</i> as defined by SMETS. Each Auxiliary Controller (where present) may be an APC, ALCS or HCALCS. The state of an Auxiliary Controller is expressed as the percentage to which its commanded state level is to be set. Where the Auxiliary Controller is an ALCS or HCALCS, 100 shall be interpreted by the Device as meaning closure of the switch (allowing energy to flow) and any other number shall be interpreted as meaning opening of the switch (not allowing energy to flow).</li> <li>3. Date returned by the Device for an Auxiliary Controller may include associated information, which is an optional additional stream of binary data.</li> <li>4. This Service Request reads: <ul style="list-style-type: none"> <li>• The Type (empty, APC, ALCS or HCALCS) and Device ID (HCALCS only)</li> <li>• A value between 0 and 100 inclusive, reflecting the percentage to which its commanded state level is currently set; this should be interpreted by the recipient according to the type of Auxiliary Controller</li> <li>• Where applicable, an indication that the direction of energy flow is to input energy from the controlled load device (for APCs only)</li> <li>• Optionally, additional information returned by the Device</li> </ul> </li> <li>5. This Service Request is applicable to an ESME (including SAPC) connected to APC, ALCS and / or HCALCS Auxiliary Controllers. The Business Target ID = ESME Device ID.</li> <li>6. An ESME (including SAPC) can be connected to a maximum of 5 switches, each of which (where present) can be APC, ALCS or HCALCS.</li> <li>7. The ESME (including SAPC) also includes an Auxiliary Controller Event Log, which is read via Service Request 6.13 (see Annex section 6.13). Note that the log is also known in DUIS using the older terminology ALCS Event Log, since the structure of the GBCS command which returns the log is the same, though there will be differences in the data returned.</li> <li>8. This Service Request will return data from all the Auxiliary Controllers connected to the ESME (including SAPC)</li> <li>9. Please note, if the Auxiliary Controller type being read refers to an HCALCS then the value of the state has no meaning (since an ESME cannot be certain of the status of an HCALCS)</li> </ol>	
GBCS Cross Reference	Electricity	Gas

GBCS prior to v4.0	N/A – feature not supported by Device	N/A
GBCS v4.0 Message Code	0x011D	N/A
GBCS v4.0 Use Case	ECS61e	N/A
GBCS v4.0 Use Case Name	Read Auxiliary Controller Operational Data	N/A
SMETS1 Availability	No	N/A
GBCS Commands - Versioning Details		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations		
Device Type	ESME	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS prior to v4.0	GBCS v4.0 or later
DEFAULT - No specific XML criteria	Response Code - E57	ECS61e

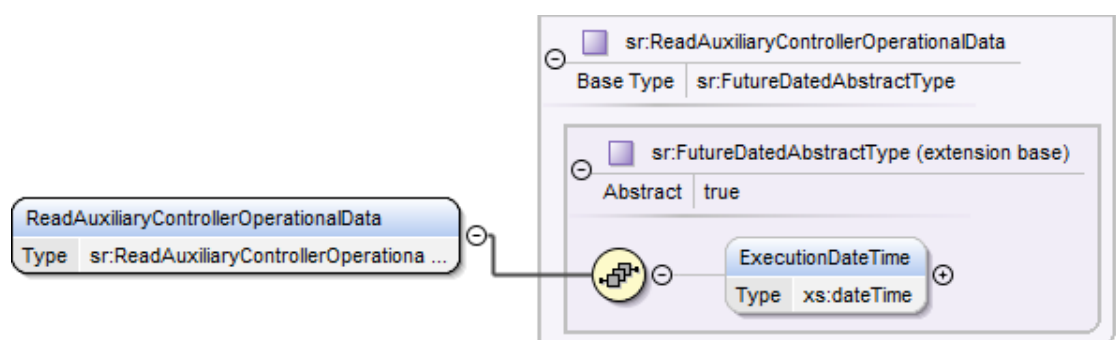
**Table 80 Read Auxiliary Controller Operational Data Service Request**

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.15.1 Service Request

### 7.15.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its ReadAuxiliaryControllerOperationalData XML element defines this Service Request and, for Future Dated Requests, it contains the Execution Date and Time.



**Figure 45 Read Auxiliary Controller Operational Data Service Request Structure**

### 7.15.1.2 Specific Data Items Definition

The data items contained in the Service Request are defined as:

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ExecutionDateTime	The UTC date and time the DCC Service User requires the command to be executed on the Device ID Valid set: <ul style="list-style-type: none"> <li>Date-time in the future that is either &lt;= current date + 30 days or the date = 31/12/3000</li> </ul>	xs:dateTime	No	None	UTC Date-Time	Non-Sensitive

Table 81 Read Auxiliary Controller Operational Data Service Request Data Items

### 7.15.1.3 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
No	Yes	No	DSP	No

Table 82 Read Auxiliary Controller Operational Data Modes of Operation

### 7.15.1.4 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
Yes	Yes	Yes	No	No	No	No	No

Table 83 Read Auxiliary Controller Operational Data Command Variant Values

### 7.15.1.5 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Execution Date Time validation.

### 7.15.1.6 Sample Request

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

<ReadAuxiliaryControllerOperationalData/>

Figure 46 Read Auxiliary Controller Operational Data Service Request (Body) Format

## 7.15.2 Responses

The Service Response messages for a "Read Auxiliary Controller Operational Data" Request follow the generic format for all "Device" response messages. The generic responses applicable to this Service Request are;

- Acknowledgement

- Service Response (from Device) - GBCSPayload. Service Response Specific Payload
- Command for Local Delivery
- Parse Output

Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

### 7.15.2.1 Parse Output Format

#### 7.15.2.1.1 Format - ReadAuxiliaryControllerOperationalDataRsp

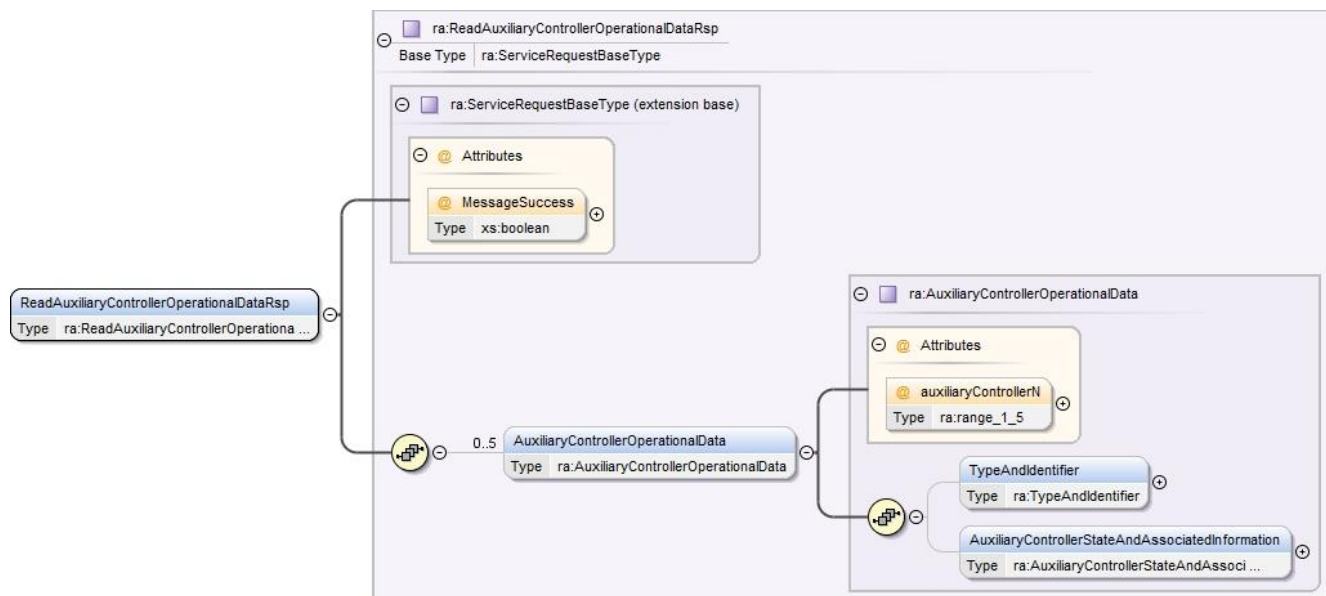


Figure 47 – Read Auxiliary Controller Operational Data Response Structure

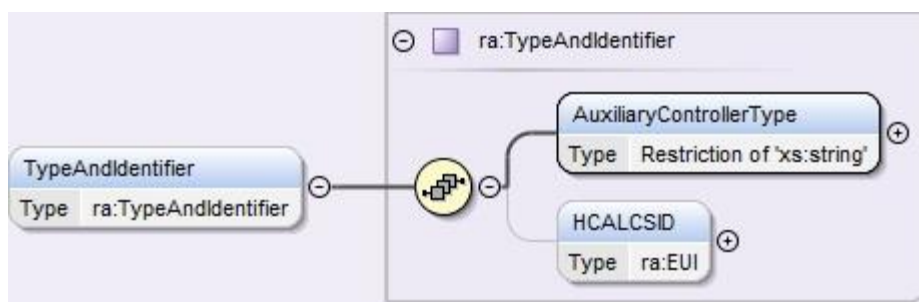


Figure 48 – TypeAndIdentifier Structure

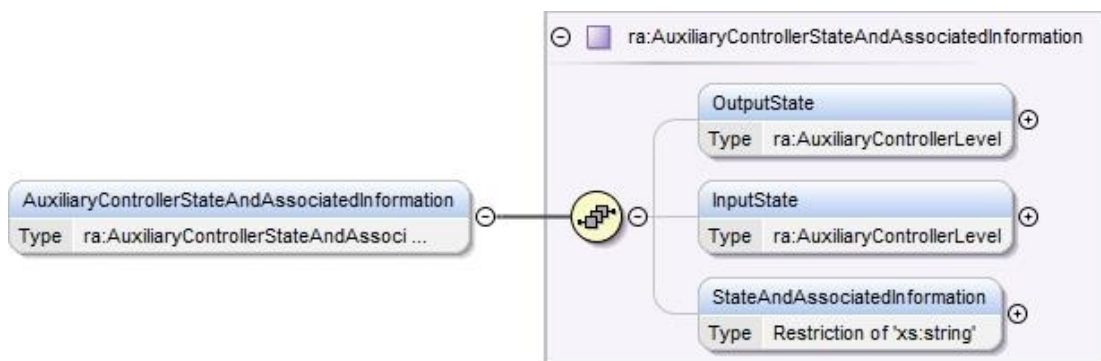


Figure 49 – AuxiliaryControllerTypeIDAndState Structure

#### 7.15.2.1.2 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	0x011D
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS61e</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read Auxiliary Controller Operational Data</i>
SupplementaryRemotePartyID	Present where originator is a URP
SupplementaryRemotePartyCounter	Present where originator is a URP
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 84 – Read Auxiliary Controller Operational Data Response Header Data Items

#### 7.15.2.1.3 Specific Body Data Items

The main XML sub-elements under the XML element ReadAuxiliaryControllerOperationalDataRsp are listed in this table.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
AuxiliaryControllerOperationalData	Information about each of the 5 Auxiliary Controller positions in an ESME, each of which may control an APC, ALCS or HCALCS type of controller or may be empty.	ra: AuxiliaryControllerTypeIDAndState (see section 7.15.2.1.4)	None	N/A	Non-sensitive

Table 85 - Read Auxiliary Controller Operational Data Response Body Data Items

#### 7.15.2.1.4 AuxiliaryControllerTypeIDAndState Data Items Definition

This table provides information about a single one of the 5 Auxiliary Controller positions in an ESME, including identifying the type and state of each Auxiliary Controller where present.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
auxiliaryControllerN (attribute of AuxiliaryControllerOperationalData)	The identifier associated with the Auxiliary Controller	ra:range_1_5 (Restriction of xs:positiveInteger minInclusive = 1, maxInclusive = 5)	None	N/A	Non-Sensitive
TypeAndIdentifier	The type of an Auxiliary Controller, and device ID if associated with an HCALCS	ra:TypeAndIdentifier (see section 7.15.2.1.5)	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
AuxiliaryControllerState	The state of an Auxiliary Controller and associated information	ra: AuxiliaryControllerState AndAssociatedInformation (see section 7.15.2.1.6)	None	N/A	Non-Sensitive

**Table 86 AuxiliaryControllerOperationalData Data Items**

#### 7.15.2.1.5 TypeAndIdentifier Data Items Definition

This table indicates the type of a single one of the 5 Auxiliary Controller positions in an ESME.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
AuxiliaryControllerType	The type of Auxiliary Controller in one position of an ESME, or an indication that there is no Auxiliary Controller present in that position. Valid set: <ul style="list-style-type: none"> <li>APC</li> <li>ALCS</li> <li>HCALCS</li> <li>None</li> </ul>	ra: AuxiliaryControllerType restriction of xs:string (Enumeration)	None	N/A	Non-Sensitive
HCALCSID	Where the type of a specific Auxiliary Controller position is HCALCS, this indicates the Device ID. For GBCS v4.0 devices, this information will be recorded when the HCALCS is joined to the ESME using SR8.7.1	ra:EUI	None	N/A	Non-Sensitive

**Table 87 TypeAndIdentifier Data Items**

#### 7.15.2.1.6 AuxiliaryControllerStateAndAssociatedInformation Data Items Definition

This table provides the state of a single one of the 5 Auxiliary Controller positions in an ESME. The state consists of the energy flow level and any optional associated information provided by the Auxiliary Controller.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
OutputState	<p>An integer indicating the output level of an Auxiliary Controller. This value is applicable to output energy, i.e. where the direction of energy flow is from the meter to the controlled load.</p> <p>Where the Auxiliary Controller is an APC, the number reflects the enabled percentage level of energy flow.</p> <p>Where the Auxiliary Controller is an ALCS or HCALCS, 100 shall be interpreted by the Device as meaning closure of the switch (allowing energy to flow) and any other number shall be interpreted as meaning opening of the switch (not allowing energy to flow).</p> <p>Valid set: Integer in the range 0 to 100</p>	ra:AuxiliaryControllerLevel (Restriction of xs:unsignedShort minInclusive = 0, maxInclusive = 100)	None	N/A	Non-Sensitive
InputState	<p>An integer indicating the input level of an Auxiliary Controller. This value is applicable to input energy, i.e. where the direction of energy flow is from the controlled load to the meter.</p> <p>This value is only applicable to an Auxiliary Controller that is an APC, and is not applicable to an ALCS or HCALCS. The number reflects the enabled percentage level of energy flow.</p> <p>Valid set: Integer in the range 0 to 100</p>	ra:AuxiliaryControllerLevel (Restriction of xs:unsignedShort minInclusive = 0, maxInclusive = 100)	None	N/A	Non-Sensitive
StateAndAssociatedInformation	<p>Information from the Auxiliary Controller which is in JavaScript Object Notation (JSON) as defined by IETF RFC8259.</p> <p>This provides associated information and incorporates the input and output state, which are also identified separately above.</p> <p>It is limited in length so that the Response can fit within a maximum of 63 GBT Messages each containing 1,149 octets.</p>	xs:string (maxLength=72000)	None	N/A	Non-Sensitive

Table 88 AuxiliaryControllerStateAndAssociatedInformation Data Items

#### 7.15.2.1.7 Sample Response

```
<ra:ReadAuxiliaryControllerOperationalDataRsp MessageSuccess="true">
  <ra:AuxiliaryControllerOperationalData auxiliaryControllerN="1">
    <ra:TypeAndIdentifier>
      <ra:AuxiliaryControllerType>ALCS</ra:AuxiliaryControllerType>
    </ra:TypeAndIdentifier>
    <ra:AuxiliaryControllerStateAndAssociatedInformation>
      <ra:OutputState>100</ra:OutputState>
      <ra:InputState>0</ra:InputState>
    </ra:AuxiliaryControllerStateAndAssociatedInformation>
  </ra:AuxiliaryControllerOperationalData>
  <ra:AuxiliaryControllerOperationalData auxiliaryControllerN="2">
    <ra:TypeAndIdentifier>
      <ra:AuxiliaryControllerType>HCALCS</ra:AuxiliaryControllerType>
      <ra:HCALCSID>00-00-00-00-00-00-00-00</ra:HCALCSID>
    </ra:TypeAndIdentifier>
    <ra:AuxiliaryControllerStateAndAssociatedInformation>
      <ra:OutputState>100</ra:OutputState>
      <ra:InputState>0</ra:InputState>
    </ra:AuxiliaryControllerStateAndAssociatedInformation>
  </ra:AuxiliaryControllerOperationalData>
  <ra:AuxiliaryControllerOperationalData auxiliaryControllerN="3">
    <ra:TypeAndIdentifier>
      <ra:AuxiliaryControllerType>APC</ra:AuxiliaryControllerType>
    </ra:TypeAndIdentifier>
    <ra:AuxiliaryControllerStateAndAssociatedInformation>
      <ra:OutputState>50</ra:OutputState>
      <ra:InputState>75</ra:InputState>
      <ra:StateAndAssociatedInformation>{"outputState": 50, "inputState": 75 other-data }</ra:StateAndAssociatedInformation>
    </ra:AuxiliaryControllerStateAndAssociatedInformation>
  </ra:AuxiliaryControllerOperationalData>
  <ra:AuxiliaryControllerOperationalData auxiliaryControllerN="4">
    <ra:TypeAndIdentifier>
      <ra:AuxiliaryControllerType>None</ra:AuxiliaryControllerType>
    </ra:TypeAndIdentifier>
  </ra:AuxiliaryControllerOperationalData >
  <ra:AuxiliaryControllerOperationalData auxiliaryControllerN="5">
    <ra:TypeAndIdentifier>
      <ra:AuxiliaryControllerType>None</ra:AuxiliaryControllerType>
    </ra:TypeAndIdentifier>
  </ra:AuxiliaryControllerOperationalData>
</ra:ReadAuxiliaryControllerOperationalDataRsp>
```

Figure 50 - Read Auxiliary Controller Operational Data Response Sample

## 7.16 Limit APC Level (7.16)

Service Request Name	LimitAPCLevel
Service Reference	7.16
Service Request Variant Name	LimitAPCLevel

Service Reference Variant	7.16
Service Request Objective	To enable a DCC Service User acting as a Load Controller to limit the maximum input or output level of an Auxiliary Proportional Controller (APC) within a specified ESME (including SAPC).
Business Context Statement	<p>The DCC Service User requires that the input or output level of an APC is limited to a maximum level, to limit the energy input from or output to a controlled load, as a percentage of the maximum input or output level of the Device.</p> <p>This Service Request is relevant to a DCC Service User which is the Load Controller of the Device, i.e. it has SMKI Organisation Certificates in the Load Controller Trust Anchor Cells of the Device. However, note that this Service Request cannot be successful until suitable SMKI Organisation Certificates with the Load Controller SMKI Remote Party Role are made available to the industry.</p>
User Role Access	<p>None.</p> <p>No User Role will be able to use this Service Request until regulation is agreed regarding the use of Load Controller certificates.</p>
Security Classification	<p>Critical and non-sensitive:</p> <p><i>GBCS XREF: SME.C.C</i></p>

Service Request Narrative	1. This Service Request is applicable only to ESME Devices (including SAPCs) with GBCS v4.0 or later, and is relevant only to an Auxiliary Controller which is an APC. The Business Target ID = ESME Device ID.	
	2. An ESME (including SAPC), can be connected to a maximum of 5 Auxiliary Controllers, each of which can be APC, ALCS or HCALCS. This Service Request will apply to one of the 5 Auxiliary Controllers as specified by the auxiliaryControllerN attribute in the request, which must be an APC for the request to be successful.	
	3. This Service Request creates an <i>APC [n] Limit Period</i> , as defined by SMETS, for a single APC during which the APC's level is limited to a specified maximum value. During this period the level limit that is specified in this Service Request will take precedence over the configuration defined in the Auxiliary Controller Calendar.	
	4. An APC limit period applies only to one energy direction. The level is expressed as the percentage of energy flow, where 0 means no energy flow, and will mean a percentage of either the input or output level, according to the energy direction specified in the request.	
	5. If a setting period, defined by use of Service Request 7.13, is in force for the same APC and energy direction at the time that the APC limit period starts, then the setting period will be immediately ended, and will not be resumed.	
	6. A request where the specified APC limit period has a duration of more than 24 hours shall be rejected.	
	7. If the Device applies the Limit APC Level Command successfully then the Device shall generate Device Alert 0x8F86 when the Command is processed, and Device Alert 0x8F87 when the period ends, for sending to the originator of the Service Request.	
	8. Only one limit period may be defined for an APC at any one time	
GBCS Cross Reference	Electricity	Gas
GBCS prior to v4.0	N/A – feature not supported by Device	N/A
GBCS v4.0 or later	Response Code – E2	N/A
SMETS1 Availability	No	N/A
GBCS Commands - Versioning Details		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations		
Device Type	ESME	

DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS prior to v4.0	GBCS v4.0 or later
DEFAULT - No specific XML criteria	Response Code - E57	Response Code - E2

Table 89 Limit APC Level Service Request

This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema - document 3 of this documentation set).

## 7.16.1 Service Request

### 7.16.1.1 Format

The ServiceRequest Body XML element of the XSD (see XML Schema - document 3 of this documentation set) defines the structure of all the Service Requests. Its LimitAPCLevel XML element defines this Service Request and contains the index, using the attribute auxiliaryControllerN, of the specific Auxiliary Controller to which the Service Request shall apply.

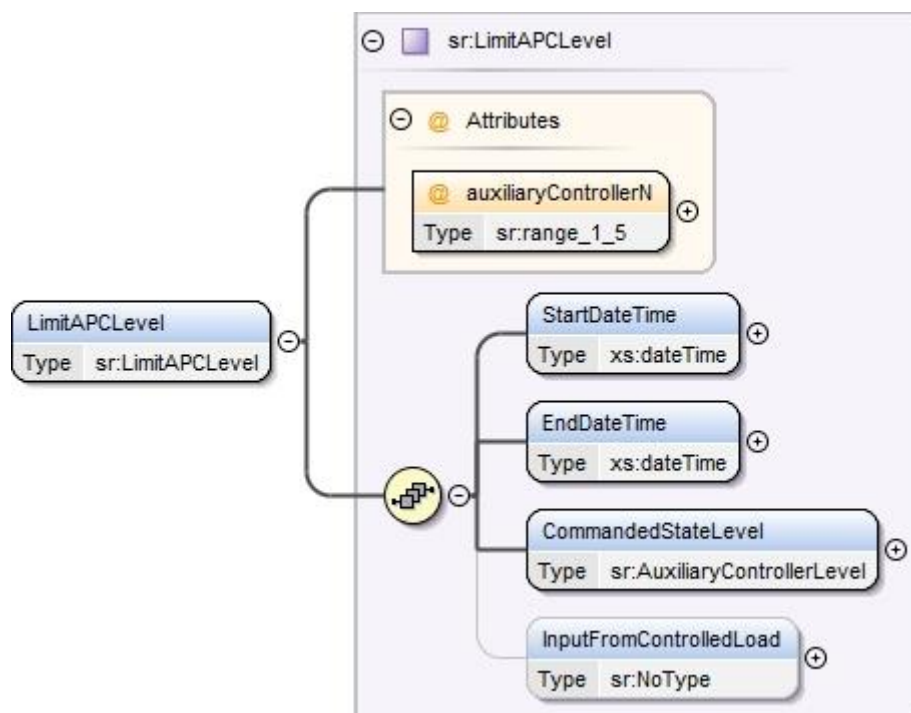


Figure 51 Limit APC Level Service Request Structure

### 7.16.1.2 Specific Data Items Definition

The data items contained in the Service Request are defined as:

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
auxiliaryControllerN (Attribute of LimitAPCLevel)	The value of this attribute indicates which one of the Auxiliary Controllers on the Device is to have the level limit applied. An ESME (including SAPC) supports up to 5 Auxiliary Controllers, of which any may be APCs.	sr:range_1_5 (xs:positiveInteger from 1 to 5)	Yes	None	N/A	Non-Sensitive
StartDateTime	The UTC date and time at which the DCC Service User requires the Device to start the APC limit period, in order to execute the level limit of the specified APC.	xs:dateTime	Yes	None	UTC Date- Time	Non-Sensitive
EndDateTime	The UTC date and time at which the DCC Service User requires the Device to the end the APC limit period.  As stated in SMETS, a Command where the specified APC limit period has a duration of more than 24 hours will not be accepted by the Device.	xs:dateTime	Yes	None	UTC Date- Time	Non-Sensitive
CommandedStateLevel	An integer indicating the required maximum level of the APC. The number reflects the percentage to which its maximum input or output level is to be set.  The maximum level applies to either output to or input from the controlled load, where the direction of energy flow is specified by the presence or absence in the Service Request of the element InputFromControlledLoad.  Valid set: <ul style="list-style-type: none"> <li>Integer in the range 0 to 100</li> </ul>	sr:AuxiliaryControllerLevel (Restriction of xs:unsignedShort minInclusive = 0, maxInclusive = 100)	Yes	None	N/A	Non-Sensitive
InputFromControlledLoad	If present, this element specifies that the direction of energy flow to which the level limit applies shall be that of input of energy from the controlled load device.  If the InputFromControlledLoad element is not present, then the limit level shall apply to output of energy to the controlled load.	sr:NoType (see Annex 17)	No	None	N/A	Non-Sensitive

Table 90 Limit APC Level Service Request Data Items

#### 7.16.1.3 Applicable Modes of Operation

The Modes of Operation applicable to this Service Request are (see Main Document of this documentation set section 2.3 for Modes of Operation definitions):

Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
Yes	Yes	No	No	No

Table 91 Limit APC Level Modes of Operation

#### 7.16.1.4 Applicable Command Variant Values

The Command Variant values applicable to this Service Request are (see Main Document of this documentation set section 3 for Command Variant definitions):

CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
No	No	No	Yes	Yes	Yes	Yes	No

**Table 92 Limit APC Level Command Variant Values**

### 7.16.1.5 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks.

### 7.16.1.6 Sample Request

There are two versions applicable to this Service Request

- Transform Service Request
- Signed Pre-command

Sample requests are given in Annex Introduction Appendix 2. The specific information for this Service Request (Body) is as follows:

```
<LimitAPCLevel auxiliaryControllerN="3">
  <StartDateTime>2021-12-01T17:00:00.00Z</StartDateTime>
  <EndDateTime>2021-12-01T18:59:59.00Z</EndDateTime>
  <CommandedStateLevel>20</CommandedStateLevel>
  <InputFromControlledLoad/>
</LimitAPCLevel>
```

**Figure 52 Limit APC Level Transform Request (Body) Format**

## 7.16.2 Responses

The Service Response messages for a Limit APC Level Request follow the generic format for all "Device" response messages. The generic responses applicable to this Service Request are;

- Pre-command
- Acknowledgement
- Service Response (from Device) - GBCSPayload
- Command for Local Delivery
- Parse Output

Sample responses are given in Annex Introduction Appendix 1; response specific information details are given below.

### 7.16.2.1 Parse Output Format

The response to this request returns only status without any substantial payload. The XML type is LimitAPCLevelRsp.

Please see Annex section 18.9 for a description of how status-only responses are represented in the MMC XML schema.

#### 7.16.2.1.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	0x011F

Data Item	Electricity Response
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS47e</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Limit APC [n] Level</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 93 – Limit APC Level Parse Response Header Data Items