

# DCC User Gateway Interface Design Specification

## Annex - Service Request Definitions 6 – Device Management Service

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## 6 Device Management Service (6 – DMS)

This section sets out the full content of the DCC Device 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	DeviceManagement	Service Id	6
Service Objective	To allow a DCC Service User to manage the products/operating settings associated with a specific device at a specified Device ID, such that the device can update its configuration and confirm that the operation has completed or otherwise fail to action the request and return the reason for its failure.		
Business Context Statement	The DCC Service User requires an update to be made to the current set of configuration parameters for a specified device, for example to configure the device following a CoS (Change of Supplier).		
User Roles	<p>The following user roles have access to the list of service requests which make up the Device 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>Electricity Network Operator (ENO)</li> <li>Gas Network Operator (GNO)</li> <li>Supplier Nominated Agent (SNA)</li> <li>Other User (read only) (OU)</li> </ul>		

**Table 1 Overview of Device Management Service**

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

Service Reference	Service Reference Variant	Name	Business Target ID
6.2	6.2.1	Read Device Configuration (Voltage)	ESME
6.2	6.2.2	Read Device Configuration (Randomisation)	ESME
6.2	6.2.3	Read Device Configuration (Billing Calendar)	ESME GPF GSME
6.2	6.2.4	Read Device Configuration (Identity Exc MPxN)	ESME GSME CHF
6.2	6.2.5	Read Device Configuration (Instantaneous Power Thresholds)	ESME

Service Reference	Service Reference Variant	Name	Business Target ID
6.2	6.2.7	Read Device Configuration (MPxN)	ESME GPF GSME
6.2	6.2.8	Read Device Configuration (Gas)	GSME
6.2	6.2.9	Read Device Configuration (Payment Mode)	ESME GPF GSME
6.2	6.2.10	Read Device Configuration (Event and Alert Behaviours)	ESME GSME
6.4	6.4.1	Update Device Configuration (Load Limiting General Settings)	ESME
6.4	6.4.2	Update Device Configuration (Load Limiting Counter Reset)	ESME
6.5	6.5	Update Device Configuration (Voltage)	ESME
6.6	6.6	Update Device Configuration (Gas Conversion)	GSME
6.7	6.7	Update Device Configuration (Gas Flow)	GSME
6.8	6.8	Update Device Configuration (Billing Calendar)	ESME GSME
6.11	6.11	Synchronise Clock	ESME GSME
6.12	6.12	Update Device Configuration (Instantaneous Power Threshold)	ESME
6.13	6.13	Read Event Or Security Log	ESME GPF GSME CHF
6.14	6.14.1	Update Device Configuration (Auxiliary Load Control Description)	ESME
6.14	6.14.2	Update Device Configuration (Auxiliary Load Control Scheduler)	ESME
6.14	6.14.3	Update Device Configuration (Auxiliary Controller Scheduler)	ESME

Service Reference	Service Reference Variant	Name	Business Target ID
6.15	6.15.1	Update Security Credentials (KRP)	ESME GSME GPF HCALCS (N/A to SMETS1)
6.15	6.15.2	Update Security Credentials (Device)	ESME GSME GPF
6.17	6.17	Issue Security Credentials	ESME GSME GPF
6.18	6.18.1	Set Maximum Demand Configurable Time Period	ESME
6.18	6.18.2	Reset Maximum Demand Registers	ESME
6.20	6.20.1	Set Device Configuration (Import MPxN)	ESME GSME
6.20	6.20.2	Set Device Configuration (Export MPAN)	ESME
6.21	6.21	Request Handover Of DCC Controlled Device	ESME GSME GPF HCALCS (N/A to SMETS1)
6.22	6.22	Configure Alert Behaviour	ESME GSME
6.23	6.23	Update Security Credentials (CoS)	ESME GSME GPF HCALCS (N/A to SMETS1)
6.24	6.24.1	Retrieve Device Security Credentials (KRP)	ESME GSME GPF HCALCS (N/A to SMETS1)
6.24	6.24.2	Retrieve Device Security Credentials (Device)	ESME GSME GPF

Service Reference	Service Reference Variant	Name	Business Target ID
6.25	6.25	Set Electricity Supply Tamper State	ESME
6.26	6.26	Update Device Configuration (daily resetting of Tariff Block Counter Matrix)	ESME
6.27	6.27	Update Device Configuration (RMS Voltage Counter Reset)	ESME
6.28	6.28	Set CHF Sub GHz Configuration	CHF (Dual Band Only)
6.29	6.29	Request CHF Sub GHz Channel Scan	CHF (Dual Band Only)
6.30	6.30	Read CHF Sub GHz Configuration	CHF (Dual Band Only)
6.31	6.31	Read CHF Sub GHz Channel	CHF (Dual Band Only)
6.32	6.32	Read CHF Sub GHz Channel Log	CHF (Dual Band Only)

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

For each of the DMS 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).

## 6.1 Section 6.1

This section has been intentionally left blank as there is no Service Reference 6.1.

## 6.2 Read Device Configuration (6.2)

SMETS2 or later

This Service Request maps to seven Electricity, five Gas and one Communications Hub Function GBCS Use Cases and each Use Case requires its own Request ID.

Therefore the 6.2 Service Request has been broken into nine parts: 6.2.1 (Voltage) – applicable to Electricity, 6.2.2 (Randomisation) – applicable to Electricity, 6.2.3 (Billing Calendar) – applicable to Electricity and Gas, 6.2.4 (Identity Exc MPxN) – applicable to Electricity, Gas and Communications Hub Function, 6.2.5 (Power Thresholds) – applicable to Electricity, 6.2.7 (MPxN) – applicable to Electricity and Gas, 6.2.8 (Gas) – applicable to Gas, 6.2.9 (Payment Mode) – applicable to Electricity and Gas and 6.2.10 (Event and Alert Behaviours) – applicable to Electricity and Gas.

SMETS1

This Service Request maps to Service Reference Variant 6.2.1 (Voltage) – applicable to Electricity, 6.2.3 (Billing Calendar) – applicable to Electricity and Gas, 6.2.5 (Power Thresholds) – applicable to Electricity, 6.2.8 (Gas) – applicable to Gas and 6.2.9 (Payment Mode) – applicable to Electricity and Gas

## 6.2.1 Read Device Configuration (Voltage) (6.2.1)

Service Request Name	ReadDeviceConfiguration
Service Reference	6.2
Service Request Variant Name	ReadDeviceConfiguration(Voltage)
Service Reference Variant	6.2.1
Service Request Objective	This Service Request enables an authorised DCC Service User to read the configuration voltage data values as defined in SMETS that are currently held on Electricity Smart Meter Equipment and that determine the configurable aspects of its behaviour.
Business Context Statement	The DCC Service User wishes to read the current configuration voltage parameters for a specified Electricity Smart Meter Equipment ID, e.g. to enable them to obtain / confirm the current configuration settings of the device for diagnostic purposes.
User Role Access	<ul style="list-style-type: none"><li>Electricity Import Supplier (EIS)</li><li>Electricity Network Operator (ENO)</li><li>Supplier Nominated Agent (SNA)</li></ul>
Security Classification	Non-critical and non-sensitive SMETS2 or later: GBCS XREF: SME.C.NC

Service Request Narrative (SMETS2 or later)	<div>1. The Voltage data returned depends on whether the Electricity Smart Meter is single phase or polyphase.</div> <div>2. Where the Electricity Smart Metering Equipment notified and recorded in the Smart Metering Inventory as Twin Element Electricity Metering Equipment as defined in SMETS, then the voltage quality data and data settings are the same as for the first element.</div> <div>3. Where the Electricity Smart Metering Equipment notified and recorded in the Smart Metering Inventory as Polyphase Electricity Metering Equipment as defined in SMETS (ESME Variant = 'C'), then the voltage quality settings will be returned that relate specifically to the polyphase meter.</div> <div>4. These values are configured on the Device by Service Request 6.5 – Update Device Configuration (Voltage). See section 6.5</div> <div>5. If the ESME Firmware is certified to GBCS v2.0 or later, the Average RMS Over and Under Voltage Counters can be explicitly reset by Service Request 6.27 – Update Device Configuration (RMS Voltage counter reset). See section 6.27. They can also be automatically reset by Service Request 6.5 – Update Device Configuration (Voltage). See section 6.5</div> <div>6. If the ESME Firmware is certified to GBCS v1.0 the Average RMS Over and Under Voltage Counters are reset automatically as part of Service Request 6.5 – Update Device Configuration (Voltage). See section 6.5</div>			
	GBCS Cross Reference	Electricity (Single Phase)	Electricity (Poly Phase)	Gas
	GBCS Message Code	0x003C	0x00C6	N/A
	GBCS Use Case	ECS26b	ECS26k	N/A
	GBCS Use Case Name	Read ESME Configuration Voltage Data	Read ESME Configuration Voltage Data - 3 phase	N/A
	SMETS1 Applicability	Yes	N/A	N/A
Service Request Narrative (SMETS1)	<div>The behaviour of DCC for this Service Request with regard to SMETS1 Devices is equivalent to the behaviour for SMETS2 or later Devices except:</div> <div>1. Only single phase ESME behaviour is applicable to SMETS1 Devices.</div> <div>2. The setting of Average RMS Over and Under Voltage Counters for SMETS1 ESME Devices is aligned to the behaviour of GBCS v2.0 ESME Devices.</div>			

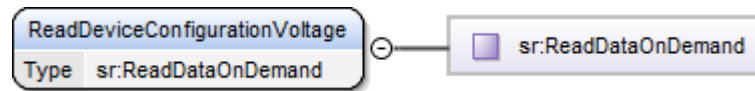
**Table 3 Read Device Configuration (Voltage) Service Request**

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).

## 6.2.1.1 Service Request

### 6.2.1.1.1 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 ReadDeviceConfigurationVoltage XML element defines this Service Request and doesn't contain any data items.



**Figure 1 Read Device Configuration (Voltage) Service Request Structure**

### 6.2.1.1.2 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	No	Yes	No	No	No
SMETS1	No	Yes	No	No	No

**Table 4 Read Device Configuration (Voltage) Modes of Operation**

### 6.2.1.1.3 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	Yes	Yes	Yes	No	No	No	No	No
SMETS1	Yes	No	No	No	No	No	No	No

**Table 5 Read Device Configuration (Voltage) Command Variant Values**

### 6.2.1.1.4 Validation

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

### 6.2.1.1.5 Sample Request

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

```
<ReadDeviceConfigurationVoltage/>
```

**Figure 2 Read Device Configuration (Voltage) Service Request (Body) Format**

## 6.2.1.2 Responses

The response messages for a “Read Device Configuration (Voltage)” request follow the generic format for all “Device” response messages, the generic responses applicable to this request are;

- Acknowledgement

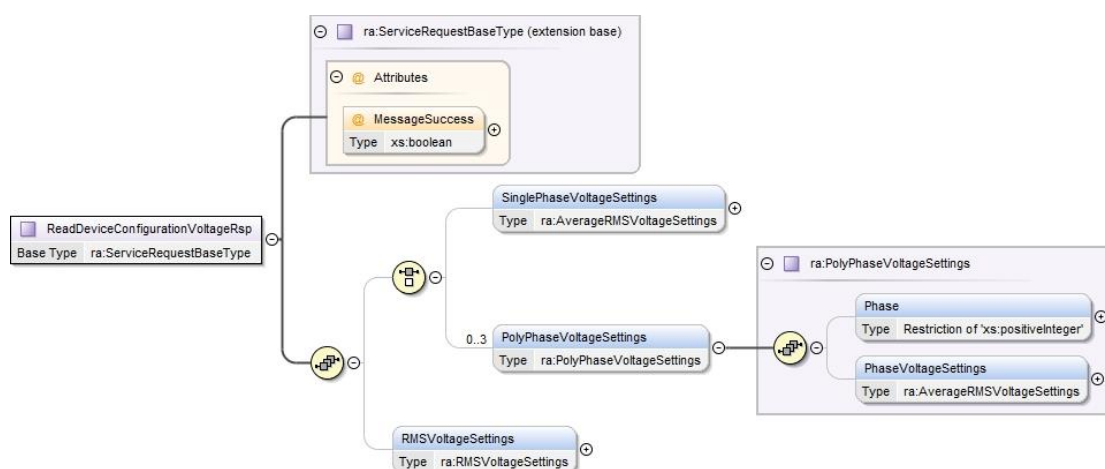
- Service Response (from Device) - GBCSPayload. Service Response Specific Payload
- Command for Local Delivery
- Parse Output / SMETS1 Response

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.

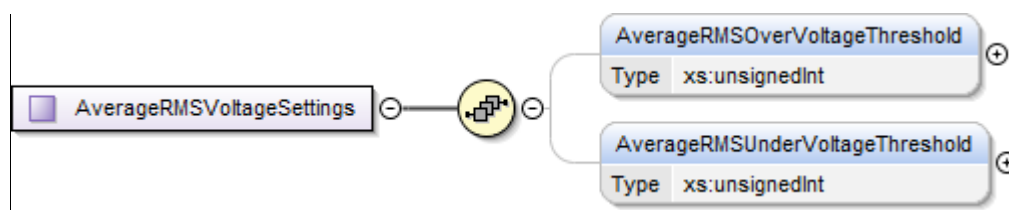
Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

#### 6.2.1.2.1 Parse Output / SMETS1 Response Format

##### 6.2.1.2.1.1 Format - ReadDeviceConfigurationVoltageResp



**Figure 3 - Read Device Configuration (Voltage) Parse Response / SMETS1 Response Structure**



**Figure 4 – AverageRMSVoltageSettings Structure**

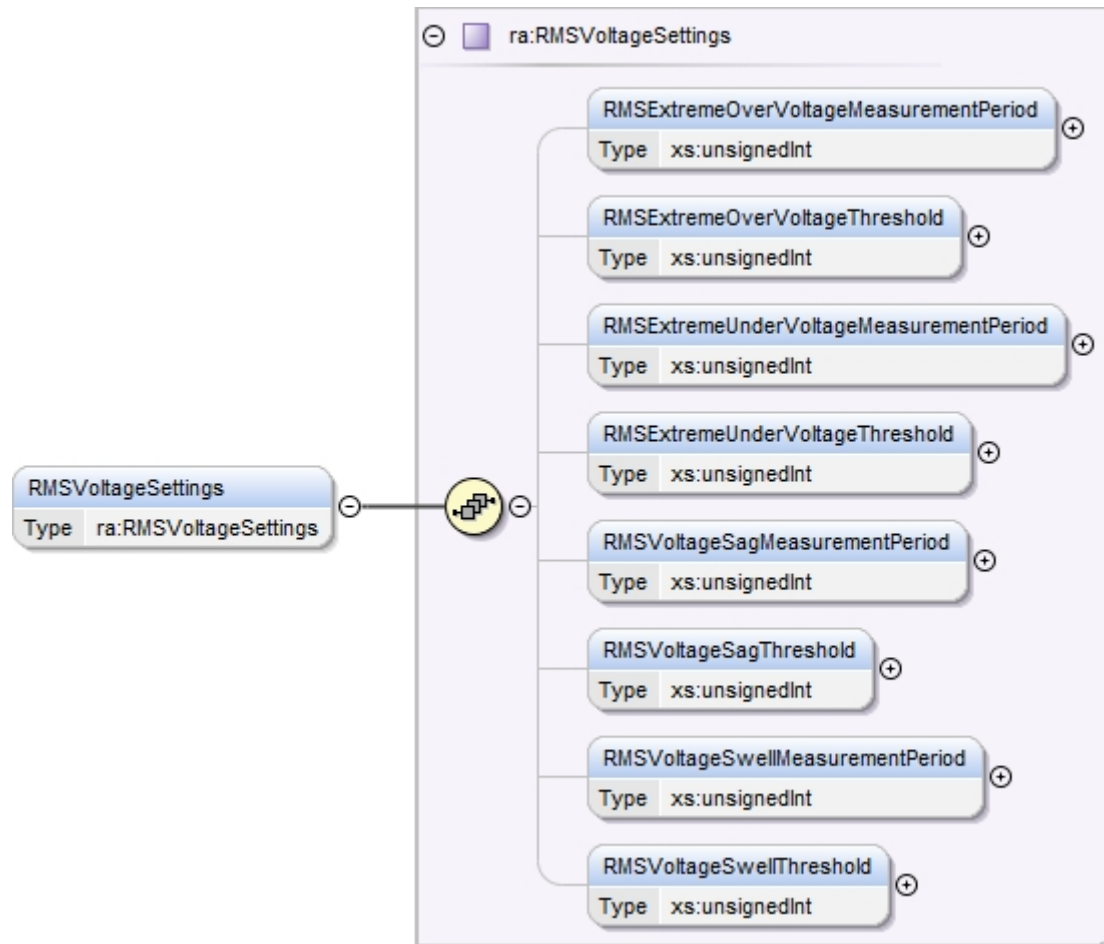


Figure 5 - RMSVoltageSettings Structure

#### 6.2.1.2.1.2 Specific Header Data Items

Data Item	Electricity Response	Electricity Response (3 Phase) (N/A to SMETS1)
GBCSHexadecimalMessageCode	003C	00C6
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS26b</i>	<i>ECS26k</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read ESME Configuration Voltage Data</i>	<i>Read ESME Configuration Voltage Data - 3 phase</i>
SupplementaryRemotePartyID	Present if the originator is a URP	Present if the originator is a URP
SupplementaryRemotePartyCounter	Present if the originator is a URP	Present if the originator is a URP
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

Table 6 - Read Device Configuration (Voltage) Parse/SMETS1 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.

#### 6.2.1.2.1.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
SinglePhaseVoltageSettings	The Average Voltage settings applicable to a Single Phase (Single or Twin Element) Electricity Smart Meter.	ra:AverageRMSVoltageSettings (see section 6.2.1.2.1.3.1)	None	N/A	Non-Sensitive
PolyPhaseVoltageSettings	The Average Voltage settings applicable to a PolyPhase Electricity Smart Meter	ra:PolyPhaseVoltageSettings (see section 6.2.1.2.1.3.2)	None	N/A	Non-Sensitive
RMSVoltageSettings	The non-average RMS Voltage settings applicable to a Single Phase (Single or Twin Element) Electricity Smart Meter or to a Polyphase Electricity Smart Meter phase.	ra: RMSVoltageSettings (see section 6.2.1.2.1.3.3)	None	N/A	Non-Sensitive

Table 6.1 - Read Device Configuration (Voltage) Parse Response Body Data Items

#### 6.2.1.2.1.3.1 AverageRMSVoltageSettings Data Items

Note that the average RMS voltage settings measurement period, which is updated by the equivalent update Service Request (6.5), is not returned in this Service Request 6.2.1. To read the measurement period it is necessary to use Service Request 4.10 Read Network Data.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
AverageRMSOverVoltageThreshold	The average RMS voltage for phase [n] above which an over voltage condition is reported. The threshold shall be configurable within the specified operating range of ESME.	xs:unsignedInt	None	10 <sup>th</sup> Volt	Non-Sensitive
AverageRMSUnderVoltageThreshold	The average RMS voltage for phase [n] below which an under voltage condition is reported. The threshold shall be configurable within the specified operating range of ESME.	xs:unsignedInt	None	10 <sup>th</sup> Volt	Non-Sensitive

Table 6.2 - AverageRMSVoltageSettings Data Items

#### 6.2.1.2.1.3.2 PolyPhaseVoltageSettings Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
Phase	The number (enumerated value: 1, 2, 3) of the phase to which the Phase Voltage Settings apply. Not applicable to single phase meters.	Restriction of xs:positiveInteger (minInclusive = 1, maxInclusive = 3)	None	N/A	Non-Sensitive
PhaseVoltageSettings	The Average Voltage settings applicable to a Single Phase (Single or Twin Element) Electricity Smart Meter.	ra:AverageRMSVoltageSettings (see section 6.2.1.2.1.3.1)	None	N/A	Non-Sensitive

Table 6.3 - PolyPhaseVoltageSettings Data Items

### 6.2.1.2.1.3.3 RMSVoltageSettings Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
RMSExtremeOverVoltageMeasurementPeriod	The duration in seconds used to measure an extreme over voltage condition.	xs:unsignedInt	None	Seconds	Non-Sensitive
RMSExtremeOverVoltageThreshold	The RMS voltage above which an extreme over voltage condition is reported. The threshold shall be configurable within the specified operating range of ESME.	xs:unsignedInt	None	10 <sup>th</sup> Volt	Non-Sensitive
RMSExtremeUnderVoltageMeasurementPeriod	The duration in seconds used to measure an extreme under voltage condition.	xs:unsignedInt	None	Seconds	Non-Sensitive
RMSExtremeUnderVoltageThreshold	The RMS voltage below which an extreme under voltage condition is reported. The threshold shall be configurable within the specified operating range of ESME.	xs:unsignedInt	None	10 <sup>th</sup> Volt	Non-Sensitive
RMSVoltageSagMeasurementPeriod	The duration in seconds used to measure a voltage sag condition.	xs:unsignedInt	None	Seconds	Non-Sensitive
RMSVoltageSagThreshold	The RMS voltage below which a sag condition is reported. The threshold shall be configurable within the specified operating range of ESME.	xs:unsignedInt	None	10 <sup>th</sup> Volt	Non-Sensitive
RMSVoltageSwellMeasurementPeriod	The duration in seconds used to measure a voltage swell condition.	xs:unsignedInt	None	Seconds	Non-Sensitive
RMSVoltageSwellThreshold	The RMS voltage above which a swell condition is reported. The threshold shall be configurable within the specified operating range of ESME.	xs:unsignedInt	None	10 <sup>th</sup> Volt	Non-Sensitive

Table 6.4 - RMSVoltageSettings Data Items

### 6.2.1.2.1.4 Sample Response

```

<ra:ReadDeviceConfigurationVoltageRsp MessageSuccess="true">
  <ra:SinglePhaseVoltageSettings>
    <ra:AverageRMSOverVoltageThreshold>20</ra:AverageRMSOverVoltageThreshold>
    <ra:AverageRMSUnderVoltageThreshold>10</ra:AverageRMSUnderVoltageThreshold>
  </ra:SinglePhaseVoltageSettings>
  <ra:RMSVoltageSettings>
    <ra:RMSExtremeOverVoltageMeasurementPeriod>50</ra:RMSExtremeOverVoltageMeasurementPeriod>
    <ra:RMSExtremeOverVoltageThreshold>20</ra:RMSExtremeOverVoltageThreshold>
    <ra:RMSExtremeUnderVoltageMeasurementPeriod>40</ra:RMSExtremeUnderVoltageMeasurementPeriod>
    <ra:RMSExtremeUnderVoltageThreshold>30</ra:RMSExtremeUnderVoltageThreshold>
    <ra:RMSVoltageSagMeasurementPeriod>30</ra:RMSVoltageSagMeasurementPeriod>
    <ra:RMSVoltageSagThreshold>20</ra:RMSVoltageSagThreshold>
    <ra:RMSVoltageSwellMeasurementPeriod>40</ra:RMSVoltageSwellMeasurementPeriod>
    <ra:RMSVoltageSwellThreshold>40</ra:RMSVoltageSwellThreshold>
  </ra:RMSVoltageSettings>
</ra:ReadDeviceConfigurationVoltageRsp>

```

Figure 6 - Read Device Configuration Voltage Parse Response Sample

## 6.2.2 Read Device Configuration (Randomisation) (6.2.2)

Service Request Name	ReadDeviceConfiguration
----------------------	-------------------------

Service Reference	6.2	
Service Request Variant Name	ReadDeviceConfiguration(Randomisation)	
Service Reference Variant	6.2.2	
Service Request Objective	This Service Request enables an authorised DCC Service User to read the configuration randomisation data values as defined in SMETS that are currently held on specified Smart Meter Equipment and that determine the configurable aspects of its behaviour.	
Business Context Statement	The DCC Service User wishes to read the current configuration randomisation parameters of a specified Electricity Smart Meter Equipment Device ID, e.g. to enable them to obtain / confirm the current configuration settings of the device for diagnostic purposes.	
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Electricity Network Operator (ENO)</li> <li>Supplier Nominated Agent (SNA)</li> </ul>	
Security Classification	Non-critical and non-sensitive: GBCS XREF: SME.C.NC	
Service Request Narrative	<ol style="list-style-type: none"> <li>Randomisation Configuration settings are used to delay the Tariff Switching Table times and the Auxiliary Load Control Switch switching times.</li> <li>The Randomised Offset Limit is configured on the Device by Service Request 7.12 - Set Randomised Offset Limit. See Annex section 7.12.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x003D	N/A
GBCS Use Case	ECS26c	N/A
GBCS Use Case Name	Read ESME Configuration Data Device Information (randomisation)	N/A
SMETS1 Applicability	No	No

**Table 7 Read Device Configuration (Randomisation) Service Request**

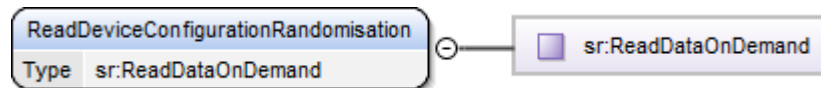
This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema – document 3 of this documentation set).

### 6.2.2.1 Service Request

#### 6.2.2.1.1 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

ReadDeviceConfigurationRandomisation XML element defines this Service Request and doesn't contain any data items.



**Figure 7 Read Device Configuration (Randomisation) Service Request Structure**

#### 6.2.2.1.2 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):

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

**Table 8 Read Device Configuration (Randomisation) Modes of Operation**

#### 6.2.2.1.3 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):

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 9 Read Device Configuration (Randomisation) Command Variant Values**

#### 6.2.2.1.4 Validation

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

#### 6.2.2.1.5 Sample Request

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

```
<ReadDeviceConfigurationRandomisation/>
```

**Figure 8 Read Device Configuration (Randomisation) Service Request (Body) Format**

#### 6.2.2.2 Responses

The response messages for a "Read Device Configuration (Randomisation)" request follow the generic format for all "Device" response messages, the generic responses applicable to this 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.

#### 6.2.2.2.1 Parse Output Format

##### 6.2.2.2.1.1 Format - ReadDeviceConfigurationRandomisationRsp

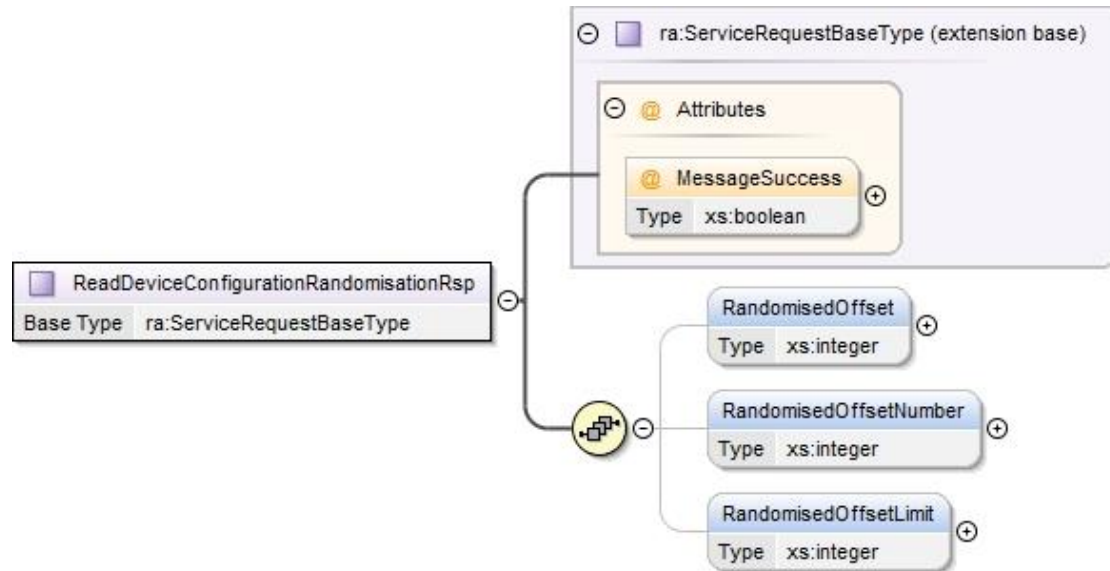


Figure 9 - Read Device Configuration (Randomisation) Parse Response Structure

##### 6.2.2.2.1.2 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	003D
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS26c</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read ESME Configuration Data Device Information (randomisation)</i>
SupplementaryRemotePartyID	Present if the originator is a URP
SupplementaryRemotePartyCounter	Present if the originator is a URP
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 10 - Read Device Configuration (Randomisation) 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.

##### 6.2.2.2.1.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
RandomisedOffset	RandomisedOffsetNumber * RandomisedOffsetLimit * (10 to the power -4) rounded to the nearest integer number of seconds.  This value is used to delay the Tariff Switching Table times and the Auxiliary Load Control Switch switching times.	xs:integer	None	Seconds	Non-Sensitive
RandomisedOffset Number	Integer between 1 and 10,000 randomly set at manufacture	xs:integer	None	N/A	Non-Sensitive
RandomisedOffsetLimit	A value in seconds in the range 0 to 1799.	xs:integer	None	seconds	Non-Sensitive

#### 6.2.2.2.1.4 Sample Response

```
<ra:ReadDeviceConfigurationRandomisationRsp MessageSuccess="true">
  <ra:RandomisedOffset>50</ra:RandomisedOffset>
  <ra:RandomisedOffsetNumber>5000</ra:RandomisedOffsetNumber>
  <ra:RandomisedOffsetLimit>100</ra:RandomisedOffsetLimit>
</ra:ReadDeviceConfigurationRandomisationRsp>
```

Figure 10 - Read Device Configuration Randomisation Parse Response Example

### 6.2.3 Read Device Configuration (Billing Calendar) (6.2.3)

Service Request Name	ReadDeviceConfiguration
Service Reference	6.2
Service Request Variant Name	ReadDeviceConfiguration(BillingCalendar)
Service Reference Variant	6.2.3
Service Request Objective	This Service Request enables an authorised DCC Service User to read the configuration Billing Calendar data values as defined by SMETS that are currently held on Gas and Electricity Smart Metering Equipment and that determine the configurable aspects of its behaviour.
Business Context Statement	The DCC Service User wishes to read the current configuration Billing Calendar parameters for a specified Gas or Electricity Smart Metering Equipment ID, e.g. to enable them to obtain / confirm the current configuration settings of the device for diagnostic purposes
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> <li>Supplier Nominated Agent (SNA)</li> </ul>
Security Classification	Non-critical and non-sensitive SMETS2 or later: GBCS XREF: SME.C.NC

Service Request Narrative (SMETS2 lor later)	<ol style="list-style-type: none"> <li>1. The Billing Calendar is a calendar as defined by SMETS for the ESME and GSME, defining User configured billing dates for the storage of billing related information in the Billing Data Log as defined by SMETS.</li> <li>2. These values are configured on the Device by Service Request 6.8 – Update Device Configuration (Billing Calendar). Users are advised not to read Billing Calendar information prior to using Service Request 6.8 to set it. See section 6.8</li> <li>3. For reading the Billing Calendar 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 (or if the GPF Firmware version is certified to GBCS v1.0 and the GSME Firmware version is certified to a later GBCS version) should this Service Request be targeted to the GSME. This will save battery life on the GSME for all Users</li> <li>4. For note - Potential Interoperability issue - In order for the Gas Billing Calendar functionality to work successfully E2E across the HAN for all billing periods, both the GSME and the GPF devices operating within the HAN MUST be operating in accordance with GBCS v2.0 specifications. If the GPF is not operating in line with GBCS 2.0 (and operating still to GBCS v1.0 whilst the GSME is operating to GBCS v2.0), then the GPF will not by definition support TOM Commands for Use Case GCS25a correctly and interoperability issues may arise as the Gas meter will support more billing periods than the GPF does and the two devices will not support the same functionality. If a GSME is installed within a HAN then the DCC Service User should ensure that the associated GPF is also operating to GBCS v2.0 to avoid any potential interoperability issues.</li> <li>5. Quarterly, Six Monthly and Yearly billing periodicities are only supported by Devices with a Firmware version certified to GBCS v2.0 or later</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS v1.0 Message Code	0x003E	0x009D
GBCS v1.0 Use Case	ECS26d	GCS21d
GBCS v1.0 Use Case Name	Read ESME Configuration Data Device Information (Billing Calendar)	Read GSME Configuration Data Device Information (BillingCalendar)
GBCS v2.0 Message Code	0x00D9	0x00DA
GBCS v2.0 Use Case	ECS26l	GCS21k

GBCS v2.0 Use Case Name	Read ESME Configuration Data Device Information (Billing Calendar - all periodicities)	Read GSME Configuration Data Device Information (BillingCalendar - all periodicities)
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:  1. SMETS1 behaviour is aligned to GBCS v2.0 behaviour.	
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 v1.0	GBCS v2.0
DUIS 1: DEFAULT - No specific XML criteria	ECS26d	ECS26l
DUIS 2 or later: DEFAULT - No specific XML criteria	ECS26d	ECS26l
Device Type	GSME	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DUIS 1: DEFAULT - No specific XML criteria	GCS21d	GCS21k
DUIS 2 or later: DEFAULT - No specific XML criteria	GCS21d	GCS21k
Device Type	GPF	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DUIS 1: DEFAULT - No specific XML criteria	GCS21d	GCS21k
DUIS 2 or later: DEFAULT - No specific XML criteria	GCS21d	GCS21k

**Table 11 Read Device Configuration (Billing Calendar) Service Request**

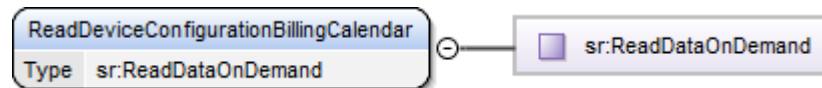
This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema – document 3 of this documentation set).

### 6.2.3.1 Service Request

#### 6.2.3.1.1 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

ReadDeviceConfigurationBillingCalendar XML element defines this Service Request and doesn't contain any data items.



**Figure 11 Read Device Configuration (Billing Calendar) Service Request Structure**

#### 6.2.3.1.2 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	No	Yes	No	No	No
SMETS1	No	Yes	No	No	No

**Table 12 Read Device Configuration (Billing Calendar) Modes of Operation**

#### 6.2.3.1.3 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	Yes	Yes	Yes	No	No	No	No	No
SMETS1	Yes	No	No	No	No	No	No	No

**Table 13 Read Device Configuration (Billing Calendar) Command Variant Values**

#### 6.2.3.1.4 Validation

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

#### 6.2.3.1.5 Sample Request

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

```
<ReadDeviceConfigurationBillingCalendar/>
```

**Figure 12 Read Device Configuration (Billing Calendar) Service Request (Body) Format**

### 6.2.3.2 Responses

The response messages for a "Read Device Configuration (Billing Calendar)" request follow the generic format for all "Device" response messages, the generic responses applicable to this request are;

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

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.

### 6.2.3.2.1 Parse Output / SMETS1 Response Format

#### 6.2.3.2.1.1 Format - ReadDeviceConfigurationDataBillingCalendarRsp

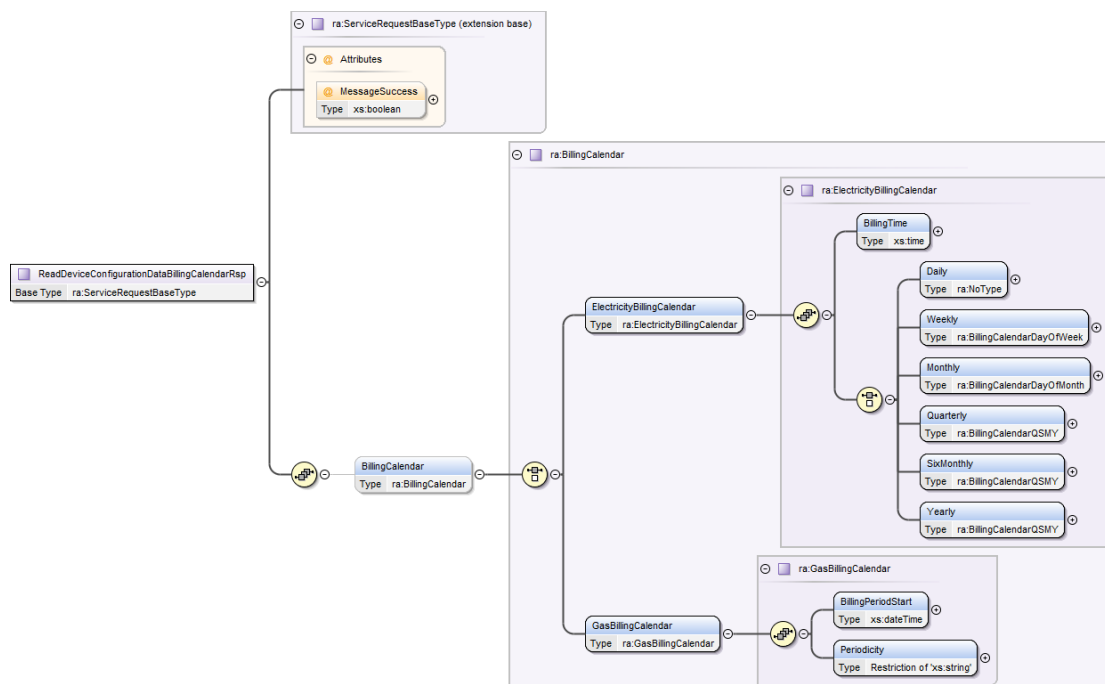


Figure 13 - Read Device Configuration (Billing Calendar) Parse Response / SMETS1 Response Structure

#### 6.2.3.2.1.2 Specific Header Data Items

GBCS v1.0:

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	003E	009D
GBCS Use Case Number (for information only - not in header)	ECS26d	GCS21d
GBCS Use Case Name (for information only - not in header)	Read ESME Configuration Data Device Information (Billing Calendar)	Read GSME Configuration Data Device Information (BillingCalendar)
SupplementaryRemotePartyID	Present if the originator is a URP	Present if the originator is a URP
SupplementaryRemotePartyCounter	Present if the originator is a URP	Present if the originator is a URP
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

Table 14 - Read Device Configuration (Billing Calendar) Parse Response Header Data Items – GBCS v1.0

GBCS v2.0 or SMETS1:

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	00D9	00DA
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS26l</i>	<i>GCS21k</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read ESME Configuration Data Device Information (Billing Calendar - all periodicities)</i>	<i>Read GSME Configuration Data Device Information (BillingCalendar - all periodicities)</i>
SupplementaryRemotePartyID	Present if the originator is a URP	Present if the originator is a URP
SupplementaryRemotePartyCounter	Present if the originator is a URP	Present if the originator is a URP
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 15 - Read Device Configuration (Billing Calendar) Parse Response Header Data Items – GBCS v2.0 & SMETS1**

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

#### **6.2.3.2.1.3 Specific Data Items**

Only 1 BillingCalendar with 1 period is permitted.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
ElectricityBillingCalendar	Indicates that the Billing Calendar is that of an ESME	ra:ElectricityBillingCalendar (see the similar sr:ElectricityBillingCalendar in section 6.8.1.3)	N/A	None	N/A
GasBillingCalendar	Indicates that the Billing Calendar is that of a GSME	ra:GasBillingCalendar (see the similar sr:GasBillingCalendar in section 6.8.1.4)	N/A	None	N/A

#### **6.2.3.2.1.4 Sample Response**

```
<ra:ReadDeviceConfigurationDataBillingCalendarRsp MessageSuccess="true">
  <ra:BillingCalendar>
    <ra:ElectricityBillingCalendar>
      <ra:BillingTime>00:05:00.00</ra:BillingTime>
      <ra:Daily/>
    </ra:ElectricityBillingCalendar>
  </ra:BillingCalendar>
</ra:ReadDeviceConfigurationDataBillingCalendarRsp>
```

**Figure 14 - Read Device Configuration (Billing Calendar) Parse Response Example  
(Electricity - Daily)**

```
<ra:ReadDeviceConfigurationDataBillingCalendarRsp MessageSuccess="true">
  <ra:BillingCalendar>
    <ra:ElectricityBillingCalendar>
      <ra:BillingTime>00:05:00.00</ra:BillingTime>
      <ra:Quarterly>
        <ra:DayOfMonth>3</ra:DayOfMonth>
        <ra:BillingPeriodStartMonth>8</ra:BillingPeriodStartMonth>
      </ra:Quarterly>
    </ra:ElectricityBillingCalendar>
  </ra:BillingCalendar>
</ra:ReadDeviceConfigurationDataBillingCalendarRsp>
```

**Figure 15 - Read Device Configuration (Billing Calendar) Parse Response Example  
(Electricity - Quarterly)**

#### **6.2.3.2.1.5 Sample Response**

```
<ra:ReadDeviceConfigurationDataBillingCalendarRsp MessageSuccess="true">
  <ra:BillingCalendar>
    <ra:GasBillingCalendar>
      <ra:BillingPeriodStart>2006-05-04T18:13:51.00</ra:BillingPeriodStart>
      <ra:Periodicity>Daily</ra:Periodicity>
    </ra:GasBillingCalendar>
  </ra:BillingCalendar>
</ra:ReadDeviceConfigurationDataBillingCalendarRsp>
```

**Figure 16 - Read Device Configuration (Billing Calendar) Parse Response Example  
(Gas – Daily)**

```
<ra:ReadDeviceConfigurationDataBillingCalendarRsp MessageSuccess="true">
  <ra:BillingCalendar>
    <ra:GasBillingCalendar>
      <ra:BillingPeriodStart>2017-05-04T18:13:51.00</ra:BillingPeriodStart>
      <ra:Periodicity>Quarterly</ra:Periodicity>
    </ra:GasBillingCalendar>
  </ra:BillingCalendar>
</ra:ReadDeviceConfigurationDataBillingCalendarRsp>
```

**Figure 17 - Read Device Configuration (Billing Calendar) Parse Response Example  
(Gas - Quarterly)**

## 6.2.4 Read Device Configuration (Identity Exc MPxN) (6.2.4)

Service Request Name	ReadDeviceConfiguration
Service Reference	6.2
Service Request Variant Name	ReadDeviceConfiguration(IdentityExcMPxN)
Service Reference Variant	6.2.4
Service Request Objective	This Service Request enables an authorised DCC Service User to read the configuration Identity (except MPxN) data values that are currently held on a Device.
Business Context Statement	The DCC Service User wishes to read the current configuration Identity (except MPxN) parameters for a specified Smart Metering Device ID, e.g. to enable them to obtain / confirm the current configuration / constant settings of the device for diagnostic purposes
User Role Access	<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>Electricity Network Operator (ENO)</li> <li>Gas Network Operator (GNO)</li> <li>Supplier Nominated Agent (SNA)</li> <li>Other User (OU)</li> </ul>
Security Classification	Non-critical and non-sensitive: SMETS2 or later: GBCS XREF: SME.C.NC
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>This Service Request reads primarily the Constant data from a specified Device as described in SMETS</li> <li>These values are configured on the Device during the manufacturing process, except for the Gas Smart Meter Equipment Depletion State, which is configured via Service Request 6.7. See section 6.7.</li> <li>This Service Request can no longer be sent to a GPF</li> <li>For CHF Read only the first 3 data items are returned and no Electricity or Gas specifics are returned in the response</li> </ol> <p>Response information for this Service Request:</p> <p>All Devices should return ZigBee OTA based values for this Service Request, specifically:</p> <ul style="list-style-type: none"> <li>'Manufacturer Identifier' should be the value equivalent to the OTA cluster's Manufacturer ID attribute / Manufacturer Code parameters, which is a string.</li> <li>For 'Model Type', there should be two parts (as used in OTA, CPL and SMI to identify a specific hardware model within manufacturer): <ul style="list-style-type: none"> <li>an equivalent to the OTA 'Image Type' parameter so a string and</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>an equivalent to the OTA 'Hardware Version' parameter, so again a string</li> </ul> <p>This means that, in all bar error states:</p> <ul style="list-style-type: none"> <li>the value returned for Manufacturer ID should be the same as the value returned from the SMI in the DUIS data item '<i>DeviceManufacturer</i>'; and</li> <li>the value returned for Model Type should be the same as the value returned from the SMI in the DUIS data item '<i>DeviceModel</i>'</li> </ul>		
GBCS Cross Reference	Electricity	Gas	Communications Hub Function
GBCS v1.0 Message Code	0x003F	0x009E	0x0092
GBCS v1.0 Use Case	ECS26e	GCS21e	ECS26i
GBCS v1.0 Use Case Name	Read ESME Configuration Data Device Information (device identity exc MPAN)	Read GSME/GPF Configuration Data Device Information (device identity)	Read Configuration Data Device Information (CHF identity)
GBCS v2.0 Message Code	0x00F9	0x00FB	0x00FA
GBCS v2.0 Use Case	ECS26m	GCS21m	ECS26n
GBCS v2.0 Use Case Name	Read ESME Configuration Data Device Information (identity, type and supply tamper state)	Read GSME Configuration Data Device Information (identity, type and supply tamper / depletion state)	Read CHF Configuration Data Device Information (CH identity and type)
SMETS1 Applicability	Yes	Yes	Yes
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>Processing by the relevant S1SP shall be according to the SMETS1 Supporting Requirements Document.</li> <li>The S1SP shall not include DeviceIdentifier, MeterVariant or ModelType fields since those do not have to be supported by SMETS1 Devices.</li> <li>The S1SP shall only return ManufacturerIdentifier where the target SMETS1 Device has a Device Identifier with its SMETS1 meaning.</li> </ol>		

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 v1.0	GBCS v2.0
DUIS 1: DEFAULT - No specific XML criteria	ECS26e	ECS26m
DUIS 2 or later: DEFAULT - No specific XML criteria	ECS26e	ECS26m
Device Type	GSME	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DUIS 1: DEFAULT - No specific XML criteria	GCS21e	GCS21m
DUIS 2 or later: DEFAULT - No specific XML criteria	GCS21e	GCS21m
Device Type	GPF	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DEFAULT - No specific XML criteria	Response Code - E57	Response Code - E57
Device Type	CHF	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DUIS 1: DEFAULT - No specific XML criteria	ECS26i	ECS26n
DUIS 2 or later: DEFAULT - No specific XML criteria	ECS26i	ECS26n

**Table 16 Read Device Configuration (Identity Exc MPxN) 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).

#### 6.2.4.1 Service Request

##### 6.2.4.1.1 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 ReadDeviceConfigurationIdentityExcMPxN XML element defines this Service Request and doesn't contain any data items.

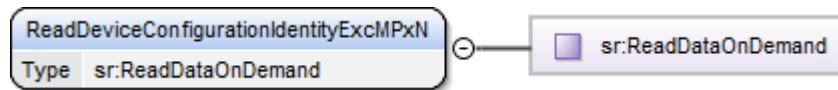


Figure 18 Read Device Configuration (Identity Exc MPxN) Service Request Structure

#### 6.2.4.1.2 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 17 Read Device Configuration (Identity Exc MPxN) Modes of Operation

#### 6.2.4.1.3 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 18 Read Device Configuration (Identity Exc MPxN) Command Variant Values

#### 6.2.4.1.4 Validation

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

#### 6.2.4.1.5 Sample Request

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

<ReadDeviceConfigurationIdentityExcMPxN/>

Figure 19 Read Device Configuration (Identity Exc MPxN) Service Request (Body) Format

#### 6.2.4.2 Responses

The response messages for a “Read Device Configuration (Identity Exc MPxN)” request follow the generic format for all “Device” response messages, the generic responses applicable to this request are;

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

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.

#### 6.2.4.2.1 Parse Output/ SMETS1 Response Format

##### 6.2.4.2.1.1 Format - ReadDeviceConfigurationIdentityExcMPxNRsp

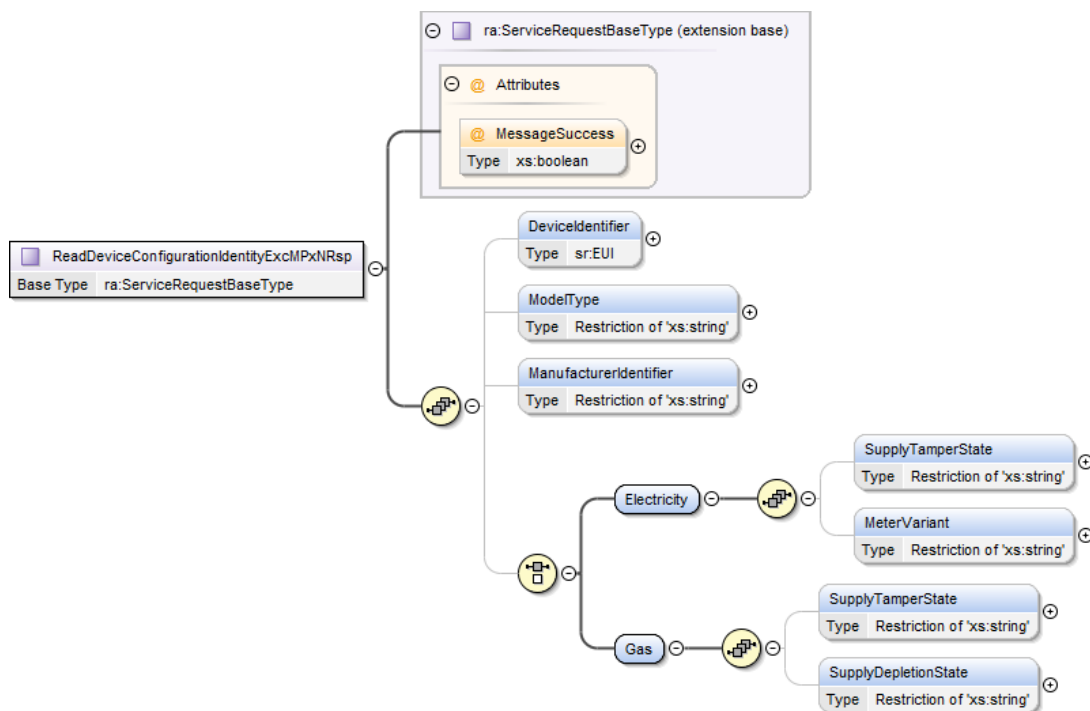


Figure 20 - Read Device Configuration (Device Identity Excluding MPxN) Parse Response/ SMETS1 Response Structure

##### 6.2.4.2.1.2 Specific Header Data Items

GBCS v1.0:

Data Item	Electricity Response	Gas Response	CHF Response
GBCSHexadecimalMessageCode	003F	009E	0092
GBCS Use Case Number (for information only - not in header)	ECS26e	GCS21e	ECS26i
GBCS Use Case Name (for information only - not in header)	Read ESME Configuration Data Device Information (device identity exc MPAN)	Read GSME Configuration Data Device Information (device identity)	Read Configuration Data Device Information (CHF identity)
SupplementaryRemotePartyID	Present if the originator is a URP	Present if the originator is a URP	Present
SupplementaryRemotePartyCounter	Present if the originator is a URP	Present if the originator is a URP	Present
SupplementaryOriginatorCounter	Not Present	Not Present	Not Present
Timestamp	Not Present	Not Present	Not Present

**Table 19 - Read Device Configuration (Device Identity Excluding MPxN) Parse  
Response Header Data Items – GBCS v1.0**

GBCS v2.0/SMETS1:

Data Item	Electricity Response	Gas Response	CHF Response
GBCSHexadecimalMessageCode	00F9	00FB	00FA
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS26m</i>	<i>GCS21m</i>	<i>ECS26n</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read ESME Configuration Data Device Information (identity, type and supply tamper state)</i>	<i>Read GSME Configuration Data Device Information (identity, type and supply tamper / depletion state)</i>	<i>Read CHF Configuration Data Device Information (CH identity and type)</i>
SupplementaryRemotePartyID	Present if the originator is a URP	Present if the originator is a URP	Present
SupplementaryRemotePartyCounter	Present if the originator is a URP	Present if the originator is a URP	Present
SupplementaryOriginatorCounter	Not Present	Not Present	Not Present
Timestamp	Not Present	Not Present	Not Present

**Table 20 - Read Device Configuration (Device Identity Excluding MPxN) Parse  
Response Header Data Items – GBCS v2.0/SMETS1**

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

#### **6.2.4.2.1.3 Specific Body Data Items**

The response structure is common for each of the three use cases it services. Some of the data items do not apply in each instance, these are detailed in the “Description/Valid Set” column of the table below.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
DeviceIdentifier	A globally unique identifier used to identify the device based on the EUI-64 Institute of Electrical and Electronic Engineers standard DeviceIdentifier is only supported (and hence returned within the response) on Devices with a Firmware version certified to GBCS v1.0	ra:EUI	None	N/A	Non-Sensitive
ModelType	An identifier used to identify the model of the device.	xs:string (maxLength = 8)	None	N/A	Non-Sensitive
ManufacturerIdentifier	An identifier used to identify the manufacturer of the device.	xs:string (maxLength = 32)	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
SupplyTamperState	A setting which determines the action of the ESME or GSME to control the state of the Supply in the case of a Tamper Event being detected. Not present when reading CHF Identity information. Statuses are: <ul style="list-style-type: none"> <li>Unchanged</li> <li>Locked</li> </ul>	Restriction of xs:string (enumeration)	None	N/A	Non-Sensitive
MeterVariant	A data item to indicate if ESME is Single Element Electricity Metering Equipment (A), Twin Element Electricity Metering Equipment (B) or Polyphase Electricity Metering Equipment (C). Electricity Only Not present when reading CHF or gas identity information.	xs:string (maxLength = 1)	None	N/A	Non-Sensitive
SupplyDepletionState	A setting which determines the action of the GSME to control the state of the Supply in the case of loss of power to GSME. Statuses are: <ul style="list-style-type: none"> <li>Unchanged</li> <li>Locked</li> </ul> Gas Only	Restriction of xs:string (enumeration)	None	N/A	Non-Sensitive

#### 6.2.4.2.1.4 Sample Response

```
<ra:ReadDeviceConfigurationIdentityExcMPxNRsp MessageSuccess="true">
  <ra:DeviceIdentifier>99-00-AA-BB-CC-DD-EE-FF</ra:DeviceIdentifier>
  <ra:ModelType>ModelType</ra:ModelType>
  <ra:ManufacturerIdentifier>Man</ra:ManufacturerIdentifier>
  <ra:Electricity>
    <ra:SupplyTamperState>Unchanged</ra:SupplyTamperState>
    <ra:MeterVariant>A</ra:MeterVariant>
  </ra:Electricity>
</ra:ReadDeviceConfigurationIdentityExcMPxNRsp>
```

Figure 21 - Read Device Configuration Device Identity Excluding MPxN Parse Response Example – GBCS v1.0

```
<ra:ReadDeviceConfigurationIdentityExcMPxNRsp MessageSuccess="true">
  <ra:ModelType>B74F5E32</ra:ModelType>
  <ra:ManufacturerIdentifier>CD04</ra:ManufacturerIdentifier>
  <ra:Electricity>
    <ra:SupplyTamperState>Unchanged</ra:SupplyTamperState>
    <ra:MeterVariant>A</ra:MeterVariant>
  </ra:Electricity>
</ra:ReadDeviceConfigurationIdentityExcMPxNRsp>
```

Figure 22 - Read Device Configuration Device Identity Excluding MPxN Parse Response Example – GBCS v2.0/SMETS1

## 6.2.5 Read Device Configuration (Instantaneous Power Thresholds) (6.2.5)

Service Request Name	ReadDeviceConfiguration	
Service Reference	6.2	
Service Request Variant Name	ReadDeviceConfiguration(InstantaneousPowerThresholds)	
Service Reference Variant	6.2.5	
Service Request Objective	This Service Request enables an authorised DCC Service User to read the configuration Instantaneous Power Thresholds data values that are currently held on a specified Electricity Smart Metering Equipment.	
Business Context Statement	The DCC Service User wishes to read the current configuration Instantaneous Power Thresholds parameters for a specified Electricity Smart Metering Equipment, e.g. to enable them to obtain / confirm the current configuration settings of the device for diagnostic purposes	
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Supplier Nominated Agent (SNA)</li> </ul>	
Security Classification	Non-critical and non-sensitive SMETS2 or later: GBCS XREF: SME.C.NC	
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>This Service Request allows a DCC Service User to read the two configurable Instantaneous Power Thresholds that can be configured within the ESME as specified by SMETS;               <ul style="list-style-type: none"> <li><i>Low Medium Power Threshold - A value in kW defining the threshold between an indicative low and medium Active Power Import level.</i></li> <li><i>Medium High Power Threshold - A value in kW defining the threshold between an indicative medium and high Active Power Import level.</i></li> </ul> </li> <li>These values are configured on the Device by Service Request 6.12 – Update Device Configuration (Instantaneous Power Threshold). See section 6.12.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x0040	N/A
GBCS Use Case	ECS26f	N/A
GBCS Use Case Name	Read ESME Configuration Data Device Information (instantaneous power thresholds)	N/A

SMETS1 Applicability	Yes	N/A
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.	

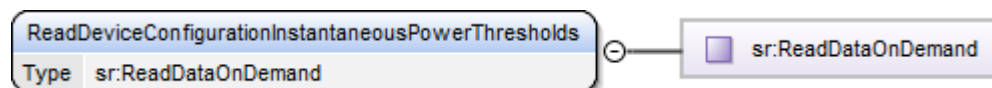
**Table 21 Read Device Configuration (Instantaneous Power Thresholds) Service Request**

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).

## 6.2.5.1 Service Request

### 6.2.5.1.1 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 ReadDeviceConfigurationInstantaneousPowerThresholds XML element defines this Service Request and doesn't contain any data items.



**Figure 23 Read Device Configuration (Instantaneous Power Thresholds) Service Request Structure**

### 6.2.5.1.2 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 22 Read Device Configuration (Instantaneous Power Thresholds) Modes of Operation**

### 6.2.5.1.3 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 23 Read Device Configuration (Instantaneous Power Thresholds) Command Variant Values**

### 6.2.5.1.4 Validation

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

#### 6.2.5.1.5 Sample Request

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

```
<ReadDeviceConfigurationInstantaneousPowerThresholds/>
```

**Figure 24 Read Device Configuration (Instantaneous Power Thresholds) Service Request (Body) Format**

#### 6.2.5.2 Responses

The response messages for a “Read Device Configuration (Instantaneous Power Thresholds)” request follow the generic format for all “Device” response messages, the generic responses applicable to this request are;

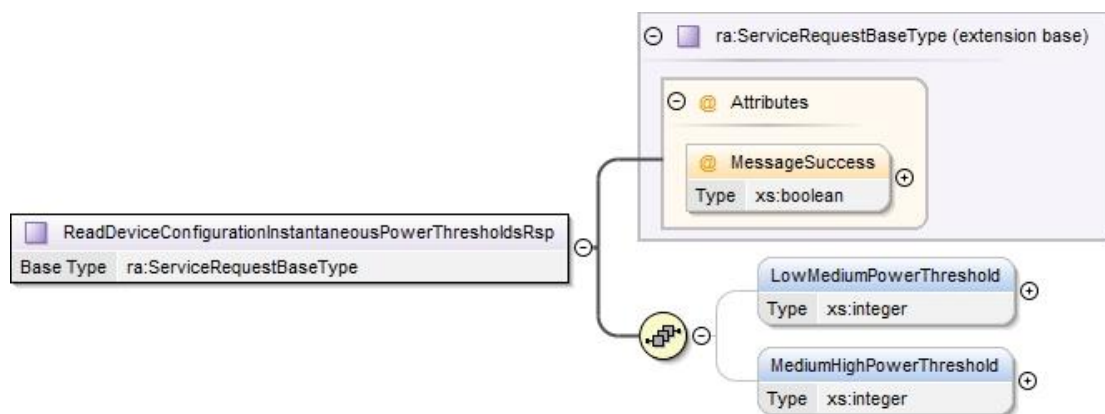
- Acknowledgement
- Service Response (from Device) - GBCSPayload. Service Response Specific Payload
- Command for Local Delivery
- Parse Output / SMETS1 Response

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.

#### 6.2.5.2.1 Parse Output / SMETS1 Response Format

##### 6.2.5.2.1.1 Format - ReadDeviceConfigurationInstantaneousPowerThresholdsRsp



**Figure 25 – Read Device Configuration Instantaneous Power Thresholds Parse Response / SMETS1 Response Structure**

##### 6.2.5.2.1.2 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	0040

Data Item	Electricity Response
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS26f</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read ESME Configuration Data Device Information (instantaneous power thresholds)</i>
SupplementaryRemotePartyID	Present if the originator is a URP
SupplementaryRemotePartyCounter	Present if the originator is a URP
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

**Table 24 - Read Device Configuration (Instantaneous Power Thresholds) Parse/SMETS1 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.

#### 6.2.5.2.1.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
LowMediumPowerThreshold	A value in W defining the threshold between an indicative low and medium Active Power Import level.	xs:integer	None	W	Non-Sensitive
MediumHighPowerThreshold	A value in W defining the threshold between an indicative medium and high Active Power Import level	xs:integer	None	W	Non-Sensitive

#### 6.2.5.2.1.4 Sample Response

```
<ra:ReadDeviceConfigurationInstantaneousPowerThresholdsRsp MessageSuccess="true">
  <ra:LowMediumPowerThreshold>50</ra:LowMediumPowerThreshold>
  <ra:MediumHighPowerThreshold>100</ra:MediumHighPowerThreshold>
</ra:ReadDeviceConfigurationInstantaneousPowerThresholdsRsp>
```

**Figure 26 - Read Device Configuration (Instantaneous Power Thresholds) Parse Response Example**

## 6.2.6 Section 6.2.6

This section has been intentionally left blank as there is no Service Reference Variant 6.2.6.

## 6.2.7 Read Device Configuration (MPxN) (6.2.7)

Service Request Name	ReadDeviceConfiguration
Service Reference	6.2
Service Request Variant Name	ReadDeviceConfiguration(MPxN)

Service Reference Variant	6.2.7	
Service Request Objective	This Service Request enables an authorised DCC Service User to read the configuration MPxN data values that are currently held on an ESME, GSME or GPF.	
Business Context Statement	The DCC Service User wishes to read the current configured MPxN set for a specified Device, e.g. to enable them to obtain / confirm the current configuration / constant settings of the device for diagnostic purposes	
User Role Access	<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>Electricity Network Operator (ENO)</li> <li>Gas Network Operator (GNO)</li> <li>Supplier Nominated Agent (SNA)</li> <li>Other User (OU)</li> </ul>	
Security Classification	Non-critical and non-sensitive: GBCS XREF: SME.C.NC	
Service Request Narrative	<ol style="list-style-type: none"> <li>For Electricity Smart Metering Equipment, all the MPANs associated to the meter will be returned to all User Roles.</li> <li>For Electricity Smart Metering Equipment, the Import MPANs are combined into a single string for storage within the Device, the first 13 bytes represents primary MPAN and the second 13 bytes represents secondary MPAN. The Export MPAN value is stored separately within the Device.</li> <li>For reading the MPRN 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> <li>These values are configured on the Device by one of Service Requests:  6.20.1 –Set Device Configuration (Import MPxN). See section 6.20.1  6.20.2 –Set Device Configuration (Export MPAN). See section 6.20.2</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x004E	0x0089
GBCS Use Case	ECS40	GCS46
GBCS Use Case Name	Read MPAN Value on the ESME	Read MPRN on the GSME

SMETS1 Applicability	No	No
----------------------	----	----

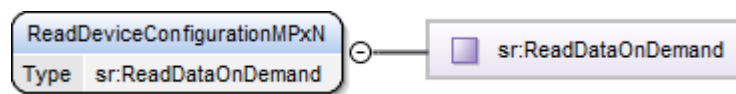
**Table 25 Read Device Configuration (MPxN) Service Request**

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).

## 6.2.7.1 Service Request

### 6.2.7.1.1 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 ReadDeviceConfigurationMPxN XML element defines this Service Request and doesn't contain any data items.



**Figure 27 Read Device Configuration (MPxN) Service Request Structure**

### 6.2.7.1.2 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):

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

**Table 26 Read Device Configuration (MPxN) Modes of Operation**

### 6.2.7.1.3 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):

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 27 Read Device Configuration (MPxN) Command Variant Values**

### 6.2.7.1.4 Validation

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

### 6.2.7.1.5 Sample Request

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

```
<ReadDeviceConfigurationMPxN/>
```

**Figure 28 Read Device Configuration (MPxN) Service Request (Body) Format**

### 6.2.7.2 Responses

The response messages for a “Read Device Configuration (MPxN)” request follow the generic format for all “Device” response messages, the generic responses applicable to this 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.

#### 6.2.7.2.1 Parse Output Format

##### 6.2.7.2.1.1 Format - ReadDeviceConfigurationMPxNRsp

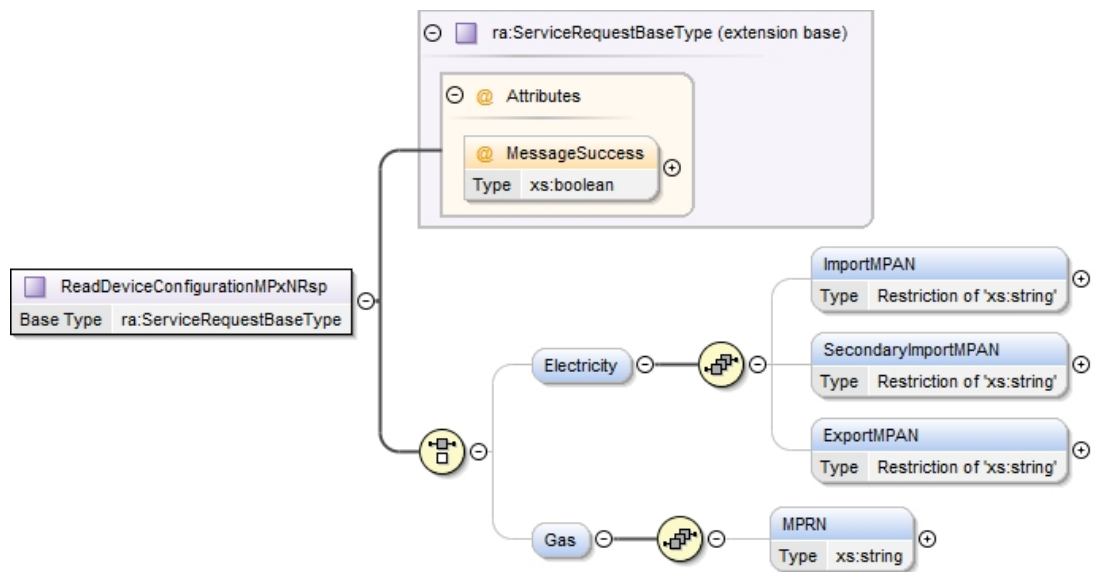


Figure 29 - Read Device Configuration (MPxN) Parse Response Structure

##### 6.2.7.2.1.2 Specific Header Data Items

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	004E	0089
GBCS Use Case Number (for information only - not in header)	ECS40	GCS46

Data Item	Electricity Response	Gas Response
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read MPAN Value on the ESME</i>	<i>Read MPRN on the GSME</i>
SupplementaryRemotePartyID	Present if the originator is a URP	Present if the originator is a URP
SupplementaryRemotePartyCounter	Present if the originator is a URP	Present if the originator is a URP
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 28 - Read Device Configuration (MPxN) 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.

#### 6.2.7.2.1.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
ImportMPAN	Primary MPAN Electricity Only	xs:string (maxLength = 13)	None	N/A	Non-Sensitive
SecondaryImportMPAN	Secondary MPAN Electricity Only Twin Element Only	xs:string (maxLength = 13)	None	N/A	Non-Sensitive
ExportMPAN	The MPAN associated with Export Consumption Electricity Only Export Only	xs:string (maxLength = 13)	None	N/A	Non-Sensitive
MPRN	The MPRN associated with Gas Consumption Gas Only	xs:string (maxLength = 10)	None	N/A	Non-Sensitive

#### 6.2.7.2.1.4 Sample Response

```
<ra:ReadDeviceConfigurationMPxNRsp MessageSuccess="true">
  <ra:Electricity>
    <ra:ImportMPAN>1800000123456</ra:ImportMPAN>
    <ra:SecondaryImportMPAN>1800000654321</ra:SecondaryImportMPAN>
    <ra:ExportMPAN>1800000044444</ra:ExportMPAN>
  </ra:Electricity>
</ra:ReadDeviceConfigurationMPxNRsp>
```

**Figure 30 - Read Device Configuration (MPxN) Parse Response Example**

### 6.2.8 Read Device Configuration (Gas) (6.2.8)

Service Request Name	ReadDeviceConfiguration
Service Reference	6.2
Service Request Variant Name	ReadDeviceConfiguration(Gas)

Service Reference Variant	6.2.8	
Service Request Objective	This Service Request enables an authorised DCC Service User to read the Gas configuration specific data values that are currently held on a GSME that determine the configurable aspects of its behaviour.	
Business Context Statement	The DCC Service User wishes to read the current Gas configuration parameters for a specified GSME, e.g. to enable them to obtain / confirm the current configuration / constant settings of the device for diagnostic purposes	
User Role Access	<ul style="list-style-type: none"> <li>Gas Import Supplier (GIS)</li> <li>Gas Network Operator (GNO)</li> <li>Supplier Nominated Agent (SNA)</li> </ul>	
Security Classification	Non-critical and non-sensitive SMETS2 or later: GBCS XREF: SME.C.NC	
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>This Service Request is only applicable to the GSME, i.e. it isn't possible to read the data from the GPF.</li> <li>These values are configured on the Device by Service Requests: <ul style="list-style-type: none"> <li>6.6 – Update Device Configuration (Gas Conversion). See section 6.6</li> <li>6.7 – Update Device Configuration (Gas Flow). See section 6.7</li> </ul> </li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	N/A	0x007B
GBCS Use Case	N/A	GCS21a
GBCS Use Case Name	N/A	Read Gas Configuration Data Device Information
SMETS1 Applicability	N/A	Yes
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>Where the SMETS1 Device does not support the setting of values equivalent to the StabilisationPeriod or MeasurementPeriod values, the S1SP shall, in populating a SMETS1 Response, set the values to the relevant Unsupported Value as detailed in section 6.2.8.2.1.3.</li> </ol>	

Table 29 Read Device Configuration (Gas) 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).

### 6.2.8.1 Service Request

#### 6.2.8.1.1 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 ReadDeviceConfigurationGas XML element defines this Service Request and doesn't contain any data items.



Figure 31 Read Device Configuration (Gas) Service Request Structure

#### 6.2.8.1.2 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 30 Read Device Configuration (Gas) Modes of Operation

#### 6.2.8.1.3 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 31 Read Device Configuration (Gas) Command Variant Values

#### 6.2.8.1.4 Validation

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

#### 6.2.8.1.5 Sample Request

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

```
<ReadDeviceConfigurationGas/>
```

Figure 32 Read Device Configuration (Gas) Service Request (Body) Format

### 6.2.8.2 Responses

The response messages for a "Read Device Configuration (Gas)" request follow the generic format for all "Device" response messages, the generic responses applicable to this request are;

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

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.

### 6.2.8.2.1 Parse Output / SMETS1 Response Format

#### 6.2.8.2.1.1 Format - ReadDeviceConfigurationGasRsp

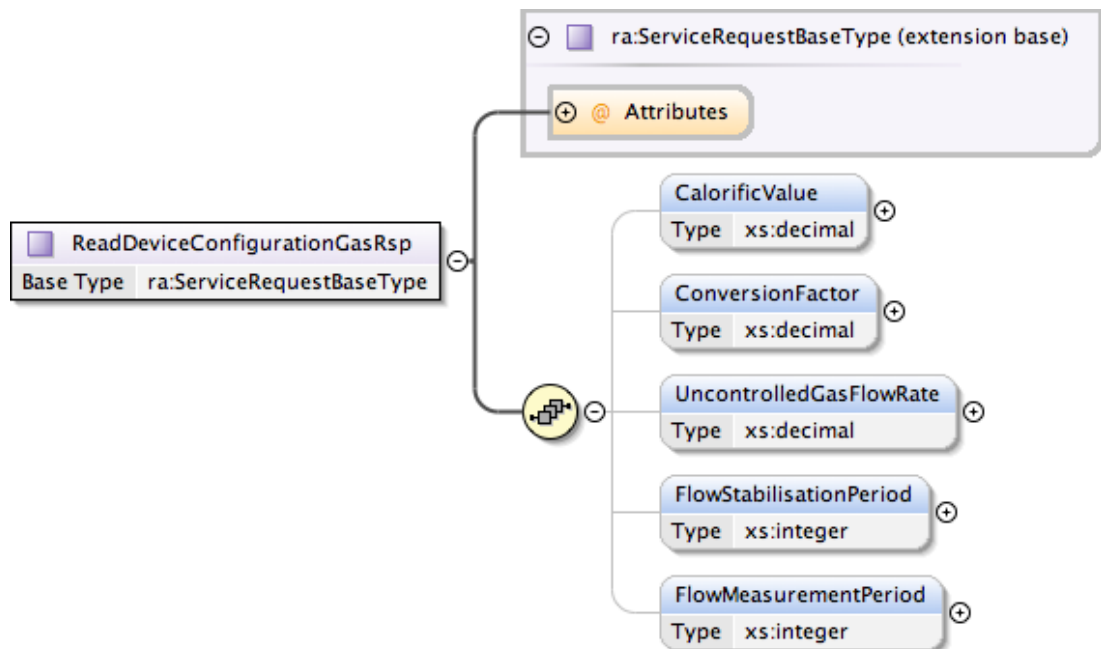


Figure 33 - Read Device Configuration (Gas) Parse Response / SMETS1 Response Structure

#### 6.2.8.2.1.2 Specific Header Data Items

Data Item	Gas Response
GBCSHexadecimalMessageCode	007B
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>GCS21a</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read Gas Configuration Data Device Information</i>

Data Item	Gas Response
SupplementaryRemotePartyID	Present if the originator is a URP
SupplementaryRemotePartyCounter	Present if the originator is a URP
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

**Table 32 - Read Device Configuration (Gas) Parse/SMETS1 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.

#### 6.2.8.2.1.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
CalorificValue	<p>The value used in the conversion of gas volume to kWh usage, based on the energy stored in one cubic metre of gas released when burnt at a standard temperature and pressure.</p> <p>The value is expected to have 1 digit to the right of the decimal</p> <p>Parse Response: Note that the Multiplier and Divisor values have been automatically applied by the P&amp;C software. The most significant nibble indicates the number of digits to the right of the decimal point</p>	xs:decimal	None	MJ/m <sup>3</sup>	Non-Sensitive
ConversionFactor	<p>The value used in the conversion of gas volume to kWh usage, based on the pressure, temperature and compressibility of the gas.</p> <p>The value is expected to have 5 digits to the right of the decimal</p> <p>Parse Response: Note that the Multiplier and Divisor values have been automatically applied by the P&amp;C software. The most significant nibble indicates the number of digits to the right of the decimal point</p>	xs:decimal	None	N/A	Non-Sensitive
UncontrolledGasFlowRate	<p>The flow rate in units of volume per unit time used in the detection of uncontrolled flow of gas on Enablement of Supply</p> <p>Parse Response: Note that the Multiplier and Divisor values have been automatically applied by the P&amp;C software.</p>	xs:decimal	None	m <sup>3</sup> /h	Non-Sensitive

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
FlowStabilisationPeriod	The time given to allow the flow to stabilize. It is defined in units of tenths of a second SMETS1 only: where a SMETS1 Device does not support the setting of this values the DCC shall set these values to the relevant Unsupported Value (see section 19.9) to indicate that the Device does not support that parameter	xs:integer	None	10 <sup>th</sup> second	Non-Sensitive
FlowMeasurementPeriod	The period over which the flow is measured and compared against the Uncontrolled Flow Threshold attribute. It is defined in units of seconds SMETS1 only: where a SMETS1 Device does not support the setting of this values the DCC shall set these values to the relevant Unsupported Value (see section 19.9) to indicate that the Device does not support that parameter	xs:integer	None	seconds	Non-Sensitive

#### 6.2.8.2.1.4 Sample Response

```
<ra:ReadDeviceConfigurationGasRsp MessageSuccess="true">
  <ra:CalorificValue>110.6</ra:CalorificValue>
  <ra:ConversionFactor>2</ra:ConversionFactor>
  <ra:UncontrolledGasFlowRate>25.5</ra:UncontrolledGasFlowRate>
  <ra:FlowStabilisationPeriod>100</ra:FlowStabilisationPeriod>
  <ra:FlowMeasurementPeriod>200</ra:FlowMeasurementPeriod>
</ra:ReadDeviceConfigurationGasRsp>
```

Figure 34 - Read Device Configuration (Gas) Parse Response Example

### 6.2.9 Read Device Configuration (Payment Mode) (6.2.9)

Service Request Name	ReadDeviceConfiguration
Service Reference	6.2
Service Request Variant Name	ReadDeviceConfiguration(PaymentMode)
Service Reference Variant	6.2.9
Service Request Objective	This Service Request enables an authorised DCC Service User to read the configuration Payment Mode data values that are currently held on a Device.
Business Context Statement	The DCC Service User wishes to read the current configuration Payment Mode for a specified Device, e.g. to enable them to obtain / confirm the current configuration / constant settings of the device for diagnostic purposes

User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> <li>Supplier Nominated Agent (SNA)</li> </ul>	
Security Classification	Non-critical and non-sensitive SMETS2 or later: GBCS XREF: SME.C.NC	
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>For reading the Gas configuration values 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> <li>These values are configured on the Device by Service Request 1.6 – Update Payment Mode. See Annex section 1.6.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x00BE	0x00BF
GBCS Use Case	ECS26j	GCS21j
GBCS Use Case Name	Read ESME Configuration Data Device Information (Payment Mode)	Read GSME Configuration Data Device Information (Payment Mode)
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>Processing by the relevant S1SP shall be according to the SMETS1 Supporting Requirements Document, which states that where the SMETS1 Device does not support the setting of values equivalent to the StabilisationPeriod or MeasurementPeriod values, the S1SP shall, in populating a SMETS1 Response, set the values to the relevant Unsupported Value.</li> </ol>	

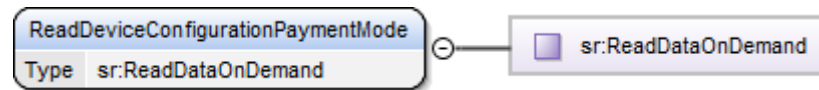
**Table 33 Read Device Configuration (Payment Mode) Service Request**

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).

## 6.2.9.1 Service Request

### 6.2.9.1.1 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 ReadDeviceConfigurationPaymentMode XML element defines this Service Request and doesn't contain any data items.



**Figure 35 Read Device Configuration (Payment Mode) Service Request Structure**

#### 6.2.9.1.2 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 34 Read Device Configuration (Payment Mode) Modes of Operation**

#### 6.2.9.1.3 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 35 Read Device Configuration (Payment Mode) Command Variant Values**

#### 6.2.9.1.4 Validation

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

#### 6.2.9.1.5 Sample Request

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

```
<ReadDeviceConfigurationPaymentMode/>
```

**Figure 36 Read Device Configuration (Payment Mode) Service Request (Body) Format**

### 6.2.9.2 Responses

The response messages for a “Read Device Configuration (Payment Mode)” request follow the generic format for all “Device” response messages, the generic responses applicable to this request are;

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

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.

#### 6.2.9.2.1 Parse Output / SMETS1 Response Format

##### 6.2.9.2.1.1 Format - ReadDeviceConfigurationPaymentModeRsp

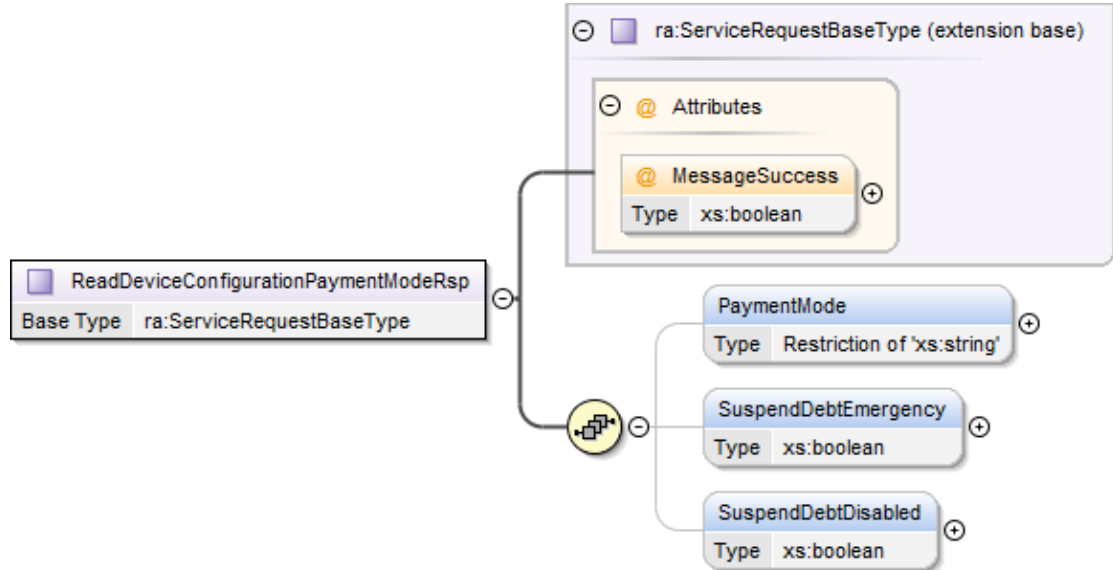


Figure 37 - Read Device Configuration (Payment Mode) Parse Response / SMETS1 Response Structure

##### 6.2.9.2.1.2 Specific Header Data Items

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	00BE	00BF
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS26j</i>	<i>GCS21j</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read ESME Configuration Data Device Information (Payment Mode)</i>	<i>Read GSME Configuration Data Device Information (Payment Mode)</i>
SupplementaryRemotePartyID	Present of the originator is a URP	Present of the originator is a URP
SupplementaryRemotePartyCounter	Present of the originator is a URP	Present of the originator is a URP
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

Table 36 - Read Device Configuration (Payment Mode) Parse/SMETS1 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.

#### 6.2.9.2.1.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
PaymentMode	The current mode of operation, being Prepayment or Credit.	xs:string (Enumeration)	None	N/A	Non-Sensitive
SuspendDebtEmergency	If Payment Mode is Prepayment, it indicates whether Suspend Debt Emergency is true (if Emergency Credit is in use, then the Meter shall not collect the Standing Charge or Time Debts from the Emergency Credit Balance and will instead increment the Accumulated Debt Register) or false (if Emergency Credit is in use, then the Meter shall collect the Standing Charge and Time Debts from the Emergency Credit Balance). See SMETS2 or later for details.  SMETS1 only: the meaning of this value shall be as defined in the SMETS1 Supporting Requirements Gas Only	xs:boolean	None	N/A	Non-Sensitive
SuspendDebtDisabled	If Payment Mode is Prepayment, it indicates whether Suspend Debt Disabled is true (if the supply is disabled due to lack of credit, then the Meter shall not collect the Time Debts however the Standing Charge is still collected from the Meter Balance) or false (if the supply is disabled due to lack of credit, then the Meter shall collect the Time Debts and the Standing Charge from the Meter Balance). See SMETS for details.  SMETS1 only: the meaning of this value shall be as defined in the SMETS1 Supporting Requirements Gas Only	xs:boolean	None	N/A	Non-Sensitive

#### 6.2.9.2.1.4 Sample Response

```
<ra:ReadDeviceConfigurationPaymentModeRsp MessageSuccess="true">
  <ra:PaymentMode>Credit</ra:PaymentMode>
</ra:ReadDeviceConfigurationPaymentModeRsp>
```

**Figure 38 - Read Device Configuration (Payment Mode) Parse Response Example (Electricity)**

```
<ra:ReadDeviceConfigurationPaymentModeRsp MessageSuccess="true">
  <ra:PaymentMode>Credit</ra:PaymentMode>
  <ra:SuspendDebtEmergency>true</ra:SuspendDebtEmergency>
  <ra:SuspendDebtDisabled>>false</ra:SuspendDebtDisabled>
</ra:ReadDeviceConfigurationPaymentModeRsp>
```

**Figure 39 - Read Device Configuration (Payment Mode) Parse Response Example (Gas)**

## 6.2.10 Read Device Configuration (Event and Alert Behaviours) (6.2.10)

Service Request Name	ReadDeviceConfiguration	
Service Reference	6.2	
Service Request Variant Name	ReadDeviceConfiguration(EventAndAlertBehaviours)	
Service Reference Variant	6.2.10	
Service Request Objective	This Service Request enables an authorised DCC Service User to read the configuration of non-critical Event and Alert Behaviours values that are currently held on a Device.	
Business Context Statement	The DCC Service User wishes to read the current configuration of non-critical Event and Alert Behaviours for a specified Device, e.g. to enable them to obtain / confirm the current configuration / constant settings of the device for diagnostic purposes	
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> <li>Electricity Network Operator (ENO)</li> </ul>	
Security Classification	Non-critical and non-sensitive: GBCS XREF: SME.C.NC	
Service Request Narrative	<ol style="list-style-type: none"> <li>This Service Request is only applicable to ESME and GSME with a Firmware version certified to GBGS v2.0 or later and it provides functionality (not previously available) to read the current configuration of the Event and Alert Behaviours on the meter. Those WAN Alerts, HAN Alerts, audible Alarms and Events to be logged set to "Enable" in the Parse Response are "turned on" and those set to "Disable" are "turned off" on the Device</li> <li>The Event and Alert Behaviours values are configured on the Device by Service Request 6.22 – Configure Event Behaviour. See section 6.22.</li> <li>This Service Request only returns details for the currently configured, <b>non critical</b> alert and event behaviours. Critical Alerts cannot be configured and so cannot be read using this Service Request as they are assumed to be by definition ALWAYS ON</li> <li>For Service Requests sent to the GSME, as defined in the GBGS Use Case GCS20r, the response will contain configuration details of all Event / Alert Codes starting 0x081 which GBGS mandates a GSME to support and any non-mandated ones which the GSME also supports</li> <li>DUIS v1 does not support this Service Request. Users should move to DUIS v2 or later if they wish to use this Service Request to access devices operating to GBGS v2.0 or later</li> </ol>	
GBCS Cross Reference	Electricity	Gas

GBCS v1.0	N/A – feature not supported by Device	N/A – feature not supported by Device
GBCS v2.0 or later Message Code	EIS – 0x00EE ENO – 0x00EF	GIS - 0x00F1
GBCS v2.0 or later Use Case	EIS – ECS25r1 ENO – ECS25r2	GIS - GCS20r
GBCS v2.0 or later Use Case Name	EIS - Read non-critical event and alert behaviours - ESME-Supplier ENO - Read non-critical event and alert behaviours - ESME-Network Operator	GIS - Read non-critical event and alert behaviours - GSME-Supplier
<b>GBCS Commands - Versioning Details</b>		
<b>DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations,</b>		
Device Type	ESME	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0 or later
DUIS 1: Not supported	N/A	N/A
DUIS 2 or later: DEFAULT - No specific XML criteria (User Role EIS)	Response Code - E57	ECS25r1
DUIS 2 or later: DEFAULT - No specific XML criteria (User Role ENO)	Response Code - E57	ECS25r2
SMETS1 Applicability	No	No
Device Type	GSME	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0 or later
DUIS 1: Not supported	N/A	N/A
DUIS 2 or later: DEFAULT - No specific XML criteria	Response Code - E57	GCS20r
SMETS1 Applicability	No	No

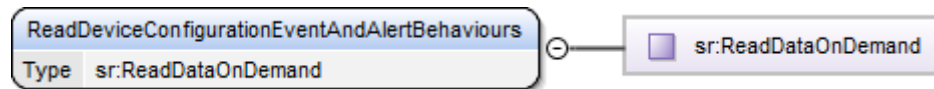
**Table 37 Read Device Configuration (Event and Alert Behaviours) Service Request**

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).

## 6.2.10.1 Service Request

### 6.2.10.1.1 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 ReadDeviceConfigurationEventAndAlertBehaviours XML element defines this Service Request and doesn't contain any data items.



**Figure 40 Read Device Configuration (Event and Alert Behaviours) Service Request Structure**

### 6.2.10.1.2 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):

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

**Table 38 Read Device Configuration (Event and Alert Behaviours) Modes of Operation**

### 6.2.10.1.3 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):

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 39 Read Device Configuration (Event and Alert Behaviours) Command Variant Values**

### 6.2.10.1.4 Validation

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

### 6.2.10.1.5 Sample Request

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

```
<ReadDeviceConfigurationEventAndAlertBehaviours/>
```

**Figure 41 Read Device Configuration (Event and Alert Behaviours) Service Request (Body) Format**

## 6.2.10.2 Responses

The response messages for a “Read Device Configuration (Event and Alert Behaviours)” request follow the generic format for all “Device” response messages, the generic responses applicable to this 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.

#### 6.2.10.2.1 Parse Output Format

##### 6.2.10.2.1.1 Format - ReadDeviceConfigurationEventAndAlertBehavioursResp

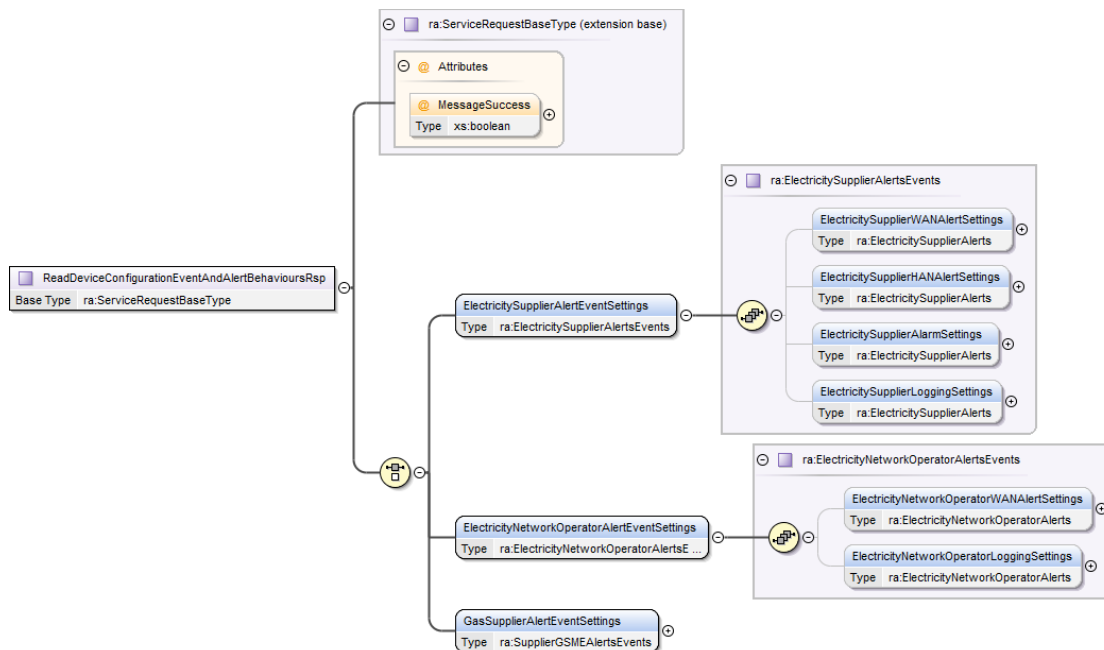


Figure 42 - Read Device Configuration (Event and Alert Behaviours) Parse Response Structure

##### 6.2.10.2.1.2 Specific Header Data Items

GBCS v2.0 or later:

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	EIS – 0x00EE ENO – 0x00EF	0x00F1
GBCS Use Case Number (for information only - not in header)	EIS – ECS25r1 ENO – ECS25r2	GCS20r
GBCS Use Case Name (for information only - not in header)	EIS - Read non-critical event and alert behaviours - ESME- Supplier ENO - Read non-critical event and alert behaviours - ESME- Network Operator	GIS - Read non-critical event and alert behaviours - GSME- Supplier
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 40 - Read Device Configuration (Event and Alert Behaviours) Parse Response  
Header Data Items – GBCS v2.0 or later**

**6.2.10.2.1.3 Specific Body Data Items**

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
ElectricitySupplierAlertEventSettings	The currently configured, non critical alert and event behaviours that are relevant to Suppliers on the ESME Includes the WAN Alerts, HAN Alerts, logging of Events recorded in the Event Logs and audible Alarms (associated to WAN Alerts, HAN Alerts and / or events recorded in the Event Log) configured by the EIS on the ESME.	ra:ElectricitySupplierAlertsEvents (see section 6.2.10.2.1.4)	None	N/A	Non-Sensitive
ElectricityNetworkOperatorAlertEventSettings	The currently configured, non critical alert and event behaviours that are relevant to Network Operators on the ESME Includes the WAN Alerts and logging of Events recorded in the Power Event Log configured by the ENO on the ESME.	ra:ElectricityNetworkOperatorAlertsEvents (see section 6.2.10.2.1.5)	None	N/A	Non-Sensitive
GasSupplierAlertEventSettings	The currently configured, non critical alert and event behaviours that are relevant to Suppliers on the GSME Includes the WAN Alerts, HAN Alerts, logging of Events recorded in the Event Log and audible Alarms (associated to WAN Alerts, HAN Alerts and / or events recorded in the Event Log) configured by the GIS on the GSME.	ra:SupplierGSMEAlertsEvents (see the similar sr:SupplierGSMEAlertsEvents in section 6.22.1.6)	None	N/A	Non-Sensitive

**6.2.10.2.1.4 ElectricitySupplierAlertsEvents Data Items**

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
ElectricitySupplierWANAlertSettings	The current configuration of the settings for WAN Alerting configured on the ESME.	ra:ElectricitySupplierAlerts (see the similar sr:ElectricitySupplierAlerts in section 6.22.1.3)	None	N/A	Non-Sensitive
ElectricitySupplierHANAlertSettings	The current configuration of the settings for HAN Alerting configured on the ESME.	ra:ElectricitySupplierAlerts (see the similar sr:ElectricitySupplierAlerts in section 6.22.1.3)	None	N/A	Non-Sensitive
ElectricitySupplierAlarmSettings	The current configuration of the audible Alarm settings (associated to WAN Alerts, HAN Alerts and / or events recorded in the Event Log) configured on the ESME.	ra:ElectricitySupplierAlerts (see the similar sr:ElectricitySupplierAlerts in section 6.22.1.3)	None	N/A	Non-Sensitive
ElectricitySupplierLoggingSettings	The current configuration of the settings for logging Events in the Event Logs configured on the ESME.	ra:ElectricitySupplierAlerts (see the similar sr:ElectricitySupplierAlerts in section 6.22.1.3)	None	N/A	Non-Sensitive

#### 6.2.10.2.1.5 ElectricityNetworkOperatorAlertsEvents Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
ElectricityNetworkOperatorWANAlertSettings	The current configuration of the settings for WAN Alerting configured on the ESME.	ra:ElectricityNetworkOperatorAlerts (see the similar sr:ElectricityNetworkOperatorAlerts in section 6.22.1.4)	None	N/A	Non-Sensitive
ElectricityNetworkOperatorLoggingSettings	The current configuration of the settings for logging Events in the Power Event Log configured on the ESME.	ra:ElectricityNetworkOperatorAlerts (see the similar sr:ElectricityNetworkOperatorAlerts in section 6.22.1.4)	None	N/A	Non-Sensitive

#### 6.2.10.2.1.6 Sample Response

Successful responses will include the settings of all the Alerts / Events the DCC Service User is responsible for configuring. For illustration purposes, the following samples include only a sub-set:

```
<ra:ReadDeviceConfigurationEventAndAlertBehavioursRsp MessageSuccess="true">
  <ra:ElectricitySupplierAlertEventSettings>
    <ra:ElectricitySupplierWANAlertSettings>
      <ra:SupplierESMECommon>
        <ra:x810D>Enable</ra:x810D>
        <ra:x810E>Disable</ra:x810E>
      </ra:SupplierESMECommon>
    </ra:ElectricitySupplierWANAlertSettings>
    <ra:ElectricitySupplierHANAlertSettings>
      <ra:SupplierESMECommon>
        <ra:x810D>Enable</ra:x810D>
        <ra:x8119>Disable</ra:x8119>
      </ra:SupplierESMECommon>
    </ra:ElectricitySupplierHANAlertSettings>
    <ra:ElectricitySupplierAlarmSettings>
      <ra:SupplierESMECommon>
        <ra:x8145>Disable</ra:x8145>
        <ra:x8154>Disable</ra:x8154>
        <ra:x81C6>Disable</ra:x81C6>
      </ra:SupplierESMECommon>
    </ra:ElectricitySupplierAlarmSettings>
    <ra:ElectricitySupplierLoggingSettings>
      <ra:SupplierESMECommon>
        <ra:x8145>Enable</ra:x8145>
        <ra:x8154>Enable</ra:x8154>
        <ra:x81C6>Enable</ra:x81C6>
      </ra:SupplierESMECommon>
    </ra:ElectricitySupplierLoggingSettings>
  </ra:ElectricitySupplierAlertEventSettings>
</ra:ReadDeviceConfigurationEventAndAlertBehavioursRsp>
```

Figure 43 - Read Device Configuration (Event and Alert Behaviours) Parse Response Example (Electricity - Supplier)

```
<ra:ReadDeviceConfigurationEventAndAlertBehavioursRsp MessageSuccess="true">
  <ra:ElectricityNetworkOperatorAlertEventSettings>
    <ra:ElectricityNetworkOperatorWANAlertSettings>
      <ra:NetworkOperatorESMECommon>
        <ra:x8014>Enable</ra:x8014>
        <ra:x8015>Disable</ra:x8015>
      </ra:NetworkOperatorESMECommon>
    </ra:ElectricityNetworkOperatorWANAlertSettings>
  <ra:ElectricityNetworkOperatorLoggingSettings>
    <ra:NetworkOperatorESMECommon>
      <ra:x8014>Enable</ra:x8014>
      <ra:x8015>Disable</ra:x8015>
    </ra:NetworkOperatorESMECommon>
  </ra:ElectricityNetworkOperatorLoggingSettings>
</ra:ElectricityNetworkOperatorAlertEventSettings>
</ra:ReadDeviceConfigurationEventAndAlertBehavioursRsp>
```

**Figure 44 - Read Device Configuration (Event and Alert Behaviours) Parse Response  
Example (Electricity – Network Operator)**

```
<ra:ReadDeviceConfigurationEventAndAlertBehavioursRsp MessageSuccess="true">
  <ra:GasSupplierAlertEventSettings>
    <ra:x810D>
      <ra:WANAlert>Enable</ra:WANAlert>
      <ra:HANAAlert>Disable</ra:HANAAlert>
      <ra:EventLog>Enable</ra:EventLog>
      <ra:Alarm>Disable</ra:Alarm>
    </ra:x810D>
    <ra:x810E>
      <ra:WANAlert>Enable</ra:WANAlert>
      <ra:HANAAlert>Disable</ra:HANAAlert>
      <ra:EventLog>Enable</ra:EventLog>
      <ra:Alarm>Disable</ra:Alarm>
    </ra:x810E>
    <ra:x8145>
      <ra:WANAlert>Enable</ra:WANAlert>
      <ra:HANAAlert>Disable</ra:HANAAlert>
      <ra:EventLog>Enable</ra:EventLog>
      <ra:Alarm>Disable</ra:Alarm>
    </ra:x8145>
    <ra:x8168>
      <ra:WANAlert>Enable</ra:WANAlert>
      <ra:HANAAlert>Disable</ra:HANAAlert>
      <ra:EventLog>Enable</ra:EventLog>
      <ra:Alarm>Disable</ra:Alarm>
    </ra:x8168>
    <ra:x8183>
      <ra:WANAlert>Enable</ra:WANAlert>
      <ra:HANAAlert>Disable</ra:HANAAlert>
      <ra:EventLog>Enable</ra:EventLog>
      <ra:Alarm>Disable</ra:Alarm>
    </ra:x8183>
    <ra:x81AA>
      <ra:WANAlert>Enable</ra:WANAlert>
      <ra:HANAAlert>Enable</ra:HANAAlert>
      <ra:EventLog>Enable</ra:EventLog>
      <ra:Alarm>Disable</ra:Alarm>
    </ra:x81AA>
    <ra:x81C6>
      <ra:WANAlert>Enable</ra:WANAlert>
      <ra:HANAAlert>Disable</ra:HANAAlert>
      <ra:EventLog>Enable</ra:EventLog>
      <ra:Alarm>Disable</ra:Alarm>
    </ra:x81C6>
  </ra:GasSupplierAlertEventSettings>
</ra:ReadDeviceConfigurationEventAndAlertBehavioursRsp>
```

**Figure 45 - Read Device Configuration (Event and Alert Behaviours) Parse Response Example (Gas)**

## 6.3 Section 6.3

This section has been intentionally left blank as there is no Service Reference 6.3.

## 6.4 Update Device Configuration (Load Limiting) (6.4)

SMETS2 or later

This Service Request maps to two GBCS Use Cases and each Use Case requires its own Request ID.

Therefore the 6.4 Service Request has been broken into two parts: 6.4.1 (General Settings) and 6.4.2 (Counter Reset).

#### SMETS1

This Service Request maps to Service Reference Variant 6.4.1 (General Settings) and 6.4.2 (Counter Reset)

### 6.4.1 Update Device Configuration (Load Limiting General Settings) (6.4.1)

Service Request Name	UpdateDeviceConfiguration(LoadLimiting)	
Service Reference	6.4	
Service Request Variant Name	UpdateDeviceConfiguration(LoadLimitingGeneralSettings)	
Service Reference Variant	6.4.1	
Service Request Objective	To enable an authorised DCC Service User to update the load limiting general settings on a specified Device as defined by SMETS.	
Business Context Statement	The DCC Service User requires that an update is made to the current load limiting configuration parameters stored within a specified Device, e.g. upon initial device installation or following a Change of Supplier event.	
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> </ul>	
Security Classification	Critical and non-sensitive SMETS2 or later: GBCS XREF: SME.C.C	
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>Where a Network Operator wishes to initiate Load Limiting due to network constraints the request should be routed -via the Supplier as they have the contractual relationship with the consumer.</li> <li>The Device Configuration (LoadLimiting) values can be read by a DCC Service User using Service Request 4.15 – Read Load Limit Counter. See Annex section 4.15.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x0043	N/A
GBCS Use Case	ECS28a	N/A
GBCS Use Case Name	Set Load Limit Configurations - General Settings	N/A

SMETS1 Applicability	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. In accordance with the SMETS1 Supporting Requirements Document, the S1SP shall not set either the LoadLimitPeriod or LoadLimitRestorationPeriod fields on SMETS1 ESME Devices as they do not support it. This shall not result in an error in the SMETS1 Response.</li> </ol>	

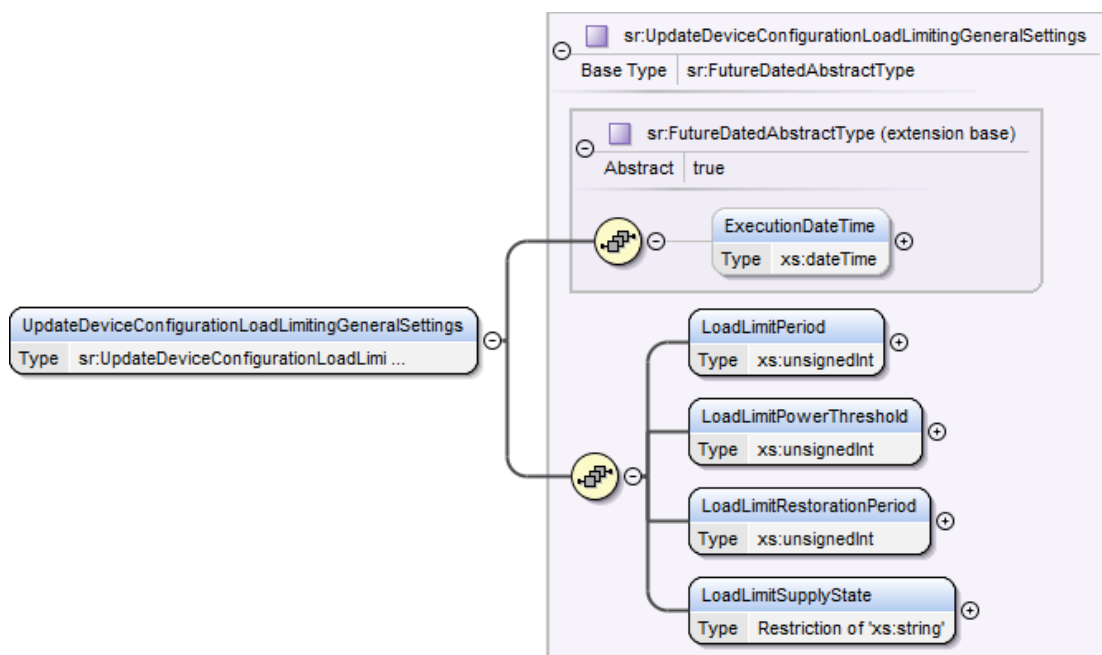
**Table 41 Update Device Configuration (Load Limiting General Settings) Service Request**

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).

## 6.4.1.1 Service Request

### 6.4.1.1.1 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 UpdateDeviceConfigurationLoadLimitingGeneralSettings XML element defines this Service Request and contains the Load Limiting General Settings and, for Future Dated Requests, the Execution Date and Time.



**Figure 46 Update Device Configuration (Load Limiting General Settings) Service Request Structure**

### 6.4.1.1.2 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
LoadLimitPeriod	The length of time which the Active Power Import needs to continuously exceed the Load Limit Power Threshold before a load limiting event is deemed to have occurred  SMETS1: this value shall not be set on a SMETS1 ESME; however since the parameter is mandatory a value must be supplied.	xs:unsignedInt	Yes	None	Seconds	Non-Sensitive
LoadLimitPowerThreshold	The Active Power threshold above which the measurement of a Load Limit Period is commenced	xs:unsignedInt	Yes	None	W	Non-Sensitive
LoadLimitRestorationPeriod	The length of time after the Supply has been Armed following a Load Limiting Event before the Supply is Enabled by the Electricity Smart Meter  SMETS1: this value shall not be set on a SMETS1 ESME; however since the parameter is mandatory a value must be supplied.	xs:unsignedInt	Yes	None	Seconds	Non-Sensitive
LoadLimitSupplyState	A setting to control the state of the Supply in the case of a load limiting occurring, being: <ul style="list-style-type: none"> <li>Disable</li> <li>Unchanged</li> </ul>	Restriction of xs:string (Enumeration)	Yes	None	N/A	Non-Sensitive

**Table 42 Update Device Configuration (Load Limiting General Settings) Service Request Data Items**

#### 6.4.1.1.3 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):

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

**Table 43 Update Device Configuration (Load Limiting General Settings) Modes of Operation**

#### 6.4.1.1.4 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):

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 44 Update Device Configuration (Load Limiting General Settings) Command Variant Values**

#### 6.4.1.1.5 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.

#### 6.4.1.1.6 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:

```
<UpdateDeviceConfigurationLoadLimitingGeneralSettings>
<LoadLimitPeriod>300</LoadLimitPeriod>
<LoadLimitPowerThreshold>10</LoadLimitPowerThreshold>
<LoadLimitRestorationPeriod>600</LoadLimitRestorationPeriod>
<LoadLimitSupplyState>Unchanged</LoadLimitSupplyState>
</UpdateDeviceConfigurationLoadLimitingGeneralSettings>
```

**Figure 47 Update Device Configuration (Load Limiting General Settings) Transform Service Request (Body) Format**

#### 6.4.1.2 Responses

The response messages for an "Update Device Configuration (Load Limiting General Settings)" request follow the generic format for all "Device" response messages, the generic responses applicable to this request are;

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

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

#### 6.4.1.2.1 Device Responses and Future Dating

For SMETS2 or later Devices this Service Request's Command contains a fixed number of instructions ('n' = 8) and activation date-time instructions ('m' = 4). See Main Document of this documentation set section 9.3.6 for details of the Device Responses returned in the different scenarios. Apart from in the exception cases described there, e.g. cancellation, the relationship between Mode of Operation and Response message types is as follows:

1. On Demand.
  - a. Service Response (from Device) – GBCSPayload
    - i. One Device Response (Command execution outcome containing 'n' results).
2. Future Dated (Device).
  - a. Service Response (from Device) – GBCSPayload
    - i. One Device Response (Command storage outcome containing 'n' results)
  - b. Service Response (from Device) – FutureDatedDeviceAlertMessage
    - i. 'm' Device Alerts (Command instruction execution outcome) . These Device Alerts are described in Annex section 15.4.4. The Device Alert payloads for this particular Service Request will be of the types described in Annex section 15.4.4.3.1

For SMETS1 Devices this Service Request is only available for Mode of Operation On Demand or Future Dated (DSP). In both cases the Response message type is a single SMETS1 Response.

#### 6.4.1.2.2 Parse Output / SMETS1 Response Format

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

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.

See section 6.4.1.2.1 for description of the responses to future dated execution requests.

#### 6.4.1.2.2.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	0043
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS28a</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Load Limit Configurations - General Settings</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present

Data Item	Electricity Response
SupplementaryOriginatorCounter	Not Present
Timestamp	Present

**Table 45 – Update Device Configuration (Load Limiting General Settings)  
Parse/SMETS1 Response Header Data Items**

#### 6.4.2 Update Device Configuration (Load Limiting Counter Reset) (6.4.2)

Service Request Name	UpdateDeviceConfiguration(LoadLimiting)	
Service Reference	6.4	
Service Request Variant Name	UpdateDeviceConfiguration(LoadLimitingCounterReset)	
Service Reference Variant	6.4.2	
Service Request Objective	To enable an authorised DCC Service User to reset the load limiting counter on a specified Device as defined by SMETS.	
Business Context Statement	The DCC Service User requires that the Load Limit Counter on a specified Device is reset to Zero.	
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> </ul>	
Security Classification	Non-critical and non-sensitive SMETS2 or later: GBCS XREF: SME.C.NC	
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>The <i>Load limit Counter</i>, as defined by SMETS, records the number of times the <i>Active Power Import</i> has exceeded, for the <i>Load Limit Period</i>, the <i>Load Limit Power Threshold</i> since last cleared.</li> <li>The Device Configuration (LoadLimiting) values can be read by a DCC Service User using Service Request 4.15 – Read Load Limit Counter. See Annex section 4.15.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x0044	N/A
GBCS Use Case	ECS28b	N/A
GBCS Use Case Name	Set Load Limit Configuration Counter Reset	N/A
SMETS1 Applicability	Yes	N/A

**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.

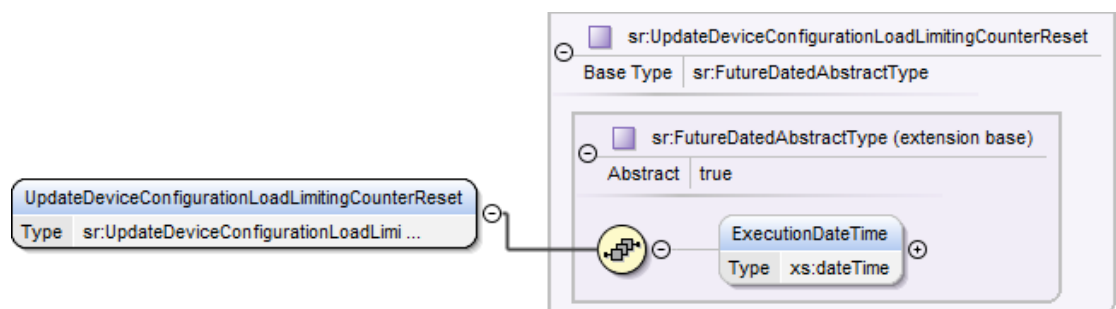
**Table 46 Update Device Configuration (Load Limiting Counter Reset) Service Request**

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).

## 6.4.2.1 Service Request

### 6.4.2.1.1 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 UpdateDeviceConfigurationLoadLimitingCounterReset XML element defines this Service Request and, for Future Dated Requests, it contains the Execution Date and Time.



**Figure 48 Update Device Configuration (Load Limiting Counter Reset) Service Request Structure**

### 6.4.2.1.2 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 47 Update Device Configuration (Load Limiting Counter Reset) Service Request Data Items**

### 6.4.2.1.3 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):

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

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

**Table 48 Update Device Configuration (Load Limiting Counter Reset) Modes of Operation**

#### 6.4.2.1.4 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):

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 49 Update Device Configuration (Load Limiting Counter Reset) Command Variant Values**

#### 6.4.2.1.5 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.

#### 6.4.2.1.6 Sample Request

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

```
<UpdateDeviceConfigurationLoadLimitingCounterReset/>
```

**Figure 49 Update Device Configuration (Load Limiting Counter Reset) Service Request (Body) Format**

### 6.4.2.2 Responses

The response messages for an "Update Device Configuration (Load Limiting Counter Reset)" request follow the generic format for all "Device" response messages, the generic responses applicable to this request are;

- 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.

#### 6.4.2.2.1 Parse Output / SMETS1 Response Format

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

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.

#### 6.4.2.2.1.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	0044
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS28b</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Load Limit Configurations - Counter Reset</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

**Table 50 – Update Device Configuration (Load Limiting Counter Reset) Parse/SMETS1 Response Header Data Items**

## 6.5 Update Device Configuration (Voltage) (6.5)

Service Request Name	UpdateDeviceConfiguration(Voltage)
Service Reference	6.5
Service Request Variant Name	UpdateDeviceConfiguration(Voltage)
Service Reference Variant	6.5
Service Request Objective	To enable an authorised DCC Service User to set the power quality monitoring configuration parameters for a specified meter. The meter shall execute the commands and then confirm that the operation has completed or otherwise fail the request and return the reason for its failure.
Business Context Statement	The DCC Service User requires that an update is made to the current power quality monitoring configuration parameters stored within a specified device, e.g. to amend a threshold value, or set a measurement period.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Network Operator (ENO)</li> </ul>
Security Classification	Non-critical and non-sensitive SMETS2 or later: GBCS XREF: SME.C.NC
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>The data items to be included in the Service Request depend on whether the Electricity Smart Meter Equipment is Single Phase (Single Element or Twin Element) or Poly Phase as defined by SMETS. This is</li> </ol>

	<p>determined by the ESME Variant recorded in the Smart Metering Inventory.</p> <ol style="list-style-type: none"> <li>The Device Configuration (Voltage) values can be read by a DCC Service User using Service Request – 6.2.1 – Read Device Configuration (Voltage). See section 6.2.1.</li> <li>For ESME Firmware certified to GBCS v2.0 or later this Service Request configures Voltage thresholds and measurement periods and it can optionally reset or not reset the Average RMS Over and Under Voltage Counters. These counters can also be reset via Service Request 6.27 Update Device Configuration (RMS Voltage Counter Reset). See section 6.27 for details.</li> <li>For ESME Firmware certified to GBCS v1.0 this Service Request configures Voltage thresholds and measurement periods and it automatically resets the Average RMS Over and Under Voltage Counters.</li> </ol>				
<b>GBCS Cross Reference</b>	Electricity (Single Phase)		Electricity (Poly Phase)		Gas
<b>GBCS v1.0 Message Code</b>	0x0045		0x00AE		N/A
<b>GBCS v1.0 Use Case</b>	ECS29a		ECS29b		N/A
<b>GBCS v1.0 Use Case Name</b>	Set Voltage Configurations on ESME		Set Voltage Configurations on ESME - 3ph		N/A
<b>GBCS v2.0 Message Code</b>	0x0045	0x00D1	0x00AE	0x00D2	N/A
<b>GBCS v2.0 Use Case</b>	ECS29a	ECS29c	ECS29b	ECS29d	N/A
<b>GBCS v2.0 Use Case Name</b>	Set Voltage Configurations on ESME with counter resets	Set Voltage Configurations on ESME without counter reset	Set Voltage Configurations on ESME - 3ph with counter resets	Set Voltage Configurations on polyphase ESME without counter reset	N/A
<b>SMETS1 Applicability</b>	Yes	Yes	N/A	N/A	N/A
<b>Service Request Narrative (SMETS1)</b>	<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>Polyphase meters are not supported by SMETS1,</li> <li>The behaviour with regard to the RMSVoltageCountersNotReset XML tag is consistent with GBCS 2.0.</li> <li>Where the target SMETS1 ESME does not support setting to a resolution of seconds, the S1SP shall round up to the nearest integer number of minutes.</li> </ol>				

GBCS Commands - Versioning Details		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations,		
Device Type	ESME (Single Phase)	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DEFAULT - No specific XML criteria	N/A	N/A
DUIS 2 or later: XML Criteria - XML data item RMSVoltageCountersNotReset included	Response Code – E060502	ECS29c
DUIS 1 or later: XML Criteria - XML data item RMSVoltageCountersNotReset not included	ECS29a	ECS29a
Device Type	ESME (Poly Phase)	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DEFAULT - No specific XML criteria	N/A	N/A
DUIS 2 or later: XML Criteria - XML data item RMSVoltageCountersNotReset included	Response Code – E060502	ECS29d
DUIS 1 or later: XML Criteria - XML data item RMSVoltageCountersNotReset not included	ECS29b	ECS29b

**Table 51 Update Device Configuration (Voltage) 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).

## 6.5.1 Service Request

### 6.5.1.1 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 UpdateDeviceConfigurationVoltage XML element defines this Service Request and contains the Voltage settings to be configured on the Device and, for Future Dated Requests, the Execution Date and Time.

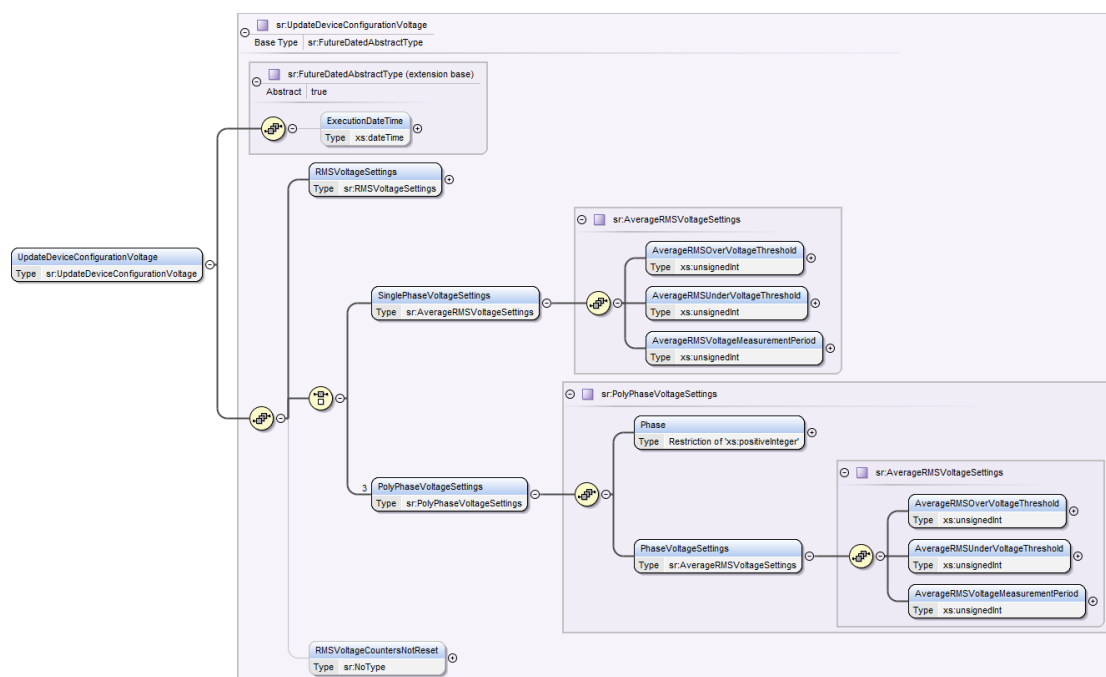


Figure 50 Update Device Configuration (Voltage) Service Request Structure

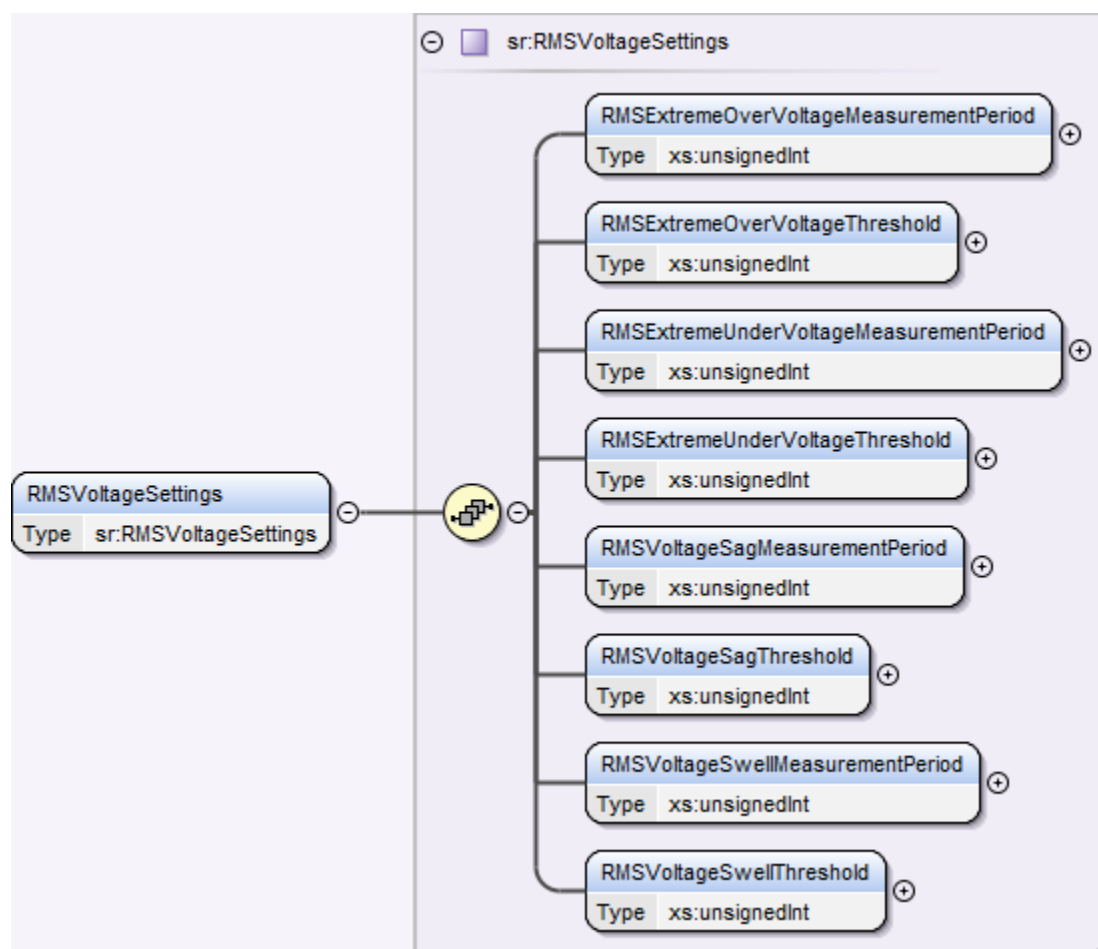


Figure 51 Update Device Configuration (Voltage) Service Request – RMS Voltage Settings Structure

### 6.5.1.2 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
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
RMSVoltageSettings	The non-average RMS Voltage settings applicable to a Single Phase (Single or Twin Element) Electricity Smart Meter or to a Polyphase Electricity Smart Meter phase.	sr:RMSVoltageSettings (see section 6.5.1.5)	Yes	None	N/A	Non-Sensitive
SinglePhaseVoltageSettings	The Average Voltage settings applicable to a Single Phase (Single or Twin Element) Electricity Smart Meter.	sr:AverageRMSVoltageSettings (see section 6.5.1.4)	Single / Twin Element Electricity Smart Meter: Yes Polyphase Electricity Smart Meter: N/A	None	N/A	Non-Sensitive
PolyPhaseVoltageSettings	The Average Voltage settings applicable to a PolyPhase Electricity Smart Meter.	sr:PolyPhaseVoltageSettings (see section 6.5.1.3)	Single / Twin Element Electricity Smart Meter: N/A Polyphase Electricity Smart Meter: Yes	None	N/A	Non-Sensitive
RMSVoltageCountersNotReset	Flag to indicate that the RMS Voltage Counters are not to be reset SMETS2 or later: RMSVoltageCountersNotReset is only supported in DUIS 2 or later on Devices with a Firmware version certified to GBCS v2.0 or later. Its inclusion is used by the DCC Data Systems to map the Service Request to GBCS Use Cases ECS29c (single phase) / ECS29d (poly phase) and its absence to ECS29a (single phase) / ECS29b (poly phase) SMETS1: RMSVoltageCountersNotReset is also supported on SMETS1 Devices (for single phase Meters).	sr:NoType	No	None	N/A	Non-Sensitive

Table 52 Update Device Configuration (Voltage) Service Request Data Items

The Request must contain one of SinglePhaseVoltageSettings or PolyPhaseVoltageSettings.

### 6.5.1.3 PolyPhaseVoltageSettings Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
Phase	The number (n: 1, 2, 3) of the phase to which the Phase Voltage Settings apply	Restriction of xs:positiveInteger (minInclusive = 1, maxInclusive = 3)	Yes	None	N/A	Non-Sensitive
PhaseVoltageSettings	The Average Voltage Settings applicable to each of the phases. See section 6.5.1.4	sr:AverageRMSVoltageSettings (see section 6.5.1.4)	Yes	None	N/A	Non-Sensitive

Table 53 Update Device Configuration (Voltage) Service Request – Poly Phase Voltage Settings Data Items

### 6.5.1.4 AverageRMSVoltageSettings Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
AverageRMSOverVoltageThreshold	The average RMS voltage above which an over voltage condition is reported	xs:unsignedInt	Yes	None	10 <sup>th</sup> Volt	Non-Sensitive
AverageRMSUnderVoltageThreshold	The average RMS voltage below which an over voltage condition is reported	xs:unsignedInt	Yes	None	10 <sup>th</sup> Volt	Non-Sensitive
AverageRMSVoltageMeasurementPeriod	The length of time in seconds over which the RMS voltage is averaged	xs:unsignedInt	Yes	None	Seconds	Non-Sensitive

Table 54 Update Device Configuration (Voltage) Service Request – Average RMS Voltage Settings Data Items

### 6.5.1.5 RMSVoltageSettings Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
RMSExtremeOverVoltageMeasurementPeriod	The duration in seconds used to measure an extreme over voltage condition	xs:unsignedInt	Yes	None	Seconds	Non-Sensitive
RMSExtremeOverVoltageThreshold	The RMS voltage above which an extreme over voltage condition is reported. The threshold shall be configurable within the specified operating range of Electricity Smart Meter	xs:unsignedInt	Yes	None	10 <sup>th</sup> Volt	Non-Sensitive
RMSExtremeUnderVoltageMeasurementPeriod	The duration in seconds used to measure an extreme under voltage condition	xs:unsignedInt	Yes	None	Seconds	Non-Sensitive
RMSExtremeUnderVoltageThreshold	The RMS voltage below which an extreme over voltage condition is reported. The threshold shall be configurable within the specified operating range of Electricity Smart Meter	xs:unsignedInt	Yes	None	10 <sup>th</sup> Volt	Non-Sensitive
RMSVoltageSagMeasurementPeriod	The duration in seconds used to measure a voltage sag condition	xs:unsignedInt	Yes	None	Seconds	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
RMSVoltageSagThreshold	The RMS voltage below which a sag condition is reported. The threshold shall be configurable within the specified operating range of Electricity Smart Meter	xs:unsignedInt	Yes	None	10 <sup>th</sup> Volt	Non-Sensitive
RMSVoltageSwellMeasurementPeriod	The duration in seconds used to measure a voltage swell condition	xs:unsignedInt	Yes	None	Seconds	Non-Sensitive
RMSVoltageSwellThreshold	The RMS voltage above which a swell condition is reported. The threshold shall be configurable within the specified operating range of Electricity Smart Meter	xs:unsignedInt	Yes	None	10 <sup>th</sup> Volt	Non-Sensitive

**Table 55 Update Device Configuration (Voltage) Service Request – RMS Voltage Settings Data Items**

#### 6.5.1.6 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	DSP	No
SMETS1	No	Yes	No	DSP	No

**Table 56 Update Device Configuration (Voltage) Modes of Operation**

#### 6.5.1.7 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 57 Update Device Configuration (Voltage) Command Variant Values**

#### 6.5.1.8 Validation

This Service Request specific validation is as follows (see Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Execution Date Time validation):

Validation Check	Process	Response Code
Are the Voltage Settings valid?	Check that the Voltage Settings are applicable to the Electricity Smart Meter variant by checking ESME Variant value in the Smart Metering Inventory for the specified Device ID	E060501

Validation Check	Process	Response Code
Does the GBCS/SMETS version for the Firmware on the Device support the features chosen in the Service Request?	Check that:  If the Service Request includes the XML tag RMSVoltageCountersNotReset, the Device Firmware version is certified to GBCS v2.0 or later or the Device is a SMETS1 Device according to the Smart Metering Inventory records	E060502

Table 58 Update Device Configuration (Voltage) Service Request Validation

### 6.5.1.9 Sample Request

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

```
<UpdateDeviceConfigurationVoltage>
  <RMSVoltageSettings>
    <RMSExtremeOverVoltageMeasurementPeriod>120</RMSExtremeOverVoltageMeasurementPeriod>
    <RMSExtremeOverVoltageThreshold>100</RMSExtremeOverVoltageThreshold>
    <RMSExtremeUnderVoltageMeasurementPeriod>120</RMSExtremeUnderVoltageMeasurementPeriod>
    <RMSExtremeUnderVoltageThreshold>5</RMSExtremeUnderVoltageThreshold>
    <RMSVoltageSagMeasurementPeriod>120</RMSVoltageSagMeasurementPeriod>
    <RMSVoltageSagThreshold>5</RMSVoltageSagThreshold>
    <RMSVoltageSwellMeasurementPeriod>120</RMSVoltageSwellMeasurementPeriod>
    <RMSVoltageSwellThreshold>50</RMSVoltageSwellThreshold>
  </RMSVoltageSettings>
  <SinglePhaseVoltageSettings>
    <AverageRMSOverVoltageThreshold>0</AverageRMSOverVoltageThreshold>
    <AverageRMSUnderVoltageThreshold>0</AverageRMSUnderVoltageThreshold>
    <AverageRMSVoltageMeasurementPeriod>120</AverageRMSVoltageMeasurementPeriod>
  </SinglePhaseVoltageSettings>
</UpdateDeviceConfigurationVoltage>
```

Figure 52 Update Device Configuration (Voltage) Service Request (Body) Format – RMS Voltage Counters automatically Reset

```
<UpdateDeviceConfigurationVoltage>
  <RMSVoltageSettings>
    <RMSExtremeOverVoltageMeasurementPeriod>120</RMSExtremeOverVoltageMeasurementPeriod>
    <RMSExtremeOverVoltageThreshold>100</RMSExtremeOverVoltageThreshold>
    <RMSExtremeUnderVoltageMeasurementPeriod>120</RMSExtremeUnderVoltageMeasurementPeriod>
    <RMSExtremeUnderVoltageThreshold>5</RMSExtremeUnderVoltageThreshold>
    <RMSVoltageSagMeasurementPeriod>120</RMSVoltageSagMeasurementPeriod>
    <RMSVoltageSagThreshold>5</RMSVoltageSagThreshold>
    <RMSVoltageSwellMeasurementPeriod>120</RMSVoltageSwellMeasurementPeriod>
    <RMSVoltageSwellThreshold>50</RMSVoltageSwellThreshold>
  </RMSVoltageSettings>
  <SinglePhaseVoltageSettings>
    <AverageRMSOverVoltageThreshold>0</AverageRMSOverVoltageThreshold>
    <AverageRMSUnderVoltageThreshold>0</AverageRMSUnderVoltageThreshold>
    <AverageRMSVoltageMeasurementPeriod>120</AverageRMSVoltageMeasurementPeriod>
  </SinglePhaseVoltageSettings>
  <RMSVoltageCountersNotReset/>
</UpdateDeviceConfigurationVoltage>
```

Figure 53 Update Device Configuration (Voltage) Service Request (Body) Format – RMS Voltage Counters Not Reset

### 6.5.2 Responses

The response messages for an “Update Device Configuration (Voltage)” request follow the generic format for all “Device” response messages, the generic responses applicable to this request are;

- 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.

### 6.5.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E060501	Failed Validation – Invalid Voltage Settings	Error	The Voltage Settings aren't applicable to the Electricity Smart Meter variant as defined in the Smart Metering Inventory
E060502	Failed Validation – Features not supported by GBCS/SMETS version	Error	The SMI GBCS/SMETS version of the Firmware running on the Device does not support the chosen features of this Service Request

**Table 59 Failed Update Device Configuration (Voltage) Service Request Response Codes**

### 6.5.2.2 Parse Output / SMETS1 Response Format

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

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.

#### 6.5.2.2.1.1 Specific Header Data Items

GBCS v1.0:

Data Item	Electricity Response (Single Phase)	Electricity Response (Poly Phase)
GBCSHexadecimalMessageCode	0045	00AE
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS29a</i>	<i>ECS29b</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Voltage Configurations on ESME</i>	<i>Set Voltage Configurations on ESME - 3ph</i>
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 60 – Update Device Configuration (Voltage) Parse Response Header Data Items – GBCS v1.0**

GBCS v2.0 & SMETS1:

Data Item	Electricity Response (Single Phase)		Electricity Response (Poly Phase)  (N/A to SMETS1)	
GBCSHexadecimalMessageCode	0045	00D1	00AE	00D2
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS29a</i>	<i>ECS29c</i>	<i>ECS29b</i>	<i>ECS29d</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Voltage Configurations on ESME with counter resets</i>	<i>Set Voltage Configurations on ESME without counter reset</i>	<i>Set Voltage Configurations on ESME - 3ph with counter resets</i>	<i>Set Voltage Configurations on polyphase ESME without counter reset</i>
SupplementaryRemotePartyID	Not Present	Not Present	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present	Not Present	Not Present
Timestamp	Not Present	Not Present	Not Present	Not Present

Table 61 – Update Device Configuration (Voltage) Parse Response Header Data Items – GBCS v2.0 & SMETS1

## 6.6 Update Device Configuration (Gas Conversion) (6.6)

Service Request Name	UpdateDeviceConfiguration(GasConversion)
Service Reference	6.6
Service Request Variant Name	UpdateDeviceConfiguration(GasConversion)
Service Reference Variant	6.6
Service Request Objective	To enable an authorised DCC Service User to update the gas conversion values on a specified GSME.
Business Context Statement	The DCC Service User requires that an update is made to the current gas conversion configuration parameters stored within a specified Device, e.g. the Calorific Value and Conversion Factor as defined in SMETS used to convert gas metered volume into kWh energy usage.
User Role Access	<ul style="list-style-type: none"> <li>Gas Import Supplier (GIS)</li> </ul>

Security Classification	Critical and non-sensitive SMETS2 or later: <i>GBCS XREF: SME.C.C</i>	
Service Request Narrative (SMETS2 or later)	1. The Device Configuration (GasConversion) values can be read by a DCC Service User using Service Request 6.2.8 – Read Device Configuration (Gas). See section 6.2.8.	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	N/A	0x007C
GBCS Use Case	N/A	GCS23
GBCS Use Case Name	N/A	Set CV and Conversion Factor Value(s) on the GSME
SMETS1 Applicability	N/A	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.	

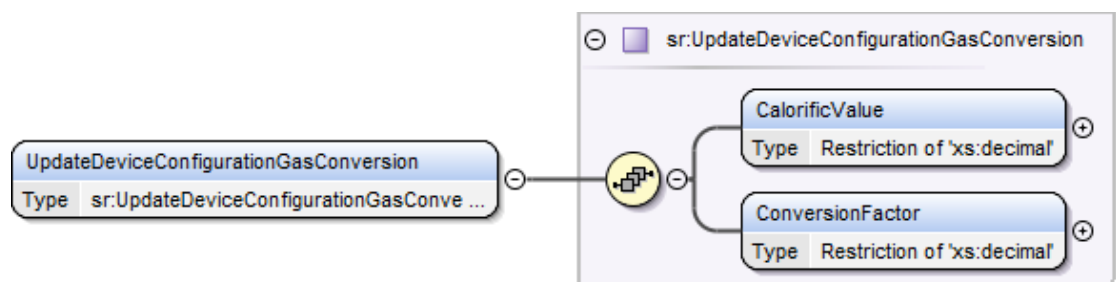
**Table 62 Update Device Configuration (Gas Conversion) Service Request**

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).

## 6.6.1 Service Request

### 6.6.1.1 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 UpdateDeviceConfigurationGasConversion XML element defines this Service Request and contains the Calorific Value and the Conversion Factor.



**Figure 54 Update Device Configuration (Gas Conversion) Service Request Structure**

### 6.6.1.2 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
CalorificValue	The value used in the conversion of gas volume to kWh usage, based on the energy stored in one cubic metre of gas released when burnt at a standard temperature and pressure.  The value can have a maximum of 1 digit to the right of the decimal, e.g. 12.3	xs:decimal (fractionDigits = 1, minInclusive = 0, maxInclusive = 429496729.5)	Yes	None	MJ/m <sup>3</sup>	Non-Sensitive
ConversionFactor	The value used in the conversion of gas volume to kWh usage, based on the pressure, temperature and compressibility of the gas.  The value can have a maximum of 5 digits to the right of the decimal, e.g. 1.23456	xs:decimal (fractionDigits = 5, minInclusive = 0, maxInclusive = 42949.67295)	Yes	None	N/A	Non-Sensitive

Table 63 Update Device Configuration (Gas Conversion) Service Request Data Items

### 6.6.1.3 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):

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 64 Update Device Configuration (Gas Conversion) Modes of Operation

### 6.6.1.4 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):

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 65 Update Device Configuration (Gas Conversion) Command Variant Values

### 6.6.1.5 Validation

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

### 6.6.1.6 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:

```
<UpdateDeviceConfigurationGasConversion>  
<CalorificValue>40.1</CalorificValue>  
<ConversionFactor>1.23456</ConversionFactor>  
</UpdateDeviceConfigurationGasConversion>
```

**Figure 55 Update Device Configuration (Gas Conversion) Transform Service Request (Body) Format**

## 6.6.2 Responses

The response messages for an "Update Device Configuration (Gas Conversion)" request follow the generic format for all "Device" response messages. The generic responses applicable to this 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.

### 6.6.2.1 Parse Output / SMETS1 Response Format

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

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.

#### 6.6.2.1.1 Specific Header Data Items

Data Item	Gas Response
GBCSHexadecimalMessageCode	007C
<i>GBCS Use Case Number (for information only - not in header)</i>	GCS23
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set CV and Conversion Factor Value(s) on the GSME</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 66 - Update Device Configuration (Gas Conversion) Parse/SMETS1 Response Header Data Items

## 6.7 Update Device Configuration (Gas Flow) (6.7)

Service Request Name	UpdateDeviceConfiguration(GasFlow)
Service Reference	6.7
Service Request Variant Name	UpdateDeviceConfiguration(GasFlow)
Service Reference Variant	6.7
Service Request Objective	To enable an authorised DCC Service User to configure the behaviour of the flow of gas through a specified GSME in various scenarios.
Business Context Statement	<p>The DCC Service User requires an update to be made to the current gas flow configuration parameters stored within a specified GSME for the following scenarios;</p> <ul style="list-style-type: none"> <li>- to control the detection of uncontrolled flow of gas on Enablement of Supply</li> <li>- to control the state of the Supply in the case of loss of power to the Gas Smart Meter</li> <li>- to control the state of the Supply in the case of a Tamper Event being detected</li> </ul>
User Role Access	<ul style="list-style-type: none"> <li>• Gas Import Supplier (GIS)</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)	<ol style="list-style-type: none"> <li>1. The Device Configuration (GasFlow) values for <i>UncontrolledGasFlowRate</i> can be read by a DCC Service User using Service Request – 6.2.8 – Read Device Configuration (Gas). See section 6.2.8</li> <li>2. The Device Configuration (GasFlow) values for <i>SupplyDepletionState</i> and <i>SupplyTamperState</i> can be read by a DCC Service User using Service Request – 6.2.4 Read Device Configuration (Identity Exc MPxN). See section 6.2.4</li> <li>3. This Service Request is only applicable to Gas Smart Meters that include a valve</li> <li>4. For Devices with firmware certified to GBCS v3.2 or later, GBCS Use Case GCS24a enables specification of the uncontrolled gas flow rate with decimal places, which provides greater granularity of control than the original integer-based GCS24. Where this Service Request is targeted at a Device that supports decimal granularity, validation in DCC Data Systems ensures that the decimal parameter is used, or a response code will be returned.</li> </ol>

	The original integer parameter will continue to be available for use with Devices with firmware prior to GBCS v3.2.	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code prior to GBCS v3.2	N/A	0x007D
GBCS Use Case prior to GBCS v3.2	N/A	GCS24
GBCS Message Code v3.2 or later	N/A	0x00FC
GBCS Use Case v3.2 or later	N/A	GCS24a
GBCS Use Case Name	N/A	Set Uncontrolled Gas Flow Rate and Supply Tamper State on the GSME
SMETS1 Applicability	N/A	Yes
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>Where a SMETS1 GSME supports the setting of values equivalent to the StabilisationPeriod or MeasurementPeriod values, the S1SP shall instruct the Device to set such values. Where the Device does not support setting of such values, the S1SP cannot send such instructions to the Device and therefore shall not do so.</li><li>The decimal parameter UncontrolledGasFlowRateDecimal does not apply to SMETS1 Devices. Use of this parameter when targeted at a SMETS1 Device would be rejected with Response Code E060701</li></ol>	
GBCS Commands - Versioning Details		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations,		
Device Type	GSME	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS prior to v3.2	GBCS v3.2 or later
DUIS 1.0: XML Criteria - UncontrolledGasFlowRate (this is the only option supported in this DUIS version)	GCS24	Response Code - E11
DUIS 2.0 to 3.0: XML Criteria - UncontrolledGasFlowRate (this is the only option supported in these DUIS versions)	GCS24	Response Code - E57

DUIS 3.1: XML Criteria – UncontrolledGasFlowRate	GCS24	Response Code - E060701
DUIS 3.1: XML Criteria - UncontrolledGasFlowRateDecimal	Response Code - E060701	GCS24a

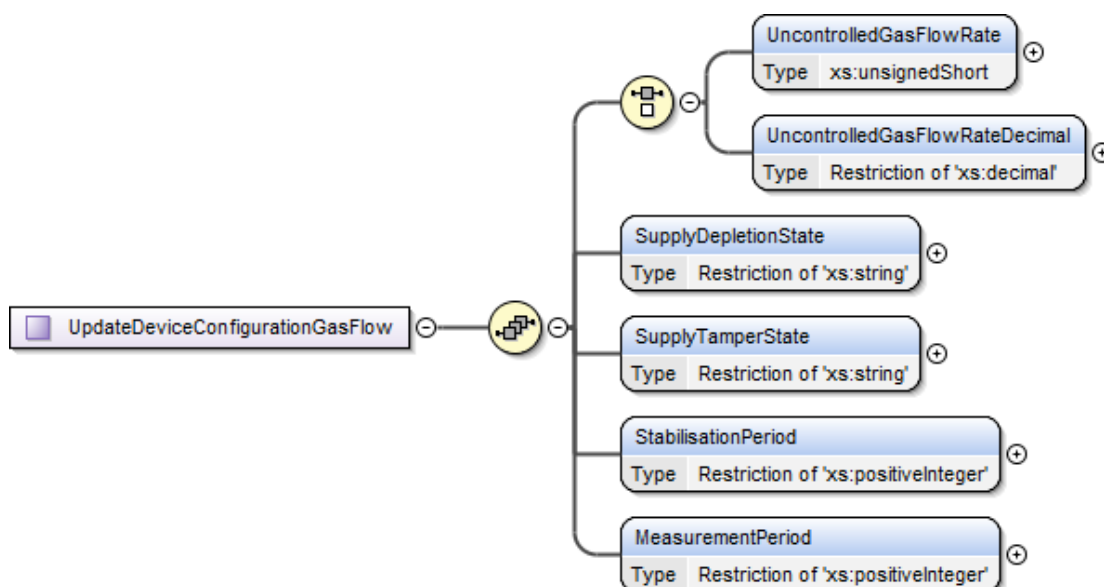
**Table 67 Update Device Configuration (Gas Flow) Service Request**

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).

## 6.7.1 Service Request

### 6.7.1.1 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 UpdateDeviceConfigurationGasFlow XML element defines this Service Request and contains the Uncontrolled Gas Flow Rate, the Supply Depletion State, the Supply Tamper State, the Stabilisation Period and the Measurement Period.



**Figure 56 Update Device Configuration (Gas Flow) Service Request Structure**

### 6.7.1.2 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
UncontrolledGasFlowRate	The flow rate in units of volume per unit time used in the detection of uncontrolled flow of gas on Enablement of Supply  This parameter is only supported on Devices with Firmware versions prior to GBCS v3.2 and on SMETS1 Devices	xs:unsignedShort	GBCS Version prior to v3.2 or SMETS1: Yes Otherwise: N/A	None	m <sup>3</sup> / hour	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
UncontrolledGasFlowRateDecimal	The flow rate in units of volume per unit time used in the detection of uncontrolled flow of gas on Enablement of Supply. Accepts decimal places.  This parameter is only supported on Devices with a Firmware version certified to GBCS v3.2 or later SMETS1: This parameter is not applicable to SMETS1 Devices	Restriction of xs:decimal (minInclusive = 0, maxInclusive = 6.5535, fractionDigits=4)	GBCS Version v3.2 or later: Yes Otherwise: N/A	None	m <sup>3</sup> / hour	Non-Sensitive
SupplyDepletionState	A setting to control the state of the Supply in the case of loss of power to the Gas Smart Meter Valid set: <ul style="list-style-type: none"> <li>Unchanged</li> <li>Locked</li> </ul>	Restriction of xs:string (Enumeration)	Yes	None	N/A	Non-Sensitive
SupplyTamperState	A setting to control the state of the Supply in the case of a Tamper Event being detected Valid set: <ul style="list-style-type: none"> <li>Unchanged</li> <li>Locked</li> </ul>	Restriction of xs:string (Enumeration)	Yes	None	N/A	Non-Sensitive
StabilisationPeriod	Value indicating the time given to allow the flow to stabilize. It is defined in units of tenths of a second SMETS1: the DCC shall not send this value to SMETS1 Devices which do not support it; however since the parameter is mandatory a value must be supplied.	Restriction of xs:positiveInteger (minInclusive = 1, maxInclusive = 255)	Yes	None	10 <sup>th</sup> second	Non-Sensitive
MeasurementPeriod	Value indicating the period over which the flow is measured and compared against the Uncontrolled Flow Threshold value. It is defined in units of 1 second SMETS1: the DCC shall not send this value to SMETS1 Devices which do not support it; however since the parameter is mandatory a value must be supplied.	Restriction of xs:positiveInteger (minInclusive = 1, maxInclusive = 65535)	Yes	None	Seconds	Non-Sensitive

Table 68 Update Device Configuration (Gas Flow) Service Request Data Items

#### 6.7.1.3 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):

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 69 Update Device Configuration (Gas Flow) Modes of Operation

#### 6.7.1.4 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):

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 70 Update Device Configuration (Gas Flow) Command Variant Values

#### 6.7.1.5 Validation

This Service Request specific validation is as follows (see Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Execution Date Time validation):

Validation Check	Process	Response Code
Is the uncontrolled gas flow rate parameter compatible with the GBCS version of the Device? This validation check is introduced in DUIS v3.1	Check that if the uncontrolled gas flow rate parameter is: <ul style="list-style-type: none"> <li>decimal then the target Device's GBCS version is v3.2 or later</li> <li>integer then the SRV is targeted at a device with GBCS version prior to v3.2 or is SMETS1</li> </ul>	E060701

Table 70.1 Update Device Configuration (Gas Flow) Service Request Validation

#### 6.7.1.6 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:

```
<UpdateDeviceConfigurationGasFlow>
<UncontrolledGasFlowRate>3</UncontrolledGasFlowRate>
<SupplyDepletionState>Unchanged</SupplyDepletionState>
<SupplyTamperState>Locked</SupplyTamperState>
<StabilisationPeriod>60</StabilisationPeriod>
<MeasurementPeriod>300</MeasurementPeriod>
</UpdateDeviceConfigurationGasFlow>
```

Figure 57 Update Device Configuration (Gas Flow) Transform Service Request (Body)  
Format With Integer Parameter

```
<UpdateDeviceConfigurationGasFlow>
<UncontrolledGasFlowRateDecimal>0.1234</UncontrolledGasFlowRateDecimal>
<SupplyDepletionState>Unchanged</SupplyDepletionState>
<SupplyTamperState>Locked</SupplyTamperState>
<StabilisationPeriod>60</StabilisationPeriod>
<MeasurementPeriod>300</MeasurementPeriod>
</UpdateDeviceConfigurationGasFlow>
```

Figure 58 Update Device Configuration (Gas Flow) Transform Service Request (Body)  
Format With Decimal Parameter

## 6.7.2 Responses

The response messages for an "Update Device Configuration (Gas Flow)" request follow the generic format for all "Device" response messages. The generic responses applicable to this 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.

### 6.7.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E060701	Failed Validation – Invalid uncontrolled gas flow parameter	Error	The uncontrolled gas flow parameter selected does not correspond to the GBCS version of the target Device, or was inappropriate for a SMETS1 Device.

**Table 70.2 Failed Update Device Configuration (Gas Flow) Service Request Response Codes**

### 6.7.2.2 Parse Output / SMETS1 Response Format

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

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.

#### 6.7.2.2.1 Specific Header Data Items

GBCS prior to v3.2:

Data Item	Gas Response
GBCSHexadecimalMessageCode	007D
<i>GBCS Use Case Number (for information only - not in header)</i>	GCS24
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Uncontrolled Gas Flow Rate and Supply Tamper State on the GSME</i>

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

**Table 71 - Update Device Configuration (Gas Flow) Parse/SMETS1 Response Header Data Items - GBCS prior to v3.2**

GBCS v3.2 or later:

Data Item	Gas Response
GBCSHexadecimalMessageCode	00FC
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>GCS24a</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Uncontrolled Gas Flow Rate and Supply Tamper State on the GSME</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

**Table 71.1 - Update Device Configuration (Gas Flow) Parse Response Header Data Items - GBCS v3.2 or later**

## 6.8 Update Device Configuration (Billing Calendar) (6.8)

Service Request Name	UpdateDeviceConfiguration(BillingCalendar)
Service Reference	6.8
Service Request Variant Name	UpdateDeviceConfiguration(BillingCalendar)
Service Reference Variant	6.8
Service Request Objective	<p>SMETS2 or later: To enable a DCC Service User to configure the billing calendar on a specified ESME or GSME in order that Billing Data Alerts are triggered to be sent by the ESME or GSME at the time specified by the calendar back to the Device's Registered Supplier.</p> <p>SMETS1: To enable a DCC Service User to configure the billing calendar on a specified ESME or GSME for recording of Billing Data. Note that no Billing Data Alerts are sent for SMETS1 Devices.</p>

<b>Business Context Statement</b>	The DCC Service User requires that an update is made to the current configuration parameters stored within a specified device that relate to the Billing Calendar, e.g. following installation and commissioning or a Change of Supplier event.
<b>User Role Access</b>	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> </ul>
<b>Security Classification</b>	<p>Critical and non-sensitive</p> <p>SMETS2 or later:</p> <p>GBCS XREF: SME.C.C</p>
<b>Service Request Narrative (SMETS2 or later)</b>	<ol style="list-style-type: none"> <li>Once the Billing Calendar has been set within the Device by this Service Request, the Meter will initiate the sending of billing data as a specific Billing Data Log Device Alert at the stated date/time as per the Billing Calendar schedule.</li> <li>The Device Configuration (Billing Calendar) values can be read by a DCC Service User using Service Request – 6.2.3 – Read Device Configuration (Billing Calendar). See section 6.2.3.</li> <li>The billing calendars for Electricity and Gas meters each have their own structure, the following explains how the calendar is defined in each case; <ul style="list-style-type: none"> <li>Electricity – The “Billing Time” indicates at what time during the day the billing snapshot is taken. The billing log is captured either daily, weekly (a numbered day of the week), monthly (a numbered day of the month), quarterly (applicable months plus a numbered day of the month), six monthly (applicable months plus a numbered day of the month) or yearly (applicable month plus a numbered day of the month). For example a billing time of 13:00 and: <ul style="list-style-type: none"> <li>a weekly recurrence on day 4, would result in a snapshot taken every Thursday at 13:00.</li> <li>a monthly recurrence on day of the month 5 would result in a snapshot taken on the 5<sup>th</sup> day of each month at 13:00</li> <li>a quarterly recurrence on Jan, Apr, Jul and Oct and day of the month 5 would result in a snapshot taken on the 5<sup>th</sup> day of January, April, July and October at 13:00, etc.</li> </ul> </li> <li>Gas – The “Billing Period Start” indicates the date and time at which the billing snapshot is taken. This can be repeated daily, weekly, monthly, quarterly, six monthly or yearly depending on the periodicity set for the command. For example a Billing Period Start of 26/01/2015 15:00 and a periodicity of monthly would result in a snapshot taken on the 26/01/2015 at 15:00, then again on 26/02/2015 at 15:00, and so on every month.</li> </ul> </li> <li>For note - Potential Interoperability issue - In order for the Gas Billing Calendar functionality to work successfully E2E across the HAN for all billing periods, both the GSME and the GPF devices operating within the HAN MUST be operating in accordance with GBCS v2.0 or later specifications (<i>or later</i> applies to other</li> </ol>

	<p>occurrences below as well). If the GPF is not operating in line with GBCS 2.0 (and operating still to GBCS v1.0 whilst the GSME is operating to GBCS v2.0), then the GPF will not by definition support TOM Commands for Use Case GCS25a correctly and interoperability issues may arise as the Gas meter will support more billing periods than the GPF does and the two devices will not support the same functionality. If a GSME operating to GBCS v2.0 is installed within a HAN then the DCC Service User should ensure that the associated GPF is also operating to GBCS v2.0 to avoid any potential interoperability issues.</p> <p>Note, however, that a GPF operating to GBCS v2.0 is able to support TOM commands for a GSME operating to GBCS v1.0 so there are no interoperability issues with GSME devices operating to GBCS v1.0.</p> <p>5. Quarterly, Six Monthly and Yearly billing periodicities are only supported by Devices with a Firmware version certified to GBCS v2.0 or later.</p>	
GBCS Cross Reference	Electricity	Gas
GBCS v1.0 Message Code	0x0046	0x007E
GBCS v1.0 Use Case	ECS30	GCS25
GBCS v1.0 Use Case Name	Set Billing Calendar on the ESME	Set Billing Calendar on the GSME
GBCS v2.0 Message Code	0x00D7	0x00D8
GBCS v2.0 Use Case	ECS30a	GCS25a
GBCS v2.0 Use Case Name	Set Billing Calendar on the ESME - all periodicities	Set Billing Calendar on the GSME - all periodicities
SMETS1 Applicability	Yes	Yes
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. Billing data is not sent by Device Alert.</li><li>2. Quarterly, Six Monthly and Yearly billing periodicities are supported by SMETS1 Devices, which is aligned to GBCS v2.0 behaviour.</li></ol>	
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 v1.0	GBCS v2.0
DUIS 1 or later: XML Criteria - XML data item Daily, Weekly or Monthly populated (note that these are the only options supported in DUIS 1)	ECS30	ECS30a
DUIS 2 or later: XML Criteria - XML data item Quarterly, SixMonthly or Yearly populated	Response Code – E060803	ECS30a
Device Type	GSME	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DUIS 1 or later: XML Criteria - "Periodicity" data item set to Daily, Weekly or Monthly value (note that these are the only options supported in DUIS 1)	GCS25	GCS25a
DUIS 2 or later: XML Criteria - "Periodicity" data item set to Quarterly, SixMonthly or Yearly value	Response Code – E060803	GCS25a

Table 72 Update Device Configuration (Billing Calendar) 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).

## 6.8.1 Service Request

### 6.8.1.1 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 UpdateDeviceConfigurationBillingCalendar XML element defines this Service Request and contains the Billing Calendar to be configured on the Device.

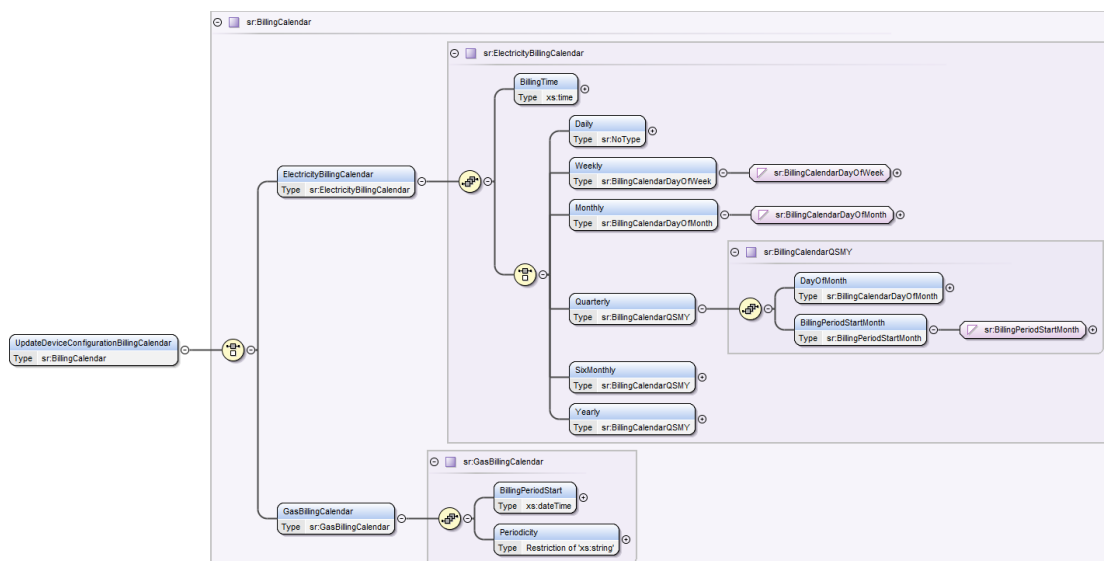


Figure 59 Update Device Configuration (Billing Calendar) Service Request Structure

### 6.8.1.2 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
ElectricityBillingCalendar	Indicates that the Billing Calendar to be configured is that of an ESME	sr:ElectricityBillingCalendar (see section 6.8.1.3)	Target Device Type = ESME: Yes Otherwise: N/A	None	N/A	Non-Sensitive
GasBillingCalendar	Indicates that the Billing Calendar to be configured is that of an GSME	Sr:GasBillingCalendar (see section 6.8.1.4)	Target Device Type = GSME Yes Otherwise: N/A	None	N/A	Non-Sensitive

Table 73 Update Device Configuration (Billing Calendar) Service Request Data Items

Each Request must contain one of either ElectricityBillingCalendar or GasBillingCalendar

### 6.8.1.3 ElectricityBillingCalendar Specific Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
BillingTime	The time from which the billing period starts	xs:time	Yes	None	N/A	Non-Sensitive
Daily	Indicates that the billing data is to be captured on a daily basis and it is a fixed value	sr:NoType (see Annex 17)	Daily: Yes Otherwise: N/A	Daily	N/A	Non-Sensitive
Weekly	Indicates that the billing data is to be captured on a weekly basis, the numeric value defines the day of the week  Valid set: • 1 (Monday) to 7 (Sunday)	sr:BillingCalendarDayOfWeek (xs:positiveInteger (between 1 and 7))	Weekly: Yes Otherwise: N/A	None	N/A	Non-Sensitive
Monthly	Indicates that the billing data is to be captured on a monthly basis, the numeric value defines the day of the month  Valid set: • 1 to 28	sr:BillingCalendarDayOfMonth (xs:positiveInteger (between 1 and 28))	Monthly: Yes Otherwise: N/A	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
Quarterly	<p>Indicates that the billing data is to be captured on a quarterly basis, i.e. every 3 months, and defines the day of the month and the start month of the billing period.</p> <p>Valid set:</p> <ul style="list-style-type: none"> <li>1 (January) to 12 (December). For example, if the start month is 1, the billing calendar schedule will be 01 (January), 4 (April), 7 (July) and 10 (October). If the start month is 7, the billing calendar schedule will be 7 (July), 10 (October), 1 (January) and 4 (April),</li> </ul> <p>Quarterly is only supported in DUIS v2 or later on Devices with a Firmware version certified to GBCS v2.0 or later and on SMETS1 Devices</p>	sr:BillingCalendarQ SMY (see section 6.8.1.5))	Quarterly: Yes Otherwise: N/A	None	N/A	Non-Sensitive
SixMonthly	<p>Indicates that the billing data is to be captured on a six monthly basis and defines the day of the month and the start month of the billing period.</p> <p>Valid set:</p> <ul style="list-style-type: none"> <li>1 (January) to 12 (December). For example, if the start month is 1, the billing calendar schedule will be 1 (January) and 7 (July). If the start month is 7, the billing calendar schedule will be 7 (July) and 1 (January),</li> </ul> <p>SixMonthly is only supported in DUIS v2 or later on Devices with a Firmware version certified to GBCS v2.0 or later and on SMETS1 Devices</p>	sr:BillingCalendarQ SMY (see section 6.8.1.5))	SixMonthly: Yes Otherwise: N/A	None	N/A	Non-Sensitive
Yearly	<p>Indicates that the billing data is to be captured on a yearly basis and defines the day of the month and the start month of the billing period.</p> <p>Valid set:</p> <ul style="list-style-type: none"> <li>1 (January) to 12 (December). For example, if the start month is 7, the billing calendar schedule will be 7 (July) of every year,</li> </ul> <p>Yearly is only supported in DUIS v2 or later on Devices with a Firmware version certified to GBCS v2.0 or later and on SMETS1 Devices</p>	sr:BillingCalendarQ SMY (see section 6.8.1.5))	Yearly: Yes Otherwise: N/A	None	N/A	Non-Sensitive

**Table 74 Update Device Configuration (Billing Calendar) Service Request – ElectricityBillingCalendar Data Items**

#### 6.8.1.4 GasBillingCalendar Specific Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
BillingPeriodStart	The date and time from which the billing period starts Valid set: <ul style="list-style-type: none"> <li>Valid date-time except if day of the month is 29, 30 or 31</li> </ul>	xs:dateTime	Yes	None	UTC Date-Time	Non-Sensitive
Periodicity	Indicates that the billing data is to be captured on a reoccurring basis, from the BillingPeriodStart date time. Valid set: <ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> <li>Quarterly (only supported in DUIS v2 or later on Devices with a Firmware version certified to GBCS v2.0 or later and on SMETS1 Devices)</li> <li>SixMonthly (only supported in DUIS v2 or later on Devices with a Firmware version certified to GBCS v2.0 or later and on SMETS1 Devices)</li> <li>Yearly (only supported in DUIS v2 or later on Devices with a Firmware version certified to GBCS v2.0 or later and on SMETS1 Devices)</li> </ul>	Restriction of xs:string (Enumeration)	Yes	Daily	N/A	Non-Sensitive

Table 75 Update Device Configuration (Billing Calendar) Service Request – GasBillingCalendar Data Items

#### 6.8.1.5 BillingCalendarQSMY Specific Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DayOfMonth	It defines the day of the month Valid set: <ul style="list-style-type: none"> <li>1 to 28</li> </ul>	sr:BillingCalendarDayOfMonth (xs:positiveInteger (between 1 and 28))	Yes	None	N/A	Non-Sensitive
BillingPeriodStartMonth	Indicates that the billing period starting month for billing calendar periodicities of quarterly, six monthly or yearly Valid set: <ul style="list-style-type: none"> <li>1 to 12</li> </ul>	sr:BillingPeriodStartMonth (xs:positiveInteger between 1 and 12)	Yes	None	N/A	Non-Sensitive

Table 76 Update Device Configuration (Billing Calendar) Service Request – Electricity BillingCalendarQSMY Data Items

#### 6.8.1.6 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 77 Update Device Configuration (Billing Calendar) Modes of Operation

#### 6.8.1.7 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 78 Update Device Configuration (Billing Calendar) Command Variant Values

#### 6.8.1.8 Validation

This Service Request specific validation is as follows (see Main Document of this documentation set section 7 for generic access control checks):

Validation Check	Process	Response Code
Is the Service Request valid?	Check that if the Business Target ID Device Type is: <ul style="list-style-type: none"> <li>ESME. The Service Request includes the ElectricityBillingCalendar data item</li> <li>GSME. The Service Request includes the GasBillingCalendar data item</li> </ul>	E060801
Is the Gas Billing Period Start Date valid?	Check that for Gas the Billing Period Start Date day of the month is not 29, 30 or 31	E060802
Does the GBCS / SMETS version for the Firmware on the Device support the features chosen in the Service Request?	Check that if the Service Request includes one of following, the Device Firmware version is certified to GBCS v2.0 or later or to SMETS1 according to the Smart Metering Inventory records: <ul style="list-style-type: none"> <li>For ESME <ul style="list-style-type: none"> <li>XML tag - Quarterly</li> <li>XML tag - SixMonthly</li> <li>XML tag - Yearly</li> </ul> </li> <li>For GSME <ul style="list-style-type: none"> <li>Periodicity value Quarterly</li> <li>Periodicity value SixMonthly</li> <li>Periodicity value Yearly</li> </ul> </li> </ul>	E060803

Table 79 Update Device Configuration (Billing Calendar) Service Request Validation

### 6.8.1.9 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:

```
<UpdateDeviceConfigurationBillingCalendar>
  <ElectricityBillingCalendar>
    <BillingTime>00:05:00.00Z</BillingTime>
    <Daily/>
  </ElectricityBillingCalendar>
</UpdateDeviceConfigurationBillingCalendar>
```

**Figure 60 Update Device Configuration (Billing Calendar) Transform Service Request (Body) Format – Electricity (Daily)**

```
<UpdateDeviceConfigurationBillingCalendar>
  <ElectricityBillingCalendar>
    <BillingTime>00:05:00.00Z</BillingTime>
    <Quarterly>
      <DayOfMonth>3</DayOfMonth>
      <BillingPeriodStartMonth>8</BillingPeriodStartMonth>
    </Quarterly>
  </ElectricityBillingCalendar>
</UpdateDeviceConfigurationBillingCalendar>
```

**Figure 61 Update Device Configuration (Billing Calendar) Transform Service Request (Body) Format – Electricity (Quarterly)**

```
<UpdateDeviceConfigurationBillingCalendar>
  <GasBillingCalendar>
    <BillingPeriodStart>2015-01-01T00:05:00.00Z</BillingPeriodStart>
    <Periodicity>Daily</Periodicity>
  </GasBillingCalendar>
</UpdateDeviceConfigurationBillingCalendar>
```

**Figure 62 Update Device Configuration (Billing Calendar) Transform Service Request (Body) Format - Gas (Daily)**

```
<UpdateDeviceConfigurationBillingCalendar>
  <GasBillingCalendar>
    <BillingPeriodStart>2017-01-01T00:05:00.00Z</BillingPeriodStart>
    <Periodicity>Quarterly</Periodicity>
  </GasBillingCalendar>
</UpdateDeviceConfigurationBillingCalendar>
```

**Figure 63 Update Device Configuration (Billing Calendar) Transform Service Request (Body) Format – Gas (Quarterly)**

### 6.8.2 Responses

The response messages for an “Update Device Configuration (Billing Calendar)” request follow the generic format for all “Device” response messages, the generic responses applicable to this 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.

### 6.8.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E060801	Failed Validation – Invalid Service Request for Device Type	Error	The Service Request is not valid for the Device Type where the Billing Calendar is to be configured
E060802	Failed Validation – Invalid Billing Period Start Date	Error	The Service Request Gas Billing Period Start Date day of the month is 29, 30 or 31
E060803	Failed Validation – Features not supported by GBCS / SMETS version	Error	The SMI GBCS / SMETS version of the Firmware running on the Device doesn't support the requested Billing Calendar periodicity

**Table 80 Failed Update Device Configuration (Billing Calendar) Service Request Response Codes**

### 6.8.2.2 Parse Output / SMETS1 Response Format

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

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.

#### 6.8.2.2.1 Specific Header Data Items

GBCS v1.0:

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	0046	007E
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS30</i>	<i>GCS25</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Billing Calendar on the ESME</i>	<i>Set Billing Calendar on the GSME</i>
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 81 – Update Device Configuration (Billing Calendar) Parse Response Header  
Data Items- GBCS v1.0**

GBCS v2.0/SMETS1:

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	00D7	00D8
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS30a</i>	<i>GCS25a</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Billing Calendar on the ESME- all periodicities</i>	<i>Set Billing Calendar on the GSME- all periodicities</i>
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 82 – Update Device Configuration (Billing Calendar) Parse Response Header  
Data Items – GBCS v2.0 & SMETS1**

## 6.9 Section 6.9

This section has been intentionally left blank as there is no Service Reference 6.9.

## 6.10 Section 6.10

This section has been intentionally left blank as there is no Service Reference 6.10.

## 6.11 Synchronise Clock (6.11)

Service Request Name	SynchroniseClock
Service Reference	6.11
Service Request Variant Name	SynchroniseClock
Service Reference Variant	6.11
Service Request Objective	To allow a DCC Service User to request synchronisation of a device's clock to the trusted DCC time source.
Business Context Statement	The Supplier is required to maintain time on devices within a tolerance of UTC and so from time to time may wish to synchronise clocks on devices to discharge this obligation.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> </ul>

	<ul style="list-style-type: none"> <li>Gas Import Supplier (GIS)</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)	<ol style="list-style-type: none"> <li>This Service Request includes the Supplier's current date-time and a tolerance in seconds. The setting of these data items has to take into account: <ol style="list-style-type: none"> <li>The fact that, because it is Critical, this Service Request requires the Service User to sign the Pre-command</li> <li>The Target Response Time for the Service Request</li> <li>For GSME, the fact that the Gas Smart Meter is 'Sleepy', i.e. its HAN radio will not be active most of the time and therefore the tolerance provided by the Supplier needs to reflect the extended latency. Note – this could be up to 1,799 seconds before the next wake up.</li> </ol> </li> <li>When the Device receives the Command, it will attempt to get the current date-time from the Communications Hub (DCC trusted time source for the HAN, which in turn is set from the CSP network time). If this date-time is within tolerance of the Supplier's date-time, the Device aligns itself to the Communication Hub's clock and treats its date-time as reliable. Otherwise the Device treats its date-time as unreliable. See GBCS documentation for details.</li> <li>If the Command is executed on the Device, the response includes the Device's date-time and its status. See GBCS documentation for details.</li> <li>For Gas a Command response indicates successful execution of the Command.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x0062	0x007F
GBCS Use Case	ECS70	GCS28
GBCS Use Case Name	Set Clock on ESME	Set Clock on GSME
SMETS1 Applicability	Yes	Yes
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>References to GBCS shall not apply. The SMETS1 Supporting Requirements Document provides alternative definitions for SMETS1 Devices.</li> </ol>	

Table 83 Synchronise Clock 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).

## 6.11.1 Service Request

### 6.11.1.1 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 SynchroniseClock XML element defines this Service Request and it contains the Supplier Current Date Time and the Tolerance Period.

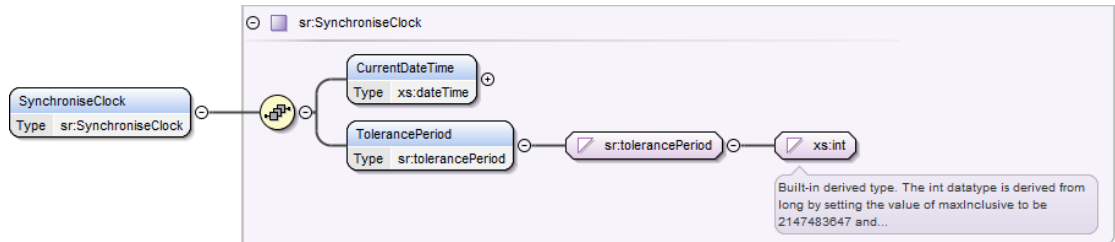


Figure 64 Synchronise Clock Service Request Structure

### 6.11.1.2 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
CurrentDateTime	The Supplier's current date-time, that define the "validity interval start" Valid set: • Valid date-time	xs:dateTime	Yes	None	UTC Date-Time	Non-Sensitive
TolerancePeriod	The maximum number of seconds that, added to the CurrentDateTime, define the "validity interval end" Valid set: • $\geq 0$ and $\leq 86400$ (Note that for the GSME this may need to be at least 1800)	sr:tolerancePeriod (Restriction of xs:int minInclusive = 0, maxInclusive = 86400)	Yes	None	Seconds	Non-Sensitive

Table 84 Synchronise Clock Service Request Data Items

### 6.11.1.3 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):

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 85 Synchronise Clock Modes of Operation

#### 6.11.1.4 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):

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 86 Synchronise Clock Command Variant Values

#### 6.11.1.5 Validation

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

#### 6.11.1.6 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:

```
<SynchroniseClock>  
<CurrentDateTime>2014-06-03T07:09:12.00Z</CurrentDateTime>  
<TolerancePeriod>50</TolerancePeriod>  
</SynchroniseClock>
```

Figure 65 Synchronise Clock Transform Service Request (Body) Format

### 6.11.2 Responses

The response messages for a "Synchronise Clock" request follow the generic format for all "Device" response messages. The generic responses applicable to this request are;

- Pre-command
- 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.

#### 6.11.2.1 Parse Output / SMETS1 Response Format

##### 6.11.2.1.1 Format - SynchroniseClockRsp

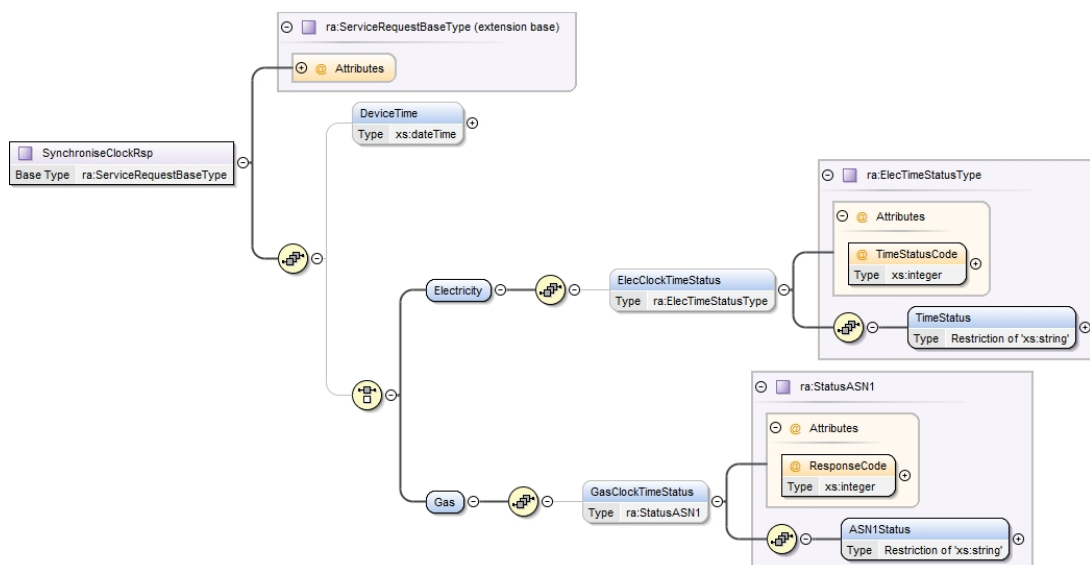


Figure 66 - Synchronise Clock Parse Response / SMETS1 Response Structure

#### 6.11.2.1.2 Specific Header Data Items

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	0062	007F
GBCS Use Case Number (for information only - not in header)	ECS70	GCS28
GBCS Use Case Name (for information only - not in header)	Set Clock on ESME	Set Clock on GSME
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

Table 87 – Synchronise Clock Parse/SMETS1 Response Header Data Items

#### 6.11.2.1.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
DeviceTime	The resulting time on the metering device.	xs:dateTime	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
ElecClockTimeStatus	The resulting time status, one of: <ul style="list-style-type: none"> <li>"reliable" (TimeStatusCode 0)</li> <li>"invalid" (TimeStatusCode 1)</li> <li>"unreliable" (TimeStatusCode 2)</li> </ul>	ra:TimeStatusType, which wraps an xs:string (maxLength = 8) with TimeStatusCode as an attribute	None	N/A	Non-Sensitive
GasClockTimeStatus	The resulting time status, one of: <ul style="list-style-type: none"> <li>"reliable" (ASN1Status0)</li> <li>"invalid" (ASN1Status1)</li> <li>"unreliable" (ASN1Status2)</li> </ul> (Please see ASN1 Response Code definitions in Annex section 18.6.4.1)	ra:StatusASN1	None	N/A	Non-Sensitive

#### 6.11.2.1.4 Sample Response

```
<ra:SynchroniseClockRsp MessageSuccess="true">
  <ra:DeviceTime>2006-05-04T18:13:51.00</ra:DeviceTime>
  <ra:Electricity>
    <ra:ElecClockTimeStatus TimeStatusCode = "0">
      <ra:TimeStatus>reliable</ra:TimeStatus>
    </ra:ElecClockTimeStatus>
  </ra:Electricity>
</ra:SynchroniseClockRsp>
```

Figure 67 - Synchronise Clock Parse Response Example

## 6.12 Update Device Configuration (Instantaneous Power Threshold) (6.12)

Service Request Name	UpdateDeviceConfiguration(InstantaneousPowerThreshold)
Service Reference	6.12
Service Request Variant Name	UpdateDeviceConfiguration(InstantaneousPowerThreshold)
Service Reference Variant	6.12
Service Request Objective	To allow a DCC Service User to configure InstantaneousPowerThreshold values on an ESME.
Business Context Statement	On installation the power thresholds may be default values that are not appropriate for every consumer. The customer may subsequently request that the Supplier reset the values to be more meaningful to their domestic energy consumption or the Supplier may wish to change them independently over time.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> </ul>

Security Classification	Non-critical and non-sensitive SMETS2 or later: GBCS XREF: SME.C.NC	
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>These settings determine the ambient signals (green/amber/red) or other indicators present on the IHD as consumer energy usage changes throughout the day.</li> <li>The Device Configuration (Instantaneous Power Threshold) values can be read by a DCC Service User using Service Request – 6.2.5 – Read Device Configuration (Instantaneous Power Threshold). See section 6.2.5.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x0047	N/A
GBCS Use Case	ECS34	N/A
GBCS Use Case Name	Set Instantaneous Power Threshold Configuration	N/A
SMETS1 Applicability	Yes	N/A
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 88 Update Device Configuration (Instantaneous Power Threshold) 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).

## 6.12.1 Service Request

### 6.12.1.1 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 UpdateDeviceConfigurationInstantaneousPowerThreshold XML element defines this Service Request and contains the Power Thresholds to be configured on the Device and, for Future Dated Requests, the Execution Date and Time.

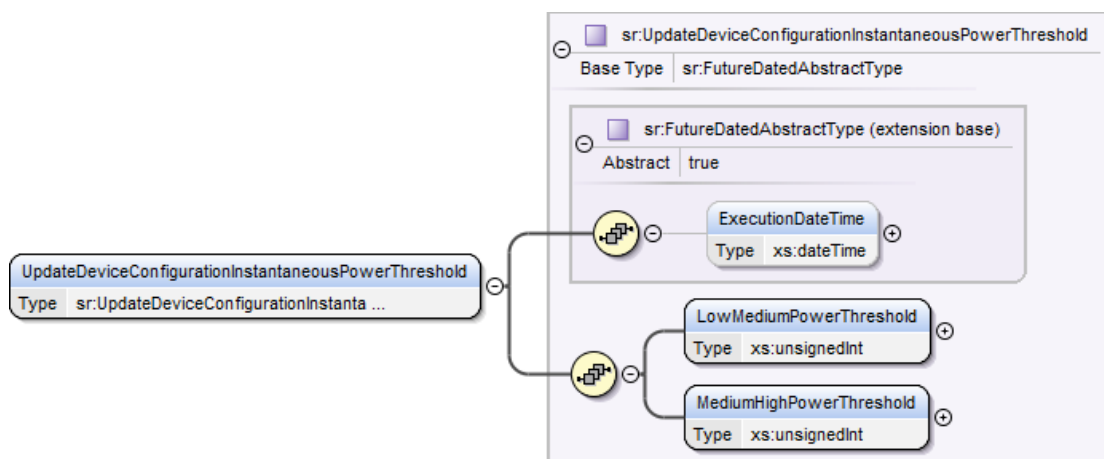


Figure 68 Update Device Configuration (Instantaneous Power Threshold) Service Request Structure

### 6.12.1.2 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
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
LowMediumPowerThreshold	A value in W defining the threshold between an indicative low and medium Active Power Import level	xs:unsignedInt	Yes	None	W	Non-Sensitive
MediumHighPowerThreshold	A value in W defining the threshold between an indicative medium and high Active Power Import level	xs:unsignedInt	Yes	None	W	Non-Sensitive

Table 89 Update Device Configuration (Instantaneous Power Threshold) Service Request Data Items

### 6.12.1.3 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):

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

Table 90 Update Device Configuration (Instantaneous Power Threshold) Modes of Operation

#### 6.12.1.4 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):

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 91 Update Device Configuration (Instantaneous Power Threshold) Command Variant Values**

#### 6.12.1.5 Validation

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

#### 6.12.1.6 Sample Request

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

```
<UpdateDeviceConfigurationInstantaneousPowerThreshold>
  <LowMediumPowerThreshold>3</LowMediumPowerThreshold>
  <MediumHighPowerThreshold>10</MediumHighPowerThreshold>
</UpdateDeviceConfigurationInstantaneousPowerThreshold>
```

**Figure 69 Update Device Configuration (Instantaneous Power Threshold) Service Request (Body) Format**

### 6.12.2 Responses

The response messages for an "Update Device Configuration (Instantaneous Power Threshold)" request follow the generic format for all "Device" response messages, the generic responses applicable to this request are;

- 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.

#### 6.12.2.1 Parse Output / SMETS1 Response Format

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

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.

##### 6.12.2.1.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	0047
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS34</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Instantaneous Power Threshold Configuration</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 92 - Update Device Configuration (Instantaneous Power Threshold) Parse/SMETS1 Response Header Data Items

## 6.13 Read Event Or Security Log (6.13)

Service Request Name	ReadEventOrSecurityLog
Service Reference	6.13
Service Request Variant Name	ReadEventOrSecurityLog
Service Reference Variant	6.13
Service Request Objective	To enable a DCC Service User to obtain information from a Device regarding its current status and/or past events for a specified Device ID via interrogating the Event or Security Log on that Device as specified by SMETS.
Business Context Statement	<p>The DCC Service User requires that a set of information is extracted from either the Event Log or Security Logs (as defined by SMETS) for a specified Device, e.g. following the receipt of a Device Alert to support diagnostics.</p> <p>The Event Log and Security Log will contain a range of data items. The Service Request will need to specify the target Device ID and a date range of content to return. The User will then receive all content from the requested log for the specified period, limited to 100 rows of data.</p> <p>Responses to requests for a periodic report from a device event log may return no data where no events have been recorded.</p>
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> <li>Electricity Network Operator (ENO)</li> <li>Gas Network Operator (GNO)</li> </ul>

	<ul style="list-style-type: none"> <li>Supplier Nominated Agent (SNA)</li> </ul>
Security Classification	<p>Non-critical and non-sensitive</p> <p>SMETS2 or later:</p> <p>GBCS <i>XREF: SME.C.NC</i></p>
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>The Service Request sender needs to be registered to the Device (as per Registration Data) for the entire date-time period for which the Event or Security Log is requested. If the sender is not authorised to read data for the entire period requested, an error will be returned. <ol style="list-style-type: none"> <li>For User Roles EIS and GIS this could be the 'current' or the 'old' Registered Import Supplier, except for the ALCS and HCALCS Event Log, which is only available to the 'current' registered EIS.</li> <li>If the Device Type is "Communications Hub Function" the registration check applies to the Electricity or Gas Smart Meter associated in the HAN (Communications Hub Whitelist).</li> </ol> </li> <li>The Electricity Smart Meter holds the following Event Logs as defined in SMETS: <ol style="list-style-type: none"> <li>Event Log (ESME specific). Read via this Service Request.</li> <li>ALCS and HCALCS Event Log. Read via this Service Request. Only available to the 'current' registered EIS and, for Devices with a Firmware version certified to GBCS v3.2 or later, to the Registered ENO. From GBCS v4.0 this log is known in GBCS as Auxiliary Controller Event Log. As the structure of the GBCS command and response did not change, the term ALCS Event Log continues to be used in DUIS, e.g. in XML element names, but may refer to data from a GBCS v4.0 Device, which may include data relating to APCs.</li> <li>Power Event Log. Read via this Service Request</li> <li>Boost Function Event Log. Read via Service Request 7.11. See Annex Section 7.11</li> </ol> </li> <li>The GPF holds the following Event and Security Logs as defined in SMETS and CHTS. For reading the Event or Security log values 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. <ol style="list-style-type: none"> <li>GPF Event Log. Read via this Service Request</li> <li>GPF Security Log. Read via this Service Request</li> <li>GSME Proxy Log copy of GSME Event Log. Read via this Service Request</li> <li>GSME Proxy Log copy of GSME Security Log. Read via this Service Request</li> </ol> </li> </ol>

	<p>4. DCC Service Users with User Role ENO can read the ALCS Event Log of ESME with a Firmware version certified to GBCS v3.2 or later.</p> <p>Event Log – A log capable of storing one hundred UTC date and time stamped entries of non-security related information for diagnosis and auditing arranged as a circular buffer such that when full, further writes shall cause the oldest entry to be overwritten.</p> <p>Auxiliary Load Control Switch Event Log (known as Auxiliary Controller Event Log from GBCS v4.0) – A log capable of storing one hundred UTC date and time stamped entries of events related to Auxiliary Load Control Switch(es) or HAN Connected Auxiliary Load Control Switch(es), or Auxiliary Proportional Controller(s) from GBCS v4.0, arranged as a circular buffer such that when full, further writes shall cause the oldest entry to be overwritten.</p> <p>Power Event Log – A log capable of storing one hundred UTC date and time stamped entries of non-security related information for diagnosis and auditing arranged as a circular buffer such that when full, further writes shall cause the oldest entry to be overwritten</p> <p>Boost Function Event Log – 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.</p> <p>Security Log – A log capable of storing one hundred UTC date and time stamped entries of security related information for diagnosis and auditing arranged as a circular buffer such that when full, further writes shall cause the oldest entry to be overwritten.</p>		
GBCS Cross Reference	Electricity	Gas	Communications Hub Function
GBCS Message Code (GBCS prior to v3.2)	0x0048 (ESME Event Log) 0x0049 (ESME Security Log) 0x00B9 (ESME Power Event Log) 0x00BA (ESME ALCS Event Log)	0x0014 (ZigBee Device Event Log) 0x00A1 (ZigBee Device Security Log)	0x0093 (CHF Event Log) 0x0094 (CHF Security Log)
GBCS Message Code (GBCS v3.2 or later)	0x0048 (ESME Event Log) 0x0049 (ESME Security Log) 0x00B9 (ESME Power Event Log) 0x00FD (ESME ALCS/ Auxiliary Controller Event Log)	0x0014 (ZigBee Device Event Log) 0x00A1 (ZigBee Device Security Log)	0x0093 (CHF Event Log) 0x0094 (CHF Security Log)

GBCS Use Case (GBCS prior to v3.2)	ECS35a (ESME Event Log) ECS35b (ESME Security Log) ECS35e (ESME Power Event Log) ECS35f (ESME ALCS Event Log)	CS10a (ZigBee Device Event Log) CS10b (ZigBee Device Security Log)	ECS35c (CHF Event Log) ECS35d (CHF Security Log)
GBCS Use Case(GBCS v3.2 or later)	ECS35a (ESME Event Log) ECS35b (ESME Security Log) ECS35e (ESME Power Event Log) <b>ECS35g</b> (ESME ALCS/ Auxiliary Controller Event Log)	CS10a (ZigBee Device Event Log) CS10b (ZigBee Device Security Log)	ECS35c (CHF Event Log) ECS35d (CHF Security Log)
GBCS Use Case Name	Read ESME Event Log Read ESME Security Log Read ESME Power Event Log Read ESME ALCS Event Log (Read Auxiliary Controller Event Log from GBCS v4.0)	Read ZigBee Device Event Log Read ZigBee Device Security Log	Read CHF Event Log Read CHF Security Log
SMETS1 Applicability	Yes, except ALCS and Power Event Log	Yes	Yes
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. The response data shall be populated in accordance with the SMETS1 Supporting Requirements Document.</li> <li>2. ALCS and Power Event Logs are not supported on SMETS1 Devices.</li> </ol>		

Table 93 Read Event Or Security Log Service Request

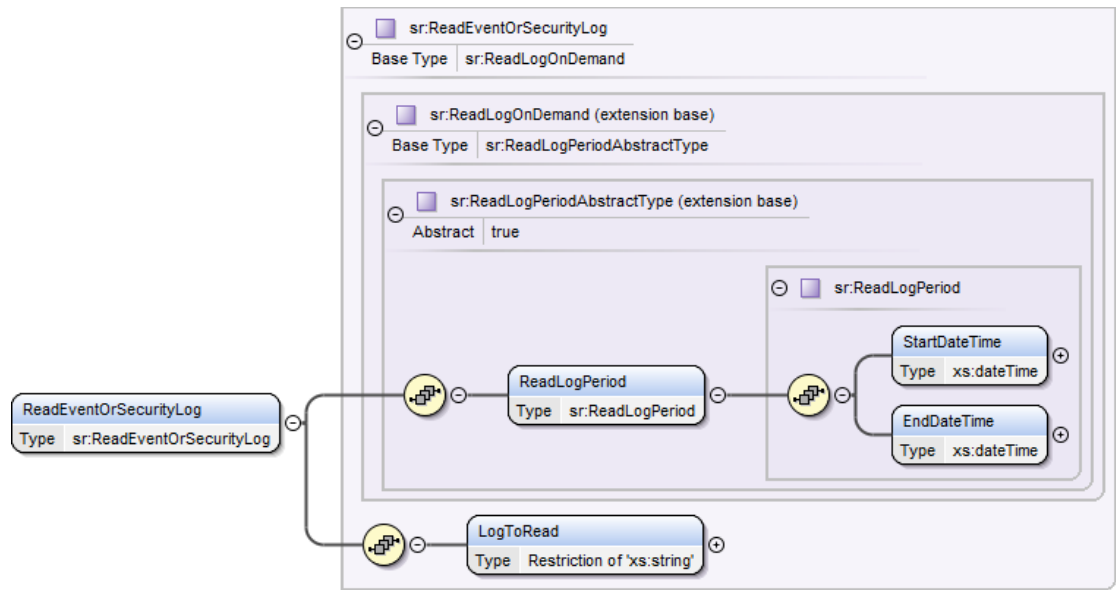
This section should be read in conjunction with the Main Document of this documentation set section 9 (which describes the general formatting for all Service Requests and Service Responses) and with the XSD (XML Schema – document 3 of this documentation set).

## 6.13.1 Service Request

### 6.13.1.1 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

ReadEventOrSecurityLog XML element defines this Service Request and contains the Log to read and the date-time range for which the log is to be read on the Device.



**Figure 70 Read Event Or Security Log Service Request Structure**

### 6.13.1.2 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
ReadLogPeriod	The Start and / or End Date-Times for which the data is required	sr:ReadLogPeriod (see Annex section 17 for details)	Yes	None	N/A	Non-Sensitive
LogToRead	An enumerated value indicating the Log to be read. Valid values: <ul style="list-style-type: none"> <li>Event. Device's Event Log</li> <li>ALCSEvent<sup>1, 2</sup>. Only applicable to Electricity Smart Meter Equipment</li> <li>PowerEvent<sup>1</sup>. Only applicable to Electricity Smart Meter Equipment</li> <li>Security. Device's Security Log</li> <li>GSMEEvent. Only applicable to GSME Event Log read on the GPF</li> <li>GSMESecurity. Only applicable to GSME Security Log read on the GPF</li> </ul>	Restriction of xs:string (Enumeration)	Yes	None	N/A	Non-Sensitive

**Table 94 Read Event Log Or Security Service Request Data Items**

<sup>1</sup> N/A to SMETS1

<sup>2</sup> For GBCS v4.0 or later Devices this log may contain data relating to APCs

### 6.13.1.3 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):

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 95 Read Event Or Security Log Modes of Operation

### 6.13.1.4 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):

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 96 Read Event Or Security Log Command Variant Values

### 6.13.1.5 Validation

This Service Request specific validation is as follows (see Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Read Log Period (Event or Security Log Period) validation):

Validation Check	Process	Response Code
Is the Log To Read type valid?	Check that if the Log To Read is: 1. ALCSEvent or PowerEvent the Device Type is Electricity Smart Metering Equipment 2. GSMEEvent or GSMESecurity the Device Type is Gas Proxy Function	E061301
Is the Service User Role valid?	Check that if the LogToRead is ALCSEvent 1. The DCC Service User Role is EIS <sup>1</sup> or 2. The DCC Service User Role is ENO <sup>1</sup> and the ESME Firmware version is certified to GBCS v3.2 or later	E061304
Is the Log To Read type valid for a SMETS1 Device?	Check that if the LogToRead is ALCSEvent or PowerEvent then the target Device is not a SMETS1 Device	E061305

Table 97 Read Event Or Security Log Service Request Validation

<sup>1</sup> Only the registered EIS or ENO will be able to read this log

### 6.13.1.6 Sample Request

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

```
<ReadEventOrSecurityLog>
  <ReadLogPeriod>
    <StartDateTime>2014-01-01T00:00:00.00Z</StartDateTime>
    <EndDateTime>2014-01-31T23:59:59.00Z</EndDateTime>
  </ReadLogPeriod>
  <LogToRead>Event</LogToRead>
</ReadEventOrSecurityLog>
```

**Figure 71 Sample Read Event Or Security Log Service Request (Body) Format**

## 6.13.2 Responses

The response messages for a "Read Event Or Security Log" request follow the generic format for all "Device" response messages, the generic responses applicable to this request are;

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

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.

### 6.13.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E061301	Failed Validation – Log To Read / Device Type mismatch	Error	The Log to Read is not applicable to the Device Type
E061304	Failed Validation – Invalid Service User Role	Error	Invalid Service User Role. The ALCS Event Log is not available to the requesting Service User Role. Only the Registered EIS User Role is eligible to read this log , or Registered ENO for Devices with GBCS v3.2 or later.
E061305	Failed Validation – Log To Read type invalid for a SMETS1 Device	Error	The request log type is not available for a SMETS1 Device

**Table 98 Failed Read Event Or Security Log Service Request Response Codes**

### 6.13.2.2 Parse Output / SMETS1 Response Format

#### 6.13.2.2.1 Format - ReadEventOrSecurityLogRsp

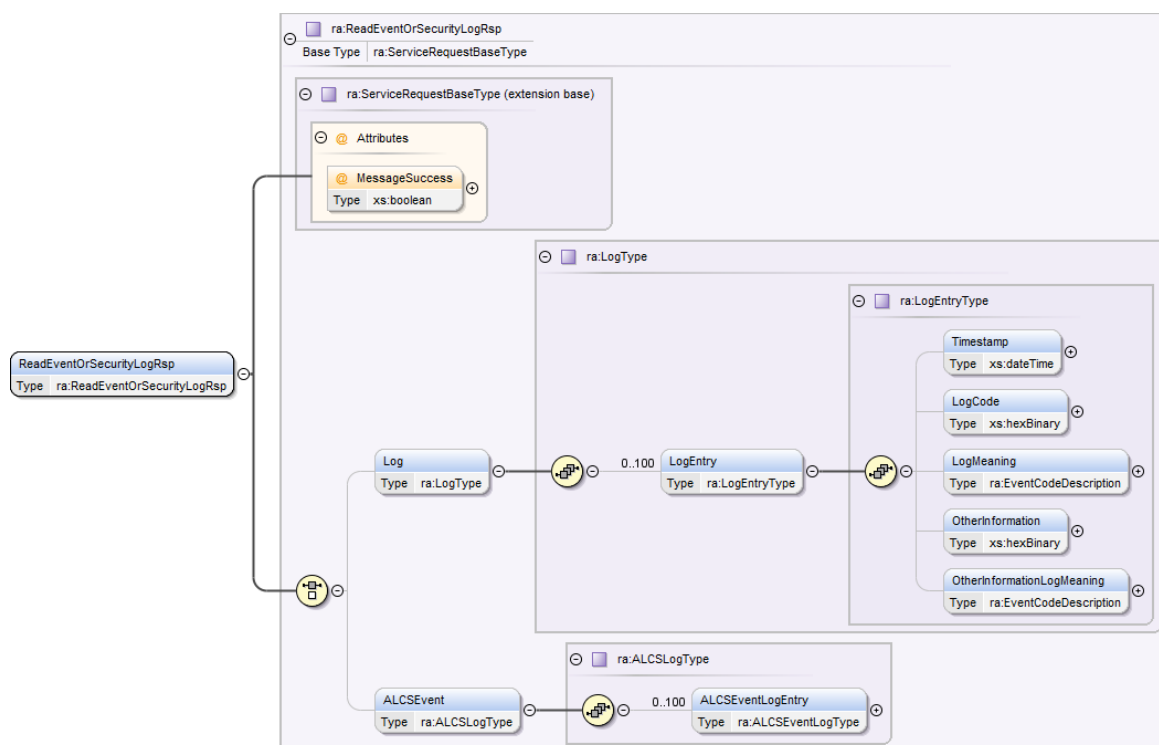


Figure 72 - Read Event or Security Log Parse Response / SMETS1 Response Structure

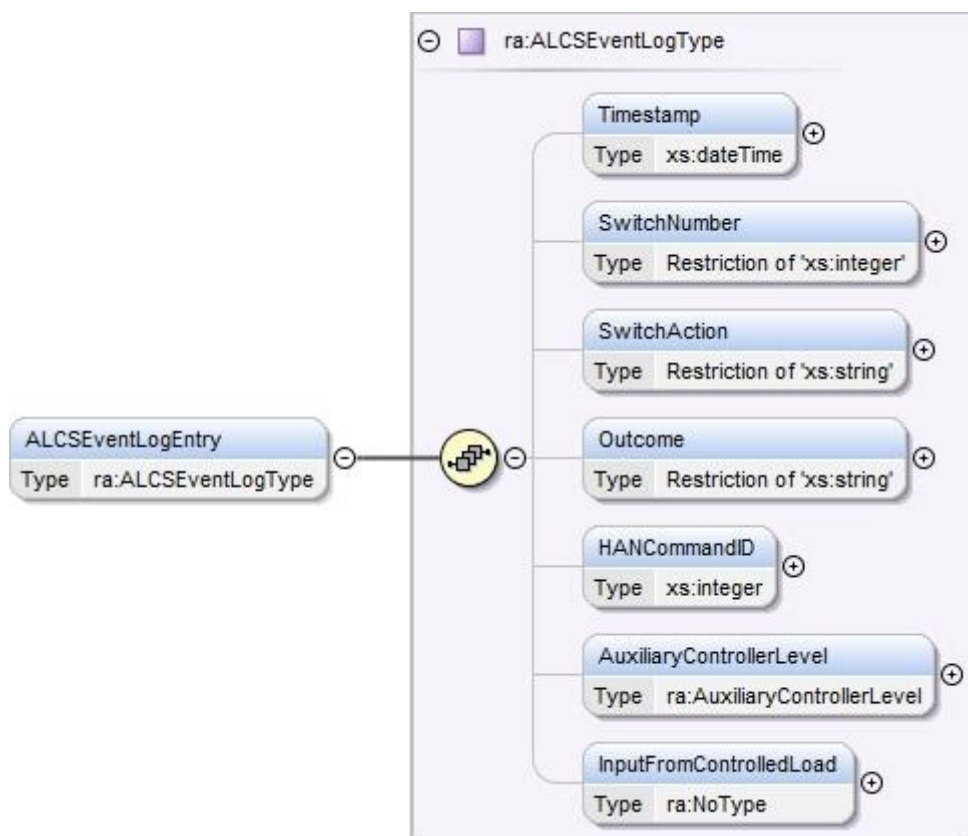


Figure 72.2 - Read Event or Security Log Parse Response - ALCS Event Log

#### 6.13.2.2.2 Specific Header Data Items

The header items vary depending on the log being read.

#### 6.13.2.2.2.1 Device Event Log

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	0048	0014
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS35a</i>	<i>CS10a</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read ESME Event Log</i>	<i>Read ZigBee Device Event Log</i>
SupplementaryRemotePartyID	Present if the originator is a URP	Present if the originator is a URP
SupplementaryRemotePartyCounter	Present if the originator is a URP	Present if the originator is a URP
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 99 - Read Event or Security Log (Device Event Log) Parse/SMETS1 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.

#### 6.13.2.2.2.2 Device Security Log

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	0049	00A1
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS35b</i>	<i>CS10b</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read ESME Security Log</i>	<i>Read ZigBee Device Security Log</i>
SupplementaryRemotePartyID	Not present if the originator is <ul style="list-style-type: none"> <li>• The current EIS</li> <li>• An ENO</li> </ul> Present if the originator is <ul style="list-style-type: none"> <li>• The old EIS</li> <li>• An SNA</li> </ul>	Not present if the originator is <ul style="list-style-type: none"> <li>• The current GIS</li> <li>• A GNO for a GPF</li> </ul> Present if the originator is <ul style="list-style-type: none"> <li>• The old GIS</li> <li>• A GNO for a GSME</li> <li>• An SNA</li> </ul>

Data Item	Electricity Response	Gas Response
SupplementaryRemotePartyCounter	Not present if the originator is <ul style="list-style-type: none"> <li>The current EIS</li> <li>An ENO</li> </ul> Present if the originator is <ul style="list-style-type: none"> <li>The old EIS</li> <li>An SNA</li> </ul>	Not present if the originator is <ul style="list-style-type: none"> <li>The current GIS</li> <li>A GNO for a GPF</li> </ul> Present if the originator is <ul style="list-style-type: none"> <li>The old GIS</li> <li>A GNO for a GSME</li> <li>An SNA</li> </ul>
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 100 - Read Event or Security Log (Device Security Log) Parse Response Header Data Items**

#### 6.13.2.2.2.3 CHF Event Log

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	0093	0093
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS35c</i>	<i>ECS35c</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read CHF Event Log</i>	<i>Read CHF Event Log</i>
SupplementaryRemotePartyID	Present	Present
SupplementaryRemotePartyCounter	Present	Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 101 - Read Event or Security Log (CHF Event Log) Parse Response Header Data Items**

#### 6.13.2.2.2.4 CHF Security Log

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	0094	0094
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS35d</i>	<i>ECS35d</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read CHF Security Log</i>	<i>Read CHF Security Log</i>
SupplementaryRemotePartyID	Present	Present

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

**Table 102 - Read Event or Security Log (CHF Security Log) Parse Response Header Data Items**

#### 6.13.2.2.2.5 Power Event Log

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	00B9	N/A
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS35e</i>	<i>N/A</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read ESME Power Event Log</i>	<i>N/A</i>
SupplementaryRemotePartyID	Not present if the originator is <ul style="list-style-type: none"> <li>The current EIS</li> <li>An ENO</li> </ul> Present if the originator is <ul style="list-style-type: none"> <li>The Old EIS</li> <li>An SNA</li> </ul>	N/A
SupplementaryRemotePartyCounter	Not present if the originator is <ul style="list-style-type: none"> <li>The current EIS</li> <li>An ENO</li> </ul> Present if the originator is <ul style="list-style-type: none"> <li>The Old EIS</li> <li>An SNA</li> </ul>	N/A
SupplementaryOriginatorCounter	Not Present	N/A
Timestamp	Not Present	N/A

**Table 103 - Read Event or Security Log (Power Event Log) Parse Response Header Data Items**

#### 6.13.2.2.2.6 ALCS Event Log (Auxiliary Controller Event Log)

GBCS prior to v3.2:

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	00BA	N/A

Data Item	Electricity Response	Gas Response
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS35f</i>	<i>N/A</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read ALCS Event Log</i>	<i>N/A</i>
SupplementaryRemotePartyID	Not Present	N/A
SupplementaryRemotePartyCounter	Not Present	N/A
SupplementaryOriginatorCounter	Not Present	N/A
Timestamp	Not Present	N/A

**Table 104.1 - Read Event or Security Log (ALCS Event Log) Parse Response Header Data Items**

GBCS v3.2 or later:

GBCS Use Case ECS35g was introduced in GBCS v3.2, and in GBCS v4.0 it was renamed to use the Auxiliary Controller terminology introduced in GBCS v4.0. As the message code and command definition did not change, it was not necessary to change the implementation of ECS35g. The change of GBCS Use Case Name is noted below.

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	00FD	N/A
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS35g</i>	<i>N/A</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read ALCS Event Log (prior to GBCS v4.0) Read Auxiliary Controller Event Log (GBCS v4.0 or later)</i>	<i>N/A</i>
SupplementaryRemotePartyID	Not Present	N/A
SupplementaryRemotePartyCounter	Not Present	N/A
SupplementaryOriginatorCounter	Not Present	N/A
Timestamp	Not Present	N/A

**Table 104.2 - Read Event or Security Log (ALCS (Auxiliary Controller) Event Log) Parse Response Header Data Items**

#### 6.13.2.2.3 Specific Body Data Items

The log is designed to store one hundred UTC date and time stamped entries of information for diagnosis and auditing arranged as a circular buffer such that when full, further writes shall cause the oldest entry to be overwritten.

A common structure is used for most of the log types read under this service request, across all device types (Log Type of "Log" in the response), with the exception of Auxiliary Controller (ALCS/HCALCS or APC) for which there is an alternative format (Log Type of "ALCSEvent") similar to the data returned by Service Request 7.7 (applicable to

GBCS prior to v4.0) or Service Requests 7.14 and 7.15 (applicable to GBCS v4.0 or later).

See GBCS section 16.2 for a definition of event codes.

Log type	Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
Log	Timestamp	The UTC date- time stamp of this entry	xs:dateTime	None	N/A	Non-Sensitive
Log	LogCode	The Event/Alert Code corresponding to this event (as defined in GBCS section 16.2)	xs:hexBinary	None	N/A	Non-Sensitive
Log	LogMeaning	Descriptive explanation of the event represented by the LogCode (as defined in GBCS section 16.2) Optional	Restriction of xs:string (maxLength = 200)	None	N/A	Non-Sensitive
Log	OtherInformation	SMETS2 or later: Where required according to the Event/Alert Code: other information relating to this event. See Event/Alert Codes section 16.4 of GBCS which details when this is required. Examples include: <ul style="list-style-type: none"> <li>For Event Codes 0x8161 and 0x8162 this field will contain a User Interface Command Code;</li> <li>for Event Codes 0x8154 and 0x8155 this field will contain a Network Interface Command Code.</li> </ul> Optional SMETS1: This shall not be present	xs:hexBinary	None	N/A	Non-Sensitive
Log	OtherInformationLogMeaning	SMETS2 or later: Where feasible, descriptive explanation of the occurrence represented by the code in the OtherInformation attribute relating to this event.  For Event Codes 0x8161 and 0x8162 this will contain the text explaining the purpose of the User Interface Command Code, as defined in GBCS section 16.4. Optional SMETS1: This shall not be present	Restriction of xs:string (maxLength = 200)	None	N/A	Non-Sensitive
ALCSEvent <sup>1,2</sup>	Timestamp	The date-time stamp of the switching event	xs:datetime	None	N/A	Non-Sensitive
ALCSEvent <sup>1,2</sup>	SwitchNumber	The number of the ALCS / HC ALCS/ APC	Restriction of xs:integer MinInclusive = 1 MaxInclusive = 5	None	N/A	Non-sensitive

Log type	Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
ALCSEvent <sup>1,2</sup>	SwitchAction	<p>See Table 104.4 “Relevance of GBCS and MMC versions to ALCS Event Log data” for context regarding the impact of MMC and GBCS versions on the use of this field.</p> <p><i>GBCS version prior to v4.0, irrespective of MMC version:</i></p> <p>The type of switch action recorded, so one of these values:</p> <ol style="list-style-type: none"> <li>(1) “On”</li> <li>(2) “Off”</li> <li>(3) “Revert to calendar control”</li> <li>(4) “Entry relates to a Message from an HC ALCS”</li> </ol> <p>Note that although originally not defined in GBCS, the device may return values 0x01 or 0x02, indicating on or off switch actions due to the ALCS calendar. Only switch actions as a result of a command to the ESME will be presented as “On” or “Off”, and values 0x01 or 0x02 will cause a failure in Parse software.</p> <p><i>GBCS version v4.0 or later and MMC version v4.0 or later:</i></p> <p>N/A</p> <p><i>GBCS version v4.0 or later and MMC version prior to v4.0:</i></p> <p>It is not possible to render all of the information from a GBCS v4.0 Device using an MMC version prior to v4.0, and in these cases the SwitchAction field will be used as follows:</p> <ol style="list-style-type: none"> <li>(1) “On”, where the Device has returned an output state of 100</li> <li>(2) “Off” where the Device has returned an output state of 0</li> <li>(3) The field will remain unpopulated where the Device has returned an output state between 1 and 99 inclusive, or an input state of any value</li> </ol>	xs:string	None	N/A	Non-Sensitive
ALCSEvent <sup>1,2</sup>	Outcome	<p>The result of the switch action, being one of:</p> <ol style="list-style-type: none"> <li>(1) “Outcome not known”</li> <li>(2) “Success”</li> <li>(3) “Failure”</li> </ol> <p>‘Outcome not known’ shall only be used where this entry relates to a Command being sent to an HC ALCS (and so the ESME cannot know the outcome)</p>	xs:string	None	N/A	Non-Sensitive
ALCSEvent <sup>1,2</sup>	HANCommandID	0x00000000, if this entry relates to an ALCS, APC or non-HAN command to an HCALCS. For HAN command entries related to an HC ALCS, an identifier, allocated by the ESME, for the Command / Response between the ESME and HC ALCS	xs:integer	None	N/A	Non-Sensitive

Log type	Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
ALCSEvent <sup>1,2</sup>	AuxiliaryControllerLevel	<p>See Table 104.4 "Relevance of GBCS and MMC versions to ALCS Event Log data" for context regarding the impact of MMC and GBCS versions on the use of this field.</p> <p><i>MMC version prior to v4.0:</i> N/A</p> <p><i>GBCS version prior to v4.0:</i> N/A</p> <p><i>MMC version v4.0 or later and:</i> <i>GBCS v4.0 or later:</i></p> <p>An integer indicating the commanded level of an Auxiliary Controller.</p> <p>Where the Auxiliary Controller is an APC, the number reflects the percentage to which its commanded state is to be set.</p> <p>Where the Auxiliary Controller is an ALCS, 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
ALCSEvent <sup>1,2</sup>	InputFromControlledLoad	<p>See Table 104.4 "Relevance of GBCS and MMC versions to ALCS Event Log data" for context regarding the impact of MMC and GBCS versions on the use of this field.</p> <p><i>MMC version prior to v4.0:</i> N/A</p> <p><i>GBCS version prior to v4.0:</i> N/A</p> <p><i>MMC version v4.0 or later and:</i> <i>GBCS v4.0 or later:</i></p> <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, this 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 104.3 - Read Event or Security Log (ALCS (Auxiliary Controller) Event Log) Parse Response Header Data Items**

<sup>1</sup> N/A to SMETS1

<sup>2</sup> For GBCS v4.0 or later Devices this log may contain data relating to APCs

MMC / GBCS version relevance	MMC prior to v4.0	MMC v4.0 or later
GBCS Prior to v4.0	SwitchAction applies. AuxiliaryControllerLevel and InputFromControlledLoad are N/A.	SwitchAction applies. AuxiliaryControllerLevel and InputFromControlledLoad are N/A.
GBCS v4.0 or later	AuxiliaryControllerLevel and InputFromControlledLoad cannot be populated as versions of MMC prior to v4.0 do not support them.  Where feasible SwitchAction will be populated, but some information cannot be rendered and will be omitted; see the SwitchAction Description field for details.	AuxiliaryControllerLevel and InputFromControlledLoad apply  SwitchAction is N/A

**Table 104.4 – Relevance of GBCS and MMC versions to ALCS Event Log data**

#### 6.13.2.2.4 Sample Response

```
<ra:ReadEventOrSecurityLogRsp MessageSuccess="true">
  <ra:ALCSEvent>
    <ra:ALCSEventLogEntry>
      <ra:Timestamp>2006-05-04T09:00:00.00</ra:Timestamp>
      <ra:SwitchNumber>1</ra:SwitchNumber>
      <ra:SwitchAction>On</ra:SwitchAction>
      <ra:Outcome>Success</ra:Outcome>
    </ra:ALCSEventLogEntry>
    <ra:ALCSEventLogEntry>
      <ra:Timestamp>2006-05-20T19:21:45.00</ra:Timestamp>
      <ra:SwitchNumber>2</ra:SwitchNumber>
      <ra:SwitchAction>Off</ra:SwitchAction>
      <ra:Outcome>Success</ra:Outcome>
      <ra:HANCommandID>0</ra:HANCommandID>
    </ra:ALCSEventLogEntry>
  </ra:ALCSEvent>
</ra:ReadEventOrSecurityLogRsp>
```

**Figure 73 - Read Event or Security Log Parse Response Sample (ALCS Event Log GBCS version prior to v4.0 or earlier)**

```
<ra:ReadEventOrSecurityLogRsp MessageSuccess="true">
  <ra:ALCSEvent>
    <ra:ALCSEventLogEntry>
      <ra:Timestamp>2006-05-20T19:21:45.00</ra:Timestamp>
      <ra:SwitchNumber>1</ra:SwitchNumber>
      <ra:Outcome>Success</ra:Outcome>
      <ra:HANCommandID>0</ra:HANCommandID>
      <ra:AuxiliaryControllerLevel>100</ra:AuxiliaryControllerLevel>
    </ra:ALCSEventLogEntry>
    <ra:ALCSEventLogEntry>
      <ra:Timestamp>2006-05-20T20:00:01.56</ra:Timestamp>
      <ra:SwitchNumber>2</ra:SwitchNumber>
      <ra:Outcome>Success</ra:Outcome>
      <ra:HANCommandID>0</ra:HANCommandID>
      <ra:AuxiliaryControllerLevel>50</ra:AuxiliaryControllerLevel>
    </ra:ALCSEventLogEntry>
    <ra:ALCSEventLogEntry>
      <ra:Timestamp>2006-05-21T06:03:04.89</ra:Timestamp>
      <ra:SwitchNumber>3</ra:SwitchNumber>
      <ra:Outcome>Success</ra:Outcome>
      <ra:HANCommandID>0</ra:HANCommandID>
      <ra:AuxiliaryControllerLevel>0</ra:AuxiliaryControllerLevel>
    </ra:ALCSEventLogEntry>
  </ra:ALCSEvent>
</ra:ReadEventOrSecurityLogRsp>
```

**Figure 73.2 - Read Event or Security Log Parse Response Sample (ALCS Event Log GBCS v4.0 or later)**

## 6.14 Update Device Configuration (Auxiliary Load Control) (6.14)

This Service Request maps to three GBCS Use Cases and each Use Case requires its own Request ID.

The 6.14 Service Request has been broken into several parts: 6.14.1 (Set Auxiliary Controller Descriptions) which is valid for all GBCS versions, 6.14.2 (ALCS / HCALCS Scheduler) for ESME Devices prior to GBCS v4.0, and 6.14.3 (Set Auxiliary Controller Calendar) which is valid for GBCS v4.0 or later ESME (including SAPC) Devices and is used for setting schedules of APC, ALCS and HCALCS Auxiliary Controllers.

### 6.14.1 Update Device Configuration (Auxiliary Load Control Description) (6.14.1)

Service Request Name	UpdateDeviceConfiguration(AuxiliaryLoadControl)
Service Reference	6.14
Service Request Variant Name	UpdateDeviceConfiguration(AuxiliaryLoadControlDescriptions)
Service Reference Variant	6.14.1
Service Request Objective	To enable a DCC Service User to configure the Auxiliary Load Control behaviour of a Device ESME.
Business Context Statement	The DCC Service User requires that an update is made to the current configurations for Auxiliary Controller descriptions held within a specified ESME.

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>This Service Request is applicable to an ESME connected to one or more Auxiliary Controllers including ALCS and / or HCALCS and / or APCs. The Business Target ID = ESME Device ID</li> <li>An ESME can be connected to a maximum of 5 Auxiliary Controllers, each of which can be ALCS or HCALCS (prior to GBCS v4.0) or APC, ALCS or HCALCS (GBCS v4.0 or later)</li> <li>The Service Request only includes the Auxiliary Controller switch Ids (values 1 to 5) and their descriptions (labels) for those switches connected to the ESME. For Devices prior to GBCS v4.0 the switch type (ALC or HCALC) and, for HCALC, its Device ID are defined via Service Request 6.14.2 (see section 6.14.2); for Devices with GBCS v4.0 or later the switch types (APC, ALCS or HCALCS) are defined via Service Request 6.14.3 (see section 6.14.3).</li> <li>The User only may update the load control descriptions of between 1 and 5 Auxiliary Controllers at their discretion with this Service Request.</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> <li>When the DCC Data Systems receive a Success Response from the Device, the DSP shall send a DCC Alert N58 to the ESME's Registered ENO to notify them of the Auxiliary Controller configuration change. The Registered ENO must be a user of DUIS version 3.1 or later in order to be able to receive DCC Alert N58.</li> <li>This Service Request has XML element names using the original load control terminology prior to GBCS v4.0, referring to ALCS and HCALCS, but it applies also to Devices with GBCS v4.0 or later, since, although the terminology has changed, the GBCS Use Case definition and message code for setting descriptions have not changed.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x0053	N/A
GBCS Use Case	ECS46a	N/A
GBCS Use Case Name	Set HC ALCS or ALCS Labels in ESME (prior to GBCS v4.0)  Set Auxiliary Controller Descriptions (GBCS v4.0 or later)	N/A

SMETS1 Applicability	No	No
----------------------	----	----

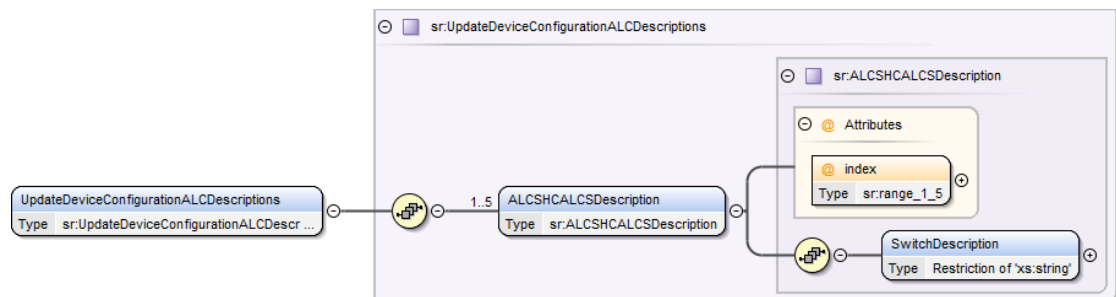
**Table 105 Update Device Configuration (Auxiliary Load Control Description) Service Request**

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).

### 6.14.1.1 Service Request

#### 6.14.1.1.1 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 UpdateDeviceConfigurationALCDescriptions XML element defines this Service Request and contains the Id (index) and Description for each of the Auxiliary Controllers (ALC / HCALC Switches or APCs) connected to the ESME.



**Figure 74 Update Device Configuration (Auxiliary Load Control Description) Service Request Structure**

#### 6.14.1.1.2 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
ALCSHCALCSDescription	The Ids (indices) and descriptions of the ALC / HCALC Switches, or APCs.	sr:ALCSHCALCSDescription (see section 6.14.1.1.3)	Yes <sup>1</sup>	None	N/A	Non-Sensitive
Index (Attribute of ALCSHCALCSDescription)	The value of the index is the Auxiliary Controller Identifier	sr:range_1_5 (xs:positiveInteger from 1 to 5)	Yes	None	N/A	Non-Sensitive

**Table 106 Update Device Configuration (Auxiliary Load Control Description) Service Request Data Items**

<sup>1</sup> Minimum 1 and maximum 5

#### 6.14.1.1.3 ALCSHCALCSDescription Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
SwitchDescription	The description of the ALCS or HCALCS Switch, or APC  Valid set: <ul style="list-style-type: none"><li>All printable characters, i.e. characters with ASCII values of 32 (space) to 126 (tilde) inclusive</li></ul>	Restriction of xs:string (maxLength = 22, pattern = "[ -~]+")	Yes	None	N/A	Non-Sensitive

**Table 107 Update Device Configuration (Auxiliary Load Control Description) Service Request - ALCSOrHCALCSDescription Data Items**

#### 6.14.1.1.4 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 108 Update Device Configuration (Auxiliary Load Control Description) Modes of Operation**

#### 6.14.1.1.5 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 109 Update Device Configuration (Auxiliary Load Control Description) Command Variant Values**

#### 6.14.1.1.6 Validation

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

#### 6.14.1.1.7 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:

```
<UpdateDeviceConfigurationALCDescriptions>
  <ALCSHCALCSDescription index="1">
    <SwitchDescription>Switch 1 Description</SwitchDescription>
  </ALCSHCALCSDescription>
</UpdateDeviceConfigurationALCDescriptions>
```

**Figure 75 Update Device Configuration (Auxiliary Load Control Description) Transform Service Request (Body) Format**

### 6.14.1.2 Responses

The response messages for an "Update Device Configuration (Auxiliary Load Control Description)" request follow the generic format for all "Device" response messages. The generic responses applicable to this 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.

#### 6.14.1.2.1 Parse Output Format

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

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

##### 6.14.1.2.1.1 Specific Header Data Items

Data Item	ALCS Response
GBCSHexadecimalMessageCode	0053
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS46a</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set HC ALCS or ALCS Labels in ESME (prior to GBCS v4.0) Set Auxiliary Controller Descriptions (GBCS v4.0 or later)</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 110 - Update Device Configuration (Auxiliary Load Control Description) Parse Response Header Data Items

### 6.14.2 Update Device Configuration (Auxiliary Load Control Scheduler) (6.14.2)

Service Request Name	UpdateDeviceConfiguration(AuxiliaryLoadControl)
Service Reference	6.14
Service Request Variant Name	UpdateDeviceConfiguration(AuxiliaryLoadControlScheduler)
Service Reference Variant	6.14.2

Service Request Objective	To enable a DCC Service User to configure the Auxiliary Load Control behaviour of an ESME with GBCS version prior to GBCS v4.0. For Devices conforming to GBCS v4.0 or later see section 6.14.3.	
Business Context Statement	The DCC Service User requires that an update is made to the current configurations for auxiliary load control (ALC scheduler) held within a specified ESME.	
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>This Service Request updates the SMETS item <i>Auxiliary Load Control Switch Calendar</i> (in SMETS2 versions prior to SMETS2 v5.0). This is a Switching Table containing a set of rules for setting the commanded state of up to five Auxiliary Load Control Switches or HAN Connected Auxiliary Load Control Switches as open and closed.</li> <li>For each of the Switches connected to the ESME, this Service Request defines the Type (ALCS or HCALCS) and, for HCALCS, the Device ID. The corresponding Switch Labels are defined via Service Request 6.14.1 (see section 6.14.1). <ul style="list-style-type: none"> <li>This Service Request is applicable to an ESME connected to ALCS and / or HCALCS. The Business Target ID = ESME Device ID</li> </ul> </li> <li>An Electricity Smart Meter can be connected to a maximum of 5 switches, each of which can be ALCS or HCALCS. The Auxiliary Load Control Scheduler (Calendar) is the same for ALCS and HCALCS</li> <li>Note that the SwitchTypeAndId data item is not future dateable on the device, If the command is future dated, then this item shall be applied immediately.</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> <li>When the DCC Data Systems receive a Success Response or successful future dated completion from the Device, the DSP shall send a DCC Alert N58 to the ESME's Registered ENO to notify them of the ALCS / HCALCS configuration change. The Registered ENO must be a user of DUIS version 3.1 or later in order to be able to receive DCC Alert N58.</li> <li>For Devices with GBCS version 4.0 or later this Service Request Variant is not applicable and Users should instead use the later equivalent 6.14.3 Update Device Configuration (Auxiliary Controller Scheduler).</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code prior to v4.0	0x0054	N/A

GBCS Use Case prior to v4.0	ECS46c	N/A
GBCS Use Case Name prior to v4.0	Set HC ALCS and ALCS configuration in ESME (excluding labels)	N/A
GBCS v4.0 or later	N/A – feature not supported by Device	N/A
SMETS1 Applicability	No	No
<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	
Device's 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	ECS46c	Response Code - E57

**Table 111 Update Device Configuration (Auxiliary Load Control Scheduler) 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).

### 6.14.2.1 Service Request

#### 6.14.2.1.1 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 UpdateDeviceConfigurationALCScheduler XML element defines this Service Request and contains the Calendar (Scheduler), The Special Days Calendar and, optionally, the Switch Type and Id for each of the switches connected to ESME and, for Future Dated Requests, the Execution Date and Time.

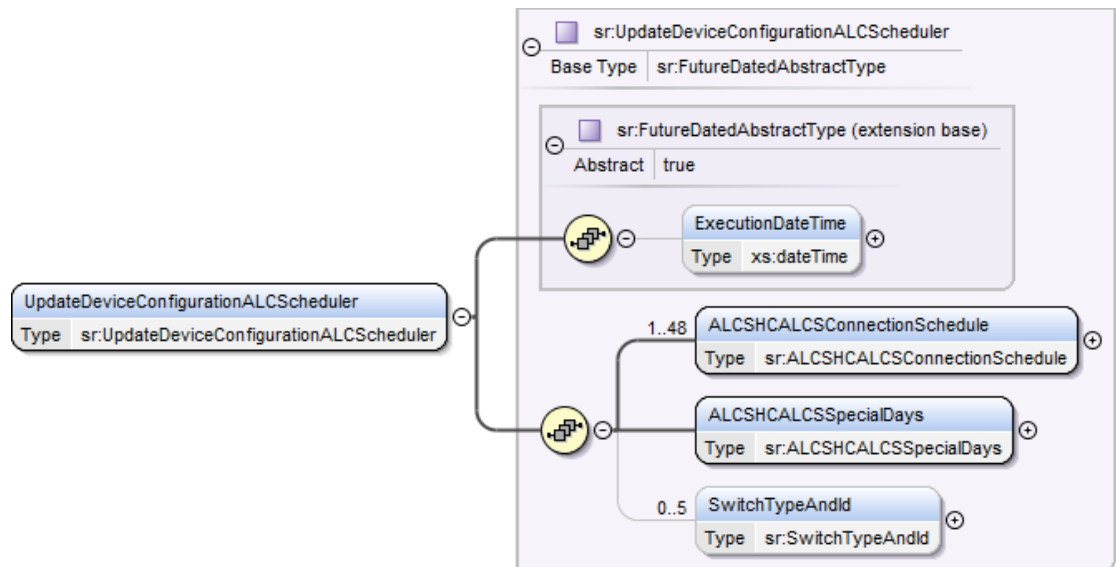


Figure 76 Update Device Configuration (Auxiliary Load Control Scheduler) Service Request Structure

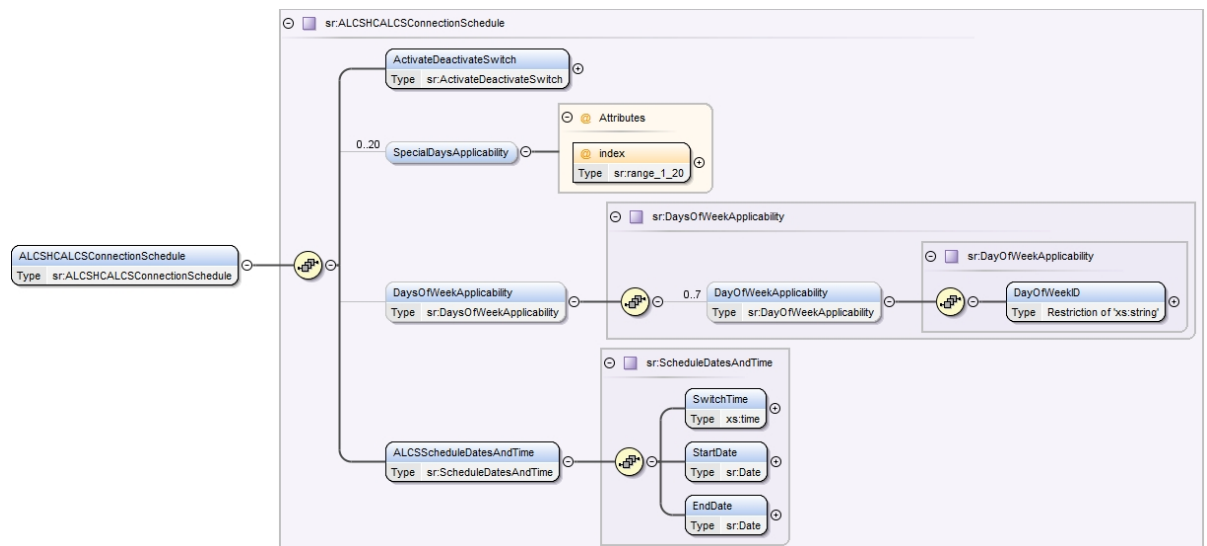
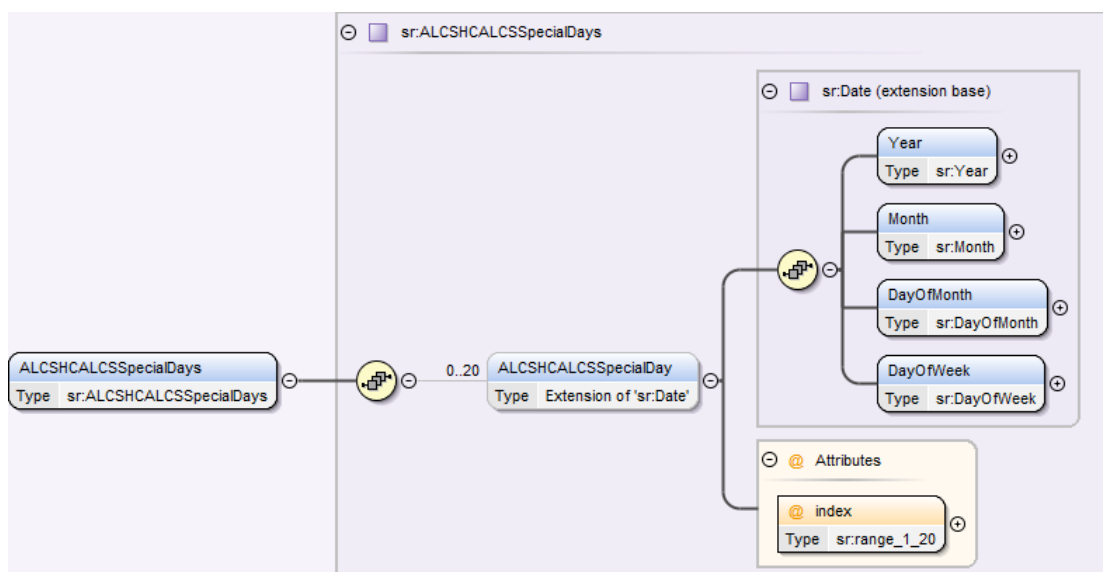
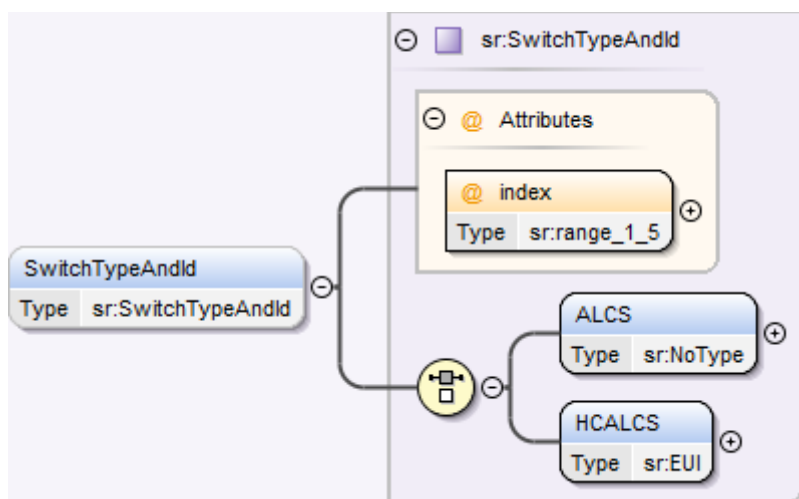


Figure 77 Update Device Configuration (Auxiliary Load Control Scheduler) Service Request - ALCSHCALCSCConnectionSchedule Structure



**Figure 78 Update Device Configuration (Auxiliary Load Control Scheduler) Service Request - ALCSHCALCSpecialDays Structure**



**Figure 79 Update Device Configuration (Auxiliary Load Control Scheduler) Service Request – SwitchTypeAndId Structure**

#### 6.14.2.1.2 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
ALCSHCALCSConnectionSchedule	Structure that defines the schedule when individual switches are to be connected or disconnected	sr:ALCSHCALCSConnectionSchedule (see section 6.14.2.1.3)	Yes <sup>1</sup>	None	N/A	Non-Sensitive
ALCSHCALCSSpecialDays	A calendar defining special days for the activation or deactivation of ALC / HCALCS Switches	sr:ALCSHCALCSSpecialDays (see section 6.14.2.1.4)	Yes <sup>3</sup>	None	N/A	Non-Sensitive
SwitchTypeAndId	The Switch Type (ALCS or HCALCS) and, for HCALCS, the Device ID The index is the Switch Identifier	sr:SwitchTypeAndId (see section 6.14.2.1.5)	No <sup>2</sup>	None	N/A	Non-Sensitive

**Table 112 Update Device Configuration (Auxiliary Load Control Scheduler) Service Request Data Items**

<sup>1</sup> Minimum of 1 and maximum of 48 schedules

<sup>2</sup> Optional. If included, minimum of 1 and maximum of 5

<sup>3</sup> If there are no ALCS HCALCS Special Days, this XML element will be present, but empty, i.e. it will contain 0 ALCS HCALCS Special Day elements

#### 6.14.2.1.3 ALCSHCALCSConnectionSchedule Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
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>	sr:ActivateDeactivateSwitch (choice of: ActivateSwitch sr:NoType DeactivateSwitch sr:NoType) (see Annex 17 for sr:NoType)	Yes	None	N/A	Non-Sensitive
SpecialDaysApplicability	Identifier, via the Index, of those Special Days to which the Schedule applies	N/A	No <sup>2</sup>	None	N/A	Non-Sensitive
Index (Attribute of SpecialDaysApplicability)	The value of the index indicates which Special Day(s) are applicable to the Schedule	sr:range_1_20 (xs:positiveInteger from 1 to 20)	No <sup>2</sup>	None	N/A	Non-Sensitive
DaysOfWeekApplicability	The days of the week to which the schedule applies defined as an array of up to 7 DayOfTheWeekApplicability elements	sr:DayOfWeekApplicability (see section 6.14.2.1.6)	No	None	N/A	Non-Sensitive
ALCSScheduledDatesAndTime	The switch time and date range (with wildcards) when the script is to be run	sr:ScheduleDatesAndTime (see Annex Section 17 for details)	Yes	None	N/A	Non-Sensitive

**Table 113 Update Device Configuration (Auxiliary Load Control Scheduler) Service Request – ALCSHCALCSConnectionSchedule Data Items**

<sup>2</sup> Optional. If included, a minimum of 1 and a maximum of 20

#### 6.14.2.1.4 ALCSHCALCSSpecialDays Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ALCSHCALCSSpecialDay	Special Day Dates to which the Schedule applies	sr:Date (with wildcards) (see Annex section 17)	No <sup>1</sup>	None	N/A	Non-Sensitive
Index (Attribute of ALCSHCALCSSpecialDay)	The value of the index provides an identifier for each ALCSHCALCSSpecialDay	sr:range_1_20 (xs:positiveInteger from 1 to 20)	No <sup>1</sup>	None	N/A	Non-Sensitive

**Table 114 Update Device Configuration (Auxiliary Load Control Scheduler) Service Request – ALCSHCALCSSpecialDays Data Items**

<sup>1</sup> Optional. If included, a minimum of 1 and a maximum of 20

#### 6.14.2.1.5 SwitchTypeAndId Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ALCS	Identifies Switch Type as ALCS	sr:NoType (see Annex 17)	ALCS: Yes Otherwise: N/A	None	N/A	Non-Sensitive
HCALCS	Identifies Switch Type as HCALCS and it defines its Device ID	sr:EUI	HCALCS: Yes Otherwise: N/A	None	N/A	Non-Sensitive
Index (Attribute of SwitchTypeAndId)	The value of the index provides an identifier for each SwitchTypeAndId	sr:range_1_5 (xs:positiveInteger from 1 to 5)	Yes	None	N/A	Non-Sensitive

**Table 115 Update Device Configuration (Auxiliary Load Control Scheduler) Service Request – SwitchTypeAndId Data Items**

#### 6.14.2.1.6 DaysOfWeekApplicability Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DayOfWeekApplicability	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>	sr:DayOfWeekID (Restriction of xs:string (Enumeration))	Yes <sup>1</sup>	None	N/A	Non-Sensitive

**Table 116 Update Device Configuration (Auxiliary Load Control Scheduler) Service Request – DaysOfWeekApplicability Data Items**

<sup>1</sup> Array of 0 to 7 ID values

#### 6.14.2.1.7 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	Device	No

**Table 117 Update Device Configuration (Auxiliary Load Control Scheduler) Modes of Operation**

#### 6.14.2.1.8 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 118 Update Device Configuration (Auxiliary Load Control Scheduler) Command Variant Values**

#### 6.14.2.1.9 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.

#### 6.14.2.1.10 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:

```

<UpdateDeviceConfigurationALCScheduler>
  <ExecutionDateTime>2014-10-24T04:03:05.00Z</ExecutionDateTime>
  <ALCSHCALCSConnectionSchedule>
    <ActivateDeactivateSwitch index="1">
      <ActivateSwitch/>
    </ActivateDeactivateSwitch>
    <SpecialDaysApplicability index="1" />
    <DaysOfWeekApplicability>
      <DayOfWeekApplicability>
        <DayOfWeekID>Monday</DayOfWeekID>
      </DayOfWeekApplicability>
      <DayOfWeekApplicability>
        <DayOfWeekID>Tuesday</DayOfWeekID>
      </DayOfWeekApplicability>
    </DaysOfWeekApplicability>
    <ALCSScheduleDatesAndTime>
      <SwitchTime>06:00:00.00Z</SwitchTime>
      <StartDate>
        <Year><NonSpecifiedYear/></Year>
        <Month><SpecifiedMonth>01</SpecifiedMonth></Month>
        <DayOfMonth><SpecifiedDayOfMonth>01</SpecifiedDayOfMonth></DayOfMonth>
        <DayOfWeek><NonSpecifiedDayOfWeek/> </DayOfWeek>
      </StartDate>
      <EndDate>
        <Year><NonSpecifiedYear/></Year>
        <Month><SpecifiedMonth>03</SpecifiedMonth></Month>
        <DayOfMonth><SpecifiedDayOfMonth>31</SpecifiedDayOfMonth></DayOfMonth>
        <DayOfWeek><NonSpecifiedDayOfWeek/></DayOfWeek>
      </EndDate>
    </ALCSScheduleDatesAndTime>
  </ALCSHCALCSConnectionSchedule>
  <ALCSHCALCSConnectionSchedule>
    <ActivateDeactivateSwitch index="1">
      <DeactivateSwitch/>
    </ActivateDeactivateSwitch>
    <SpecialDaysApplicability index="1" />
    <DaysOfWeekApplicability>
      <DayOfWeekApplicability>
        <DayOfWeekID>Monday</DayOfWeekID>
      </DayOfWeekApplicability>
      <DayOfWeekApplicability>
        <DayOfWeekID>Tuesday</DayOfWeekID>
      </DayOfWeekApplicability>
    </DaysOfWeekApplicability>
    <ALCSScheduleDatesAndTime>
      <SwitchTime>22:00:00.00Z</SwitchTime>
      <StartDate>
        <Year><NonSpecifiedYear/></Year>
        <Month><SpecifiedMonth>01</SpecifiedMonth></Month>
        <DayOfMonth><SpecifiedDayOfMonth>01</SpecifiedDayOfMonth></DayOfMonth>
        <DayOfWeek><NonSpecifiedDayOfWeek/> </DayOfWeek>
      </StartDate>
      <EndDate>
        <Year><NonSpecifiedYear/> </Year>
        <Month><SpecifiedMonth>03</SpecifiedMonth></Month>
        <DayOfMonth><SpecifiedDayOfMonth>31</SpecifiedDayOfMonth></DayOfMonth>
        <DayOfWeek><NonSpecifiedDayOfWeek/></DayOfWeek>
      </EndDate>
    </ALCSScheduleDatesAndTime>
  </ALCSHCALCSConnectionSchedule>
  <ALCSHCALCSSpecialDays>
    <ALCSHCALCSSpecialDay index="1">
      <Year><NonSpecifiedYear/></Year>
      <Month><SpecifiedMonth>12</SpecifiedMonth></Month>
      <DayOfMonth><SpecifiedDayOfMonth>25</SpecifiedDayOfMonth></DayOfMonth>
      <DayOfWeek><NonSpecifiedDayOfWeek/></DayOfWeek>
    </ALCSHCALCSSpecialDay>
  </ALCSHCALCSSpecialDays>
  <SwitchTypeAndId index="1"><ALCS/></SwitchTypeAndId>
  <SwitchTypeAndId index="2">
    <HCALCS>12-52-73-24-95-66-77-88</HCALCS>
  </SwitchTypeAndId>
</UpdateDeviceConfigurationALCScheduler>

```

**Figure 80 Update Device Configuration (Auxiliary Load Control Scheduler) Transform Service Request (Body) Format**

In this example:

- Only 2 out of the 48 possible schedules have been included
- The first schedule connects ALC switch 1 every Monday and Tuesday, at 06:00:00 from the 1<sup>st</sup> of January to the 31<sup>st</sup> of March and also on Christmas Day of every year
- The second schedule disconnects ALC switch 1 every Monday and Tuesday at 22:00:00 from the 1<sup>st</sup> of January to the 31<sup>st</sup> of March and also on Christmas Day of every year
- The Special Days Calendar only includes Christmas Day of every year
- Only Switch 1 (ALCS) and 2 (HCALCS) have been included

#### 6.14.2.2 Responses

The response messages for an “Update Device Configuration (Auxiliary Load Control Scheduler)” request follow the generic format for all “Device” response messages. The generic responses applicable to this request are;

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

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

##### 6.14.2.2.1 Device Responses and Future Dating

This Service Request's Command contains a variable number of instructions ( $4 \leq 'n' \leq 9$ ) and a fixed number of activation date-time instructions ( $'m' = 2$ ). See Main Document of this documentation set section 9.3.6 for details of the Device Responses returned in the different scenarios. Apart from in the exception cases described there, e.g. cancellation, the relationship between Mode of Operation and Response message types is as follows:

1. On Demand.
  - a. Service Response (from Device) – GBCSPayload
    - i. One Device Response (Command execution outcome containing ‘n’ results).
2. Future Dated (Device).
  - a. Service Response (from Device) – GBCSPayload
    - i. One Device Response (Command storage outcome containing ‘n’ results)
  - b. Service Response (from Device) – FutureDatedDeviceAlertMessage
    - i. ‘m’ Device Alerts (Command instruction execution outcome) . These Device Alerts are described in Annex section 15.4.4. The Device Alert payloads for this particular Service Request will be of the types described in Annex section 15.4.4.3.1

##### 6.14.2.2.2 Parse Output Format

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

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

See section 6.14.2.2.1 for description of the responses to future dated execution requests.

#### 6.14.2.2.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	0054
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS46c</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set HC ALCS and ALCS configuration in ESME (excluding labels)</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Present

Table 119 - Update Device Configuration (Auxiliary Load Control Scheduler) Parse Response Header Data Items

### 6.14.3 Update Device Configuration (Auxiliary Controller Scheduler) (6.14.3)

Service Request Name	UpdateDeviceConfiguration(AuxiliaryControllerScheduler)
Service Reference	6.14
Service Request Variant Name	UpdateDeviceConfiguration(AuxiliaryControllerScheduler)
Service Reference Variant	6.14.3
Service Request Objective	To enable a DCC Service User to configure the Auxiliary Load Control behaviour of an ESME with GBCS version GBCS v4.0 or later. For Devices with a GBCS version prior to GBCS v4.0 see section 6.14.2.
Business Context Statement	The DCC Service User requires that an update is made to the current schedule configuration for auxiliary load control (Auxiliary Controller Calendar) held within a specified ESME (including SAPC).
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	<ol style="list-style-type: none"> <li>1. This Service Request is applicable only to ESME Devices with GBCS v4.0 or later. For GBCS versions prior to v4.0 use Service Request 6.14.2.</li> <li>2. This Service Request updates the SMETS item <i>Auxiliary Controller Calendar</i>. This is a Switching Table containing a set of rules for setting the commanded state of Auxiliary Controllers. The term <i>Auxiliary Controller Calendar</i> was introduced in SMETS v5.0.</li> <li>3. This Service Request 6.14.3 does not have functionality corresponding to the updating of switch type and HCALCS device ID in Service Request 6.14.2. Note that the HCALCS device ID in the ESME is established during the use of Join Service Request 8.7.1 (see Annex Section 8.7.1 for details)</li> <li>4. This Service Request is applicable to an ESME (including SAPC) connected to one or more Auxiliary Controllers. The Business Target ID = ESME Device ID.</li> <li>5. An Electricity Smart Meter can be connected to a maximum of 5 Auxiliary Controllers, each of which can be APC, ALCS or HCALCS.</li> <li>6. The Service Request consists of: <ol style="list-style-type: none"> <li>a. A special day calendar defining 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.</li> <li>b. Information defining up to 120 load control changes, each including a schedule defining when the load control change is to be applied, which one of the 5 Auxiliary Controller positions in an ESME is to be commanded, and the new commanded state.</li> </ol> </li> <li>7. Each new commanded state is sent to the Device as a value between 0 and 100 inclusive. Depending on the type of the specified Auxiliary Controller, the value will be interpreted by the Device as a percentage of energy flow (where the Auxiliary Controller is an APC) or an activate or deactivate instruction (where the Auxiliary Controller is an ALCS or HCALCS).</li> <li>8. The default direction of energy flow is to output energy from the electricity supply 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>9. When the DCC Data Systems receive a Success Response or successful future dated completion from the Device, the DSP shall send a DCC Alert N58 to the ESME's Registered ENO to notify them of the Auxiliary Controller configuration change. The Registered ENO must be a user of DUIS version 3.1 or later in order to be able to receive DCC Alert N58.</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	0x011A	N/A
GBCS v4.0 Use Case	ECS46d	N/A
GBCS v4.0 Case Name	Set Auxiliary Controller Calendar	N/A
SMETS1 Applicability	No	No
GBCS Commands - Versioning Details		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations		
Device Type	ESME	
Device's 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	ECS46d

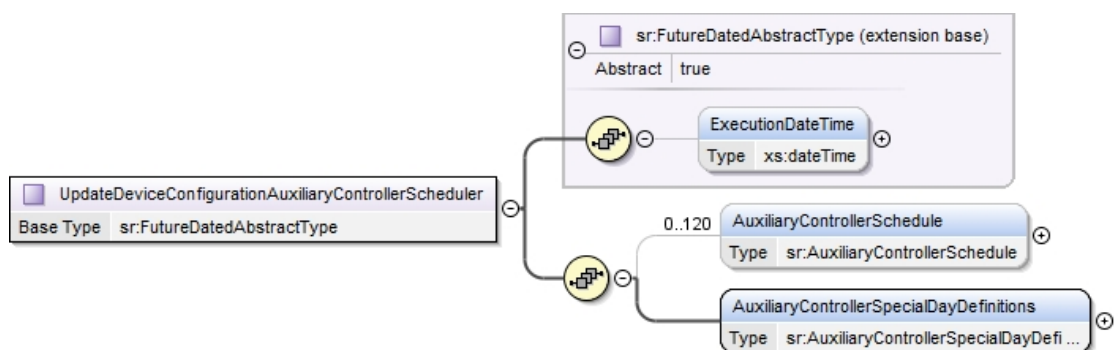
**Table 119.1 Update Device Configuration (Auxiliary Controller Scheduler) Service Request**

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).

### 6.14.3.1 Service Request

#### 6.14.3.1.1 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 UpdateDeviceConfigurationAuxiliaryControllerScheduler XML element defines this Service Request and contains the scheduler and Special Days Calendar to ESME and, for Future Dated Requests, the Execution Date and Time.



**Figure 80.2 Update Device Configuration (Auxiliary Controller Scheduler) Service Request Structure**

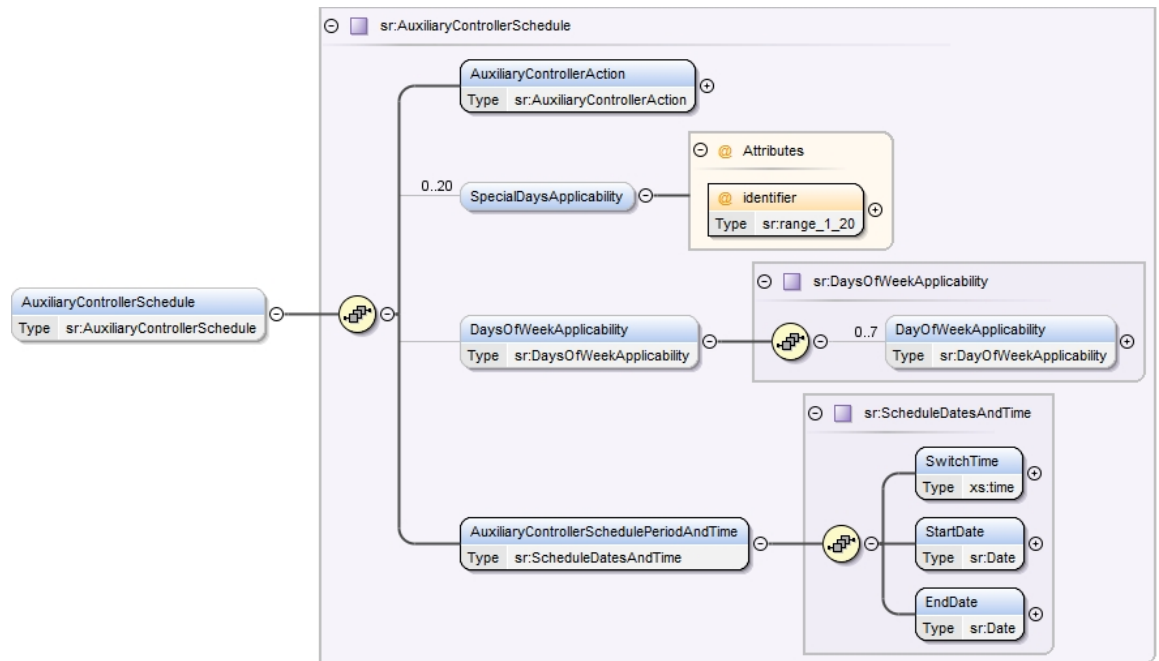


Figure 80.3 Update Device Configuration (Auxiliary Controller Scheduler) Service Request – AuxiliaryControllerSchedule Structure

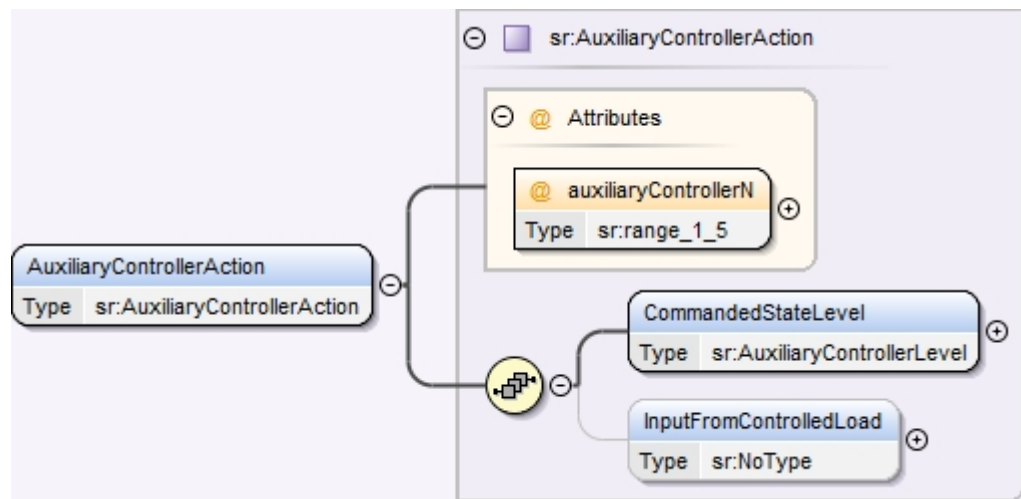
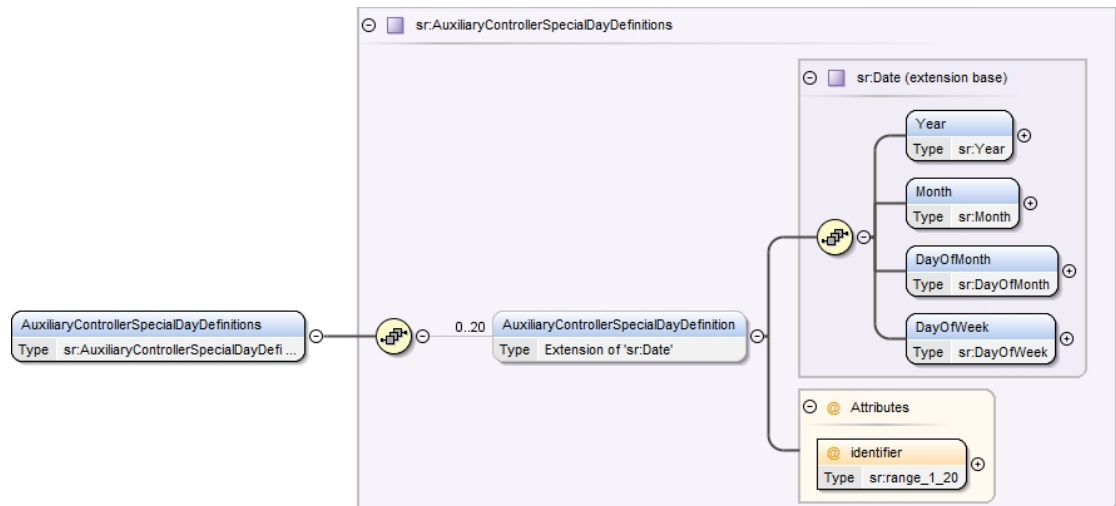


Figure 80.4 Update Device Configuration (Auxiliary Controller Scheduler) Service Request – AuxiliaryControllerAction Structure



**Figure 80.5 Update Device Configuration (Auxiliary Controller Scheduler) Service Request - AuxiliaryControllerSpecialDayDefinitions Structure**

#### 6.14.3.1.2 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
AuxiliaryControllerSpecialDayDefinitions	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.	sr: AuxiliaryControllerSpecialDayDefinitions (see section 6.14.3.1.5)	Yes <sup>1</sup>	None	N/A	Non-Sensitive
AuxiliaryControllerSchedule	Structure that defines the schedule for changing the commanded state of individual Auxiliary Controllers. Up to 120 load control changes may be defined, each consisting of a schedule defining when the load control change is to be applied, which one of the 5 Auxiliary Controller positions in an ESME is to be commanded, and the new commanded state.	sr: AuxiliaryControllerSchedule (see section 6.14.3.1.3)	Yes <sup>2</sup>	None	N/A	Non-Sensitive

**Table 119.2 Update Device Configuration (Auxiliary Controller Scheduler) Service Request Data Items**

<sup>1</sup> If there are no Auxiliary Controller special day definitions, this XML element will be present, but empty, i.e. it will contain 0 special day elements

<sup>2</sup> Minimum of 0 and maximum of 120 schedules

#### 6.14.3.1.3 AuxiliaryControllerSchedule Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
AuxiliaryControllerAction	This specifies the Auxiliary Controller and the instruction to set the commanded state, which may be interpreted by the Device as a percentage load (applicable to an APC) or an activate or deactivate instruction (applicable to an ALCS or HCALCS).	sr: AuxiliaryControllerAction (see section 6.14.3.1.4)	Yes	None	N/A	Non-Sensitive
SpecialDaysApplicability	A Special Day to which the Schedule applies	N/A	No <sup>1</sup>	None	N/A	Non-Sensitive
identifier (Attribute of SpecialDaysApplicability)	The value of this attribute specifies the identifier of the Special Day to be applicable to the Schedule	sr:range_1_20 (xs:positiveInteger from 1 to 20)	Yes	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>	sr:DayOfWeekApplicability (see section 6.14.2.1.6)	No	None	N/A	Non-Sensitive
AuxiliaryControllerSchedulePeriodAndTime	Definition of the date, or set of dates, and time of execution, of a single schedule definition	sr:ScheduleDatesAndTime (see Annex Section 17 for details)	Yes	None	N/A	Non-Sensitive

**Table 119.3 Update Device Configuration (Auxiliary Controller Scheduler) Service Request – AuxiliaryControllerSchedule Data Items**

<sup>1</sup> Optional. If included, a minimum of 1 and a maximum of 20

#### 6.14.3.1.4 AuxiliaryControllerAction Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
auxiliaryControllerN (attribute of AuxiliaryControllerAction)	The identifier associated with the Auxiliary Controller	sr:range_1_5 (Restriction of xs:positiveInteger minInclusive = 1, maxInclusive = 5)	None	N/A	Non-Sensitive	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
CommandedStateLevel	Where the Auxiliary Controller is an APC, the commanded state includes the percentage to which its level is to be set, where 0 means no energy flow.  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.  Valid set: Integer in the range 0 to 100	sr:AuxiliaryControllerLevel  (Restriction of xs:unsignedShort minInclusive = 0, maxInclusive = 100)	Yes	None	N/A	Non-Sensitive
InputFromControlledLoad	This element is only relevant to an APC, and will be ignored where the Auxiliary Controller is not an APC.  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.  If the InputFromControlledLoad element is not present, then the energy flow shall default to output of energy to the controlled load.	sr:NoType (see Annex 17)	No	None	N/A	Non-Sensitive

**Table 119.4 Update Device Configuration (Auxiliary Controller Scheduler) Service Request – AuxiliaryControllerAction Data Items**

#### 6.14.3.1.5 AuxiliaryControllerSpecialDayDefinitions Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	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	sr:Date (with wildcards) (see Annex section 17)	No <sup>1</sup>	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	sr:range_1_20 (xs:positiveInteger from 1 to 20)	No <sup>1</sup>	None	N/A	Non-Sensitive

**Table 119.5 Update Device Configuration (Auxiliary Controller Scheduler) Service Request – AuxiliaryControllerSpecialDayDefinitions Data Items**

<sup>1</sup> Optional. A maximum of 20 may be included

#### 6.14.3.1.6 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	Device	No

**Table 119.6 Update Device Configuration (Auxiliary Load Controller Scheduler) Modes of Operation**

#### 6.14.3.1.7 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 119.7 Update Device Configuration (Auxiliary Load Controller Scheduler) Command Variant Values**

#### 6.14.3.1.8 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.

#### 6.14.3.1.9 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:

```
<UpdateDeviceConfigurationAuxiliaryControllerScheduler>
<ExecutionDateTime>2020-10-24T04:03:05.00Z</ExecutionDateTime>
<AuxiliaryControllerSchedule>
  <AuxiliaryControllerAction auxiliaryControllerN="1">
    <CommandedStateLevel>50</CommandedStateLevel>
  </AuxiliaryControllerAction>
  <SpecialDaysApplicability identifier="1"/>
  <DaysOfWeekApplicability>
    <DayOfWeekApplicability>
      <DayOfWeekID>Monday</DayOfWeekID>
    </DayOfWeekApplicability>
    <DayOfWeekApplicability>
      <DayOfWeekID>Tuesday</DayOfWeekID>
    </DayOfWeekApplicability>
  </DaysOfWeekApplicability>
  <AuxiliaryControllerSchedulePeriodAndTime>
    <SwitchTime>06:00:00.00</SwitchTime>
    <StartDate>
      <Year><NonSpecifiedYear/></Year>
      <Month><SpecifiedMonth>01</SpecifiedMonth></Month>
      <DayOfMonth><SpecifiedDayOfMonth>01</SpecifiedDayOfMonth></DayOfMonth>
      <DayOfWeek><NonSpecifiedDayOfWeek/> </DayOfWeek>
    </StartDate>
    <EndDate>
      <Year><NonSpecifiedYear/></Year>
      <Month><SpecifiedMonth>03</SpecifiedMonth></Month>
      <DayOfMonth><SpecifiedDayOfMonth>31</SpecifiedDayOfMonth></DayOfMonth>
      <DayOfWeek><NonSpecifiedDayOfWeek/></DayOfWeek>
    </EndDate>
  </AuxiliaryControllerSchedulePeriodAndTime>
</AuxiliaryControllerSchedule>
<AuxiliaryControllerSchedule>
  <AuxiliaryControllerAction auxiliaryControllerN="1">
    <CommandedStateLevel>100</CommandedStateLevel>
  </AuxiliaryControllerAction>
  <SpecialDaysApplicability identifier="3"/>
  <DaysOfWeekApplicability>
    <DayOfWeekApplicability>
      <DayOfWeekID>Saturday</DayOfWeekID>
    </DayOfWeekApplicability>
    <DayOfWeekApplicability>
      <DayOfWeekID>Sunday</DayOfWeekID>
    </DayOfWeekApplicability>
  </DaysOfWeekApplicability>
  <AuxiliaryControllerSchedulePeriodAndTime>
    <SwitchTime>06:00:00.00</SwitchTime>
    <StartDate>
      <Year><NonSpecifiedYear/></Year>
      <Month><SpecifiedMonth>01</SpecifiedMonth></Month>
      <DayOfMonth><SpecifiedDayOfMonth>01</SpecifiedDayOfMonth></DayOfMonth>
      <DayOfWeek><NonSpecifiedDayOfWeek/> </DayOfWeek>
    </StartDate>
    <EndDate>
      <Year><NonSpecifiedYear/></Year>
      <Month><SpecifiedMonth>03</SpecifiedMonth></Month>
      <DayOfMonth><SpecifiedDayOfMonth>31</SpecifiedDayOfMonth></DayOfMonth>
      <DayOfWeek><NonSpecifiedDayOfWeek/></DayOfWeek>
    </EndDate>
  </AuxiliaryControllerSchedulePeriodAndTime>
</AuxiliaryControllerSchedule>
<AuxiliaryControllerSpecialDayDefinitions>
  <AuxiliaryControllerSpecialDayDefinition identifier="1">
    <Year><NonSpecifiedYear/></Year>
    <Month><SpecifiedMonth>12</SpecifiedMonth></Month>
    <DayOfMonth><SpecifiedDayOfMonth>25</SpecifiedDayOfMonth></DayOfMonth>
    <DayOfWeek><NonSpecifiedDayOfWeek/></DayOfWeek>
  </AuxiliaryControllerSpecialDayDefinition>
</AuxiliaryControllerSpecialDayDefinitions>
</UpdateDeviceConfigurationAuxiliaryControllerScheduler>
```

**Figure 80.6 Update Device Configuration (Auxiliary Controller Scheduler) Transform Service Request (Body) Format**

In this example:

- Only 2 out of 120 possible schedules have been included

- The first schedule sets the state of Auxiliary Controller 1 every Monday and Tuesday at 06:00:00 from the 1<sup>st</sup> of January to the 31<sup>st</sup> of March and also on Christmas Day of every year. The commanded state level will be set to 50, which would have the effect of limiting the load to 50% of energy flow if Auxiliary Controller 1 is an APC. A commanded state level of 50 would be unusual if it is an ALCS or HCALCS, but if sent would deactivate supply. The absence of an InputFromControlledLoad element indicates that the direction of energy flow is to output energy from the electricity supply to the controlled load.
- The second schedule sets the state of Auxiliary Controller 1 every Monday and Tuesday at 22:00:00 from the 1<sup>st</sup> of January to the 31<sup>st</sup> of March and also on Christmas Day of every year. The commanded state level will be set to 100, which would have the effect of enabling 100% of energy flow if Auxiliary Controller 1 is an APC, or would activate supply if it is an ALCS or HCALCS. The absence of an InputFromControlledLoad element indicates that the direction of energy flow is to output energy from the electricity supply to the controlled load.
- The Special Days Calendar only includes Christmas Day of every year

#### 6.14.3.2 Responses

The response messages for an "Update Device Configuration (Auxiliary Controller Scheduler)" request follow the generic format for all "Device" response messages. The generic responses applicable to this request are;

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

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

##### 6.14.3.2.1 Device Responses and Future Dating

This Service Request's Command contains a variable number of instructions ( $4 \leq 'n' \leq 9$ ) and a fixed number of activation date-time instructions ( $'m' = 2$ ). See Main Document of this documentation set section 9.3.6 for details of the Device Responses returned in the different scenarios. Apart from in the exception cases described there, e.g. cancellation, the relationship between Mode of Operation and Response message types is as follows:

3. On Demand.
  - a. Service Response (from Device) – GBCSPayload
    - i. One Device Response (Command execution outcome containing 'n' results).
4. Future Dated (Device).
  - a. Service Response (from Device) – GBCSPayload
    - i. One Device Response (Command storage outcome containing 'n' results)
  - b. Service Response (from Device) – FutureDatedDeviceAlertMessage

- i. 'm' Device Alerts (Command instruction execution outcome). These Device Alerts are described in Annex section 15.4.4. The Device Alert payloads for this particular Service Request will be of the types described in Annex section 15.4.4.3.1

#### 6.14.3.2.2 Parse Output Format

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

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

See section 6.14.2.2.1 for description of the responses to future dated execution requests.

#### 6.14.3.2.2.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	011A
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS46d</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Auxiliary Controller Calendar</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Present

Table 119.8 Update Device Configuration (Auxiliary Controller Scheduler) Parse Response Header Data Items

## 6.15 Update Security Credentials (6.15)

### SMETS2 or later

This Service Request maps to two types of GBCS Use Case, relating to SMKI Organisation Certificates and SMKI Device Certificates.

Therefore the 6.15 Service Request has been broken into two parts: 6.15.1 (KRP Credentials) and 6.15.2 (Device Credentials).

### SMETS1

This Service Request maps to Service Reference Variant 6.15.1 (KRP Credentials).

### 6.15.1 Update Security Credentials (KRP) (6.15.1)

Service Request Name	UpdateSecurityCredentials
Service Reference	6.15
Service Request Variant Name	UpdateSecurityCredentials(KRP)

Service Reference Variant	6.15.1
Service Request Objective	<p>SMETS2 or later: To enable a DCC Service User to update/replace the security credentials held on a specified Device to ensure that a DCC Service User is able to interact with the device in line with their designated User Role.</p> <p>SMETS1: To enable a DCC Service User to update/replace the security credentials which the DCC Data Systems holds corresponding to the specified Device, to ensure that a DCC Service User is able to interact with the Device in line with their designated User Role.</p>
Business Context Statement	<p>SMETS2 or later: Periodically a User who is a Known Remote Party to a device may need to replace their security credentials on the Device in line with their security policy. This Service Request is the way that a User would update/replace these security credentials.</p> <p>SMETS1: Periodically a User who is the SMETS1 equivalent of a Known Remote Party to a Device may need to replace their security credentials which the DCC Data Systems holds corresponding to the specified Device, in line with their security policy. This Service Request is the way that a User would update/replace these security credentials.</p>
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> <li>Electricity Network Operator (ENO)</li> <li>Gas Network Operator (GNO)</li> </ul>
Security Classification	<p>Critical and non-sensitive:</p> <p>SMETS2 or later: GBCS XREF: SME.C.C</p>
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>This Service Request is applicable in the following cases: <ul style="list-style-type: none"> <li>EIS. <ol style="list-style-type: none"> <li>To change the Supplier Public Security Credentials on the ESME or the HCALCS. The Remote Party Role has to be set to 'Supplier', if they need changing and are applicable to the Device Type, the Remote Party Floor Seq Number and Remote Party Prepayment Top Up Floor Seq Number have to be set to the Supplier Originator Counter values and the Replacement Certificate(s) have to be those of the Supplier applicable to the Device Type that need changing.</li> <li>To change the Network Operator Public Security Credentials on the ESME, after Meter commissioning and before updating its own Public Security Credentials on the Meter, i.e. when the Network Operator Public Security Credentials on the ESME are those of the EIS. The Remote Party Role has to be set to 'Network Operator' and the Replacement Certificate(s) have to be those of the Network Operator. At least the Network Operator Digital Signature Certificate will have to be changed by the EIS before the ENO will be able to change its Public Security Credentials on the Meter. This Service Request cannot change the Network Operator Originator Counter value.</li> </ol> </li> </ul> </li> </ol>

- c. To change the Load Controller Public Security Credentials on the ESME, after Meter commissioning and subsequently to manage credentials on the meter. The Remote Party Role has to be set to LoadController. The replacement certificates can be either those of the Supplier or they can be certificates with the SMKI Remote Party Role of LoadController from another party.  
  
Note that SMKI Certificates in the SMKI Remote Party Role of Load Controller are not yet available and will be added in a subsequent release.
- ENO.
  - a. To change the Network Operator Public Security Credentials on the ESME. The Remote Party Role has to be set to 'Network Operator', the Remote Party Floor Seq Number, if it needs changing, has to be set to the Network Operator Originator Counter value and the Replacement Certificate(s) have to be those of the Network Operator that need changing.
- GIS.
  - a. To change the Supplier Public Security Credentials on the GSME. The Remote Party Role has to be set to 'Supplier', if they need changing and are applicable to the Device Type, the Remote Party Floor Seq Number and Remote Party Prepayment Top Up Floor Seq Number have to be set to the Supplier Originator Counter values and the Replacement Certificate(s) have to be those of the Supplier applicable to the Device Type that need changing.
  - b. To change the Supplier Public Security Credentials on the Gas Proxy Function.
- GNO.
  - a. To change the Network Operator Public Security Credentials on the Gas Proxy Function. The Remote Party Role has to be set to 'Network Operator' and the Replacement Certificate(s) have to be those of the Network Operator that need changing. This Service Request cannot change the Network Operator Originator Counter value.
2. This Service Request can only be Future Dated if the Remote Party Role is 'Supplier' or Load Controller.
3. This Service Request includes data item ApplyTimeBasedCPVChecks to instruct the Device to apply (true) or not apply (false) time based checks as part of Certification Path Validation. It should only be set to false in exceptional circumstances (e.g. credentials on the Device have expired without replacement for unforeseen reasons).
4. Upon successful processing of this Service Request to replace Security Credentials related to that Remote Party Role, if the Request includes Remote Party Floor Sequence Number(s), the Remote Party Role is Supplier and the Digital Signature Certificate is being changed, the specified target Device will reset the Immediate Execution Counters and Future Dated Counters on the Device to the Remote Party Floor Sequence Number(s) specified within this Service Request.
5. When constructing a Service Request, a DCC Service User may populate one or more CertificationPathCertificates as appropriate depending on how that DCC Service User has implemented their Security Credentials
6. Where the DSP receives a Success Response from Update Security Credentials command and where the Remote Party whose certificate has been placed on the Device is not the sender of the

	<p>Service Request, the DSP shall send a DCC Alert N42 to the Remote Party whose certificate has been placed on the Device (this action is a post-processing step after the Service Response has been sent to the User).</p> <p>7. Where the DSP receives a Success Response from Update Security Credentials command and where the Device Status is 'Recovered' and all the ACB Credentials on the Supplier and / or Network Operator slots have been replaced with the corresponding DCC Service User ones, the DSP shall update the Device Status to the value it held immediately prior to its recovery (this action is carried out before the Service Response is generated).</p> <p>8. For each certificate specified in a Response or Alert from the Device as being successfully updated by the Update Security Credentials Command, the DCC Data Systems shall update the Smart Metering Inventory with the new certificate identifier as a record of the certificate held in the relevant Trust Anchor Cell on that Device (this action is carried out before the Service Response is generated).</p> <p>9. Guidance note: If a Network Operator has received a DCC Alert N16 to indicate that a Device has been associated with a Meter Point, but has not yet received a DCC Alert N42 for the Device, then the Network Operator will not yet be able to use this Service Request 6.15.1. Network Operators must wait for receipt of a DCC Alert N42, which indicates that the Network Operator's security credentials have been associated with the Device. Network Operators must not trigger SRV 6.15.1 on receipt of the initial DCC Alert N16 only, as the command would not be accepted, and the request would fail silently with no response being received by the Network Operator.</p>	
GBCS Cross Reference	Electricity	Gas
	All Remote Party Roles other than Load Controller	
GBCS Message Code (for each CredentialsReplacementMode)	<p>supplierBySupplier – 0x0102</p> <p>networkOperatorByNetworkOperator – 0x0103</p>	
GBCS Use Case	CS02b	CS02b
GBCS Use Case Name	Update Security Credentials	Update Security Credentials
SMETS1 Applicability	Yes	Yes
	Load Controller Remote Party Role	
	Electricity	Gas
GBCS v4.0 Message Code (for each CredentialsReplacementMode)	loadControllerBySupplier – 0x0126	N/A
GBCS v4.0 Use Case	CS02g	N/A
GBCS v4.0 Use Case Name	Update Load Controller Security Credentials	N/A

SMETS1 Applicability	No	N/A	
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:		
	1. For SMETS1 Devices, references to storage of Certificates and Execution Counters on the Device shall be interpreted as meaning storage of Execution Counters and Security Credentials in DCC Data Systems corresponding to the Device, as defined in the SMETS1 Supporting Requirements Document.		
	2. As defined in the SMETS1 Supporting Requirements Document, it shall not be possible to use this Service Request 6.15.1 for a newly-commissioned Device until Service Request 6.21 has been successfully executed for the same Remote Party Role.		
	3. Device Status ‘Recovered’ is not applicable to SMETS1 Devices.		
	4. Since the Service Request is not to effect a change of control, any value in the RemotePartyFloorSequenceNumber field shall be discarded.		
	5. Key Agreement Top Up Certificates and floor sequence numbers shall not be used.		
	6. Time-based checks shall always be applied.		
	7. Descriptions of behaviour for HCALCS Devices are not applicable to SMETS1.		
	8. Load Controller Security Credentials are not applicable to SMETS1.		
GBCS Commands - Versioning Details			
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations			
Device’s firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS prior to v4.0	GBCS v4.0 or later	
Device Type	ESME		
DUIS 1 to DUIS v3.1: DEFAULT - No specific XML criteria	CS02b	CS02b	
DUIS 4.0 or later: XML Criteria - XML data item RemotePartyRole populated with Supplier or NetworkOperator	CS02b	CS02b	
DUIS 4.0 or later: XML Criteria - XML data item RemotePartyRole populated with LoadController	Response Code – E061509	CS02g	
Device Type	Other Device Types		

DUIS 1 to DUIS v3.1: DEFAULT - No specific XML criteria	CS02b	CS02b
DUIS 4.0 or later: XML Criteria - XML data item RemotePartyRole populated with Supplier or NetworkOperator	CS02b	CS02b
DUIS 4.0 or later: XML Criteria - XML data item RemotePartyRole populated with LoadController	Response Code – E061501	Response Code – E061501

**Table 120 Update Security Credentials (KRP) Service Request**

The following table summarises the possible combinations of User Roles, Remote Party Roles, Device Types and Certificate Types:

User Role	Remote Party Role	Target Device Type	Certificate Type
EIS	Supplier	ESME	Digital Signing
EIS	Supplier	ESME	Key Agreement
EIS	Supplier	ESME	Key Agreement Top Up
EIS	Supplier	HCALCS <sup>1</sup>	Digital Signing
EIS	NetworkOperator <sup>1</sup>	ESME	Digital Signing
EIS	NetworkOperator <sup>1</sup>	ESME	Key Agreement
ENO	NetworkOperator	ESME	Digital Signing
ENO	NetworkOperator	ESME	Key Agreement
GIS	Supplier	GSME	Digital Signing
GIS	Supplier	GSME	Key Agreement
GIS	Supplier	GSME	Key Agreement Top Up
GIS	Supplier	GPF	Digital Signing
GIS	Supplier	GPF	Key Agreement
GNO	NetworkOperator	GPF	Digital Signing
GNO	NetworkOperator	GPF	Key Agreement
EIS	LoadController <sup>1,2</sup>	ESME	Digital Signing
EIS	LoadController <sup>1,2</sup>	ESME	Key Agreement

**Table 121 Update Security Credentials (KRP) Service Request User Roles / Remote Party Roles / Devices / Certificate Types**

<sup>1</sup> N/A to SMETS1

<sup>2</sup> N/A to Devices with GBCS version prior to v4.0

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).

### 6.15.1.1 Service Request

#### 6.15.1.1.1 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 UpdateSecurityCredentialsKRP XML element defines this Service Request and contains the KRP Public Security Credentials to be updated on the Device and, for Future Dated Requests, the Execution Date and Time.

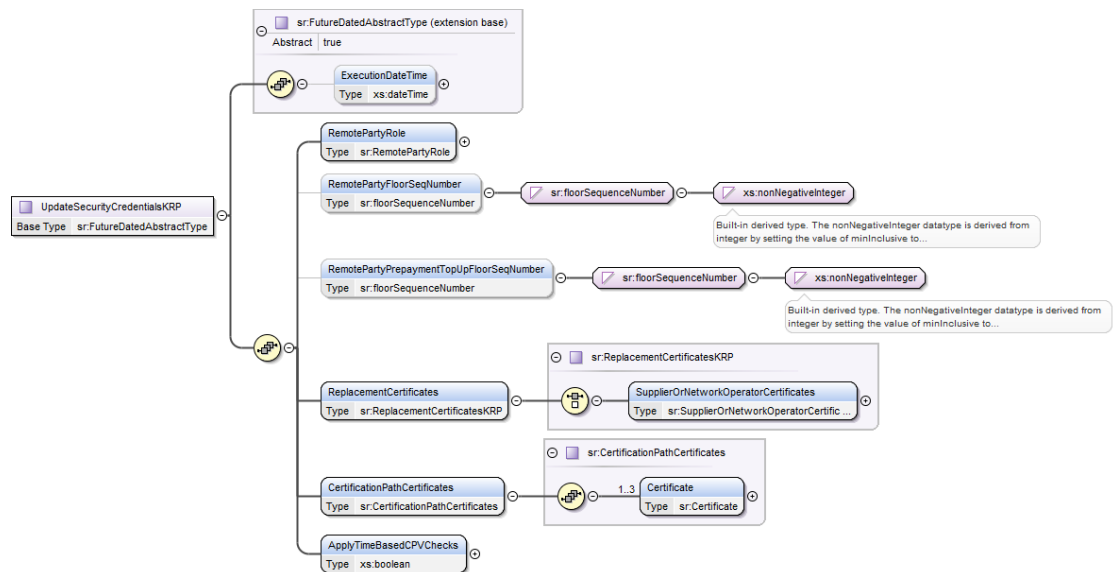


Figure 81 Update Security Credentials (KRP) Service Request Structure

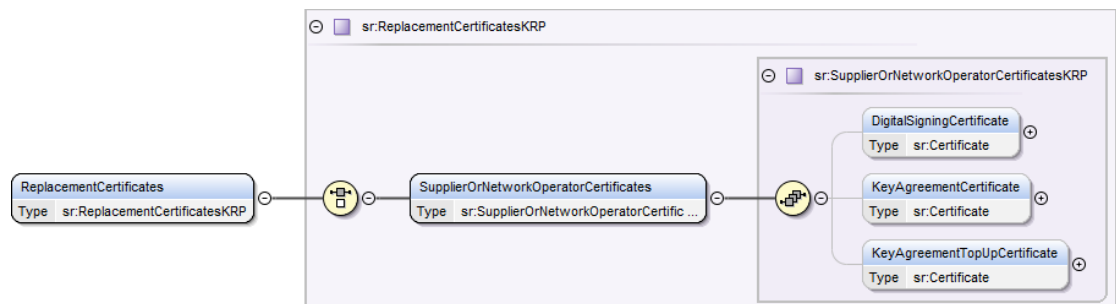


Figure 82 Update Security Credentials (KRP) Service Request – ReplacementCertificates Structure

#### 6.15.1.1.2 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	Remote Party Role – Supplier or LoadController: No Otherwise: N/A	None	UTC Date-Time	Non-Sensitive
RemotePartyRole	Remote Party Role for which the Credentials are being updated Valid Set: <ul style="list-style-type: none"> <li>Supplier</li> <li>NetworkOperator</li> <li>LoadController</li> </ul>	Restriction base xs:token (Enumeration)	Yes	None	N/A	Non-Sensitive
RemotePartyFloorSeqNumber	Not relevant if the RemotePartyRole is NetworkOperator. Otherwise, this value will set a new floor sequence number that will be used by the Device to prevent replay of Update Security Credentials Commands, and other Commands, for the affected Remote Party.	sr:floorSequenceNumber (Restriction of xs:nonNegativeInteger minInclusive = 0, maxInclusive = 9223372036854775807)	If RemoteParty Role is Load Controller: Yes Otherwise: No	None	N/A	Non-Sensitive
RemotePartyPrepaymentTopUpFloorSeqNumber	Only applicable when the Command changes Supplier Credentials and Counters on a Meter and the Counter for its Prepayment Top Ups is different to that used for other Commands.  This value will be used to prevent replay of Prepayment Top Up Commands. Where applicable (i.e. the target Device is a Meter and Supplier security credentials are being updated), if not populated then the RemotePartyFloorSeqNumber will be used in prevention of replay of Prepayment Top Up Commands. SMETS1: This value shall not be used.	sr:floorSequenceNumber (Restriction of xs:nonNegativeInteger minInclusive = 0, maxInclusive = 9223372036854775807)	Remote Party Role = Supplier and Device Type = ESME or GSME: No Otherwise: N/A	None	N/A	Non-Sensitive
ReplacementCertificates	This structure provides a list of the replacement Certificates.	sr:ReplacementCertificate sKRP (see section 6.15.1.1.3)	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
CertificationPathCertificates	This structure provides the Certificates needed to undertake Certification Path Validation of the new end entity Certificate against the root public key held on the Device. The number of these may be less than the number of replacement certificates (e.g. a Supplier may replace all of its certificates but may only need to supply one Certification Authority Certificate to link them all back to root.  SMETS1: the Device shall not use these Certificates but they must be supplied as the element is mandatory.	sr:Certificate (xs:base64Binary minOccurs = "1", maxOccurs = "3")	Yes	None	N/A	Non-Sensitive
ApplyTimeBasedCPVChecks	Specify whether the time based Certification Path Validation should be applied  SMETS1: time based checks shall always be applied	xs:boolean	Yes	None	N/A	Non-Sensitive

**Table 122 Update Security Credentials (KRP) Service Request Data Items**

#### 6.15.1.1.3 ReplacementCertificatesKRP Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
SupplierOrNetworkOperatorCertificates	Certificates to be included in Requests to update Supplier, Network Operator or Load Controller Credentials	sr: SupplierOrNetworkOperatorCertificatesKRP (see section 6.15.1.1.4)	Yes	None	N/A	Non-Sensitive

**Table 123 Update Security Credentials (KRP) Service Request – ReplacementCertificatesKRP Data Items**

#### 6.15.1.1.4 SupplierOrNetworkOperatorCertificatesKRP Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory <sup>1</sup>	Default	Units	Sensitivity
DigitalSigningCertificate	The new Digital Signing Certificate to be placed in the Remote Party Role Key Usage digitalSignature (Cell Usage management) on the Device	sr:Certificate (xs:base64Binary)	No	None	N/A	Non-Sensitive
KeyAgreementCertificate	The new Key Agreement Certificate to be placed in the Remote Party Role Key Usage keyAgreement (Cell Usage management) on the Device	sr:Certificate (xs:base64Binary)	HCALCS <sup>2</sup> : N/A Otherwise: No	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory <sup>1</sup>	Default	Units	Sensitivity
KeyAgreementTopUpCertificate	The new Key Agreement Certificate to be placed in the Supplier Remote Party Role Key Usage keyAgreement (Cell Usage prePaymentTopUp) on the Device for those Suppliers that use different Originator Counters for Prepayment Top Up	sr:Certificate (xs:base64Binary)	Remote Party Role = Supplier and Device Type = ESME or GSME: No Otherwise: N/A	None	N/A	Non-Sensitive

**Table 124 Update Security Credentials (KRP) Service Request – SupplierOrNetworkOperatorCertificatesKRP Data Items**

<sup>1</sup> At least one of the Certificates applicable to the Remote Party Role and Device Type must be included

<sup>2</sup> N/A to SMETS1

<Table Removed>

**Table 125 Not Used**

#### 6.15.1.1.5 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	Device	No
SMETS1	No	Yes	No	DSP	No

**Table 126 Update Security Credentials (KRP) Modes of Operation**

#### 6.15.1.1.6 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 127 Update Security Credentials (KRP) Command Variant Values**

#### 6.15.1.1.7 Validation

This Service Request specific validation is as follows (see Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Execution Date Time and Public Security Credentials validation):

Validation Check	Process	Response Code
Are the Remote Party Role and Device Type valid?	Check that the combination of DCC Service User Role, Remote Party Role and Device Type is valid, i.e. it is one of the valid combinations in Table 121	E061501

Validation Check	Process	Response Code
Is the Remote Party Prepayment Top Up Floor Seq Number applicable to the Request?	Check that the Remote Party Prepayment Top Up Floor Seq Number is only included if the Supplier (EIS or GIS) is updating the Supplier Security Credentials on the Device and the Device is an ESME or GSME	E061504
Is the Certificate type applicable to the Device type?	Check that if the Certificate Type is: <ul style="list-style-type: none"> <li>Digital Signing. The Device Type is ESME, HCALCS<sup>1</sup>, GSME or GPF</li> <li>Key Agreement. The Device Type is ESME, GSME or GPF</li> <li>Key Agreement Top Up. The Device Type is ESME or GSME</li> </ul>	E061505
Is Future Dating applicable to the Remote Party Role?	If the Request is Future Dated, check that the Remote Party Role is Supplier or Load Controller	E061506
Does the Request include valid Certificate Types for the Remote Party Role?	Check that the combination of Remote Party Role and Certificate Types is as follows: <ul style="list-style-type: none"> <li>Supplier. Certificate Types: Digital Signing, Key Agreement and / or Key Agreement Top Up</li> <li>Network Operator. Certificate Types: Digital Signing and / or Key Agreement</li> <li>Load Controller. Certificate Types: Digital Signing and / or Key Agreement</li> </ul>	E061507
Is the Remote Party Role suitable for a SMETS1 Service Request?	If the Device is SMETS1 check that the Role of the User submitting the Service Request and RemotePartyRole align. Specifically if the User's role is EIS or GIS, the RemotePartyRole must be Supplier, and if the User's role is ENO or GNO the RemotePartyRole must be NetworkOperator.	E061508
Is the GBCS version of the target Device appropriate for the requested Remote Party Role?	If the Device is ESME and the requested RemotePartyRole is LoadController then check that the GBCS version of the Device is v4.0 or later	E061509

**Table 128 Update Security Credentials (KRP) Service Request Validation**

<sup>1</sup> N/A to SMETS1

#### 6.15.1.1.8 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:

```
<UpdateSecurityCredentialsKRP>
  <RemotePartyRole>Supplier</RemotePartyRole>
  <ReplacementCertificates>
    <SupplierOrNetworkOperatorCertificates>
      <DigitalSigningCertificate>ZGVmYXVsdA==</DigitalSigningCertificate>
      <KeyAgreementCertificate>ZGVmYXVsdA==</KeyAgreementCertificate>
    </SupplierOrNetworkOperatorCertificates>
  </ReplacementCertificates>
  <CertificationPathCertificates>
    <Certificate>ZGVmYXVsdA==</Certificate>
  </CertificationPathCertificates>
  <ApplyTimeBasedCPVChecks>true</ApplyTimeBasedCPVChecks>
</UpdateSecurityCredentialsKRP>
```

**Figure 83 Update Security Credentials (KRP) Transform Service Request (Body) Format**

### 6.15.1.2 Responses

The response messages for an “Update Security Credentials (KRP)” request follow the generic format for all “Device” response messages, the generic responses applicable to this request are;

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

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

#### 6.15.1.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E061501	Failed Validation –DCC Service User Role / Remote Party Role / Device Type mismatch	Error	The combination of DCC Service User Role, Remote Party Role and Device Type is invalid
E061504	Failed Validation – Invalid Remote Party Prepayment Top Up Floor Seq Number	Error	The Remote Party New Prepayment Top Up Floor Seq Number data item is not applicable to the Request
E061505	Failed Validation – Certificate Type / Device Type mismatch	Error	The Certificate type is not applicable to the Device Type
E061506	Failed Validation – Future Dating / Remote Party Role mismatch	Error	The Remote Party Role is not Supplier or Load Controller
E061507	Failed Validation – Remote Party Role / Certificate Type mismatch	Error	The Certificate Type is not applicable to the Remote Party Role
E061508	Failed Validation – SMETS1-specific Remote Party Role check failure	Error	Mismatch between User Role and Remote Party Role where the target is a SMETS1 Device.

Response Code	Response Code Name	Response Code Type	Description
E061509	Failed Validation – Remote Party Role / GBCS version mismatch	Error	Mismatch between Remote Party Role and the GBCS version of the target Device.

**Table 129 Failed Update Security Credentials (KRP) Service Request Response Codes**

#### 6.15.1.2.2 Device Responses and Future Dating

For SMETS2 or later this Service Request's Command contains a fixed number of instructions ('n' = 1) and activation date-time instructions ('m' = 1). See Main Document of this documentation set section 9.3.6 for details of the Device Responses returned in the different scenarios. Apart from in the exception cases described there, e.g. cancellation, the relationship between Mode of Operation and Response message types is as follows:

1. On Demand.
  - a. Service Response (from Device) – GBCSPayload
    - i. One Device Response (Command execution outcome containing 'n' results).
2. Future Dated (Device).
  - a. Service Response (from Device) – GBCSPayload
    - i. One Device Response (Command storage outcome containing 'n' results)
  - b. Service Response (from Device) – FutureDatedDeviceAlertMessage
    - i. 'm' Device Alerts (Command instruction execution outcome). These Device Alerts are described in Annex section 15.4.4. The Device Alert payloads for this particular Service Request will be of the type described in Annex section 15.4.4.3.3

For SMETS1 Devices this Service Request is only available for Mode of Operation On Demand or Future Dated (DSP). In both cases the Response message type is a single SMETS1 Response.

ii.

#### 6.15.1.2.3 Parse Output / SMETS1 Response Format

##### 6.15.1.2.3.1 Format - UpdateSecurityCredentialsKRPRsp

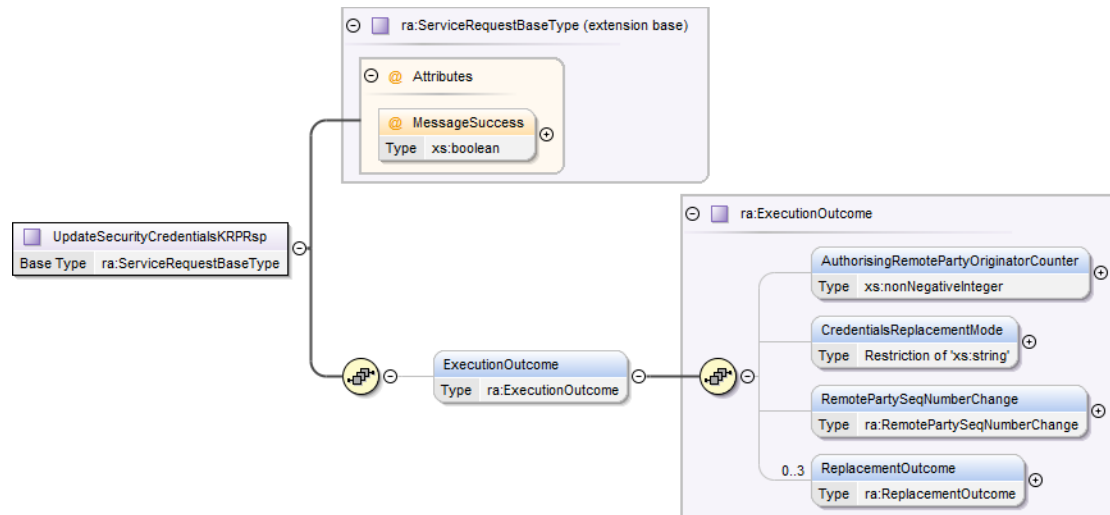


Figure 84 - Update Security Credentials KRP Response Structure

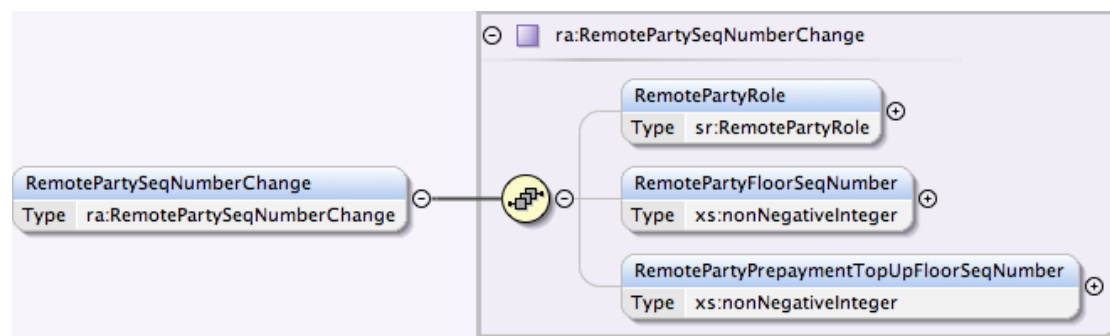


Figure 85 - Update Security Credentials KRP - Remote Party Seq Number Change Structure

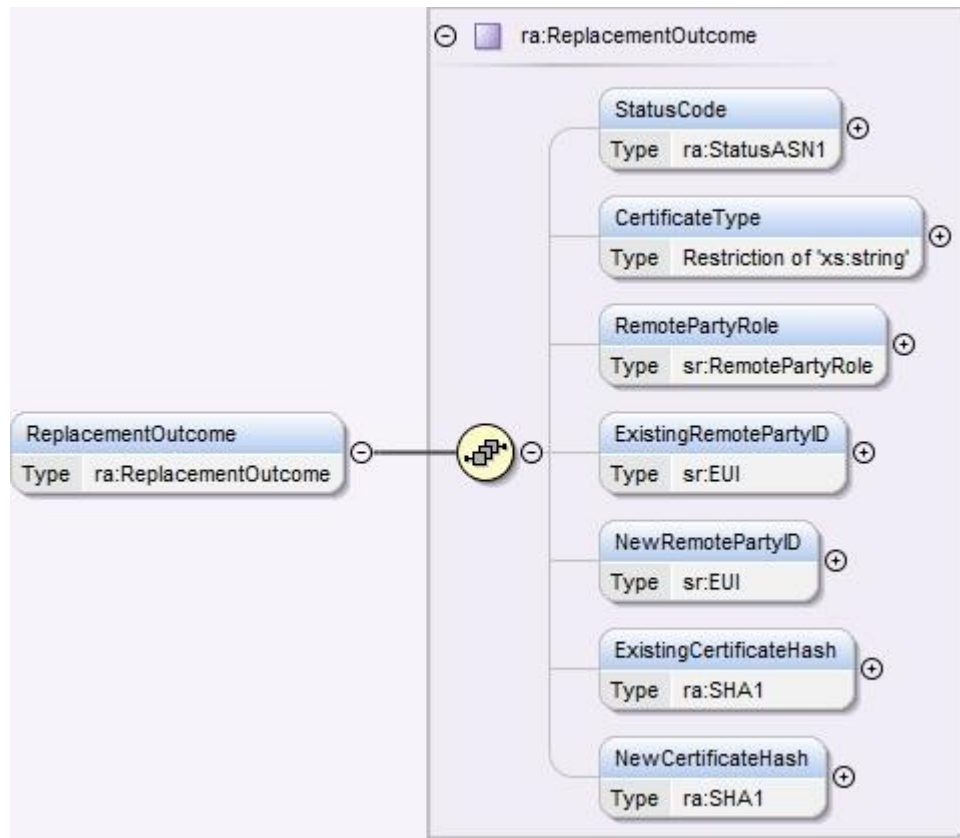


Figure 86 - Update Security Credentials KRP - Replacement Outcome Structure

#### 6.15.1.2.3.2 Specific Header Data Items

All Remote Party Roles other than Load Controller:

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	Dependent on credentials replacement mode; see GBCS Table 13.3.5.2 or Table 131 in this document	Dependent on credentials replacement mode; see GBCS Table 13.3.5.2 or Table 131 in this document
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>CS02b</i>	<i>CS02b</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Update Security Credentials</i>	<i>Update Security Credentials</i>
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Present	Present

Table 130 – Update Security Credentials (KRP) Parse/ SMETS1 Response Header Data Items - All Remote Party Roles other than Load Controller

Load Controller Remote Party Role:

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	0x0126	N/A
<i>GBCS Use Case Number (for information only - not in header)</i>	CS02g	N/A
<i>GBCS Use Case Name (for information only - not in header)</i>	Update Load Controller Security Credentials	N/A
SupplementaryRemotePartyID	Not Present	N/A
SupplementaryRemotePartyCounter	Not Present	N/A
SupplementaryOriginatorCounter	Not Present	N/A
Timestamp	Present	N/A

**Table 130.1 – Update Security Credentials (KRP) Parse - Load Controller Remote Party Role**

The Message Code is dependent on the credentials replacement mode, as described in GBCS Table 13.3.5.2 in GBCS section 13.3.5.2 and in section 13.10.5.2, and reproduced here (only Credential Replacement Modes applicable to this Service Request) for convenience.

CredentialsReplacementMode	Message Code
supplierBySupplier	0102
networkOperatorByNetworkOperator	0103
loadControllerBySupplier <sup>1</sup>	0126

**Table 131 – Message Codes and Credential Replacement Mode (GBCS Table 13.3.5.2)**

<sup>1</sup> Not applicable to Devices with GBCS version prior to v4.0 and not applicable to SMETS1 Devices

#### **6.15.1.2.3.3 Specific Body Data Items**

Responses to on demand execution requests will carry the data in the table below.

See section 6.15.1.2.2 for description of the responses to future dated execution requests. A successful immediate response to a request for future dated execution will be returned as a status-only response. Please see Annex section 18.9 for a description of how status-only responses are represented in the MMC XML schema.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
ExecutionOutcome	The execution outcome is only provided when the command was for immediate execution. Details are provided below.  Only present in responses to on demand execution requests or failure responses. Not present in responses to requests for future dated execution.	ra:ExecutionOutcome - see below	None	N/A	Non-Sensitive

#### 6.15.1.2.3.4 ExecutionOutcome Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
AuthorisingRemotePartyOriginatorCounter	Originating counter passed in the request, allows alerts to be matched to the request	xs:nonNegativeInteger	None	N/A	Non-Sensitive
CredentialsReplacementMode	Define the valid combinations as to which Remote Party Roles can replace which kinds of credentials. Valid Set: <ul style="list-style-type: none"> <li>SupplierBySupplier</li> <li>NetworkOperatorByNetworkOperator</li> <li>LoadControllerBySupplier<sup>1</sup></li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive
RemotePartySeqNumberChange	The resulting changes to any replay counters held on the Device	ra:RemotePartySeqNumberChange – see below	None	N/A	Non-Sensitive
ReplacementOutcome	For each replacement in the request, detail the outcome and impacted parties	ra:ReplacementOutcome – see below	None	N/A	Non-Sensitive

<sup>1</sup> Not applicable to Devices with GBCS version prior to v4.0 and not applicable to SMETS1 Devices

#### 6.15.1.2.3.5 RemotePartySeqNumberChange Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
RemotePartyRole	Remote Party Role for which the Credentials have been updated Valid Set: <ul style="list-style-type: none"> <li>Supplier</li> <li>NetworkOperator</li> <li>LoadController<sup>1</sup></li> </ul>	Restriction base xs:token (Enumeration)	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
RemotePartyFloorSeqNumber	<p>The corresponding counter value.</p> <p>Where the Remote Party Role for which the Certificates are being updated is Supplier or LoadController<sup>1</sup> and the Digital Signature Certificate is being changed, this will be the "RemotePartyFloorSeqNumber" parameter from the Service Request.</p> <p>Where the Remote Party Role is Network Operator, or is Supplier or LoadController<sup>1</sup> and the Digital Signature Certificate is not being changed, this will not be present.</p> <p>Note that the counter in use on the Device will be the originator counter of the Service Request that updated the Certificate.</p>	xs:nonNegativeInteger	None	N/A	Non-Sensitive
RemotePartyTopUpFloorSeqNumber	<p>Only present where Remote Party Role is Supplier and a top up certificate was provided in the request. The prepayment top up counter value.</p> <p>SMETS1: This value shall not be used.</p>	xs:nonNegativeInteger	None	N/A	Non-Sensitive

<sup>1</sup> Not applicable to Devices with GBCS version prior to v4.0 and not applicable to SMETS1 Devices

#### 6.15.1.2.3.6 ReplacementOutcome Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
StatusCode	<p>Outcome of the request for each replacement.</p> <p>Valid Set:</p> <ul style="list-style-type: none"> <li>success</li> <li>badCertificate</li> <li>noTrustAnchor</li> <li>insufficientMemory</li> <li>resourcesBusy</li> <li>other</li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive
CertificateType	<p>To what use can the public key in this replacement be put</p> <p>Valid Set:</p> <ul style="list-style-type: none"> <li>DigitalSigning</li> <li>KeyAgreement</li> <li>KeyAgreementTopUp</li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive
ExistingRemotePartyId	Identifies the existing subject unique identifier equating to Entity Identifier (64 bit value)	ra:EUI	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
NewRemotePartyId	Identifies the replacement subject unique identifier equating to Entity Identifier (64 bit value)	ra:EUI	None	N/A	Non-Sensitive
ExistingCertificateHash	Identifies the existing subject key identifier, a SHA-1 hash, i.e. of the certificate  Certificate Hash Values are calculated in accordance with the SEC defined term of Certificate Hash.	xs:base64binary (maxLength = 20)	None	N/A	Non-Sensitive
NewCertificateHash	Identifies the replacement subject key identifier, a SHA-1 hash, i.e. of the certificate  Certificate Hash Values are calculated in accordance with the SEC defined term of Certificate Hash.	xs:base64binary (maxLength = 20)	None	N/A	Non-Sensitive

#### 6.15.1.2.3.7 Sample Response

```

<ra:UpdateSecurityCredentialsKRPRsp MessageSuccess="true">
  <ra:ExecutionOutcome>
    <ra:AuthorisingRemotePartyOriginatorCounter>123</ra:AuthorisingRemotePartyOriginatorCounter>
    <ra:CredentialsReplacementMode>SupplierBySupplier</ra:CredentialsReplacementMode>
    <ra:RemotePartySeqNumberChange>
      <ra:RemotePartyRole>Supplier</ra:RemotePartyRole>
      <ra:RemotePartyFloorSeqNumber>1234</ra:RemotePartyFloorSeqNumber>
    </ra:RemotePartySeqNumberChange>
    <ra:ReplacementOutcome>
      <ra:StatusCode ResponseCode="0">
        <ra:ASN1Status>success</ra:ASN1Status>
      </ra:StatusCode>
      <ra:CertificateType>KeyAgreementTopUp</ra:CertificateType>
      <ra:RemotePartyRole>Supplier</ra:RemotePartyRole>
      <ra:ExistingRemotePartyID>10-00-00-00-00-00-00-00</ra:ExistingRemotePartyID>
      <ra:NewRemotePartyID>10-00-00-00-00-00-00-00</ra:NewRemotePartyID>
      <ra:ExistingCertificateHash>ZGVmYXVsdA==</ra:ExistingCertificateHash>
      <ra:NewCertificateHash>ZGVmYXVsdA==</ra:NewCertificateHash>
    </ra:ReplacementOutcome>
    <ra:ReplacementOutcome>
      <ra:StatusCode ResponseCode="0">
        <ra:ASN1Status>success</ra:ASN1Status>
      </ra:StatusCode>
      <ra:CertificateType>KeyAgreement</ra:CertificateType>
      <ra:RemotePartyRole>Supplier</ra:RemotePartyRole>
      <ra:ExistingRemotePartyID>10-00-00-00-00-00-00-00</ra:ExistingRemotePartyID>
      <ra:NewRemotePartyID>10-00-00-00-00-00-00-00</ra:NewRemotePartyID>
      <ra:ExistingCertificateHash>ZGVmYXVsdA==</ra:ExistingCertificateHash>
      <ra:NewCertificateHash>ZGVmYXVsdA==</ra:NewCertificateHash>
    </ra:ReplacementOutcome>
    <ra:ReplacementOutcome>
      <ra:StatusCode ResponseCode="0">
        <ra:ASN1Status>success</ra:ASN1Status>
      </ra:StatusCode>
      <ra:CertificateType>DigitalSigning</ra:CertificateType>
      <ra:RemotePartyRole>Supplier</ra:RemotePartyRole>
      <ra:ExistingRemotePartyID>10-00-00-00-00-00-00-00</ra:ExistingRemotePartyID>
      <ra:NewRemotePartyID>10-00-00-00-00-00-00-00</ra:NewRemotePartyID>
      <ra:ExistingCertificateHash>ZGVmYXVsdA==</ra:ExistingCertificateHash>
      <ra:NewCertificateHash>ZGVmYXVsdA==</ra:NewCertificateHash>
    </ra:ReplacementOutcome>
  </ra:ExecutionOutcome>
</ra:UpdateSecurityCredentialsKRPRsp>

```

Figure 87 - Update Security Credentials KRP Response Sample

### 6.15.2 Update Security Credentials (Device) (6.15.2)

Service Request Name	UpdateSecurityCredentials
Service Reference	6.15
Service Request Variant Name	UpdateSecurityCredentials(Device)
Service Reference Variant	6.15.2
Service Request Objective	To enable a DCC Service User to activate a new Public / Private Device Credential pair on the specified Device
Business Context Statement	Periodically the Supplier replaces the public security credentials of a specified Device in line with their security policy. Also mandated as part of the Install and Commission process
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: GBCS XREF: SME.C.C

Service Request Narrative	<div>1. This Service Request allows the DCC Service User to replace the current Digital Signature or Key Agreement Device Credentials with the corresponding pair that had been generated by the Device via Service Request 6.17. See section 6.17</div> <div>2. If the Request is to replace the Digital Signature Certificate<div><div>a. If it is successful, the Device will sign the response with the private key corresponding to the replaced Certificate.</div><div>b. If it fails, the Device will sign the response with the private key corresponding to the pre-existing Certificate</div></div></div> <div>3. Once the Pending Private Key becomes the Current Private Key, the Device will be using the new Private Key and this will affect all Remote Parties interacting with the Device; specifically they will need to use the new certificate corresponding to the Private Key now in use. This will result in the ‘in-use’ flag in the Public Key Repository being updated accordingly (this action is a post-processing step after the Service Response has been sent to the User).</div> <div>4. The associated GBCS use case only allows for a single Device Credential to be requested for change per Service Request. This can either be a Digital Signature or Key Agreement Device Credentials but not both in the same Service Request</div> <div>5. Following successful execution targeting a GSME, if previously joined to a PPMID, the Service User should re-join the PPMID to the GSME via Service Request 8.7.2 Join Service (Non-Critical) targeting the PPMID (note that unjoining the PPMID with the GSME via SR8.8.2 Unjoin Service (Non-Critical) before re-joining is optional).</div> <div>6. If no Response is received from the Device then the DCC and the User will both be unsure as to which Device Credentials are now in use on the Device. In these circumstances the User is advised to send Service Request 6.24.2 Retrieve Device Security Credentials (Device) for the Credential Type that was the subject of the original 6.15.2 Service Request.</div>		
	GBCS Cross Reference	Electricity	Gas
	GBCS Message Code	0x000B	0x000B
	GBCS Use Case	CS02d	CS02d
	GBCS Use Case Name	Update Device Certificates on Device	Update Device Certificates on Device
	SMETS1 Applicability	No	No

**Table 132 Update Security Credentials (Device) 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).

### 6.15.2.1 Service Request

#### 6.15.2.1.1 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 UpdateSecurityCredentialsDevice XML element defines this Service Request and contains the Device Public Security Credentials to be updated on the Device.

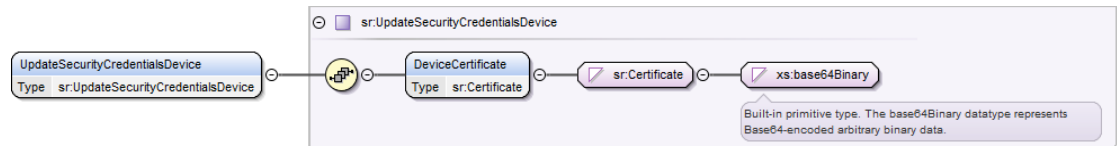


Figure 88 Update Security Credentials (Device) Service Request Structure

#### 6.15.2.1.2 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
DeviceCertificate	The Device Digital Signing or Key Agreement Public Security Credentials to replace the existing one.	sr:Certificate (xs:base64Binary)	Yes	None	N/A	Non-Sensitive

Table 133 Update Security Credentials (Device) Service Request Data Items

#### 6.15.2.1.3 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 134 Update Security Credentials (Device) Modes of Operation

#### 6.15.2.1.4 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 135 Update Security Credentials (Device) Command Variant Values

#### 6.15.2.1.5 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 Public Security Credentials validation.

#### 6.15.2.1.6 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:

```
<UpdateSecurityCredentialsDevice>
  <DeviceCertificate>ZGVmYXVsdA==</DeviceCertificate>
</UpdateSecurityCredentialsDevice>
```

**Figure 89 Update Security Credentials (Device) Transform Service Request (Body) Format**

#### 6.15.2.2 Responses

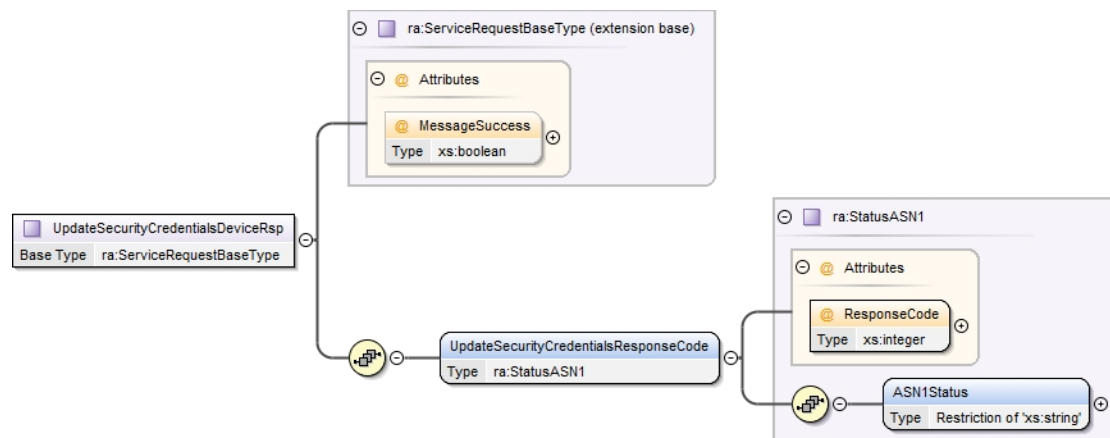
The response messages for an "Update Security Credentials (Device)" request follow the generic format for all "Device" response messages, the generic responses applicable to this request are;

- 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.

##### 6.15.2.2.1 Parse Output Format

###### 6.15.2.2.1.1 Format - UpdateSecurityCredentialsDeviceRsp



**Figure 90 - Update Security Credentials (Device) Response Structure**

###### 6.15.2.2.1.2 Specific Header Data Items

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	000B	000B
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>CS02d</i>	<i>CS02d</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Update Device Certificates on Device</i>	<i>Update Device Certificates on Device</i>
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

Table 136 – Update Security Credentials (Device) Parse Response Header Data Items

#### 6.15.2.2.1.3 Specific Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
UpdateSecurityCredentialsResponseCode	<p>Either a success code is returned, or the reason for the failure</p> <p>Valid Set:</p> <ul style="list-style-type: none"> <li>success</li> <li>invalidCertificate</li> <li>wrongDeviceIdentity</li> <li>invalidKeyUsage</li> <li>noCorrespondingKeyPairGenerated</li> <li>wrongPublicKey</li> <li>certificateStorageFailed</li> <li>privateKeyChangeFailed</li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive

#### 6.15.2.2.1.4 Sample Response

```
<ra:UpdateSecurityCredentialsDeviceRsp MessageSuccess="true">
  <ra:UpdateSecurityCredentialsResponseCode ResponseCode="0">
    <ra:ASN1Status>success</ra:ASN1Status>
  </ra:UpdateSecurityCredentialsResponseCode>
</ra:UpdateSecurityCredentialsDeviceRsp>
```

Figure 91 - Update Security Credentials (Device) Response Sample

## 6.16 Section 6.16

This section has been intentionally left blank as there is no Service Reference 6.16.

## 6.17 Issue Security Credentials (6.17)

Service Request Name	IssueSecurityCredentials	
Service Reference	6.17	
Service Request Variant Name	IssueSecurityCredentials	
Service Reference Variant	6.17	
Service Request Objective	To enable a DCC Service User to instruct a specified Device to generate a new Key Pair and issue a corresponding Certificate Signing Request.	
Business Context Statement	The security credentials for a Device need to be regenerated due to certificate security policy. The Registered Energy Supplier issues a request for the Device to generate new security credential material and return the certificate signing 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: GBCS XREF: SME.C.C	
Service Request Narrative	<p>1. This Service Request allows the DCC Service User to request the Device to generate Digital Signature or Key Agreement Credentials and to return the certificate signing request. Once the certificate has been signed, the Credential replacement request will be sent to the Device via Service Request 6.15.2. See section 6.15.2</p> <p>1. The associated GBCS use case only allows for a single Device Credential to be requested for re-generation per Service Request. This can either be a Digital Signature or Key Agreement Device Credentials but not both in the same Service Request</p>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x000A	0x000A
GBCS Use Case	CS02c	CS02c
GBCS Use Case Name	Issue Security Credentials	Issue Security Credentials
SMETS1 Applicability	No	No

Table 137 Issue Security Credentials 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).

## 6.17.1 Service Request

### 6.17.1.1 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 IssueSecurityCredentials XML element defines this Service Request and contains the Device Public Security Credential Type to be issued by the Device.

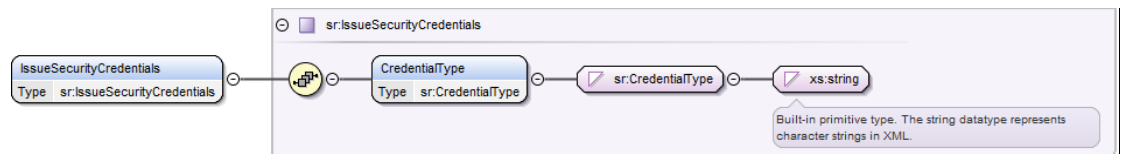


Figure 92 Issue Security Credentials Service Request Structure

### 6.17.1.2 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
Credential Type	Type of credential to be issued Valid Set: <ul style="list-style-type: none"> <li>Digital Signature</li> <li>Key Agreement</li> </ul>	sr:CredentialType (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive

Table 138 Issue Security Credentials Service Request Data Items

### 6.17.1.3 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 139 Issue Security Credentials Modes of Operation

### 6.17.1.4 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 140 Issue Security Credentials Command Variant Values

### 6.17.1.5 Validation

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

### 6.17.1.6 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:

```
<IssueSecurityCredentials>
  <CredentialType>Digital Signature</CredentialType>
</IssueSecurityCredentials>
```

**Figure 93 Issue Security Credentials Transform Service Request (Body) Format**

## 6.17.2 Responses

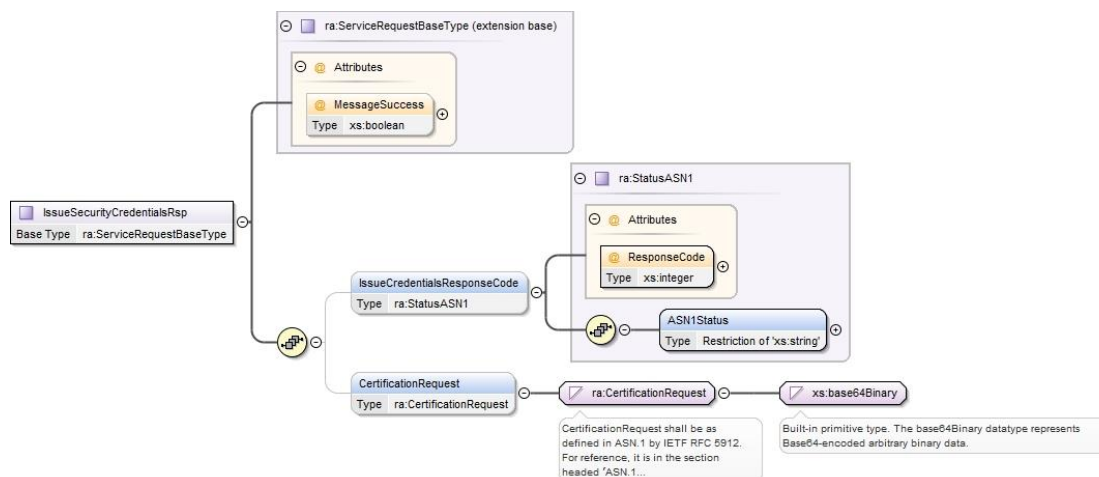
The response messages for an "Issue Security Credentials" request follow the generic format for all "Device" response messages, the generic responses applicable to this request are;

- Pre-command
- 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.

### 6.17.2.1 Parse Output Format

#### 6.17.2.1.1 Format - IssueSecurityCredentialsResp



**Figure 94 - Issue Security Credentials Parse Response Structure**

#### 6.17.2.1.2 Specific Header Data Items

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	000A	000A

Data Item	Electricity Response	Gas Response
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>CS02c</i>	<i>CS02c</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Issue Security Credentials</i>	<i>Issue Security Credentials</i>
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

Table 141 – Issue Security Credentials Parse Response Header Data Items

#### 6.17.2.1.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
IssueCredentialsResponseCode	If the request fails, the reason for the failure is returned Valid Set: <ul style="list-style-type: none"> <li>success</li> <li>invalidKeyUsage</li> <li>keyPairGenerationFailed</li> <li>cRProductionFailed</li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive
CertificationRequest	CertificationRequest shall be as defined in ASN.1 by IETF RFC 5912. For reference, it is in the section headed 'ASN.1 Module for RFC 2986'.  This is returned DER encoded CertificationRequest is only included if IssueCredentialsResponseCode ASN1Status is 'success'	xs:base64Binary	None	N/A	Non-Sensitive

#### 6.17.2.1.4 Sample Response

```
<ra:IssueSecurityCredentialsRsp MessageSuccess="true">
  <ra:IssueCredentialsResponseCode ResponseCode="0">
    <ra:ASN1Status>success</ra:ASN1Status>
  </ra:IssueCredentialsResponseCode>
  <ra:CertificationRequest>ZGVmYXVsdA==</ra:CertificationRequest>
</ra:IssueSecurityCredentialsRsp>
```

Figure 95 - Issue Security Credentials Response Sample

## 6.18 Set Maximum Demand Registers (6.18)

This Service Request maps to two GBCS Use Cases and each Use Case requires its own Request ID.

Therefore the 6.18 Service Request has been broken into two parts: 6.18.1 (Configurable Time Period) and 6.18.2 (Registers)

### 6.18.1 Set Maximum Demand Configurable Time Period (6.18.1)

Service Request Name	SetMaximumDemandRegisters	
Service Reference	6.18	
Service Request Variant Name	SetMaximumDemandConfigurableTimePeriod	
Service Reference Variant	6.18.1	
Service Request Objective	To enable a DCC Service User to set the <i>Maximum Demand Configurable Time Period</i> on the ESME as defined by SMETS	
Business Context Statement	The Electricity Network Operator wishes to conduct a network demand survey and requires the Maximum Demand Active Import and Maximum Demand Active Export (if assessing the impact of supply coming onto the network). For surveys at specific times in the day the Network Operator will set the Maximum Demand Configurable Time Period (set by this Service Request) and ensure that the Maximum Demand (Configurable Time) Active Energy Import Value register has been reset (by Service Request 6.18.2, see section 6.18.2).	
User Role Access	<ul style="list-style-type: none"> <li>Electricity Network Operator (ENO)</li> </ul>	
Security Classification	Non-critical and non-sensitive: GBCS XREF: <i>SME.C.NC</i>	
Service Request Narrative	<ol style="list-style-type: none"> <li>Maximum Demand Configurable Time Period - A time period of up to 24 hours comprising a number of half-hour periods (commencing at the start of minutes 00 and 30 in each hour) during which recording to the <i>Maximum Demand (Configurable Time) Active Power Import Value</i> is active. This time period is repeated every day until another Service Request 6.18.1 changes it. If both the StartTime and EndTime values are midnight, then the Device will be instructed to stop recording Maximum Demand.</li> <li>Post Condition - Once the Maximum Demand Configurable Time Period has been set to a new value via this Service Request, the authorised DCC Service User (Electricity Network Operator) will need to reset the Maximum Demand registers using Service Request 6.18.2 Reset Maximum Demand Registers. See section 6.18.2.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x004A	N/A
GBCS Use Case	ECS37	N/A

<b>GBCS Use Case Name</b>	Set Maximum Demand Configurable Time Period	N/A
<b>SMETS1 Applicability</b>	No	No

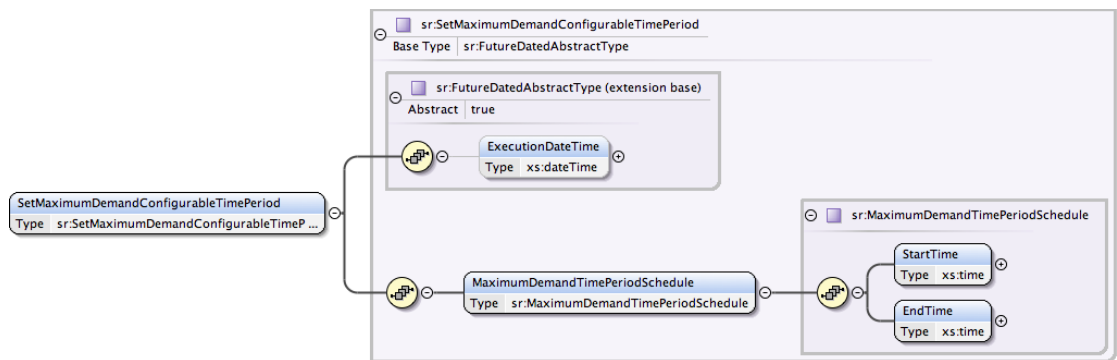
**Table 142 Set Maximum Demand Configurable Time Period Service Request**

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).

### 6.18.1.1 Service Request

#### 6.18.1.1.1 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 SetMaximumDemandConfigurableTimePeriod XML element defines this Service Request and contains the Calendar (Schedule) defining the time period when the Maximum Demand (Configurable Time) Active Energy Import Value register is to be captured and, for Future Dated Requests, the Execution Date and Time.



**Figure 96 Set Maximum Demand Configurable Time Period Service Request Structure**

#### 6.18.1.1.2 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 <math>\leq</math> current date + 30 days or the date = 31/12/3000</li> </ul>	xs:dateTime	No	None	UTC Date-Time	Non-Sensitive
MaximumDemandTimePeriodSchedule	The date-time period (maximum of 24 hours) when the Maximum Demand is to be recorded on a daily basis.	sr:MaximumDemandTimePeriodSchedule (see section 6.18.1.1.3)	Yes	None	N/A	Non-Sensitive

**Table 143 Set Maximum Demand Configurable Time Period Service Request Data Items**

#### 6.18.1.1.3 MaximumDemandTimePeriodSchedule Specific Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
StartTime	The Start time from which the Maximum Demand period begins.	xs:time	Yes	None	N/A	Non-Sensitive
EndTime	The End Time at which the Maximum Demand period ends.	xs:time	Yes	None	N/A	Non-Sensitive

**Table 144 Set Maximum Demand Configurable Time Period Service Request - MaximumDemandTimePeriodSchedule Data Items**

#### 6.18.1.1.4 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 145 Set Maximum Demand Configurable Time Period Modes of Operation**

#### 6.18.1.1.5 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 146 Set Maximum Demand Configurable Time Period Command Variant Values**

#### 6.18.1.1.6 Validation

This Service Request specific validation is as follows (see Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Execution Date Time validation):

Validation Check	Process	Response Code
Is the Start Time valid?	Check that the Start Time minutes are 00 or 30	E061801
Is the End Time valid?	Check that the End Time minutes are 00 or 30	E061802

**Table 147 Set Maximum Demand Configurable Time Period Service Request Validation**

#### 6.18.1.1.7 Sample Request

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

```
<SetMaximumDemandConfigurableTimePeriod>
  <ExecutionDateTime>2015-02-24T04:03:05.00Z</ExecutionDateTime>
  <MaximumDemandTimePeriodSchedule>
    <StartTime>22:00:00.00Z</StartTime>
    <EndTime>08:00:00.00Z</EndTime>
  </MaximumDemandTimePeriodSchedule>
</SetMaximumDemandConfigurableTimePeriod>
```

**Figure 97 Sample Set Maximum Demand Configurable Time Period Service Request (Body) Format**

In this example:

- Only 1 out of the 2 possible schedules has been included

### 6.18.1.2 Responses

The response messages for a "Set Maximum Demand Configurable Time Period" request follow the generic format for all "Device" response messages, the generic responses applicable to this 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.

#### 6.18.1.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E061801	Failed Validation – Invalid Start Time	Error	Invalid Start Time – The Start Time is not valid, Start Time minutes must be either 00 or 30
E061802	Failed Validation – Invalid End Time	Error	Invalid End Time – The End Time is not valid, End Time minutes must be either 00 or 30

**Table 148 Failed Set Maximum Demand Configurable Time Period Service Request Response Codes**

#### 6.18.1.2.2 Parse Output Format

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

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

##### 6.18.1.2.2.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	004A
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS37</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Maximum Demand Configurable Time Period</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present

Data Item	Electricity Response
Timestamp	Not Present

Table 149 - Set Maximum Demand Configurable Time Period Parse Response Header Data Items

### 6.18.2 Reset Maximum Demand Registers (6.18.2)

Service Request Name	SetMaximumDemandRegisters	
Service Reference	6.18	
Service Request Variant Name	ResetMaximumDemandRegisters	
Service Reference Variant	6.18.2	
Service Request Objective	To enable a DCC Service User to reset the maximum demand register value(s) to accommodate new network demand survey(s).	
Business Context Statement	<p>The Electricity Network Operator wishes to conduct a network demand survey and requires the Maximum Demand Active Import and Maximum Demand Active Export (if assessing the impact of supply coming onto the network).</p> <p>For surveys at specific times in the day the Network Operator will set the Maximum Demand Configurable Time Period (set by Service Request 6.18.1, (see section 6.18.1) and ensure that the Maximum Demand (Configurable Time) Active Energy Import Value register has been reset (by this Service Request).</p> <p>Any combination of one, two or three of these data items can be re-set via this Service Request to meet the DCC Service Users requirements</p>	
User Role Access	<ul style="list-style-type: none"> <li>Electricity Network Operator (ENO)</li> </ul>	
Security Classification	<p>Non-critical and non-sensitive:</p> <p>GBCS XREF: SME.C.NC</p>	
Service Request Narrative	<ol style="list-style-type: none"> <li>This Service Request should be used once the Maximum Demand Configurable Time Period has been set to a new value by the DCC Service User (Electricity Network Operator) as in Service Request 6.18.1. See section 6.18.1</li> <li>This Service Request resets the Maximum Demand Configurable Time Active Energy Import, the Maximum Demand Active Energy Export and / or the Maximum Demand Active Energy Import values on the ESME as defined in SMETS</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x005A	N/A
GBCS Use Case	ECS57	N/A

GBCS Use Case Name	Reset ESME Maximum Demand Registers	N/A
SMETS1 Applicability	No	No

Table 150 Reset Maximum Demand Registers 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).

## 6.18.2.1 Service Request

### 6.18.2.1.1 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 ResetMaximumDemandRegisters XML element defines this Service Request and contains the Maximum Demand Register Values to be reset and, for Future Dated Requests, the Execution Date and Time.

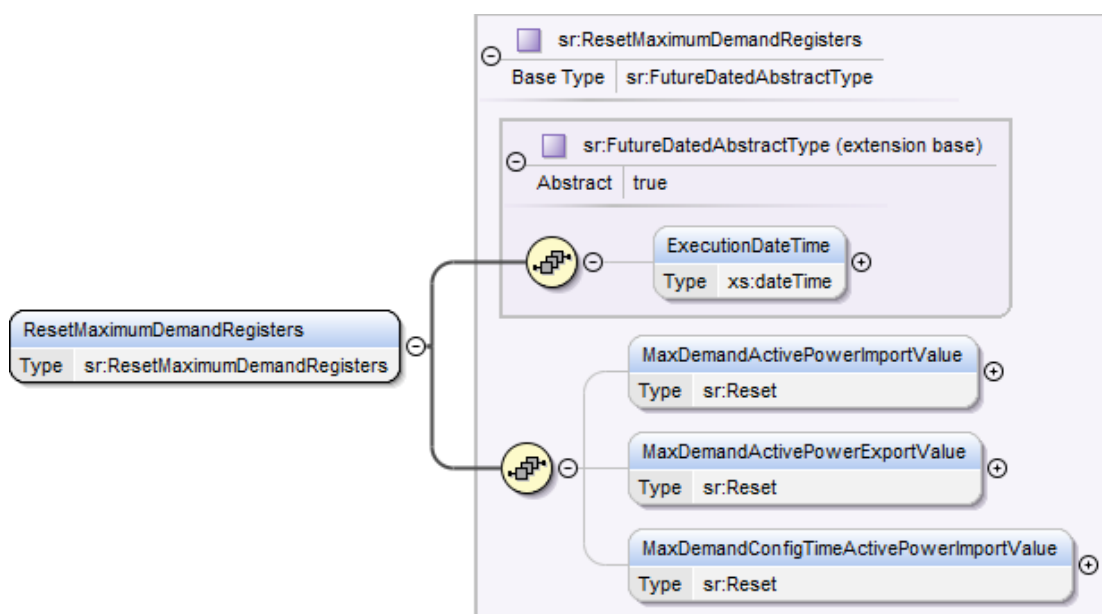


Figure 98 Reset Maximum Demand Registers Service Request Structure

### 6.18.2.1.2 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
MaxDemandActivePowerImportValue	Included if the Maximum Demand Active Power Import Value is to be reset	sr:Reset	Reset MaxDemandActivePowerImportValue: Yes Otherwise: N/A	None	N/A	Non-Sensitive
MaxDemandActivePowerExportValue	Included if the Maximum Demand Active Power Export Value is to be reset	sr:Reset	Reset MaxDemandActivePowerExportValue: Yes Otherwise: N/A	None	N/A	Non-Sensitive
MaxDemandConfigTimeActivePowerImportValue	Included if the Maximum Demand (Configuration Time) Active Power Import Value is to be reset	sr:Reset	Reset MaxDemandConfigTimeActivePowerImportValue: Yes Otherwise: N/A	None	N/A	Non-Sensitive

Table 151 Reset Maximum Demand Registers Service Request Data Items

#### 6.18.2.1.3 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 152 Reset Maximum Demand Registers Modes of Operation

#### 6.18.2.1.4 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 153 Reset Maximum Demand Registers Command Variant Values

#### 6.18.2.1.5 Validation

This Service Request specific validation is as follows (see Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Execution Date Time validation):

Validation Check	Process	Response Code
Is the Request valid?	Check that the Request contains at least one Maximum Demand Register to reset	E061803

Table 154 Reset Maximum Demand Registers Service Request Validation

#### 6.18.2.1.6 Sample Request

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

```
<ResetMaximumDemandRegisters>
  <ExecutionDateTime>2014-10-24T04:03:05.00Z</ExecutionDateTime>
  <MaxDemandActivePowerImportValue/>
  <MaxDemandActivePowerExportValue/>
  <MaxDemandConfigTimeActivePowerImportValue/>
</ResetMaximumDemandRegisters>
```

**Figure 99 Sample Reset Maximum Demand Registers Service Request (Body) Format**

#### 6.18.2.2 Responses

The response messages for a "Reset Maximum Demand Registers" request follow the generic format for all "Device" response messages, the generic responses applicable to this 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.

##### 6.18.2.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E061803	Failed Validation – Invalid Request	Error	The Request doesn't include any Maximum Demand Register to reset

**Table 155 Failed Reset Maximum Demand Registers Service Request Response Codes**

##### 6.18.2.2.2 Parse Output Format

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

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

##### 6.18.2.2.2.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	005A
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS57</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Reset ESME Maximum Demand Registers</i>
SupplementaryRemotePartyID	Not Present

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

Table 156 - Reset Maximum Demand Registers Parse Response Header Data Items

## 6.19 Section 6.19

This section has been intentionally left blank as there is no Service Reference 6.19.

## 6.20 Set Device Configuration (MPxN) (6.20)

This Service Request maps to two GBCS Use Cases and each Use Case requires its own Request ID.

Therefore the 6.20 Service Request has been broken into two parts: 6.20.1 (Import MPxN) and 6.20.2 (Export MPAN).

### 6.20.1 Set Device Configuration (Import MPxN) (6.20.1)

Service Request Name	SetDeviceConfiguration(MPxN)
Service Reference	6.20
Service Request Variant Name	SetDeviceConfiguration(ImportMPxN)
Service Reference Variant	6.20.1
Service Request Objective	To enable a DCC Service User to configure the Import MPxN(s) data items for a specified ESME or GSME for local display on the Device.
Business Context Statement	An authorised DCC Service User may wish to update the Import MPxN displayed on a device from time to time over the lifetime of the Device or subsequently there is a need to change it to correct an earlier entry in to the Device.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> </ul>
Security Classification	Non-critical and non-sensitive: GBCS XREF: SME.C.NC
Service Request Narrative	<ol style="list-style-type: none"> <li>This Service Request is only used to update the <i>Meter Point Administration Numbers (MPAN)</i> for the ESME as defined in SMETS and Meter Point Reference Number (MPRN) for the GSME as defined in SMETS.</li> <li>This Service Request should be sent following successful completion of Service Reference 8.1.1 – Commission Device (Synchronise Clock) (see section 8.1.1). Used to update the</li> </ol>

	<p>Import MPxN(s) on the Meter for display purposes. The Service Request may also be used to update this initial value at any time post its initial setting..</p> <p>3. Electricity Meters: Requests for Single Element, Twin Element or Poly Phase Meters have to include the Primary Element Import MPAN and those for Twin Element Meters can also include the Secondary Element MPAN.</p> <p>4. For Service Requests which include a Secondary Import MPAN, the MPANs are combined into a single string for display on the Device. The first 13 bytes represents primary MPAN, second 13 bytes represents secondary MPAN. Sending a string longer than 13 bytes to a single element meter will result in an error being returned to the DCC Service User.</p>	
<b>GBCS Cross Reference</b>	Electricity	Gas
<b>GBCS Message Code</b>	0x004C	0x0087
<b>GBCS Use Case</b>	ECS39a	GCS41
<b>GBCS Use Case Name</b>	Set MPAN Value on the ESME	Set MPRN Value on the GSME
<b>SMETS1 Applicability</b>	No	No

**Table 157 Set Device Configuration (Import MPxN) 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).

### 6.20.1.1 Service Request

#### 6.20.1.1.1 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 SetDeviceConfigurationImportMPxN XML element defines this Service Request and contains the Import MPxN(s) and, for Future Dated Requests, the Execution Date and Time.

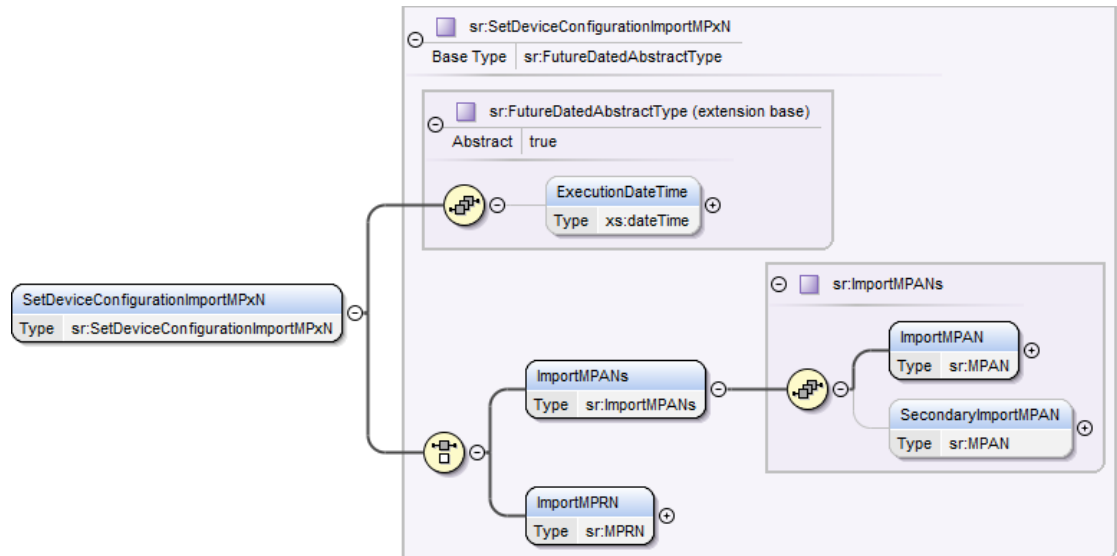


Figure 100 Set Device Configuration (Import MPxN) Service Request Structure

#### 6.20.1.1.2 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
ImportMPANs	For Electricity Smart Meters, the Primary Element Import MPAN and, for Twin Element Meters, also the Secondary Element Import MPAN	sr:ImportMPANs (see section 6.20.1.1.3)	Electricity Smart Meter: Yes Otherwise: N/A	None	None	Non-Sensitive
ImportMPRN	For Gas Smart Meters, the reference number identifying a gas metering point	sr:MPRN (Restriction of xs:string (minLength = 1, maxLength = 10))	Gas Smart Meter: Yes Otherwise: N/A	None	None	Non-Sensitive

Table 158 Set Device Configuration (Import MPxN) Service Request Data Items

#### 6.20.1.1.3 ImportMPANs Specific Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ImportMPAN	The reference number identifying an import electricity metering point	sr:MPAN (Restriction of xs:string (minLength = 13, maxLength = 13))	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
SecondaryImportMPAN	The reference number identifying the secondary import electricity metering point	sr:MPAN (Restriction of xs:string (minLength = 13, maxLength = 13))	Electricity Smart Meter (non Twin Element)  N/A  Electricity Smart Meter (Twin Element)  No	None	N/A	Non- Sensitive

**Table 159 Set Device Configuration (Import MPxN) Service Request – ImportMPANs Data Items**

#### 6.20.1.1.4 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 160 Set Device Configuration (Import MPxN) Modes of Operation**

#### 6.20.1.1.5 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 161 Set Device Configuration (Import MPxN) Command Variant Values**

#### 6.20.1.1.6 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.

#### 6.20.1.1.7 Sample Request

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

```
<SetDeviceConfigurationImportMPxN>
  <ImportMPANs>
    <ImportMPAN>1234567890123</ImportMPAN>
  </ImportMPANs>
</SetDeviceConfigurationImportMPxN>
```

**Figure 101 Set Device Configuration (Import MPxN) Service Request (Body) Format**

#### 6.20.1.2 Responses

The response messages for a “Set Device Configuration (Import MPxN)” request follow the generic format for all “Device” response messages, the generic responses applicable to this 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.

#### 6.20.1.2.1 Parse Output Format

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

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

##### 6.20.1.2.1.1 Specific Header Data Items

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	004C	0087
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS39a</i>	<i>GCS41</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set MPAN Value on the ESME</i>	<i>Set MPRN Value on the GSME</i>
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

Table 162 Set Device Configuration (Import MPxN) Parse Response Header Data Items

## 6.20.2 Set Device Configuration (Export MPAN) (6.20.2)

Service Request Name	SetDeviceConfiguration(MPxN)
Service Reference	6.20
Service Request Variant Name	SetDeviceConfiguration(ExportMPAN)
Service Reference Variant	6.20.2
Service Request Objective	To enable a DCC Service User to configure the Export MPAN data item for a specified ESME for local display on the Device.
Business Context Statement	An authorised DCC Service User may wish to update the Export MPxN displayed on a Device from time to time over the lifetime of the device or subsequently there is a need to change it to correct an earlier entry in to the Device.

User Role Access	<ul style="list-style-type: none"> <li>Electricity Export Supplier (EES)</li> </ul>	
Security Classification	Non-critical and non-sensitive: GBCS XREF: SME.C.NC	
Service Request Narrative	<ol style="list-style-type: none"> <li>This Use Case is for setting the Export MPAN value on the ESME by the Consumer's export Supplier (who is unknown to the ESME). It is not mandatory to set this value for all ESME Devices; only those that have an active Export capability configured by the Registered Supplier.</li> <li>This Service Request will also need to be used as part of the install and commissioning process to set the Export MPAN if the ESME installation includes active Export capability.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x004D	N/A
GBCS Use Case	ECS39b	N/A
GBCS Use Case Name	Set Export MPAN Value on the ESME	N/A
SMETS1 Applicability	No	No

Table 163 Set Device Configuration (Export MPAN) 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).

## 6.20.2.1 Service Request

### 6.20.2.1.1 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 SetDeviceConfigurationExportMPAN XML element defines this Service Request and contains the Export MPAN and, for Future Dated Requests, the Execution Date and Time.

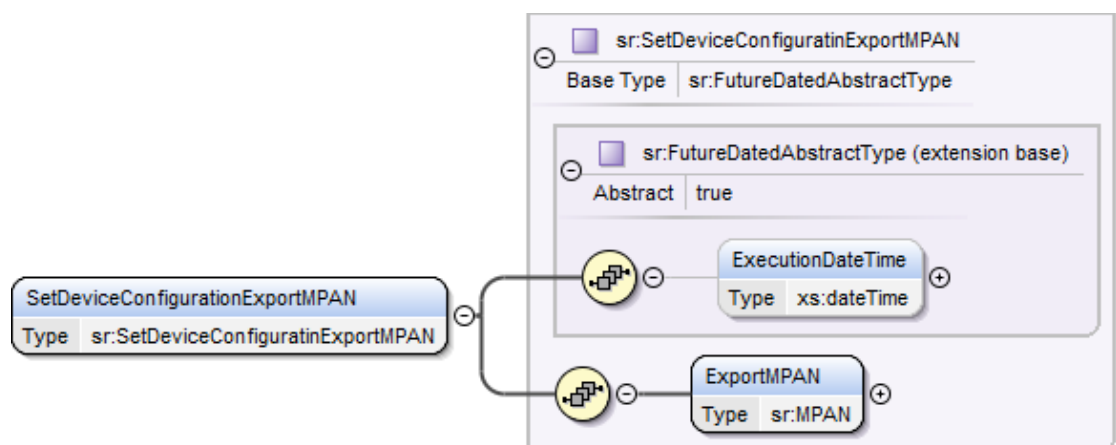


Figure 102 Set Device Configuration (Export MPAN) Service Request Structure

### 6.20.2.1.2 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
ExportMPAN	The reference number identifying an export electricity metering point	sr:MPAN (Restriction of xs:string (minLength = 13, maxLength = 13))	Yes	None	N/A	Non-Sensitive

Table 164 Set Device Configuration (Export MPAN) Service Request Data Items

### 6.20.2.1.3 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 165 Set Device Configuration (Export MPAN) Modes of Operation

### 6.20.2.1.4 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 166 Set Device Configuration (Export MPAN) Command Variant Values

### 6.20.2.1.5 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.

### 6.20.2.1.6 Sample Request

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

```
<SetDeviceConfigurationExportMPAN>
  <ExportMPAN>0123456789012</ExportMPAN>
</SetDeviceConfigurationExportMPAN>
```

Figure 103 Set Device Configuration (Export MPAN) Service Request (Body) Format

### 6.20.2.2 Responses

The response messages for a "Set Device Configuration (Export MPAN)" request follow the generic format for all "Device" response messages, the generic responses applicable to this 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.

#### 6.20.2.2.1 Parse Output Format

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

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

##### 6.20.2.2.1.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	004D
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS39b</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Export MPAN Value on the ESME</i>
SupplementaryRemotePartyID	Present
SupplementaryRemotePartyCounter	Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 167 - Set Device Configuration (Export MPAN) Parse Response Header Data Items

## 6.21 Request Handover of DCC Controlled Device (6.21)

Service Request Name	RequestHandoverOfDCCControlledDevice
Service Reference	6.21
Service Request Variant Name	RequestHandoverOfDCCControlledDevice
Service Reference Variant	6.21

Service Request Objective	<p>SMETS2 or later: To replace the DCC's Security Credentials on a specified Device with the Security Credentials contained within the Service Request.</p> <p>SMETS1: To enable an Import Supplier to specify the Security Credentials which the DCC Data Systems shall hold corresponding to a specified Device.</p>
Business Context Statement	<p>SMETS2 or later: Some devices may require a Supplier set of Security Credentials that are (1) required for full operation but (2) are not known when the device is installed / commissioned. For example, a communications hub installed by a single fuel, electricity supplier will have a Gas Proxy Device. However, the Gas Supplier details could not be set on the Gas Proxy until that second supplier installs a SMETS Gas Meter subsequently. In such case, DCC Security Credentials can be placed on the Gas Proxy Device in the 'Gas Supplier' role (and in the NO role). This ensures the Gas Proxy Device is secured until the second installation. This function can also be used to support MOP roll out operations where multiple suppliers are served.</p> <p>SMETS1: for SMETS1 Devices, the DCC Data Systems shall store Supplier and Network Operator Security Credentials corresponding to each Device, whereas for SMETS2 or later Devices they are stored on the Device. This Service Request enables an Import Supplier as part of commissioning a SMETS1 Device to specify the Security Credentials to be used by the DCC Data Systems in operation of the Device.</p>
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> </ul>
Security Classification	<p>Non-critical and non-sensitive:</p> <p>SMETS2 or later: GBCS XREF: SME.C.C (the GBCS Command is Critical, but it is cryptographically protected by the DSP Access Control Broker, so the Service Request interaction between the DCC Service Users and the DCC is Non-Critical)</p>
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>This Service Request is applicable in the following cases: <ol style="list-style-type: none"> <li>EIS. <ol style="list-style-type: none"> <li>To change the Supplier Public Security Credentials on the ESME or HCALCS in cases where the existing Supplier Credentials on the Device are those of the DSP Access Control Broker.</li> <li>To change the Network Operator Public Security Credentials on the ESME in cases where the existing Network Operator Credentials on the Device are those of the DSP Access Control Broker.</li> </ol> </li> <li>GIS. <ol style="list-style-type: none"> <li>To change the Supplier Public Security Credentials on the GSME in cases where the existing Supplier Credentials on the</li> </ol> </li> </ol> </li> </ol>

	<p>Device are those of the DSP Access Control Broker.</p> <ul style="list-style-type: none"><li>ii. To change the Supplier Public Security Credentials on the GPF in cases where the existing Supplier Credentials on the Device are those of the DSP Access Control Broker.</li><li>iii. To change the Network Operator Public Security Credentials on the GPF in cases where the existing Network Operator Credentials on the Device are those of the DSP Access Control Broker.</li></ul>
	<p>2. Because the Credentials being replaced on the Device are those of the DSP Access Control Broker:</p> <ul style="list-style-type: none"><li>a. This Service Request is Non-critical.</li><li>b. The Command will be submitted to the Device by the DSP Broker using the URP interaction type. This Command will include the DSP Access Control Broker MAC and its digital signature.</li></ul>
	<p>3. This Service Request includes data item ApplyTimeBasedCPVChecks to instruct the Device to apply (true) or not apply (false) time based checks as part of Certification Path Validation. It should only be set to false in exceptional circumstances (e.g. credentials on the Device have expired without replacement for unforeseen reasons).</p>
	<p>4. Upon successful processing of this Service Request to replace Security Credentials related to that Remote Party Role, the specified target Device will (for Remote Party Supplier Role) reset the Immediate Execution Counters and Future Dated Counters on the Device to the Remote Party Floor Sequence Number(s) specified within this Service Request.</p>
	<p>5. When constructing a Service Request, a DCC Service User may populate one or more CertificationPathCertificates as appropriate depending on how that DCC Service User has implemented their Security Credentials</p>
	<p>6. Where the DSP receives a Success Response from Update Security Credentials command and where the Remote Party whose certificate has been placed on the Device is not the sender of the Service Request, the DSP shall send a DCC Alert N42 to the Remote Party whose certificate has been placed on the Device (this action is a post-processing step after the Service Response has been sent to the User).</p>
	<p>7. Where the DSP receives a Success Response from Update Security Credentials command and where the Device Status is 'Recovered' and all the ACB Credentials on the Supplier and / or Network Operator slots have been replaced with the corresponding DCC Service User ones, the DSP shall update the Device Status to the value it held immediately prior to its recovery (this action is carried out before the Service Response is generated).</p>

	<p>8. For each certificate specified in a Response or Alert from the Device as being successfully updated by the Update Security Credentials Command, the DCC Data Systems shall update the Smart Metering Inventory with the new certificate identifier as a record of the certificate held in the relevant Trust Anchor Cell on that Device (this action is carried out before the Service Response is generated).</p> <p>9. Guidance note: When transferring control of a Device to the Network Operator, the Import Supplier should use a single Service Request process by sending SRV 6.21 Request Handover Of DCC Controlled Device to give control directly to the Network Operator certificates required for business as usual activities. An alternative option is technically possible for SMETS2 Devices, as the GBCS Use Case and command CS02b Update Security Credentials technically supports a two Service Request process. However, sending SR6.21 Request Handover Of DCC Controlled Device to change the default ACB certificates to their own Supplier certificates, and then a subsequent SR6.15.1 Update Security Credentials (KRP) to change these certificates to the actual Network Operator certificates, is not supported by the DCC Systems. It is assumed that only the Network Operator User Role should be the Eligible User to change the Security Credentials associated with the Network Operator.</p>	
	GBCS Cross Reference	Electricity Gas
GBCS Message Code (for each CredentialsReplacementMode)	<p>supplierBySupplier – 0x0102</p> <p>networkOperatorByNetworkOperator – 0x0103</p>	
GBCS Use Case	CS02b	CS02b
GBCS Use Case Name	Update Security Credentials	Update Security Credentials
SMETS1 Applicability	Yes	Yes

<p>Service Request Narrative (SMETS1)</p>	<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. For SMETS1 Devices, references to the process and storage of Certificates and Execution Counters on the Device shall be interpreted as meaning storage of Execution Counters and Security Credentials in DCC Data Systems corresponding to the Device, as defined in the SMETS1 Supporting Requirements Document.</li> <li>2. As defined in the SMETS1 Supporting Requirements Document, it shall not be possible to use Service Request 6.15.1 for a newly-commissioned Device until this Service Request 6.21 has been successfully executed for the same Remote Party Role.</li> <li>3. Since the Service Request is not to effect a change of control, any value in the RemotePartyFloorSequenceNumber field shall be discarded.</li> <li>4. Key Agreement Top Up Certificates and floor sequence numbers shall not be used.</li> <li>5. Time-based checks shall always be applied.</li> <li>6. Descriptions of behaviour for HCALCS Devices are not applicable to SMETS1.</li> <li>7. Device status "Recovered" is not applicable to SMETS1 Devices.</li> </ol>
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**Table 168 Request Handover Of DCC Controlled Device Service Request**

The following table summarises the possible combinations of User Roles, Remote Party Roles, Device Types and Certificate Types:

User Role	Remote Party Role	Target Device Type	Certificate Type
EIS	Supplier	ESME	Digital Signing
EIS	Supplier	ESME	Key Agreement
EIS	Supplier	ESME	Key Agreement Top Up
EIS <sup>1</sup>	Supplier	HCALCS	Digital Signing
EIS	NetworkOperator	ESME	Digital Signing
EIS	NetworkOperator	ESME	Key Agreement
GIS	Supplier	GSME	Digital Signing
GIS	Supplier	GSME	Key Agreement
GIS	Supplier	GSME	Key Agreement Top Up
GIS	Supplier	GPF	Digital Signing
GIS	Supplier	GPF	Key Agreement
GIS	NetworkOperator	GPF	Digital Signing
GIS	NetworkOperator	GPF	Key Agreement

**Table 169 Request Handover Of DCC Controlled Device Service Request User Roles / Remote Party Roles / Devices / Certificate Types**

<sup>1</sup> Row N/A to SMETS1 Services

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).

## 6.21.1 Service Request

### 6.21.1.1 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 RequestHandoverOfDCCControlledDevice XML element defines this Service Request and contains the Public Security Credentials to be updated on the Device and, for Future Dated Requests, the Execution Date and Time.

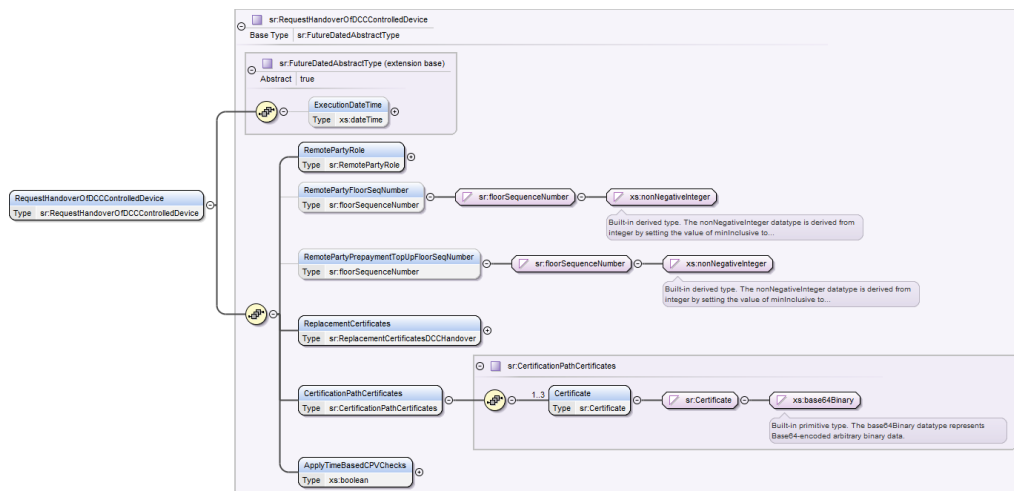


Figure 104 Request Handover Of DCC Controlled DeviceService Request Structure

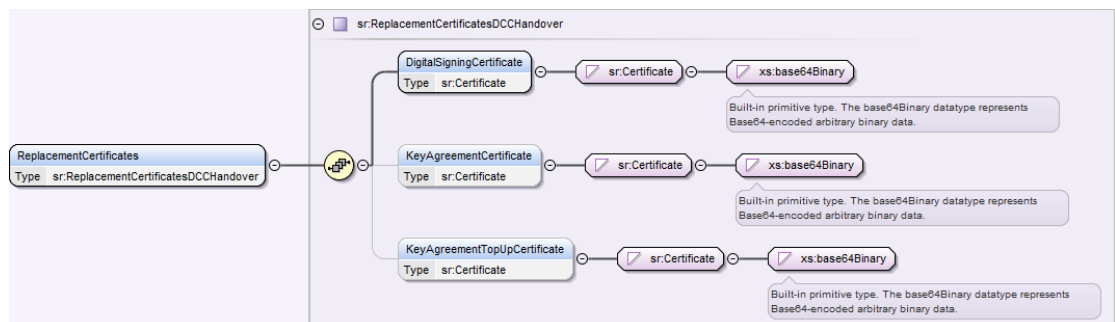


Figure 105 Request Handover Of DCC Controlled DeviceService Request – ReplacementCertificates Structure

### 6.21.1.2 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
RemotePartyRole	Remote Party Role for which the Credentials are being updated Valid Set: <ul style="list-style-type: none"> <li>Supplier</li> <li>NetworkOperator</li> </ul>	Restriction base xs:token (Enumeration)	Yes	None	N/A	Non-Sensitive
RemotePartyFloorSeqNumber	Originator Counter (floor value) for the new Remote Party.  This value will be used to prevent replay of Update Security Credentials Commands, and other Commands, for the new controlling Remote Party. Used only where the Remote Party Role for which the Certificates are being updated is Supplier	sr:floorSequenceNumber (Restriction of xs:nonNegativeInteger minInclusive = 0, maxInclusive = 9223372036854775807)	No	None	N/A	Non-Sensitive
RemotePartyPrepaymentTopUpFloorSeqNumber	Only applicable when the Command changes Supplier Credentials and Counters on a Meter and the Counter for its Prepayment Top Ups is different to that used for other Commands.  This value will be used to prevent replay of Prepayment Top Up Commands. Where applicable (i.e. the target Device is a Meter and Supplier security credentials are being updated), if not populated then the RemotePartyFloorSeqNumber will be used in prevention of replay of Prepayment Top Up Commands. SMETS1: This value shall not be used.	sr:floorSequenceNumber (Restriction of xs:nonNegativeInteger minInclusive = 0, maxInclusive = 9223372036854775807)	Remote Party Role = Supplier and Device Type = ESME or GSME: No Otherwise: N/A	None	N/A	Non-Sensitive
ReplacementCertificates	This structure provides a list of the replacement Certificates.	sr:ReplacementCertificate sDCCHandover (see section 6.21.1.3)	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
CertificationPathCertificates	This structure provides the Certificates needed to undertake Certification Path Validation of the new end entity Certificate against the root public key held on the Device. The number of these may be less than the number of replacement certificates (e.g. a Supplier may replace all of its certificates but may only need to supply one Certification Authority Certificate to link them all back to root. SMETS1: the Device shall not use these Certificates but they must be supplied as the element is mandatory.	sr:Certificate (xs:base64Binary minOccurs = "1", maxOccurs = "3")	Yes	None	N/A	Non-Sensitive
ApplyTimeBasedCPVChecks	Specify whether the time based Certification Path Validation should be applied SMETS1: time based checks shall always be applied	xs:boolean	Yes	None	N/A	Non-Sensitive

Table 170 Request Handover Of DCC Controlled Device Service Request Data Items

#### 6.21.1.3 ReplacementCertificatesDCCHandover Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DigitalSigningCertificate	The new Digital Signing Certificate to be placed in the Remote Party Role Key Usage digitalSignature (Cell Usage management) on the Device	sr:Certificate (xs:base64Binary)	Yes	None	N/A	Non-Sensitive
KeyAgreementCertificate	The new Key Agreement Certificate to be placed in the Remote Party Role Key Usage keyAgreement (Cell Usage management) on the Device	sr:Certificate (xs:base64Binary)	HCALCS: N/A Otherwise: Yes	None	N/A	Non-Sensitive
KeyAgreementTopUpCertificate	The new Key Agreement Certificate to be placed in the Supplier Remote Party Role Key Usage keyAgreement (Cell Usage prePaymentTopUp) on the Device for those Suppliers that use different Originator Counters for Prepayment Top Up  SMETS1: This Certificate shall not be used	sr:Certificate (xs:base64Binary)	Remote Party Role = Supplier, User Role = EIS or GIS and Device Type = ESME or GSME: Yes Otherwise: N/A	None	N/A	Non-Sensitive

Table 171 Request Handover Of DCC Controlled Device Service Request – ReplacementCertificatesDCCHandover Data Items

#### 6.21.1.4 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):

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

Table 172 Request Handover Of DCC Controlled Device Modes of Operation

#### 6.21.1.5 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):

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 173 Request Handover Of DCC Controlled Device Command Variant Values

#### 6.21.1.6 Validation

This Service Request specific validation is as follows (see Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Execution Date Time and Public Security Credentials validation):

Validation Check	Process	Response Code
Is the Remote Party Prepayment Top Up Floor Seq Number applicable to the Request?	Check that the Remote Party Prepayment Top Up Floor Seq Number is only included if the Supplier (EIS or GIS) is updating the Supplier Security Credentials on an ESME or GSME	E062101
Is the Certificate type applicable to the Device type?	Check that if the Certificate Type is: <ul style="list-style-type: none"> <li>Digital Signing. The Device Type is ESME, HCALCS, GSME or GPF</li> <li>Key Agreement. The Device Type is ESME, GSME or GPF</li> <li>Key Agreement Top Up. The Device Type is ESME or GSME</li> </ul>	E062102
Are the Remote Party Role and Device Type valid?	Check that the combination of DCC Service User Role, Remote Party Role and Device Type is valid, i.e. it is one of the valid combinations in Table 169	E062103
Are all the Certificate Types applicable to the Device Type and Remote Party Role included in the Request?	Check that the all the Certificate Types applicable to the Device Type and Remote Party Role defined in Table 169 are included in the Request	E062105

Table 174 Request Handover Of DCC Controlled Device Service Request Validation

#### 6.21.1.7 Sample Request

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

```
<RequestHandoverOfDCCControlledDevice>
  <RemotePartyRole>Supplier</RemotePartyRole>
  <RemotePartyFloorSeqNumber>23456</RemotePartyFloorSeqNumber>
  <ReplacementCertificates>
    <DigitalSigningCertificate>ZGVmYXVsdA==</DigitalSigningCertificate>
    <KeyAgreementCertificate>ZGVmYXVsdA==</KeyAgreementCertificate>
  </ReplacementCertificates>
  <CertificationPathCertificates>
    <Certificate>ZGVmYXVsdA==</Certificate>
  </CertificationPathCertificates>
  <ApplyTimeBasedCPVChecks>true</ApplyTimeBasedCPVChecks>
</RequestHandoverOfDCCControlledDevice>
```

**Figure 106 Request Handover Of DCC Controlled Device Service Request (Body) Format**

## 6.21.2 Responses

The response messages for a "Request Handover Of DCC Controlled Device" request follow the generic format for all "Device" response messages, the generic responses applicable to this request are;

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

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

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

### 6.21.2.1 Unsuccessful Response

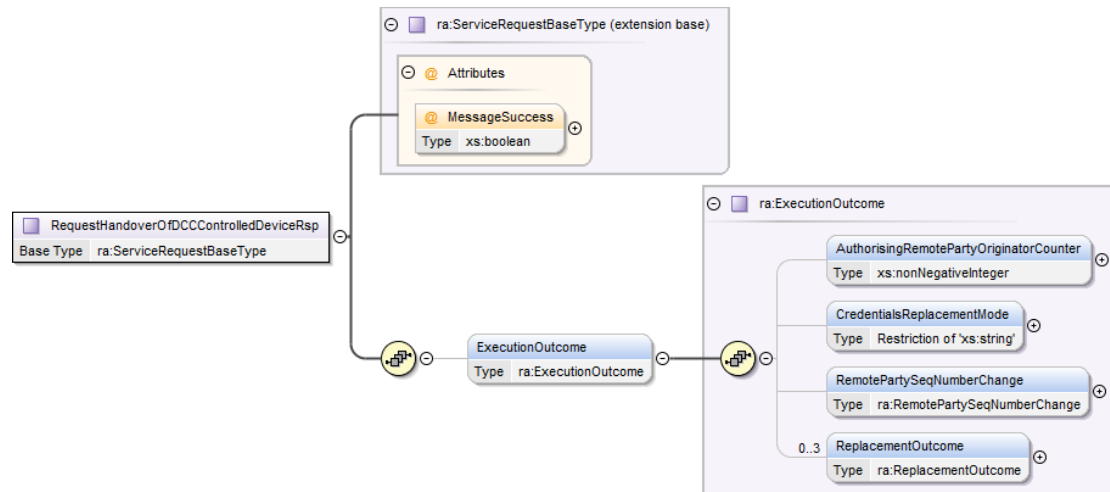
The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E062101	Failed Validation – Invalid Remote Party Prepayment Top Up Floor Seq Number	Error	The Remote Party New Prepayment Top Up Floor Seq Number data item is not applicable to the Request
E062102	Failed Validation – Invalid Certificate Type	Error	The Certificate type is not applicable to the Device Type
E062103	Failed Validation –DCC Service User Role / Remote Party Role mismatch	Error	The combination of DCC Service User Role and Remote Party Role is invalid for the Device Type
E062105	Failed Validation – Certificate Type / Device Type & Remote Party Role mismatch or Missing Certificate(s)	Error	The Certificate Type is not applicable to the Device Type & Remote Party Role combination or not all applicable Certificate Types are included in the Request

**Table 175 Failed Request Handover Of DCC Controlled Device Service Request Response Codes**

### 6.21.2.2 Parse Output / SMETS1 Response Format

#### 6.21.2.2.1 Format - RequestHandoverOfDCCControlledDeviceRsp



**Figure 107 - Request Handover Of DCC Controlled DeviceParse Response / SMETS1 Response Structure**

For detailed structure of RemotePartySeqNumberChange and ReplacementOutcome refer to section 6.15.1.2.2.

#### 6.21.2.2.2 Specific Header Data Items

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	Dependent on credentials replacement mode; see GBCS Table 13.3.5.2 or Table 177 in this document	Dependent on credentials replacement mode; see GBCS Table 13.3.5.2 or Table 177 in this document
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>CS02b</i>	<i>CS02b</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Update Security Credentials</i>	<i>Update Security Credentials</i>
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Present	Present

**Table 176 – Request Handover Of DCC Controlled Device Parse/SMETS1 Response Header Data Items**

The Message Code is dependent on the credentials replacement mode, as described in GBCS Table 13.3.5.2 in GBCS section 13.3.5.2, and reproduced here (only Credential Replacement Modes applicable to this Service Request) for convenience.

CredentialsReplacementMode	Message Code
supplierBySupplier	0102

CredentialsReplacementMode	Message Code
networkOperatorByNetworkOperator	0103

Table 177 – Message Codes and Credential Replacement Mode (GBCS Table 13.3.5.2)

#### 6.21.2.2.3 Specific Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
AuthorisingRemotePartyOriginatorCounter	Originating counter passed in the request, allows alerts to be matched to the request	xs:nonNegativeInteger	None	N/A	Non-Sensitive
CredentialsReplacementMode	Define the valid combinations as to which Remote Party Roles can replace which kinds of credentials. Valid Set: <ul style="list-style-type: none"> <li>SupplierBySupplier</li> <li>NetworkOperatorByNetworkOperator</li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive
RemotePartySeqNumberChange	The resulting changes to any replay counters held on the Device	ra:RemotePartySeqNumberChange – see 6.15.1.2.3.5 for details	None	N/A	Non-Sensitive
ReplacementOutcome	For each replacement in the request, detail the outcome and impacted parties	ra:ReplacementOutcome – see 6.15.1.2.3.6 for details	None	N/A	Non-Sensitive

#### 6.21.2.2.4 Sample Response

```
<ra:RequestHandoverOfDCCControlledDeviceRsp MessageSuccess="true">
  <ra:ExecutionOutcome>
    <ra:AuthorisingRemotePartyOriginatorCounter>123</ra:AuthorisingRemotePartyOriginatorCounter>
    <ra:CredentialsReplacementMode>SupplierBySupplier</ra:CredentialsReplacementMode>
    <ra:RemotePartySeqNumberChange>
      <ra:RemotePartyRole>Supplier</ra:RemotePartyRole>
      <ra:RemotePartyFloorSeqNumber>1234</ra:RemotePartyFloorSeqNumber>
    </ra:RemotePartySeqNumberChange>
    <ra:ReplacementOutcome>
      <ra:StatusCode ResponseCode="0">
        <ra:ASN1Status>success</ra:ASN1Status>
      </ra:StatusCode>
      <ra:CertificateType>KeyAgreement</ra:CertificateType>
      <ra:RemotePartyRole>Supplier</ra:RemotePartyRole>
      <ra:ExistingRemotePartyID>10-00-00-00-00-00-00-00</ra:ExistingRemotePartyID>
      <ra:NewRemotePartyID>10-00-00-00-00-00-00-00</ra:NewRemotePartyID>
      <ra:ExistingCertificateHash>ZGVmYXVsdA==</ra:ExistingCertificateHash>
      <ra:NewCertificateHash>ZGVmYXVsdA==</ra:NewCertificateHash>
    </ra:ReplacementOutcome>
    <ra:ReplacementOutcome>
      <ra:StatusCode ResponseCode="0">
        <ra:ASN1Status>success</ra:ASN1Status>
      </ra:StatusCode>
      <ra:CertificateType>DigitalSigning</ra:CertificateType>
      <ra:RemotePartyRole>Supplier</ra:RemotePartyRole>
      <ra:ExistingRemotePartyID>10-00-00-00-00-00-00-00</ra:ExistingRemotePartyID>
      <ra:NewRemotePartyID>10-00-00-00-00-00-00-00</ra:NewRemotePartyID>
      <ra:ExistingCertificateHash>ZGVmYXVsdA==</ra:ExistingCertificateHash>
      <ra:NewCertificateHash>ZGVmYXVsdA==</ra:NewCertificateHash>
    </ra:ReplacementOutcome>
  </ra:ExecutionOutcome>
</ra:RequestHandoverOfDCCControlledDeviceRsp>
```

Figure 108 - Request Handover Of DCC Controlled Device Parse Response Sample

## 6.22 Configure Alert Behaviour (6.22)

Service Request Name	ConfigureAlertBehaviour
Service Reference	6.22
Service Request Variant Name	ConfigureAlertBehaviour
Service Reference Variant	6.22
Service Request Objective	To enable a DCC Service User to configure Device Alert behaviours

<p><b>Business Context Statement</b></p>	<p>This Service Request is for Users to configure Event / Alert behaviours on specified Devices</p> <p>GBCS section 16 defines that some Event / Alert Codes can be configured by a defined User Role to either be</p> <p>‘turned on’ to</p> <ul style="list-style-type: none"> <li>• send WAN Alerts</li> <li>• send HAN Alerts</li> <li>• sound audible Alarms</li> <li>• enable logging of information relating to the Event / Alert Code in the Event Log</li> </ul> <p>or ‘turned off’ to</p> <ul style="list-style-type: none"> <li>• not send WAN Alerts,</li> <li>• not send HAN Alerts</li> <li>• not sound audible Alarms</li> <li>• not enable logging of information relating to the Event / Alert Code in the Event Log.</li> </ul> <p>Each authorised User may set this configuration for each applicable Alert Code within a specific Device ID</p>
<p><b>User Role Access</b></p>	<ul style="list-style-type: none"> <li>• Electricity Import Supplier (EIS)</li> <li>• Gas Import Supplier (GIS)</li> <li>• Electricity Network Operator (ENO)</li> </ul>
<p><b>Security Classification</b></p>	<p>Non-critical and non-sensitive: GBCS XREF: SME.C.NC</p>
<p><b>Service Request Narrative</b></p>	<ol style="list-style-type: none"> <li>1. Only non-critical Device Events / Alerts, as defined in GBCS, can be configured by this Service Request. These will always be in the range of either 0x80 (Network Operator non critical Events / Alerts. It is possible to configure them as WAN Alerts and / or Events to be logged in the Power Event Log) or 0x81 (Supplier non critical Events / Alerts. It is possible to configure them as WAN Alerts, HAN Alerts, audible Alarms and / or Events to be logged in the Event Log). The WAN Alerts, HAN Alerts, audible Alarms and Events to be logged in the Event Log or Power Event Log that are set to “Enable” in the Service Request will be “turned on” and those set to “Disable” will be “turned off” on the Device. See Main Document of this documentation set for the list of configurable non-critical Events / Alerts</li> <li>2. Each DCC Service User can only select not to receive those Non-Critical Alerts for which they are responsible.</li> <li>3. This Service Request can be used to configure single alerts or combinations of them. Configurable alerts for which the DCC Service User is responsible for which are not included in the Service Request will remain unchanged.</li> <li>4. Note that Critical Events / Alerts, as defined by GBCS, including those relating to security, cannot be configured using this Service Request and so events logged in the security log cannot be configured.</li> </ol>

5. For Devices with a Firmware version certified to GBCS v1.0
  - a. The DCC Service Users can continue to configure those WAN Alerts for which they are responsible according to GBCS section 16.2. The exception is Device Alert 0x81A0, which is ONLY introduced in GBCS v2.0 and Device Alerts 0x81A2 and 0x81A3 which are ONLY configurable from GBCS v2.0
  - b. Each DCC Service User must track the Alerts that they have configured for use of their Devices as they cannot be read back by the DCC Service Users at a later date via a Service Request. The DCC Data Systems does not store Event / Alert Configuration information, as this is ONLY stored on the specified target Device. If the DCC Service User is unsure of the current Alert behaviour settings on the Device then they should use this Service Request to configure all of the Alerts for which they are the responsible party again to obtain known values.
6. For Devices with a Firmware version certified to GBCS v2.0 or later
  - a. The DCC Service Users can configure those WAN Alerts, HAN Alerts, audible Alarms and logging of Events in the Event Log(s) for which they are responsible for according to GBCS section 16.2.
    - i. For Electricity each 1 of the 4 possible configuration setting sets of WAN Alerts, HAN Alerts, audible Alarms and logging of Events in the Event Log are available to be configured separately via different GBCS Use Cases, i.e. different instances of this Service Request. For a given Event / Alert Code it is possible to change only the required settings, e.g. those of the WAN Alert, and leave the others unchanged
    - ii. For Gas the WAN Alerts, HAN Alerts, audible Alarms and logging of Events in the Event Log are configured simultaneously per Event / Alert Code via a single GBCS Use Case, i.e. single instance of this Service Request. For a specified Event / Alert Code it is not possible to change only some of the settings, e.g. those of the WAN Alert, and leave the others unchanged. All 4 of the possible configuration setting sets must be populated with the actual behaviours expected from the device for each setting
  - b. The DCC Service Users can read the Alert / Event Configuration via Service Request 6.2.10 - Read Device Configuration (Event and Alert Behaviours). See section 6.2.10.
7. For Devices with a Firmware version certified to GBCS v3.2 or later
  - a. The DCC Service Users can configure the Alert Code 0x81C6.

GBCS Cross Reference	Electricity				Gas
	WAN Alerts	HAN Alerts	Audible Alarms	Event Logging	
GBCS v1.0 Message Code	EIS – 0x00AC ENO – 0x00B0	N/A	N/A	N/A	GIS – 0x00AD
GBCS v1.0 Use Case	EIS – ECS25a ENO – ECS25b	N/A	N/A	N/A	GIS – GCS20
GBCS v1.0 Use Case Name	EIS - Set Alert Behaviours - ESME - Supplier ENO - Set Alert Behaviours - ESME - Network Operator	N/A	N/A	N/A	GIS - Set Alert Behaviours - GSME
GBCS v2.0 or later Message Code	EIS – 0x00AC ENO – 0x00B0	EIS – 0x00EA	EIS – 0x00EB	EIS – 0x00EC ENO – 0x00ED	GIS – 0x00AD
GBCS v2.0 or later Use Case	EIS – ECS25a ENO – ECS25b	EIS - ECS25a1	EIS - ECS25a2	EIS - ECS25a3 ENO - ECS25b3	GIS – GCS20
GBCS v2.0 or later Use Case Name	EIS - Set Alert Behaviours - ESME - Supplier ENO - Set Alert Behaviours - ESME - Network Operator	EIS - Set Event Behaviours - ESME to HAN Device - Supplier	EIS - Set Event Behaviours - ESME audible alarm - Supplier	EIS - Set Event Behaviours - ESME logging - Supplier ENO - Set Event Behaviours - ESME logging - Network Operator	GIS - Set Alert Behaviours - GSME
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 v1.0	GBCS v2.0 or later
DUIS 1: XML Criteria - XML data item ElectricitySupplierAlerts populated only with Device Alerts included in GBCS v1.0 (note that the DUIS 1 XML schema does not include WAN Alerts 0x81A2, 0x81A3 or 0x81A0)	ECS25a	ECS25a
DUIS 2 or later: XML Criteria - XML data item ElectricitySupplierAlerts populated only with Device Alerts included in GBCS v1.0 (WAN Alerts except 0x81A2, 0x81A3 and 0x81A0)	ECS25a	ECS25a
DUIS 2 or later: XML Criteria - XML data item ElectricitySupplierAlerts populated with at least one Device Alert not included in GBCS v1.0 (i.e. 0x81A2, 0x81A3 and 0x81A0)	Response Code – E062203	ECS25a
DUIS 2 or later: XML Criteria - XML data item ElectricitySupplierHANAlertSettings populated	Response Code – E062203	ECS25a1
DUIS 2 or later: XML Criteria - XML data item ElectricitySupplierAlarmSettings populated	Response Code – E062203	ECS25a2
DUIS 2 or later: XML Criteria - XML data item ElectricitySupplierLoggingSettings populated	Response Code – E062203	ECS25a3
DUIS 2 or later: XML Criteria - XML data item ElectricityNetworkOperatorAlerts populated	ECS25b	ECS25b
DUIS 2 or later: XML Criteria - XML data item ElectricityNetworkOperatorLoggingSettings populated	Response Code – E062203	ECS25b3
SMETS1 Applicability	No	No
Device Type	GSME	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0 or later
DUIS 1 or later: XML Criteria - XML data item GasSupplierAlerts populated (note that GasSupplierAlertEventSettings is not supported in DUIS 1)	GCS20	GCS20
DUIS 2 or later: XML Criteria - XML data item GasSupplierAlertEventSettings populated	Response Code – E062203	GCS20
SMETS1 Applicability	No	No

Table 178 Configure Alert Behaviour Service Request

The following table summarises the possible combinations of User Roles, GBCS UCs and GBCS version:

User Role	GBCS UC	Device's GBCS Version
EIS	ECS25a	>= 1.0
EIS	ECS25a1	>= 2.0
EIS	ECS25a2	>= 2.0
EIS	ECS25a3	>= 2.0
ENO	ECS25b	>= 1.0
ENO	ECS25b3	>= 2.0
GIS	GCS20	= 1.0 (WAN Alerts only) >= 2.0 (WAN Alerts, HAN Alerts, Audible Alarms and / or Event Logging)

**Table 179 Configure Alert Behaviour Service Request User Roles / GBCS UCs / GBCS Version**

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).

This Service Request references the Alert Codes used to configure the ESME or GSME, these codes are defined in GBCS section 16.2, the meaning of each code is not repeated here.

## 6.22.1 Service Request

### 6.22.1.1 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 ConfigureAlertBehaviour XML element defines this Service Request and contains the Device Alert Codes that each User Role can set on each Device Type.

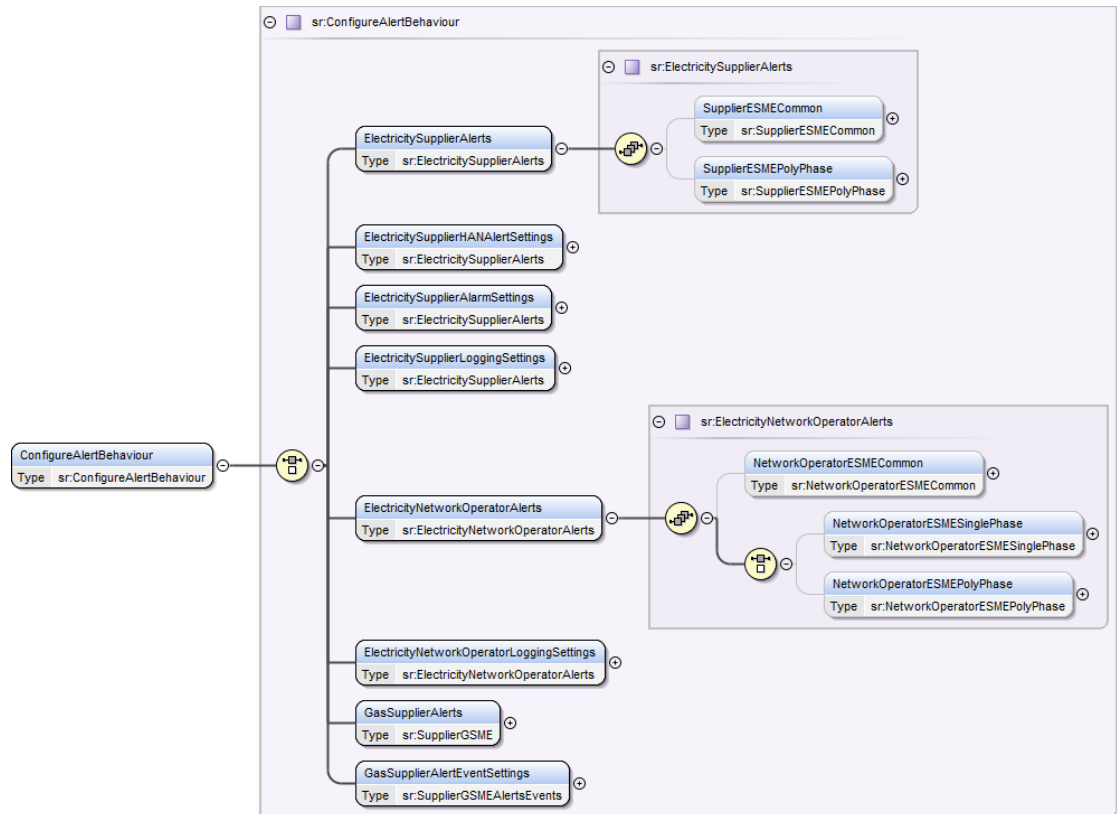


Figure 109 – Configure Alert Behaviour Service Request Structure

### 6.22.1.2 Specific Data Items Definition

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

Data Item	Description / Valid Set	Type	Mandatory <sup>1</sup>	Default	Units	Sensitivity
ElectricitySupplierAlerts	The configuration settings for WAN Alerts which the registered EIS can configure on the ESME.	sr:ElectricitySupplierAlerts (See 6.22.1.3)	EIS and ESME Firmware certified to GBCS v1.0:: Yes EIS and ESME Firmware certified to GBCS v2.0 or later: Optional Otherwise: N/A	None	N/A	Non-Sensitive
ElectricitySupplierHANAlertSettings	The configuration settings for HAN Alerts which the registered EIS can configure on the ESME.  ElectricitySupplierHANAlertSettings is only supported in DUIS v2 or later on Devices with a Firmware version certified to GBCS v2.0 or later	sr:ElectricitySupplierAlerts (See 6.22.1.3)	EIS and ESME Firmware certified to GBCS v2.0 or later: Optional Otherwise: N/A	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory <sup>1</sup>	Default	Units	Sensitivity
ElectricitySupplierAlarmSettings	The configuration settings for audible Alarms (associated to WAN Alerts, HAN Alerts and / or events recorded in the Event Log) which the registered EIS can configure on the ESME.  ElectricitySupplierAlarmSettings is only supported in DUIS v2 or later on Devices with a Firmware version certified to GBCS v2.0 or later	sr:ElectricitySupplierAlerts (See 6.22.1.3)	EIS and ESME Firmware certified to GBCS v2.0 or later: Optional Otherwise: N/A	None	N/A	Non-Sensitive
ElectricitySupplierLoggingSettings	The configuration settings for logging Events in the Event Logs, which the registered EIS can configure on the ESME.  ElectricitySupplierLoggingSettings is only supported in DUIS v2 or later on Devices with a Firmware version certified to GBCS v2.0 or later	sr:ElectricitySupplierAlerts (See 6.22.1.3)	EIS and ESME Firmware certified to GBCS v2.0 or later: Optional  Otherwise: N/A	None	N/A	Non-Sensitive
ElectricityNetworkOperatorAlerts	The configuration settings for WAN Alerts which the registered ENO can configure on the ESME.	sr:ElectricityNetworkOperatorAlerts (See 6.22.1.4)	ENO and ESME Firmware certified to GBCS v1.0: Yes ENO and ESME Firmware certified to GBCS v2.0 or later: Optional Otherwise: N/A	None	N/A	Non-Sensitive
ElectricityNetworkOperatorLoggingSettings	The configuration settings for logging Events in the Power Event Log, which the registered ENO can configure on the ESME.  ElectricityNetworkOperatorLoggingSettings is only supported in DUIS v2 or later on Devices with a Firmware version certified to GBCS v2.0 or later	sr:ElectricityNetworkOperatorAlerts (See 6.22.1.4)	ENO and ESME Firmware certified to GBCS v2.0 or later: Optional Otherwise: N/A	None	N/A	Non-Sensitive
GasSupplierAlerts	The configuration settings for WAN Alerts which the registered GIS can configure on the GSME.  GasSupplierAlerts is only supported on Devices with a Firmware version certified to GBCS 1.0	sr:GasSupplierAlerts (See 6.22.1.5)	GIS and GSME Firmware certified to GBCS v1.0: Yes Otherwise: N/A	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory <sup>1</sup>	Default	Units	Sensitivity
GasSupplierAlertEventSettings	<p>The configuration settings for WAN Alerts, HAN Alerts, logging of Events in the Event Log and / or audible Alarms (associated to WAN Alerts, HAN Alerts and / or events recorded in the Event Log) which the registered GIS can configure on the GSME.</p> <p>GasSupplierAlertEventSettings is only supported in DUIS v2 or later on Devices with a Firmware version certified to GBCS v2.0 or later</p>	sr: SupplierGSMEAlertsEvents (See 6.22.1.6)	GIS and GSME Firmware certified to GBCS v2.0 or later: Yes Otherwise: N/A	None	N/A	Non-Sensitive

Table 180 Configure Alert Behaviour Service Request Data Items

<sup>1</sup> This Service Request is a choice, so it must only include one of the data items in the table

### 6.22.1.3 ElectricitySupplierAlerts Specific Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
SupplierESMECommon	A set of Event / Alert Codes (as defined by GBCS) for which WAN Alert, HAN Alert, audible Alarm or logging of Events to the Event Log behaviours that are applicable to both Single and Poly Phase Electric Smart Meters are to be configured.	See 6.22.1.8	No (If included at least 1 Alert must be configured)	None	N/A	Non-Sensitive
SupplierESMEPolyPhase	A set of Event / Alert Codes (as defined by GBCS) for which WAN Alert, HAN Alert, audible Alarm or logging of Events to the Event Log behaviours that are only applicable to Poly Phase Electric Smart Meters are to be configured.	See 6.22.1.8	No (If included at least 1 Alert must be configured)	None	N/A	Non-Sensitive

Table 181 Configure Alert Behaviour Service Request – ElectricitySupplierAlerts Data Items

### 6.22.1.4 ElectricityNetworkOperatorAlerts Specific Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
NetworkOperatorESMECommon	A set of Event / Alert Codes (as defined by GBCS) for which WAN Alert or logging of Events to the Power Event Log behaviours that are applicable to both Single and Poly Phase Electric Smart Meters are to be configured.	See 6.22.1.8	No (If included at least 1 Alert must be configured)	None	N/A	Non-Sensitive
NetworkOperatorESMESinglePhase	A set of Event / Alert Codes (as defined by GBCS) for which WAN Alert or logging of Events to the Power Event Log behaviours that are only applicable to Single Phase Electric Smart Meters are to be configured.	See 6.22.1.8	No (If included at least 1 Alert must be configured)	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
NetworkOperatorESMEPolyPhase	A set of Event / Alert Codes (as defined by GBCS) for which WAN Alert or logging of Events to the Power Event Log behaviours that are only applicable to Poly Phase Electric Smart Meters are to be configured.	See 6.22.1.8	No (If included at least 1 Alert must be configured)	None	N/A	Non-Sensitive

**Table 182 Configure Alert Behaviour Service Request – ElectricityNetworkOperatorAlerts Data Items**

#### 6.22.1.5 GasSupplierAlerts Specific Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
GasSupplierAlerts	A set of Event / Alert Codes (as defined by GBCS) for which WAN Alert behaviours that are applicable to GSME are to be configured.	See 6.22.1.8	No (If included at least 1 Alert must be configured)	None	N/A	Non-Sensitive

**Table 183 Configure Alert Behaviour Service Request – GasSupplierAlerts Data Items**

#### 6.22.1.6 GasSupplierAlertEventSettings Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
GasSupplierAlertEventSettings	A set of Event / Alert Codes (as defined by GBCS) with configurable WAN Alert, HAN Alert, Alarm and / or Event Logging that are applicable to GSME are to be configured.	sr:WANHANEventLogAlarm (see 6.22.1.7)	No (If included at least 1 Alert must be configured)	None	N/A	Non-Sensitive

**Table 184 Configure Alert Behaviour Service Request – GasSupplierAlertEventSettings Data Items**

#### 6.22.1.7 WANHANEventLogAlarm Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
XML Tag name is the GBCS Alert Code without the leading zero.	Applicable to each Event / Alert Code with configurable WAN Alert, HAN Alert, Event Log and Alarm on the GSME.  For each of these alerts, e.g. 0x81AA, the WAN Alert, HAN Alert, the Event Log and the Alarm have to be configured at the same time, but their setting (enable / disable) can be different	(see 6.22.1.8)	No	None	N/A	Non-Sensitive

**Table 185 Configure Alert Behaviour Service Request – WANHANEventLogAlarm Data Items (Gas)**

### 6.22.1.8 Alert Type Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
XML Tag name is the GBCS Alert Code without the leading zero.	<p>Each of the following elements contain a sequence of GBCS Alert Codes;</p> <ul style="list-style-type: none"> <li>SupplierESMECommon</li> <li>SupplierESMEPolyPhase</li> <li>NetworkOperatorESMECommon</li> <li>NetworkOperatorESMESinglePhase</li> <li>NetworkOperatorESMEPolyPhase</li> <li>GasSupplierAlerts</li> <li>GasSupplierAlertEventSettings</li> </ul> <p>See section 16.2 of GBCS for the definition of these codes. Each Alert may be enabled (turned on) or disabled (turned off), if an Alert isn't reconfigured then its configuration state is unchanged.</p>	sr:EnableDisableAlert	No	None	N/A	Non-Sensitive

Table 186 Configure Alert Behaviour Service Request – Alert Type Definition

### 6.22.1.9 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	No	No

Table 187 Configure Alert Behaviour Modes of Operation

### 6.22.1.10 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 188 Configure Alert Behaviour Command Variant Values

### 6.22.1.11 Validation

This Service Request specific validation is as follows (see Main Document of this documentation set section 7 for generic access control checks):

Validation Check	Process	Response Code
Is the Service Request valid?	<p>Check that the combination of DCC Service User Role and Service Request contents is as follows and it includes at least one Alert configuration:</p> <ul style="list-style-type: none"> <li>EIS and (ElectricitySupplierAlerts or ElectricitySupplierHANAlertSettings or ElectricitySupplierAlarmSettings or ElectricitySupplierLoggingSettings) <ul style="list-style-type: none"> <li>At least one Alert configuration included</li> </ul> </li> <li>ENO and (ElectricityNetworkOperatorAlerts or ElectricityNetworkOperatorLoggingSettings) <ul style="list-style-type: none"> <li>At least one Alert configuration included</li> </ul> </li> <li>GIS and (GasSupplierAlerts or GasSupplierAlertEventSettings) <ul style="list-style-type: none"> <li>At least one Alert configuration included</li> </ul> </li> </ul>	E062201
Is the Service Request applicable to the ESME variant?	<p>Check that when the EIS or ENO is configuring Device Alerts (WAN or HAN or audible Alarms or Logging of Events) on an ESME (except for those applicable to all variants), the combination of the ESME Variant and the Service Request contents is as follows:</p> <ul style="list-style-type: none"> <li>Single Phase ESME (Variant combinations including A or B) and ESMESinglePhase</li> <li>Poly Phase ESME (Variant combinations including C) and ESMEPolyPhase</li> </ul>	E062202
Does the GBCS version for the Firmware on the Device support the features chosen in the Service Request?	<p>Check that if the Device Firmware version is certified to GBCS v1.0 according to the Smart Metering Inventory records, the Service Request does not include Device Alerts 0x81A0, 0x81A2 or 0x81A3 and that it includes one of:</p> <ul style="list-style-type: none"> <li>ElectricitySupplierAlerts</li> <li>ElectricityNetworkOperatorAlerts</li> <li>GasSupplierAlerts</li> </ul> <p>Check that if the Device Firmware version is certified to GBCS v2.0 or later according to the Smart Metering Inventory records, the Service Request doesn't include GasSupplierAlerts.</p> <p>Check that if the request includes an instruction to configure 0x81C6 then the Device Firmware version is certified to GBCS v3.2 or later according to the Smart Metering Inventory records.</p>	E062203

Table 189 Configure Alert Behaviour Service Request Validation

### 6.22.1.12 Sample Request

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

```
<ConfigureAlertBehaviour>
  <ElectricitySupplierAlerts>
    <SupplierESMECommon>
      <x81AB>Enable</x81AB>
      <x81BC>Disable</x81BC>
    </SupplierESMECommon>
  </ElectricitySupplierAlerts>
</ConfigureAlertBehaviour>
```

Figure 110 Configure Alert Behaviour Service Request (Body) Format – Electricity (WAN Alerts - Supplier)

```
<ConfigureAlertBehaviour>
  <ElectricitySupplierHANAlertSettings>
    <SupplierESMECommon>
      <x8119>Enable</x8119>
      <x81AA>Disable</x81AA>
    </SupplierESMECommon>
  </ElectricitySupplierHANAlertSettings>
</ConfigureAlertBehaviour>
```

**Figure 111 Configure Alert Behaviour Service Request (Body) Format – Electricity (HAN Alerts - Supplier)**

```
<ConfigureAlertBehaviour>
  <ElectricitySupplierAlarmSettings>
    <SupplierESMECommon>
      <x81AB>Disable</x81AB>
      <x81BC>Disable</x81BC>
    </SupplierESMECommon>
  </ElectricitySupplierAlarmSettings>
</ConfigureAlertBehaviour>
```

**Figure 112 Configure Alert Behaviour Service Request (Body) Format – Electricity (Audible Alarms - Supplier)**

```
<ConfigureAlertBehaviour>
  <ElectricitySupplierLoggingSettings>
    <SupplierESMECommon>
      <x81AB>Enable</x81AB>
      <x81BC>Disable</x81BC>
    </SupplierESMECommon>
  </ElectricitySupplierLoggingSettings>
</ConfigureAlertBehaviour>
```

**Figure 113 Configure Alert Behaviour Service Request (Body) Format – Electricity (Logging in Event Log - Supplier)**

```
<ConfigureAlertBehaviour>
  <ElectricityNetworkOperatorAlerts>
    <NetworkOperatorESMECommon>
      <x8014>Enable</x8014>
      <x8015>Disable</x8015>
    </NetworkOperatorESMECommon>
  </ElectricityNetworkOperatorAlerts>
</ConfigureAlertBehaviour>
```

**Figure 114 Configure Alert Behaviour Service Request (Body) Format – Electricity (WAN Alerts – Network Operator)**

```
<ConfigureAlertBehaviour>  
  <ElectricityNetworkOperatorLoggingSettings>  
    <NetworkOperatorESMECommon>  
      <x8014>Enable</x8014>  
      <x8015>Disable</x8015>  
    </NetworkOperatorESMECommon>  
  </ElectricityNetworkOperatorLoggingSettings>  
</ConfigureAlertBehaviour>
```

**Figure 115 Configure Alert Behaviour Service Request (Body) Format – Electricity  
(Logging in Power Event Log – Network Operator)**

```
<ConfigureAlertBehaviour>  
  <GasSupplierAlerts>  
    <x81B2>Enable</x81B2>  
    <x81C5>Disable</x81C5>  
  </GasSupplierAlerts>  
</ConfigureAlertBehaviour>
```

**Figure 116 Configure Alert Behaviour Service Request (Body) Format – Gas (WAN  
Alerts only)**

```
<ConfigureAlertBehaviour>
  <GasSupplierAlertEventSettings>
    <x810D>
      <WANAAlert>Enable</WANAAlert>
      <HANAAlert>Disable</HANAAlert>
      <EventLog>Enable</EventLog>
      <Alarm>Disable</Alarm>
    </x810D>
    <x810E>
      <WANAAlert>Enable</WANAAlert>
      <HANAAlert>Disable</HANAAlert>
      <EventLog>Enable</EventLog>
      <Alarm>Disable</Alarm>
    </x810E>
    <x8145>
      <WANAAlert>Enable</WANAAlert>
      <HANAAlert>Disable</HANAAlert>
      <EventLog>Enable</EventLog>
      <Alarm>Disable</Alarm>
    </x8145>
    <x8168>
      <WANAAlert>Enable</WANAAlert>
      <HANAAlert>Disable</HANAAlert>
      <EventLog>Enable</EventLog>
      <Alarm>Disable</Alarm>
    </x8168>
    <x8183>
      <WANAAlert>Enable</WANAAlert>
      <HANAAlert>Disable</HANAAlert>
      <EventLog>Enable</EventLog>
      <Alarm>Disable</Alarm>
    </x8183>
    <x81AA>
      <WANAAlert>Enable</WANAAlert>
      <HANAAlert>Enable</HANAAlert>
      <EventLog>Enable</EventLog>
      <Alarm>Disable</Alarm>
    </x81AA>
    <x81C6>
      <WANAAlert>Enable</WANAAlert>
      <HANAAlert>Enable</HANAAlert>
      <EventLog>Enable</EventLog>
      <Alarm>Disable</Alarm>
    </x81C6>
  </GasSupplierAlertEventSettings>
</ConfigureAlertBehaviour>
```

Figure 117 Configure Alert Behaviour Service Request (Body) Format - Gas

## 6.22.2 Responses

The response messages for a “Configure Alert Behaviour” request follow the generic format for all “Device” response messages, the generic responses applicable to this 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.

### 6.22.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E062201	Failed Validation – Request Invalid	Error	The Service Request is invalid
E062202	Failed Validation – Request / ESME Variant mismatch	Error	The combination of ESME Variant and Service Request contents is invalid
E062203	Failed Validation - Features not supported by GBCS version	Error	The SMI GBCS version of the Firmware running on the Device does not support the chosen features of this Service Request

Table 190 Failed Configure Alert Behaviour Service Request Response Codes

#### 6.22.2.2 Parse Output Format

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

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

#### 6.22.2.2.1 Specific Header Data Items

GBCS v1.0:

Data Item	Electricity Response (Supplier)	Electricity Response (Network Operator)	Gas Response
GBCSHexadecimalMessageCode	00AC	00B0	00AD
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS25a</i>	<i>ECS25b</i>	<i>GCS20</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Alert Behaviours - ESME - Supplier</i>	<i>Set Alert Behaviours - ESME - Network Operator</i>	<i>Set Alert Behaviours - GSME</i>
SupplementaryRemotePartyID	Not Present	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present	Not Present
Timestamp	Not Present	Not Present	Not Present

Table 191 – Configure Alert Behaviour Parse Response Header Data Items – GBCS v1.0

GBCS v2.0 or later:

Data Item	Electricity Response (Supplier – WAN Alerts)	Electricity Response (Supplier – HAN Alerts)	Electricity Response (Supplier – Alarms)	Electricity Response (Supplier – Event Logging)
GBCSHexadecimalMessageCode	00AC	0x00EA	0x00EB	0x00EC
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS25a</i>	<i>ECS25a1</i>	<i>ECS25a2</i>	<i>ECS25a3</i>

Data Item	Electricity Response (Supplier – WAN Alerts)	Electricity Response (Supplier – HAN Alerts)	Electricity Response (Supplier – Alarms)	Electricity Response (Supplier – Event Logging)
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Alert Behaviours - ESME - Supplier</i>	<i>Set Event Behaviours - ESME to HAN Device - Supplier</i>	<i>Set Event Behaviours - ESME audible alarm - Supplier</i>	<i>Set Event Behaviours - ESME logging - Supplier</i>
SupplementaryRemotePartyID	Not Present	Not Present	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present	Not Present	Not Present
Timestamp	Not Present	Not Present	Not Present	Not Present

**Table 192 – Configure Alert Behaviour Parse Response Header Data Items – GBCS v2.0 or later (Electricity Supplier)**

Data Item	Electricity Response (Network Operator – WAN Alerts)	Electricity Response (Network Operator – Event Logging)	Gas Response
GBCSHexadecimalMessageCode	00B0	0x00ED	00AD
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS25b</i>	<i>ECS25b3</i>	<i>GCS20</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Alert Behaviours - ESME - Network Operator</i>	<i>Set Event Behaviours - ESME logging - Network Operator</i>	<i>Set Alert Behaviours - GSME</i>
SupplementaryRemotePartyID	Not Present	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present	Not Present
Timestamp	Not Present	Not Present	Not Present

**Table 193 – Configure Alert Behaviour Parse Response Header Data Items – GBCS v2.0 or later (Electricity Network Operator and Gas Supplier)**

## 6.23 Update Security Credentials (CoS) (6.23)

Service Request Name	Update Security Credentials (CoS)
Service Reference	6.23
Service Request Variant Name	Update Security Credentials (CoS)

Service Reference Variant	6.23
Service Request Objective	<p>SMETS2 or later: To enable an Import Supplier to replace the Supplier Security Credentials on a specified Device with the Security Credentials contained within the Service Request.</p> <p>SMETS1: To enable an Import Supplier to replace the Supplier Security Credentials which the DCC Data Systems holds corresponding to a specified Device with the Security Credentials contained within the Service Request.</p>
Business Context Statement	<p>SMETS2 or later: The gaining Energy Supplier wins a site and requests that the security credentials present on the device are updated to the gaining Energy Supplier's credentials so that they can operate the device.</p> <p>SMETS1: The gaining Energy Supplier wins a site and requests that the security credentials which the DCC Data Systems holds corresponding to the specified Device are updated to the gaining Energy Supplier's credentials so that they can operate the Device.</p>
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> </ul>
Security Classification	<p>Non-critical and non-sensitive:</p> <p>SMETS2 or later: GBCS XREF: SME.C.C (the GBCS Command to the Device is Critical, but it is digitally signed by the CoS Party, so the Service Request interaction between the DCC Service Users and the DCC is Non-Critical)</p>
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>The Services to support the Change of Supplier (CoS) process are a special use case for processing for the DCC Data Systems. In this case, a separate function within the DCC Total System called the CoS Party interacts with the main Access Control Broker (ACB) function to deliver an appropriately signed command to the Device. See Main Document of this documentation set section 2.3.11 for details.</li> <li>To allow the CoS Party to perform Access Control Checks on the Request: <ol style="list-style-type: none"> <li>CoS Party own registration check. This Service Request has to include the Import MPxN (Primary MPAN for ESME or HCALCS and MPRN for GSME or GPF) associated to the Device which the DCC Data Systems will include in the Request to the CoS Party</li> <li>Identity check. The DCC Data Systems will include the DCC Service User Service Request Signature in the Request to the CoS Party</li> </ol> </li> <li>This Service Request applies to those Devices for which the DCC Service User Role is a KRP: <ol style="list-style-type: none"> <li>EIS.</li> </ol> </li> </ol>

	<ul style="list-style-type: none"><li><ul style="list-style-type: none"><li>i. Electricity Smart Meter Equipment (ESME)</li><li>ii. HAN Connected Auxiliary Load Control Switch (HCALCS)</li></ul></li><li>b. GIS<ul style="list-style-type: none"><li>i. Gas Smart Meter Equipment (GSME)</li><li>ii. Gas Proxy Function (GPF)</li></ul></li></ul>
	<p>4. The Certificates to be changed via this Service Request are summarised in Table 195. The Service Request has to include all the Certificates applicable to the Business Target ID Device Type.</p>
	<p>5. Because the Command to the Device is generated and signed by the Cos Party:</p> <ul style="list-style-type: none"><li>a. This Service Request is Non-critical.</li><li>b. The Command will be submitted to the Device by the DSP Access Control Broker using a variation of the URP interaction type, where the Command Business Originator ID and Counter are those of the Cos Party</li></ul>
	<p>6. This Service Request includes data item ApplyTimeBasedCPVChecks to instruct the Device to apply (true) or not apply (false) time based checks as part of Certification Path Validation. It should only be set to false in exceptional circumstances (e.g. credentials on the Device have expired without replacement for unforeseen reasons).</p>
	<p>7. If the Service Request completes successfully, the Old registered Import Supplier will be sent DCC Alert N27 to inform them of the change of Security Credentials to support the CoS event (this action is a post-processing step after the Service Response has been sent to the User).</p>
	<p>8. If the Service Request completes successfully, all active DSP Schedules on that Device owned by the Old registered Import Supplier will be automatically deleted by the DCC Data Systems. For each deleted DSP Schedule a DCC Alert N17 will be sent to the Old registered Import Supplier (this action is a post-processing step after the Service Response has been sent to the User).</p>
	<p>9. If the Service Request completes successfully, all Future Dated (DSP) requests for that Device submitted by the Old registered Import Supplier not yet sent to the Device will be automatically cancelled by the DCC Data Systems. For each cancelled Future Dated (DSP) request a DCC Alert N38 will be sent to the Old registered Import Supplier (this action is a post-processing step after the Service Response has been sent to the User).</p>
	<p>10. If the Service Request completes successfully, the DCC Data Systems will stop monitoring all Future Dated (Device) Commands for that Device submitted by the Old registered Import Supplier for which no response has been received from the Device. This won't trigger the sending of DCC Alerts to the Old registered Import Supplier.</p>

11. If the Service Request fails access control checks or the processing by the CoS Party, the Service Request Sender will be sent DCC Alert N26 and the Request won't be processed any further (this action is a post-processing step after the Service Response has been sent to the User).
12. The Modes of Operation applicable to this Service Request are:
  - a. On Demand. Only if sent to the DCC Data Systems on or after the CoS Date.
  - b. Future Dated. Only if sent to the DCC Data Systems with an ExecutionDateTime on or after the CoS Date. As explained in the Main Document of this documentation set section 2.3.11, this Service Request uses a Future Date (DSP + Device) Mode of Operation. This means that, where applicable, the DCC Data Systems will hold the Service Request until the day before the Execution Date Time in the Request and then will re-apply access control to it, before forwarding the Request to the CoS Party. If a Future Dated Service Request fails DSP access control (note this includes checking that the certificates haven't been revoked) at the point the Request is to be sent to the CoS Party, the Service Request Sender will be sent DCC Alert N26 and the Request won't be processed any further.
13. Upon successful processing of this Service Request to replace Security Credentials related to the Remote Party Supplier Role, the specified target Device will reset the Immediate Execution Counters and Future Dated Counters on the Device to the Remote Party Role (Supplier) Floor Sequence Number(s) specified within this Service Request
14. As an exception, the Authorisation Check associated to E5 allows the Device Status to be 'Suspended', but successful completion of the Service Request doesn't change the Device Status in the Smart Metering Inventory
15. For each certificate specified in a Response or Alert from the Device as being successfully updated by the Update Security Credentials Command, the DCC Data Systems shall update the Smart Metering Inventory with the new certificate identifier as a record of the certificate held in the relevant Trust Anchor Cell on that Device (this action is carried out before the Service Response is generated).
16. If the DCC Data Systems do not receive any Response to the Service Request then the DCC Data Systems will initiate a Command to read the Organisation Certificates on the target Device. If the Response to this Command indicates that the Supplier certificates have changed from those currently recorded by the DCC Data Systems (ie the original Change of Supplier request was actually successfully completed on the Device) then the DCC Data Systems will carry out all the post-processing actions described in this

	<p>narrative section as if a successful Response had been received to the original request.</p> <p>17. During the period where both the Transitional CoS Party and the Enduring CoS Party are in operation, the device may have a TCoS or ECoS certificate in the CoS Party Trust Anchor Cell. The DCC Data Systems will manage the use of the correct CoS certificate and route the Service Request to the relevant CoS Party. However, Users should note that processing by the Enduring CoS Party may result in additional error response codes being returned in DCC Alert N26. See Main Document of this documentation set section 12.3 for details.</p> <p>18. Where the Device has an ECoS certificate in its CoS Party Trust Anchor Cell, the User shall ensure that the Originator Counter is numerically greater than the value it has used in relation to any previously created 'Update Security Credentials (CoS) (SRV 6.23)' SMETS2 Service Request (i.e. not just on a per-Device basis).</p> <p>19. For this Service Request the check that the Service User is the Registered Supplier for the device is additionally carried out against the Market Participant Identifier that is included within the certificate that is used to sign the Service Request</p>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code (for each CredentialsReplacementMode)	supplierByTransCoS – 0x0107	
GBCS Use Case	CS02b	CS02b
GBCS Use Case Name	Update Security Credentials	Update Security Credentials
SMETS1 Applicability	Yes	Yes
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>For SMETS1 Devices, references to storage of Certificates and Execution Counters on the Device shall be interpreted as meaning storage of Execution Counters and Security Credentials in DCC Data Systems corresponding to the Device, as defined in the SMETS1 Supporting Requirements Document.</li> <li>The User shall ensure that the Originator Counter is numerically greater than the value it has used in relation to any previously created 'Update Security Credentials (CoS) (SRV 6.23)' SMETS1 Service Request (i.e. not just on a per-Device basis), as defined in the SMETS1 Supporting Requirements Document.</li> </ol>	

	<ol style="list-style-type: none"> <li>Protection against Replay shall be applied to this Service Request by the DCC as defined in the SMETS1 Supporting Requirements Document.</li> <li>Time-based checks shall always be applied.</li> <li>Descriptions of behaviour for HCALCS Devices are not applicable to SMETS1.</li> <li>Service Requests for SMETS1 devices are passed to the CoS Party for further authorisation checks, although there is no Command to be created. If the Service Request fails access control checks or the processing by the CoS Party, the Service Request Sender will be sent DCC Alert N26 as for SMETS2 or later devices.</li> <li>The SMETS1 equivalent to “stop monitoring all Future Dated (Device) Commands for that Device” in point 10 in the SMETS2 or later narrative is that</li> <li>The Future Dated (Device) Command pattern is not applicable to SMETS1 Devices.</li> </ol>
--	--

**Table 194 Update Security Credentials (CoS) Service Request**

The following table summarises the relationship between CoS Event Type, Device Types and Supplier Certificates to change on the Device

CoS Type	Device	Device Supplier Certificates to change
Electricity CoS Event	ESME	Digital Signing Key Agreement Key Agreement Top Up
	HCALCS <sup>1</sup>	Digital Signing
Gas CoS Event	GSME	Digital Signing Key Agreement Key Agreement Top Up
	GPF	Digital Signing Key Agreement

**Table 195 Update Security Credentials (CoS) – Device / Certificates**

<sup>1</sup> N/A to SMETS1 Services

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).

## 6.23.1 Service Request

### 6.23.1.1 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 UpdateSecurityCredentialsCos XML element defines this Service Request and contains the Supplier Public Security Credentials to be updated on the Device and, for Future Dated, the Execution Date and Time.

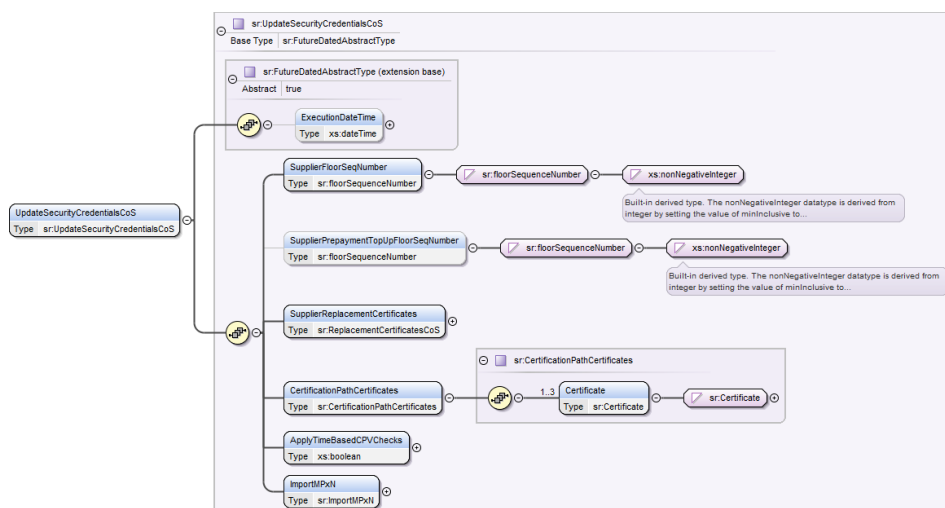


Figure 118 Update Security Credentials (CoS) Service Request Structure

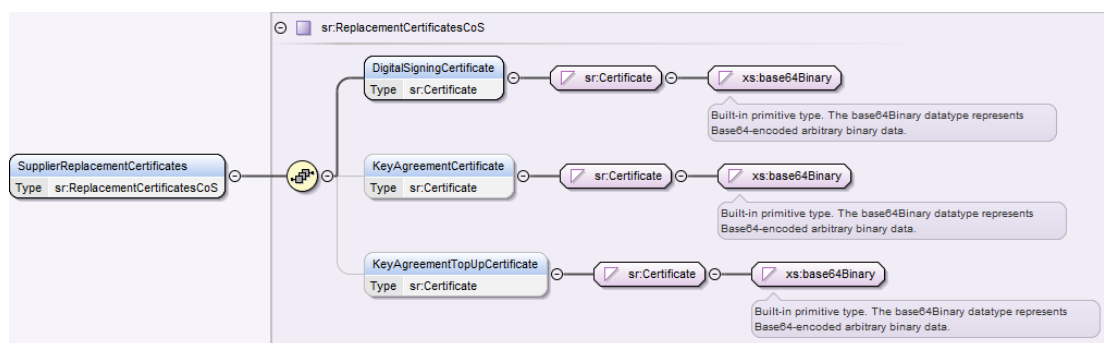


Figure 119 Update Security Credentials (CoS) Service Request – Supplier Replacement Certificates Structure

### 6.23.1.2 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, i.e. the date when the Supplier Credentials are to be replaced <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
SupplierFloorSeqNumber	New Supplier Originator Counter (floor value).  This value will be used to prevent replay of Update Security Credentials Commands, and other Commands, for the new controlling Remote Party.	sr:floorSequenceNumber (Restriction of xs:nonNegativeInteger minInclusive = 0, maxInclusive = 9223372036854775807)	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
SupplierPrepaymentTopUpFloorSequenceNumber	<p>Only applicable when the Command changes Supplier Credentials and Counters on a Meter and the Counter for its Prepayment Top Ups is different to that used for other Commands.</p> <p>This value will be used to prevent replay of Prepayment Top Up Commands.</p> <p>Where the target Device is a Meter and Supplier security credentials are being updated this must be populated as it is required for prevention of replay of Prepayment Top Up Commands. However, if not set it can be corrected by the Supplier sending a subsequent SRV 6.15.1.</p> <p>SMETS1: This value shall not be used.</p>	<p>sr:floorSequenceNumber</p> <p>(Restriction of xs:nonNegativeInteger minInclusive = 0, maxInclusive = 9223372036854775807 )</p>	<p>ESME or GSME: No</p> <p>Otherwise: N/A</p>	None	N/A	Non-Sensitive
SupplierReplacementCertificates	This structure provides a list of the replacement Certificates.	<p>sr:ReplacementCertificatesCoS</p> <p>(see section 6.23.1.3)</p>	Yes	None	N/A	Non-Sensitive
CertificationPathCertificates	<p>This structure provides the Certificates needed to undertake Certification Path Validation of the new end entity Certificate against the root public key held on the Device. The number of these may be less than the number of replacement certificates (e.g. a Supplier may replace all of its certificates but may only need to supply one Certification Authority Certificate to link them all back to root.</p> <p>SMETS1: the Device shall not use these Certificates but they must be supplied as the element is mandatory.</p>	<p>sr:Certificate</p> <p>(xs:base64Binary minOccurs = "1", maxOccurs = "unbounded")</p>	Yes	None	N/A	Non-Sensitive
ApplyTimeBasedCPVChecks	<p>Specify whether the time based Certification Path Validation should be applied</p> <p>SMETS1: time based checks shall always be applied</p>	xs:boolean	Yes	None	N/A	Non-Sensitive
ImportMPxN	The reference number identifying the primary import electricity or gas metering point associated to the premises to which the Change of Supplier Applies	<p>Restriction of xs:string</p> <p>(minLength = 1, maxLength = 13)</p>	Yes	None	N/A	Non-Sensitive

**Table 196 Update Security Credentials (CoS) Service Request Data Items**

### 6.23.1.3 SupplierReplacementCertificates Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DigitalSigningCertificate	The new Supplier digital signing credentials to be placed in the Supplier Remote Party Role Key Usage digitalSignature (Cell Usage management) on the Device	sr:Certificate (xs:base64Binary)	Yes	None	N/A	Non-Sensitive
KeyAgreementCertificate	The new Supplier key agreement credentials to be placed in the Supplier Remote Party Role Key Usage keyAgreement (Cell Usage management) on the Device	sr:Certificate (xs:base64Binary)	HCALCS: N/A Otherwise: Yes	None	N/A	Non-Sensitive
KeyAgreementTopUpCertificate	The new Supplier key agreement credentials to be placed in the Supplier Remote Party Role Key Usage keyAgreement (Cell Usage prePaymentTopUp) on the Device, for those Suppliers that use different Originator Counters for Prepayment Top Up  SMETS1: This Certificate shall not be used	sr:Certificate (xs:base64Binary)	ESME or GSME: Yes Otherwise: N/A	None	N/A	Non-Sensitive

Table 197 Update Security Credentials (CoS) Service Request – SupplierReplacementCertificates Data Items

### 6.23.1.4 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):

Service	Transform	On Demand	DCC Only	Future Dated	DSP Scheduled
SMETS2 or later	No	Yes	No	DSP + Device <sup>1</sup>	No
SMETS1	No	Yes	No	DSP	No

Table 198 Update Security Credentials (CoS) Modes of Operation

<sup>1</sup> Variant only applicable to this Service Request, as explained in the narrative (see Table 194)

### 6.23.1.5 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):

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

Table 199 Update Security Credentials (CoS) Command Variant Values

<sup>1</sup> Please note Local Delivery is no longer available from the June 2022 Release onwards. Please see DUGIDS main document Appendix 16 for further details.

### 6.23.1.6 Validation

This Service Request specific validation is as follows (see Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Execution Date Time and Public Security Credentials validation):

Validation Check	Process	Response Code
Is the MPxN in the Request identical to the one in the Smart Metering Inventory? <sup>1</sup>	Check that the MPxN included in the Request matches the Primary Import MPxN associated to the Device in the Smart Metering Inventory <sup>2</sup>	E062301
Is the Supplier Prepayment Top Up Floor Seq Number applicable to the Request?	Check that the Supplier Prepayment Top Up Floor Seq Number is included if the Service Request is updating the Supplier Security Credentials on an ESME or GSME and is not included in any other circumstances.	E062302 <sup>7</sup>
Are all the Certificate Types applicable to the Device type included in the Request?	<p>Check that if the Device Type is:</p> <ul style="list-style-type: none"> <li>ESME. The Certificate Types included are: <ul style="list-style-type: none"> <li>Digital Signing</li> <li>Key Agreement</li> <li>Key Agreement Top Up</li> </ul> </li> <li>HCALCS<sup>3</sup>. The Certificate Types included are: <ul style="list-style-type: none"> <li>Digital Signing</li> </ul> </li> <li>GSME. The Certificate Types included are: <ul style="list-style-type: none"> <li>Digital Signing</li> <li>Key Agreement</li> <li>Key Agreement Top Up</li> </ul> </li> <li>GPF. The Certificate Types included are: <ul style="list-style-type: none"> <li>Digital Signing</li> <li>Key Agreement</li> </ul> </li> </ul> <p>In all cases, check that the Certificate Type is the correct usage for the Replacement Certificate data item for which it has been provided.</p>	E062303 <sup>7</sup>
Do all the Certificates included in the Request Body correspond to the Service User submitting the Request?	Check that all the Certificates included in the Request Body correspond to the Service User submitting the Request and that they have the Supplier role	E062304 <sup>7</sup>
Does the Device hold a CoS Certificate belonging to an active CoS Party? <sup>3</sup>	Check that the Device in question has a CoS Certificate in its CoS Party Trust Anchor Cell belonging to a CoS Party (either TCoS or ECoS) that has not been removed from service	E062305 <sup>4, 6</sup>
Does the MPID included within the Certificate that is used to sign the Service Request correspond to the Registered Supplier?	Check that the Service User is the Registered Supplier for the Device by carrying out an additional check using the Market Participant Identifier that is included within the certificate that is used to sign the CoS Service Request.	E062306 <sup>1,5, 6</sup>

Table 200 Update Security Credentials (CoS) Service Request Validation

<sup>1</sup> This validation check doesn't replace the Authorisation Check associated to E4, which is also applied to this Service Request

<sup>2</sup> For Device Types HCALCS and GPF the Device / Primary Import MPxN association check is done via the HAN Device Log

<sup>3</sup> N/A to SMETS1

<sup>4</sup> Since response code E062305 is not supported prior to DUIS 5.1, E19 will be returned for Service Requests rejected due to this check when submitted using a DUIS version earlier than 5.1.

<sup>5</sup> Since response code E062306 is not supported prior to DUIS 5.1, E4 will be returned for Service Requests rejected due to this check when submitted using a DUIS version earlier than 5.1.

<sup>6</sup>Please note these changes are only created by the DCC Systems alongside the Implementation of the new ECoS functionality, which is not part of the June 2022 Release (expected as part of June 2023 Release). Please see DUGIDS main document Appendix 16 for further details.

<sup>7</sup> Please note additional security validation applies from the June 2022 Release onwards. Please see DUGIDS main document Appendix 16 for further details.

Note that for this Service Request and as an exception, the Authorisation Check associated to E5 allows the Device Status to be 'Suspended'

### 6.23.1.7 Sample Request

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

```
<UpdateSecurityCredentialsCoS>
  <SupplierFloorSeqNumber>1234567</SupplierFloorSeqNumber>
  <SupplierPrepaymentTopUpFloorSeqNumber>500</SupplierPrepaymentTopUpFloorSeqNumber>
  <SupplierReplacementCertificates>
    <DigitalSigningCertificate>ZGVmYXVsdA==</DigitalSigningCertificate>
    <KeyAgreementCertificate>ZGVmYXVsdA==</KeyAgreementCertificate>
    <KeyAgreementTopUpCertificate>ZGVmYXVsdA==</KeyAgreementTopUpCertificate>
  </SupplierReplacementCertificates>
  <CertificationPathCertificates>
    <Certificate>ZGVmYXVsdA==</Certificate>
  </CertificationPathCertificates>
  <ApplyTimeBasedCPVChecks>true</ApplyTimeBasedCPVChecks>
  <ImportMPxN>1234567890123</ImportMPxN>
</UpdateSecurityCredentialsCoS>
```

**Figure 120 Update Security Credentials (CoS) Service Request (Body) Format**

This example illustrates the case of the Supplier Security Credentials being updated on an ESME

### 6.23.2 Responses

The response messages for a "Update Security Credentials (CoS)" request follow the generic format for all "Device" response messages, the generic responses applicable to this request are;

- Acknowledgement
- Service Response (from Device) - GBCSPayload. Service Response Specific Payload
- Service Response (from Device) - FutureDatedDeviceAlertMessage
- Parse Output / SMETS1 Response

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

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

### 6.23.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E062301	Failed Validation – Invalid MPxN	Error	The MPxN included in the Request doesn't match the Primary Import MPxN associated to the Device in the Smart Metering Inventory
E062302 <sup>4</sup>	Failed Validation – Invalid Supplier Prepayment Top Up Floor Seq Number	Error	The Supplier Prepayment Top Up Floor Seq Number data item is not applicable to the Device Type or has not been included where it is applicable to the Device Type
E062303 <sup>4</sup>	Failed Validation – Device Type / Certificate Type mismatch	Error	The Certificate Type is not applicable to the Device Type or not all Certificate Type applicable to the Device Type have been included in the Request <a href="#">or a certificate with an incorrect key usage has been provided for a Certificate Type</a>
E062304 <sup>4</sup>	Failed Validation – Service User / Certificate mismatch	Error	At least one of the Certificates included in the Request Body doesn't correspond to the Service User submitting the Request or does not have Supplier role
E062305 <sup>2,5</sup>	Failed Validation – CoS Party / Certificate mismatch <sup>1</sup>	Error	The target Device holds a CoS Certificate in the CoS Party Trust Anchor Cell for which the associated CoS Party has been decommissioned
E062306 <sup>3,5</sup>	Failed Validation – Incorrect MPID	Error	The MPID included within the Certificate that is used to sign the Service Request does not correspond to the Registered Supplier.

**Table 201 Failed Update Security Credentials (CoS) Service Request Response Codes**

<sup>1</sup> N/A to SMETS1.

<sup>2</sup> Since response code E062305 is not supported prior to DUIS 5.1, E19 will be returned for Service Requests rejected due to this check when submitted via a DUIS version earlier than 5.1.

<sup>3</sup> Since response code E062306 is not supported prior to DUIS 5.1, E4 will be returned for Service Requests rejected due to this check when submitted via a DUIS version earlier than 5.1.

<sup>4</sup> Please note additional security validation applies from the June 2022 Release onwards. Please see DUGIDS main document Appendix 16 for further details

<sup>5</sup> Please note these changes are only created by the DCC Systems alongside the Implementation of the new ECoS functionality, which is not part of the June 2022 Release (expected as part of June 2023 Release). Please see DUGIDS main document Appendix 16 for further details.

### 6.23.2.2 Device Responses and Future Dating

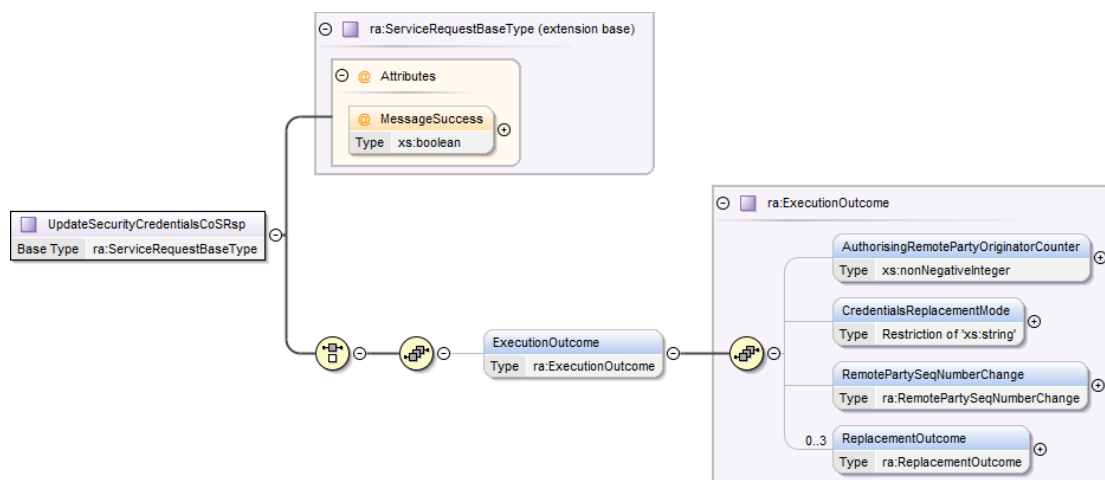
For SMETS2 or later Devices this Service Request's Command contains a fixed number of instructions ('n' = 1) and activation date-time instructions ('m' = 1). See Main Document of this documentation set section 9.3.6 for details of the Device Responses returned in the different scenarios. Apart from in the exception cases described there, e.g. cancellation, the relationship between Mode of Operation and Response message types is as follows:

1. On Demand.
  - a. Service Response (from Device) – GBCSPayload
    - i. One Device Response (Command execution outcome containing 'n' results).
2. Future Dated (Device).
  - a. Service Response (from Device) – GBCSPayload
    - i. One Device Response (Command storage outcome containing 'n' results)
  - b. Service Response (from Device) – FutureDatedDeviceAlertMessage
    - i. 'm' Device Alerts (Command instruction execution outcome). These Device Alerts are described in Annex section 15.4.4. The Device Alert payloads for this particular Service Request will be of the type described in Annex section 15.4.4.3.3

For SMETS1 Devices this Service Request is only available for Mode of Operation On Demand or Future Dated (DSP). In both cases the Response message type is a single SMETS1 Response.

### 6.23.2.3 Parse Output / SMETS1 Response Format

#### 6.23.2.3.1 Format - UpdateSecurityCredentialsCoSRsp



**Figure 121 - Update Security Credentials (CoS) Parse Response / SMETS1 Response Structure**

For detailed structure of RemotePartySeqNumberChange and ReplacementOutcome refer to section 6.15.1.2.2.

#### 6.23.2.3.2 Specific Header Data Items

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	0107	0107

Data Item	Electricity Response	Gas Response
<i>GBCS Use Case Number (for information only - not in header)</i>	CS02b	CS02b
<i>GBCS Use Case Name (for information only - not in header)</i>	Update Security Credentials	Update Security Credentials
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Present	Present

**Table 202 – Update Security Credentials (CoS) Parse/ SMETS1 Response Header Data Items**

### 6.23.2.3.3 Specific Body Data Items

Responses to on demand execution requests will carry the data in the table below.

Parse Response: See section 6.23.2.2 for description of the responses to future dated execution requests. An immediate response to a request for future dated execution will be returned as a status-only response. Please see Annex section 18.9 for a description of how status-only responses are represented in the MMC XML schema.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
AuthorisingRemotePartyOriginatorCounter	Originating counter passed in the request, allows alerts to be matched to the request	xs:nonNegativeInteger	None	N/A	Non-Sensitive
CredentialsReplacementMode	Define the valid combinations as to which Remote Party Roles can replace which kinds of credentials. Valid Set: <ul style="list-style-type: none"> <li>SupplierByTransCoS</li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive
RemotePartySeqNumberChange	The resulting changes to any replay counters held on the Device	ra:RemotePartySeqNumberChange – see section 6.15.1.2.3.5 for details	None	N/A	Non-Sensitive
ReplacementOutcome	For each replacement in the request, detail the outcome and impacted parties	ra:ReplacementOutcome – see section 6.15.1.2.3.6 for details	None	N/A	Non-Sensitive

### 6.23.2.3.4 Sample Response

```
<ra:UpdateSecurityCredentialsCoSRsp MessageSuccess="true">
  <ra:ExecutionOutcome>
    <ra:AuthorisingRemotePartyOriginatorCounter>123</ra:AuthorisingRemotePartyOriginatorCounter>
    <ra:CredentialsReplacementMode>SupplierByTransCoS</ra:CredentialsReplacementMode>
    <ra:RemotePartySeqNumberChange>
      <ra:RemotePartyRole>Supplier</ra:RemotePartyRole>
      <ra:RemotePartyFloorSeqNumber>1234</ra:RemotePartyFloorSeqNumber>
    </ra:RemotePartySeqNumberChange>
    <ra:ReplacementOutcome>
      <ra:StatusCode ResponseCode="0">
        <ra:ASN1Status>success</ra:ASN1Status>
      </ra:StatusCode>
      <ra:CertificateType>KeyAgreement</ra:CertificateType>
      <ra:RemotePartyRole>Supplier</ra:RemotePartyRole>
      <ra:ExistingRemotePartyID>10-00-00-00-00-00-00-00</ra:ExistingRemotePartyID>
      <ra:NewRemotePartyID>10-00-00-00-00-00-00-00</ra:NewRemotePartyID>
      <ra:ExistingCertificateHash>ZGVmYXVsdA==</ra:ExistingCertificateHash>
      <ra:NewCertificateHash>ZGVmYXVsdA==</ra:NewCertificateHash>
    </ra:ReplacementOutcome>
    <ra:ReplacementOutcome>
      <ra:StatusCode ResponseCode="0">
        <ra:ASN1Status>success</ra:ASN1Status>
      </ra:StatusCode>
      <ra:CertificateType>DigitalSigning</ra:CertificateType>
      <ra:RemotePartyRole>Supplier</ra:RemotePartyRole>
      <ra:ExistingRemotePartyID>10-00-00-00-00-00-00-00</ra:ExistingRemotePartyID>
      <ra:NewRemotePartyID>10-00-00-00-00-00-00-00</ra:NewRemotePartyID>
      <ra:ExistingCertificateHash>ZGVmYXVsdA==</ra:ExistingCertificateHash>
      <ra:NewCertificateHash>ZGVmYXVsdA==</ra:NewCertificateHash>
    </ra:ReplacementOutcome>
  </ra:ExecutionOutcome>
</ra:UpdateSecurityCredentialsCoSRsp>
```

Figure 122 - Update Security Credentials (CoS) Parse Response Sample

## 6.24 Retrieve Device Security Credentials (6.24)

### SMETS2 or later

This Service Request maps to two GBCS Use Cases and each Use Case requires its own Request ID.

Therefore the 6.24 Service Request has been broken into two parts: 6.24.1 (KRP Credentials) and 6.24.2 (Device Credentials)

### SMETS1

This Service Request maps to Service Reference Variant 6.24.1 (KRP Credentials)

### 6.24.1 Retrieve Device Security Credentials (KRP) (6.24.1)

Service Request Name	RetrieveDeviceSecurityCredentials
Service Reference	6.24
Service Request Variant Name	RetrieveDeviceSecurityCredentials(KRP)
Service Reference Variant	6.24.1
Service Request Objective	<p>To enable a DCC Service User to retrieve Remote Party Security Credentials from a specified Device.</p> <p>SMETS1: The security credentials shall be retrieved from the Device's S1SP rather than the Device itself.</p>

Business Context Statement	This is a last resort request which can be used if and when a DCC Service User does not know which Security Credentials are currently held on a specified Device for the Remote Parties known to the Device. The response will return the Remote Parties Security Credentials (Hash Certificates) currently held on the Device.	
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> <li>Electricity Network Operator (ENO)</li> <li>Gas Network Operator (GNO)</li> </ul>	
Security Classification	<p>Non-critical and non-sensitive:</p> <p>SMETS2 or later: GBCS XREF: SME.C.NC (The GBCS Command to the Device is a Variant Message which is not Critical. This Command can either be protected by an Access Control Broker MAC or digitally signed by the KRP, but not both. The DCC Data Systems only supports adding the DSP ACB MAC to the Command, so the Service Request interaction between the DCC Service Users and the DCC is Non-Critical and follows the URP processing pattern in all cases)</p>	
Service Request Narrative (SMETS2 or later)	This Service Request allows the DCC Service User to read the Public Security Credentials (Hash of the Certificates) for all KRPs on Devices for which they themselves are KRPs.	
GBCS Cross Reference	Electricity other than ESME	Gas
GBCS Message Code	0x0008	0x0008
GBCS Use Case	CS02a	CS02a
GBCS Use Case Name	Provide Security Credentials Details	Provide Security Credentials Details
SMETS1 Applicability	Yes	Yes
	Electricity ESME	N/A
GBCS Message Code prior to v4.0	0x0008	N/A
GBCS Use Case prior to v4.0	CS02a	N/A
GBCS Use Case Name prior to v4.0	Provide Security Credentials Details	N/A
GBCS v4.0 Message Code	0x011B	N/A
GBCS v4.0 Use Case	CS02f	N/A

GBCS v4.0 Use Case Name	Provide Security Credentials Details	N/A
SMETS1 Applicability	Yes	Yes
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>For SMETS1 Devices, references to storage of Certificates and Execution Counters on the Device shall be interpreted as meaning storage of Execution Counters and Security Credentials in DCC Data Systems corresponding to the Device, as defined in the SMETS1 Supporting Requirements Document.</li><li>For protection against Replay the S1SP shall use the Execution Counter corresponding to Service Request 6.15.1 as the floor counter for this Service Request 6.24.1.</li><li>Remote Party Role LoadController is not applicable to SMETS1 Devices</li></ol>	
GBCS Commands - Versioning Details		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations		
Device’s firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS prior to v4.0	GBCS v4.0 or later
Device Type	ESME	
DUIS 1 to DUIS v3.1: DEFAULT - No specific XML criteria	CS02a	CS02f
DUIS 4.0 or later: XML Criteria - no XML data item RemotePartyRole specifying LoadController	CS02a	CS02f
DUIS 4.0 or later: XML Criteria - XML data item RemotePartyRoles specifying LoadController	Response Code – E062402	CS02f
Device Type	Other Device Types	
DUIS 1 to DUIS v3.1: DEFAULT - No specific XML criteria	CS02a	CS02a
DUIS 4.0 or later: XML Criteria - no XML data item RemotePartyRole specifying LoadController	CS02a	CS02a
DUIS 4.0 or later: XML Criteria - XML data item RemotePartyRoles specifying LoadController	Response Code – E062403	Response Code – E062403

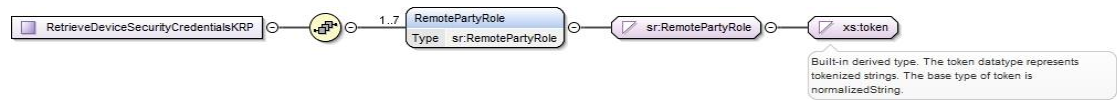
**Table 203 Retrieve Device Security Credentials (KRP) Service Request**

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).

## 6.24.1.1 Service Request

### 6.24.1.1.1 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 RetrieveDeviceSecurityCredentialsKRP XML element defines this Service Request and contains the KRP Party Role(s) for which the Public Security Credentials are to be retrieved from the Device.



**Figure 123 Retrieve Device Security Credentials (KRP) Service Request Structure**

### 6.24.1.1.2 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
RemotePartyRole	Remote Party Role for which the Public Security Credentials are required Valid Set: <ul style="list-style-type: none"> <li>ACB<sup>2</sup></li> <li>NetworkOperator</li> <li>Recovery<sup>2</sup></li> <li>Root<sup>2</sup></li> <li>Supplier</li> <li>TransCoS<sup>2</sup></li> <li>LoadController<sup>2, 3</sup></li> </ul>	Restriction base xs:token (Enumeration)	Yes <sup>1</sup>	None	N/A	Non-Sensitive

**Table 204 Retrieve Device Security Credentials (KRP) Service Request Data Items**

<sup>1</sup> Minimum of 1 and maximum of 7 for non-SMETS1 Devices (maximum of 2 for SMETS1 Devices)

<sup>2</sup> Not applicable to SMETS1 Devices

<sup>3</sup> Not applicable to Devices with GBCS version prior to v4.0

### 6.24.1.1.3 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):

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 205 Retrieve Device Security Credentials (KRP) Modes of Operation**

#### 6.24.1.1.4 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):

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 206 Retrieve Device Security Credentials (KRP) Command Variant Values**

#### 6.24.1.1.5 Validation

This Service Request specific validation is as follows (see Main Document of this documentation set section 7 for generic access control checks):

Validation Check	Process	Response Code
Is the Service Request valid?	Check that: <ul style="list-style-type: none"> <li>If the Business Target ID Device Type is HCALCS the DCC Service User Role is EIS</li> <li>If the Business Target ID Device Type is GSME the DCC Service User Role is GIS</li> </ul>	E062401
Is the GBCS version of the target Device appropriate for all of the requested Remote Party Roles?	If the Device is of Device Type ESME and the requested Remote Party Roles include Load Controller then check that the GBCS version of the Device is v4.0 or later	E062402
Is the Device Type of the target Device appropriate for the Load Controller Remote Party Role?	If the Device is of any Device Type other than ESME then check that the requested Remote Party Roles do not include Load Controller	E062403

**Table 207 Retrieve Device Security Credentials (KRP) Service Request Validation**

#### 6.24.1.1.6 Sample Request

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

```
<RetrieveDeviceSecurityCredentialsKRP>
  <RemotePartyRole>Supplier</RemotePartyRole>
</RetrieveDeviceSecurityCredentialsKRP>
```

**Figure 124 Retrieve Device Security Credentials (KRP) Service Request (Body) Format**

#### 6.24.1.2 Responses

The response messages for a "Retrieve Device Security Credentials (KRP)" request follow the generic format for all "Device" response messages, the generic responses applicable to this 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.

#### 6.24.1.2.1 Unsuccessful Response

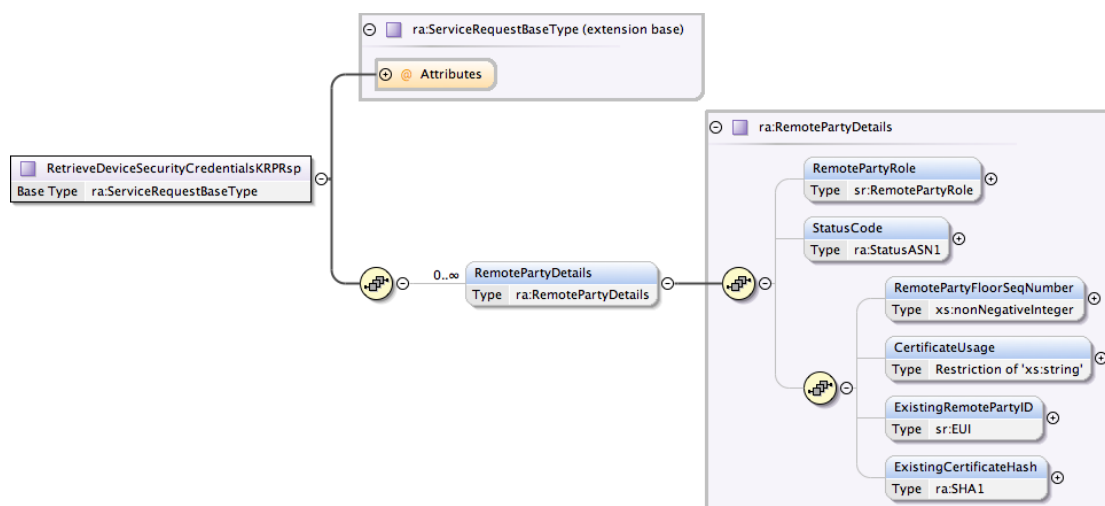
The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E062401	Failed Validation – Device Type / User Role mismatch	Error	The User Role is not a KRP of the Device
E062402	Failed Validation – Remote Party Role / GBCS version mismatch	Error	Mismatch between Remote Party Role and the GBCS version of the target Device.
E062403	Failed Validation – Load Controller Remote Party Role / Device Type mismatch	Error	Mismatch between Load Controller Remote Party Role and the Device Type of the target Device.

**Table 208 Failed Retrieve Device Security Credentials (KRP) Service Request Response Codes**

#### 6.24.1.2.2 Parse Output/ SMETS1 Response Format

##### 6.24.1.2.2.1 Format - RetrieveDeviceSecurityCredentialsKRPRsp



**Figure 125 - Retrieve Device Security Credentials (KRP) Response Structure**

##### 6.24.1.2.2.1.1 Specific Header Data Items

GBCS prior to v4.0 and SMETS1:

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	0008	0008
GBCS Use Case Number (for information only - not in header)	CS02a	CS02a
GBCS Use Case Name (for information only - not in header)	Provide Security Credentials Details	Provide Security Credentials Details

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

**Table 209 – Retrieve Device Security Credentials (KRP) Parse Response/ SMETS1 Header Data Items - GBCS prior to v4.0**

GBCS v4.0 or later:

Data Item	Electricity Response		Gas Response
Device Type	ESME	Other	
GBCSHexadecimalMessageCode	011B	0008	0008
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>CS02f</i>	<i>CS02a</i>	<i>CS02a</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Provide Security Credentials Details</i>	<i>Provide Security Credentials Details</i>	<i>Provide Security Credentials Details</i>
SupplementaryRemotePartyID	Not Present	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present	Not Present
Timestamp	Not Present	Not Present	Not Present

**Table 209.1 – Retrieve Device Security Credentials (KRP) Parse Response Header Data Items – GBCS v4.0 or later**

#### **6.24.1.2.2.2 Specific Data Items**

There will be a RemotePartyDetails structure for each returned credentials.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
RemotePartyRole	Remote Party Role for which Credentials are on the Device Valid Set: <ul style="list-style-type: none"> <li>ACB<sup>1</sup></li> <li>NetworkOperator</li> <li>Recovery<sup>1</sup></li> <li>Root<sup>1</sup></li> <li>Supplier</li> <li>TransCoS<sup>1</sup></li> <li>LoadController<sup>1, 2</sup></li> </ul>	Restriction base xs:token (Enumeration)	None	N/A	Non-Sensitive
StatusCode	Outcome of the request for each Certificate. Valid Set: <ul style="list-style-type: none"> <li>success</li> <li>trustAnchorNotFound</li> <li>Other<sup>1</sup></li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive
RemotePartyFloorSeqNumber	The counter value held by the device corresponding to the Update Security Credentials GBCS command for the role. Note that the counter is not related to individual certificates, and is the single value "currentSeqNumber" in the GBCS response. Although it occurs once per certificate in the MMC structure, it will be the same in each case.  SMETS1: The counter value held by the DCC corresponding to the Update Security Credentials Service Request for the role. Note that the counter is not related to individual certificates. Although it occurs once per certificate in the MMC structure, it will be the same in each case.	xs:nonNegativeInteger	None	N/A	Non-Sensitive
CertificateUsage	To what use can the public key be put. Valid Set: <ul style="list-style-type: none"> <li>DigitalSigning</li> <li>KeyAgreement</li> <li>KeyAgreementTopUp<sup>1</sup></li> <li>KeyCertSign<sup>1</sup></li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive
ExistingRemotePartyId	Identifies the existing subject unique identifier equating to Entity Identifier (64 bit value)	ra:EUI	None	N/A	Non-Sensitive
ExistingCertificateHash	Identifies the existing subject key identifier, a SHA-1 hash, i.e. of the certificate	xs:base64binary	None	N/A	Non-Sensitive

Table 209.2 – Retrieve Device Security Credentials (KRP) Parse Response Data Items

<sup>1</sup> Not applicable to SMETS1 Devices

<sup>2</sup> Not applicable to Devices with GBCS version prior to v4.0

#### 6.24.1.2.2.3 Sample Response

```
<ra:RetrieveDeviceSecurityCredentialsKRPRsp MessageSuccess="false">
  <ra:RemotePartyDetails>
    <ra:RemotePartyRole>NetworkOperator</ra:RemotePartyRole>
    <ra:StatusCode ResponseCode="3">
      <ra:ASN1Status>noTrustAnchor</ra:ASN1Status>
    </ra:StatusCode>
  </ra:RemotePartyDetails>
  <ra:RemotePartyDetails>
    <ra:RemotePartyRole>ACB</ra:RemotePartyRole>
    <ra:StatusCode ResponseCode="0">
      <ra:ASN1Status>success</ra:ASN1Status>
    </ra:StatusCode>
    <ra:RemotePartyFloorSeqNumber>123</ra:RemotePartyFloorSeqNumber>
    <ra:CertificateUsage>DigitalSigning</ra:CertificateUsage>
    <ra:ExistingRemotePartyID>10-00-00-00-00-00-00-00</ra:ExistingRemotePartyID>
    <ra:ExistingCertificateHash>ZGVmYXVsdA==</ra:ExistingCertificateHash>
  </ra:RemotePartyDetails>
</ra:RetrieveDeviceSecurityCredentialsKRPRsp>
```

Figure 126 - Retrieve Device Security Credentials (KRP) Response Sample

### 6.24.2 Retrieve Device Security Credentials (Device) (6.24.2)

Service Request Name	RetrieveDeviceSecurityCredentials	
Service Reference	6.24	
Service Request Variant Name	RetrieveDeviceSecurityCredentials(Device)	
Service Reference Variant	6.24.2	
Service Request Objective	To enable a DCC Service User to retrieve the Device's public security credentials.	
Business Context Statement	A DCC Service User needs to retrieve the public security credentials for a Device to enable validation of the device's MAC, Signature or decryption of encrypted data fields in the Device responses.	
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: GBCS XREF: SME.C.C	
Service Request Narrative	Upon receipt of a successful Response from the Device, the DCC shall check the contents of the Response against the Device Certificate details held in the SMI. If the Response indicates that different Device Certificates are in use on the device then the DCC shall update the details held in the SMI and shall initiate an update to the 'in-use' flag in the Public Key Repository (this latter action is a post-processing step after the Service Response has been sent to the User).	
GBCS Cross Reference	Electricity	Gas

GBCS Message Code	0x000C	0x000C
GBCS Use Case	CS02e	CS02e
GBCS Use Case Name	Provide Device Certificates from Device	Provide Device Certificates from Device
SMETS1 Applicability	No	No

Table 210 Retrieve Device Security Credentials (Device) 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).

### 6.24.2.1 Service Request

#### 6.24.2.1.1 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 RetrieveDeviceSecurityCredentialsDevice XML element defines this Service Request and contains the Device Public Security Credential Type to be retrieved from the Device.

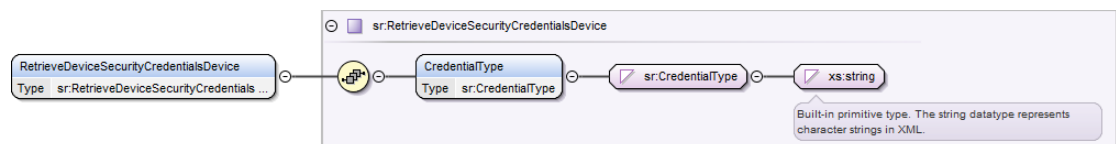


Figure 127 Retrieve Device Security Credentials (Device) Service Request Structure

#### 6.24.2.1.2 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
CredentialType	Type of credential to be retrieved Valid Set: <ul style="list-style-type: none"> <li>Digital Signature</li> <li>Key Agreement</li> </ul>	sr:CredentialType (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive

Table 211 Retrieve Device Security Credentials (Device) Service Request Data Items

#### 6.24.2.1.3 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 212 Retrieve Device Security Credentials (Device) Modes of Operation

#### 6.24.2.1.4 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 213 Retrieve Device Security Credentials (Device) Command Variant Values

#### 6.24.2.1.5 Validation

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

#### 6.24.2.1.6 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:

```
<RetrieveDeviceSecurityCredentialsDevice>  
  <CredentialType>Digital Signature</CredentialType>  
</RetrieveDeviceSecurityCredentialsDevice>
```

Figure 128 Retrieve Device Security Credentials (Device) Transform Service Request (Body) Format

#### 6.24.2.2 Responses

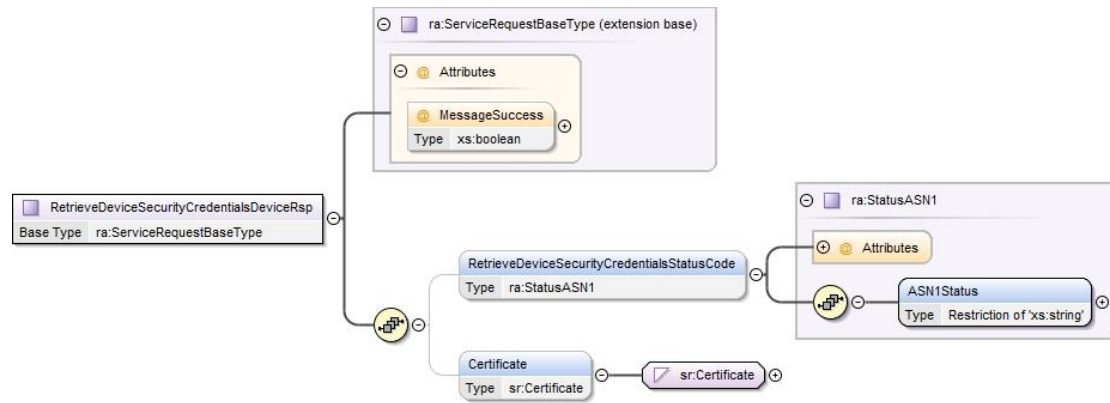
The response messages for a "Retrieve Device Security Credentials (Device)" request follow the generic format for all "Device" response messages, the generic responses applicable to this request are;

- Pre-command
- 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.

#### 6.24.2.2.1 Parse Output Format

##### 6.24.2.2.1.1 Format - RetrieveDeviceSecurityCredentialsDeviceRsp



**Figure 129 - Retrieve Device Security Credentials (Device) Response Structure**

#### 6.24.2.2.1.2 Specific Header Data Items

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	000C	000C
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>CS02e</i>	<i>CS02e</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Provide Device Certificates from Device</i>	<i>Provide Device Certificates from Device</i>
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 214 – Retrieve Device Security Credentials (Device) Parse Response Header Data Items**

#### 6.24.2.2.1.3 Specific Data Items

Either RetrieveDeviceSecurityCredentialsStatusCode or Certificate will be populated, but never both in the Response.

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
RetrieveDeviceSecurityCredentialsStatusCode	When the request is unsuccessful, details the failure Valid Set: <ul style="list-style-type: none"> <li>invalidKeyUsage</li> <li>noCertificateHeld</li> <li>certificateRetrievalFailure</li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive
Certificate	The certificate requested from the Device, if successful	ra:Certificate (xs:base64Binary)	None	N/A	Non-Sensitive

#### 6.24.2.2.1.4 Response Sample

```
<ra:ResponseMessage>
  <ra:SMETSData>
    <ra:RetrieveDeviceSecurityCredentialsDeviceRsp MessageSuccess="true">
      <ra:RetrieveDeviceSecurityCredentialsStatusCode ResponseCode="0">
        <ra:ASN1Status>success</ra:ASN1Status>
      </ra:RetrieveDeviceSecurityCredentialsStatusCode>
      <ra:Certificate>ZGVmYXVsdA==</ra:Certificate>
    </ra:RetrieveDeviceSecurityCredentialsDeviceRsp>
  </ra:SMETSData>
</ra:ResponseMessage>
```

Figure 130 - Retrieve Device Security Credentials (Device) Response Sample

## 6.25 Set Electricity Supply Tamper State (6.25)

Service Request Name	SetElectricitySupplyTamperState	
Service Reference	6.25	
Service Request Variant Name	SetElectricitySupplyTamperState	
Service Reference Variant	6.25	
Service Request Objective	To enable a DCC Service User to configure the <i>Supply Tamper State</i> , as defined in SMETS, on the ESME	
Business Context Statement	The Supply Tamper State is a setting on the ESME to control the state of the Supply in the case of Unauthorised Physical Access being detected, being Locked or unchanged.	
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> </ul>	
Security Classification	Critical and non-sensitive: SMETS2 or later: GBCS XREF: SME.C.C	
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>This Service Request is only for the ESME as the Supply Tamper State is set for the GSME by Service Request 6.7 – Update Gas Configuration (Gas Flow) which is available only to the Gas Import Supplier (GIS). See section 6.7.</li> <li>The Set Electricity Supply Tamper State values can be read by a DCC Service User using Service Request - 6.2.4 Read Device Configuration (Identity Exc MPxN). See section 6.2.4.</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	0x0068	N/A
GBCS Use Case	ECS81	N/A
GBCS Use Case Name	Set Supply Tamper State on ESME	N/A
SMETS1 Applicability	Yes	N/A

**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.

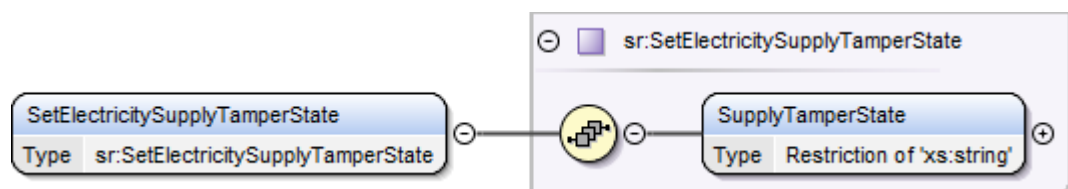
**Table 215 Set Electricity Supply Tamper State Service Request**

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).

## 6.25.1 Service Request

### 6.25.1.1 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 SetElectricitySupplyTamperState XML element defines this Service Request and contains the supply status in case of a tamper event.



**Figure 131 Set Electricity Supply Tamper State Service Request Structure**

### 6.25.1.2 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
SupplyTamperState	Status to set the Supply in case of a tamper event. Valid Set: <ul style="list-style-type: none"> <li>Locked</li> <li>Unchanged</li> </ul>	Restriction of xs:string (Enumeration)	Yes	None	N/A	Non-Sensitive

**Table 216 Set Electricity Supply Tamper State Service Request Data Items**

### 6.25.1.3 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):

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 217 Set Electricity Supply Tamper State Modes of Operation**

### 6.25.1.4 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):

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 218 Set Electricity Supply Tamper State Command Variant Values**

#### 6.25.1.5 Validation

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

#### 6.25.1.6 Sample Request

There are two versions applicable to this Service Request

- Transform Service Request
- Signed Pre-command
- SMETS1 Service Request.

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

```
<SetElectricitySupplyTamperState>
  <SupplyTamperState>Locked</SupplyTamperState>
</SetElectricitySupplyTamperState >
```

**Figure 132 Set Electricity Supply Tamper State Transform Service Request (Body) Format**

### 6.25.2 Responses

The response messages for a “Set Electricity Supply Tamper State” request follow the generic format for all “Device” response messages, the generic responses applicable to this 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.

#### 6.25.2.1 Parse Output/SMETS1 Response Format

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

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

##### 6.25.2.1.1 Specific Header Data Items

Data Item	Electricity Response
GBCSHexadecimalMessageCode	0068
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS81</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set Supply Tamper State on ESME</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 219 – Set Electricity Supply Tamper State Parse Response Header Data Items

## 6.26 Update Device Configuration (daily resetting of Tariff Block Counter Matrix) (6.26)

Service Request Name	UpdateDeviceConfiguration(daily resetting of Tariff Block Counter Matrix)
Service Reference	6.26
Service Request Variant Name	UpdateDeviceConfiguration(daily resetting of Tariff Block Counter Matrix)
Service Reference Variant	6.26
Service Request Objective	To enable a DCC Service User to turn daily resetting of the ESME Tariff Block Counter Matrix on or off
Business Context Statement	The DCC Service User requires the ability to reset the Tariff Block Counter Matrix daily, independently of billing calendar
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	1. This Service Request is only applicable to ESME Firmware certified to GBCS v2.0 or later and it provides functionality (not previously available) to reset block counters daily on an ESME independently of the Billing Calendar.	
	2. The DCC Service User must track the setting of the Daily Tariff Block Counter Matrix Reset that they have configured for use of their Devices as they cannot be read back by the DCC Service Users at a later date via a Service Request. This information is ONLY stored on the specified target Device. If the DCC Service User is unsure of the current Daily Tariff Block Counter Matrix Reset setting on the Device then they should use this Service Request to configure it again to the required value	
	3. DUIS v1 does not support this Service Request. Users should move to DUIS v2 or later if they wish to use this Service Request to access devices operating to GBCS v2.0	
GBCS Cross Reference	Electricity	Gas
GBCS v1.0	N/A – feature not supported by Device	N/A
GBCS v2.0 Message Code	0x00DB	N/A
GBCS v2.0 Use Case	ECS48	N/A
GBCS v2.0 Use Case Name	Configure daily resetting of Tariff Block Counter Matrix	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 v1.0	GBCS v2.0
DUIS 1: Not supported	N/A	N/A
DUIS 2 or later: DEFAULT - No specific XML criteria	Response Code - E57	ECS48
SMETS1 Applicability	No	No

**Table 220 Update Device Configuration (daily resetting of Tariff Block Counter Matrix) 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).

## 6.26.1 Service Request

### 6.26.1.1 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 UpdateDeviceConfigurationDailyResettingOfBlockCounterMatrix XML element defines this Service Request and contains a boolean to indicate if the Block Counters have to be reset daily or not.

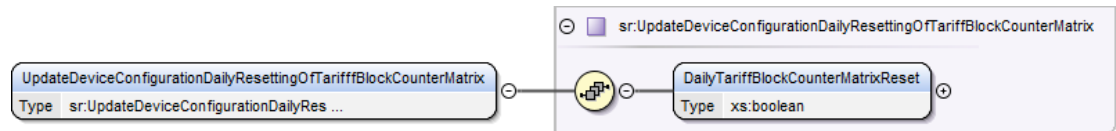


Figure 133 Update Device Configuration (daily resetting of Tariff Block Counter Matrix) Service Request Structure

### 6.26.1.2 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
DailyTariffBlockCounterMatrixReset	<p>Specifies whether daily resetting of the ESME Tariff Block Counter Matrix is on or off.</p> <p>Valid Set:</p> <ul style="list-style-type: none"> <li>true. <ul style="list-style-type: none"> <li>daily resetting of the ESME Tariff Block Counter Matrix is ON</li> </ul> </li> <li>false. <ul style="list-style-type: none"> <li>daily resetting of the ESME Tariff Block Counter Matrix is OFF</li> </ul> </li> </ul>	xs:boolean	Yes	None	N/A	Non-Sensitive

Table 221 Update Device Configuration (daily resetting of Tariff Block Counter Matrix) Service Request Data Items

### 6.26.1.3 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 222 Update Device Configuration (daily resetting of Tariff Block Counter Matrix) Modes of Operation

### 6.26.1.4 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 223 Update Device Configuration (daily resetting of Tariff Block Counter Matrix) Command Variant Values**

#### 6.26.1.5 Validation

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

#### 6.26.1.6 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:

```
<UpdateDeviceConfigurationDailyResettingOfTariffBlockCounterMatrix>
  <DailyTariffBlockCounterMatrixReset>true</DailyTariffBlockCounterMatrixReset>
</UpdateDeviceConfigurationDailyResettingOfTariffBlockCounterMatrix>
```

**Figure 134 Update Device Configuration (daily resetting of Tariff Block Counter Matrix) Transform Service Request (Body) Format**

### 6.26.2 Responses

The response messages for an "Update Device Configuration (daily resetting of Tariff Block Counter Matrix)" request follow the generic format for all "Device" response messages, the generic responses applicable to this 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.

#### 6.26.2.1 Parse Output Format

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

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

##### 6.26.1.1.1 Specific Header Data Items

GBCS v2.0:

Data Item	Electricity Response
GBCSHexadecimalMessageCode	00DB
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS48</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Configure daily resetting of Tariff Block Counter Matrix</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 224 – Update Device Configuration (daily resetting of Tariff Block Counter Matrix)  
Parse Response Header Data Items – GBCS v2.0

## 6.27 Update Device Configuration (RMS Voltage Counter Reset) (6.27)

Service Request Name	UpdateDeviceConfiguration(RMSVoltageCounterReset)
Service Reference	6.27
Service Request Variant Name	UpdateDeviceConfiguration(RMSVoltageCounterReset)
Service Reference Variant	6.27
Service Request Objective	To enable an authorised DCC Service User to reset the average RMS over and under voltage counters for a specified meter. The meter shall execute the commands and then confirm that the operation has completed or otherwise fail the request and return the reason for its failure.
Business Context Statement	The DCC Service User requires that the average RMS over and under voltage counters are reset to zero values.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Network Operator (ENO)</li> </ul>
Security Classification	Non-critical and non-sensitive: GBCS XREF: SME.C.NC
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>For ESME Firmware certified to GBCS v2.0 or later this Service Request resets the Average RMS Over and Under Voltage Counters. For these Devices it is also possible to reset these Counters if the thresholds and periods are written at the same time via Service Request 6.5 Update Device Configuration (Voltage). See section 6.5.</li> <li>For ESME Firmware certified to GBCS v1.0 the Average RMS Over and Under Voltage Counters are reset every time the</li> </ol>

	thresholds and periods are written at the same time via Service Request 6.5 Update Device Configuration (Voltage). See section 6.5.		
	3. The Device Configuration (Voltage) values can be read by a DCC Service User using Service Request – 6.2.1 – Read Device Configuration (Voltage). See section 6.2.1.		
	4. DUIS v1 does not support this Service Request. Users should move to DUIS v2 or later if they wish to use this Service Request to access devices operating to GBCS v2.0		
GBCS Cross Reference	Electricity (Single Phase)	Electricity (Poly Phase)	Gas
GBCS v1.0	N/A – feature not supported byDevice	N/A – feature not supported byDevice	N/A
GBCS v2.0 Message Code	0x00D3	0x00D4	N/A
GBCS v2.0 Use Case	ECS29e	ECS29f	N/A
GBCS v2.0 Use Case Name	Reset RMS Voltage Counters on ESME	Reset RMS Voltage Counters on polyphase ESME	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 (Single Phase)		
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0	
DUIS 1: Not supported	N/A	N/A	
DUIS 2 or later: DEFAULT - No specific XML criteria	Response Code - E57	ECS29e	
SMETS1 Applicability	No	Yes	
Device Type	ESME (Poly Phase)		
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0	
DUIS 1: Not supported	N/A	N/A	
DUIS 2 or later: DEFAULT - No specific XML criteria	Response Code - E57	ECS29f	

SMETS1 Applicability	No	No
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. SMETS1 behaviour is aligned only to GBCS v2.0 behaviour. GBCS v1.0 behaviour is not applicable to SMETS1 devices</li> </ol>	

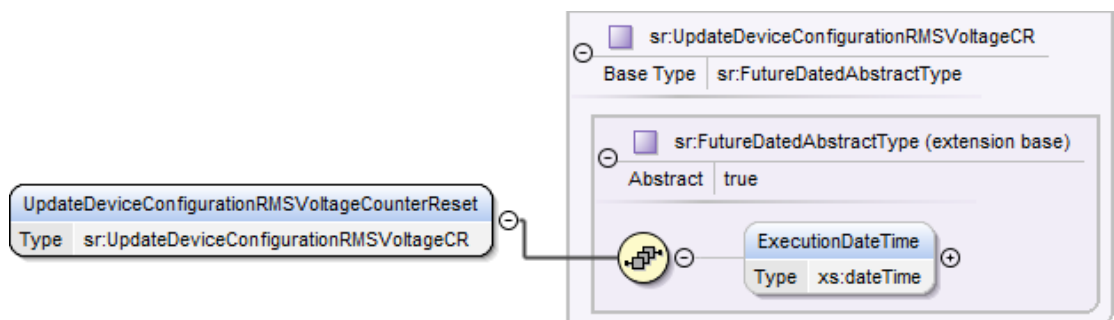
**Table 225 Update Device Configuration (RMS Voltage Counter Reset) Service Request**

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).

## 6.27.1 Service Request

### 6.27.1.1 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 UpdateDeviceConfigurationRMSVoltageCounterReset XML element defines this Service Request and, for Future Dated Requests, it contains the Execution Date and Time.



**Figure 135 Update Device Configuration (RMS Voltage Counter Reset) Service Request Structure**

### 6.27.1.2 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	<p>The UTC date and time the DCC User requires the command to be executed on the Device ID</p> <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 226 Update Device Configuration (RMS Voltage Counter Reset) Service Request Data Items**

### 6.27.1.3 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):

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

**Table 227 Update Device Configuration (RMS Voltage Counter Reset) Modes of Operation**

### 6.27.1.4 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):

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 228 Update Device Configuration (RMS Voltage Counter Reset) Command Variant Values**

### 6.27.1.5 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.

### 6.27.1.6 Sample Request

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

```
<UpdateDeviceConfigurationRMSVoltageCounterReset/>
```

**Figure 136 Update Device Configuration (RMS Voltage Counter Reset) Service Request (Body) Format**

## 6.27.2 Responses

The response messages for an "Update Device Configuration (RMS Voltage Counter Reset)" request follow the generic format for all "Device" response messages, the generic responses applicable to this request are;

- 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.

### 6.27.2.1 Parse Output/SMETS1 Response Format

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

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.

#### 6.27.2.1.1 Specific Header Data Items

GBCS v2.0 or SMETS1:

Data Item	Electricity Response (Single Phase)	Electricity Response (Poly Phase) (N/A to SMETS1)
GBCSHexadecimalMessageCode	00D3	00D4
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>ECS29e</i>	<i>ECS29f</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Reset RMS Voltage Counters on ESME</i>	<i>Reset RMS Voltage Counters on polyphase ESME</i>
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

Table 229 – Update Device Configuration (RMS Voltage Counter Reset) Parse Response Header Data Items – GBCS v2.0 or SMETS1

## 6.28 Set CHF Sub GHz Configuration (6.28)

Service Request Name	SetCHFSubGHzConfiguration
Service Reference	6.28
Service Request Variant Name	SetCHFSubGHzConfiguration
Service Reference Variant	6.28
Service Request Objective	To enable an authorised DCC Service User to set the Sub GHz configuration values on a dual band Communications Hub

Business Context Statement	The DCC Service User requires to configure the Sub GHz Configuration Settings [DBCH] as defined by CHTS and GBCS on a dual band Communications Hub. These are the settings used to control the Communications Hub operations in relation to Sub GHz Bands.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> </ul>
Security Classification	<p>Non-critical and non-sensitive:</p> <p>GBCS XREF: SME.C.NC</p>
Service Request Narrative	<ol style="list-style-type: none"> <li>This Service Request configures the Sub GHz Configuration Settings to be used on the SMHAN for dual band Communications Hub.</li> <li>This configuration can be read via Service Request 6.30 Read CHF Sub GHz Configuration. See section 6.30.</li> <li>The definition of this Service Request includes all the channels potentially configurable in the Lower Band Sub GHz (863 to 876 MHz) and Upper Band Sub GHz (915 to 921 MHz) frequency ranges. <ol style="list-style-type: none"> <li>The Upper Band Sub GHz channels can only be configured for CHs used in the North Region. For those used in the Central or South Region the UpperBandSubGHzChannels0To26 channel XML tag has to be included, but left empty. Please note the DCC Data Systems will not validate the content of this XML tag.</li> </ol> </li> <li>GBCS v2.0 section 10.6.5 summarises the list of configurable channels that comply with UK telecommunications regulations. Currently: <ol style="list-style-type: none"> <li>Channels 0 to 48 at 863 to 876 MHz; and</li> <li>Channels 0 to 12 at 915 to 921 MHz</li> </ol> </li> <li>Validation check E062801 will ensure this Service Request only includes channels compliant with UK telecommunications regulations. <ul style="list-style-type: none"> <li>E.g - Response Code E062801 is generated by the DCC Data Systems if Channel49 to Channel61 inclusive are included within the <u>LowerBandSubGHzChannels35To61</u> data item.</li> <li>E.g - Response Code E062801 is generated by the DCC Data Systems if Channel13 to Channel26 inclusive are included within the <u>UpperBandSubGHzChannels0To26</u> data item</li> </ul> </li> <li>Because the User Roles that can submit this Service Request are URPs to the Communications Hub Function, the DSP Access Control Broker submits the Command to the Device on their behalf and the CHF response and Device Alert are also returned to the DSP Access Control Broker.</li> </ol>

	<div>7. If the Device completes the configuration successfully it returns a Command Response to the DSP Access Control Broker and it sends Device Alert 0x8F2A (Sub GHz Configuration Changed) to the DSP Access Control Broker. The DCC Data Systems then sends<ul style="list-style-type: none"><li>a. the Command Response to the DCC Service User that submitted the Service Request</li><li>b. DCC Alert N54 (corresponding to Device Alert 0x8F2A Sub GHz Configuration Changed) to the Registered Import Suppliers for that HAN. See Annex section 16</li></ul></div> <div>8. DUIS v1 does not support this Service Request. Users should move to DUIS v2 or later if they wish to use this Service Request to access devices operating to GBCS v2.0</div>	
GBCS Cross Reference	Communications Hub Function (Dual Band only)	
GBCS v1.0	N/A – feature not supported by Device	
GBCS v2.0 Message Code	0x010D	
GBCS v2.0 Use Case	DBCH04	
GBCS v2.0 Use Case Name	Set CHF Sub GHz Configuration	
GBCS Commands - Versioning Details		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations,		
Device Type	CHF (Dual Band or Unknown)	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DUIS 1: Not supported	N/A	N/A
DUIS 2 or later: DEFAULT - No specific XML criteria	Response Code - E57	DBCH04
SMETS1 Applicability	No	No
Device Type	CHF (Single Band)	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DUIS 1: Not supported	N/A	N/A
DUIS 2 or later: DEFAULT - No specific XML criteria	Response Code - E57	Response Code – E1011

SMETS1 Applicability	No	No
----------------------	----	----

Table 230 Set CHF Sub GHz Configuration 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).

6.28.1 Service Request

6.28.1.1 Format

The Service Request Body XML element of the XSD (see XML Schema – document 3 of this documentation set) defines the structure of all the Service Requests. Its SetCHFSubGHzConfiguration XML element defines this Service Request and it contains the configuration data items.

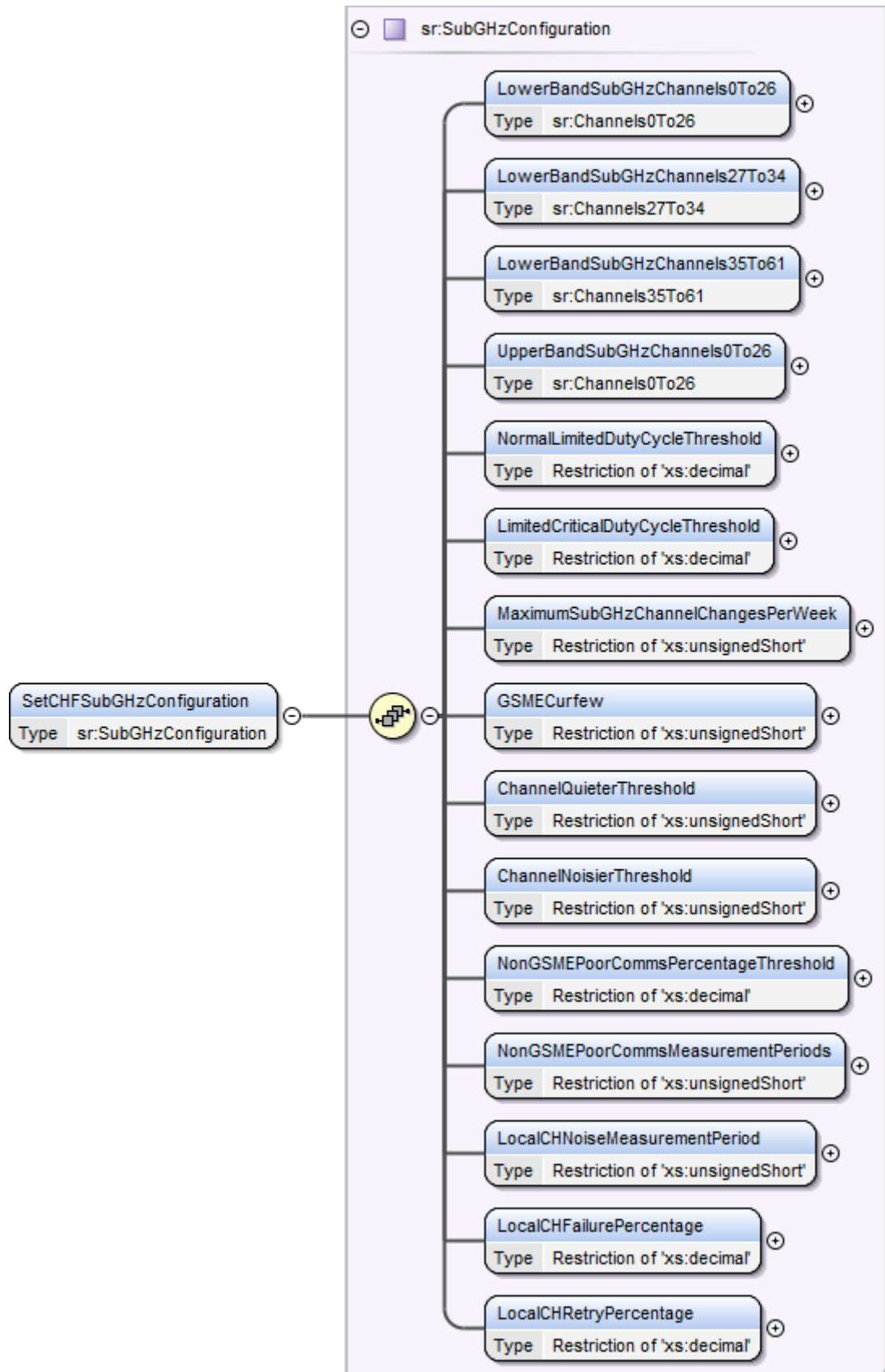


Figure 137 Set CHF Sub GHz Configuration Service Request Structure

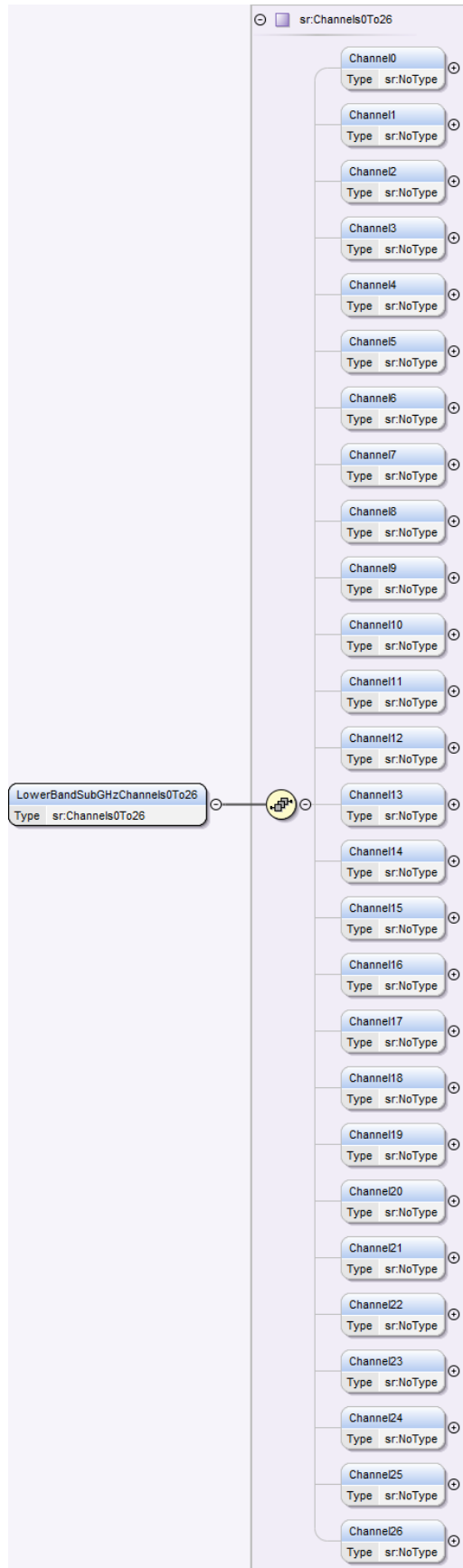


Figure 138 Set CHF Sub GHz Configuration Service Request –  
LowerBandSubGHzChannels0To26 Structure

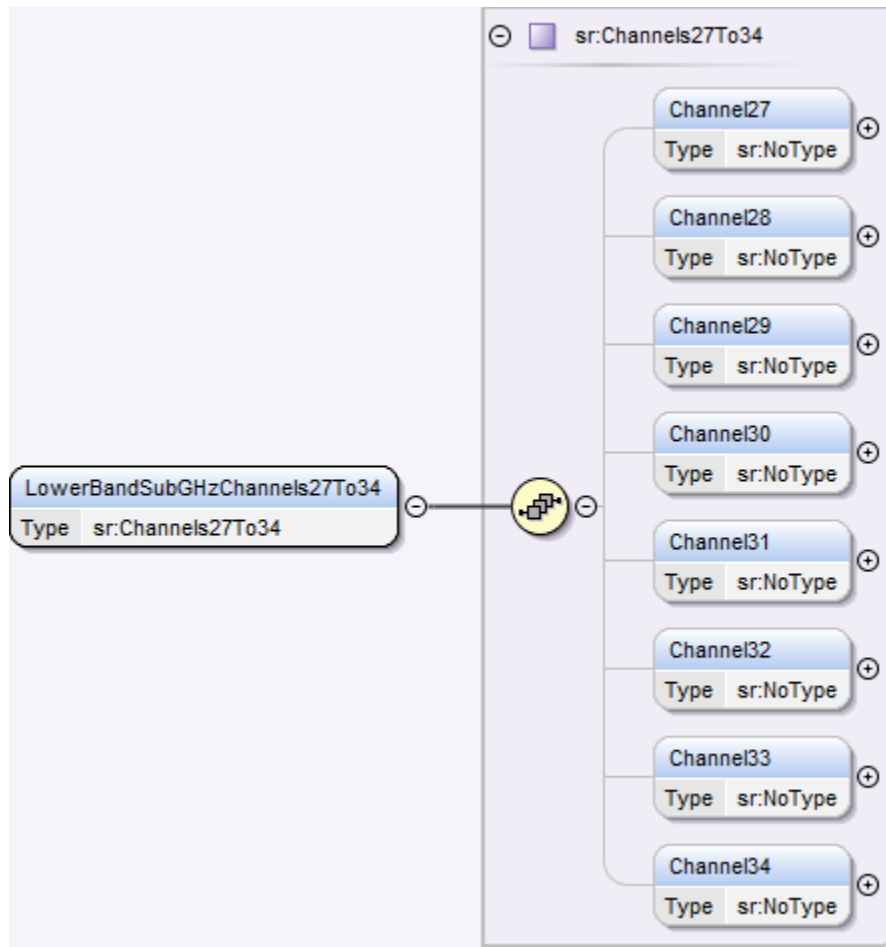


Figure 139 Set CHF Sub GHz Configuration Service Request –  
LowerBandSubGHzChannels27To34 Structure

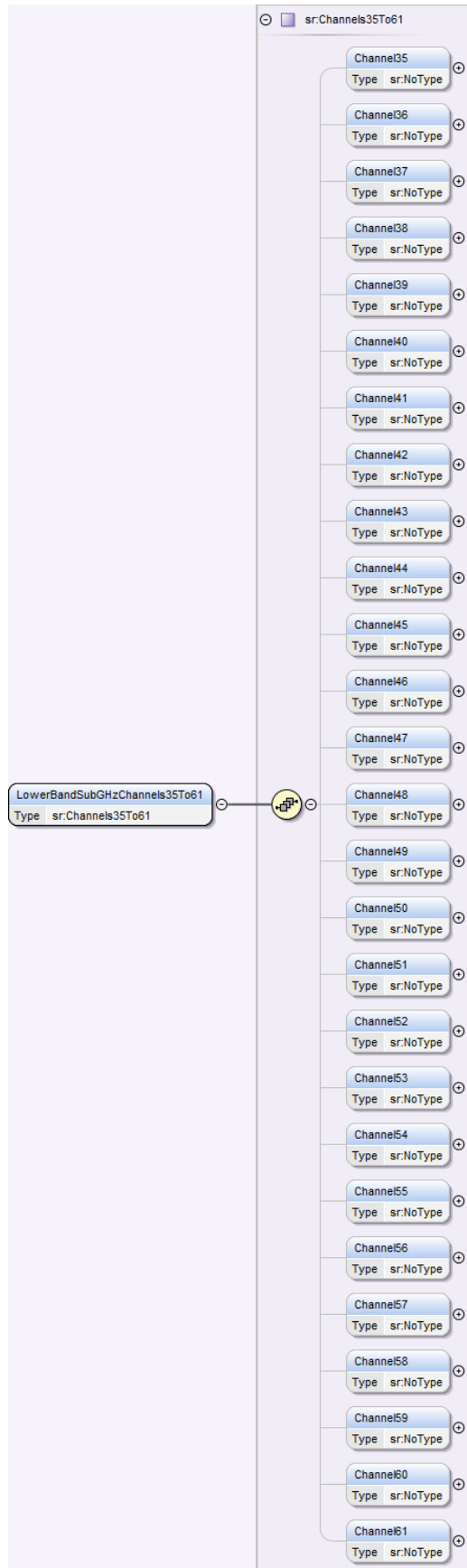


Figure 140 Set CHF Sub GHz Configuration Service Request –  
LowerBandSubGHzChannels35To61 Structure

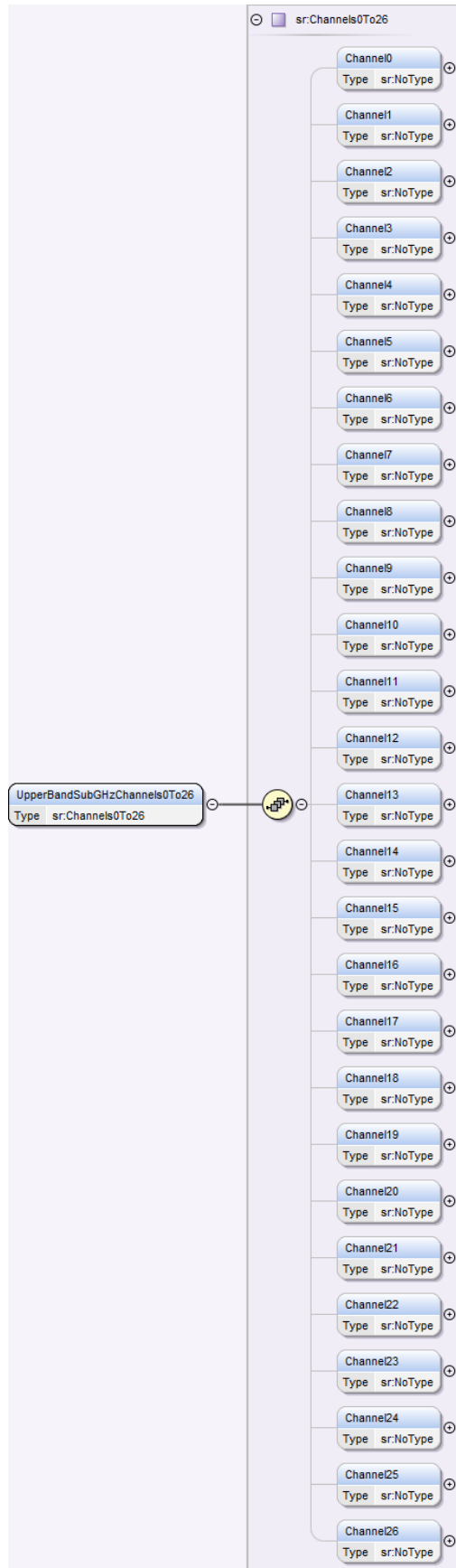


Figure 141 Set CHF Sub GHz Configuration Service Request –  
UpperBandSubGHzChannels0To26 Structure

### 6.28.1.2 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
LowerBandSubGHz Channels0To26	<p>Sets the configuration of the Sub GHz Channel Masks for the data item "Page 28 Mask" as defined by GBCS (each page equates to a set of channels that could be used in a specific frequency range)</p> <p>Sets list of channels 0 to 26 in the Lower Band Sub GHz (863 to 876 MHz) frequency range. See Response Code E062801</p> <ul style="list-style-type: none"> <li>By including a Channel number within the SR this shall mean 'channel can be used by the Communications Hub'</li> <li>By NOT including a Channel number within the SR this shall mean 'channel cannot be used by the CH'</li> </ul> <p>At least 2 Channels must be set within this data item. See Response Code E062802</p>	<p>sr:Channels0To26 (Sequence of Channel0 sr:NoType to Channel26 sr:NoType, all optional, but a minimum of 2 Channels must be set)</p>	Yes	None	N/A	Non-Sensitive
LowerBandSubGHz Channels27To34	<p>Sets the configuration of the Sub GHz Channel Masks for the data item "Page 29 Mask" as defined by GBCS (each page equates to a set of channels that could be used in a specific frequency range)</p> <p>Sets list of channels 27 to 34 in the Lower Band Sub GHz (863 to 876 MHz) frequency range. See Response Code E062801</p> <ul style="list-style-type: none"> <li>By including a Channel number within the SR this shall mean 'channel can be used by the Communications Hub'</li> <li>By NOT including a Channel number within the SR this shall mean 'channel cannot be used by the CH'</li> </ul> <p>At least 2 Channels must be set within this data item. See Response Code E062802</p>	<p>sr:Channels27To34 (Sequence of Channel27 sr:NoType to Channel34 sr:NoType, all optional, but a minimum of 2 Channels must be set)</p>	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
LowerBandSubGHz Channels35To61	<p>Sets the configuration of the Sub GHz Channel Masks for the data item "Page 30 Mask" as defined by GBCS (each page equates to a set of channels that could be used in a specific frequency range)</p> <p>Sets list of channels 35 to 61 in the Lower Band Sub GHz (863 to 876 MHz) frequency range. See Response Code E062801</p> <ul style="list-style-type: none"> <li>By including a Channel number within the SR this shall mean 'channel can be used by the Communications Hub'</li> <li>By NOT including a Channel number within the SR this shall mean 'channel cannot be used by the CH'.</li> </ul> <p>At least 2 Channels must be set within this data item. See Response Code E062802</p>	<p>sr:Channels35To61</p> <p>(Sequence of Channel35 sr:NoType to Channel61 sr:NoType, all optional, but a minimum of 2 Channels must be set)</p>	Yes	None	N/A	Non-Sensitive
UpperBandSubGHz Channels0To26	<p>Sets the configuration of the Sub GHz Channel Masks for the data item "Page 31 Mask" as defined by GBCS (each page equates to a set of channels that could be used in a specific frequency range)</p> <p>List of channels 0 to 26 in the Upper Band Sub GHz (915 to 921 MHz) frequency range. See Response Code E062801</p> <ul style="list-style-type: none"> <li>By including a Channel number within the SR this shall mean 'channel can be used by the Communications Hub'</li> <li>By NOT including a Channel number within the SR this shall mean 'channel cannot be used by the CH'.</li> </ul> <p>If the CH is used in the North Region at least 2 Channels must be set within this data item and if it is used in the Central or South Regions this data item must be empty, i.e. it can't include any Channels</p>	<p>sr:Channels0To26</p> <p>(Sequence of Channel0 sr:NoType to Channel26 sr:NoType, all optional)</p>	Yes	None	N/A	Non-Sensitive
NormalLimitedDuty CycleThreshold	<p>As defined in GBCS section 10.6.2.3.</p> <p>Valid Set:</p> <ul style="list-style-type: none"> <li>Percentage value between 0.5 and 2.0 %</li> </ul>	<p>Restriction of xs:decimal</p> <p>(fractionDigits = 1, minInclusive = 0,5, maxInclusive = 2.0)</p>	Yes	None	%	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
LimitedCriticalDutyCycleThreshold	<p>As defined in GBCS section 10.6.2.3.</p> <p>Valid Set:</p> <ul style="list-style-type: none"> <li>Percentage value between 1.5 and 2.5 % and greater than NormalLimitedDutyCycleThresh hold</li> </ul> <p>GBCS specifies this as a range excluding the boundary values (namely 1.5 and 2.5), although DUIS XML schema versions prior to v3.1 do not exclude them. Users on an earlier version of DUIS are advised not to set the threshold to exactly 1.5 or 2.5 since the service request would be rejected by the CHF with a security alert and there would be no response to this SRV 6.28.</p>	<p>Restriction of xs:decimal (fractionDigits = 1, minExclusive = 1.5, maxExclusive = 2.5)</p>	Yes	None	%	Non-Sensitive
MaximumSubGHzChannelChangesPerWeek	<p>The CHF shall not undertake more than this number of Channel Changes per week except where the one or more additional channel changes results from 'DBCH05 Request CHF Sub GHz Channel Scan' Command(s). See section 6.29</p> <p>Valid Set:</p> <ul style="list-style-type: none"> <li>Value between 1 and 7</li> </ul>	<p>Restriction of xs:unsignedShort (minInclusive = 1, maxInclusive = 7)</p>	Yes	None	N/A	Non-Sensitive
GSMECurfew	<p>The numbers of hours without GSME communications before the CHF determines the GSME to be a 'Lost GSME'</p> <p>When the CHF identifies that there is a 'Lost GSME', it shall take actions as defined in GBCS section 10.6.2.6.</p> <p>Valid Set:</p> <ul style="list-style-type: none"> <li>Value &gt; 1</li> </ul>	<p>Restriction of xs:unsignedShort (minExclusive = 1)</p>	Yes	None	Hours	Non-Sensitive
ChannelQuieterThreshold	<p>Shall be the minimum number of decibels by which an alternative channel needs to be quieter, in the conditions defined in GBCS section 10.6.2.8.</p> <p>Valid Set:</p> <ul style="list-style-type: none"> <li>Value between 1 and 255</li> </ul>	<p>Restriction of xs:unsignedShort (minInclusive = 1, maxInclusive = 255)</p>	Yes	None	dB	Non-Sensitive
ChannelNoisierThreshold	<p>Shall be the maximum number of decibels by which an alternative channel may be noisier, in the conditions defined in GBCS section 10.6.2.8.</p> <p>Valid Set:</p> <ul style="list-style-type: none"> <li>Value between 0 and 20</li> </ul>	<p>Restriction of xs:unsignedShort (minInclusive = 0, maxInclusive = 20)</p>	Yes	None	dB	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
NonGSMEPoorCommsPercentageThreshold	The number of 30 minute periods over which assessment of non GSME Device poor communications reports is made by the CH. See GBCS section 10.6.2.6 for details.  Valid Set: <ul style="list-style-type: none"> <li>Value between 1.00 and 100.00%</li> </ul>	Restriction of xs:decimal (fractionDigits = 2, minInclusive = 1,00, maxInclusive = 100.00)	Yes	None	%	Non-Sensitive
NonGSMEPoorCommsMeasurementPeriods	The number of 30 minute periods over which assessment of non GSME Device poor communications reports is made by the CH  Valid Set: <ul style="list-style-type: none"> <li>Value between 50 and 150</li> </ul>	Restriction of xs:unsignedShort (minInclusive = 50, maxInclusive = 150)	Yes	None	N/A	Non-Sensitive
LocalCHNoiseMeasurementPeriod	The number of trailing minutes over which the CHF shall assess its own percentage of retried messages.  Valid Set: <ul style="list-style-type: none"> <li>Value &gt; 60</li> </ul>	Restriction of xs:unsignedShort (minExclusive = 60)	Yes	None	Minutes	Non-Sensitive
LocalCHFFailurePercentage	As defined in GBCS section 10.6.2.6.  Valid Set: <ul style="list-style-type: none"> <li>Value between 1.00 and 100.00%</li> </ul>	Restriction of xs:decimal (fractionDigits = 2, minInclusive = 1,00, maxInclusive = 100.00)	Yes	None	%	Non-Sensitive
LocalCHRetryPercentage	As defined in GBCS section 10.6.2.6.  Valid Set: <ul style="list-style-type: none"> <li>Value between 1.00 and 100.00%</li> </ul>	Restriction of xs:decimal (fractionDigits = 2, minInclusive = 1,00, maxInclusive = 100.00)	Yes	None	%	Non-Sensitive

Table 231 Set CHF Sub GHz Configuration Service Request Data Items

### 6.28.1.3 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	No	No

Table 232 Set CHF Sub GHz Configuration Modes of Operation

### 6.28.1.4 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 233 Set CHF Sub GHz Configuration Command Variant Values

### 6.28.1.5 Validation

This Service Request specific validation is as follows (see Main Document of this documentation set section 7 for generic access control checks (including access control rules for CHF) and Annex section 17.2 for Dual Band CHF validation).

Validation Check	Process	Response Code
Are the Sub GHz channels valid?	Check that all the Sub GHz channels provided by the DCC Service User in the Service Request are included in the Sub GHz Available Channels <sup>2</sup>	E062801
Are the required minimum number of Sub GHz channels included? <sup>1</sup>	Check that each of the Lower Band Sub GHz Page Masks (as defined in GBCS section 10.6.2.3) includes at least 2 channels that can be used by the Communications Hub: <ul style="list-style-type: none"> <li>LowerBandSubGHzChannels0To26</li> <li>LowerBandSubGHzChannels27To34</li> <li>LowerBandSubGHzChannels35To61</li> </ul>	E062802
Is the Limited Critical Duty Cycle Threshold valid?	Check that the LimitedCriticalDutyCycleThreshold is > NormalLimitedDutyCycleThreshold	E062803

**Table 234 Set CHF Sub GHz Configuration Service Request Validation**

<sup>1</sup> It is the DCC Service User responsibility to ensure that if the CH is used in the North Region the UpperBandSubGHzChannels0To26 Page Mask (as defined in GBCS section 10.6.2.3) also includes at least 2 channels and if it is used in the Central or South Regions it doesn't include any channels

<sup>2</sup> I.e. all the Sub GHz channels provided by the DCC Service User in the Service Request are valid values in the configurable list of allowable channels maintained by the DCC Data Systems

### 6.28.1.6 Sample Request

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

```

<SetCHFSubGHzConfiguration>
  <LowerBandSubGHzChannels0To26>
    <Channel0/>
    <Channel7/>
  </LowerBandSubGHzChannels0To26>
  <LowerBandSubGHzChannels27To34>
    <Channel28/>
    <Channel30/>
  </LowerBandSubGHzChannels27To34>
  <LowerBandSubGHzChannels35To61>
    <Channel37/>
    <Channel38/>
  </LowerBandSubGHzChannels35To61>
  <UpperBandSubGHzChannels0To26>
    <Channel3/>
    <Channel9/>
  </UpperBandSubGHzChannels0To26>
  <NormalLimitedDutyCycleThreshold>1.7</NormalLimitedDutyCycleThreshold>
  <LimitedCriticalDutyCycleThreshold>2.1</LimitedCriticalDutyCycleThreshold>
  <MaximumSubGHzChannelChangesPerWeek>3</MaximumSubGHzChannelChangesPerWeek>
  <GSMECurfew>3</GSMECurfew>
  <ChannelQuieterThreshold>10</ChannelQuieterThreshold>
  <ChannelNoisierThreshold>12</ChannelNoisierThreshold>
  <NonGSMEPoorCommsPercentageThreshold>15.00</NonGSMEPoorCommsPercentageThreshold>
  <NonGSMEPoorCommsMeasurementPeriods>75</NonGSMEPoorCommsMeasurementPeriods>
  <LocalCHNoiseMeasurementPeriod>65</LocalCHNoiseMeasurementPeriod>
  <LocalCHFFailurePercentage>12.00</LocalCHFFailurePercentage>
  <LocalCHRetryPercentage>15.3</LocalCHRetryPercentage>
</SetCHFSubGHzConfiguration>

```

**Figure 142 Set CHF Sub GHz Configuration Service Request (Body) Format**

## 6.28.2 Responses

The response messages for a “Set CHF Sub GHz Configuration” request follow the generic format for all “Device” response messages, the generic responses applicable to this 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.

### 6.28.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E062801	Failed Validation – Invalid Channel(s)	Error	At least one of the Sub GHz channels in the Service Request is not included in the Sub GHz Available Channels <sup>1</sup>
E062802	Failed Validation – Invalid Number of Channels	Error	The Service Request does not contain the required minimum number of Sub GHz channels in one or more of the Page Masks, as defined in GBCS section 10.6.2.3
E062803	Failed Validation – Invalid Duty Cycle Threshold Configuration	Error	The LimitedCriticalDutyCycleThreshold is not > NormalLimitedDutyCycleThreshold

**Table 235 Failed Set CHF Sub GHz Configuration Service Request Response Codes**

<sup>1</sup> I.e. at least one of the Sub GHz channels in the Service Request is not included in the configurable list of allowable channels maintained by the DCC Data Systems in line with GBCS and UK telecommunications regulations

### 6.28.2.2 Parse Output Format

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

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

#### 6.28.2.2.1 Specific Header Data Items

Data Item	Dual Band CHF Response
GBCSHexadecimalMessageCode	010D
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>DBCH04</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Set CHF Sub GHz Configuration</i>
SupplementaryRemotePartyID	Present

Data Item	Dual Band CHF Response
SupplementaryRemotePartyCounter	Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

**Table 236 – Set CHF Sub GHz Configuration 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.

## 6.29 Request CHF Sub GHz Channel Scan (6.29)

Service Request Name	RequestCHFSubGHzChannelScan
Service Reference	6.29
Service Request Variant Name	RequestCHFSubGHzChannelScan
Service Reference Variant	6.29
Service Request Objective	To enable an authorised DCC Service User to invoke a Sub GHz Channel Scan on a dual band Communications Hub.
Business Context Statement	The DCC Service User requires the DCC to issue a Command to a dual band Communications Hub to request that the Comms Hub assesses the current levels of interference in Sub GHz Bands and, dependent on that assessment, change the frequency channel on which it is operating within those bands. This will provide the best communication links for creation and maintenance of the HAN.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> </ul>
Security Classification	Non-critical and non-sensitive:  GBCS XREF: SME.C.NC
Service Request Narrative	<ol style="list-style-type: none"> <li>This Service Request scans the Sub GHz channels configured to be used on the HAN. If successful, the CH will select the channel it perceives as being most likely to give the best communication links.</li> <li>Because the User Roles that can submit this Service Request are URPs to the Communications Hub Function, the DSP Access Control Broker submits the Commands to the Device on their behalf and the CHF response and Device Alerts are also returned to the DSP Access Control Broker.</li> <li>If the Device completes the Command validation and stores the request successfully, it returns a Command Response to the DSP Access Control Broker. The DCC Data Systems then send the Command Response to the DCC Service User that submitted the Service Request.</li> <li>Once the Command Response has been sent the Device:</li> </ol>

	<div><div><div><div><div><div></div><div>a.</div></div><div>Assesses the scan request. Should a check fail, the CHF shall set the assessment Status Code to the value equating to the failed check and shall not undertake further checks. If no checks fail, Status Code will be set to success. See GBCS for details. To indicate the result of the assessment (success or failure reason) DCC Alert N54 (corresponding to Device Alert 0x8F28 Sub GHz Channel Scan Request Assessment Outcome) will be sent to the Registered Import Suppliers for that HAN. See Annex section 16</div></div></div><div><div><div><div><div></div><div>b.</div></div><div>If the assessment outcome indicates success, the CHF will run the scan (see GBCS for details). If as a result of the scan the Sub GHz operating channel changes, DCC Alert N54 (corresponding to Device Alert 0x8F26 Sub GHz Channel Changed) will be sent to the Registered Import Suppliers for that HAN. See Annex section 16</div></div></div><div><div><div><div><div></div><div>c.</div></div><div>If the assessment outcome indicates failure, the CHF will examine the Status Code and scan trigger. In some cases there will be no further processing. In others, once the reason for the failure is no longer applicable, the CHF will re-assess the scan request (see item ‘a’ above)</div></div><div><div><div><div><div></div><div>i.</div></div><div>Note that one of the reasons for failure is that the CHF Device Log includes an HHT, so if the command is delivered locally, the assessment will fail while the HHT is connected to the HAN. Once it is disconnected, the CHF will repeat the assessment and this check will no longer fail.</div></div></div></div></div><div><div><div><div></div><div>5.</div></div><div>DUIS v1 does not support this Service Request. Users should move to DUIS v2 or later if they wish to use this Service Request to access devices operating to GBCS v2.0</div></div></div></div></div></div></div>	
GBCS Cross Reference	Communications Hub Function (Dual Band only)	
GBCS v1.0	N/A – feature not supported by Device	
GBCS v2.0 Message Code	0x010E	
GBCS v2.0 Use Case	DBCH05	
GBCS v2.0 Use Case Name	Request CHF Sub GHz Channel Scan	
GBCS Commands - Versioning Details		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations,		
Device Type	CHF (Dual Band or Unknown)	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0

DUIS 1: Not supported	N/A	N/A
DUIS 2 or later: DEFAULT - No specific XML criteria	Response Code - E57	DBCH05
SMETS1 Applicability	No	No
Device Type	CHF (Single Band)	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DUIS 1: Not supported	N/A	N/A
DUIS 2 or later: DEFAULT - No specific XML criteria	Response Code - E57	Response Code – E1011
SMETS1 Applicability	No	No

Table 237 Request CHF Sub GHz Channel Scan 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).

## 6.29.1 Service Request

### 6.29.1.1 Format

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



Figure 143 Request CHF Sub GHz Channel Scan Service Request Structure

### 6.29.1.2 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):

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

Table 238 Request CHF Sub GHz Channel Scan Modes of Operation

### 6.29.1.3 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):

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 239 Request CHF Sub GHz Channel Scan Command Variant Values

#### 6.29.1.4 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks (including access control rules for CHF) and Annex section 17.2 for Dual Band CHF validation.

#### 6.29.1.5 Sample Request

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

```
<RequestCHFSubGHzChannelScan/>
```

Figure 144 Request CHF Sub GHz Channel Scan Service Request (Body) Format

### 6.29.2 Responses

The response messages for a "Request CHF Sub GHz Channel Scan" request follow the generic format for all "Device" response messages, the generic responses applicable to this 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.

#### 6.29.2.1 Parse Output Format

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

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

##### 6.29.2.1.1 Specific Header Data Items

Data Item	Dual Band CHF Response
GBCSHexadecimalMessageCode	010E
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>DBCH05</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Request CHF Sub GHz Channel Scan</i>
SupplementaryRemotePartyID	Present
SupplementaryRemotePartyCounter	Present

Data Item	Dual Band CHF Response
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

**Table 240 – Request CHF Sub GHz Channel Scan 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.

### 6.30 Read CHF Sub GHz Configuration (6.30)

Service Request Name	ReadCHFSubGHzConfiguration
Service Reference	6.30
Service Request Variant Name	ReadCHFSubGHzConfiguration
Service Reference Variant	6.30
Service Request Objective	To enable an authorised DCC Service User to read the Sub GHz Configuration values from a dual band Communications Hub
Business Context Statement	The DCC Service User requires to read the Sub GHz Configuration values from a dual band Communications Hub for diagnostics purposes
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> <li>Supplier Nominated Agent (SNA)</li> </ul>
Security Classification	Non-critical and non-sensitive: GBCS XREF: SME.C.NC
Service Request Narrative	<ol style="list-style-type: none"> <li>This Service Request reads the configuration data “Sub GHz Configuration Settings [DBCH]” as defined in GBCS and CHTS. The settings control the CH’s operations in relation to Sub GHz Bands.</li> <li>The definition of this Service Request Response includes all the channels potentially configurable in the Lower Band Sub GHz (863 to 876 MHz) and Upper Band Sub GHz (915 to 921 MHz) frequency ranges and will return those currently set as configurable on the Device.</li> <li>GBCS section 10.6.5 summarises the list of configurable channels that comply with UK telecommunications regulations. Currently: <ul style="list-style-type: none"> <li>Channels 0 to 48 at 863 to 876 MHz; and</li> <li>Channels 0 to 12 at 915 to 921 MHz</li> </ul> </li> <li>The “Sub GHz Configuration Settings [DBCH]” configuration can be set using Service Request 6.28 Set CHF Sub GHz Configuration. See section 6.28.</li> <li>Because the User Roles that can submit this Service Request are URPs to the Communications Hub Function, the DSP</li> </ol>

	Access Control Broker submits the Command to the Device on their behalf and the CHF response is also returned to the DSP Access Control Broker.	
	6. DUIS v1 does not support this Service Request. Users should move to DUIS v2 or later if they wish to use this Service Request to access devices operating to GBCS v2.0	
GBCS Cross Reference	Communications Hub Function (Dual Band only)	
GBCS v1.0	N/A – feature not supported by Device	
GBCS v2.0 Message Code	0x010C	
GBCS v2.0 Use Case	DBCH03	
GBCS v2.0 Use Case Name	Read CHF Sub GHz Configuration	
GBCS Commands - Versioning Details		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations,		
Device Type	CHF (Dual Band or Unknown)	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DUIS 1: Not supported	N/A	N/A
DUIS 2 or later: DEFAULT - No specific XML criteria	Response Code - E57	DBCH03
SMETS1 Applicability	No	No
Device Type	CHF (Single Band)	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DUIS 1: Not supported	N/A	N/A
DUIS 2 or later: DEFAULT - No specific XML criteria	Response Code - E57	Response Code – E1011
SMETS1 Applicability	No	No

**Table 241 Read CHF Sub GHz Configuration 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).

## 6.30.1 Service Request

### 6.30.1.1 Format

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



Figure 145 Read CHF Sub GHz Configuration Service Request Structure

### 6.30.1.2 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):

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

Table 242 Read CHF Sub GHz Configuration Modes of Operation

### 6.30.1.3 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):

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 243 Read CHF Sub GHz Configuration Command Variant Values

### 6.30.1.4 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks (including access control rules for CHF) and Annex section 17.2 for Dual Band CHF validation.

### 6.30.1.5 Sample Request

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

```
<ReadCHFSubGHzConfiguration/>
```

Figure 146 Read CHF Sub GHz Configuration Service Request (Body) Format

## 6.30.2 Responses

The response messages for a "Read CHF Sub GHz Configuration" request follow the generic format for all "Device" response messages, the generic responses applicable to this 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.

### **6.30.2.1 Parse Output Format**

#### **6.30.2.1.1 Format – ReadCHFSubGHzConfigurationRsp**

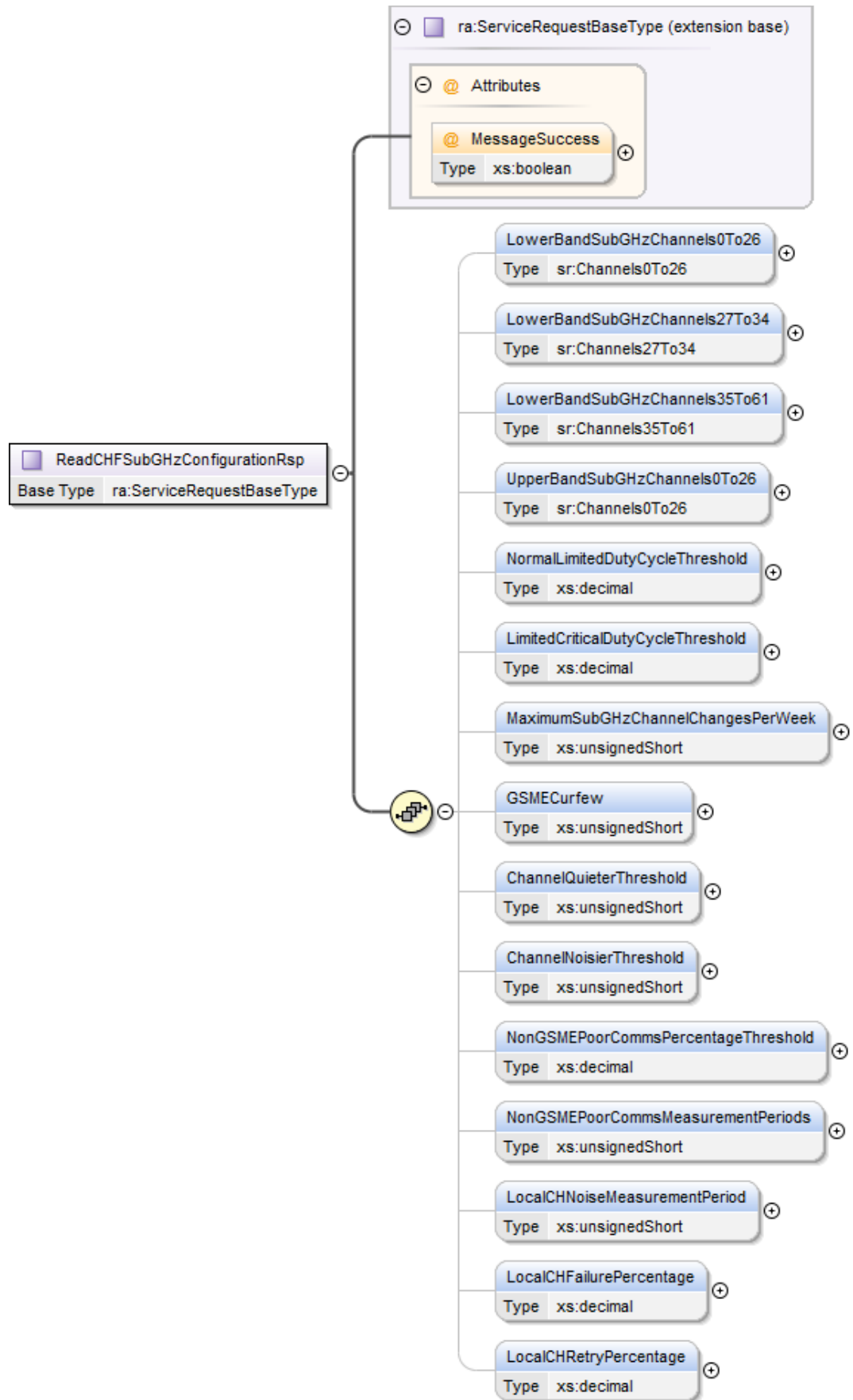


Figure 147 Read CHF Sub GHz Configuration Parse Response Structure

### 6.30.2.1.2 Specific Header Data Items

Data Item	Dual Band CHF Response
GBCSHexadecimalMessageCode	010C
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>DBCH03</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read CHF Sub GHz Configuration</i>
SupplementaryRemotePartyID	Present
SupplementaryRemotePartyCounter	Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 244 – Read CHF Sub GHz Configuration 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.

### 6.30.2.1.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
LowerBandSubGHzChannels0To26	Provides the current configuration. See section 6.28.1.2	ra:Channels0To26 (see section 6.28.1.2)	None	N/A	Non-Sensitive
LowerBandSubGHzChannels27To34	Provides the current configuration. See section 6.28.1.2	ra:Channels27To34 (see section 6.28.1.2)	None	N/A	Non-Sensitive
LowerBandSubGHzChannels35To61	Provides the current configuration. See section 6.28.1.2	ra:Channels35To61 (see section 6.28.1.2)	None	N/A	Non-Sensitive
UpperBandSubGHzChannels0To26	Provides the current configuration. See section 6.28.1.2	ra:Channels0To26 (see section 6.28.1.2)	None	N/A	Non-Sensitive
NormalLimitedDutyCycleThreshold	See section 6.28.1.2 Valid Set: <ul style="list-style-type: none"> <li>Percentage value between 0.5 and 2.0 %</li> </ul>	xs:decimal	None	%	Non-Sensitive
LimitedCriticalDutyCycleThreshold	See section 6.28.1.2. Valid Set: <ul style="list-style-type: none"> <li>Percentage value between 1.5 and 2.5 % and greater than NormalLimitedDutyCycleThreshold</li> </ul>	xs:decimal	None	%	Non-Sensitive
MaximumSubGHzChannelChangesPerWeek	See section 6.28.1.2. Valid Set: <ul style="list-style-type: none"> <li>Value between 1 and 7</li> </ul>	xs:unsignedShort	None	N/A	Non-Sensitive
GSMECurfew	See section 6.28.1.2. Valid Set: <ul style="list-style-type: none"> <li>Value &gt; 1</li> </ul>	xs:unsignedShort	None	Hours	Non-Sensitive

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
ChannelQuieterThreshold	See section 6.28.1.2. Valid Set: • Value between 1 and 255	xs:unsignedShort	None	dB	Non-Sensitive
ChannelNoisierThreshold	See section 6.28.1.2. Valid Set: • Value between 0 and 20	xs:unsignedShort	None	dB	Non-Sensitive
NonGSMEPoorCommsPercentageThreshold	See section 6.28.1.2. Valid Set: • Value between 1.00 and 100.00%	xs:decimal	None	%	Non-Sensitive
NonGSMEPoorCommsMeasurementPeriods	See section 6.28.1.2. Valid Set: • Value between 50 and 150	xs:unsignedShort	None	N/A	Non-Sensitive
LocalCHNoiseMeasurementPeriod	See section 6.28.1.2. Valid Set: • Value > 60	xs:unsignedShort	None	Minutes	Non-Sensitive
LocalCHFailurePercentage	See section 6.28.1.2. Valid Set: • Value between 1.00 and 100.00%	xs:decimal	None	%	Non-Sensitive
LocalCHRetryPercentage	See section 6.28.1.2. Valid Set: • Value between 1.00 and 100.00%	xs:decimal	None	%	Non-Sensitive

**Table 245 – Read CHF Sub GHz Configuration Parse Response Specific Body Data Items**

#### 6.30.2.1.4 Sample Response

Successful responses will include the Sub GHz Configuration:

```
<ra:ReadCHFSubGHzConfigurationRsp MessageSuccess="true">
  <ra:LowerBandSubGHzChannels0To26>
    <ra:Channel0/>
    <ra:Channel7/>
  </ra:LowerBandSubGHzChannels0To26>
  <ra:LowerBandSubGHzChannels27To34>
    <ra:Channel28/>
    <ra:Channel30/>
  </ra:LowerBandSubGHzChannels27To34>
  <ra:LowerBandSubGHzChannels35To61>
    <ra:Channel37/>
    <ra:Channel38/>
  </ra:LowerBandSubGHzChannels35To61>
  <ra:UpperBandSubGHzChannels0To26>
    <ra:Channel3/>
    <ra:Channel9/>
  </ra:UpperBandSubGHzChannels0To26>
  <ra:NormalLimitedDutyCycleThreshold>1.7</ra:NormalLimitedDutyCycleThreshold>
  <ra:LimitedCriticalDutyCycleThreshold>2.1</ra:LimitedCriticalDutyCycleThreshold>
  <ra:MaximumSubGHzChannelChangesPerWeek>3</ra:MaximumSubGHzChannelChangesPerWeek>
  <ra:GSMECurfew>3</ra:GSMECurfew>
  <ra:ChannelQuieterThreshold>10</ra:ChannelQuieterThreshold>
  <ra:ChannelNoisierThreshold>12</ra:ChannelNoisierThreshold>
  <ra:NonGSMEPoorCommsPercentageThreshold>15.00</ra:NonGSMEPoorCommsPercentageThreshold>
  <ra:NonGSMEPoorCommsMeasurementPeriods>75</ra:NonGSMEPoorCommsMeasurementPeriods>
  <ra:LocalCHNoiseMeasurementPeriod>65</ra:LocalCHNoiseMeasurementPeriod>
  <ra:LocalCHFFailurePercentage>12.00</ra:LocalCHFFailurePercentage>
  <ra:LocalCHRetryPercentage>15.3</ra:LocalCHRetryPercentage>
</ra:ReadCHFSubGHzConfigurationRsp>
```

Figure 148 - Read CHF Sub GHz Configuration Parse Response Example

### 6.31 Read CHF Sub GHz Channel (6.31)

Service Request Name	ReadCHFSubGHzChannel
Service Reference	6.31
Service Request Variant Name	ReadCHFSubGHzChannel
Service Reference Variant	6.31
Service Request Objective	To enable an authorised DCC Service User to read the Sub GHz Channel that a dual band Communication Hub is currently operating on
Business Context Statement	The DCC Service User requires to read the Sub GHz operating channel on a dual band Communications Hub
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> <li>Supplier Nominated Agent (SNA)</li> </ul>
Security Classification	Non-critical and non-sensitive: GBCS XREF: SME.C.NC
Service Request Narrative	1. This Service Request reads the Data item "Operating Sub GHz Channel" on a Dual Band CH as defined by GBCS and CHTS.

	<div>2. Please note that, as for Single band (2.4 GHz only) CH, there is no requirement on the CH to expose the 2.4 GHz channel in use.</div> <div>3. Because the User Roles that can submit this Service Request are URPs to the Communications Hub Function, the DSP Access Control Broker submits the Command to the Device on their behalf and the CHF response is also returned to the DSP Access Control Broker.</div> <div>4. DUIS v1 does not support this Service Request. Users should move to DUIS v2 or later if they wish to use this Service Request to access devices operating to GBCS v2.0.</div>	
GBCS Cross Reference	Communications Hub Function (Dual Band only)	
GBCS v1.0	N/A – feature not supported by Device	
GBCS v2.0 Message Code	0x010A	
GBCS v2.0 Use Case	DBCH01	
GBCS v2.0 Use Case Name	Read CHF Sub GHz Channel	
GBCS Commands - Versioning Details		
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations,		
Device Type	CHF (Dual Band or Unknown)	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DUIS 1: Not supported	N/A	N/A
DUIS 2 or later: DEFAULT - No specific XML criteria	Response Code - E57	DBCH01
SMETS1 Applicability	No	No
Device Type	CHF (Single Band)	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0
DUIS 1: Not supported	N/A	N/A
DUIS 2 or later: DEFAULT - No specific XML criteria	Response Code - E57	Response Code – E1011
SMETS1 Applicability	No	No

Table 246 Read CHF Sub GHz Channel 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).

### 6.31.1 Service Request

#### 6.31.1.1 Format

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

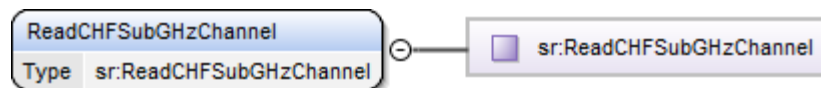


Figure 149 Read CHF Sub GHz Channel Service Request Structure

#### 6.31.1.2 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):

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

Table 247 Read CHF Sub GHz Channel Modes of Operation

#### 6.31.1.3 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):

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 248 Read CHF Sub GHz Channel Command Variant Values

#### 6.31.1.4 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks (including access control rules for CHF) and Annex section 17.2 for Dual Band CHF validation.

#### 6.31.1.5 Sample Request

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

```
<ReadCHFSubGHzChannel/>
```

Figure 150 Read CHF Sub GHz Channel Service Request (Body) Format

### 6.31.2 Responses

The response messages for a “Read CHF Sub GHz Channel” request follow the generic format for all “Device” response messages, the generic responses applicable to this 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.

### 6.31.2.1 Parse Output Format

#### 6.31.2.1.1 Format – ReadCHFSubGHzChannelRsp

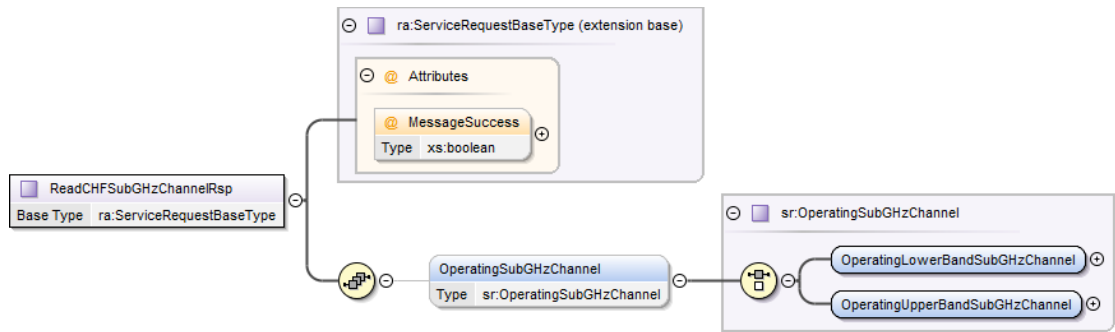


Figure 151 Read CHF Sub GHz Channel Parse Response Structure

#### 6.31.2.1.2 Specific Header Data Items

Data Item	Dual Band CHF Response
GBCSHexadecimalMessageCode	010A
GBCS Use Case Number (for information only - not in header)	DBCH01
GBCS Use Case Name (for information only - not in header)	Read CHF Sub GHz Channel
SupplementaryRemotePartyID	Present
SupplementaryRemotePartyCounter	Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 249 – Read CHF Sub GHz Channel 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.

#### 6.31.2.1.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
OperatingSubGHzChannel	The Sub GHz Channel currently operating on the SMHAN, being one of 0 to 61 in the Lower Band Sub GHz (863 to 876 MHz) or one of 0 to 26 in the Upper Band Sub GHz (915 to 921 MHz) frequency range	ra:OperatingSubGHzChannel (see Annex 16 section 16.2.1.2.13)	None	N/A	Non-Sensitive

Table 250 – Read CHF Sub GHz Channel Parse Response Specific Body Data Items

#### 6.31.2.1.4 Sample Response

Successful responses will include the Sub GHz channel currently operational:

```
<ra:ReadCHFSubGHzChannelRsp MessageSuccess="true">
  <ra:OperatingSubGHzChannel>
    <ra:OperatingLowerBandSubGHzChannel>
      <ra:Channel27/>
    </ra:OperatingLowerBandSubGHzChannel>
  </ra:OperatingSubGHzChannel>
</ra:ReadCHFSubGHzChannelRsp>
```

Figure 152 - Read CHF Sub GHz Channel Parse Response Example

### 6.32 Read CHF Sub GHz Channel Log (6.32)

Service Request Name	ReadCHFSubGHzChannelLog
Service Reference	6.32
Service Request Variant Name	ReadCHFSubGHzChannelLog
Service Reference Variant	6.32
Service Request Objective	To enable an authorised DCC Service User to read the Sub GHz Channel log on a dual band Communications Hub
Business Context Statement	The DCC Service User requires to read the Sub GHz band channel log of a dual band Communications Hub
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> <li>Supplier Nominated Agent (SNA)</li> </ul>
Security Classification	Non-critical and non-sensitive: GBCS XREF: SME.C.NC
Service Request Narrative	<ol style="list-style-type: none"> <li>This Service Request reads the data item Sub GHz channel log on a Dual Band CH as defined by GBCS and CHTS.</li> <li>According to CHTS the 'Sub GHz Channel Log' is a circular log containing date-time stamped entries of the last 100 Operating Sub GHz Channel values used, where each entry in the Log specifies (1) the date-time operation began on the Sub GHz Channel, (2) the Sub GHz Channel (by way of a 32 bit bit-string which has the same structure as Operating Sub GHz Channel) and (3) a flag indicating the trigger for the change.</li> </ol>

	<div>3. For clarity, the first entry created in this Log shall detail the Sub GHz Channel selected by the CH at initial SMHAN network formation.</div> <div>4. Because the User Roles that can submit this Service Request are URPs to the Communications Hub Function, the DSP Access Control Broker submits the Command to the Device on their behalf and the CHF response is also returned to the DSP Access Control Broker.</div> <div>5. DUIS v1 does not support this Service Request. Users should move to DUIS v2 or later if they wish to use this Service Request to access devices operating to GBCS v2.0</div>		
GBCS Cross Reference	Communications Hub Function (Dual Band only)		
GBCS v1.0	N/A – feature not supported by Device		
GBCS v2.0 Message Code	0x010B		
GBCS v2.0 Use Case	DBCH02		
GBCS v2.0 Use Case Name	Read CHF Sub GHz Channel Log		
GBCS Commands - Versioning Details			
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations,			
Device Type		CHF (Dual Band or Unknown)	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI		GBCS v1.0	GBCS v2.0
DUIS 1: Not supported		N/A	N/A
DUIS 2 or later: DEFAULT - No specific XML criteria		Response Code - E57	DBCH02
SMETS1 Applicability		No	No
Device Type		CHF (Single Band)	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI		GBCS v1.0	GBCS v2.0
DUIS 1: Not supported		N/A	N/A
DUIS 2 or later: DEFAULT - No specific XML criteria		Response Code - E57	Response Code – E1011
SMETS1 Applicability		No	No

Table 251 Read CHF Sub GHz Channel Log 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).

## 6.32.1 Service Request

### 6.32.1.1 Format

The Service Request Body XML element of the XSD (see XML Schema – document 3 of this documentation set) defines the structure of all the Service Requests. Its ReadCHFSubGHzChannelLog XML element defines this Service Request and it contains the date-time range for which the log is to be read on the Device.

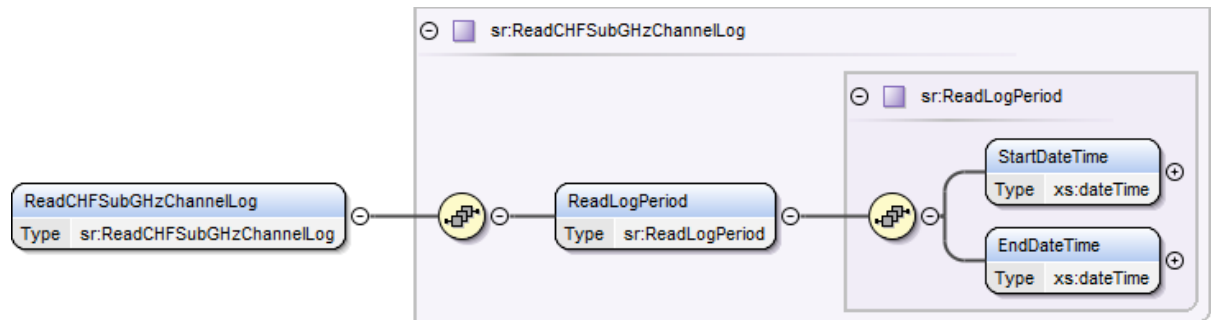


Figure 153 Read CHF Sub GHz Channel Log Service Request Structure

### 6.32.1.2 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
ReadLogPeriod	The Start and End Date-Times for which the data is required	sr:ReadLogPeriod (see Annex section 17)	Yes	None	N/A	Non-Sensitive

Table 252 Read CHF Sub GHz Channel Log Service Request Data Items

### 6.32.1.3 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	No	No

Table 253 Read CHF Sub GHz Channel Log Modes of Operation

### 6.32.1.4 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 254 Read CHF Sub GHz Channel Log Command Variant Values

### 6.32.1.5 Validation

This Service Request has no specific validation. See Main Document of this documentation set section 7 for generic access control checks (including access control rules for CHF) and Annex section 17.2 for Read Log Period and Dual Band CHF validation.

### 6.32.1.6 Sample Request

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

```
<ReadCHFSubGHzChannelLog>
  <ReadLogPeriod>
    <StartDateTime>2017-01-01T00:00:00.00Z</StartDateTime>
    <EndDateTime>2017-01-31T23:59:59.00Z</EndDateTime>
  </ReadLogPeriod>
</ReadCHFSubGHzChannelLog>
```

Figure 154 Read CHF Sub GHz Channel Log Service Request (Body) Format

## 6.32.2 Responses

The response messages for a “Read CHF Sub GHz Channel Log” request follow the generic format for all “Device” response messages, the generic responses applicable to this 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.

### 6.32.2.1 Parse Output Format

#### 6.32.2.1.1 Format – ReadCHFSubGHzChannelLogRsp

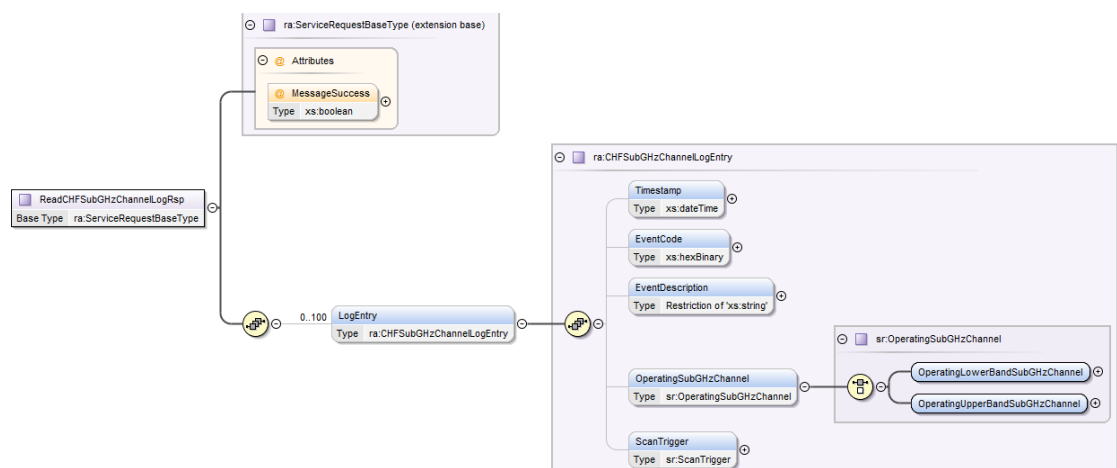


Figure 155 Read CHF Sub GHz Channel Log Parse Response Structure

#### 6.32.2.1.2 Specific Header Data Items

Data Item	Dual Band CHF Response
GBCSHexadecimalMessageCode	010B
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>DBCH02</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read CHF Sub GHz Channel Log</i>
SupplementaryRemotePartyID	Present
SupplementaryRemotePartyCounter	Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

**Table 255 – Read CHF Sub GHz Channel Log 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.

#### 6.32.2.1.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
LogEntry	The 'Sub GHz Channel Log' is a circular log containing date-time stamped entries of the last 100 Operating Sub GHz Channel values used, where each entry in the Log specifies a timestamp indicating when operation began on the channel, the Event Code and Description, the Operating Channel and the trigger for the channel change	ra:CHFSubGHzChannelLogEntry (see section 6.32.2.1.4)	None	N/A	Non-Sensitive

**Table 256 – Read CHF Sub GHz Channel Log Parse Response Specific Body Data Items**

#### 6.32.2.1.4 CHFSubGHzChannelLogEntry Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
Timestamp	Date and time indicating when operation began on the Sub GHz Channel	xs:dateTime	None	N/A	Non-Sensitive
EventCode	Code indicating the channel changed Valid Set: ▪ 8F26	xs:hexBinary	None	N/A	Non-Sensitive
EventDescription	Description indicating the channel changed Valid Set: ▪ Sub GHz Channel Changed	Restriction of xs:string (maxLength=200)	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
OperatingSubGHzChannel	The Sub GHz Channel becoming the operating one at that time (one of 0 to 61 in the Lower Band Sub GHz (863 to 876 MHz) or one of 0 to 26 in the Lower Band Sub GHz (915 to 921 MHz) frequency range)	ra: OperatingSubGHzChannel (see Annex section 16)	None	N/A	Non-Sensitive
ScanTrigger	Trigger of the Scan that resulted in the change to the operating channel Valid Set: <ul style="list-style-type: none"> <li>RemotePartyCommand</li> <li>GSMERequest</li> <li>GSMEMissedItsCurfew</li> <li>GSMEMissingForTheLastDay</li> <li>CHDetectedMessageFailureProblems</li> <li>CHDetectedMessageRetryProblems</li> <li>SubGHzNon-GSMEDeviceRequest</li> <li>SMHANFormation</li> </ul>	ra:ScanTrigger (see Annex section 16)	None	N/A	Non-Sensitive

**Table 257 – Read CHF Sub GHz Channel Log Parse Response  
CHFSubGHzChannelLogEntry Data Items**

#### 6.32.2.1.5 Sample Response

Successful responses will include the Sub GHz channel log:

```
<ra:ReadCHFSubGHzChannelLogRsp MessageSuccess="true">
  <ra:LogEntry>
    <ra:Timestamp>2017-01-07T09:07:03.00</ra:Timestamp>
    <ra:EventCode>8F26</ra:EventCode>
    <ra:EventDescription>Sub GHz Channel Changed</ra:EventDescription>
    <ra:OperatingSubGHzChannel>
      <ra:OperatingLowerBandSubGHzChannel>
        <ra:Channel27/>
      </ra:OperatingLowerBandSubGHzChannel>
    </ra:OperatingSubGHzChannel>
    <ra:ScanTrigger>SMHANFormation</ra:ScanTrigger>
  </ra:LogEntry>
  <ra:LogEntry>
    <ra:Timestamp>2017-01-20T17:25:18.00</ra:Timestamp>
    <ra:EventCode>8F26</ra:EventCode>
    <ra:EventDescription>Sub GHz Channel Changed</ra:EventDescription>
    <ra:OperatingSubGHzChannel>
      <ra:OperatingLowerBandSubGHzChannel>
        <ra:Channel45/>
      </ra:OperatingLowerBandSubGHzChannel>
    </ra:OperatingSubGHzChannel>
    <ra:ScanTrigger>GSMERequest</ra:ScanTrigger>
  </ra:LogEntry>
</ra:ReadCHFSubGHzChannelLogRsp>
```

**Figure 156 - Read CHF Sub GHz Channel Log Parse Response Example**