

# DCC User Gateway Interface Design Specification

## Annex - Service Request Definitions 8 – Device Estate Management Service

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## 8 Device Estate Management Service (8 – DEMS)

This section sets out the full content of the DCC Device Estate 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	DeviceEstateManagement	Service Id	8
Service Objective	To allow a DCC Service User to manage a device within the DCC estate		
Business Context Statement	The DCC Service User requires a device to be commissioned, decommissioned, joined, un-joined, moved in or out of the DCC estate or to confirm information held within the DCC for a specific device		
User Roles	<p>The following user roles have access to the list of service requests which make up the Device Estate Management Service:</p> <ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Electricity Export Supplier (EES)</li> <li>Gas Import Supplier (GIS)</li> <li>Supplier Nominated Agent (SNA)</li> <li>Electricity Network Operator (ENO)</li> <li>Gas Network Operator (GNO)</li> <li>Other User (OU)</li> </ul>		

**Table 1 Overview of Device Estate Management Service**

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

Service Reference	Service Reference Variant	Name	Business Target ID
8.1	8.1.1	Commission Device	ESME GSME
8.2	8.2	Read Inventory	DSP Access Control Broker
8.3	8.3	Decommission Device	DSP Access Control Broker
8.4	8.4	Update Inventory	DSP Access Control Broker
8.5	8.5	Service Opt Out	ESME GSME HCALCS PPMID
8.6	8.6	Service Opt In	DSP Access Control Broker

Service Reference	Service Reference Variant	Name	Business Target ID
8.7	8.7.1	Join Service (Critical)	ESME GSME HCALCS (N/A to SMETS1)
8.7	8.7.2	Join Service (Non-Critical)	ESME GSME GPF PPMID
8.8	8.8.1	Unjoin Service (Critical)	ESME GSME HCALCS (N/A to SMETS1)
8.8	8.8.2	Unjoin Service (Non-Critical)	ESME GSME GPF PPMID
8.9	8.9	Read Device Log	SMETS2 or later: ESME GSME CHF GPF HCALCS PPMID SMETS1: CHF
8.11	8.11	Update HAN Device Log	CHF
8.12	8.12.1	Restore HAN Device Log	CHF
8.12	8.12.2	Restore Gas Proxy Function Device Log	GPF
8.13	8.13	Return Local Command Response	DSP Access Control Broker
8.14	8.14.1	Communications Hub Status Update- Install Success	DSP Access Control Broker
8.14	8.14.2	Communications Hub Status Update - Install No SM WAN	DSP Access Control Broker
8.14	8.14.3	Communications Hub Status Update. – Fault Return	DSP Access Control Broker

Service Reference	Service Reference Variant	Name	Business Target ID
8.14	8.14.4	Communications Hub Status Update – No Fault Return	DSP Access Control Broker

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

For each of the DEMS 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).

## 8.1 Commission Device (8.1)

This Service Request maps to one Electricity and one Gas GBCS Use Case.

### 8.1.1 Commission Device (8.1.1)

Service Request Name	CommissionDevice
Service Reference	8.1
Service Request Variant Name	CommissionDevice(SynchroniseClock)
Service Reference Variant	8.1.1
Service Request Objective	To activate and configure a Meter for use with the DCC
Business Context Statement	The DCC Service User requires a specified Meter to be immediately commissioned and configured, e.g. following the installation of a new smart meter.
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>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. This Service Request has to be sent before any other post-Installation Service Requests. A successful Device Response triggers the change of Device status to Commissioned in the Smart Metering Inventory. The Meter functionality is identical to that provided by the GBCS UC mapping to Service Reference 6.11 – Synchronise Clock (see Annex section 6.11)</li> <li>2. This Service Request includes the Supplier's current date-time and a tolerance in seconds. The setting of these data item has to take into account: <ul 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> </ul> </li> <li>3. A successful completion of this Service Request results in the ESME / GSME Device Status being set to 'Commissioned' in the Smart Metering Inventory (this action is carried out before the Service Response is generated). DCC Data Systems check the "MessageSuccess" attribute in the Response to determine "successful completion" and not the individual ElecClockTimeStatus or GasClockTimeStatus values received from the device within the GBCS response.</li> <li>4. For Gas a Command response indicates successful execution of the Command</li> <li>5. Pre Condition - The Device Status of the CHF which Device Log contains the Meter ID must be 'Commissioned'.</li> <li>6. Post Condition – The DCC Service Users should also send Service Request 6.20.1 – Set Device Configuration (Import MPxN) and / or Service Request 6.20.2 – Set Device Configuration (Export MPAN) as appropriate upon successful commissioning of an ESME or GSME to set the MPxN value for display purposes on the Device. See Section 6.20.</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)

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. Service Request 6.20.1 and Service Request 6.20.2 are not supported for SMETS1 Devices

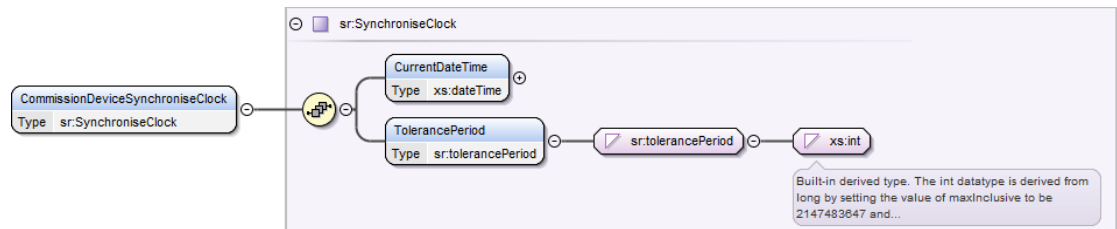
**Table 3 Commission Device Service Request**

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).

### 8.1.1.1 Service Request

#### 8.1.1.1.1 Format

The 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 CommissionDeviceSynchroniseClock XML element defines this Service Request and it contains the Supplier Current Date Time and the Tolerance Period in seconds.



**Figure 1 Commission Device Service Request Structure**

#### 8.1.1.1.2 Specific Data Items Definition

See Annex section 6.11.1.2 for details.

#### 8.1.1.1.3 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	No	No
SMETS1	No	Yes	No	No	No

**Table 4 Commission Device Modes of Operation**

#### 8.1.1.1.4 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	No	No	No
SMETS1	No	No	No	Yes	No	No	No	No

**Table 5 Commission Device Command Variant Values**

#### 8.1.1.1.5 Validation

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

#### 8.1.1.1.6 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:

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

**Figure 2 Commission Device Transform Service Request (Body) Format**

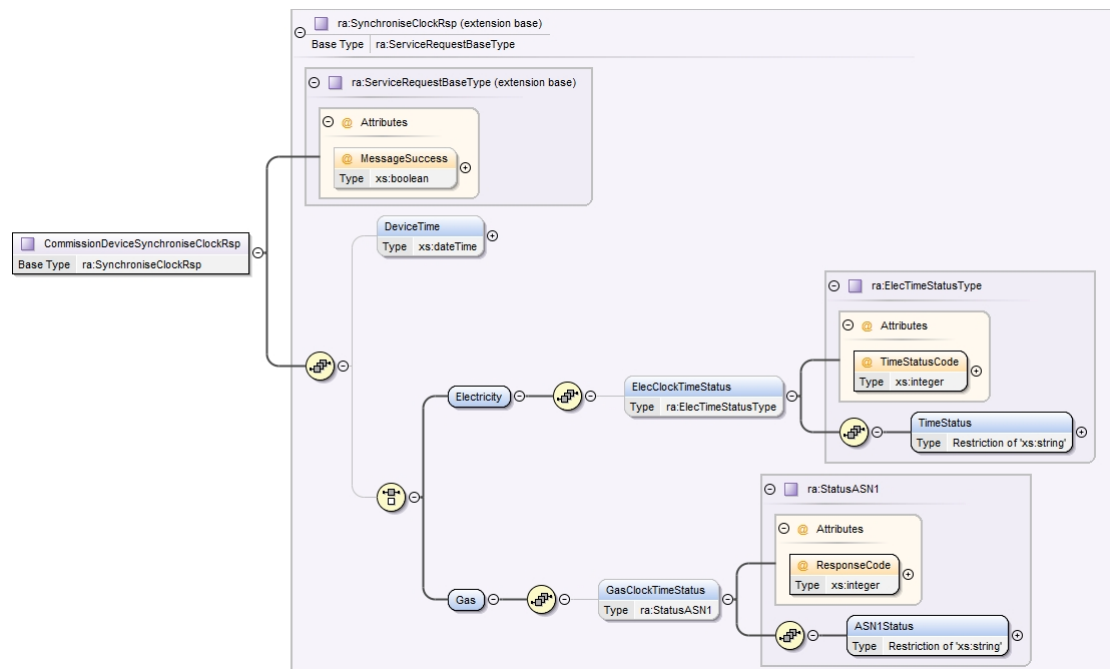
#### 8.1.1.2 Responses

- The response messages for a “Commission 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
  - Parse Output / SMETS1 Response

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

##### 8.1.1.2.1 Parse Output / SMETS1 Response Format

##### 8.1.1.2.1.1 Format - CommissionDeviceSynchroniseClockRsp



**Figure 3 - Commission Device Parse Response / SMETS1 Response Format**

#### 8.1.1.2.1.2 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 6 - Commission Device Parse/SMETS1 Response Header Data Items**

#### 8.1.1.2.1.3 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 = 25) 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

Table 7 - Commission Device Parse Response / SMETS1 Response Body Data Items

#### 8.1.1.2.1.4 Sample Response

```
<ra:CommissionDeviceSynchroniseClockRsp 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:CommissionDeviceSynchroniseClockRsp>
```

Figure 4 – Commission Device Parse Response Sample

## 8.1.2 Section 8.1.2

This section has been intentionally left blank as there is no Service Reference 8.1.2.

## 8.2 Read Inventory (8.2)

Service Request Name	ReadInventory
Service Reference	8.2
Service Request Variant Name	ReadInventory
Service Reference Variant	8.2
Service Request Objective	To confirm the data held within the DCC Smart Metering Inventory for a specified Device Id
Business Context Statement	The DCC Service User requires a set of data for a specified Smart Metering System (based on a UPRN / End Point Id / Device ID / Property Filter) from the DCC Smart Metering Inventory.

<b>User Role Access</b>	<ul style="list-style-type: none"> <li>• Electricity Import Supplier (EIS)</li> <li>• Electricity Export Supplier (EES)</li> <li>• Gas Import Supplier (GIS)</li> <li>• Supplier Nominated Agent (SNA)</li> <li>• Electricity Network Operator (ENO)</li> <li>• Gas Network Operator (GNO)</li> <li>• Other User (OU)</li> </ul>
<b>Security Classification</b>	<p>Non-critical and non-sensitive: GBCS XREF: Not applicable</p>
<b>Service Request Narrative (SMETS2 or later)</b>	<ol style="list-style-type: none"> <li>1. This Service Request reads Smart Metering Inventory data for the premises or Device identified by the search criteria. The response will contain all the Devices associated to the premises or Device. Note that Devices in a 'Pending' Status won't be associated to anything, except for the CHF and GPF which will always be associated to each other.</li> <li>2. A Device is associated / disassociated with a property (premises) via the relationship established between ESME / GSME and their MPxN(s) in SR 8.11 – Update HAN Device Log (see section 8.11) or because of the use of SR 8.14.2 Communications Hub Status Update - Install No SM WAN.</li> <li>3. Note that in cases where address details are returned, but the Smart Metering Inventory does not hold direct, distinct address data for the type of Device in question: <ol style="list-style-type: none"> <li>a. For Communications Hubs where separate address information is held for the Communications Hub Function and the Gas Proxy Function, if the address fields differ, both will be displayed. The address for the Communications Hub Function will be determined from the first Electricity Smart Meter (or Gas Smart Meter if no Electricity Smart Meter is present), and the address for the Gas proxy Function will be determined from the Gas Smart Meter (or first Electricity Smart Meter if no Gas Smart Meter is present).</li> <li>b. For Devices for which address data is not held, the address data shown will be that of the first Electricity Smart Meter for the Smart Metering System of which the Device in question is a member or the Gas Smart Meter if no Electricity Smart Meter is present.</li> <li>c. Note that the first Electricity Smart Meter is that with the earliest Commissioned Date and the address to be displayed is that of its associated Primary Import MPAN.</li> </ol> </li> <li>4. From DUIS Version 2.0 onwards, this Service Request returns <ol style="list-style-type: none"> <li>a. The Device GBCS Version, wherever the Device Type, Device Manufacturer and Firmware Version are included in the Certified Products List</li> <li>b. The HAN Variant of Device Type CHF</li> </ol> </li> </ol>

	<p>5. New combinations of ESME Variant were introduced to the DUIS schema in DUIS v4.0. If a Service Request 8.2 is sent using an earlier version of DUIS where the Device has an ESME Variant introduced in DUIS v4.0 and GBCS v4.0, the ESME Variant cannot be returned as it will not be present in a DUIS schema older than DUIS v4.0. In this case any parts of the ESME Variant not in the XML schema will be omitted from the Service Response, e.g. if the combination in the Inventory is "AG" and the Service Request was formed using DUIS v3.0, then just "A" will be returned since G will not be recognised in the DUIS v3.0 XML schema.</p>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	N/A	N/A
GBCS Use Case	N/A	N/A
GBCS Use Case Name	N/A	N/A
SMETS1 Applicability	Yes for ESME, GSME, CHF, GPF, PPMID, IHD and CAD	
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>Valid Device Types: ESME, GSME, CHF, GPF, PPMID, IHD, CAD</li> <li>From DUIS Version 3.0 onwards, where applicable, this Service Request returns the SMETS1 Service Provider associated with the Device</li> <li>ESME Variants F and G and associated combinations, which were introduced in DUIS v4.0, are not applicable to SMETS1.</li> </ol>	

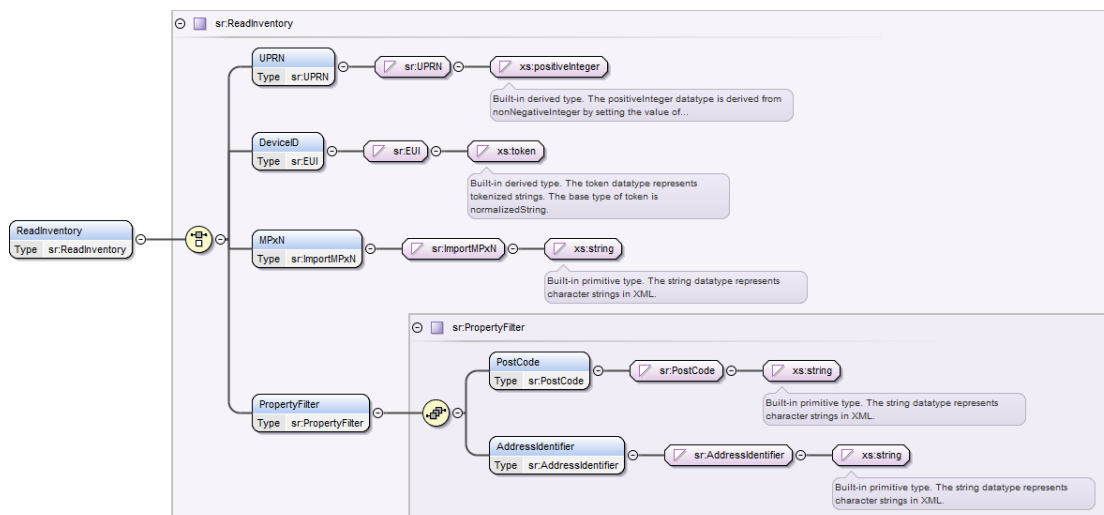
**Table 8 Read Inventory Service Request**

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).

## 8.2.1 Service Request

### 8.2.1.1 Format

The 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 ReadInventory XML element defines this Service Request and contains the UPRN, an MPxN or a Property Filter that identifies the Device or Property (premises) or a Device ID that identifies the Device for which details are required.



**Figure 5 Read Inventory Service Request Structure**

### 8.2.1.2 Specific Data Items Definition

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

Data Item	Description / Valid Set	Type	Mandatory <sup>1</sup>	Default	Units	Sensitivity
UPRN	Unique Property Reference Number	sr:UPRN (Restriction of xs:positiveInteger (totalDigits = 12))	No	None	N/A	Non-Sensitive
DeviceID	Device ID of a Device in the Smart Metering Inventory	sr:EUI (see Annex section 17)	No	None	N/A	Non-Sensitive
MPxN	MPAN or MPRN associated to a Device in the premises	ImportMPxN (Restriction of xs:string (minLength = 1 maxLength = 13))	No	None	N/A	Non-Sensitive
PropertyFilter	PostCode and Address Identifier that uniquely identify an address	sr:PropertyFilter (see section 8.2.1.3)	No	None	N/A	Non-Sensitive

**Table 9 Read Inventory Service Request Data Items**

<sup>1</sup> The Request is a Choice of one of these Data Items

### 8.2.1.3 PropertyFilter Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
PostCode	Postcode of Metering Point This search criteria is case insensitive	sr:PostCode (Restriction of xs:string (minLength = 6 maxLength = 8))	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
AddressIdentifier	Address Identifier (house number or house name), that combined with the Postcode, allows the identification of the premises This search criteria is case insensitive	sr:AddressIdentifier (Restriction of xs:string (maxLength = 30))	Yes	None	N/A	Non-Sensitive

Table 10 Read Inventory Service Request – PropertyFilter Data Items

#### 8.2.1.4 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	No	Yes	No	No
SMETS1	No	No	Yes	No	No

Table 11 Read Inventory Modes of Operation

#### 8.2.1.5 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	No	No	No	No	No	No	No	Yes
SMETS1	No	No	No	No	No	No	No	Yes

Table 12 Read Inventory Command Variant Values

#### 8.2.1.6 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 Device ID existence validation):

Validation Check	Process	Response Code
Does the Service Request identify a single Premise?	If the Service Request doesn't include a Device ID, check that it identifies a single Premise	E080201
Is there at least one Device associated with the Premises?	If the Service Request doesn't include a Device ID, check that the identified Premises are associated with at least one Device	E080202

Table 13 Read Inventory Service Request Validation

Note that this Service Request is available on the basis of Eligible User Role (rather than a User's status as an Eligible User in respect of a particular Smart Metering System or Device). In other words, the generic authorisation check associated to E4 is N/A. The generic authorisation check associated to E5 is N/A either. See Main Document of this documentation set section 7.4

### 8.2.1.7 Sample Request

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

```
<ReadInventory>  
  <DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>  
</ReadInventory>
```

Figure 6 Read Inventory Service Request (Body) Format

## 8.2.2 Responses

The response messages for a "Read Inventory" request follow the generic format for all "DCC Only" responses that include specific data in the response.

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

### 8.2.2.1 Service Response (from DCC)

Applicable to cases where the "Read Inventory" Request is successfully read and its details returned to the DCC Service User.

#### 8.2.2.1.1 Format

This Service Request synchronous response is defined in the XSD ResponseMessage DSPInventory XML element, which contains the DSP Inventory details applicable to a single premises or Device.

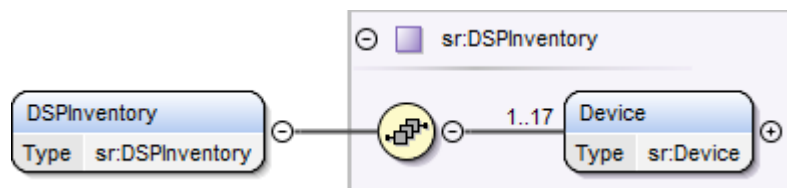
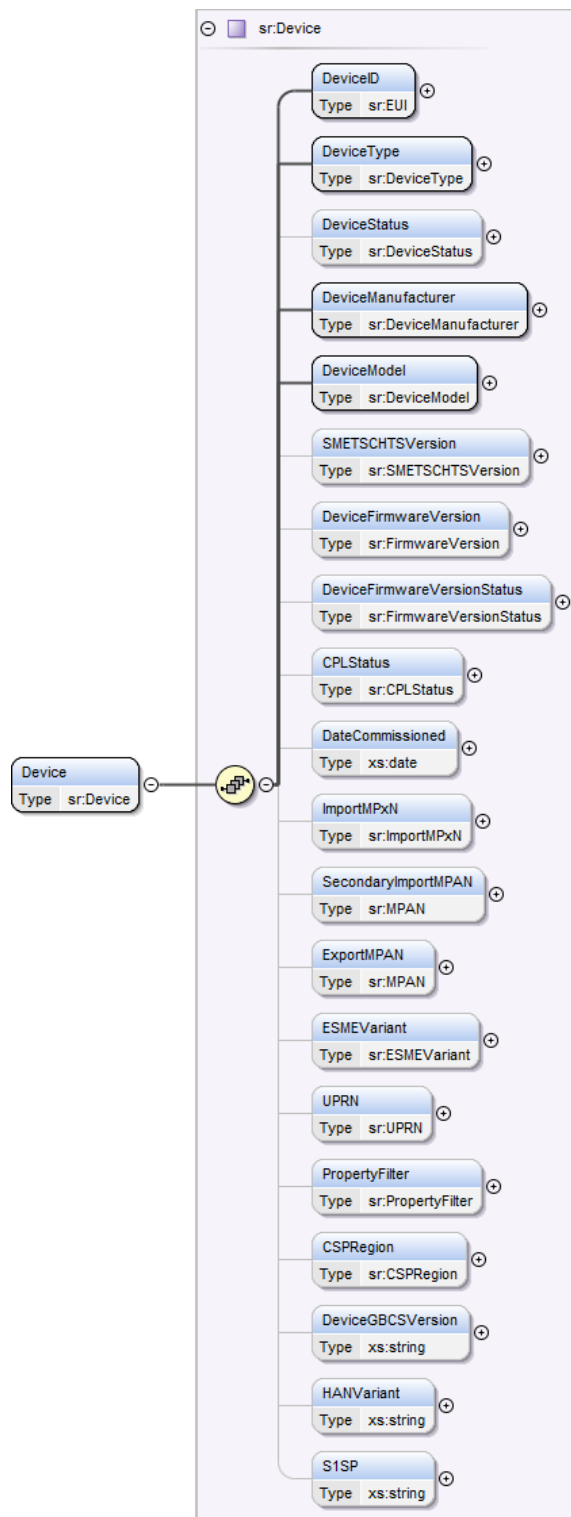


Figure 7 Read Inventory Service Response (from DCC) Structure



**Figure 8 Read Inventory Service Response (from DCC) – Device Structure**

#### 8.2.2.1.2 Specific Data Items

Returned if the DCC Data Items successfully read the Inventory in the Request.

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
Device		sr:Device	Yes <sup>1</sup>	None	N/A	Non-Sensitive
Per Device (complex type sr:Device) found :						
DeviceID	Device ID of a Device in the Smart Metering Inventory	sr:EUI (see Annex section 17)	Yes	None	N/A	Non-Sensitive
DeviceType	The Type of device Valid set: <ul style="list-style-type: none"> <li>ESME</li> <li>GSME</li> <li>GPF</li> <li>CHF</li> <li>HCALCS<sup>11</sup></li> <li>PPMID</li> <li>IHD</li> <li>CAD</li> </ul>	sr:DeviceType (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive
DeviceStatus <sup>2</sup>	An indicator giving the status of the device Valid set: <ul style="list-style-type: none"> <li>Pending</li> <li>Whitelisted<sup>3</sup></li> <li>InstalledNotCommissioned</li> <li>Commissioned</li> <li>Decommissioned</li> <li>Withdrawn<sup>11</sup></li> <li>Suspended</li> <li>Recovery<sup>11</sup></li> <li>Recovered<sup>11</sup></li> </ul>	sr:DeviceStatus (Restriction of xs:string (Enumeration))	Device Type = IHD, CAD: N/A Otherwise: Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DeviceManufacturer	<p>The name of the Device's manufacturer</p> <p>With the exception of IHD and CAD:</p> <ul style="list-style-type: none"> <li>The Device Manufacturer is the &lt;device_model_manufacturer_identifier&gt; from the CPL and presented in the format XXXX where each X is one of the characters 0 to 9 or A to F</li> <li>This data item matches the value on the CPL (excluding the colon separator between octet values)</li> </ul> <p>For IHD and CAD this data item is free text</p>	<p>sr:DeviceManufacturer (Restriction of xs:string (maxLength = 30))</p>	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DeviceModel	<p>The specific model of the device, as used by the manufacturer</p> <p>With the exception of IHD and CAD:</p> <ul style="list-style-type: none"> <li>The Device Model is the concatenation of &lt;device_model.model_identifier&gt;&lt;device_model.hardware_version.version&gt;&lt;device_model.hardware_version.revision&gt; from the CPL and presented in the format XXXXXXXX where each X is one of the characters 0 to 9 or A to F</li> </ul> <p>Where:</p> <ul style="list-style-type: none"> <li>the first 4 characters are the model identifier</li> <li>the next 2 characters are the hardware version.version</li> <li>the final 2 characters are the hardware version.revision</li> <li>This data item matches the value on the CPL (excluding the colon separator between octet values)</li> </ul> <p>For IHD and CAD this data item is free text</p>	sr:DeviceModel (Restriction of xs:string (maxLength = 30))	Yes	None	N/A	Non-Sensitive
SMETSCHTSVersion	<p>The version of SMETS or CHTS that the Device complies with. This should align with the CPL version, for Device Types recorded on the CPL</p>	sr:SMETSCHTSVersion (Restriction of xs:string (minLength = 1, maxLength = 20))	Device Type = CAD: N/A Otherwise: Yes	None	N/A	Non-Sensitive
DeviceFirmwareVersion	<p>The operational version of Firmware of the Device.</p> <p>The Firmware version as held in the CPL and presented in the format XXXXXXXX where each X is one of the characters 0 to 9 or A to F.</p> <p>This data item matches the value on the CPL (excluding the colon separator between octet values)</p>	Restriction of xs:string (minLength = 1, maxLength = 8)	Device includes Firmware <sup>9</sup> : Yes Otherwise: N/A	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DeviceFirmwareVersionStatus <sup>8</sup>	The status of the Firmware Version. Valid set: <ul style="list-style-type: none"> <li>Active</li> <li>Cancelled</li> <li>Expired</li> <li>Withdrawn</li> </ul>	sr:FirmwareVersionStatus (Restriction of xs:string Enumeration))	Device includes Firmware <sup>9</sup> : Yes Otherwise: N/A	None	N/A	Non-Sensitive
CPLStatus <sup>8</sup>	The CPL Assurance Certificate Status. Valid set: <ul style="list-style-type: none"> <li>Active</li> <li>Cancelled</li> <li>Expired</li> <li>Withdrawn</li> </ul>	sr:CPLStatus (Restriction of xs:string Enumeration))	Device includes Firmware <sup>9</sup> : Yes Otherwise: N/A	None	N/A	Non-Sensitive
DateCommissioned	Where applicable, the date when the Device was commissioned	xs:date	Device Type = IHD, CAD: N/A Device has been commissioned: Yes Otherwise: No	None	UTC Date	Non-Sensitive
ImportMPxN	<i>The reference number identifying an Import electricity or a gas metering point</i>	sr:ImportMPxN (Restriction of xs:string (minLength = 1, maxLength = 13))	Device Type = ESME, GSME: No <sup>6</sup> Otherwise: N/A	None	N/A	Non-Sensitive
SecondaryImportMPAN <sup>11</sup>	The reference number identifying a Twin Element Import electricity secondary metering point	sr:MPAN (Restriction of xs:string (minLength = 13, maxLength = 13))	Device Type = ESME and ESME Variant = B: No <sup>6</sup> Otherwise: N/A	None	N/A	Non-Sensitive
ExportMPAN	The reference number identifying an Export electricity metering point	sr:MPAN (Restriction of xs:string (minLength = 13, maxLength = 13))	Device Type = ESME includes Export capability: No <sup>6</sup> Otherwise: N/A	None	N/A	Non-Sensitive
ESMEVariant	Electricity Smart Metering Equipment Variant. Valid set:	sr:ESMEVariant Restriction of xs:string (Enumeration)	DeviceType = ESME: Yes Otherwise:	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
	<ul style="list-style-type: none"> <li>A. Single Element</li> <li>B. Twin Element<sup>11</sup></li> <li>C. Polyphase<sup>11</sup></li> <li>AD. Single Element with ALCS<sup>11</sup></li> <li>BD. Twin Element with ALCS<sup>11</sup></li> <li>CD. Polyphase with ALCS<sup>11</sup></li> <li>ADE. Single Element with ALCS and Boost Function<sup>11</sup></li> <li>BDE. Twin Element with ALCS and Boost Function<sup>11</sup></li> <li>CDE. Polyphase with ALCS and Boost Function<sup>11</sup></li> <li>ADF. Single Element with ALCS and APC<sup>11, 13, 14</sup></li> <li>BDF. Twin Element with ALCS and APC<sup>11, 13, 14</sup></li> <li>CDF. Polyphase with ALCS and APC<sup>11, 13, 14</sup></li> <li>ADEF. Single Element with ALCS, Boost Function and APC<sup>11, 13, 14</sup></li> <li>BDEF. Twin Element with ALCS, Boost Function and APC<sup>11, 13, 14</sup></li> <li>CDEF. Polyphase with ALCS, Boost Function and APC<sup>11, 13, 14</sup></li> <li>ADG Single Element with ALCS and SAPC<sup>11, 13, 14</sup></li> <li>ADEG. Single Element with ALCS, Boost Function and SAPC<sup>11, 13, 14</sup></li> <li>AF. Single Element with APC<sup>11, 13, 14</sup></li> <li>BF. Twin Element with APC<sup>11, 13, 14</sup></li> <li>CF. Polyphase with APC<sup>11, 13, 14</sup></li> </ul>		N/A			

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
	<ul style="list-style-type: none"> <li>AEF. Single Element with Boost Function and APC<sup>11, 13, 14</sup></li> <li>BEF. Twin Element with Boost Function and APC<sup>11, 13, 14</sup></li> <li>CEF. Polyphase with Boost Function and APC<sup>11, 13, 14</sup></li> <li>AG. Single Element with SAPC<sup>11, 13, 14</sup></li> <li>AEG. Single Element with Boost Function and SAPC<sup>11, 13, 14</sup></li> </ul>					
UPRN	Unique Property Reference Number	sr:UPRN (Restriction of xs:positiveInteger (totalDigits = 12))	No	None	N/A	Non-Sensitive
PropertyFilter	PostCode and Address Identifier that uniquely identify an address	sr:PropertyFilter (see section 8.2.1.3)	No	None	N/A	Non-Sensitive
CSPRegion	<p>The CSP Region the Smart Metering System is associated with. "SMETS1" is used where the HAN is based on a SMETS1 CHF.</p> <p>Valid set:</p> <ul style="list-style-type: none"> <li>North</li> <li>Central</li> <li>South</li> <li>Unknown<sup>7</sup></li> <li>SMETS1</li> </ul>	sr:CSPRegion (Restriction of xs:string (Enumeration))	No	None	N/A	Non-Sensitive
DeviceGBCSVersion	<p>The operational version of GBCS of the Device.</p> <p>The version number format will align with the CPL, For example 1.0, 2.0. Note that the version number for a SMETS1 Device is 0.0</p> <p>DeviceGBCSVersion is introduced in DUIS Version 2.0</p>	xs:string	Device includes Firmware <sup>9</sup> : Yes Otherwise: N/A	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
HANVariant <sup>10</sup>	The Device's HAN Variant. Valid Set: <ul style="list-style-type: none"> <li>Single Band (2.4GHz only) <sup>11</sup></li> <li>Dual Band (868MHz and 2.4GHz) <sup>11</sup></li> <li>Unknown HAN Variant</li> </ul> HANVariant is introduced in DUIS Version 2.0	xs:string	DeviceType = CHF: Yes Otherwise: N/A	None	N/A	Non-Sensitive
S1SP <sup>12</sup>	Identifier of the SMETS1 Service Provider the Smart Metering System is associated with  S1SP is introduced in DUIS Version 3.0 and it is only applicable to SMETS1 Smart Metering Systems Valid set: <ul style="list-style-type: none"> <li>1SP (Instant Energy)</li> <li>2SP (Trilliant)</li> <li>3SP (Secure Meters)</li> </ul>	xs:string	No	None	N/A	Non-Sensitive

Table 14 Read Inventory Service Request Response Data Items

<sup>1</sup> Minimum 1 and maximum 17 Devices

<sup>2</sup> Device Status is not applicable to Type 2 Devices, i.e. IHD and CAD

<sup>3</sup> Not applicable to Communications Hub Function or Gas Proxy Function

<sup>6</sup> MPxN is applicable to the Device Type, but the association doesn't yet exist, e.g. because the Device Status is 'Pending' or the ESME Secondary Element or Export capability is not being used

<sup>7</sup> Applicable to a Pre-Notified Device that hasn't yet been assigned to an MPxN

<sup>8</sup> The status displayed in DeviceFirmwareVersionStatus and CPLStatus maps to the status on the Certified Product List as follows:

Certified Product List Status	DUGIDS Status
Current	Active
Removed	Cancelled
N/A	Expired (not currently used)
N/A	Withdrawn (not currently used)

Table 15 Certified Product List / DUGIDS Status mapping

<sup>9</sup> Firmware is included in ESME, GSME, CHF, GPF, PPMID and HCALCS and not included in IHD and CAD

<sup>10</sup> The CPL CHF Device Manufacturer and Device Model define its HAN Variant and the DCC Data Systems hold this relationship. When a CH is pre-notified to the DCC, its CHF HAN Variant is set based on its Device Manufacturer and Device Model

<sup>11</sup> N/A to SMETS1 Devices

<sup>12</sup> N/A to SMETS2 or later Devices

<sup>13</sup> N/A to Devices prior to GBCS v4.0

<sup>14</sup> Combination introduced in DUIS v4.0. This combination cannot be included in a response for a version of DUIS prior to DUIS v4.0, and in such cases invalid items will be omitted, e.g. if the combination in the Inventory is "AG" and the Service Request was formed using DUIS v3.0, then just "A" will be returned since G will not be recognised in the DUIS v3.0 XML schema

#### 8.2.2.1.3 Sample Responses

Sample responses are given in Annex Introduction Appendix 1. The specific information for this Service Request Response is as follows:

```
<ResponseMessage>
  <ServiceReference>8.2</ServiceReference>
  <ServiceReferenceVariant>8.2</ServiceReferenceVariant>
  <DSPInventory>
    <Device>
      <DeviceID>99-00-AA-BB-CC-DD-EE-AA</DeviceID>
      <DeviceType>CHF</DeviceType>
      <DeviceStatus>Commissioned</DeviceStatus>
      <DeviceManufacturer>CD04</DeviceManufacturer>
      <DeviceModel>B74F5E32</DeviceModel>
      <SMETSCHTSVersion>V1.46</SMETSCHTSVersion>
      <DeviceFirmwareVersion>1100EEFF</DeviceFirmwareVersion>
      <DeviceFirmwareVersionStatus>Active</DeviceFirmwareVersionStatus>
      <CPLStatus>Active</CPLStatus>
      <DateCommissioned>2014-08-10</DateCommissioned>
      <PropertyFilter>
        <PostCode>KT22 7LP</PostCode>
        <AddressIdentifier>17</AddressIdentifier>
      </PropertyFilter>
      <CSPRegion>South</CSPRegion>
      <DeviceGBCSVersion>2.0</DeviceGBCSVersion>
      <HANVariant>Dual Band (868MHz and 2.4GHz)</HANVariant>
    </Device>
    <Device>
      <DeviceID>99-00-AA-BB-CC-DD-EE-BB</DeviceID>
      <DeviceType>GPF</DeviceType>
      <DeviceStatus>InstalledNotCommissioned</DeviceStatus>
      <DeviceManufacturer>CD04</DeviceManufacturer>
      <DeviceModel>B74F5E32</DeviceModel>
      <SMETSCHTSVersion>V1.46</SMETSCHTSVersion>
      <DeviceFirmwareVersion>1100EEFF</DeviceFirmwareVersion>
      <DeviceFirmwareVersionStatus>Active</DeviceFirmwareVersionStatus>
      <CPLStatus>Active</CPLStatus>
      <PropertyFilter>
        <PostCode>KT22 7LP</PostCode>
        <AddressIdentifier>17</AddressIdentifier>
      </PropertyFilter>
      <CSPRegion>South</CSPRegion>
      <DeviceGBCSVersion>2.0</DeviceGBCSVersion>
    </Device>
    <Device>
      <DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
      <DeviceType>ESME</DeviceType>
      <DeviceStatus>Commissioned</DeviceStatus>
      <DeviceManufacturer>AB02</DeviceManufacturer>
      <DeviceModel>D7A50E04</DeviceModel>
      <SMETSCHTSVersion>V1.58</SMETSCHTSVersion>
      <DeviceFirmwareVersion>1100EEAB</DeviceFirmwareVersion>
      <DeviceFirmwareVersionStatus>Active</DeviceFirmwareVersionStatus>
      <CPLStatus>Active</CPLStatus>
      <DateCommissioned>2014-08-12</DateCommissioned>
      <ImportMPxN>1234567890123</ImportMPxN>
      <ESMEVariant>A</ESMEVariant>
      <PropertyFilter>
        <PostCode>KT22 7LP</PostCode>
        <AddressIdentifier>17</AddressIdentifier>
      </PropertyFilter>
      <CSPRegion>South</CSPRegion>
      <DeviceGBCSVersion>2.0</DeviceGBCSVersion>
    </Device>
  </DSPInventory>
</ResponseMessage>
```

Figure 9 Sample Read Inventory Service Response (from DCC) Format

### 8.2.2.2 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E080201	Failed Validation – No Premises identified	Error	The request doesn't uniquely identify a Premises
E080202	Failed Validation – No Devices identified	Error	The Premises don't contain any Devices

Table 16 Failed Read Inventory Service Request Response Codes

### 8.3 Decommission Device (8.3)

Service Request Name	DecommissionDevice
Service Reference	8.3
Service Request Variant Name	DecommissionDevice
Service Reference Variant	8.3
Service Request Objective	To update the status of a specified Device within the DCC Smart Metering Inventory to "Decommissioned" to reflect the status of the Device at the consumer premises.
Business Context Statement	The DCC Service User requires that a specified Device is recorded as decommissioned within the Smart Metering Inventory, e.g. to support physical removal of 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: Not applicable
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>This Service Request doesn't apply to: <ol style="list-style-type: none"> <li>Type 2 (IHD and CAD) Devices, because Device Status doesn't apply to them</li> <li>GPF, because when decommissioning a CHF, the associated GPF is automatically also decommissioned</li> </ol> </li> <li>For those Devices to which Device Status applies, this Service Request can be used to set the Device Status to 'Decommissioned' in all cases except if its current Status is one of the following: <ol style="list-style-type: none"> <li>'Decommissioned'</li> <li>'Pending'</li> <li>'Withdrawn'</li> </ol> <p>Note that this does mean that if a Device Status is 'Recovery' and the SMKI Recovery Process cannot be completed, then it is possible to decommission that Device via this Service Request</p> </li> </ol>

3. For all Device Types except CHF, on successful completion of the Service Request
  - a. All active DSP Schedules on that Device will be automatically deleted by the DCC Data Systems. For each deleted DSP Schedule a DCC Alert N6 will be sent to the DSP Schedule owner.
  - b. All Future Dated (DSP) requests for that Device not yet sent to the Device will be automatically deleted by the DCC Data Systems. For each cancelled request a DCC Alert N33 will be sent to the sender of the Future Dated request.
  - c. For Device Type ESME,
    - i. Disassociate the Device from any MPAN with which it is associated in the Smart Metering Inventory.
    - ii. Send DCC Alert N1 to the registered ENO and, if applicable, registered EES.
  - d. For Device Type GSME,
    - i. Disassociate the Device from any MPRN with which it is associated in the Smart Metering Inventory.
    - ii. Send DCC Alert N2 to the registered GNO.
4. For Device Type CHF, on successful completion of the Service Request
  - a. All active DSP Schedules on the associated GPF will be automatically deleted by the DCC Data Systems. For each deleted DSP Schedule a DCC Alert N6 will be sent to the DSP Schedule owner.
  - b. All Future Dated (DSP) requests for that CHF and its associated GPF not yet sent to the Device will be automatically deleted by the DCC Data Systems. For each cancelled request a DCC Alert N34 will be sent to the sender of the Future Dated request.
  - c. Set the Device Status of the associated GPF to 'Decommissioned' in the Smart Metering Inventory.
  - d. Send DCC Alert N9 to
    - All Responsible Import Suppliers for that CH function, other than the Responsible EIS / GIS that instigated the Decommissioning
    - Registered ENO
    - Registered GNO
5. A Device Status update of the Smart Metering Inventory is carried out before the Service Response is generated. The other actions detailed in points 3 and 4 above are post-processing steps after the Service Response has been sent to the User.

	6. Guidance note: DCC recommends that Suppliers decommission Devices as soon as possible after physical removal. After associating a Device with an MPxN, it is only possible to decommission the Device while the Supplier is still the registered Supplier for that MPxN, even if the Device is no longer physically present in the property relating to the MPxN. If the Supplier does not decommission the Device and there is a subsequent Change of Supplier for that MPxN, then the original Supplier will no longer be able to decommission the Device and resend the SR12.2 Pre-Notification Service Request in order to re-use the Device.	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	N/A	N/A
GBCS Use Case	N/A	N/A
GBCS Use Case Name	N/A	N/A
SMETS1 Applicability	Yes for ESME, GSME, CHF/GPF and PPMID	
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 Service Request will be forwarded to the relevant S1SP. If the S1SP rejects the request because of a validation condition then it will generate an S1SP Alert for sending to the Supplier; Note that if the Service Request has been accepted by the DCC Data Systems the Device Status in the SMI will be changed to Decommissioned, regardless of whether or not an S1SP validation error arises.</li> </ol>	

Table 17 Decommission 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).

## 8.3.1 Service Request

### 8.3.1.1 Format

The 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 DecommissionDevice XML element defines this Service Request and contains the Device ID of the Device to be decommissioned.

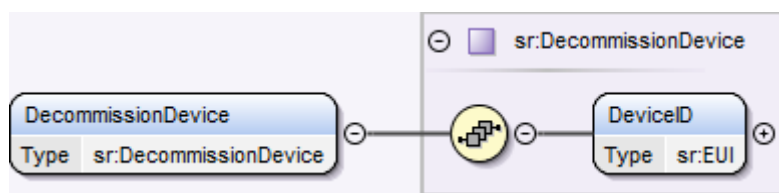


Figure 10 Decommission Device Service Request Structure

### 8.3.1.2 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
DeviceID	Device ID of the Device to be decommissioned	sr:EUI (see Annex section 17)	Yes	None	N/A	Non-Sensitive

Table 18 Decommission Device Service Request Data Items

### 8.3.1.3 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	No	Yes	No	No
SMETS1	No	No	Yes	No	No

Table 19 Decommission Device Modes of Operation

### 8.3.1.4 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	No	No	No	No	Yes
SMETS1	No	No	No	No	No	No	No	Yes

Table 20 Decommission Device Command Variant Values

### 8.3.1.5 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 Device ID existence validation):

Validation Check	Process	Response Code
Is the Device's current Status valid?	Check that the Device Status is not one of: <ul style="list-style-type: none"> <li>'Decommissioned'</li> <li>'Pending'</li> <li>'Withdrawn'</li> </ul>	E080301
Is the Device Type valid?	Check that the Device Type is not GPF, IHD or CAD	E080302

Table 21 Decommission Device Service Request Validation

Note that the authorisation check associated with error code E4 is not carried out in the case where the Device Type is CHF and there is no associated Smart Meter.

### 8.3.1.6 Sample Request

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

```
<DecommissionDevice>  
<DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>  
</DecommissionDevice>
```

Figure 11 Decommission Device Service Request (Body) Format

### 8.3.2 Responses

The response messages for a “Decommission Device” request follow the generic format for all “DCC Only” responses that don’t include specific data in the response, the generic responses applicable to this request are;

- Acknowledgement

Sample responses are given in Annex Introduction Appendix 1.

#### 8.3.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E080301	Failed Validation – Invalid Device Status	Error	The Device Status is invalid
E080302	Failed Validation – Invalid Device Type	Error	The Device Type is invalid

Table 22 Failed Decommission Device Service Request Response Codes

## 8.4 Update Inventory (8.4)

Service Request Name	UpdateInventory
Service Reference	8.4
Service Request Variant Name	UpdateInventory
Service Reference Variant	8.4
Service Request Objective	To notify DCC of a change in the details of a Device held within the Smart Metering Inventory
Business Context Statement	The DCC Service User requires that a specified Device is recorded in the DCC Smart Metering Inventory with changes to details or update the status of a Device to a new status.

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>Supplier Nominated Agent (SNA)</li> <li>Electricity Network Operator (ENO)</li> <li>Gas Network Operator (GNO)</li> <li>Other User (OU)</li> </ul>
Security Classification	<p>Non-critical and non-sensitive</p> <p>:</p> <p>GBCS XREF: Not applicable</p>
Service Request Narrative	<p>This Service Request can be used by DCC Service Users to perform the following four functions;</p> <ol style="list-style-type: none"> <li>Update Device details within the Smart Metering Inventory provided via Pre-Notification <ol style="list-style-type: none"> <li>This functionality of the Service Request is available to all the Eligible User Roles associated with this Service Request.</li> <li>Only the DCC Service User who Pre-notified the Device details may update these device details <a href="#">whilst the Device has a status of 'Pending'</a>.</li> <li><a href="#">For Devices with Device Type ESME, the ESME Variant can be updated by the Registered Supplier Party for the MPAN associated with the Device if the Device has a status of 'Whitelisted', 'Installed Not Commissioned' or 'Commissioned'. The ESME Variant and other Device details can be updated by the User who originally added the Device to the Smart Metering Inventory whilst the Device has a status of 'Pending'.</a></li> <li>For <a href="#">all other</a> Devices that have Device Status values, only Devices in a status of 'Pending' can be updated.</li> <li>Type 2 (IHD and CAD) Devices can be updated at any time.</li> <li>Update most of the Device details that were initially provided to the DCC via Service Request 12.2 – Device Pre-notification (see Annex 12.2)</li> <li>It isn't possible to update a Device ID (including the GPF Device ID associated to a CHF). If it has been entered in error it has to be deleted via this Service Request and re-added via Service Request 12.2 – Device Pre-notification (see Annex 12.2).</li> <li>It isn't possible to update a Device Type. If it has been entered in error it has to be deleted via this Service Request and re-added via Service Request 12.2 – Device Pre-notification (see Annex 12.2).</li> <li>Any updates to the details shared between a CHF and a GPF will be applied to both. The Device ID in the Service Request has to be that of the CHF.</li> </ol> </li> <li>Delete Device details from the Smart Metering Inventory provided via Pre-Notification which have not been installed. <ol style="list-style-type: none"> <li>This functionality of the Service Request is available to all the Eligible User Roles associated with this Service Request.</li> </ol> </li> </ol>

- b. Only the DCC Service User who Pre-notified the Device details may delete these device details.
  - c. For Devices that have Device Status values, only Devices in a status of 'Pending' can be deleted.
  - d. Type 2 (IHD and CAD) Devices can be deleted at any time.
  - e. Deleting a CHF will also delete its associated GPF.
- 3. Update Device Status within the Smart Metering Inventory
  - a. This functionality of the Service Request is ONLY available to the Eligible User Roles of Electricity Import Supplier and Gas Import Supplier who are the Registered Supplier to the Device being updated.
  - b. Different options exist for which device Status values can be updated by DCC Service Users depending on Device type. Functionality allows,
    - i. Update the Device status for all Device Types, other than the CHF and the GPF and where the old and new status apply to the Device Type
      - 1. From 'Pending' to 'Installed Not Commissioned'
      - 2. From 'Whitelisted' to 'Pending'
  - c. Update the Device status for a CHF (and its associated GPF)
    - i. To support the Install & Leave process and / or Install & Commission after Decommissioning or Withdrawal:
      - 1. From 'Pending' to 'Installed Not Commissioned' (GPF from 'Pending' to 'Installed' Not Commissioned')
      - 2. From 'Installed Not Commissioned' to 'Commissioned' (GPF no status transition)
      - 3. From 'Pending' to 'Commissioned' (GPF from 'Pending' to 'Installed' Not Commissioned')
    - ii. From 'Commissioned' to 'Withdrawn' (GPF from 'Commissioned' to 'Withdrawn' or from 'Installed Not Commissioned' to 'Withdrawn'). This is the equivalent of Service Request 8.5 – Service Opt Out (see section 8.5) for other Device Types. On successful completion of the Service Request, the DCC Data Systems will:
      - 1. automatically delete all active DSP Schedules on all Devices in the CHF Whitelist. For each deleted DSP Schedule a DCC Alert N37 will be sent to the DCC Service User that owned it.
      - 2. automatically cancel all Future Dated (DSP) requests not yet sent to the Device for that CHF and all the Devices in its Whitelist. For each cancelled request a

DCC Alert N36 will be sent to the sender of the Future Dated request.

4. Update MPxN associated with the Device within the Smart Metering Inventory
  - a. This functionality allows the registered Electricity or Gas Supplier to:
    - i. Update the MPxN associated with that Device (initially set as part of the SR8.11 Service Request processing). The registered Supplier can only update the MPxN value to another for which they are also the registered Supplier.
    - ii. Associate an MPxN with an ESME or GSME in a status of "Whitelisted", "Installed Not Commissioned" or "Commissioned" if such an association doesn't exist. The Supplier can only add the association to an MPxN value for which they are the registered Supplier
  - b. The new MPxN must be consistent with the type of Device, for example if the Secondary MPAN is updated then the device must be a twin element ESME.
  - c. ONLY a single MPxN association can be changed / added per Service Request call.
  - d. If the MPxN is successfully updated in the Smart Metering Inventory, then a DCC Alert N16 is sent to the Meter's Registered Network Operator.
5. Updates to the Smart Metering Inventory are carried out before the Service Response is generated. The other actions detailed above are post-processing steps after the Service Response has been sent to the User.
6. New combinations of ESME Variant were introduced to the DUIS schema in DUIS v4.0. If a Service Request 8.4 is sent using an earlier version of DUIS where the Device has an ESME Variant introduced in DUIS v4.0 and GBCS v4.0, the ESME Variant cannot be included as it will not be present in a DUIS schema older than DUIS v4.0.

Additional Information

1. Where a DCC Service User wishes to decommission an ESME or GSME Device and re-use the ESME/GSME Device at another premise then the DCC Service User must not use the Update Inventory Service Request to perform this activity. Instead, a Service Request 8.3 Decommission Device (see section 8.3) should be used to update the Device Status to 'Decommissioned', the ESME/GSME Device then needs to be returned to a triage facility, followed by a subsequent Service Request 12.2 Device Pre-notification (see section 12.2) to update the Device Status to 'Pending'. The ESME/GSME Device can then be commissioned as per normal process.

GBCS Cross Reference	Electricity	Gas
GBCS Message Code	N/A	N/A
GBCS Use Case	N/A	N/A
GBCS Use Case Name	N/A	N/A
SMETS1 Applicability	Yes for ESME, GSME, CHF/GPF, PPMID, IHD and CAD	
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. Device Status 'Withdrawn' and 'Recovered' do not apply to SMETS1 Devices.</li> <li>2. <a href="#">The ability to update ESMEVariant for a Device with Device Status other than Pending is not supported for SMETS1 Devices.</a></li> </ol>	

**Table 23 Update Inventory 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).

## 8.4.1 Service Request

### 8.4.1.1 Format

The 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 UpdateInventory XML element defines this Service Request and contains the Device ID and a choice of the Device Status to be updated, details to be updated, Device to be deleted or MPxN to be updated.

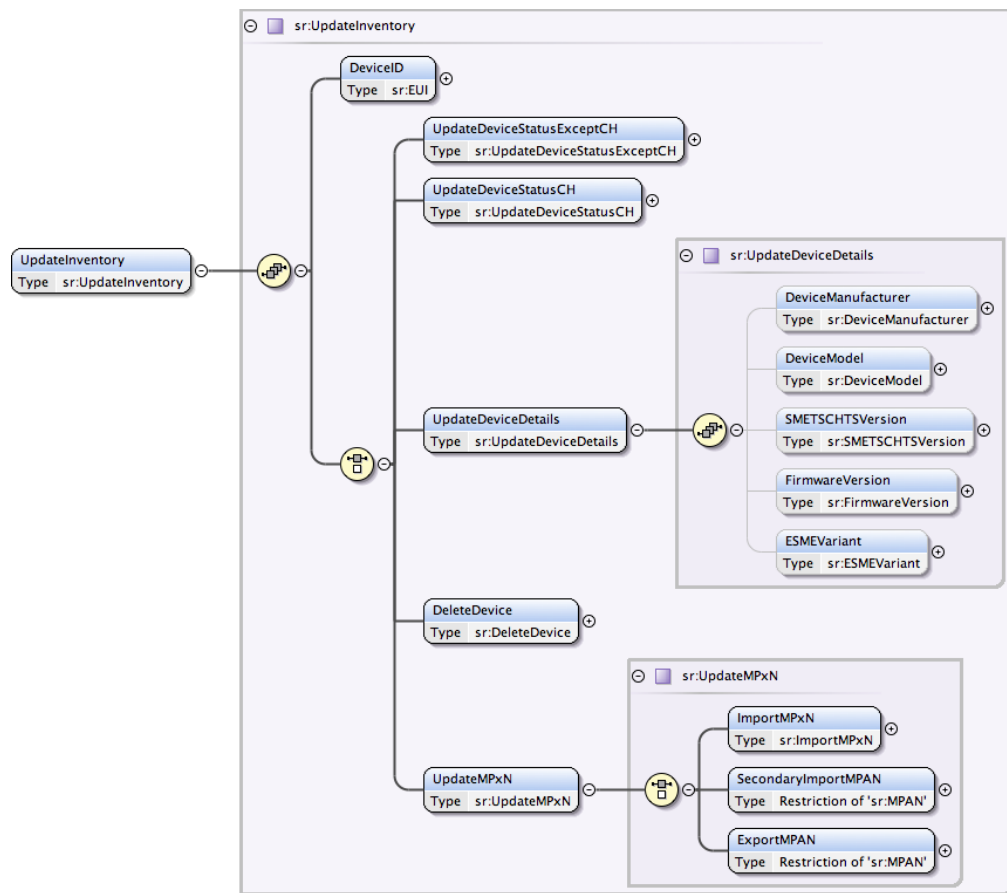


Figure 12 Update Inventory Service Request Structure

#### 8.4.1.2 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
DeviceID	Device ID of the Device to be updated (status or details) or deleted	sr:EUI (see Annex section 17)	Yes	None	N/A	Non-Sensitive
UpdateDeviceStatusExceptCH <sup>1</sup>	An indicator giving the status to be recorded for the Device Valid set: <ul style="list-style-type: none"> <li>Pending</li> <li>InstalledNotCommissioned</li> </ul>	sr:UpdateDeviceStatusExceptCH (Restriction of xs:string (Enumeration))	No <sup>3</sup>	None	N/A	Non-Sensitive
UpdateDeviceStatusCH <sup>4</sup>	An indicator giving the status to be recorded for the CHF and its associated GPF Valid set: <ul style="list-style-type: none"> <li>Commissioned</li> <li>InstalledNotCommissioned</li> <li>Withdrawn<sup>5</sup></li> </ul>	sr:UpdateDeviceStatusCH (Restriction of xs:string (Enumeration))	No <sup>3</sup>	None	N/A	Non-Sensitive
UpdateDeviceDetails	Details to be updated, for a Device in a status of 'Pending'	sr:UpdateDeviceDetails (see section 8.4.1.3)	No <sup>3</sup>	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DeleteDevice	Device, in a status of 'Pending, is to be deleted	N/A	No <sup>3</sup>	None	N/A	Non-Sensitive
UpdateMPxN	The MPxN to be associated with the device within the Smart Metering Inventory to be updated	sr:UpdateMPxN (see section 8.4.1.4)	No <sup>3</sup>	None	N/A	Non-Sensitive

**Table 24 Update Inventory Service Request Data Items**

<sup>1</sup> Not applicable to CHF, GPF or Type 2 Devices

<sup>3</sup> Choice, so one of these 5 elements is mandatory

<sup>4</sup> Only applicable to CHF (and indirectly to associated GPF)

<sup>5</sup> SMETS1 Devices are not expected to include this ESME variant

#### 8.4.1.3 UpdateDeviceDetails Specific Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory <sup>1</sup>	Default	Units	Sensitivity
DeviceManufacturer	<p>The name of the Device's manufacturer</p> <p>With the exception of IHD and CAD:</p> <ul style="list-style-type: none"> <li>The Device Manufacturer is the &lt;device_model_manufacturer_identifier&gt; from the CPL and presented in the format XXXX where each X is one of the characters 0 to 9 or A to F</li> <li>This data item must match the value on the CPL (excluding the colon separator between octet values) otherwise a validation error is raised, see E080409.</li> </ul> <p>For IHD and CAD this data item is free text</p>	sr:DeviceManufacturer (Restriction of xs:string (maxLength = 30))	No	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory <sup>1</sup>	Default	Units	Sensitivity
DeviceModel	<p>The specific model of the device, as used by the manufacturer</p> <p>With the exception of IHD and CAD:</p> <ul style="list-style-type: none"> <li>The Device Model is the concatenation of &lt;device_model.model_identifier&gt;&lt;device_model.hardware_version.version&gt;&lt;device_model.hardware_version.revision&gt; from the CPL and presented in the format XXXXXXXX where each X is one of the characters 0 to 9 or A to F</li> </ul> <p>Where:</p> <ul style="list-style-type: none"> <li>the first 4 characters are the model identifier</li> <li>the next 2 characters are the hardware version.version</li> <li>the final 2 characters are the hardware version.revision</li> <li>This data item must match the value on the CPL (excluding the colon separator between octet values) otherwise a validation error is raised, see E080409.</li> </ul> <p>For IHD and CAD this data item is free text</p>	sr:DeviceModel (Restriction of xs:string (maxLength = 30))	No	None	N/A	Non-Sensitive
SMETSCHTSVersion	The version of SMETS or CHTS that the Device complies with. This should align with the CPL version	sr:SMETSCHTSVersion (Restriction of xs:string (minLength = 1, maxLength = 20))	No	None	N/A	Non-Sensitive
FirmwareVersion	<p>The operational version of Firmware of the Device.</p> <p>The Firmware version as held in the CPL and presented in the format XXXXXXXX where each X is one of the characters 0 to 9 or A to F.</p> <p>This data item must match the value on the CPL (excluding the colon separator between octet values) otherwise a validation error is raised, see E080409.</p>	Restriction of xs:string (minLength = 1, maxLength = 8)	No	None	N/A	Non-Sensitive
ESMEVariant	<p>Electricity Smart Metering Equipment Variant.</p> <p>Valid set:</p> <ul style="list-style-type: none"> <li>A. Single Element</li> <li>B. Twin Element<sup>2</sup></li> <li>C. Polyphase<sup>2</sup></li> <li>AD. Single Element with ALCS<sup>2</sup></li> <li>BD. Twin Element with ALCS<sup>2</sup></li> <li>CD. Polyphase with ALCS<sup>2</sup></li> </ul>	sr:ESMEVariant Restriction of xs:string (Enumeration)	No	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory <sup>1</sup>	Default	Units	Sensitivity
	<ul style="list-style-type: none"> <li>ADE. Single Element with ALCS and Boost Function<sup>2</sup></li> <li>BDE. Twin Element with ALCS and Boost Function<sup>2</sup></li> <li>CDE. Polyphase with ALCS and Boost Function<sup>2</sup></li> <li>ADF. Single Element with ALCS and APC<sup>2, 3, 4</sup></li> <li>BDF. Twin Element with ALCS and APC<sup>2, 3, 4</sup></li> <li>CDF. Polyphase with ALCS and APC<sup>2, 3, 4</sup></li> <li>ADEF. Single Element with ALCS, Boost Function and APC<sup>2, 3, 4</sup></li> <li>BDEF. Twin Element with ALCS, Boost Function and APC<sup>2, 3, 4</sup></li> <li>CDEF. Polyphase with ALCS, Boost Function and APC<sup>2, 3, 4</sup></li> <li>ADG Single Element with ALCS and SAPC<sup>11, 13, 14</sup></li> <li>ADEG. Single Element with ALCS, Boost Function and SAPC<sup>11, 13, 14</sup></li> <li>AF. Single Element with APC<sup>2, 3, 4</sup></li> <li>BF. Twin Element with APC<sup>2, 3, 4</sup></li> <li>CF. Polyphase with APC<sup>2, 3, 4</sup></li> <li>AEF. Single Element with Boost Function and APC<sup>2, 3, 4</sup></li> <li>BEF. Twin Element with Boost Function and APC<sup>2, 3, 4</sup></li> <li>CEF. Polyphase with Boost Function and APC<sup>2, 3, 4</sup></li> <li>AG. Single Element with SAPC<sup>2, 3, 4</sup></li> <li>AEG. Single Element with Boost Function and SAPC<sup>2, 3, 4</sup></li> </ul> <p>See Annex 12 Table 12 for mapping between XML enumerated values and CPL values</p>					

**Table 25 Update Inventory Service Request – UpdateDeviceDetails Data Items**

<sup>1</sup> The UpdateDeviceDetails element must contain at least one data item

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

<sup>3</sup> N/A to Devices prior to GBCS v4.0

<sup>4</sup> Combination introduced in DUIS v4.0. This combination cannot be included in a request using a version of DUIS prior to DUIS v4.0

#### 8.4.1.4 UpdateMPxN Specific Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory <sup>1</sup>	Default	Units	Sensitivity
ImportMPxN	The Primary MPAN or MPRN for the device	sr:ImportMPxN (restriction on xs:String, minimum length = 1, maximum length = 13)	No	None	N/A	Non-Sensitive
SecondaryImportMPAN <sup>2</sup>	The Secondary MPAN for the device (only applicable to twin element meters)	sr:MPAN (restriction on xs:String, minimum length = 13, maximum length = 13)	No	None	N/A	Non-Sensitive
ExportMPAN	The Export MPAN for the device	sr:MPAN (restriction on xs:String, minimum length = 13, maximum length = 13)	No	None	N/A	Non-Sensitive

Table 26 Update Inventory Service Request – UpdateMPxN Data Items

<sup>1</sup> The UpdateMPxN element is a choice so it must contain one of these 3 elements

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

#### 8.4.1.5 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	No	No	Yes	No	No
SMETS1	No	No	Yes	No	No

Table 27 Update Inventory Modes of Operation

#### 8.4.1.6 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	No	No	No	No	Yes
SMETS1	No	No	No	No	No	No	No	Yes

Table 28 Update Inventory Command Variant Values

#### 8.4.1.7 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 Device ID existence validation):

Validation Check	Process	Response Code
Is the Device Status applicable to the Device Type?	Check that if the Request is to update the "Device Status Except CH", this Status is applicable to the Device Type	E080405

Validation Check	Process	Response Code
Is the Device Status transition for a non CHF Device valid?	Check that if the Request is to update the "Device Status Except CH", the Device Status transition is one of: <ul style="list-style-type: none"> <li>'Pending' to 'Installed Not Commissioned'</li> <li>'Whitelisted'<sup>4</sup> to 'Pending'</li> </ul>	E080406
Does the Device exist in the Smart Metering Inventory and does it have a valid status? <sup>1</sup>	<p><u>Check that if the Request is for Device to be deleted, the Device ID does exist in the Smart Metering Inventory and its status is 'Pending'</u></p> <p><u>(SMETS2 only) Check that if the Request is for Device to be updated, the Device ID does exist in the Smart Metering Inventory and its status is 'Pending', 'Whitelisted', 'Installed Not Commissioned' or 'Commissioned'</u></p> <p><u>(SMETS2 only) Check that if the Request is for Device to be updated, and its status is 'Whitelisted', 'Installed Not Commissioned' or 'Commissioned', only the ESME Variant is being updated.</u></p> <p><u>(SMETS1 only) Check that if the Request is for Device to be updated or deleted, the Device ID does exist in the Smart Metering Inventory and its status is 'Pending'</u></p>	E080407
Does the Request include details to be updated?	Check that if the Request is for Device to be updated at least one of the data items to be updated is included in the Request.	E080408
Is the Device valid as per the Certified Product List?	Check that if the Request is for Device to be updated, the Device Type (and first character of ESME Variant for ESME) / Manufacturer / Model / Firmware Version data resulting from the changes specified by the DCC User matches the DCC's list of equipment that has been approved for use (Certified Products List - CPL), if validation against certified products list is required for this Device Type	E080409
Is the DCC Service User authorised to execute the Service Request? <sup>2</sup>	<p>Check that:</p> <ul style="list-style-type: none"> <li><u>If the Request is to Delete the Device, check that the DCC Service User ID is the same that had added it to the DCC Data Systems</u></li> <li><u>If the Request is to Update Details and the Device is a Type 2 Device, check that the DCC Service User ID is the same that had added it to the DCC Data Systems.</u></li> <li><u>If the Request is to Update Details and the Device status is 'Pending', check that the DCC Service User ID is the same that had added it to the DCC Data Systems.</u></li> <li><u>(SMETS2 only) If the Request is to Update Details and the Device status is 'Whitelisted', 'Installed Not Commissioned' or 'Commissioned', check that the DCC Service User ID is the Responsible Supplier.</u></li> <li><u>If the Request is to Update Details / Delete the Device, check that the DCC Service User ID is the same that had added it to the DCC Data Systems</u></li> <li>If the Request is to Update the Device Status, check that the DCC Service User Role is EIS or GIS</li> <li>If the Request is to Update MPxN, check the DCC Service User is the Registered Supplier for the MPxN (currently associated with the Device where an association exists) which is to be updated<sup>3</sup></li> </ul>	E080410
Is the Request to update Device Status applicable to the Device Type?	<p>Check that</p> <ul style="list-style-type: none"> <li>If the Request is to update the "Device Status Except CH", the Device Type is not CHF or GPF</li> <li>If the Request is to update the "Device Status CH", the Device Type is CHF</li> </ul>	E080411

Validation Check	Process	Response Code
Is the Device Status transition for a CHF Device valid?	Check that if the Request is to update the "Device Status CH", the Device Status transition is one of: <ul style="list-style-type: none"> <li>'Pending' to 'Commissioned'</li> <li>'Pending' to 'InstalledNotCommissioned'</li> <li>'InstalledNotCommissioned' to 'Commissioned'</li> <li>'Commissioned' to 'Withdrawn' (only permitted for SMETS2 or later; not permitted for SMETS1 Devices)</li> </ul>	E080412
Is the MPxN appropriate for the device type?	Check that if the Import MPxN is to be updated, that the device is as ESME or GSME. Check that if the Secondary Import MPAN is to be updated, that the device is a twin element ESME. Check that if the Export MPAN is to be updated, that the device is an ESME.	E080413
Does the Device have the appropriate status to allow an MPxN update?	Check that the device has a status of "Whitelisted" <sup>4</sup> , "Installed Not Commissioned" or "Commissioned".	E080414
Is the DCC Service User the Registered Supplier for the new MPxN?	If the Request is to Update MPxN, check that the DCC Service User is the Registered Supplier for the new MPxN specified within the Service Request to be associated with the Device	E080415

**Table 29 Update Inventory Service Request Validation**

<sup>1</sup> Check not applicable to Type 2 (IHD and CAD) Devices, because they don't have a Status

<sup>2</sup> This check replaces the generic authorisation check associated to E4. See Main Document of this documentation set section 7.4

<sup>3</sup> If updating the Import MPxN then the DCC Service User must be the Registered Supplier for that Import MPxN. If updating the Secondary Import MPAN then the DCC Service User must be the Registered Supplier for that Secondary Import MPAN. If updating the Export MPAN then the DCC Service User must be the Registered Supplier for that Export MPAN.

<sup>4</sup> N/A to SMETS1 Devices

#### 8.4.1.8 Sample Request

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

```
<UpdateInventory>
<DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
<UpdateDeviceStatusExceptCH>Pending</UpdateDeviceStatusExceptCH>
</UpdateInventory>
```

**Figure 13 Update Inventory Service Request (Body) Format – Update Device Status Except CH**

```
<UpdateInventory>
<DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
<UpdateDeviceStatusCH>Withdrawn</UpdateDeviceStatusCH>
</UpdateInventory>
```

**Figure 14 Update Inventory Service Request (Body) Format – Update Device Status CH**

```
<UpdateInventory>
<DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
<UpdateDeviceDetails>
<FirmwareVersion>1100EEFF</FirmwareVersion>
</UpdateDeviceDetails>
</UpdateInventory>
```

Figure 15 Update Inventory Service Request (Body) Format – Update Device Details

```
<UpdateInventory>
  <DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
  <DeleteDevice/>
</UpdateInventory>
```

Figure 16 Update Inventory Service Request (Body) Format – Delete Device

```
<UpdateInventory>
  <DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
  <UpdateMPxN>
    <ImportMPxN>1234567890123</ImportMPxN>
  </UpdateMPxN>
</UpdateInventory>
```

Figure 17 Update Inventory Service Request (Body) Format – Update MPxN

## 8.4.2 Responses

The response messages for an “Update Inventory” request follow the generic format for all “DCC Only” response message, the generic responses applicable to this request are;

- Acknowledgement

Sample responses are given in Annex Introduction Appendix 1.

### 8.4.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E080405	Failed Validation – Invalid Device Status for Device Type	Error	The Device Status is not applicable to the Device Type
E080406	Failed Validation – Invalid Device Status Transition for non CHF Device	Error	The Device Status transition is not valid
E080407	Failed Validation – Invalid Device ID or Status	Error	The Device ID doesn't exist in the Smart Metering Inventory or its status isn't <u>'Pending' not valid for the requested update</u>
E080408	Failed Validation – Empty Update Details Request	Error	The Request doesn't include any details to be updated
E080409	Failed Validation – Invalid Request	Error	The Device Type / Manufacturer / Model / Firmware Version data resulting from the changes specified by the DCC User does not match the DCC's list of equipment that has been approved for use
E080410	Failed Authorisation – Invalid DCC Service User ID	Error	The DCC Service User ID is not authorised to run this Service Request for this Device
E080411	Failed Validation – Update Device Status option / Device Type mismatch	Error	Request to update Device Status not applicable to the Device Type
E080412	Failed Validation – Invalid Device Status Transition for CHF Device	Error	The Device Status transition is not valid
E080413	Failed Validation – Invalid MPxN type for device	Error	The requested MPxN update isn't suitable for that Device.

Response Code	Response Code Name	Response Code Type	Description
E080414	Failed Validation – Device Status not compatible with update	Error	The Device Status does not allow the MPxN to be updated.
E080415	Failed Validation – DCC Service User is not the Registered Supplier for the new MPxN	Error	The DCC Service User is not the Registered Supplier for the new MPxN specified within the Service Request.

Table 30 Failed Update Inventory Service Request Response Codes

## 8.5 Service Opt Out (8.5)

Service Request Name	ServiceOptOut
Service Reference	8.5
Service Request Variant Name	ServiceOptOut
Service Reference Variant	8.5
Service Request Objective	To replace the DCC Security Credentials (DSP Access Control Broker Certificates) held on the Device with the Security Credentials contained within the Service Request and Withdraw the Device from DCC Services.
Business Context Statement	The DCC Service User requires that a specified device is removed from DCC services and transferred to another Service provider as nominated by the DCC Service User, e.g. as a result of changes to the communications service provider for a non-domestic meter.
User Role Access	This Service Request is no longer available to any User Roles.
Security Classification	Non-critical and non-sensitive: 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)
Service Request Narrative	<ol style="list-style-type: none"> <li>1. This Service Request is only applicable to Premises associated to a non-domestic MPxN.</li> <li>2. The Device to be Opted Out is the Business Target ID of this Service Request.</li> <li>3. The Credentials being replaced on the Device are those of the Access Control Broker (ACB), which can only be replaced by the ACB and this role is held by the DSP Access Control Broker. This means that: <ol style="list-style-type: none"> <li>a. This Service Request is Non-critical.</li> <li>b. Even though the DCC Service User is a KRP to the Device (except in the case of PPMID), the Command will be submitted to the Device by the</li> </ol> </li> </ol>

	<p>DSP Access Control Broker using the URP interaction type.</p> <p>4. This Service Request applies to the following Device Types:</p> <ol style="list-style-type: none"><li>ESME</li><li>GSME</li><li>HCALCS</li><li>PPMID</li></ol> <p>5. 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>6. On successful completion of the Service Request, the DCC Data Systems will</p> <ol style="list-style-type: none"><li>set the Device Status to 'Withdrawn' in the Smart Metering Inventory</li><li>automatically delete all active DSP Schedules on that Device (and for GSME also those on the corresponding GPF). For each deleted DSP Schedule a DCC Alert N5 will be sent to the DCC Service User that owned it.</li><li>automatically cancel all Future Dated (DSP) requests for that Device not yet sent to the Device (and for GSME also those on the corresponding GPF). For each cancelled request a DCC Alert N35 will be sent to the sender of the Future Dated request.</li><li>For Device Types ESME and GSME, update the Registration Systems to set the Service Status of the MPxN(s) associated to that Meter to "Withdrawn"</li><li>For Device Type ESME, send DCC Alert N1 to the registered ENO and, if applicable, registered EES</li><li>For Device Type GSME, send DCC Alert N2 to the registered GNO</li></ol> <p>7. When opting out of DCC Services, the DCC Service User is expected to use Service Request 8.4 – Update Inventory (see section 8.4) to set the CHF and its associated GPF to be Opted Out and hence set to 'Withdrawn'</p> <p>8. Upon successful processing of this Service Request to replace Security Credentials related to the Remote Party Access Control Broker Role, the specified target Device will reset the Immediate Execution Counters on the Device to the Remote Party (ACB) Floor Sequence Number specified within this Service Request</p> <p>9. 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</p>
--	---

	<p>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</p> <p>10. Updates to the Smart Metering Inventory are carried out before the Service Response is generated. The other actions detailed above are post-processing steps after the Service Response has been sent to the User.</p>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code (for each CredentialsReplacementMode)	accessControlBrokerByACB – 0x0104	
GBCS Use Case	CS02b	CS02b
GBCS Use Case Name	Update Security Credentials	Update Security Credentials
SMETS1 Applicability	No	No

Table 31 Service Opt Out 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).

## 8.5.1 Service Request

### 8.5.1.1 Format

The 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 ServiceOptOut XML element defines this Service Request and contains the Access Control Broker Public Security Credentials to be updated on the Device and the Execution Date and Time (Opt Out Effective Date).

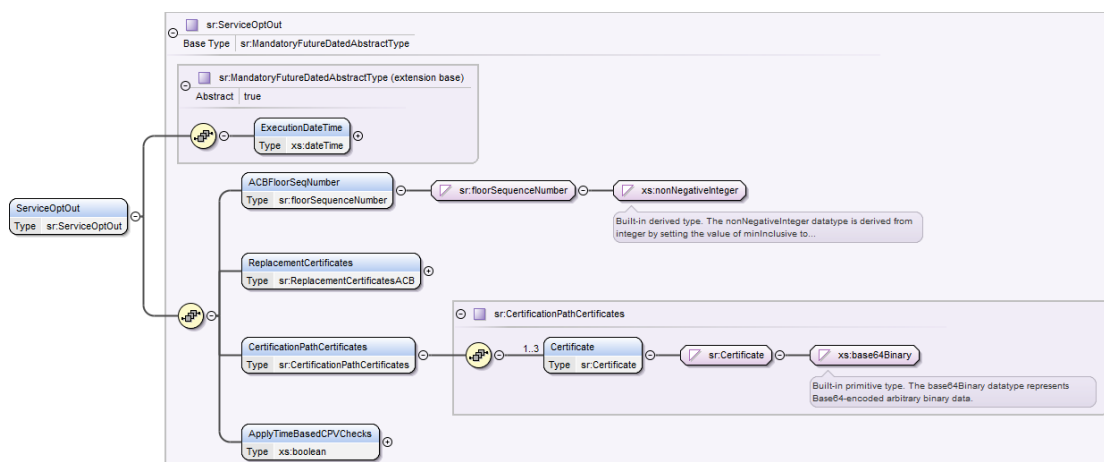


Figure 18 Service Opt Out Service Request Structure

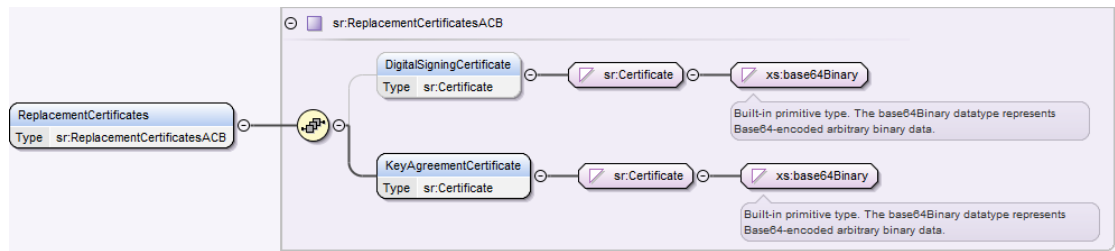


Figure 19 Service Opt Out Service Request – ReplacementCertificatesACB Structure

### 8.5.1.2 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, i.e. the date from which Device is to be opted out from DCC services 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	Yes	None	UTC Date-Time	Non-Sensitive
ACBFloorSequenceNumber	Originator Counter (floor value) for the new ACB Remote Party.  This value will be used to prevent replay of Update Security Credentials Commands, and other Commands, for the new controlling Remote Party. Valid set: <ul style="list-style-type: none"> <li>Value <math>\geq 0</math> and <math>\leq</math> Originator Counter of the first Command to be Device from the New ACB</li> </ul>	sr:floorSequenceNumber  (Restriction of xs:nonNegativeInteger minInclusive = 0, maxInclusive = 9223372036854775807	Yes	None	N/A	Non-Sensitive
ReplacementCertificates	This structure provides a list of the replacements. Each replacement contains a replacement Certificate.	sr:ReplacementCertificatesACB (see section 8.5.1.3)	Yes	None	N/A	Non-Sensitive
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	sr:Certificate (xs:base64Binary minOccurs = "1", maxOccurs = "3")	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ApplyTimeBasedCPVChecks	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. root credentials on the Device have expired without replacement for unforeseen reasons)	xs:boolean	Yes	None	N/A	Non-Sensitive

Table 32 Service Opt Out Service Request Data Items

### 8.5.1.3 ReplacementCertificatesACB Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DigitalSigningCertificate	The digital signing credentials to be placed by the Supplier (or Supplier's SMSO) in the 'Access Control Broker' Remote Party Role, Key Usage digitalSignature on the Device so that communications via the DCC are no longer possible	sr:Certificate (xs:base64Binary)	DeviceType = PPMID: Yes Otherwise: N/A	None	N/A	Non-Sensitive
KeyAgreementCertificate	The key agreement credentials to be placed by the Supplier (or Supplier's SMSO) in the 'Access Control Broker' Remote Party Role Key Usage keyAgreement on the Device so that communications via the DCC are no longer possible	sr:Certificate (xs:base64Binary)	Yes	None	N/A	Non-Sensitive

Table 33 Service Opt Out Service Request – ReplacementCertificatesACB Data Items

### 8.5.1.4 Applicable Modes of Operation

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

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

Table 34 Service Opt Out Modes of Operation

### 8.5.1.5 Applicable Command Variant Values

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

CV = 1	CV = 2	CV = 3	CV = 4	CV = 5	CV = 6	CV = 7	CV = 8
Yes	No <sup>1</sup>	No <sup>1</sup>	No	No	No	No	No

Table 35 Service Opt Out Command Variant Values

<sup>1</sup> Technical reason for this CV not being available: The Device doesn't support Future Dating for this Command and Remote Party Role

### 8.5.1.6 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 Device associated to a Non-Domestic MPxN?	Check that the Device is associated to a Non-Domestic MPxN	E080501
Is the Device status correct?	Check that the Device Status is not "Withdrawn" <sup>1</sup>	E080502
Is the Certificate type applicable to the Device type?	Check that if the Digital Signing Certificate is included in the Request, the Device Type is PPMID	E080503

Table 36 Service Opt Out Service Request Validation

<sup>1</sup> Please note that this particular check and Response Code is not expected to be reached in this DUIS version, as the generic Authorisation Check associated to Response Code E5 will fail prior to this check being carried out

### 8.5.1.7 Sample Request

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

```
<ServiceOptOut>
  <ExecutionDateTime>2014-10-03T00:00:00.00Z</ExecutionDateTime>
  <ACBFloorSeqNumber>1234567</ACBFloorSeqNumber>
  <ReplacementCertificates>
    <KeyAgreementCertificate>ZGVmYXVsdA==</KeyAgreementCertificate>
  </ReplacementCertificates>
  <CertificationPathCertificates>
    <Certificate>ZGVmYXVsdA==</Certificate>
  </CertificationPathCertificates>
  <ApplyTimeBasedCPVChecks>true</ApplyTimeBasedCPVChecks>
</ServiceOptOut>
```

Figure 20 Service Opt Out Service Request (Body) Format

## 8.5.2 Responses

The response messages for a "Service Opt Out" 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
- Parse Output

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.

### 8.5.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E080501	Failed Validation – Device ID / MPxN type mismatch	Error	The Device is not associated to a non-Domestic MPxN
E080502	Failed Validation – Invalid Device Status	Error	The Device Status is "Withdrawn"
E080503	Failed Validation – Invalid Certificate Type	Error	The Certificate type is not applicable to the Device type

Table 37 Failed Service Opt Out Service Request Response Codes

## 8.5.2.2 Parse Output Format

### 8.5.2.2.1 Format - ServiceOptOutRsp

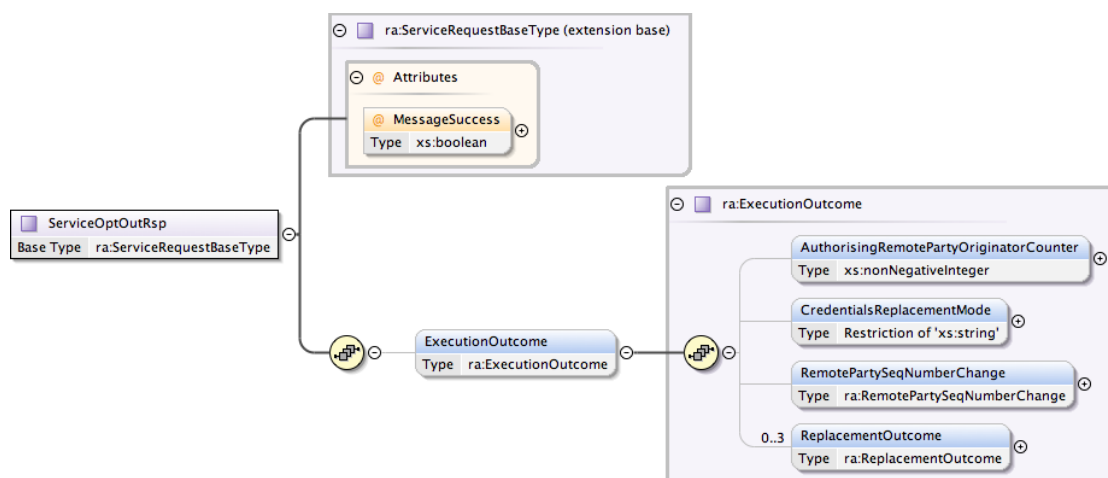


Figure 21 - Service Opt Out Parse Response Structure

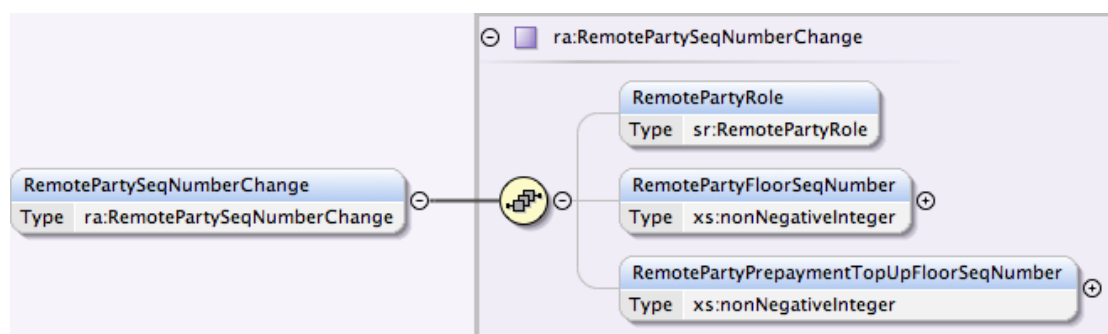


Figure 22 - Service Opt Out - Remote Party Sequence Number Change Structure

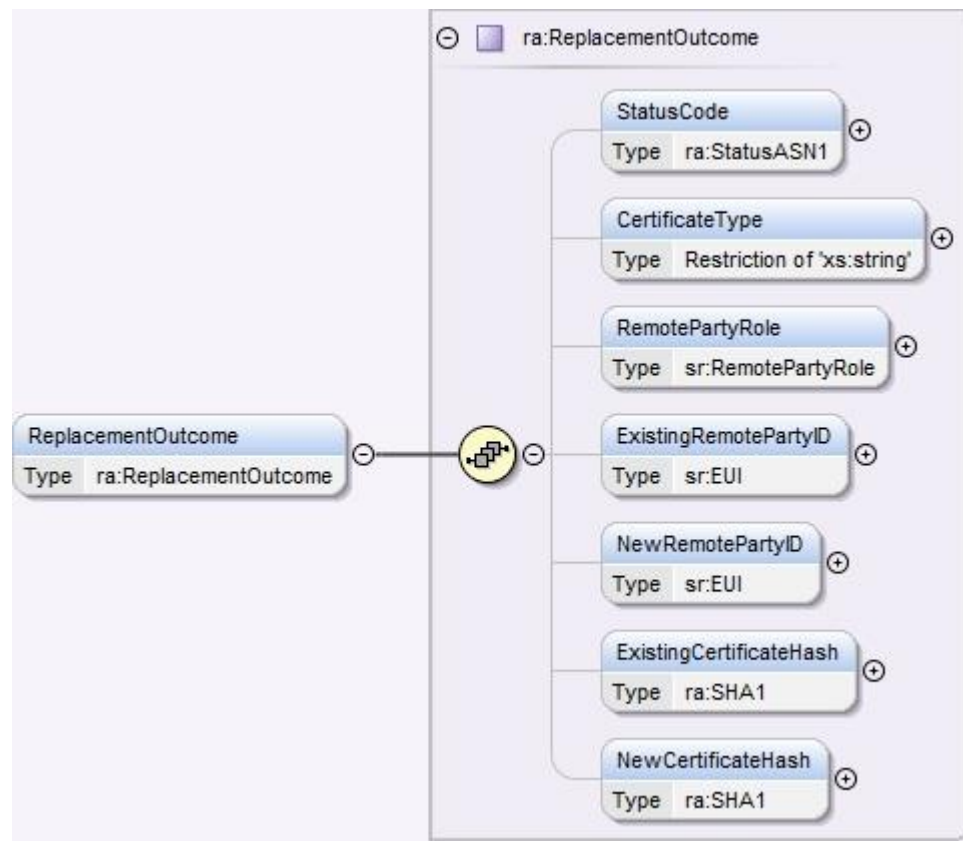


Figure 23 - Service Opt Out - Replacement Outcome Structure

#### 8.5.2.2.2 Specific Header Data Items

Data Item	Response
GBCSHexadecimalMessageCode	0104
GBCS Use Case Number (for information only - not in header)	CS02b
GBCS Use Case Name (for information only - not in header)	Update Security Credentials
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Present

Table 38 - Service Opt Out Parse Response Header Data Items

#### 8.5.2.2.3 Specific Body 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	Only a value of 'ACBByACB' is valid for this response	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
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

Table 39 - Service Opt Out Parse Response Body Data Items

#### 8.5.2.2.3.1 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>Access Control Broker</li> </ul>	Restriction base xs:token (Enumeration)	None	N/A	Non-Sensitive
RemotePartyFloorSeqNumber	The corresponding counter value	xs: nonNegativeInteger	None	N/A	Non-Sensitive
RemotePartyTopUpFloorSeqNumber	Only present where Remote Party Role is Supplier, therefore not used by this service request.	xs: nonNegativeInteger	None	N/A	Non-Sensitive

Table 40 - RemotePartySeqNumberChange Data Items

#### 8.5.2.2.3.2 ReplacementOutcome Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
StatusCode	Outcome of the request for each replacement. Valid Set: <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	To what use can the public key in this replacement be put. Only applicable to Device Type PPMID Valid Set: <ul style="list-style-type: none"> <li>DigitalSigning</li> <li>KeyAgreement</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), i.e. the DSP Broker ID	sr:EUI (see Annex section 17)	None	N/A	Non-Sensitive
NewRemotePartyId	Identifies the replacement subject unique identifier equating to Entity Identifier (64 bit value). i.e. the ID of the new ACB	sr:EUI (see Annex section 17)	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
ExistingCertificateHash	Identifies the existing subject key identifier, a SHA-1 hash, i.e. of the certificate	xs:base64binary	None	N/A	Non-Sensitive
NewCertificateHash	Identifies the replacement subject key identifier, a SHA-1 hash, i.e. of the certificate	xs:base64binary	None	N/A	Non-Sensitive

Table 41 - ReplacementOutcome Data Items

#### 8.5.2.2.4 Sample Response

```
<ra:ServiceOptOutRsp MessageSuccess="true">
  <ra:ExecutionOutcome>
    <ra:AuthorisingRemotePartyOriginatorCounter>123</ra:AuthorisingRemotePartyOriginatorCounter>
    <ra:CredentialsReplacementMode>ACBByACB</ra:CredentialsReplacementMode>
    <ra:RemotePartySeqNumberChange>
      <ra:RemotePartyRole>ACB</ra:RemotePartyRole>
      <ra:RemotePartyFloorSeqNumber>1234</ra:RemotePartyFloorSeqNumber>
    </ra:RemotePartySeqNumberChange>
    <ra:ReplacementOutcome>
      <ra:StatusCode ResponseCode="0">
        <ra:ASN1Status>success</ra:ASN1Status>
      </ra:StatusCode>
      <ra:CertificateType>DigitalSigning</ra:CertificateType>
      <ra:RemotePartyRole>ACB</ra:RemotePartyRole>
      <ra:ExistingRemotePartyID>10-00-00-00-00-00-00</ra:ExistingRemotePartyID>
      <ra:NewRemotePartyID>11-00-00-00-00-00-00</ra:NewRemotePartyID>
      <ra:ExistingCertificateHash>ZGVmYXVsdA==</ra:ExistingCertificateHash>
      <ra:NewCertificateHash>ZGVmYXVsdA==</ra:NewCertificateHash>
    </ra:ReplacementOutcome>
  </ra:ExecutionOutcome>
</ra:ServiceOptOutRsp>
```

Figure 24 - Service Opt Out Parse Response Sample

## 8.6 Service Opt In (8.6)

Service Request Name	ServiceOptIn
Service Reference	8.6
Service Request Variant Name	ServiceOptIn
Service Reference Variant	8.6
Service Request Objective	<p>To provide the DCC Security Credentials to the requestor so that the existing operator of the Device may change the security credentials to those of the DCC and enable the DCC to take control of the specified Devices once the security credential change has been successful.</p> <p>To opt in Smart Metering Devices to the DCC services for a specified Device ID</p>

<b>Business Context Statement</b>	The DCC Service User requires that a specified device is opted in to DCC services, e.g. as a result of changes to the communications service provider for a non-domestic meter.
<b>User Role Access</b>	This Service Request is no longer available to any User Roles.
<b>Security Classification</b>	Non-critical and non-sensitive: GBCS XREF: SME.C.NC
<b>Service Request Narrative</b>	<ol style="list-style-type: none"> <li>This Service Request includes: <ol style="list-style-type: none"> <li>Device ID of Device to be Opted In. One per Request</li> <li>Device Type of Device to be Opted In. One per Request. Used by the DCC Data Systems to validate the Device ID and the Device Type match</li> <li>MPxN(s) the Device would be associated with once Opted In</li> <li>Estimated Opt In Date</li> </ol> </li> <li>This Service Request is a notification to the DCC Data Systems of the wish to Opt In the Device to the DCC Services. The Device Status is not updated. To complete the Device Opt In, associate it to MPxN(s), etc. the Device will have to follow the Install and Commission process as if it had been newly added to the Smart Metering Inventory.</li> <li>Devices being Opted In: <ol style="list-style-type: none"> <li>Must already exist in the Smart Metering Inventory and be in a status of 'Pending'. A previously Opted Out Device Status will have to be set to 'Pending' via Service Request 12.2 – Device Pre-notification (see Annex section 12.2).</li> <li>If any of the Device details needs updating, e.g. Firmware Version, the update should be done via Service Request 8.4 – Update Inventory (see section 8.4) at the same time the Device is being Pre-notified.</li> <li>Valid Device Types: <ol style="list-style-type: none"> <li>ESME</li> <li>GSME</li> <li>HCALCS</li> <li>PPMID</li> <li>CHF</li> <li>GPF</li> </ol> </li> </ol> </li> <li>This Service Request returns the DCC (DSP Access Control Broker) Credentials to be placed on a previously Opted Out Device that is to be Opted In to DCC Services. Note this completes the Service Request.</li> <li>When opting in to DCC Services, the DCC Service User is expected to use Service Request 8.4 – Update Inventory (see section 8.4) to set the CHF and its associated GPF to be opted</li> </ol>

	in and hence set to 'Commissioned' whenever an existing DCC Communication Hub is reused. This is because the Commissioning Alert from the CHF will not be regenerated as part of this opt in process to automatically update the CHF device status within the Smart Metering Inventory.	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	N/A	N/A
GBCS Use Case	N/A	N/A
GBCS Use Case Name	N/A	N/A
SMETS1 Applicability	No	No

Table 42 Service Opt In 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).

## 8.6.1 Service Request

### 8.6.1.1 Format

The 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 ServiceOptIn XML element defines this Service Request and contains the Device ID, Device Type, MPxNs the Device would be associated with and the estimated Opt In Date.

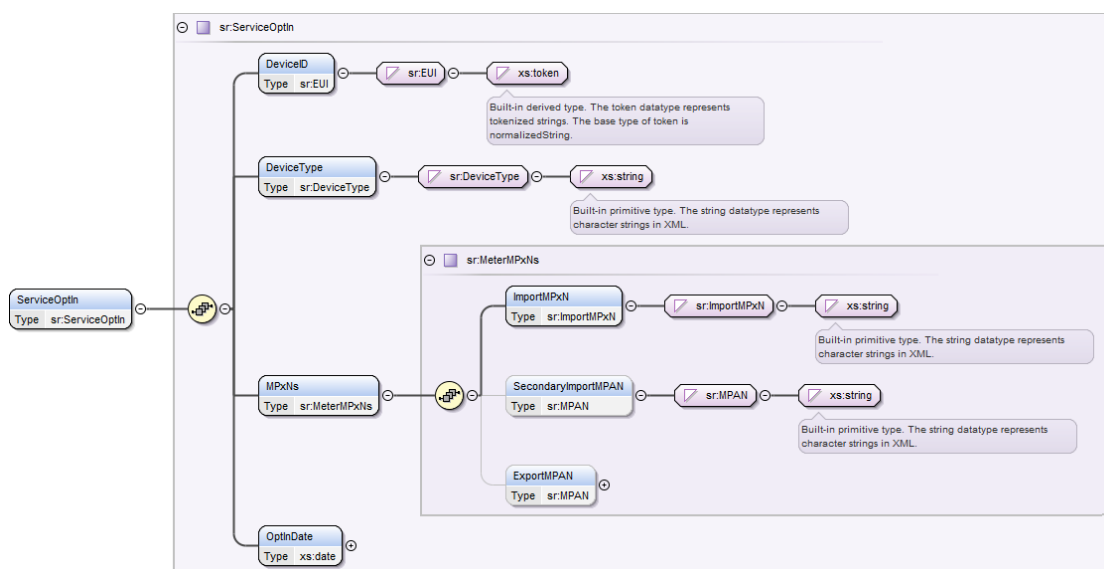


Figure 25 Service Opt In Service Request Structure

### 8.6.1.2 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
DeviceID	A unique ID for the device	sr:EUI (see Annex section 17)	Yes	None	N/A	Non-Sensitive
DeviceType	The Type of device Valid set: <ul style="list-style-type: none"> <li>ESME</li> <li>GSME</li> <li>HCALCS</li> <li>PPMID</li> <li>CHF</li> <li>GPF</li> </ul>	sr:DeviceType (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive
MPxNs	MPxNs to be associated to the Device once Opted In	sr:MeterMPxNs (see section 8.6.1.3)	Yes	None	N/A	Non-Sensitive
OptInDate	UTC Date from which the Device is planned to enter into DCC services Valid Set: <ul style="list-style-type: none"> <li>Date in the future</li> </ul>	xs:date	Yes	None	UTC Date	Non-Sensitive

**Table 43 Service Opt In Service Request Data Items**

#### 8.6.1.3 MeterMPxNs Specific Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ImportMPxN	The reference number identifying an Import electricity or a gas metering point	sr:ImportMPxN (Restriction of xs:string (minLength = 1, maxLength = 13))	Yes	None	N/A	Non-Sensitive
SecondaryImportMPAN	The reference number identifying a Twin Element Import electricity secondary metering point	sr:MPAN (Restriction of xs:string (minLength = 13, maxLength = 13))	Twin Element Electricity Smart Meter: No Otherwise: N/A	None	N/A	Non-Sensitive
ExportMPAN	The reference number identifying an Export electricity metering point	sr:MPAN (Restriction of xs:string (minLength = 13, maxLength = 13))	Export Electricity Smart Meter: No Otherwise: N/A	None	N/A	Non-Sensitive

**Table 44 Service Opt In Service Request – MeterMPxNs Data Items**

#### 8.6.1.4 Applicable Modes of Operation

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

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

Table 45 Service Opt In Modes of Operation

#### 8.6.1.5 Applicable Command Variant Values

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

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

Table 46 Service Opt In Command Variant Values

#### 8.6.1.6 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 Device ID existence validation):

Validation Check	Process	Response Code
Is the OptInDate a future date?	Check that the OptInDate is a date in the future	E080601
Is the DeviceType valid for the DeviceID?	Check that the Device Type is the correct one for Device ID	E080602
Is the Device status correct?	Check that the Device Status is "Pending"	E080604
Is the Device Type valid?	Check that the Device Type is one of: <ul style="list-style-type: none"> <li>ESME</li> <li>GSME</li> <li>HCALCS</li> <li>PPMID</li> <li>CHF</li> <li>GPF</li> </ul>	E080606
Does the Service Request include correct MPxNs? <sup>1</sup>	If the Service Request is Opting In an ESME, GSME or HCALCS, check that: <ul style="list-style-type: none"> <li>For ESME / HCALCS. The Service Request includes an Import MPxN (Primary Import MPAN) and optionally a Secondary Import MPAN and / or an Export MPAN and the sender's identity matches the organisation registered against the Primary Import MPAN</li> <li>For GSME. The Service Request includes an MPRN and the sender's identity matches the organisation registered against the Import MPxN (MPRN)</li> </ul>	E080607

Table 47 Service Opt In Service Request Validation

<sup>1</sup> This check replaces the generic authorisation check associated to E4. See Main Document of this documentation set section 7.4

### 8.6.1.7 Sample Request

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

```
<ServiceOptIn>
  <DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
  <DeviceType>ESME</DeviceType>
  <MPxNs>
    <ImportMPxN>1234567890123</ImportMPxN>
  </MPxNs>
  <OptInDate>2014-11-04Z</OptInDate>
</ServiceOptIn>
```

**Figure 26 Service Opt In Service Request (Body) Format**

## 8.6.2 Responses

The response messages for a “Service Opt In” request follow the generic format for all “DCC Only” responses that include specific data in the response.

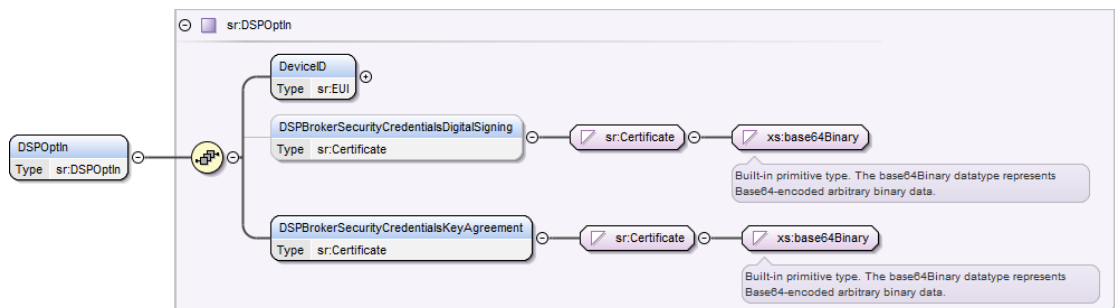
Sample responses are given in Annex Introduction Appendix 1, response specific information details are given below.

### 8.6.2.1 Service Response (from DCC)

Applicable to cases where the Request is successful and the Device Security Credentials for the DSP Broker User Role are returned to the DCC Service User.

#### 8.6.2.1.1 Format

This Service Request synchronous response is defined in the XSD DSPOptIn XML element, which contains the DSP Broker Security Credentials to be placed in the ‘Access Control Broker’ Remote Party Role on the Device so that communications via the DCC are possible.



**Figure 27 Service Opt In Service Response (from DCC) Structure**

#### 8.6.2.1.2 Specific Data Items

Returned if the DCC Data Items successfully processed the Request.

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DeviceID	A unique ID for the Device	sr:EUI (see Annex section 17)	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DSPSecurityCredentialsDigitalSigning	The digital signing credentials to be placed by the Supplier (or Supplier's SMSO) in the 'ACB' Remote Party Role, Key Usage digitalSignature on the Device so that communications via the DCC are possible	sr:Certificate (xs:base64Binary)	DeviceType = PPMID, CHF: Yes Otherwise: N/A	None	N/A	Non-Sensitive
DSPSecurityCredentialsKeyAgreement	The key agreement credentials to be placed by the Supplier (or Supplier's SMSO) in the 'ACB' Remote Party Role Key Usage keyAgreement on the Device so that communications via the DCC are possible	sr:Certificate (xs:base64Binary)	Yes	None	N/A	Non-Sensitive

Table 48 Service Opt In Service Request Response Data Items

#### 8.6.2.1.3 Sample Responses

Sample responses are given in Annex Introduction Appendix 1. The specific information for this Service Request Response is as follows:

```
<ResponseMessage>
  <ServiceReference>8.6</ServiceReference>
  <ServiceReferenceVariant>8.6</ServiceReferenceVariant>
  <DSPOptIn>
    <DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
    <DSPBrokerSecurityCredentialsKeyAgreement>ZGVmYXVsdA==</DSPBrokerSecurityCredentialsKeyAgreement>
  </DSPOptIn>
</ResponseMessage>
```

Figure 28 Sample Service Opt In Service Response (from DCC) Format

#### 8.6.2.2 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E080601	Failed Validation – Opt In Date not in the future	Error	The Opt In Date is not a date in the future
E080602	Failed Validation – Device ID / Device Type mismatch	Error	The Device Type is not correct
E080604	Failed Validation – Invalid Device Status	Error	The Device Status is not "Pending"
E080606	Failed Validation – Invalid Device Type	Error	The Device Type is invalid
E080607	Failed Authorisation –DCC Service User / MPxN mismatch	Error	The DCC Service User is not the registered organisation of any of the MPxNs in the Service Request

Table 49 Failed Service Opt In Service Request Response Codes

## 8.7 Join Service (8.7)

### SMETS2 or later

This Service Request maps to four GBCS Use Cases and each Use Case requires its own Request ID and some of the Use Cases are Critical and others Non-Critical.

Therefore the 8.7 Service Request has been broken into two parts: 8.7.1 (Join Service (Critical)) and 8.7.2 (Join Service (Non-Critical)).

### SMETS1

This Service Request maps to Service Reference Variant 8.7.1 (Join Service (Critical)) and 8.7.2 (Join Service (Non-Critical))

The following table summarises which Join Service Request Variant applies to which User Roles and Devices:

Service Request Variant	Critical / Non-Critical	User Role	Target Device Type	Join to Device Type	Two Step Join	Step No.
8.7.1 <sup>1</sup>	Critical	EIS	ESME	HCALCS	Yes	2
8.7.1	Critical	EIS	ESME	PPMID	Yes	2
8.7.1 <sup>1</sup>	Critical	EIS	HCALCS	ESME	Yes	1
8.7.1	Critical	GIS	GSME	PPMID	Yes	1 or 2
8.7.2	Non-Critical	EIS	ESME	Type 2 (IHD or CAD)	No	1
8.7.2	Non-Critical	EIS	PPMID	ESME	Yes	1
8.7.2	Non-Critical	GIS	GPF	PPMID	No	1
8.7.2	Non-Critical	GIS	GPF	Type 2 (IHD or CAD)	No	1
8.7.2	Non-Critical	GIS / EIS	GSME	GPF	No	1
8.7.2	Non-Critical	GIS	PPMID	GSME	Yes	1 or 2
8.7.2	Non-Critical	OU	ESME	Type 2 (CAD)	No	1
8.7.2	Non-Critical	OU	GPF	Type 2 (CAD)	No	1

Table 50 Join Service Request Variants / Devices

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

### 8.7.1 Join Service (Critical) (8.7.1)

Service Request Name	JoinService
Service Reference	8.7
Service Request Variant Name	JoinService (Critical)

Service Reference Variant	8.7.1
Service Request Objective	To authorise specified Devices to communicate with each other via the Home Area Network (HAN)
Business Context Statement	To enable authorised Data transfer between Devices connected on the HAN e.g. Data from the Electricity Gas Metering Equipment to be shared with the PPMID for data display purposes to the consumer.
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>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>For two Devices in a HAN to be able to communicate with each other they have to be paired (joined). There are two join types: <ul style="list-style-type: none"> <li>In the first one, each of the Devices is capable of providing information to the other and it requires each of the Devices to hold details in its Device Log of the 'joined' Device. Two Service Requests are needed to complete the Join. See <a href="#">Table 50Table 50</a> where "Two Step Join" is Yes</li> <li>In the second type only one of the Devices can provide information to the other, which can only read information from its joined Device. Only one Service Request to the Device that can provide information is needed to complete the Join. See <a href="#">Table 50Table 50</a> where "Two Step Join" is No</li> </ul> </li> <li>This Service Request triggers a Command to the Business Target ID (Device ID) to add the details of the 'Other Device' in the Service Request to the Business Target ID Device Log <ul style="list-style-type: none"> <li>For the two Devices to be able to communicate, each of them has to have successfully processed a Join Service Command</li> </ul> </li> <li>The DCC Service User is a KRP of the Business Target ID (Device ID), so the Device Response will be addressed to them</li> <li>The Device Type is not included in the Service Request, because the DCC Data Systems can identify it from the Device ID.</li> <li>This Service Request is applicable to the following Target Device Types: <ol style="list-style-type: none"> <li>Electricity Smart Meter. As a pre-requisite, the other Device must have already been joined to the Electricity Smart Meter. To join it to one of: <ol style="list-style-type: none"> <li>HCALCS. Successful completion results in the HCALCS Device Status being set to 'Commissioned' in the Smart Metering Inventory if the status of the ESME it is being joined to is 'Commissioned'</li> </ol> </li> </ol> </li> </ol>

	<p>9. PPMID. Successful completion results in the PPMID Device Status being set to 'Commissioned' in the Smart Metering Inventory, unless this was already its Device Status and provided that the status of the ESME it is being joined to is 'Commissioned'</p> <p>10. Gas Smart Meter. To join it to:</p> <p>11. PPMID. Successful completion results in the PPMID Device Status being set to 'Commissioned' in the Smart Metering Inventory, unless this was already its Device Status and provided that the status of the GSME it is being joined to is 'Commissioned'</p> <p>12. HCALCS. To join it to:</p> <p>13. Electricity Smart Meter. This is a pre-requisite to joining the Electricity Smart Meter to the HCALCS</p> <p>6. On successful completion of this Service Request, the DCC Data Systems will be updated to reflect its outcome (this action is carried out before the Service Response is generated)</p> <p>7. Any Device id specified within this Service Request must have been pre notified to the DCC via Service Request 12.2</p> <p>8. Where a GSME is joined to a PPMID then the DCC shall add the Key Agreement Certificate currently in use by the other Device (PPMID) to the returned Pre-Command to the DCC Service User as this is required in the GBCS use Case. This shall be retrieved by the DCC from the Public Key Repository where the "In Use" flag is set</p> <p>9. There are some failure cases where the Device command has not resulted in a successful join but the target Device's Device log retains the ID of the other Device. In such cases the SMI will record that the two Devices are joined, but other post-processing activities associated with the successful completion of a join command (for example, changing the status of a GPF, HCALCS or PPMID to Commissioned) will only be carried out if the Device returns a success response to the join command</p>			
	GBCS Cross Reference	ESME Join to HCALCS or PPMID	HCALCS Join to ESME	GSME Join to PPMID
	GBCS Message Code	0x000D	0x00AB	0x00AF
	GBCS Use Case	CS03A1	CS03A2	CS03C
	GBCS Use Case Name	Method A Join (Meter)	Method A Join (non Meter)	Method C Join
	SMETS1 Applicability	Yes (ESME Join to PPMID)	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> <p>1. HCALCS is not a valid SMETS1 Device Type.</p>		

2. Processing by the relevant S1SP shall be according to the SMETS1 Supporting Requirements Document, which is primarily to confirm that the Devices are associated with the same SMETS1 CHF Device Log.
3. Item 8 is not applicable to SMETS1 Devices.
4. Item 9 is not applicable to SMETS1 Devices.

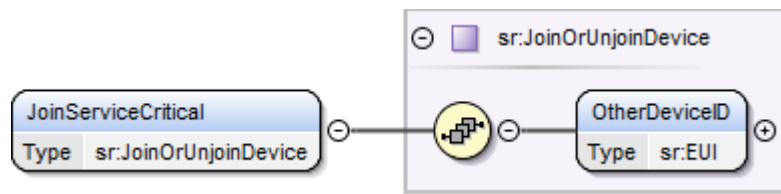
**Table 51 Join Service (Critical) Service Request**

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).

### 8.7.1.1 Service Request

#### 8.7.1.1.1 Format

The 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 JoinServiceCritical XML element defines this Service Request and it contains the Device ID of the 'Other Device' the Business Target ID Device is to be joined with.



**Figure 29 Join Service (Critical) Service Request Structure**

#### 8.7.1.1.2 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
OtherDeviceID	Device ID of the device to be joined to (paired with) the Business Target ID Device	sr:EUI (see Annex section 17)	Yes	None	N/A	Non-Sensitive

**Table 52 Join Service (Critical) Service Request Data Items**

#### 8.7.1.1.3 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	No	No
SMETS1	No	Yes	No	No	No

**Table 53 Join Service (Critical) Modes of Operation**

#### 8.7.1.1.4 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 54 Join Service (Critical) Command Variant Values**

#### 8.7.1.1.5 Validation

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

Validation Check	Process	Response Code
Is the 'Other Device' Type valid?	Check that if the Business Target ID Device Type is: <ul style="list-style-type: none"> <li>Electricity Smart Meter. The 'Other Device' Type is HCALCS or PPMID</li> <li>Gas Smart Meter. The 'Other Device' Type is PPMID</li> <li>HCALCS. The 'Other Device' Type is Electricity Smart Meter</li> </ul>	E080702

**Table 55 Join Service (Critical) Service Request Validation**

<sup>1</sup> This check is N/A if the "Other Device" is a CAD

#### 8.7.1.1.6 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:

```
<JoinServiceCritical>
  <OtherDeviceID>99-22-AA-BB-CC-DD-EE-FF</OtherDeviceID>
</JoinServiceCritical>
```

**Figure 30 Join Service (Critical) Transform Service Request (Body) Format**

#### 8.7.1.2 Responses

The response messages for a "Join Service (Critical)" 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.

#### 8.7.1.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E080702	Failed Validation – Invalid Device Type	Error	The 'Other Device' Type is not valid

Table 56 Failed Join Service (Critical) Service Request Response Codes

#### 8.7.1.2.2 Parse Output / SMETS1 Response Format

##### 8.7.1.2.2.1 Format - JoinServiceCriticalRsp

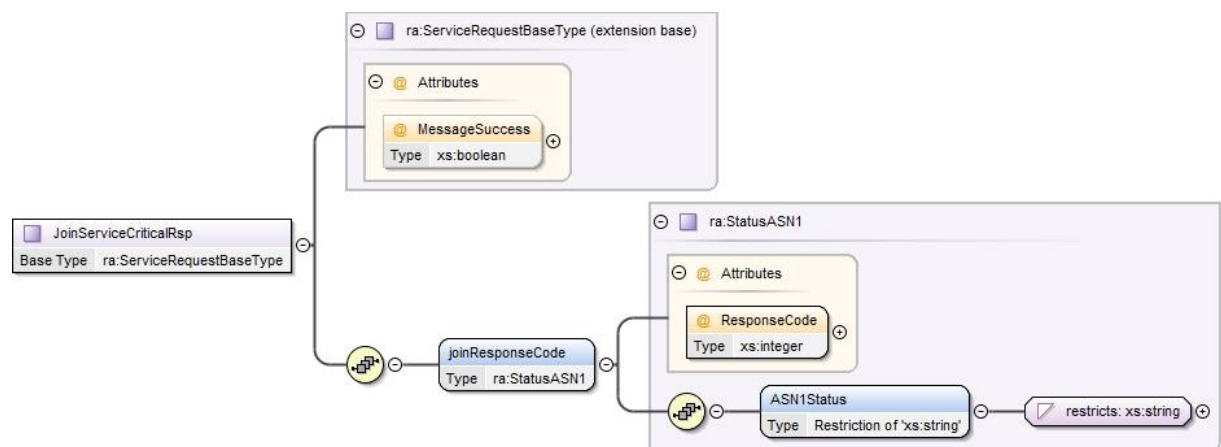


Figure 31 – Join Service (Critical) Parse Response Structure

##### 8.7.1.2.2.2 Specific Header Data Items

Data Item	ESME join to HCALCS <sup>1</sup> or PPMID Response	HCALCS join to ESME Response <sup>1</sup>	GSME join to PPMID Response
GBCSHexadecimalMessageCode	000D	00AB	00AF
GBCS Use Case Number (for information only - not in header)	CS03A1	CS03A2	CS03C
GBCS Use Case Name (for information only - not in header)	Method A Join (Meter)	Method A Join (non Meter)	Method C Join
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 57 - Join Service (Critical) Parse/SMETS1 Response Specific Header Data Items

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

##### 8.7.1.2.2.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
joinResponseCode	<p>Outcome of the request.</p> <p>Valid Set:</p> <ul style="list-style-type: none"> <li>• success</li> <li>• invalidMessageCodeForJoinMethodAndRole</li> <li>• invalidJoinMethodAndRole</li> <li>• incompatibleWithExistingEntry</li> <li>• deviceLogFull</li> <li>• writeFailure</li> <li>• keyAgreementNoResources</li> <li>• keyAgreementUnknownIssuer</li> <li>• keyAgreementUnsupportedSuite</li> <li>• keyAgreementBadMessage</li> <li>• keyAgreementBadKeyConfirm</li> <li>• invalidOrMissingCertificate</li> <li>• noPartnerLinkKeyReceived (only supported on Devices with a Firmware version certified to GBCS v2.0 or later)</li> <li>• noCBKEResponse (only supported on Devices with a Firmware version certified to GBCS v2.0 or later)</li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive

Table 58 - Join Service (Critical) Parse Response / SMETS1 Response Body Data Items

#### 8.7.1.2.2.4 Sample Response body

```
<ra:JoinServiceCriticalRsp MessageSuccess="false">
  <ra:joinResponseCode ResponseCode="2">
    <ra:ASN1Status>invalidJoinMethodAndRole</ra:ASN1Status>
  </ra:joinResponseCode>
</ra:JoinServiceCriticalRsp>
```

Figure 32 - Join Service (Critical) Parse Response Sample

## 8.7.2 Join Service (Non-Critical) (8.7.2)

Service Request Name	JoinService
Service Reference	8.7
Service Request Variant Name	JoinService (Non-Critical)
Service Reference Variant	8.7.2

Service Request Objective	To authorise specified Devices to communicate with each other via the Home Area Network (HAN)
Business Context Statement	To enable authorised Data transfer between Devices connected on the HAN e.g. Data from the Electricity Gas Metering Equipment to be shared with the IHD for data display purposes to the consumer.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> <li>Other User (OU) (Type 2 CAD Only)</li> </ul>
Security Classification	<p>Non-critical and non-sensitive: <i>SMETS2 or later:</i></p> <p><i>Target Device Type = All except PPMID: GBCS XREF: SME.C.NC</i></p> <p><i>Target Device Type = PPMID: 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)</i></p>
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>For two Devices in a HAN to be able to communicate with each other they have to be paired (joined). There are two join types: <ul style="list-style-type: none"> <li>In the first one, each of the Devices is capable of providing information to the other and it requires each of the Devices to hold details in its Device Log of the 'joined' Device. Two Service Requests are needed to complete the Join. See <a href="#">Table 50Table-50</a> where "Two Step Join" is Yes</li> <li>In the second type only one of the Devices can provide information to the other, which can only read information from its joined Device. Only one Service Request to the Device that can provide information is needed to complete the Join. See <a href="#">Table 50Table-50</a> where "Two Step Join" is No</li> </ul> </li> <li>This Service Request triggers a Command to the Business Target ID (Device ID) to add the details of the 'Other Device' in the Service Request to the Business Target ID Device Log</li> <li>The Device Type is not included in the Service Request, because the DCC Data Systems can identify it from the Device ID.</li> <li>This Service Request is applicable to the following Target Device Types: <ul style="list-style-type: none"> <li>Electricity Smart Meter. To join it to a Type 2 Device (IHD or CAD)</li> <li>Gas Smart Meter. To join it to a Gas Proxy Function. <ul style="list-style-type: none"> <li>Successful completion results in the GPF Device Status being set to 'Commissioned' in the Smart Metering Inventory if the status of the GSME it is being joined to is 'Commissioned'</li> </ul> </li> </ul> </li> </ol>

	<ul style="list-style-type: none"> <li>This join is available to the EIS to support the Restore Gas Proxy Function Device Log scenario (see section 8.12.2)</li> <li>Gas Proxy Function. To join it to one of: <ul style="list-style-type: none"> <li>PPMID</li> <li>Type 2 Device (IHD or CAD)</li> </ul> </li> <li>PPMID. To join it to one of: <ul style="list-style-type: none"> <li>Electricity Smart Meter. This is a prerequisite to joining the Electricity Smart Meter to the PPMID</li> <li>Gas Smart Meter</li> </ul> </li> </ul>				
	5. On successful completion of this Service Request, the DCC Data Systems will be updated to reflect its outcome (this action is carried out before the Service Response is generated)				
	6. Any Device id specified within this Service Request must have been pre notified to the DCC via Service Request 12.2				
	7. Where a PPMID is joined to a GSME then the DCC shall add the Key Agreement Certificate currently in use by the other Device (GSME) to the Command as this is required in the GBCS use Case. This shall be retrieved by the DCC from the Public Key Repository where the "In Use" flag is set				
	8. There are some failure cases where the Device command has not resulted in a successful join but the target Device's Device log retains the ID of the other Device. In such cases the SMI will record that the two Devices are joined, but other post-processing activities associated with the successful completion of a join command (for example, changing the status of a GPF, HCALCS or PPMID to Commissioned) will only be carried out if the Device returns a success response to the join command				
	<b>GBCS Cross Reference</b>	ESME Join to Type 2 Device	GSME Join to GPF	PPMID Join to ESME	PPMID Join to GSME
	<b>GBCS Message Code</b>	0x000E	0x000E	0x00AB	0x00AF
<b>GBCS Use Case</b>	CS03B	CS03B	CS03A2	CS03C	CS03B
<b>GBCS Use Case Name</b>	Method B Join	Method B Join	Method A Join (non Meter)	Method C Join	Method B Join
<b>SMETS1 Applicability</b>	Yes	Yes	Yes	Yes	Yes
<b>Service Request Narrative (SMETS1)</b>	The behaviour of DCC for this Service Request with regard to SMETS1 Devices is equivalent to the behaviour for SMETS2 or later Devices except:				

1. Processing by the relevant S1SP shall be according to the SMETS1 Supporting Requirements Document, which is primarily to confirm that the Devices are associated with the same SMETS1 CHF Device Log.
2. Item 7 is not applicable to SMETS1 Devices.
3. Item 8 is not applicable to SMETS1 Devices.

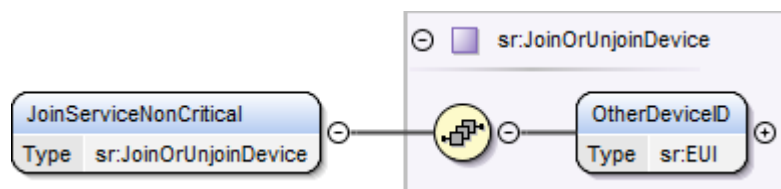
**Table 59 Join Service (Non-Critical) Service Request**

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).

## 8.7.2.1 Service Request

### 8.7.2.1.1 Format

The 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 JoinServiceNonCritical XML element defines this Service Request and it contains the Device ID of the 'Other Device' the Business Target ID Device is to be joined with.



**Figure 33 Join Service (Non-Critical) Service Request Structure**

### 8.7.2.1.2 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
OtherDeviceID	Device ID of the device to be joined to (paired with) the Business Target ID Device	sr:EUI (see Annex section 17)	Yes	None	N/A	Non-Sensitive

**Table 60 Join Service (Non-Critical) Service Request Data Items**

### 8.7.2.1.3 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	No	No
SMETS1	No	Yes	No	No	No

**Table 61 Join Service (Non-Critical) Modes of Operation**

### 8.7.2.1.4 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 62 Join Service (Non-Critical) Command Variant Values**

#### 8.7.2.1.5 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 Other Device ID existence validation):

Validation Check	Process	Response Code
Is the 'Other Device' Type valid?	Check that if the Business Target ID Device Type is: <ul style="list-style-type: none"> <li>Electricity Smart Meter. The 'Other Device' Type is IHD or CAD</li> <li>Gas Smart Meter. The 'Other Device' Type is Gas Proxy Function</li> <li>Gas Proxy Function. The 'Other Device' Type is PPMID, IHD or CAD</li> <li>PPMID. The 'Other Device Type' is Electricity Smart Meter or Gas Smart Meter</li> </ul>	E080721
Is the DCC Service User authorised to Join the Device?	If the DCC Service User Role is 'OU', check that the 'Other Device' Device Type is CAD	E080722
Is the EIS authorised to Join the Devices? <sup>1</sup>	If the DCC Service User Role is 'EIS', the Business Target ID Type is GSME and the 'Other Device' Type is GPF check that the DCC Service User is the registered Import Supplier to the Primary MPAN in the CHF ID Whitelist associated to the GPF ID	E080723

**Table 63 Join Service (Non-Critical) Service Request Validation**

<sup>1</sup> This check replaces the generic authorisation registration check (E4) for this combination of Service User Role, Business Target ID Device Type and 'Other Device' Type

<sup>2</sup> This check is N/A if the "Other Device" is a CAD

Note that for Command Variant 2 (Command for Local Delivery) the authorisation registration check (E4) is not applicable to this Service Request

#### 8.7.2.1.6 Sample Request

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

```
<JoinServiceNonCritical>
  <OtherDeviceID>99-11-AA-BB-CC-DD-EE-FF</OtherDeviceID>
</JoinServiceNonCritical>
```

**Figure 34 Join Service (Non-Critical) Service Request (Body) Format**

#### 8.7.2.2 Responses

- The response messages for a "Join Service (Non-Critical)" 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.

#### 8.7.2.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E080721	Failed Validation – Invalid Device Type	Error	The 'Other Device' Type is not valid
E080722	Failed Authorisation – Invalid Service User Role for Device Type	Error	The DCC Service User Role is not authorised to Join this Device Type
E080723	Failed Authorisation – Invalid DCC Service User for Join Type	Error	The DCC Service User is not authorised to Join these GSME / GPF

Table 64 Failed Join Service (Non-Critical) Service Request Response Codes

#### 8.7.2.2.2 Parse Output / SMETS1 Response Format

##### 8.7.2.2.2.1 Format - JoinServiceNonCriticalRsp

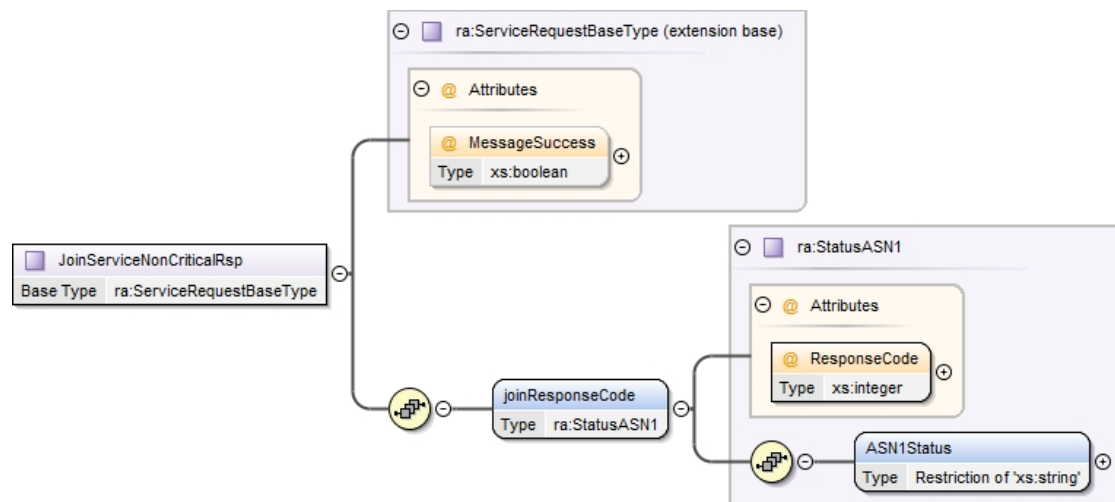


Figure 35 – Join Service (Non-Critical) Parse Response / SMETS1 Response Structure

##### 8.7.2.2.2.2 Specific Header Data Items

Data Item	ESME join to Type 2 Device Response	GSME join to GPF Response	PPMID join to ESME Response
GBCSHexadecimalMessageCode	000E	000E	00AB
GBCS Use Case Number (for information only - not in header)	CS03B	CS03B	CS03A2

Data Item	ESME join to Type 2 Device Response	GSME join to GPF Response	PPMID join to ESME Response
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Method B Join</i>	<i>Method B Join</i>	<i>Method A Join (non Meter)</i>
SupplementaryRemotePartyID	Present where originator is a URP	Present where originator is a URP	Present
SupplementaryRemotePartyCounter	Present where originator is a URP	Present where originator is a URP	Present
SupplementaryOriginatorCounter	Not Present	Not Present	Not Present
Timestamp	Not Present	Not Present	Not Present

**Table 65 - Join Service (Non-Critical) Parse/SMETS1 Response Header Data Items**

Data Item	PPMID join to GSME Response	GPF join to PPMID or Type 2 Device Response
GBCSHexadecimalMessageCode	00AF	000E
GBCSUseCaseNumber	CS03C	CS03B
GBCSUseCaseName	Method C Join	Method B Join
SupplementaryRemotePartyID	Present	Present where originator is a URP
SupplementaryRemotePartyCounter	Present	Present where originator is a URP
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 66 - Join Service (Non-Critical) Parse/SMETS1 Response Header Data Items (continued)**

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

#### 8.7.2.2.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
joinResponseCode	<p>Outcome of the request.</p> <p>Valid Set:</p> <ul style="list-style-type: none"> <li>• success</li> <li>• invalidMessageCodeForJoinMethodAndRole</li> <li>• invalidJoinMethodAndRole</li> <li>• incompatibleWithExistingEntry</li> <li>• deviceLogFull</li> <li>• writeFailure</li> <li>• keyAgreementNoResources</li> <li>• keyAgreementUnknownIssuer</li> <li>• keyAgreementUnsupportedSuite</li> <li>• keyAgreementBadMessage</li> <li>• keyAgreementBadKeyConfirm</li> <li>• invalidOrMissingCertificate</li> <li>• noPartnerLinkKeyReceived (only supported on Devices with a Firmware version certified to GBCS v2.0 or later)</li> <li>• noCBKEResponse (only supported on Devices with a Firmware version certified to GBCS v2.0 or later)</li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive

**Table 67 - Join Service (Non-Critical) Parse Response / SMETS1 Response Body Data Items**

#### 8.7.2.2.4 Sample Response body

```
<ra:JoinServiceNonCriticalRsp MessageSuccess="false">
  <ra:joinResponseCode ResponseCode="3">
    <ra:ASN1Status>incompatibleWithExistingEntry</ra:ASN1Status>
  </ra:joinResponseCode>
</ra:JoinServiceNonCriticalRsp>
```

**Figure 36 - Join Service (Non-Critical) Parse Response Sample**

## 8.8 Unjoin Service (8.8)

### SMETS2 or later

This Service Request maps to two GBCS Use Cases and each Use Case requires its own Request ID and one of the Use Cases is Critical and other Non-Critical.

Therefore the 8.8 Service Request has been broken into two parts: 8.8.1 (Unjoin Service (Critical)) and 8.8.2 (Unjoin Service (Non-Critical)).

### SMETS1

This Service Request maps to Service Reference Variant 8.8.1 (Unjoin Service (Critical)) and 8.8.2 (Unjoin Service (Non-Critical)).

The following table summarises which Unjoin Service Request Variant applies to which User Roles and Devices:

Service Request Variant	Critical / Non-Critical	User Role	Target Device Type	UnJoin from Device Type
8.8.1 <sup>1</sup>	Critical	EIS	ESME	HCALCS
8.8.1	Critical	EIS	ESME	PPMID
8.8.1 <sup>1</sup>	Critical	EIS	HCALCS	ESME
8.8.1	Critical	GIS	GSME	PPMID
8.8.2	Non-Critical	EIS	ESME	Type 2 (IHD or CAD)
8.8.2	Non-Critical	EIS	PPMID	ESME
8.8.2	Non-Critical	GIS	GPF	PPMID
8.8.2	Non-Critical	GIS	GPF	Type 2 (IHD or CAD)
8.8.2	Non-Critical	GIS / EIS	GSME	GPF
8.8.2	Non-Critical	GIS	PPMID	GSME
8.8.2	Non-Critical	OU	ESME	Type 2 (CAD)
8.8.2	Non-Critical	OU	GPF	Type 2 (CAD)

Table 68 Unjoin Service Request Variants / Devices

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

### 8.8.1 Unjoin Service (Critical) (8.8.1)

Service Request Name	UnjoinService
Service Reference	8.8
Service Request Variant Name	UnjoinService (Critical)
Service Reference Variant	8.8.1
Service Request Objective	To instruct specified Devices to cease communicating with each other via the Home Area Network (HAN)
Business Context Statement	The DCC Service User no longer wishes two Devices to communicate with each other (e.g. because it wishes to remove one of them from the HAN). It needs to instruct all non-Type 2 Devices paired with it accordingly

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>Critical and non-sensitive: SMETS2 or later: <i>GBCS XREF: SME.C.C</i></p>	
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>If two Devices in a HAN are paired (joined) and they no longer need to communicate with each other, e.g. because one of them is to be removed from the HAN, the join has to be removed. The mechanism to remove the join depends on the join type, of which there are two: <ul style="list-style-type: none"> <li>In the first one, each of the Devices holds details in its Device Log of the 'joined' Device. Two Service Requests are needed to completely remove the Join information, but as soon as the details for one of the Devices are removed from the Device Log of the other, they'll no longer be able to communicate with each other. See <a href="#">Table 50</a> where "Two Step Join" is Yes</li> <li>In the second type, only one of the Devices can provide information to the other, which can only read information from its joined Device. Only one Service Request to the Device that can provide information is needed to completely Unjoin them. See <a href="#">Table 50</a> where "Two Step Join" is No</li> </ul> </li> <li>This Service Request triggers a Command to the Business Target ID (Device ID) to remove the details of the 'Other Device' in the Service Request from the Business Target ID Device Log <ul style="list-style-type: none"> <li>If this Command is successful, the two Devices will no longer be able to communicate via the HAN</li> </ul> </li> <li>The DCC Service User is a KRP of the Business Target ID (Device ID), so the Device Response will be addressed to them</li> <li>The Device Type is not included in the Service Request, because the DCC Data Systems can identify it from the Device ID.</li> <li>This Service Request is applicable to the following Target Device Types: <ul style="list-style-type: none"> <li>Electricity Smart Meter. To unjoin it from one of: <ol style="list-style-type: none"> <li>HCALCS</li> <li>PPMID</li> </ol> </li> <li>Gas Smart Meter. To unjoin it from: <ol style="list-style-type: none"> <li>PPMID</li> </ol> </li> <li>HCALCS. To unjoin it from: <ol style="list-style-type: none"> <li>Electricity Smart Meter</li> </ol> </li> </ul> </li> <li>On successful completion of this Service Request, the DCC Data Systems will be updated to reflect its outcome</li> </ol>	
GBCS Cross Reference	Electricity	Gas

GBCS Message Code	0x000F	0x000F
GBCS Use Case	CS04AC	CS04AC
GBCS Use Case Name	Method A or C Unjoin	Method A or C Unjoin
SMETS1 Applicability	Yes (ESME Unjoin from PPMID)	Yes (GSME Unjoin from PPMID)
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. HCALCS is not a valid SMETS1 Device Type.</li> <li>2. Processing by the relevant S1SP shall be according to the SMETS1 Supporting Requirements Document, which is simply to confirm success.</li> </ol>	

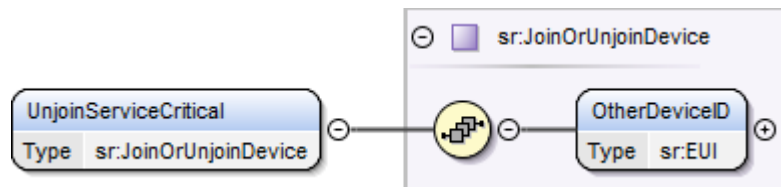
**Table 69 Unjoin Service (Critical) Service Request**

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).

## 8.8.1.1 Service Request

### 8.8.1.1.1 Format

The 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 UnjoinServiceCritical XML element defines this Service Request and it contains the Device ID of the 'Other Device' the Business Target ID Device is to be unjoined from.



**Figure 37 Unjoin Service (Critical) Service Request Structure**

### 8.8.1.1.2 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
OtherDeviceID	Device ID of the device for which the details have to be removed from the Business Target ID Device Log	sr:EUI (see Annex section 17)	Yes	None	N/A	Non-Sensitive

**Table 70 Unjoin Service (Critical) Service Request Data Items**

### 8.8.1.1.3 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	No	No
SMETS1	No	Yes	No	No	No

**Table 71 Unjoin Service (Critical) Modes of Operation**

#### 8.8.1.1.4 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 72 Unjoin Service (Critical) Command Variant Values**

#### 8.8.1.1.5 Validation

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

Validation Check	Process	Response Code
Is the 'Other Device' valid?	Check that according to the DCC Data Systems the 'Other Device' is joined to the Business Target ID Device	E080801

**Table 73 Unjoin Service (Critical) Service Request Validation**

#### 8.8.1.1.6 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:

```
<UnjoinServiceCritical>
  <OtherDeviceID>99-22-AA-BB-CC-DD-EE-FF</OtherDeviceID>
</UnjoinServiceCritical>
```

**Figure 38 Unjoin Service (Critical) Transform Service Request (Body) Format**

#### 8.8.1.2 Responses

The response messages for an "Unjoin Service (Critical)" 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.

#### 8.8.1.2.1 Unsuccessful Response

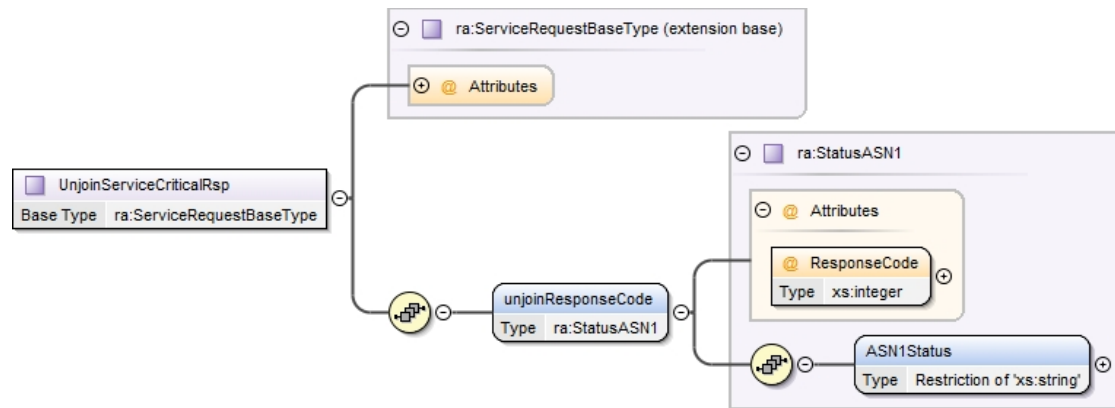
The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E080801	Failed Validation – Invalid Device ID	Error	According to the DCC Data Systems the 'Other Device' is not joined to the Business Target ID Device

**Table 74 Failed Unjoin Service (Critical) Service Request Response Codes**

#### 8.8.1.2.2 Parse Output Format / SMETS1 Response

##### 8.8.1.2.2.1 Format - UnjoinServiceCriticalResp



**Figure 39 – Unjoin Service (Critical) Parse Response / SMETS1 Response Structure**

##### 8.8.1.2.2.2 Specific Header Data Items

Data Item	Electricity Response	Gas Response
GBCSHexadecimalMessageCode	000F	000F
GBCS Use Case Number (for information only - not in header)	CS04AC	CS04AC
GBCS Use Case Name (for information only - not in header)	Method A or C Unjoin	Method A or C Unjoin
SupplementaryRemotePartyID	Not Present	Not Present
SupplementaryRemotePartyCounter	Not Present	Not Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 75 - Unjoin Service (Critical) Parse/SMETS1 Response Header Data Items**

##### 8.8.1.2.2.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
unjoinResponseCode	Outcome of the request. Valid Set (SMETS2 or later): <ul style="list-style-type: none"> <li>success</li> <li>otherDeviceNotInDeviceLog</li> <li>otherFailure</li> </ul> Valid Set (SMETS1): <ul style="list-style-type: none"> <li>success</li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive

Table 76 - Unjoin Service (Critical) Parse Response / SMETS1 Response Body Data Items

#### 8.8.1.2.2.4 Sample Response body

```
<ra:UnjoinServiceCriticalRsp MessageSuccess="false">
  <ra:unjoinResponseCode ResponseCode="1">
    <ra:ASN1Status>otherDeviceNotInDeviceLog</ra:ASN1Status>
  </ra:unjoinResponseCode>
</ra:UnjoinServiceCriticalRsp>
```

Figure 40 - Unjoin Service (Critical) Parse Response Sample

## 8.8.2 Unjoin Service (Non-Critical) (8.8.2)

Service Request Name	UnjoinService
Service Reference	8.8
Service Request Variant Name	UnjoinService (Non-Critical)
Service Reference Variant	8.8.2
Service Request Objective	To instruct specified Devices to cease communicating with each other via the Home Area Network (HAN)
Business Context Statement	The DCC Service User no longer wishes two Devices to communicate with each other (e.g. because it wishes to remove one of them from the HAN). It needs to instruct all non-Type 2 Devices paired with it accordingly
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> <li>Other User (OU) (Type 2 CAD Only)</li> </ul>

Security Classification	<p>Non-critical and non-sensitive:</p> <p>SMETS2 or later:</p> <p><i>Target Device Type = All except PPMID: GBCS XREF: SME.C.NC</i></p> <p><i>Target Device Type = PPMID: GBCS XREF: SME.C.C</i> (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	<ol style="list-style-type: none"> <li>If two Devices in a HAN are paired (joined) and they no longer need to communicate with each other, e.g. because one of them is to be removed from the HAN, the join has to be removed. The mechanism to remove the join depends on the join type, of which there are two: <ul style="list-style-type: none"> <li>In the first one, each of the Devices holds details in its Device Log of the 'joined' Device. Two Service Requests are needed to completely remove the Join information, but as soon as the details of one of the Devices are removed from the Device Log of the other, they'll no longer be able to communicate with each other. See <a href="#">Table 50Table-50</a> where "Two Step Join" is Yes</li> <li>In the second type only one of the Devices can provide information to the other, which can only read information from its joined Device. Only one Service Request to the Device that can provide information is needed to completely Unjoin them. See <a href="#">Table 50Table-50</a> where "Two Step Join" is No</li> </ul> </li> <li>This Service Request triggers a Command to the Business Target ID (Device ID) to remove the details of the 'Other Device' in the Service Request from the Business Target ID Device Log <ul style="list-style-type: none"> <li>If this Command is successful, the 2 Devices will no longer be able to communicate via the HAN and the Unjoin will be completed, except in the case where the Business Target ID is a PPMID</li> </ul> </li> <li>The Device Type is not included in the Service Request, because the DCC Data Systems can identify it from the Device ID.</li> <li>This Service Request is applicable to the following Target Device Types: <ul style="list-style-type: none"> <li>Electricity Smart Meter. To unjoin it from a Type 2 Device (IHD or CAD)</li> <li>Gas Smart Meter. To unjoin it from a Gas Proxy Function <ol style="list-style-type: none"> <li>This unjoin is available to the EIS to support the Restore Gas Proxy Function Device Log scenario (see section 8.12.2)</li> </ol> </li> <li>Gas Proxy Function. To unjoin it from one of: <ol style="list-style-type: none"> <li>PPMID</li> <li>Type 2 Device (IHD or CAD)</li> </ol> </li> </ul> </li> </ol>

	<ul style="list-style-type: none"> <li>PPMID. To unjoin it from one of: <ul style="list-style-type: none"> <li>i. Electricity Smart Meter</li> <li>ii. Gas Smart Meter</li> </ul> </li> </ul> <p>5. On successful completion of this Service Request, the DCC Data Systems will be updated to reflect its outcome</p>				
GBCS Cross Reference	ESME Unjoin from Type 2 Device	GSME Unjoin from GPF	PPMID Unjoin from ESME	PPMID Unjoin from GSME	GPF Unjoin from PPMID or Type 2 Device
GBCS Message Code	0x0010	0x0010	0x000F	0x000F	0x0010
GBCS Use Case	CS04B	CS04B	CS04AC	CS04AC	CS04B
GBCS Use Case Name	Method B Unjoin	Method B Unjoin	Method A or C Unjoin	Method A or C Unjoin	Method B Unjoin
SMETS1 Applicability	Yes	Yes	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, which is simply to confirm success.</li> </ol>				

Table 77 Unjoin Service (Non-Critical) 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).

### 8.8.2.1 Service Request

#### 8.8.2.1.1 Format

The 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 UnjoinServiceNonCritical XML element defines this Service Request and it contains the Device ID of the 'Other Device' the Business Target ID Device is to be unjoined from.

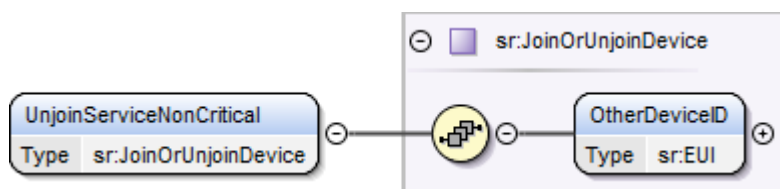


Figure 41 Unjoin Service (Non-Critical) Service Request Structure

#### 8.8.2.1.2 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
OtherDeviceID	Device ID of the device for which the details have to be removed from the Business Target ID Device Log	sr:EUI (see Annex section 17)	Yes	None	N/A	Non-Sensitive

**Table 78 Unjoin Service (Non-Critical) Service Request Data Items**

#### 8.8.2.1.3 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	No	No
SMETS1	No	Yes	No	No	No

**Table 79 Unjoin Service (Non-Critical) Modes of Operation**

#### 8.8.2.1.4 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 80 Unjoin Service (Non-Critical) Command Variant Values**

#### 8.8.2.1.5 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 Other Device ID existence validation):

Validation Check	Process	Response Code
Is the 'Other Device' valid?	Check that according to the DCC Data Systems the 'Other Device' is joined to the Business Target ID Device	E080801
Is the DCC Service User authorised to Unjoin the Device?	If the DCC Service User Role is 'OU', check that the 'Other Device' Device Type is CAD	E080821
Is the EIS authorised to Unjoin the Devices? <sup>1</sup>	If the DCC Service User Role is 'EIS', the Business Target ID Type is GSME and the 'Other Device' Type is GPF check that the DCC Service User is the registered Import Supplier to the Primary MPAN in the CHF ID Whitelist associated to the GPF ID	E080822

**Table 81 Unjoin Service (Non-Critical) Service Request Validation**

<sup>1</sup> This check replaces the generic authorisation registration check (E4) for this combination of Service User Role, Business Target ID Device Type and 'Other Device' Type

#### 8.8.2.1.6 Sample Request

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

```
<UnjoinServiceNonCritical>
  <OtherDeviceID>99-11-AA-BB-CC-DD-EE-FF</OtherDeviceID>
</UnjoinServiceNonCritical>
```

**Figure 42 Unjoin Service (Non-Critical) Service Request (Body) Format**

### 8.8.2.2 Responses

The response messages for an “Unjoin Service (Non-Critical)” 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.

#### 8.8.2.2.1 Unsuccessful Response

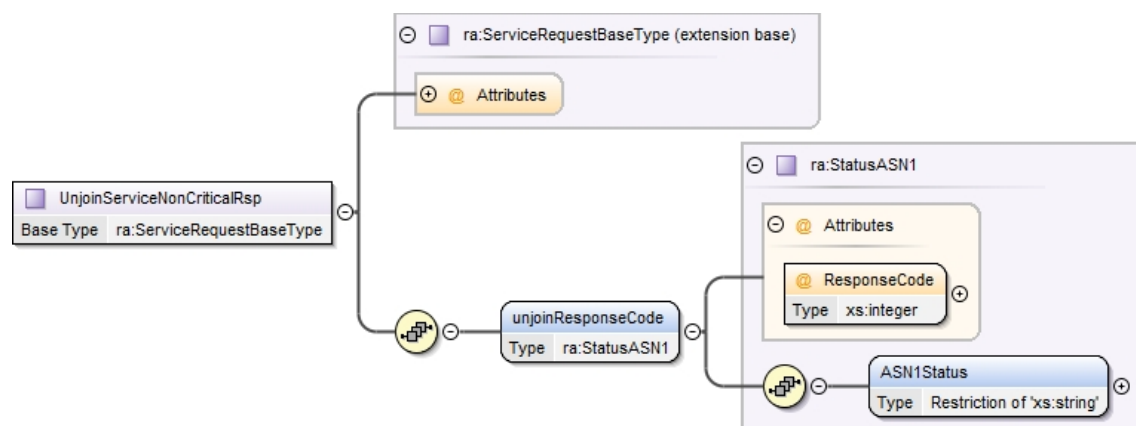
The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E080801	Failed Validation – Invalid Device ID	Error	According to the DCC Data Systems Inventory the ‘Other Device’ is not joined to the Business Target ID Device
E080821	Failed Authorisation – Invalid Service User Role for Device Type	Error	The DCC Service User Role is not authorised to Unjoin this Device Type
E080822	Failed Authorisation – Invalid DCC Service User for Unjoin Type	Error	The DCC Service User is not authorised to Unjoin these GSME / GPF

**Table 82 Failed Unjoin Service (Non-Critical) Service Request Response Codes**

#### 8.8.2.2.2 Parse Output / SMETS1 Response Format

##### 8.8.2.2.2.1 Format - UnjoinServiceNonCriticalRsp



**Figure 43 – Unjoin Service (Non-Critical) Parse Response / SMETS1 Response Structure**

##### 8.8.2.2.2.2 Specific Header Data Items

Data Item	ESME Unjoin from Type 2 Device	PPMID Unjoin from ESME
GBCSHexadecimalMessageCode	0010	000F
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>CS04B</i>	<i>CS04AC</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Method B Unjoin</i>	<i>Method A or C Unjoin</i>
SupplementaryRemotePartyID	Present where originator is a URP	Present
SupplementaryRemotePartyCounter	Present where originator is a URP	Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 83 - Unjoin Service (Non-Critical) Parse/SMETS1 Response Header Data Items – Electricity**

Data Item	GSME Unjoin from GPF	GPF Unjoin from PPMID or Type 2 Device	PPMID Unjoin from GSME
GBCSHexadecimalMessageCode	0010	0010	000F
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>CS04B</i>	<i>CS04B</i>	<i>CS04AC</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Method B Unjoin</i>	<i>Method B Unjoin</i>	<i>Method A or C Unjoin</i>
SupplementaryRemotePartyID	Present where originator is a URP	Present where originator is a URP	Present
SupplementaryRemotePartyCounter	Present where originator is a URP	Present where originator is a URP	Present
SupplementaryOriginatorCounter	Not Present	Not Present	Not Present
Timestamp	Not Present	Not Present	Not Present

**Table 84 - Unjoin Service (Non-Critical) Parse/SMETS1 Response Header Data Items – Gas**

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

#### 8.8.2.2.2.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
unjoinResponseCode	<p>Outcome of the request.</p> <p>Valid Set (SMETS2 or later):</p> <ul style="list-style-type: none"> <li>success</li> <li>otherDeviceNotInDeviceLog</li> <li>otherFailure</li> </ul> <p>Valid Set (SMETS1):</p> <ul style="list-style-type: none"> <li>success</li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive

**Table 85 - Unjoin Service (Non-Critical) Parse Response / SMETS1 Response Body Data Items**

#### 8.8.2.2.4 Sample Response body

```
<ra:UnjoinServiceNonCriticalRsp MessageSuccess="false">
  <ra:unjoinResponseCode ResponseCode="2">
    <ra:ASN1Status>otherFailure</ra:ASN1Status>
  </ra:unjoinResponseCode>
</ra:UnjoinServiceNonCriticalRsp>
```

**Figure 44 - Unjoin Service (Non-Critical) Parse Response Sample**

## 8.9 Read Device Log (8.9)

Service Request Name	ReadDeviceLog
Service Reference	8.9
Service Request Variant Name	ReadDeviceLog
Service Reference Variant	8.9
Service Request Objective	To retrieve the contents of a Device Log as defined in SMETS for a specified Device ID.
Business Context Statement	The DCC Service User wishes to understand which devices in the HAN are authorised to communicate with which other devices – e.g. Gas Meter may have a relationship with the Gas Proxy device - by reading the device IDs from the device log.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</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>1. If the Device Type is a Communication Hub Function, the response will contain the whitelist of all Device identifiers currently associated with the HAN created by the Communications Hub and the last date-time each of the Devices in the list communicated with the Communication Hub Function.</li> <li>2. For CHF with a Firmware version certified to GBCS v2.0 or later the response will also contain details of Sub GHz signal strength, for dual band CHF using the Sub GHz frequency band interface.</li> <li>3. As per the CHTS definition, the CHF shall be capable of storing the Security Credentials of a minimum of 16 Devices in the CHF Device Log. The minimum 16 Devices shall comprise a minimum of, <ul style="list-style-type: none"> <li>• four ESME</li> <li>• one GSME</li> <li>• one GPF</li> <li>• seven Type 1 Devices (including a minimum of two PPMIDs) and</li> <li>• three Type 2 Devices</li> </ul> </li> <li>4. If the Device Type is not a Communication Hub Function, the response will contain the Device identifiers and Types of the Devices in the Request's Device ID Device Log.</li> <li>5. If the Service Request Business Originator User Role is EIS and the Target Device Type is HCALCS, even though the DCC Service User is a KRP to the Device, the Command will be submitted to the Device by the DSP Access Control Broker using the URP interaction type. This is because HCALCS hold Supplier Digital Signature, but not Key Agreement Credentials.</li> <li>6. For a CHF with a Firmware version certified to GBCS v3.2 or later, the current and historic CHF Device log, including the hashed link key used for connection, can be read by supplying the optional parameter 'ReadSecurityDetails' in the Request. If the parameter 'ReadSecurityDetails' is present the use case CCS07 will be invoked, otherwise the use case CCS06 will be invoked.</li> </ol>	
GBCS Cross Reference	Communications Hub Function	All Other Devices
GBCS v1.0 Message Code	0x0004	0x0013
GBCS v1.0 Use Case	CCS05/CCS04	CS07
GBCS v1.0 Use Case Name	Read CHF device log / Check HAN communications (by reading the CHF Communications Store)	Read Device Join Details

GBCS v2.0 Message Code	0x010F	0x0013	
GBCS v2.0 Use Case	CCS06	CS07	
GBCS v2.0 Use Case Name	Read CHF device log and check HAN communications	Read Device Join Details	
GBCS v3.2 or later Message Code	0x010F/0x00FE	0x0013	
GBCS v3.2 or later Use Case	CCS06/CCS07	CS07	
GBCS v3.2 or later Use Case Name	Read CHF device log and check HAN communications /  Read CHF Device Logs	Read Device Join Details	
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 except:  1. The response data shall be populated in accordance with the SMETS1 Supporting Requirements Document.  2. The only SMETS1 Device Type supported is CHF.  3. The SMETS1 limits on Device numbers may be different.  4. The parameter “ReadSecurityDetails” is not applicable to SMETS1 Devices.		
GBCS Commands - Versioning Details			
DCC Data System creates the following GBCS Commands or Response Codes based on the following combinations			
Device Type	CHF		
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.x	GBCS v3.2 or later
DEFAULT - No specific XML criteria	CCS05/CCS04	CCS06	CCS06
DUIS v4.0 – XML contains “ReadSecurityDetails”	E080902	E080902	CCS07
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
DEFAULT - No specific XML criteria	CS07	CS07
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
DEFAULT - No specific XML criteria	CS07	CS07
Device Type	GPF	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0 or later
DEFAULT - No specific XML criteria	CS07	CS07
Device Type	HCALCS	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0 or later
DEFAULT - No specific XML criteria	CS07	CS07
Device Type	PPMID	
DEVICES firmware version for Business Target Device ID specified within SRV and contained within SMI	GBCS v1.0	GBCS v2.0 or later
DEFAULT - No specific XML criteria	CS07	CS07

**Table 86 Read Device 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).

## 8.9.1 Service Request

### 8.9.1.1 Format

The 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 ReadDeviceLog XML element defines this Service Request and it only contains the Execution Date Time for Future Dated Requests.

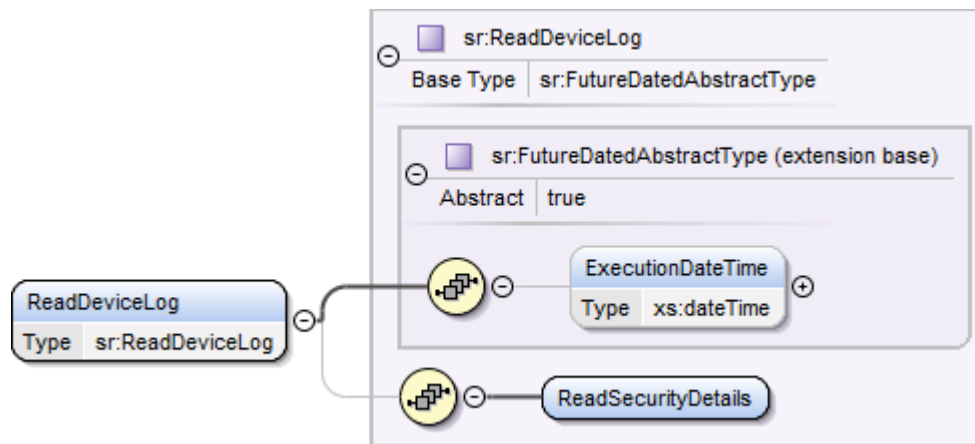


Figure 45 Read Device Log Import Service Request Structure

### 8.9.1.2 Specific Data Items Definition

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

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ExecutionDateTime	The UTC date and time the DCC Service User requires the command to be executed on the Device ID Valid set: <ul style="list-style-type: none"> <li>Date-time in the future that is either <math>\leq</math> current date + 30 days or the date = 31/12/3000</li> </ul>	xs:dateTime	No	None	UTC Date-Time	Non-Sensitive
ReadSecurityDetails	This parameter is supplied if the DCC Service User wishes to receive the current and historic device log security detail information available in the CHF. Available only for a CHF with Firmware Version of GBCS v3.2 or later.	sr:ReadSecurityDetails	No	None	None	Non-Sensitive

Table 87 Read Device Log Service Request Data Items

### 8.9.1.3 Applicable Modes of Operation

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

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 88 Read Device Log Modes of Operation

### 8.9.1.4 Applicable Command Variant Values

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

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 89 Read Device Log Command Variant Values

### 8.9.1.5 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 Other Device ID existence validation):

Validation Check	Process	Response Code
Check Device Type is CHF if Device is SMETS1	Check that if the target Device is a SMETS1 Device then the Device Type is CHF, SMETS1 does not require any other Device Logs be supported.	E080901
Check if 'ReadSecurityDetails' is supported by the Device	Check that if 'ReadSecurityDetails' is specified in the Service Request then the Device Firmware Version is at GBCS version 3.2 or later.	E080902
Check if 'ReadSecurityDetails' is supported by the Device Type	Check that if 'ReadSecurityDetails' is specified in the Service Request then the Device Type is a CHF	E080903

Table 90 Read Device Log Service Request Validation

### 8.9.1.6 Sample Request

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

#### 8.9.1.6.1 To read CHF without security details or other Device Type

```
<ReadDeviceLog/>
```

Figure 46 Sample Read Device Log Service Request (Body) Format – CHF without security details or other Device Type

#### 8.9.1.6.2 To read CHF Device Log current and historic security details

```
<ReadDeviceLog>
  <ReadSecurityDetails/>
</ReadDeviceLog>
```

Figure 46.1 Sample Read Device Log Service Request (Body) Format – CHF with security details

## 8.9.2 Responses

The response messages for a "Read Device 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.

### 8.9.2.1 Unsuccessful Response

Response Code	Response Code Name	Response Code Type	Description
E080901	Failed Validation – SMETS1 Device where Device Type is not valid for this Service Request	Error	The Device is a SMETS1 Device and the Device Type is not CHF.
E080902	Failed Authorisation – GBCS Firmware Version does not support ReadSecurityDetails	Error	ReadSecurityDetails is specified in the Service Request but the Firmware Version recorded in the SMI for the Device is not at GBCS version 3.2 or later.
E080903	Failed Authorisation – Device Type does not support ReadSecurityDetails	Error	ReadSecurityDetails' is specified in the Service Request but the Device Type is not a CHF.

Table 90Table 90.1 Failed Read Device Log Service Request Response Codes

### 8.9.2.2 Parse Output / SMETS1 Response Format

#### 8.9.2.2.1 Format - ReadDeviceLogResp

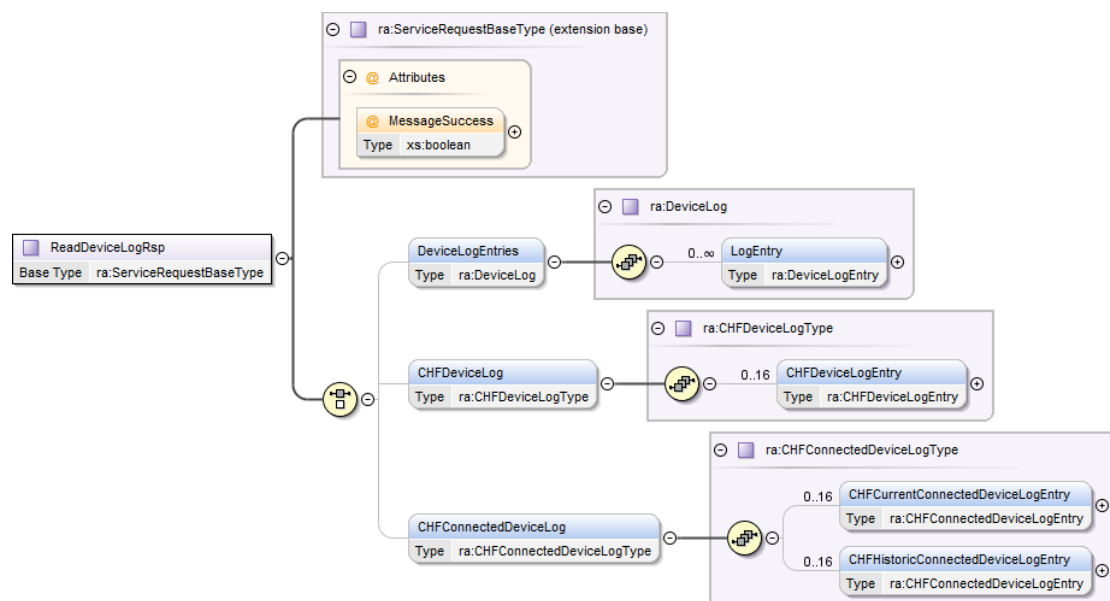


Figure 47 - Read Device Log Parse Response / SMETS1 Response Structure

### 8.9.2.2.2 Specific Header Data Items

The list of Devices which can respond to this Service Request is listed in this document, Section 8, [Table 2](#). The responses from CHF Devices are made with a different GBCS message code from the responses from other valid Devices.

GBCS v1.0:

Data Item	CHF Response	Non-CHF Response
GBCSHexadecimalMessageCode	0004	0013
<i>GBCS Use Case Number (for information only - not in header)</i>	CCS05/CCS04	CS07
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Read CHF Device Log / Check HAN Communications (by reading the CHF Communications Store)</i>	<i>Read Device Join Details</i>
SupplementaryRemotePartyID	Present	Present if the originator is a URP or the target Device Type is HCALCS
SupplementaryRemotePartyCounter	Present	Present if the originator is a URP or the target Device Type is HCALCS
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 91 - Read Device Log Parse Response Header Data Items – GBCS v1.0**

GBCS v2.0 & SMETS1:

Data Item	CHF Response	Non-CHF Response (N/A to SMETS1)
GBCSHexadecimalMessageCode	010F	0013
<i>GBCS Use Case Number (for information only – not in header)</i>	CCS06	CS07
<i>GBCS Use Case Name (for information only – not in header)</i>	<i>Read CHF device log and check HAN communications</i>	<i>Read Device Join Details</i>
SupplementaryRemotePartyID	Present	Present if the originator is a URP or the target Device Type is HCALCS
SupplementaryRemotePartyCounter	Present	Present if the originator is a URP or the target Device Type is HCALCS
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 92 – Read Device Log Parse Response Header Data Items – GBCS v2.0 & SMETS1**

GBCS v3.2:

Data Item	CHF Response	Non-CHF Response
GBCSHexadecimalMessageCode	010F, 00FE	0013
<i>GBCS Use Case Number (for information only – not in header)</i>	CCS06, CCS07	CS07
<i>GBCS Use Case Name (for information only – not in header)</i>	<i>Read CHF device log and check HAN communications, Read CHF device log</i>	<i>Read Device Join Details</i>
SupplementaryRemotePartyID	Present	Present if the originator is a URP or the target Device Type is HCALCS
SupplementaryRemotePartyCounter	Present	Present if the originator is a URP or the target Device Type is HCALCS
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

**Table 92 – Read Device Log Parse Response Header Data Items – GBCS v3.2**

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

#### 8.9.2.2.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
DeviceLogEntries	This is only present if the response code indicates a successful response.  The element returns a list of DeviceLogEntry items from the device, which may be empty Max 16 entries returned.	List of DeviceLogEntry – see below	None	N/A	Non-Sensitive
CHFDeviceLog	If reading the comms hub device log, this group is returned rather than DeviceLogEntries. Shows all the currently authorised devices on the ZIGBEE PAN.	List of CHFDeviceLogEntry – see below	None	N/A	Non-Sensitive
CHFConnectedDeviceLog <sup>1</sup>	If the request specified ReadSecurityDetails, this group is returned. This holds the current and historic devices that are/were in the Zigbee PAN.	ra:CHFConnectedDeviceLogType (see section 8.9.2.2.3.3)	None	N/A	Non-Sensitive

**Table 93 - Read Device Log Parse Response / SMETS1 Response Body Data Items**

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

#### 8.9.2.2.3.1 DeviceLogEntry Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
DeviceID	Device ID of a device	ra:EUI	None	N/A	Non-Sensitive
DeviceType	<i>The Type of device</i> <i>Valid set:</i> <ul style="list-style-type: none"> <li>ESME</li> <li>GSME</li> <li>GPF</li> <li>CHF</li> <li>HCALCS<sup>1</sup></li> <li>PPMID</li> <li>Type2</li> </ul>	ra:DeviceType	None	N/A	Non-Sensitive

Table 94 - DeviceLogEntry Data Items

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

#### 8.9.2.2.3.2 CHFDeviceLogEntry Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
DeviceID	The device identifier (ID).	ra:EUI	None	N/A	Non-Sensitive
LastCommunicationsDateTime	Date-time when a ZigBee packet was sent/received  SMETS1 only: where the Device is not able to support the LastCommunicationsDateTime parameter, the DCC shall set the value of that parameter to "3000-12-31T00:00:00Z" to indicate that the Device does not support that parameter	xs:dateTime	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
SubGHzLinkQuality	<p>For each Device in the <i>CHF Device Log</i>, an indication of its quality of communication for Communication Links in Sub GHz Bands</p> <p>A value of zero indicates Device ID is not communicating using Sub GHz frequencies:</p> <p>If the <i>LastCommunicationsDateTime</i> is recent, the Device is on 2.4GHz</p> <p>If the <i>LastCommunicationsDateTime</i> is not recent, the Device has not communicated or has ceased communicating</p> <p>SubGHzLinkQuality is only supported on CHF Devices with a Firmware version certified to GBCS v2.0 or later</p> <p>SMETS1 only: the DCC shall set the value of SubGHzLinkQuality to zero, meaning that the Device is not communicating on Sub GHz frequencies</p>	Restriction of xs:short (minInclusive = -128 maxInclusive = 127)	None	dBm	Non-Sensitive

Table 95 - CHFDeviceLogEntry Data Items

#### 8.9.2.2.3.3 CHFConnectedDeviceLog Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
CHFCurrentConnectedDeviceLogEntry	List of Devices and their Security Details that are currently in the CHF Device Log.	List of CHFConnectedDeviceLogEntry (see section 8.9.2.2.3.4)	None	N/A	Non-Sensitive
CHFHistoricConnectedDeviceLogEntry	List of Devices and their Security Details that are in the CHF Historic Device Log.	List of CHFConnectedDeviceLogEntry (see section 8.9.2.2.3.4)	None	N/A	Non-Sensitive

Table 95Table 95.1- CHFConnectedDeviceLog Data Items

#### 8.9.2.2.3.4 CHFConnectedDeviceLogEntry Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
DeviceID	The device identifier.	ra:EUI	None	N/A	Non-Sensitive
DeviceSecurityDetails	Where a TC Link Key between the CHF and the Device with this Device ID had been established previously, this field shall contain a Hash of that TC Link Key. Otherwise this field shall contain an empty string.	Restriction of xs:string (maxLength = 32)	None	N/A	Non-Sensitive

Table 95Table 95.2 - CHFConnectedDeviceLogEntry Data Items

#### 8.9.2.2.4 Sample Response

```
<ra:ReadDeviceLogRsp MessageSuccess="true">
  <ra:DeviceLogEntries>
    <ra:LogEntry>
      <ra:DeviceID>99-00-AA-BB-CC-DD-EE-FF</ra:DeviceID>
      <ra:DeviceType>ESME</ra:DeviceType>
    </ra:LogEntry>
    <ra:LogEntry>
      <ra:DeviceID>11-00-AA-55-44-33-22-11</ra:DeviceID>
      <ra:DeviceType>GSME</ra:DeviceType>
    </ra:LogEntry>
  </ra:DeviceLogEntries>
</ra:ReadDeviceLogRsp>
```

**Figure 48 - Read Device Log (CS07) Parse Response Sample**

```
<ra:ReadDeviceLogRsp MessageSuccess="true">
  <ra:CHFDeviceLog>
    <ra:CHFDeviceLogEntry>
      <ra:DeviceID>99-00-AA-BB-CC-DD-EE-FF </ra:DeviceID>
      <ra:LastCommunicationsDateTime>2014-10-03T00:00:00.00</ra:LastCommunicationsDateTime>
    </ra:CHFDeviceLogEntry>
    <ra:CHFDeviceLogEntry>
      <ra:DeviceID>99-00-AA-BB-CC-DD-EE-FF </ra:DeviceID>
      <ra:LastCommunicationsDateTime>2014-10-03T00:00:00.00</ra:LastCommunicationsDateTime>
    </ra:CHFDeviceLogEntry>
  </ra:CHFDeviceLog>
</ra:ReadDeviceLogRsp>
```

**Figure 49 - Read Device Log (CCS04/CCS05 Parse Response) Sample**

```
<ra:ReadDeviceLogRsp MessageSuccess="true">
  <ra:CHFDeviceLog>
    <ra:CHFDeviceLogEntry>
      <ra:DeviceID>99-00-AA-BB-CC-DD-EE-FF</ra:DeviceID>
      <ra:LastCommunicationsDateTime>2017-10-03T00:00:00.00</ra:LastCommunicationsDateTime>
      <ra:SubGHzLinkQuality>3</ra:SubGHzLinkQuality>
    </ra:CHFDeviceLogEntry>
    <ra:CHFDeviceLogEntry>
      <ra:DeviceID>99-00-DA-BB-CC-DD-EE-FE</ra:DeviceID>
      <ra:LastCommunicationsDateTime>2017-10-03T00:00:00.00</ra:LastCommunicationsDateTime>
      <ra:SubGHzLinkQuality>0</ra:SubGHzLinkQuality>
    </ra:CHFDeviceLogEntry>
  </ra:CHFDeviceLog>
</ra:ReadDeviceLogRsp>
```

**Figure 50 - Read Device Log (CCS06 Parse Response) Sample**

```
<ra:ReadDeviceLogRsp MessageSuccess="true">
  <ra:CHFConnectedDeviceLog>
    <ra:CHFCurrentConnectedDeviceLogEntry>
      <ra:DeviceID>99-00-AA-BB-CC-DD-EE-FF</ra:DeviceID>
      <ra:DeviceSecurityDetails>1234567890ABCDEF1234567890ABCDEF</ra:DeviceSecurityDetails>
    </ra:CHFCurrentConnectedDeviceLogEntry>
    <ra:CHFCurrentConnectedDeviceLogEntry>
      <ra:DeviceID>99-00-AA-BB-CC-DD-EE-FA</ra:DeviceID>
      <ra:DeviceSecurityDetails>1234567890ABCDEF1234567890ABCDEA</ra:DeviceSecurityDetails>
    </ra:CHFCurrentConnectedDeviceLogEntry>
    <ra:CHFHistoricConnectedDeviceLogEntry>
      <ra:DeviceID>99-00-AA-BB-CC-DD-EE-FB</ra:DeviceID>
      <ra:DeviceSecurityDetails>1234567890ABCDEF1234567890ABCDEB</ra:DeviceSecurityDetails>
    </ra:CHFHistoricConnectedDeviceLogEntry>
    <ra:CHFHistoricConnectedDeviceLogEntry>
      <ra:DeviceID>99-00-AA-BB-CC-DD-EE-FC</ra:DeviceID>
      <ra:DeviceSecurityDetails>1234567890ABCDEF1234567890ABCDEC</ra:DeviceSecurityDetails>
    </ra:CHFHistoricConnectedDeviceLogEntry>
  </ra:CHFConnectedDeviceLog>
</ra:ReadDeviceLogRsp>
```

**Figure 50**Figure 50.1 - Read CHF Device Logs (CCS07 Parse Response) Sample

## 8.10 Section 8.10

This section has been intentionally left blank as there is no Service Reference 8.10.

## 8.11 Update HAN Device Log (8.11)

Service Request Name	UpdateHANDeviceLog
Service Reference	8.11
Service Request Variant Name	UpdateHANDeviceLog
Service Reference Variant	8.11
Service Request Objective	To update the Communications Hub Function's Device Log (as defined within SMETS) with details of other Devices to either be added to or removed from it.
Business Context Statement	The Supplier wishes to add or remove a specified Device to the Home Area Network (HAN) as part of the management of its Smart Metering System at a consumer premise.
User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Gas Import Supplier (GIS)</li> <li>Other User (OU) (Type 2 CAD Only)</li> </ul>
Security Classification	Non-critical and non-sensitive SMETS2 or later: GBCS XREF: SME.C.NC
Service Request Narrative (SMETS2 or later)	1. The Communications Hub Function's Device Log contains the whitelist of the other Devices that are part of its HAN. A backup of this whitelist is maintained by the DCC Data Systems to enable its restoration in case the Communications Hub needs replacing. See section 8.12. The Gas Proxy Function is not included in this whitelist, because both Device IDs are part of

the physical Communications Hub. The relationship between these two Device IDs is set via Service Request 12.2 - Device Pre-notification. See Annex section 12.2.

2. As defined in CHTS, the CHF Device Log can include a maximum of sixteen Devices, with each type limited to a maximum number of Devices. Please note the CHF will reject Commands to add more Devices of a type for which it has already reached the maximum number. Any Devices no longer required should be removed from the CHF Device Log to avoid this. The maximum number of Devices by Device Type are:
  - a. Four ESME
  - b. One GSME
  - c. One GPF
  - d. Seven Type 1 Devices (including a minimum of two PPMIDs)
  - e. Three Type 2 Devices (IHD and / or CAD)
3. This Service Request's Business Target ID is the Communications Hub Function ID and the Device ID of the Device to be added to or removed from the HAN (one Device ID per Request) is included in the Service Request. The Device Type is not included in the Service Request, because the DCC Data Systems can identify it from the Device ID.
  - a. A Device must have been Pre-notified via Service Request 12.2 - Device Pre-notification (see Annex section 12.2) before it can be added to a CHF Whitelist via this Service Request.
4. All Service Requests to add a Device to the HAN Device Log have to include the Join Time Period, which is the maximum time the CHF will wait for the Device to join the HAN. This has to be set to a value between 1 and 3600 seconds (1 hour). For GSME, the Join Time Period value needs to reflect the extended latency due to the fact that the Meter is 'Sleepy', i.e. its HAN radio will not be active most of the time.
5. If the Device being added to the whitelist is an ESME, GSME, HCALCS or PPMID, its status must be 'Pending'. As an exception it will also be possible to add one of these Devices if its status is 'Whitelisted', but it will be the DCC Service User responsibility to ensure it is added to the same CHF whitelist and, where applicable, associated to the same MPxN(s) as when the Request was sent for the Device being in a status of 'Pending'
6. If the Device being added to the whitelist is an ESME, GSME or HCALCS, validation checks are made by the DCC to ensure that the identity of the sender matches the organisation registered against one of the MPxNs specified within the Service Request, by checking the DCCs registration database, i.e.

- a. For ESME / HCALCS. The Service Request includes an Import MPxN (Primary Import MPAN) and optionally a Secondary Import MPAN and or an Export MPAN and the sender's identity matches the organisation registered against each of the MPANs included in the Service Request
  - b. For GSME. The Service Request includes an MPRN and the sender's identity matches the organisation registered against the Import MPxN (MPRN)
7. If the Device being added to the whitelist is an IHD and the Command is for Local Delivery only (Command Variant = 2) the authorisation registration check (E4) is not applicable. See Main Document of this documentation set section 7.4
8. Because Access Control is based on registration data, Meters have to be added before Type 1 and Type 2 Devices and removed after them.
9. If the Device is being removed from the whitelist, all its joins to other Devices in the same whitelist should have previously been removed.
10. This Service Request can be submitted to the DCC Data Systems by the Import Supplier registered to the ESME / GSME MPxN(s) to be added to or removed from the whitelist as well as by Other Users (CAD Devices only). Because these User Roles are URPs to the Communications Hub Function, the DSP Access Control Broker submits the Commands to the Device on their behalf and the CHF responses and Device Alerts are also returned to the DSP Access Control Broker.
11. A Service Response is returned to the DCC Service User to indicate if the Service Request was successful or not.

If the DCC Service User calls the Request Type "Add" variant of 8.11, then a successful Command Response indicates that the details provided in the Service Request have been successfully added to the CHF Device Log and the CHF is waiting for the Device to join the HAN. This triggers the following actions;

  - a) The DCC Data Systems will set the status of the Device to be added within the Service Request to 'Whitelisted' in the Smart Metering Inventory
  - b) For ESME and GSME, the association between the Meter Device ID and its MPxN(s) is recorded in the Smart Metering Inventory and DCC Alert N16 is sent to the Meter's Registered Network Operator. Only the Primary Import MPAN, the Export MPAN and the MPRN will be used for registration checks
  - c) The DCC Data Systems shall wait for a timeout period to receive the updated Device Log from the CHF. This updated CHF Device Log (received via a Device Alert to the ACB) will confirm that the specified Device has been successfully connected onto the HAN. The timeout period that the DCC Data Systems shall wait for the Device Alert is defined as "JoinTimePeriod" as

	<p>specified within the Service Request + a configurable network transmission time to allow delivery of the Device Alert over the SMWAN</p> <p>d) If the CHF Device Log confirming communications have been established with the Device specified in the Service Request is received within the timeout period, then the DCC Data Systems informs the DCC Service User via a DCC Alert N24, and;</p> <p>I. For ESME, GSME, HCALCS and PPMID, the Device Status is set to 'Installed Not Commissioned' in the Smart Metering Inventory</p> <p>e) If the CHF Device Log confirming communications have been established with the Device specified in the Service Request is not received within the timeout period, then the DCC Data Systems informs the DCC Service User via a DCC Alert N25</p> <p>If the Service User calls the Request Type "Add" variant of 8.11, then an unsuccessful Command Response indicates that the CHF did not execute the command, the details provided in the Service Request have NOT been successfully added to the CHF Device Log and no further actions are triggered by the DCC Data Systems.</p> <p>If the Service User calls the Request Type "Remove" variant of 8.11, then the Command Response indicates whether the specified Device provided in the Service Request was either successfully or unsuccessfully removed from the CHF Device Log. Upon receipt of a successful Response resulting from the Update HAN Device Log Service Request to Remove a Device, the DCC shall where the Device Status is currently 'Whitelisted', set the Device status to 'Pending'. No additional DCC Alerts are produced by the DCC Data Systems as the Service Response contains all the required details for the Sender of the Service Request and any DCC Alerts would duplicate information already received as part of the Service Response.</p> <p>12. Updates to the Smart Metering Inventory are carried out before the Service Response is generated. The other actions detailed above are post-processing steps after the Service Response has been sent to the User.</p>
<b>GBCS Cross Reference</b>	Communications Hub Function
<b>GBCS Message Code</b>	<p>Request Type Add – 0x0001</p> <p>Request Type Remove – 0x0002</p>
<b>GBCS Use Case</b>	<p>Request Type Add – CCS01</p> <p>Request Type Remove – CCS02</p>
<b>GBCS Use Case Name</b>	<p>Request Type Add – Add Device to CHF device log</p> <p>Request Type Remove – Remove device from CHF device log</p>

SMETS1 Applicability	Yes (Add and Remove)
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 N25 DCC Alert and use of "Whitelisted" Device Status to indicate potentially unsuccessful additions to the HAN Device Log are not applicable to SMETS1 Devices.</li> <li>2. CHTS does not apply to SMETS1 CHF Devices; SMETS1 limits on Device numbers may be different.</li> <li>3. HCALCS Devices are not applicable to SMETS1.</li> <li>4. Local Delivery is not applicable.</li> <li>5. This section for SMETS1 Devices supersedes the steps under SMETS2 or later narrative step 11.</li> </ol> <p>If the DCC Service User calls the Request Type "Add" variant of 8.11 then a successful SMETS1 Response from the S1SP to the DCC Data Systems indicates that the details provided in the Service Response have been successfully processed and that the device is assumed to be joined to the HAN. The timeout period for the DCC Data Systems while waiting for the SMETS1 Response shall be long enough to include a 15 minute timeout for the target Device to join to the CHF; note that the "JoinTimePeriod" as specified within the Service Request is not used by the DSP for SMETS1 Devices. The successful response triggers the following actions (using the same step numbers as for SMETS2 or later Devices);</p> <ol style="list-style-type: none"> <li>a) <i>(There is no Whitelisted state for SMETS1 devices)</i></li> <li>b) For ESME and GSME, the association between the Meter Device ID and its MPxN(s) is recorded in the Smart Metering Inventory and DCC Alert N16 is sent to the Meter's Registered Network Operator. Only the Primary Import MPAN, the Export MPAN and the MPRN will be used for registration checks</li> <li>c) <i>(There is no separate alert to indicate the join to the HAN is complete for SMETS1 devices.)</i></li> <li>d) In addition to the DCC Data Systems informing the DCC Service User of the successful outcome via the Countersigned SMETS1 Response to the 8.11 Service Request, a DCC Alert N24 is issued for compatibility with SMETS2 or later Device processing, and;             <ol style="list-style-type: none"> <li>a. For ESME, GSME and PPMID, the Device Status is set to 'Installed Not Commissioned' in the Smart Metering Inventory</li> </ol> </li> <li>e) <i>(There is no equivalent of a failure to receive a Device Alert at this point, since only the SMETS1 Response is required and there is no Device Alert in this process).</i></li> </ol> <p>If the Service User calls the Request Type "Add" variant of 8.11, then an unsuccessful response from the S1SP indicates that the device was not linked to the CHF. This will be forwarded to the DCC Service User in the normal way and no further actions are triggered by the DCC Data Systems.</p>

	<p>If an S1SPAlert indicating failure to process the 8.11 request is received from the S1SP then this will be forwarded to the DCC Service User as DCC Alert N55 in the normal way and no further actions are triggered by the DCC Data Systems.</p> <p>If the Service User calls the Request Type “Remove” variant of 8.11, then the Command Response indicates whether the specified Device provided in the Service Request was either successfully or unsuccessfully removed from the CHF Device Log. No additional DCC Alerts are produced by the DCC Data Systems as the Service Response contains all the required details for the Sender of the Service Request and any DCC Alerts would duplicate information already received as part of the Service Response.</p>
--	---

Table 96 Update HAN Device 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).

## 8.11.1 Service Request

### 8.11.1.1 Format

The 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 UpdateHANDeviceLog XML element defines this Service Request and it contains the details the Communications Hub Function requires to add a Device to or remove it from its Whitelist and, for Future Dated Requests, the Execution Date Time.

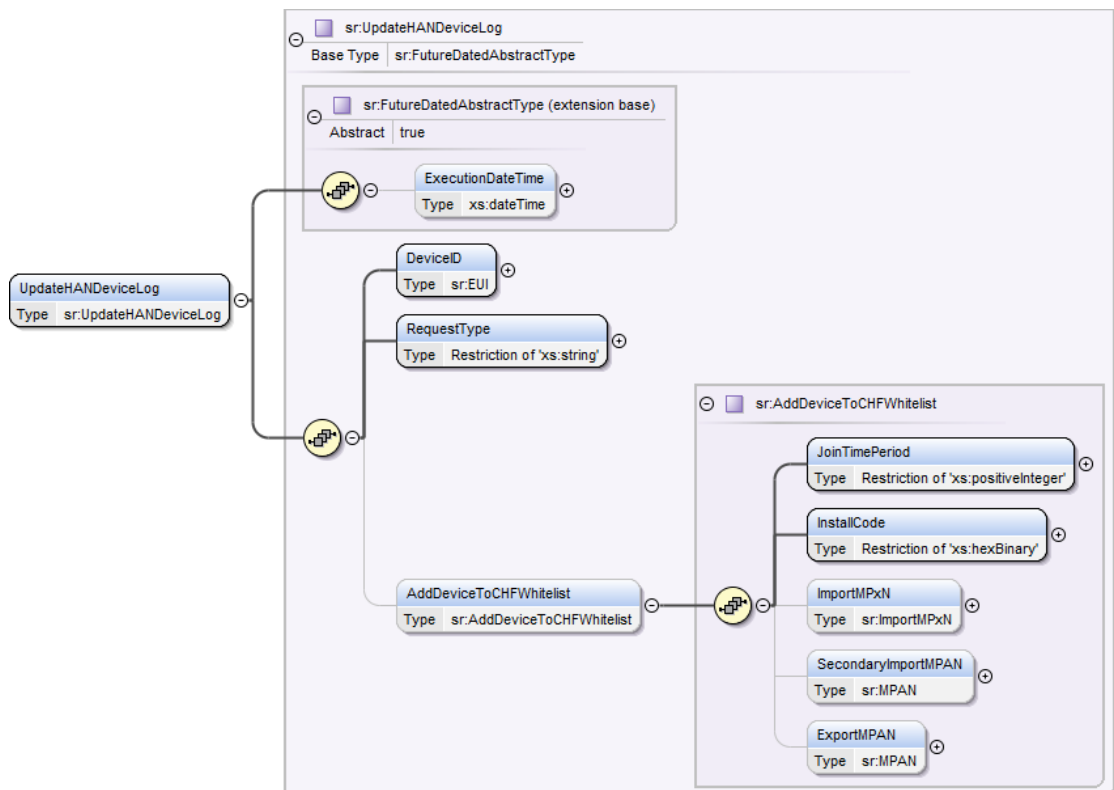


Figure 51 Update HAN Device Log Service Request Structure

### 8.11.1.2 Specific Data Items Definition

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

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ExecutionDateTime	The UTC date and time the DCC Service User requires the command to be executed on the Device ID Valid set: <ul style="list-style-type: none"> <li>Date-time in the future that is either <math>\leq</math> current date + 30 days or the date = 31/12/3000</li> </ul>	xs:dateTime	No	None	UTC Date-Time	Non-Sensitive
DeviceID	Device ID of a Device to be added to the Communications Hub Function Whitelist or removed from it	sr:EUI (see Annex section 17)	Yes	None	N/A	Non-Sensitive
RequestType	Indicates whether the request is to add or remove the Device from the Communications Hub Function Whitelist Valid Set: <ul style="list-style-type: none"> <li>Add</li> <li>Remove</li> </ul>	Restriction of xs:string (Enumeration)	Yes	None	N/A	Non-Sensitive
AddDeviceToCHFWhitelist	List of data items required to add the Device to the Communications Hub Function Whitelist	sr:AddDeviceToCHFWhitelist (see section 8.11.1.3)	Device to be added to Whitelist: Yes Device to be removed from Whitelist: N/A	None	N/A	Non-Sensitive

**Table 97 Update HAN Device Log Service Request Data Items**

### 8.11.1.3 AddDeviceToCHFWhitelist Data Items Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
JoinTimePeriod	Defines the time period in seconds during which the Communications Hub Function will permit the device being added to join the HAN and communicate with the Communications Hub Function SMETS1: this value should be set to a maximum of 15 minutes to align with DSP timeout behaviour	Restriction of xs:positiveInteger (min Inclusive = 1, max Inclusive = 3600)	Yes	None	Seconds	Non-Sensitive
InstallCode	Installation Credentials Valid set: <ul style="list-style-type: none"> <li>SMETS2: Install code of 16 octets; note that device behaviour is not defined if an install code of less than 16 octets is used, and from DUIS v3.0 the XML schema allows a lower minimum length, so the DCC Service User is advised to ensure that the install code is exactly 16 bytes. From DUIS v4.0 this will be validated by the DSP</li> <li>SMETS1: Install code in the range 6 to 16 octets</li> </ul>	Restriction of xs:hexBinary (minLength = 6, maxLength = 16)	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
ImportMPxN	The reference number identifying an Import electricity or a gas metering point	sr:ImportMPxN (Restriction of xs:string (minLength = 1, maxLength = 13))	ESME, HCALCS <sup>4</sup> and GSME: Yes <sup>1</sup> Else: N/A	None	N/A	Non-Sensitive
SecondaryImportMPAN	The reference number identifying a Twin Element Import electricity secondary metering point	sr:MPAN (Restriction of xs:string (minLength = 13, maxLength = 13))	Twin ESME, HCALCS <sup>4</sup> : No <sup>2</sup> Else: N/A	None	N/A	Non-Sensitive
ExportMPAN	The reference number identifying an Export electricity metering point	sr:MPAN (Restriction of xs:string (minLength = 13, maxLength = 13))	Export ESME, HCALCS <sup>4</sup> : No <sup>3</sup> Else: N/A	None	N/A	Non-Sensitive

**Table 98 Update HAN Device Log Service Request – AddDeviceToCHFWhitelist Data Items**

<sup>1</sup> Used for registration checks

<sup>2</sup> Not used for registration checks

<sup>3</sup> If Export capability is used it must be provided, because it is used for registration checks

<sup>4</sup> N/A to SMETS1

#### 8.11.1.4 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 99 Update HAN Device Log Modes of Operation**

#### 8.11.1.5 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 100 Update HAN Device Log Command Variant Values**

### 8.11.1.6 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 Device ID of the Device to be added to the CHF Whitelist valid?	If the Request Type is 'Add', check that the Device ID of the Device to be added to the CHF Whitelist is not already associated with another CHF	E081101
Is the Device ID of the Device to be removed from the CHF Whitelist valid?	If the Request Type is 'Remove', check that the Device ID of the Device to be removed is one of the Devices in the CHF Whitelist	E081102
Is the Device Type of a Device being added to the Whitelist valid?	Check that the Device Type of a Device being added to the Whitelist is one of: <ul style="list-style-type: none"> <li>• ESME</li> <li>• GSME</li> <li>• HCALCS<sup>2</sup></li> <li>• PPMID</li> <li>• IHD</li> <li>• CAD</li> </ul>	E081104
Is the Device Status of a Device being added to the Whitelist valid?	For those Devices that have a Device Status, check that if the Device is being added to the Whitelist its Device Status is 'Pending' or 'Whitelisted'	E081105
Is the data in the Request consistent?	Check that if the Request Type is: <ul style="list-style-type: none"> <li>• 'Add'. The Request includes the Add Device CHF Whitelist element</li> <li>• 'Remove'. The Request doesn't include the Add Device CHF Whitelist element</li> </ul>	E081106
Does the Device ID of the Device being added to or removed from the Whitelist exist?	Check that the Device ID of the Device being added to or removed from the Whitelist exists in the Smart Metering Inventory	E081107
Is the DCC Service User authorised to Add the Device to or remove it from the HAN Device Log?	If the DCC Service User Role is 'OU', check that the Device ID Device Type is CAD	E081108
Does the Service Request include correct MPxNs? <sup>1</sup>	If the Service Request is adding an ESME, GSME or HCALCS, check that: <ul style="list-style-type: none"> <li>• For ESME / HCALCS. The Service Request includes an Import MPxN (Primary Import MPAN) and optionally a Secondary Import MPAN and / or an Export MPAN and the sender's identity matches the organisation registered against each of the MPANs included in the Service Request</li> <li>• For GSME. The Service Request includes an MPRN and the sender's identity matches the organisation registered against the Import MPxN (MPRN)</li> </ul>	E081109

Validation Check	Process	Response Code
Are the MPANs of the correct type?	<p>If the Service Request includes one or more MPANs, for those included check that:</p> <ul style="list-style-type: none"> <li>The Import MPxN (Primary Import MPAN) contains an Import MPAN</li> <li>The Secondary Import MPAN contains an Import MPAN</li> <li>The Export MPAN contains an Export MPAN</li> </ul>	E081110
Is the length of the Install Code valid for a SMETS2 or later Device?	Check that if the target device is SMETS2 or later then the Install Code is exactly 32 hexadecimal characters (representing 16 octets) in length.	E081111

**Table 101 Update HAN Device Log Service Request Validation**

<sup>1</sup> This check supersedes the generic Authorisation Check associated to Response Code E4 only for Request Type 'Add' (please note the check associated to Response Code E4 is applicable to Request Type 'Remove'). See Main Document of this documentation set section 7.4

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

#### 8.11.1.7 Sample Request

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

```
<UpdateHANDeviceLog>
<DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
<RequestType>Add</RequestType>
<AddDeviceToCHFWhitelist>
  <JoinTimePeriod>600</JoinTimePeriod>
  <InstallCode>0123456789ABCDEF0123456789ABCDEF</InstallCode>
  <ImportMPxN>1234567890123</ImportMPxN>
</AddDeviceToCHFWhitelist>
</UpdateHANDeviceLog>
```

**Figure 52 Update HAN Device Log Service Request (Body) Format**

#### 8.11.2 Responses

- The response messages for an "Update HAN Device 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
  - 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.

### 8.11.2.1 Unsuccessful Response

Response Code	Response Code Name	Response Code Type	Description
E081101	Failed Validation – Device to be added already associated with another CHF	Error	The Device ID of a Device to be added to the CHF Whitelist is already associated with another CHF
E081102	Failed Validation – Device to be removed not in CHF Whitelist	Error	The Device ID of a Device to be removed is not included in the CHF Whitelist
E081104	Failed Validation – Invalid Device Type to add to whitelist	Error	The Device Type of the Device to be added to the whitelist is invalid, e.g. if it is a Communications Hub Function or Gas Proxy Function
E081105	Failed Validation – Invalid status of Device to add to whitelist	Error	The Status of the Device being added to the Whitelist is not 'Pending' or 'Whitelisted'
E081106	Failed Validation – Inconsistent Request	Error	If the Request Type is: <ul style="list-style-type: none"> <li>'Add'. It doesn't include the Add Device CHF Whitelist element</li> <li>'Remove'. It does include the Add Device CHF Whitelist element</li> </ul>
E081107	Failed Validation – Invalid Device ID	Error	The Device ID of the Device to be added to or removed from the Whitelist doesn't exist
E081108	Failed Authorisation – Invalid Service User Role for Device Type	Error	The DCC Service User Role is not authorised to add this Device Type to the HAN Device Log or remove it from it
E081109	Failed Authorisation – DCC Service User / MPxN mismatch	Error	The DCC Service User is not the registered organisation (Import Supplier and, where applicable Export Supplier) of all of the MPxNs in the Service Request
E081110	Failed Authorisation – Invalid MPAN Type	Error	The Service Request contains an Invalid MPAN Type, e.g. the Import MPxN is populated with an Export MPAN
E081111	Failed Validation – Invalid Install Code length	Error	The Service Request contains an Install Code which is not exactly 32 hexadecimal characters (representing 16 octets) in length and the target device is SMETS2.

Table 102 Failed Update HAN Device Log Service Request Response Codes

### 8.11.2.2 Parse Output / SMETS1 Response Format

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

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.

#### 8.11.2.2.1 Specific Header Data Items

Data Item	Add Device Response	Remove Device Response
GBCSHexadecimalMessageCode	0001	0002

Data Item	Add Device Response	Remove Device Response
<i>GBCS Use Case Number (for information only - not in header)</i>	CCS01	CCS02
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Add Device to CHF device log</i>	<i>Remove device from CHF device log</i>
SupplementaryRemotePartyID	Present	Present
SupplementaryRemotePartyCounter	Present	Present
SupplementaryOriginatorCounter	Not Present	Not Present
Timestamp	Not Present	Not Present

Table 103 - Update HAN Device Log Parse/SMETS1 Response Header Data Items

## 8.12 Restore HAN Device Log (8.12)

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

Therefore the 8.12 Service Request has been broken into two parts: 8.12.1 (Communications Hub Function Device Log) and 8.12.2 (Gas Proxy Function Device Log).

### 8.12.1 Restore HAN Device Log (8.12.1)

Service Request Name	RestoreHANDeviceLog
Service Reference	8.12
Service Request Variant Name	RestoreHANDeviceLog
Service Reference Variant	8.12.1
Service Request Objective	To replace the Device log of a specified Communications Hub Function as specified in CHTS with the Device Log of a specified previous Communications Hub Function's Device Log stored within the DCC Data Systems.
Business Context Statement	On replacement of a Communications Hub (e.g. due to failure) restoration of the backup of the Communications Hub Function data is required in order to restore 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	1. This Service Request can be submitted to the DCC Data Systems by the Import Supplier registered to the ESME / GSME MPxN(s) in the old Communications Hub Function whitelist. Because these User Roles are URPs to the Communications

	<p>Hub Function, the DSP Broker submits the Commands to it on their behalf</p> <p>2. This Service Request Business Target ID is the new Communications Hub Function ID (Device ID). This Device Status must not be one of:</p> <ul style="list-style-type: none"> <li>a. 'Decommissioned'</li> <li>b. 'Pending'</li> <li>c. 'Suspended'</li> <li>d. 'Withdrawn'</li> </ul> <p>3. When a Communications Hub is physically replaced, the following Service Requests have to be sent:</p> <ul style="list-style-type: none"> <li>a. 8.12.1 - Restore HAN Device Log (see section 8.12.1). To restore the HAN, the Communications Hub Function ID has to be replaced and the whitelist (Device Log) of the old one restored to the new ID</li> <li>b. 8.12.2 – Restore GPF Device Log (see section 8.12.2). Only applicable if the CHF whitelist includes Gas equipment. It can only be sent following successful completion of Service Request 8.12.1 - Restore HAN Device Log (see section 8.12.1) to restore the Gas Proxy Device Log from the Old Gas Proxy ID to that of the new ID (Business Target ID associated to the new CHF in 8.12.1)</li> <li>c. 8.3 – Decommission Device. To update the status of the old CHF and its associated GPF within the Smart Metering Inventory to a status of 'Decommissioned'</li> </ul> <p>4. To restore the HAN Device Log to the new Communications Hub Function Device ID, the DCC Data Systems will take the old Device ID whitelist backup from its records and include it in the Command sent to the new Communications Hub Function Device ID. If the Command is successful, the DCC Data Systems will associate the Whitelist to the new Communications Hub Function Device ID</p> <p>5. On successful completion, DCC Alert N30 will be sent to the other Registered Import Supplier, if applicable</p>
<b>GBCS Cross Reference</b>	Communications Hub Function
<b>GBCS Message Code</b>	0x0003
<b>GBCS Use Case</b>	CCS03
<b>GBCS Use Case Name</b>	Restore CHF Device Log

SMETS1 Applicability

No

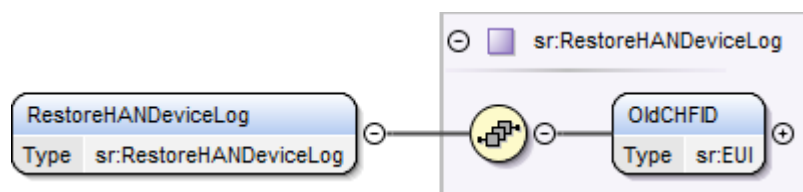
**Table 104 Restore HAN Device Log Service Request**

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).

### 8.12.1.1 Service Request

#### 8.12.1.1.1 Format

The 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 RestoreHANDeviceLog XML element defines this Service Request and it contains the old Communications Hub Function Device ID.



**Figure 53 Restore HAN Device Log Service Request Structure**

#### 8.12.1.1.2 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
OldCHFID	Device ID of the Old Communications Hub Function being replaced	sr:EUI (see Annex section 17)	Yes	None	N/A	Non-Sensitive

**Table 105 Restore HAN Device Log Service Request Data Items**

#### 8.12.1.1.3 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):

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

**Table 106 Restore HAN Device Log Modes of Operation**

#### 8.12.1.1.4 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):

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 107 Restore HAN Device Log Command Variant Values**

#### 8.12.1.1.5 Validation

This Service Request specific validation is as follows (see Main Document of this documentation set section 7 for generic access control checks and Annex section 17.2 for Old CHF Device ID existence validation):

Validation Check	Process	Response Code
Is the Old CHF ID Device Type a Communications Hub Function?	Check that the Old CHF ID corresponds to a Device of Type Communications Hub Function	E081202
Is the Business Target ID Device Status valid?	Check that the Device Status of the new Communications Hub Function is not one of: <ul style="list-style-type: none"> <li>Decommissioned</li> <li>Pending</li> <li>Suspended</li> <li>Withdrawn</li> </ul>	E081204
Is the DCC Service User Authorised to access the Old CHF ID? <sup>1</sup>	Check that the DCC Service User is a registered Import Supplier to one of the MPxNs associated with Device(s) in the Old CHF ID Whitelist	E081205

**Table 108 Restore HAN Device Log Service Request Validation**

<sup>1</sup> This check replaces the generic authorisation registration check (E4), which in this case is not applicable to the Business Target ID

#### 8.12.1.1.6 Sample Request

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

```
<RestoreHANDeviceLog>
<OldCHFID>13-35-AA-BB-CC-DD-EE-FF</OldCHFID>
</RestoreHANDeviceLog>
```

**Figure 54 Restore HAN Device Log Service Request (Body) Format**

#### 8.12.1.2 Responses

The response messages for a “Restore HAN Device 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
- 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 Unknown Remote Parties (URP) to the Device.

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

##### 8.12.1.2.1 Unsuccessful Response

Response Code	Response Code Name	Response Code Type	Description
E081202	Failed Validation – Invalid Old CHF ID Device Type	Error	The Old CHF ID doesn't correspond to a Device of Type Communications Hub Function

Response Code	Response Code Name	Response Code Type	Description
E081204	Failed Validation – Invalid new Communications Hub Function Device Status	Error	The Device Status of the new Communications Hub Function is invalid
E081205	Failed Authorisation – DCC Service User unable to access Old CHF ID	Error	The DCC Service User is not a registered Import Supplier to any of the MPxNs associated with Device(s) in the Old CHF ID Whitelist

**Table 109 Failed Restore HAN Device Log Service Request Response Codes**

#### 8.12.1.2.2 Parse Output Format

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

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

#### 8.12.1.2.2.1 Specific Header Data Items

Data Item	Response
GBCSHexadecimalMessageCode	0003
<i>GBCS Use Case Number (for information only - not in header)</i>	CCS03
<i>GBCS Use Case Name (for information only - not in header)</i>	Restore CHF Device Log
SupplementaryRemotePartyID	Present
SupplementaryRemotePartyCounter	Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

**Table 110 - Restore HAN Device Log Parse Response Header Data Items**

### 8.12.2 Restore Gas Proxy Function Device Log (8.12.2)

Service Request Name	RestoreGPFDDeviceLog
Service Reference	8.12
Service Request Variant Name	RestoreGPFDDeviceLog
Service Reference Variant	8.12.2
Service Request Objective	To replace the Device log of a specified Gas Proxy Function (GPF) Function as specified in CHTS with the Device Log of a specified previous Gas Proxy Function's Device Log stored within the DCC Data Systems.

<b>Business Context Statement</b>	On replacement of a Communications Hub (e.g. due to failure) restoration of the backup of the Gas Proxy Function data is required in order to restore the new Gas Proxy Function Device Log.
<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>	Non-critical and non-sensitive: GBCS XREF: SME.C.NC
<b>Service Request Narrative</b>	<ol style="list-style-type: none"> <li>This Service Request can be submitted to the DCC Data Systems by the Import Supplier registered to the ESME / GSME MPxN(s) in the Communications Hub Function whitelist of the CHF associated to the Business Target ID GPF. Because the GBCS Use Case is only available to the Access Control Broker, the DSP Access Control Broker submits the Commands to it on their behalf</li> <li>This Service Request Business Target ID is the new Gas Proxy Function ID (Device ID). This Device Status must not be one of: <ol style="list-style-type: none"> <li>'Decommissioned'</li> <li>'Pending'</li> <li>'Suspended'</li> <li>'Withdrawn'</li> </ol> </li> <li>When a Communications Hub is physically replaced, the following Service Requests have to be sent: <ol style="list-style-type: none"> <li>8.12.1 - Restore HAN Device Log (see section 8.12.1). To restore the HAN, the Communications Hub Function ID has to be replaced and the whitelist (Device Log) of the old one restored to the new ID</li> <li>8.12.2 – Restore GPF Device Log (see section 8.12.2). Only applicable if the CHF whitelist includes Gas equipment. It can only be sent following successful completion of Service Request 8.12.1 - Restore HAN Device Log (see section 8.12.1) to restore the Gas Proxy Device Log from the Old Gas Proxy ID to that of the new ID (Business Target ID associated to the new CHF in 8.12.1)</li> <li>8.3 – Decommission Device. To update the status of the old CHF and its associated GPF within the Smart Metering Inventory to a status of 'Decommissioned'</li> </ol> </li> <li>To restore the Gas Proxy Function Device Log to the new Gas Proxy Function Device ID, the DCC Data Systems will take the old Device ID Gas Proxy Device Log backup from its records and include it in the Command sent to the new Communications Hub Function Device ID.</li> </ol>

	<p>a. If the Command is successful the DCC Data Systems will:</p> <p>i. Associate the Device Log to the new Gas Proxy Function Device ID</p> <p>5. The DCC Service User will also need to:</p> <p>a. Unjoin / join the GSME to the new GPF once the GPF Device Log has been restored by sending the appropriate service request (8.8.2 or 8.7.2 respectively). If not, then the GSME will still have the old GPF details contained within its Device Log.</p> <p>6. On successful completion, DCC Alert N31 will be sent to the other Registered Import Supplier, if applicable</p>
<b>GBCS Cross Reference</b>	Gas Proxy Function
<b>GBCS Message Code</b>	0x008C
<b>GBCS Use Case</b>	GCS59
<b>GBCS Use Case Name</b>	Restore GPF Device Log
<b>SMETS1 Applicability</b>	No

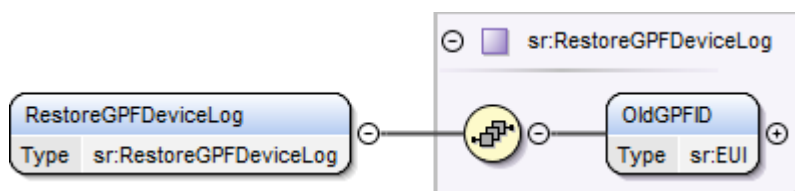
**Table 111 Restore Gas Proxy Function Device Log Service Request**

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).

### 8.12.2.1 Service Request

#### 8.12.2.1.1 Format

The 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 RestoreGPFDeviceLog XML element defines this Service Request and it contains the old Gas Proxy Function Device ID.



**Figure 55 Restore Gas Proxy Function Device Log Service Request Structure**

#### 8.12.2.1.2 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
OldGPFID	Device ID of the Old Gas Proxy Function being replaced	sr:EUI (see Annex section 17)	Yes	None	N/A	Non-Sensitive

**Table 112 Restore Gas Proxy Function Device Log Service Request Data Items**

#### 8.12.2.1.3 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	No	No

**Table 113 Restore Gas Proxy Function Device Log Modes of Operation**

#### 8.12.2.1.4 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 114 Restore Gas Proxy Function Device Log Command Variant Values**

#### 8.12.2.1.5 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 Old GPF Device ID existence validation):

Validation Check	Process	Response Code
Is the Old GPF ID Device Type a Gas Proxy Function?	Check that the Old GPF ID corresponds to a Device of Type Gas Proxy Function	E081221
Is the Business Target ID Device Status valid?	Check that the Device Status of the new Gas Proxy Function is not one of: <ul style="list-style-type: none"> <li>Decommissioned</li> <li>Pending</li> <li>Suspended</li> <li>Withdrawn</li> </ul>	E081222
Is the DCC Service User Authorised to access the CHF associated to the Business Target ID <sup>1</sup>	Check that the DCC Service User is a registered Import Supplier to one of the MPxNs associated with Device(s) in the CHF ID Whitelist associated to the Business Target ID GPF	E081223

**Table 115 Restore Gas Proxy Function Device Log Service Request Validation**

<sup>1</sup> This check replaces the generic authorisation registration check (E4), which in this case is not applicable to the Business Target ID

#### 8.12.2.1.6 Sample Request

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

```
<RestoreGPFDeviceLog>
  <OldGPFID>57-68-AA-BB-CC-DD-EE-FF</OldGPFID>
</RestoreGPFDeviceLog>
```

**Figure 56 Restore Gas Proxy Function Device Log Service Request (Body) Format**

### 8.12.2.2 Responses

The response messages for a “Restore Gas Proxy Function Device 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
- 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 Unknown Remote Parties (URP) to the Device.

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

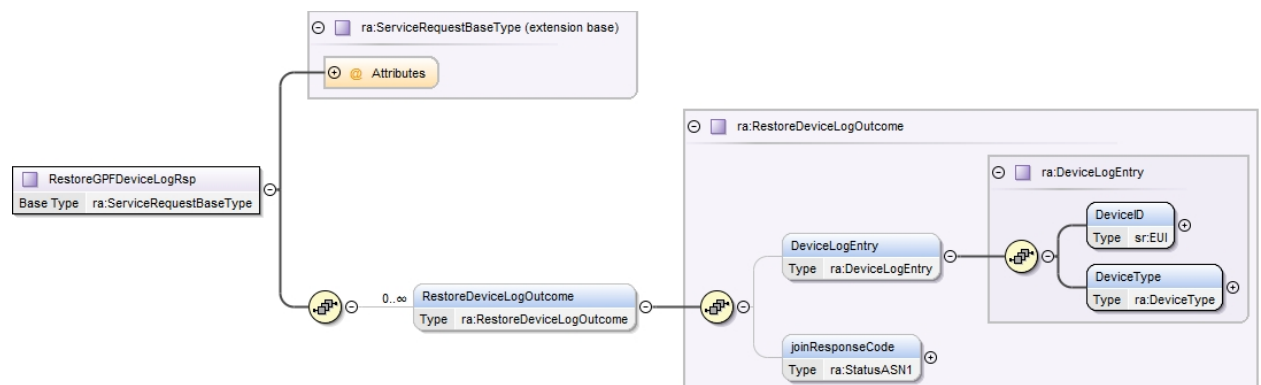
#### 8.12.2.2.1 Unsuccessful Response

Response Code	Response Code Name	Response Code Type	Description
E081221	Failed Validation – Invalid Old GPF ID Device Type	Error	The Old GPF ID doesn't correspond to a Device of Type Gas Proxy Function
E081222	Failed Validation – Invalid new Gas Proxy Function Device Status	Error	The Device Status of the new Gas Proxy Function is invalid
E081223	Failed Authorisation – DCC Service User unable to access CHF associated to the GPF	Error	The DCC Service User is not a registered Import Supplier to any of the MPxNs associated with Device(s) in the CHF ID Whitelist associated to the Business Target ID GPF

**Table 116 Failed Restore Gas Proxy Function Device Log Service Request Response Codes**

#### 8.12.2.2.2 Parse Output Format

##### 8.12.2.2.2.1 Format - RestoreGPFDeviceLogResp



**Figure 57 – Restore Gas Proxy Function Device Log Parse Response Structure**

##### 8.12.2.2.2.2 Specific Header Data Items

Data Item	Gas Response
GBCSHexadecimalMessageCode	008C
<i>GBCS Use Case Number (for information only - not in header)</i>	<i>GCS59</i>
<i>GBCS Use Case Name (for information only - not in header)</i>	<i>Restore GPF Device Log</i>
SupplementaryRemotePartyID	Not Present
SupplementaryRemotePartyCounter	Not Present
SupplementaryOriginatorCounter	Not Present
Timestamp	Not Present

Table 117 - Restore Gas Proxy Parse Response Header Data Items

#### 8.12.2.2.2.3 Specific Body Data Items

Data Item	Description / Valid Set	Type	Default	Units	Sensitivity
RestoreDeviceLogOutcome	There will be one present corresponding to each Device. The element returns a DeviceLogEntry and join response code giving the outcome of the restore.	DeviceLogEntry – see below	None	N/A	Non-Sensitive
DeviceLogEntry	A Device ID and Type for which there is a join response code.	See 8.9.2.2.3.1	None	N/A	Non-Sensitive
joinResponseCode	Outcome of the request for this particular device Valid Set: <ul style="list-style-type: none"> <li>success</li> <li>incompatibleWithExistingEntry</li> <li>deviceLogFull</li> <li>writeFailure</li> </ul>	Restriction base xs:string (Enumeration)	None	N/A	Non-Sensitive

Table 118 - Restore Gas Proxy Function Device Log Parse Response Body Data Items

#### 8.12.2.2.2.4 Sample Response body

```
<ra:RestoreGPFDeviceLogRsp MessageSuccess="false">
  <ra:RestoreDeviceLogOutcome>
    <ra:DeviceLogEntry>
      <ra:DeviceID>99-00-AA-BB-CC-DD-EE-FF</ra:DeviceID>
      <ra:DeviceType>ESME</ra:DeviceType>
    </ra:DeviceLogEntry>
    <ra:joinResponseCode ResponseCode="4">
      <ra:ASN1Status>deviceLogFull</ra:ASN1Status>
    </ra:joinResponseCode>
  </ra:RestoreDeviceLogOutcome>
</ra:RestoreGPFDeviceLogRsp>
```

Figure 58 - Restore Gas Proxy Function Device Log Parse Response Sample

## 8.13 Return Local Command Response (8.13)

Service Request Name	ReturnLocalCommandResponse
----------------------	----------------------------

Service Reference	8.13
Service Request Variant Name	ReturnLocalCommandResponse
Service Reference Variant	8.13
Service Request Objective	To return to the DCC the response from a Device obtained as a result of a locally executed Command resulting from DCC Local Command Services.
Business Context Statement	A DCC Service User requests Local Command Service from DCC so that commands are delivered to them for loading to a HHT. The command is executed by the Device locally and the HHT receives the responses from the Smart Metering Equipment. The DCC Service user should then use this service to return responses to DCC as applicable.
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 has to be used when the result of a Command applied locally has a DCC Data Systems or Public Key Repository Impact. <ol style="list-style-type: none"> <li>In most cases the Device returns the result of the Command in the Command Response but, in some, e.g. 8.11 Update HAN Device Log (see section 8.11) the result is included in a Device Alert</li> </ol> </li> <li>This Service Request has to be used when a successful Device Response for a Command for each of the Service Requests in <a href="#">Table 120</a> is applied Locally by the DCC Service Users is returned to them rather than to the DCC Data Systems via the SM WAN</li> <li>This Service Request also has to be used when any of the Device Alerts in <a href="#">Table 121</a> associated to Commands applied Locally for the Service Request in <a href="#">Table 120</a> is returned to the DCC Service Users rather than to the DCC Data Systems via the SM WAN</li> <li>This Service Request includes: <ol style="list-style-type: none"> <li>For Device Responses, the Original Service Request ID to which the Device Response corresponds, where known. Note the DCC Service User won't be able to match Device Responses that use the URP interaction pattern, i.e. where the Business Target ID is the DSP Access Control Broker.</li> <li>In all cases, the Device GBCS Response (in GBCS format) as would have been received by the DCC</li> </ol> </li> </ol>

	Data Systems if the Device Response / Alert had been sent via the SM WAN.	
	5. Response Codes E081301 and E081303 should be ignored if they correspond to Commands not applied locally	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	N/A	N/A
GBCS Use Case	N/A	N/A
GBCS Use Case Name	N/A	N/A
SMETS1 Applicability	No	No

**Table 119 Return Local Command Response Service Request**

The following table lists the Service Requests Responses needed by the DCC Data Systems and the reasons why:

Service Request Response	DCC Data Systems Actions (Successful Service Request Response)
3.2 - Restrict Access For Change Of Tenancy	<ul style="list-style-type: none"> <li>All active DSP Schedules on that Device owned by an Other User will be automatically deleted by the DCC Data Systems.</li> <li>For each deleted DSP Schedule A DCC Alert N4 will be sent to the Other User that owned it</li> <li>All Other User Future Dated (DSP) Requests not yet sent to the Device will be automatically cancelled by the DCC Data Systems.</li> <li>For each cancelled Future Dated (DSP) Request a DCC Alert N3 will be sent to the Other User that had sent the Service Request.</li> </ul>
6.8 - Update Device Configuration (Billing Calendar)	<ul style="list-style-type: none"> <li>The DCC Data Systems will inform the CSPs that require it, to enable them to collect and send Billing Data Log Device Alerts</li> </ul>
6.14.1 - Update Device Configuration (Auxiliary Load Control Descriptions)	<ul style="list-style-type: none"> <li>The DSP shall send a DCC Alert N58 to the ESME's ENO to notify them of the ALCS / HCALCS configuration change (where the ENO is a user of DUIS version 3.1 or later).</li> </ul>
6.14.2 - Update Device Configuration (Auxiliary Load Control Scheduler)	<ul style="list-style-type: none"> <li>The DSP shall send a DCC Alert N58 to the ESME's ENO to notify them of the ALCS / HCALCS configuration change (where the ENO is a user of DUIS version 3.1 or later).</li> </ul>
6.14.3 - Update Device Configuration (Auxiliary Controller Scheduler)	<ul style="list-style-type: none"> <li>The DSP shall send a DCC Alert N58 to the ESME's ENO to notify them of the Auxiliary Controller configuration change</li> </ul>

Service Request Response	DCC Data Systems Actions (Successful Service Request Response)
	(where the ENO is a user of DUIS version 3.1 or later).
6.15.1 - Update Security Credentials (KRP)	<ul style="list-style-type: none"> <li>The DCC Data Systems shall update the Smart Metering Inventory with new certificate identifiers as a record of the certificate held in the relevant Trust Anchor Cell on that Device</li> <li>Where the Remote Party whose certificate has been placed on the Device is not the sender of the Service Request, the DCC Data Systems shall send a DCC Alert N42 to the Remote Party whose certificate has been placed on the Device</li> </ul>
6.15.2 - Update Security Credentials (Device)	<ul style="list-style-type: none"> <li>The DCC Data Systems will update Public Key Repository with the status of the Certificates</li> </ul>
6.21 - Request Handover of DCC Controlled Device	<ul style="list-style-type: none"> <li>The DCC Data Systems shall update the Smart Metering Inventory with the new certificate identifiers as a record of the certificate held in the relevant Trust Anchor Cell on that Device</li> <li>Where the Remote Party whose certificate has been placed on the Device is not the sender of the Service Request, the DCC Data Systems shall send a DCC Alert N42 to the Remote Party whose certificate has been placed on the Device</li> </ul>
8.7.1 - Join Service (Critical)	<ul style="list-style-type: none"> <li>The DCC Data Systems will record the association</li> <li>Joining an ESME (Business Target ID) to an HCALCS results in the HCALCS Device Status being set to 'Commissioned' in the Smart Metering Inventory if the status of the ESME it is being joined to is 'Commissioned'</li> <li>Joining an ESME or GSME (Business Target ID) to a PPMID results in the PPMID Device Status being set to 'Commissioned' in the Smart Metering Inventory, unless this was already its Device Status and provided that the status of the ESME or GSME it is being joined to is 'Commissioned'</li> </ul>
8.7.2 - Join Service (Non-Critical)	<ul style="list-style-type: none"> <li>The DCC Data Systems will record the association</li> <li>Joining a GSME (Business Target ID) to a GPF results in the GPF Device Status being set to 'Commissioned' in the Smart Metering Inventory if the status of the GSME it is being joined to is 'Commissioned'</li> </ul>
8.8.1 - Unjoin Service (Critical)	<ul style="list-style-type: none"> <li>The DCC Data Systems will record the disassociation</li> </ul>
8.8.2 - Unjoin Service (Non-Critical)	<ul style="list-style-type: none"> <li>The DCC Data Systems will record the disassociation</li> </ul>

Service Request Response	DCC Data Systems Actions (Successful Service Request Response)
8.11 – Update HAN Device Log	<ul style="list-style-type: none"> <li>For Devices being added to / removed from the HAN, the DCC Data Systems will update the Device Status in the Smart Metering Inventory as described in section 8.11</li> <li>For ESME and GSME Devices being added to the HAN the association between the Meter Device ID and its MPxN(s) is recorded in the Smart Metering Inventory and DCC Alert N16 is sent to the Meter's Registered Operator</li> <li>For Devices being added to the HAN, the DCC Data Systems will a start timeout period (JoinTimePeriod + network transmission time) for the updated Device Log to be returned via a Device Log Backup Device Alert.</li> <li>Subsequent processing related to the Device Log Backup Device Alert is as described in section 8.11.</li> </ul>
8.12.1 - Restore HAN Device Log	<ul style="list-style-type: none"> <li>The DCC Data Systems will update the association of the HAN Device Log Backup to the new CHF Device ID</li> <li>If applicable, DCC Alert N30 will be sent to the Registered Import Supplier that didn't send the Request</li> </ul>
8.12.2 - Restore Gas Proxy Function Device Log	<ul style="list-style-type: none"> <li>The DCC Data Systems will update the association of the GPF Device Log Backup to the new GPF Device ID</li> <li>If applicable, DCC Alert N31 will be sent to the Registered Import Supplier that didn't send the Request</li> </ul>

Service Request Response	DCC Data Systems Actions (Successful Service Request Response)
11.2 Read Firmware Version	<ul style="list-style-type: none"> <li>• if the Target Device Type is ESME, GSME or CHF and the Firmware Version returned by the Device matches an entry on the CPL, but is different from that stored in the SMI, the DCC Data Systems will update the Firmware Version in the SMI to the value returned by the Device. Note that updating the Firmware Version may also update the Device's GBCS Version in the SMI <ul style="list-style-type: none"> <li>○ If the target Device is CHF, the associated GPF Firmware Version will also be updated</li> <li>○ If the Firmware Version is valid on the CPL and the Service Request wasn't submitted by the Responsible Import Supplier, DCC Alert N49 will be sent to the Responsible Import Supplier</li> <li>○ If the Firmware Version is no longer valid on the CPL, the SMI Firmware Version will be updated, but the Device Status will not be set to 'Suspended'. In this case DCC Alert N50 will be sent to the Responsible Import Supplier as a warning</li> </ul> </li> <li>• if the Target Device Type is ESME, GSME or CHF and the Firmware Version returned by the Device is invalid (doesn't match an entry on the CPL) DCC Alert N51 will be sent to the Responsible Import Supplier as a warning and the SMI Firmware Version will not be updated</li> <li>• if the Target Device Type is GPF and the GSME Firmware Version returned by the GPF is different from that stored in the SMI, DCC Alert N52 will be sent to the Responsible Import Supplier as a warning and the SMI Firmware Version will not be updated</li> </ul>

Service Request Response	DCC Data Systems Actions (Successful Service Request Response)
11.3 - Activate Firmware	<ul style="list-style-type: none"> <li>If the Firmware Version returned by the Device matches an entry on the CPL <ul style="list-style-type: none"> <li>The DCC Data Systems will update the Device ID Firmware version in the Smart Metering Inventory</li> <li>If the Device Status was 'Suspended' and the Firmware Version returned by the Device matches an entry on the CPL with a status of "Current" the DCC Data Systems shall update it to the status it held immediately prior to its Suspension and DCC Alert N29 will be sent to the Responsible Import Supplier and to the Responsible Network Operator</li> <li>If the Firmware Version returned by the Device matches an entry on the CPL with a status of "Removed", the SMI Firmware Version will be updated, but the Device Status will not be set to 'Suspended'. In this case DCC Alert N50 will be sent to the Responsible Import Supplier as a warning</li> </ul> </li> <li>If the Firmware Version returned by the Device is invalid (doesn't match an entry on the CPL), DCC Alert N51 will be sent to the Responsible Import Supplier as a warning and the Smart Metering Inventory Firmware Version will not be updated</li> </ul>

**Table 120 Return Local Command Response – Service Request Responses / Actions**

The following table lists the Device Alerts needed by the DCC Data Systems and the reasons why:

Device Alert	DCC Data Systems Action
CHF Device Log Backup Device Alert (GBCS Alert Codes: 0x8F12 – CHF Device Log Updated)	<p>On the receipt of the Device Alert the DCC Data Systems will update the backup of the CHF whitelist it maintains.</p> <p>Subsequent processing related to the Device Log Backup Device Alert is as described in section 8.11.</p>
GPF Device Log Backup Device Alert (GBCS Alert Code: 0x8071)	<p>This Device Alert is returned by the GPF whenever its Device Log changes, except where the change arises from a GPF Device Log Restore Command. I.e. as a result of the successful completion of the following Service Requests:</p> <ul style="list-style-type: none"> <li>8.7.2 – Join Service (Non-Critical), where the Business Target ID is the GPF. See section 8.7.2</li> <li>8.8.2 – Unjoin Service (Non-Critical), where the Business Target Id is the GPF. See section 8.8.2</li> </ul> <p>In both cases, the DCC Data Systems will update the backup of the GPF Device Log it maintains</p>

**Table 121 Return Local Command Response – Device Alerts / Actions**

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).

## 8.13.1 Service Request

### 8.13.1.1 Format

The 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 ReturnLocalCommandResponse XML element defines this Service Request and contains the original RequestID applied locally to the Device and the GBCS response returned to the DCC Service User by the Device rather than to the DCC Data Systems via the SM WAN.

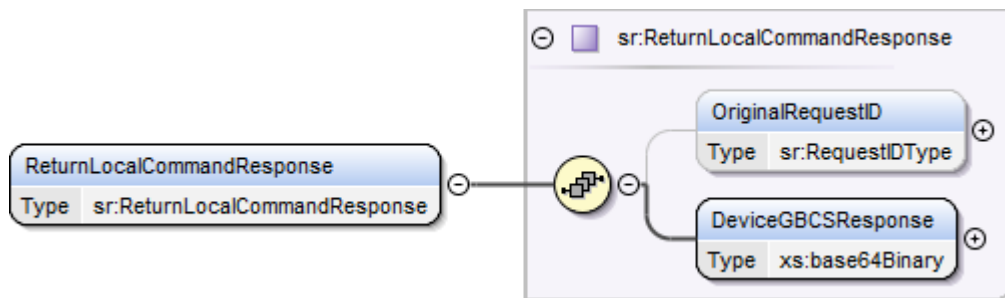


Figure 59 Return Local Command Response Service Request Structure

### 8.13.1.2 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
OriginalRequestID	Concatenation of BusinessOriginatorID, BusinessTargetID and OriginatorCounter, separated by ":" in the original Service Request RequestID, e.g. AA-22-33-44-55-66-77-88:99-00-AA-BB-CC-DD-EE-FF:1234	sr:RequestIDType (see Annex section 17)	DeviceGBCSResponse is not a Device Alert: No Otherwise: N/A	None	N/A	Non-Sensitive
DeviceGBCSResponse	Message (GBCSPayload) received locally by the DCC Service User and needed by the DCC to perform the relevant actions described in Table 120 if the GBCSPayload contains a Device Response or in Table 121 if it contains a Device Alert	xs:base64Binary	Yes	None	N/A	Non-Sensitive

Table 122 Return Local Command Response Service Request Data Items

### 8.13.1.3 Applicable Modes of Operation

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

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

Table 123 Return Local Command Response Modes of Operation

#### 8.13.1.4 Applicable Command Variant Values

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

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

Table 124 Return Local Command Response Command Variant Values

#### 8.13.1.5 Validation

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

Validation Check	Process	Response Code
Is the OriginalRequestID valid?	If the OriginalRequestID is included in the Request, check that it corresponds to a Command to be Delivered Locally for which no Device Response has been received and for which the DCC Data Systems have to perform the relevant actions described in Table 120	E081301
Does the DeviceGBCSResponse GBCS message ID match the OriginalRequestID?	If the OriginalRequestID is included in the Request, check that the DeviceGBCSResponse corresponds to the OriginalRequestID	E081302
Is the DeviceGBCSResponse valid?	<ul style="list-style-type: none"> <li>If the OriginalRequestID is included in the Request, check that the DeviceGBCSResponse is a successful Device Response</li> <li>If the OriginalRequestID is not included in the Request, check that the DeviceGBCSResponse is a <ul style="list-style-type: none"> <li>Successful Device Response for a Command to be Delivered Locally for which no Device Response has been received and for which the DCC Data Systems have to perform the relevant actions described in Table 120</li> </ul> </li> </ul> or <ul style="list-style-type: none"> <li>Device Alert corresponding to a Command for which a Device Alert is expected and for which the DCC Data Systems have to perform the relevant actions described in Table 121</li> </ul>	E081303

Table 125 Return Local Command Response Service Request Validation

#### 8.13.1.6 Sample Request

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

```
<ReturnLocalCommandResponse>
  <OriginalRequestID>11-22-33-44-55-66-77-88:99-00-AA-BB-CC-DD-EE-FF:50</OriginalRequestID>
  <DeviceGBCSResponse>ZGVmYXVsdA==</DeviceGBCSResponse>
</ReturnLocalCommandResponse>
```

Figure 60 Return Local Command Response Service Request (Body) Format

## 8.13.2 Responses

The response messages for a "Return Local Command Response" request follow the generic format for all "DCC Only" responses that don't include specific data in the response, the generic responses applicable to this request are;

- Acknowledgement

Sample responses are given in Annex Introduction Appendix 1.

### 8.13.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E081301	Failed Validation – Invalid Original Command	Error	The Original Request ID doesn't correspond to a Command to be Delivered Locally for which no Device Response has been received
E081302	Failed Validation – Device Response and Original Command mismatch	Error	The Device Response doesn't correspond to the Original Request ID or it isn't a valid Device Alert Type
E081303	Failed Validation – Invalid Device Response	Error	<ul style="list-style-type: none"> <li>• If the OriginalRequestID is included in the Request, the DeviceGBCS Response is not a successful Device Response</li> <li>• If the OriginalRequestID is not included in the Request, the DeviceGBCS Response is not a               <ul style="list-style-type: none"> <li>○ Device Response for a Command to be Delivered Locally for which no Device Response has been received</li> </ul> </li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>○ valid Device Alert Type corresponding to a Command for which a Device Alert is expected and for which the DCC Data Systems have to perform the relevant actions described in Table 121</li> </ul>

Table 126 Failed Return Local Command Response Service Request Response Codes

## 8.14 Communications Hub Status Update

Communications Hub Status Updates are used to provide DCC with information regarding the physical status (including location) of Communications Hubs. Installation and physical maintenance activity of Communications Hubs shall be carried out by Users who shall be required to update DCC on completion of the following activities (each an associated Service Request Variant):

1. Successful Installation of a Communications Hub Device, including connectivity established to the SM WAN (InstallSuccess)
2. Installation of a Communications Hub where connectivity is not established to the SM WAN (InstallNoSMWAN)

3. Communications Hub to be returned to DCC because of a Fault (FaultReturn)
4. Communications Hub to be returned to DCC for a reason other than a Fault, or reporting that a Communications Hub has been lost or stolen (NoFaultReturn)

Where an Energy Supplier successfully installs a Communication Hub at a consumer premise, a Service Request 8.14.1 or 8.14.2 is expected to be sent to the DCC. The choice of Service Request to send is determined by whether or not the Communication Hub was successfully connected to the SM WAN (8.14.1) or not (8.14.2).

Where an Energy Supplier returns a Communication Hub to the DCC, a Service Request 8.14.3 or 8.14.4 is expected to be sent to the DCC. The choice of Service Request to send is determined by the reason for the return of the Communications Hub. This is established on the basis of whether or not the Energy Supplier party is allocating responsibility for the return on the DCC by defining the return as a fault return (8.14.3) or taking responsibility itself for the return and declaring it as a no fault return, or reporting it lost or stolen (8.14.4).

Service Request Variants 8.14.3 and 8.14.4 are for informing DCC of the logistical status of a Communications Hub, but they do not manage the status of Communications Hubs within the Smart Metering Inventory. An Energy Supplier returning a Communications Hub, or reporting it lost or stolen, is also expected to use SR 8.3 (DecommissionDevice) to inform DCC that a Communications Hub is being removed from the consumer premises.

### 8.14.1 Communications Hub Status Update – Installation Success

Service Request Name	CommunicationsHubStatusUpdate	
Service Reference	8.14	
Service Request Variant Name	CHFInstallSuccess(SMWAN)	
Service Reference Variant	8.14.1	
Service Request Objective	To enable Eligible Users to notify DCC of a successful Communications Hub installation including successful connection to the SM WAN.	
Business Context Statement	The DCC requires that Service Users provide updates upon changes to Communication Hub installation status as set out in the Communications Hub Support Materials.	
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: Not applicable	
Service Request Narrative	1. The Communications Hub Status Update – Installation Success data provided in this Service Request is used to allow DCC to track Communications Hub managed assets and verify CSP Coverage Models against installed meter locations.	
GBCS Cross Reference	Electricity	Gas

GBCS Message Code	N/A	N/A
GBCS Use Case	N/A	N/A
GBCS Use Case Name	N/A	N/A
SMETS1 Applicability	No	No

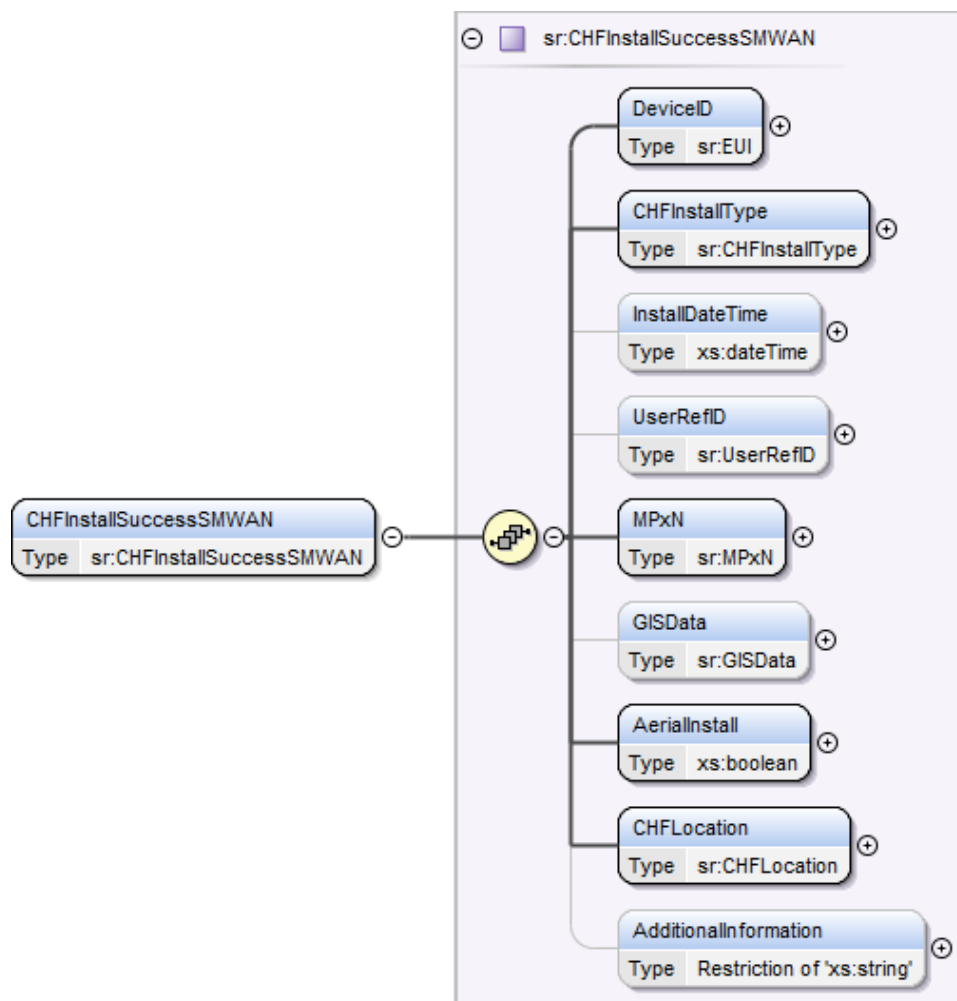
**Table 127 Communications Hub Status Update - Install Success Service Request**

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).

### 8.14.1.1 Service Request

#### 8.14.1.1.1 Format

The 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 CHFInstallSuccessSMWAN XML element defines this Service Request and contains the DeviceID of the Communications Hub which has been successfully installed over the SM WAN, along with other details.



**Figure 61 Communications Hub Status Update - Install Success Service Request Structure**

#### 8.14.1.1.2 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
DeviceID	The DeviceID of the Communications Hub Successfully Installed (CHF)	sr:EUI	Yes	None	N/A	Non-Sensitive
CHFInstallType	Valid Set: <ul style="list-style-type: none"> <li>New CHF Install</li> <li>Replacement CHF Install</li> </ul>	sr:CHFInstallType (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive
InstallDateTime	An optional field to record the date and time that the CHF was successfully installed	xs:dateTime	No	None	UTC Date-Time	Non-Sensitive
UserRefID	An optional field to record User reference for activity or engineer job	sr:UserRefID (Restriction of xs:string (maxLength = 25))	No	None	N/A	Non-Sensitive
MPxN	One MPAN or MPRN associated to the premises For dual fuel installs this value can be populated with either reference number	sr:MPxN Restriction of xs:string (minLength = 1 maxLength = 13)	Yes	None	N/A	Non-Sensitive
GISData	This field is for GPS coordinates which can assist CSPs in diagnosing problems with connecting to CHF Devices. The data will be passed through to CSPs as a string, which should be GPS coordinates in decimal degrees to at least 4 decimal places, range -90.0000 to +90.0000 (latitude) and -180.0000 to +180.0000 (longitude). The string should consist of the latitude value followed by a space and the longitude value, e.g. "+12.1234 -123.1234". The DSP will not validate the format of the field; this description is for guidance only.	sr:GISData (Restriction of xs:string (maxLength = 25))	No	None	N/A	Non-Sensitive
AerialInstall	Indication of whether external aerial installed. Valid set: <ul style="list-style-type: none"> <li>true</li> <li>false</li> </ul>	xs:boolean	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
CHFLocation	Installation location within Consumer Premise as further defined through Communications Hubs Support Materials and Installer Training Plans. Valid set: <ul style="list-style-type: none"> <li>Outside Premises</li> <li>Indoors on external wall</li> <li>Deep indoors</li> <li>Basement or Cellar</li> </ul>	sr: CHFLocation (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive
AdditionalInformation	An optional field to record any specific User information of Communication Hub installation details or activity	Restriction of xs:string (maxLength = 200)	No	None	N/A	Non-Sensitive

**Table 128 Communications Hub Status Update - Install Success Data Items**

#### 8.14.1.1.3 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):

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

**Table 129 Communications Hub Status Update - Install Success Modes of Operation**

#### 8.14.1.1.4 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):

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

**Table 130 Communications Hub Status Update - Install Success Command Variant Values**

#### 8.14.1.1.5 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 DeviceID specified of a valid Device Type?	Check that the Device Type of a Device being notified is a CHF.	E081401
Is the InstallDateTime in the past?	Check that the InstallDateTime is not a future date.	E081402
Is the DeviceID specified at a compatible status in the Smart Metering Inventory? <sup>1</sup>	Check that the DeviceID of the specified Device is one of the following status values in the Smart Metering Inventory, and if not then raise the Warning Response Code: Commissioned	W081401

**Table 131 Communications Hub Status Update - Install Success Service Request Validation**

<sup>1</sup> This check supersedes the generic Authorisation Check associated to Response Code E5. See Main Document of this documentation set section 7.4

Note that the generic authorisation check associated to E4 is N/A to this Service Request. See Main Document of this documentation set section 7.4

#### 8.14.1.1.6 Sample Request

A sample Service Request document is as follows:

```
<CHFInstallSuccessSMWAN>
<DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
<CHFInstallType>New CHF Install</CHFInstallType>
<InstallDateTime>2006-05-04T18:13:51.00Z</InstallDateTime>
<UserRefID>UserRefID0</UserRefID>
<MPxN>1234567890123</MPxN>
<AerialInstall>>false</AerialInstall>
<CHFLocation>Outside Premises</CHFLocation>
<AdditionalInformation>AdditionalInformation0</AdditionalInformation>
</CHFInstallSuccessSMWAN>
```

**Figure 62 Communications Hub Status Update - Install Success Service Request Format**

#### 8.14.1.2 Responses

The Service Response messages for a “Communications Hub Status Update - Install Success” Request follow the generic format for all “DCC Only” response messages, the generic responses applicable to this Service Request are;

- Acknowledgement

Sample responses are given in Annex Introduction Appendix 1.

#### 8.14.1.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E081401	Failed Validation – Invalid Device Type	Error	The Device Type of the Device being notified is not CHF.
E081402	Failed Validation – Invalid Install Date Time	Error	The install date & time supplied is a future date.
W081401	Validation warning – Incompatible Device Status	Warning	The CHF Device status is not 'Commissioned'. The change in logistical status of the CHF will be processed by the DCC, but the commissioned status is set according to information from the SM WAN rather than Service Requests. If the CHF Device status is not 'Commissioned' this suggests that the CHF Device has not been installed successfully.

**Table 132 Communications Hub Status Update - Install Success Service Request Response Codes**

### 8.14.2 Communications Hub Status Update – Install No SM WAN

Service Request Name	CommunicationsHubStatusUpdate	
Service Reference	8.14	
Service Request Variant Name	CHFInstallSuccess(NoSMWAN)	
Service Reference Variant	8.14.2	
Service Request Objective	<p>To notify DCC of a Communications Hub installation that fails to connect to the SM WAN</p> <p>To enable Eligible Users to notify DCC of a successful Communications Hub installation that fails to connect successfully to the SM WAN.</p>	
Business Context Statement	The DCC requires that Service Users provide updates upon changes to Communication Hub installation status as set out in the Communications Hub Support Materials.	
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: Not applicable</p>	
Service Request Narrative	<ol style="list-style-type: none"> <li>The Communications Hub Status Update – Install No SM WAN data provided in this Service Request is used to allow DCC to resolve SM WAN coverage incidents on installation</li> <li>Where the CHF Device status is 'Pending' and response code W081401 is returned, the DCC shall update the CHF Device status to 'InstalledNotCommissioned'. If the GPF Device status is also 'Pending' the DCC shall update the GPF Device status to 'InstalledNotCommissioned'</li> </ol>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	N/A	N/A
GBCS Use Case	N/A	N/A
GBCS Use Case Name	N/A	N/A
SMETS1 Applicability	No	No

**Table 133 Communications Hub Status Update - Install No SM WAN 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).

### 8.14.2.1 Service Request

#### 8.14.2.1.1 Format

The 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 CHFInstallSuccessNoSMWAN XML element defines this Service Request and contains the DeviceId of the Communications Hub which has been installed without being able to access the SM WAN, along with other details.

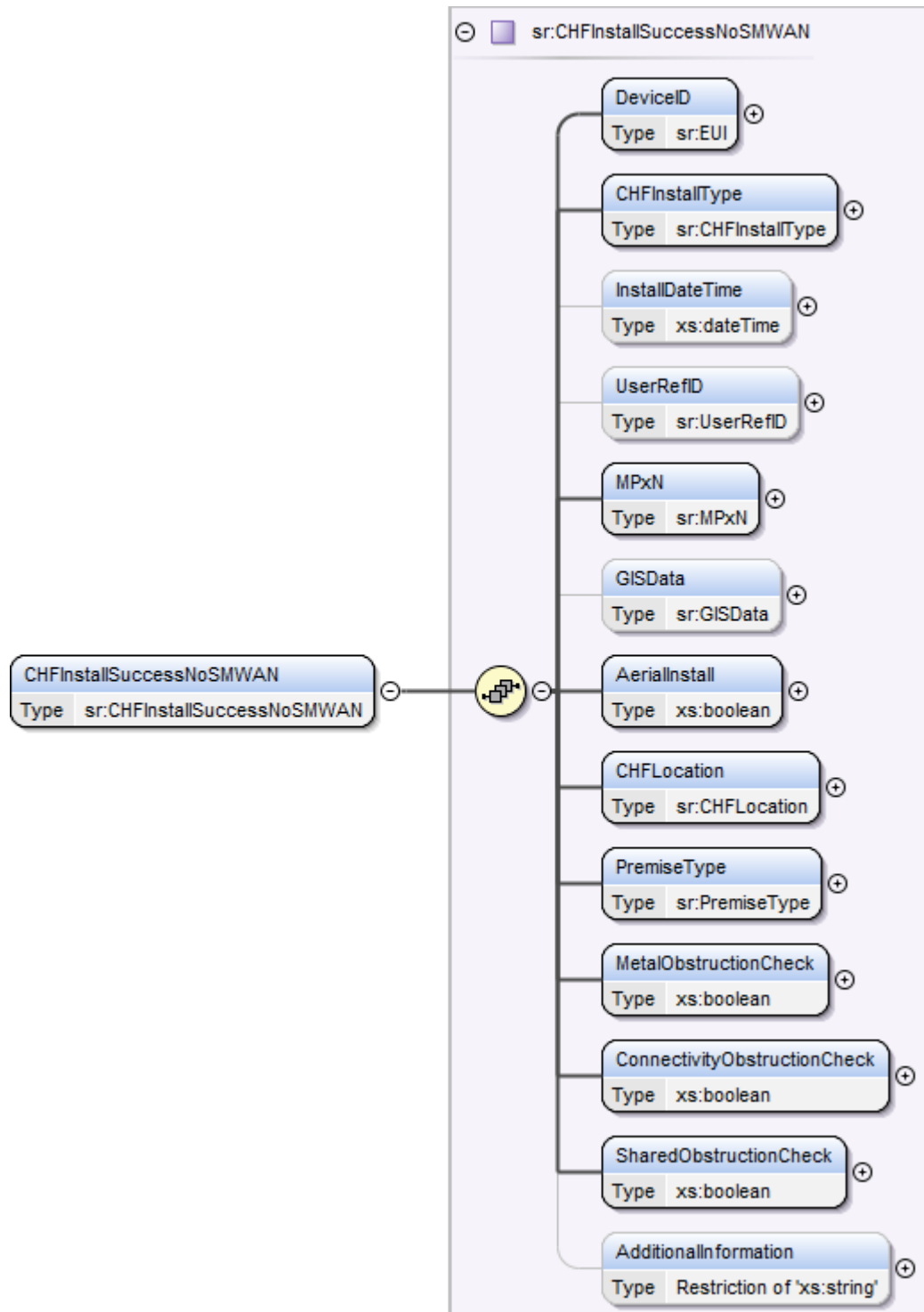


Figure 63 Communications Hub Status Update - Install No SM WAN Service Request Format

#### 8.14.2.1.2 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
DeviceID	The Device ID of the Communications Hub Installed (CHF)	sr:EUI	Yes	None	N/A	Non-Sensitive
CHFInstallType	Valid Set: <ul style="list-style-type: none"> <li>CHF Install - no SM WAN</li> </ul>	sr:CHFInstallType (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive
InstallDateTime	An optional field to record the date and time that the CHF was successfully installed	xs:dateTime	No	None	UTC Date-Time	Non-Sensitive
UserRefID	An optional field to record User reference for activity or engineer job	sr>UserRefID (Restriction of xs:string (maxLength = 25))	No	None	N/A	Non-Sensitive
MPxN	One MPAN or MPRN associated to the premises	sr:MPxN Restriction of xs:string (minLength = 1 maxLength = 13)	Yes	None	N/A	Non-Sensitive
GISData	This field is for GPS coordinates which can assist CSPs in diagnosing problems with connecting to CHF Devices. The data will be passed through to CSPs as a string, which should be GPS coordinates in decimal degrees to at least 4 decimal places, range -90.0000 to +90.0000 (latitude) and -180.0000 to +180.0000 (longitude).  The string should consist of the latitude value followed by a space and the longitude value, e.g. "+12.1234 -123.1234".  The DSP will not validate the format of the field; this description is for guidance only.	sr:GISData (Restriction of xs:string (maxLength = 25))	No	None	N/A	Non-Sensitive
AerialInstall	Indication of whether external aerial installed. Valid set: <ul style="list-style-type: none"> <li>true</li> <li>false</li> </ul>	xs:boolean	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
CHFLocation	<p>Installation location within Consumer Premise as further defined through Communications Hubs Support Materials and Installer Training Plans.</p> <p>Valid set:</p> <ul style="list-style-type: none"> <li>• Outside Premises</li> <li>• Indoors on external wall</li> <li>• Deep indoors</li> <li>• Basement or Cellar</li> </ul>	sr: CHFLocation (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive
PremiseType	<p>Identifies the property type to support coverage incident resolution:</p> <p>Valid set:</p> <ul style="list-style-type: none"> <li>• Detached / Semi Detached</li> <li>• Terraced</li> <li>• Low Rise Apartment (MDU &lt;= 5 floors)</li> <li>• High Rise Apartment (MDU &gt; 5 floors)</li> </ul> <p>Note that the XML representation of &lt; and &gt; is as follows</p> <p>&lt; is &amp;lt;</p> <p>&gt; is &amp;gt;</p>	sr: PremiseType (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive
MetalObstructionCheck	<p>Connectivity Obstruction Check 1 identifies: <i>Is there a local metal obstruction (as defined in CHSM) or metal meter cabinet?</i></p> <p>Valid set:</p> <ul style="list-style-type: none"> <li>• true</li> <li>• false</li> </ul>	xs:boolean	Yes	None	N/A	Non-Sensitive
ConnectivityObstructionCheck	<p>Connectivity Obstruction Check 2 identifies: <i>Does the premise have thick stone walled construction (as defined in CHSM)?</i></p> <p>Valid set:</p> <ul style="list-style-type: none"> <li>• true</li> <li>• false</li> </ul>	xs:boolean	Yes	None	N/A	Non-Sensitive
SharedObstructionCheck	<p>Connectivity Obstruction Check3 identifies: <i>Is the Comms Hub in a shared / communal area (as defined in CHSM)?</i></p> <p>Valid set:</p> <ul style="list-style-type: none"> <li>• true</li> <li>• false</li> </ul>	xs:boolean	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
AdditionalInformation	An optional field to record any specific User information of Communication Hub installation details or activity	Restriction of xs:string (max length = 200)	No	None	N/A	Non-Sensitive

Table 134 Communications Hub Status Update - Install No SM WAN Data Items

#### 8.14.2.1.3 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	No	Yes	No	No

Table 135 Communications Hub Status Update - Install No SM WAN Modes of Operation

#### 8.14.2.1.4 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	No	No	No	No	Yes

Table 136 Communications Hub Status Update - Install No SM WAN Command Variant Values

#### 8.14.2.1.5 Validation

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

Validation Check	Process	Response Code
Is the DeviceID specified of a valid Device Type?	Check that the Device Type of a Device being notified is a CHF.	E081401
Is the InstallDateTime in the past?	Check that the InstallDateTime is not a future date	E081402
Is the DeviceID specified at a valid status in the Smart Metering Inventory? <sup>1</sup>	<p>Check that the DeviceID of the specified Device is one of the following status values in the Smart Metering Inventory and if not then raise the Warning Response Code:</p> <ul style="list-style-type: none"> <li>InstalledNotCommissioned</li> </ul> <p>Note: the status of the Device <a href="#">for the CHF and the associated GPF</a> will be updated to Installed Not Commissioned if it is <a href="#">still in the Pending state-not already in this state</a>.</p>	W081401

Table 137 Communications Hub Status Update - Install No SM WAN Service Request Validation

<sup>1</sup> This check supersedes the generic Authorisation Check associated to Response Code E5. See Main Document of this documentation set section 7.4

Note that the generic authorisation check associated to E4 is N/A to this Service Request. See Main Document of this documentation set section 7.4

#### 8.14.2.1.6 Sample Request

A sample Service Request document is as follows:

```
<CHFInstallSuccessNoSMWAN>
<DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
<CHFInstallType>CHF Install - no SM WAN</CHFInstallType>
<InstallDateTime>2006-05-04T18:13:51.00Z</InstallDateTime>
<UserRefID>UserRefID0</UserRefID>
<MPxN>7012345678999</MPxN>
<AerialInstall>false</AerialInstall>
<CHFLocation>Outside Premises</CHFLocation>
<PremiseType>High Rise Apartment (MDU > 5 floors)</PremiseType>
<MetalObstructionCheck>false</MetalObstructionCheck>
<ConnectivityObstructionCheck>false</ConnectivityObstructionCheck>
<SharedObstructionCheck>false</SharedObstructionCheck>
<AdditionalInformation>AdditionalInformation0</AdditionalInformation>
</CHFInstallSuccessNoSMWAN>
```

**Figure 64 Communications Hub Status Update - Install No SM WAN Service Request Format**

#### 8.14.2.2 Responses

The Service Response messages for a “Communications Hub Status Update - Install No SM WAN” Request follow the generic format for all “DCC Only” response messages, the generic responses applicable to this Service Request are;

- Acknowledgement

Sample responses are given in Annex Introduction Appendix 1.

#### 8.14.2.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E081401	Failed Validation – Invalid Device Type	Error	The Device Type of the Device being notified is not CHF.
E081402	Failed Validation – Invalid Install Date Time	Error	The install date & time supplied is a future date.
W081401	Validation warning – Incompatible Device Status	Warning	The CHF Device status is not 'InstalledNotCommissioned', which is the only valid status compatible with this Service Request.

**Table 138 Communications Hub Status Update - Install No SM WAN Service Request Response Codes**

### 8.14.3 Communications Hub Status Update – Fault Return

Service Request Name	CommunicationsHubStatusUpdate
Service Reference	8.14

Service Request Variant Name	CHF(Fault)Return	
Service Reference Variant	8.14.3	
Service Request Objective	To enable an Energy Supplier to notify DCC of a Communications Hub return to the DCC due to a Fault associated with the CHF / GPF.	
Business Context Statement	The DCC requires that Service Users provide updates upon changes to Communication Hub installation status as set out in the Communications Hub Support Materials.	
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.	
Service Request Narrative	<p>The Communications Hub Status Update – Fault Return data provided in this Service Request is used to allow DCC to track Communications Hub managed assets as they enter the returns logistics path.</p> <p>A Supplier Nominated Agent (SNA) is able to notify the DCC of the return of a Communications Hubs that has not been installed; however, only an Import Supplier may notify the return of a Communications Hub after installation.</p>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	N/A	N/A
GBCS Use Case	N/A	N/A
GBCS Use Case Name	N/A	N/A
SMETS1 Applicability	No	No

**Table 139 Communications Hub Status Update – Fault Return 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).

### 8.14.3.1 Service Request

#### 8.14.3.1.1 Format

The 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 CHFFaultReturn XML element defines this Service Request and contains the DeviceId of the Communications Hub which has been returned, along with other details.

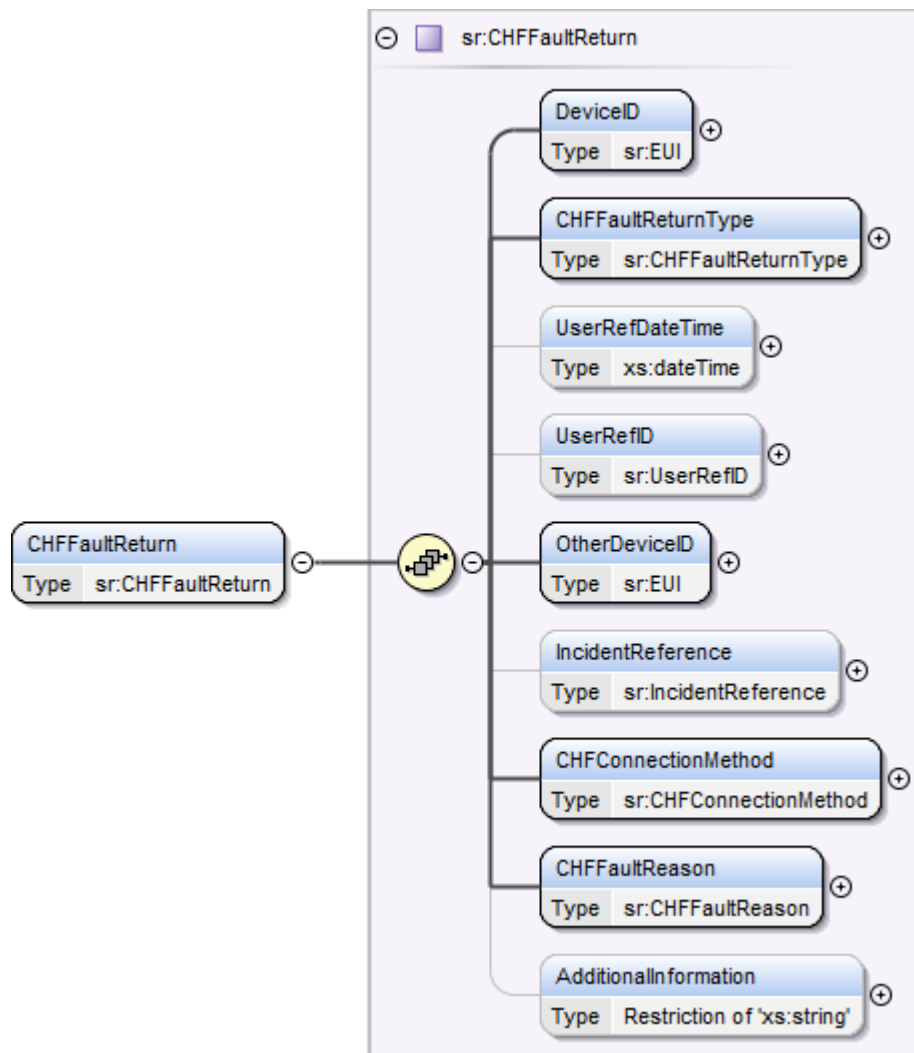


Figure 65 Communications Hub Status Update – Fault Return Service Request Format

#### 8.14.3.1.2 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
DeviceID	The Device ID of the Communications Hub Returned (CHF)	sr:EUI	Yes	None	N/A	Non-Sensitive
CHFFaultReturnType	Valid Set: <ul style="list-style-type: none"> <li>Fault identified prior to installation</li> <li>Fault identified post installation</li> </ul>	sr:CHFFaultReturnType (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive
UserRefDateTime	An optional field to record User recorded time of activity or engineer job	xs:dateTime	No	None	UTC Date-Time	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
UserRefID	An optional field to record User reference for activity or engineer job	sr:UserRefID (Restriction of xs:string (maxLength = 25))	No	None	N/A	Non-Sensitive
OtherDeviceID	The Device ID of the ESME / GSME associated with the CHF <sup>1</sup>	sr:EUI	Yes	None	N/A	Non-Sensitive
IncidentReference	An optional field to record a DCC Service Management associated incident reference	sr:IncidentReference (Restriction of xs:string (maxLength = 15))	No	None	N/A	Non-Sensitive
CHFConnectionMethod	To record how the Communication Hub has been installed and connected to the rest of the Smart Metering System within the consumer premise  Valid set: <ul style="list-style-type: none"> <li>Hot-shoe</li> <li>Cradle</li> <li>ESME</li> </ul> Guidance note: there is no option for a case where a Communications Hub has been identified as faulty but has never been installed. Please use "ESME" in these cases.	sr:CHFConnectionMethod (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive
CHFFaultReason	User description of fault;  Valid set: <ul style="list-style-type: none"> <li>Damaged case</li> <li>Damaged Connector</li> <li>Illegal interference or missing seals</li> <li>Environmental conditions exceeded</li> <li>SM WAN Fault</li> <li>SMHAN Interface Fault</li> <li>LED Fault</li> <li>Aerial fault</li> <li>Manufacturing defect</li> </ul>	sr:CHFFaultReason (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive
AdditionalInformation	An optional field to record any specific User information of Communication Hub installation details or activity	Restriction of xs:string (max length = 200)	No	None	N/A	Non-Sensitive

**Table 140 Communications Hub Status Update – Fault Return Data Items**

<sup>1</sup> If there is no ESME or GSME associated with the CHF, OtherDeviceID should be populated with the CHF Device ID

#### 8.14.3.1.3 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	No	Yes	No	No

**Table 141 Communications Hub Status Update – Fault Return Modes of Operation**

#### 8.14.3.1.4 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	No	No	No	No	Yes

**Table 142 Communications Hub Status Update – Fault Return Command Variant Values**

#### 8.14.3.1.5 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 DeviceID specified of a valid Device Type?	Check that the Device Type of a Device being notified is a CHF.	E081401
Is the UserRefDateTime in the past?	Check that the UserRefDateTime is not a future date	E081405
Is the DeviceID specified at a valid status in the Smart Metering Inventory? <sup>1</sup>	Check that the DeviceID of the specified Device is one of the following status values in the Smart Metering Inventory and if not then raise the Warning Response Code: <ul style="list-style-type: none"> <li>Decommissioned</li> </ul>	W081401
Where the sender is an SNA, has the Device been installed?	If the Device has a Device Status other than Pending, confirm that the sender of the Service Request is an Import Supplier	E5

**Table 143 Communications Hub Status Update – Fault Return Service Request Validation**

<sup>1</sup> This check supersedes the generic Authorisation Check associated to Response Code E5. See Main Document of this documentation set section 7.4

Note that the generic authorisation check associated to E4 is N/A to this Service Request. See Main Document of this documentation set section 7.4

#### 8.14.3.1.6 Sample Request

A sample Service Request document is as follows:

```
<CHFFaultReturn>
<DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
<CHFFaultReturn>Fault identified prior to installation</CHFFaultReturn>
<UserRefDateTime>2014-05-04T18:13:51.00Z</UserRefDateTime>
<UserRefID>UserRefID0</UserRefID>
<OtherDeviceID>00-AA-BB-CC-DD-EE-FF-00</OtherDeviceID>
<IncidentReference>INC0000000000001</IncidentReference>
<CHFFaultReason>Damaged case</CHFFaultReason>
<AdditionalInformation>AdditionalInformation0</AdditionalInformation>
</CHFFaultReturn>
```

Figure 66 Communications Hub Status Update – Fault Return Service Request Format

### 8.14.3.2 Responses

The Service Response messages for a “Communications Hub Status Update – Fault Return” Request follow the generic format for all “DCC Only” response messages, the generic responses applicable to this Service Request are;

- Acknowledgement

Sample responses are given in Annex Introduction Appendix 1.

#### 8.14.3.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E081401	Failed Validation – Invalid Device Type	Error	The Device Type of the Device being notified is not CHF.
E081405	Failed Validation – Invalid User Ref Date Time	Error	The user reference date & time supplied is a future date.
W081401	Validation warning – Incompatible Device Status	Warning	The CHF Device status is not 'Decommissioned'.
E5	Failed Validation – Invalid Device Status for this Service User	Error	The Service Request has been sent by a Service User which has a role that is not valid for the Device Status of the Device.  Note that this is a specific use of a generic Response Code that is also used for other purposes in different circumstances.

Table 144 Communications Hub Status Update – Fault Return Service Request Response Codes

### 8.14.4 Communications Hub Status Update – No Fault Return

Service Request Name	CommunicationsHubStatusUpdate
Service Reference	8.14
Service Request Variant Name	CHF(NoFault)Return
Service Reference Variant	8.14.4

Service Request Objective	To enable an Energy Supplier to notify DCC of a Communications Hub return to the DCC where there is no fault associated with the CHF / GPF.	
Business Context Statement	The DCC requires that Service Users provide updates upon changes to Communication Hub installation status as set out in the Communications Hub Support Materials.	
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.	
Service Request Narrative	<p>The Communications Hub Status Update – No Fault Return data provided in this Service Request is used to allow DCC to track Communications Hub managed assets as they enter the returns logistics path.</p> <p>A Supplier Nominated Agent (SNA) is able to notify the DCC of the return of a Communications Hubs that has not been installed; however, only an Import Supplier may notify the return of a Communications Hub after installation.</p>	
GBCS Cross Reference	Electricity	Gas
GBCS Message Code	N/A	N/A
GBCS Use Case	N/A	N/A
GBCS Use Case Name	N/A	N/A
SMETS1 Applicability	No	No

**Table 145 Communications Hub Status Update – No Fault Return 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).

#### 8.14.4.1 Service Request

##### 8.14.4.1.1 Format

The 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 CHFNoFaultReturn XML element defines this Service Request and contains the DeviceID of the Communications Hub which has been returned, along with other details.

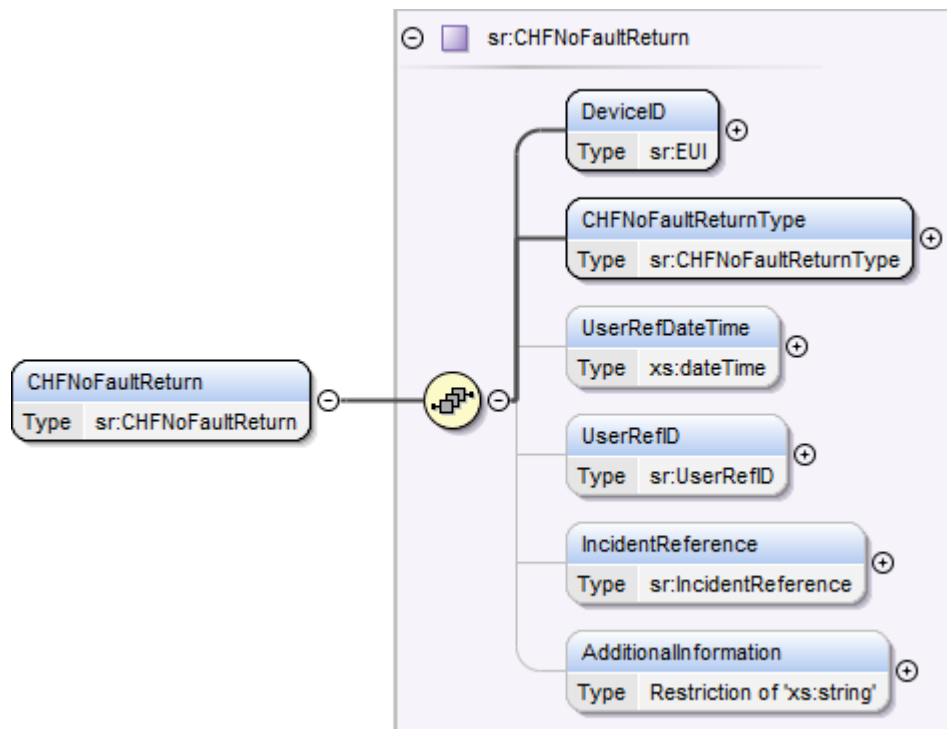


Figure 67 Communications Hub Status Update – No Fault Return Service Request Format

#### 8.14.4.1.2 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
DeviceID	The Device ID of the Communications Hub Returned (CHF)	sr:EUI	Yes	None	N/A	Non-Sensitive
CHFNoFaultReturn Type	Valid Set: <ul style="list-style-type: none"> <li>No Fault Return (general)</li> <li>No Fault Return (non-dom opt out)</li> <li>No Fault Return (dual supplier HAN variant replacement)</li> <li>No Fault Return (SM WAN variant replacement requested by DCC)</li> <li>Lost or Stolen Hub</li> </ul>	sr:CHFNoFaultReturn Type (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive
UserRefDateTime	An optional field to record User recorded time of activity or engineer job	xs:dateTime	No	None	UTC Date-Time	Non-Sensitive
UserRefID	An optional field to record User reference for activity or engineer job	sr:UserRefID (Restriction of xs:string (maxLength = 25))	No	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
IncidentReference	An optional field to record a DCC associated incident reference	sr:IncidentReference (Restriction of xs:string (maxLength = 15))	No	None	N/A	Non-Sensitive
AdditionalInformation	An optional field to record any specific User information of Communication Hub installation details or activity	Restriction of xs:string (max length = 200)	No	None	N/A	Non-Sensitive

**Table 146 Communications Hub Status Update – No Fault Return Data Items**

#### 8.14.4.1.3 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	No	Yes	No	No

**Table 147 Communications Hub Status Update – No Fault Return Modes of Operation**

#### 8.14.4.1.4 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	No	No	No	No	Yes

**Table 148 Communications Hub Status Update – No Fault Return Command Variant Values**

#### 8.14.4.1.5 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 DeviceID specified of a valid Device Type?	Check that the Device Type of a Device being notified is a CHF.	E081401
Is the UserRefDateTime in the past?	Check that the UserRefDateTime is not a future date	E081405
Is the DeviceID specified at a valid status in the Smart Metering Inventory? <sup>1</sup>	Check that the DeviceID of the specified Device is one of the following status values in the Smart Metering Inventory and if not then raise the Warning Response Code: Decommissioned	W081401
Where the sender is an SNA, has the Device been installed?	If the Device has a Device Status other than Pending, confirm that the sender of the Service Request is an Import Supplier	E5

**Table 149 Communications Hub Status Update – No Fault Return Service Request Validation**

<sup>1</sup> This check supersedes the generic Authorisation Check associated to Response Code E5. See Main Document of this documentation set section 7.4

Note that the generic authorisation check associated to E4 is N/A to this Service Request. See Main Document of this documentation set section 7.4

#### 8.14.4.1.6 Sample Request

A sample Service Request document is as follows:

```
<CHFNoFaultReturn>
  <DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
  <CHFNoFaultReturn>No Fault Return (dual supplier HAN variant replacement)</CHFNoFaultReturn>
  <UserRefDate>2014-05-04T18:13:51.00Z</UserRefDate>
  <UserRefID>UserRefID0</UserRefID>
  <IncidentReference>INC000000000001</IncidentReference>
  <AdditionalInformation>AdditionalInformation0</AdditionalInformation>
</CHFNoFaultReturn>
```

**Figure 68 Communications Hub Status Update – No Fault Return Service Request Format**

#### 8.14.4.2 Responses

The Service Response messages for a “Communications Hub Status Update – No Fault Return” Request follow the generic format for all “DCC Only” response messages, the generic responses applicable to this Service Request are;

- Acknowledgement

Sample responses are given in Annex Introduction Appendix 1.

#### 8.14.4.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E081401	Failed Validation – Invalid Device Type	Error	The Device Type of the Device being notified is not CHF.
E081405	Failed Validation – Invalid User Ref Date Time	Error	The user reference date & time supplied is a future date.
W081401	Validation warning – Incompatible Device Status	Warning	The CHF Device status is not 'Decommissioned'.
E5	Failed Validation – Invalid Device Status for this Service User	Error	The Service Request has been sent by a Service User which has a role that is not valid for the Device Status of the Device.  Note that this is a specific use of a generic Response Code that is also used for other purposes in different circumstances.

**Table 150 Communications Hub Status Update – No Fault Return Service Request Response Codes**