

# DCC User Gateway Interface Design Specification

## Annex - Service Request Definitions

### 5 – Scheduling Service

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## 5 Scheduling Service (5 – SS)

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

Service Name	Scheduling	Service Id	5
Service Objective	To enable a DCC Service User to request that the DCC creates, maintains and operates a schedule of regular and repeating actions for a specified Device ID. Each time the UTC date/time specified in the schedule is reached, the DCC will initiate an action to the device (where the action is the equivalent of a service request).  Billing data retrieval schedules are not part of this service. Please refer to the UpdateDeviceConfiguration(BillingCalendar) Service Request 6.8 (see Annex section 6).		
Business Context Statement	The service is concerned with the creation, reading and removal of a schedule within the DCC on behalf of the DCC Service User. A schedule may be created or deleted, however detail within a schedule may not be amended.		
User Roles	The following user roles have access to the list of service requests which make up the Scheduling Service: <ul style="list-style-type: none"><li>Electricity Import Supplier (EIS)</li><li>Electricity Export Supplier (EES)</li><li>Gas Import Supplier (GIS)</li><li>Electricity Network Operator (ENO)</li><li>Gas Network Operator (GNO)</li><li>Other User (OU)</li></ul>		

Table 1 Overview of Scheduling Service

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

Service Reference	Service Reference Variant	Name	Business Target ID
5.1	5.1	Create Schedule	DSP Access Control Broker
5.2	5.2	Read Schedule	DSP Access Control Broker
5.3	5.3	Delete Schedule	DSP Access Control Broker

Table 2 SS - Service Requests / Devices

For each of the SS 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).

## 5.1 Create Schedule (5.1)

Service Request Name	CreateSchedule
Service Reference	5.1
Service Request Variant Name	CreateSchedule
Service Reference Variant	5.1
Service Request Objective	<p>To enable a DCC Service User to create a schedule to provide the specified Service on a recurring basis where the Service is identified as available as a Scheduled Service.</p> <p>On the creation of a schedule, the DCC Service User will then be automatically sent the relevant responses from the device ID, triggered by the commands sent to device ID at the scheduled time. Such response will be structured as for the same On-Demand command.</p>
Business Context Statement	<p>The DCC Service User requests the creation of a schedule within the DCC for a defined Device ID. This enables the DCC Service User to receive regular data (configuration and/or operational) from a device, e.g. interval/profile data, without having to raise a request each time.</p> <ul style="list-style-type: none"> <li>• The Main Document of this documentation set Table 33 identifies the Service Request Variants that can be DSP Scheduled.</li> </ul>
User Role Access	<ul style="list-style-type: none"> <li>• Electricity Import Supplier (EIS)</li> <li>• Electricity Export Supplier (EES)</li> <li>• Gas Import Supplier (GIS)</li> <li>• Electricity Network Operator (ENO)</li> <li>• Gas Network Operator (GNO)</li> <li>• Other User (OU)</li> </ul>
Security Classification	<p>Non-critical and non-sensitive</p> <p>SMETS2 or later:</p> <p><i>GBCS XREF: SME.C.NC</i></p>
Service Request Narrative (SMETS2 or later)	<p>1. Only the following 13 Service Request Variants may be scheduled by the DCC using this Service Request as defined in SEC.</p> <ul style="list-style-type: none"> <li>- SR 4.6.1 – Retrieve Import Daily Read Log</li> <li>- SR 4.6.2 - Retrieve Export Daily Read Log</li> </ul>

- SR 4.8.1 – Read Active Import Profile Data
  - SR 4.8.2 – Read Reactive Import Profile Data
  - SR.4.8.3 – Read Export Profile Data
  - SR 4.10 – Read Network Data
  - SR 4.12.1 – Read Maximum Demand Import Registers
  - SR 4.12.2 – Read Maximum Demand Export Registers
  - SR 4.14 – Read Prepayment Daily Read Log
  - SR 4.15 – Read Load Limit Data
  - SR 4.16 – Read Active Power Import
  - SR 4.17 – Retrieve Daily Consumption Log
  - SR 14.1 – Record Network Data (Gas)
2. Schedules can only be created for sending commands over the SM WAN to Devices. There are no DSP scheduled Services to return commands for local delivery.
  3. Service Reference Variants 4.6.1, 4.6.2, 4.8.1, 4.8.2, 4.8.3, 4.14 and 4.17 are available to the 'old' Registered Import / Export Supplier when submitting them 'Ad-hoc', but not when submitting them via 'Create Schedule'.
  4. URPs (e.g. 'Other User') to the specified device creating DSP Schedules that return Sensitive data (i.e. those corresponding to Service Reference Variants: 4.8.1 (OU), 4.10 (GNO (GSME)) and 4.17 (OU)), have to include in the Create Schedule Request the Key Agreement Public Security Credentials they want the target Device to encrypt the response with.
  5. The Schedule Frequency options are as follows (for each scheduled execution, the Schedule Execution Start Time will be as defined in this Service Request or, if not defined, the default of 00:01:00):
    - a. Daily. The Service Request Variant will be scheduled once a day. E.g. for Schedule Start Date = 31/01/2015 it would be scheduled on the 31/01/2015, 01/02/2015, 02/02/2015, etc.
    - b. Weekly. The Service Request Variant will be scheduled once a week, on the Schedule Start Date day of the week. E.g. for Schedule Start Date = 31/01/2015 it would be scheduled on the 31/01/2015, 07/02/2015, 14/02/2015, etc.
    - c. Monthly. The Service Request Variant will be scheduled once a month, on the Schedule Start Date day of the month, where possible. For those months where the Schedule Start Date day of the month doesn't exist, the Service Request Variant will be scheduled on the last day of that month. E.g. for Schedule Start Date = 31/01/2015 it would be scheduled on the 31/01/2015, 28/02/2015, 31/03/2015, 30/04/2015, etc.
    - d. Quarterly. The Service Request Variant will be scheduled once every three months, on the Schedule Start Date day of the month, where possible. For those months where the Schedule Start Date day of the

	month doesn't exist, the Service Request Variant will be scheduled on the last day of that month. E.g. for Schedule Start Date = 30/11/2014 it would be scheduled on the 30/11/2014, 28/02/2015, 30/05/2015, etc.	
	e. Half-Yearly. The Service Request Variant will be scheduled once every six months, on the Schedule Start Date day of the month, where possible. For those months where the Schedule Start Date day of the month doesn't exist, the Service Request Variant will be scheduled on the last day of that month. E.g. for Schedule Start Date = 31/08/2015 it would be scheduled on the 31/08/2015, 29/02/2016, 31/08/2016, 28/02/2017, etc.	
	f. Yearly. The Service Request Variant will be scheduled once every twelve months, on the Schedule Start Date day of the month, where possible. For those months where the Schedule Start Date day of the month doesn't exist, the Service Request Variant will be scheduled on the last day of that month. E.g. for Schedule Start Date = 29/02/2016 it would be scheduled on the 29/02/2016, 28/02/2017, etc.	
	6. The following Service Reference Variants should not be scheduled on a GSME as the GSME will reject these commands if sent by the DSP as part of a schedule. The DCC Service User is advised to target these schedules at the corresponding GPF:	
	<ul style="list-style-type: none"><li>- SR 4.6.1 – Retrieve Import Daily Read Log</li><li>- SR 4.8.1 – Read Active Import Profile Data</li><li>- SR 4.14 – Read Prepayment Daily Read Log</li></ul> <p>If any of these are targeted at a GSME, for each scheduled request the device will generate a security alert. However, this alert cannot be matched to a corresponding request and the DSP will continue to retry the scheduled request for up to 24 hours before eventually sending DCC Alert N11.</p>	
7. Guidance note: for scheduling delivery of overnight readings based on data for a calendar day, Service Users are recommended to use the default setting for the start time, i.e. 00:01:00, in order to maximise efficiency in DCC systems. This may be achieved by omitting the specification of ScheduleExecutionStartTime (see section 5.1.1.2). See DUGIDS main document section 2.3.7 for more information about DSP scheduling.		
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	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>Only the following 7 (SMETS1) Service Request Variants may be scheduled by the DCC using this Service Request as defined in SEC. <ul style="list-style-type: none"> <li>SR 4.6.1 – Retrieve Import Daily Read Log</li> <li>SR 4.8.1 – Read Active Import Profile Data</li> <li>SR 4.8.2 – Read Reactive Import Profile Data</li> <li>SR.4.8.3 – Read Export Profile Data</li> <li>SR 4.10 – Read Network Data</li> <li>SR 4.15 – Read Load Limit Data</li> <li>SR 4.16 – Read Active Power Import</li> </ul> </li> <li>Although for SMETS2 Devices, URPs (e.g. 'Other User') to the specified device creating DSP Schedules that return Sensitive data (i.e. those corresponding to Service Reference Variants: 4.8.1 (OU) and 4.10 (GNO (GSME))), have to include in the Create Schedule Request the Key Agreement Public Security Credentials they want the target Device to encrypt the response with, these are not required for SMETS1 Devices. Please note the DCC Data Systems will not validate whether this data item has been included in a SMETS1 Service</li> </ol>	

**Table 3 Create Schedule 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).

## 5.1.1 Service Request

### 5.1.1.1 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 CreateSchedule XML element defines this Service Request and the Service Request to be scheduled, its frequency, start and end dates and start time of execution and, if Sensitive data is required for URP, the Key Agreement Public Security Credentials.

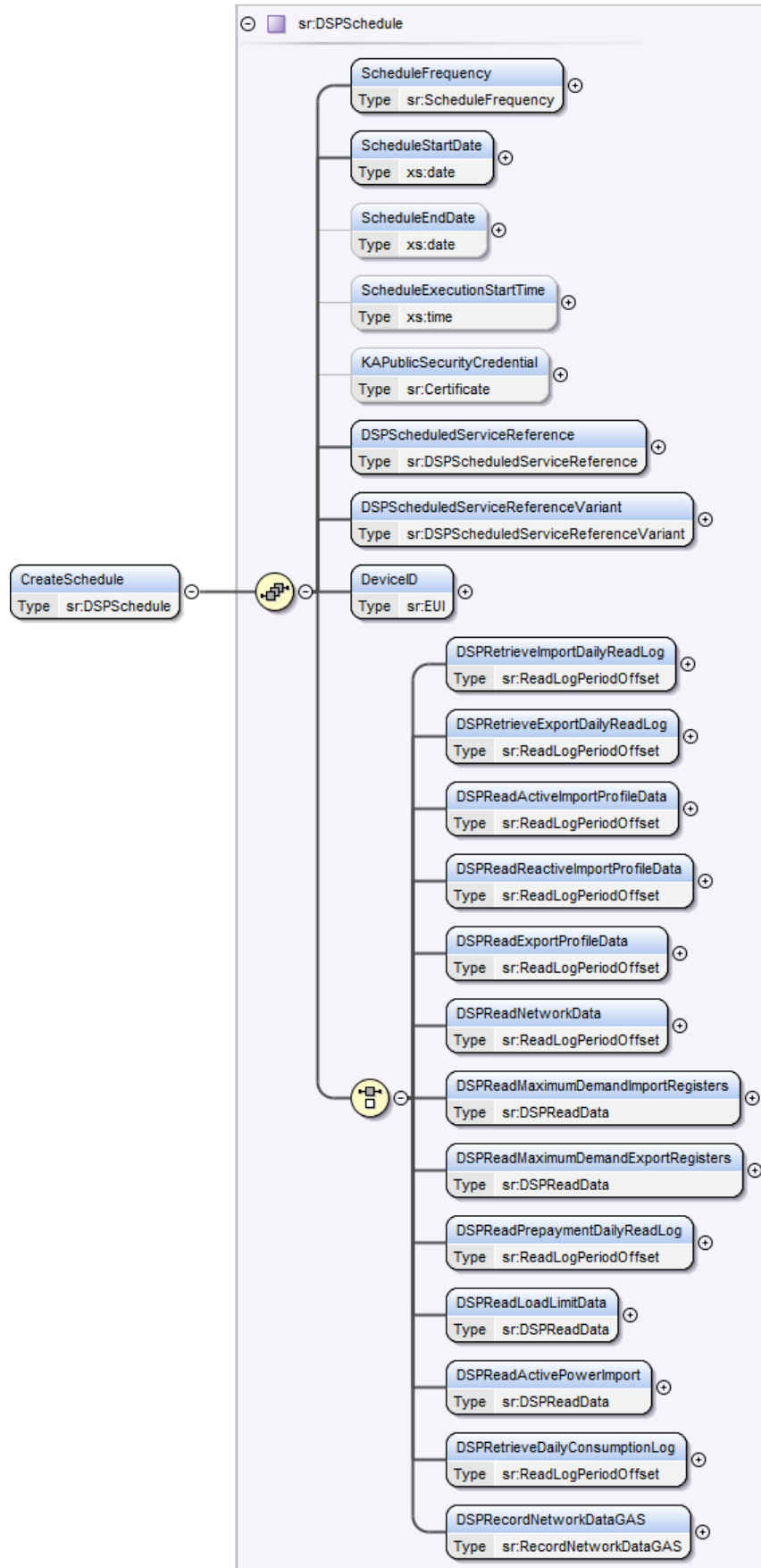


Figure 1 Create Schedule Service Request Structure

### 5.1.1.2 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
ScheduleFrequency	The frequency of which the required service reference is executed. Valid set: <ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> <li>Quarterly</li> <li>Half-Yearly</li> <li>Yearly</li> </ul>	sr:ScheduleFrequency (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive
ScheduleStartDate	The UTC date that the scheduled request is required to commence from <ul style="list-style-type: none"> <li>Valid date in the future</li> </ul>	xs:date	Yes	None	UTC Date	Non-Sensitive
ScheduleEndDate	The UTC date that the scheduled request is required to cease, or if not present then the schedule shall remain in force until deleted by the DCC Service User (see section 5.3) or by the DCC Data Systems, e.g. because of Device Decommission <ul style="list-style-type: none"> <li>Valid date in the future &gt;= ScheduleStartDate</li> </ul>	xs:date	User Role EIS, GIS, EES, ENO, GNO: No  User Role OU: Yes	None	UTC Date	Non-Sensitive
ScheduleExecutionStartTime	The UTC start time of the window during a day when a scheduled Command may be run <sup>1</sup> <ul style="list-style-type: none"> <li>Valid time</li> </ul>	xs:time	No	00:01:00	UTC Time	Non-Sensitive
KAPublicSecurityCredential	The Key Agreement Public Security Credentials, associated with the Service User submitting the request, that will be relied upon for Sensitive data responses. Only applicable to those Scheduled Service Requests that can be submitted by DCC Service User Roles for which the Device doesn't hold credentials. See Section 5.1 Service Request Narrative note 4. KAPublicSecurityCredential is N/A to SMETS1 Services	sr:Certificate (xs:base64Binary)	SMETS2 or later Service and (User Role EIS, GIS, EES, ENO: N/A User Role GNO: Yes <sup>3</sup> User Role OU: Yes <sup>2</sup> ) SMETS1 Service: N/A	None	N/A	Non-Sensitive
DSPScheduledServiceReference	Reference of the Service Request to be Scheduled.  Valid Set: See Main Document of this documentation set Table 33, where DSP Scheduled column is set to "Yes"	sr:DSPScheduledServiceReference (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DSPScheduledServiceReferenceVariant	Reference Variant of the Service Request to be Scheduled.  Valid Set: See Main Document of this documentation set Table 33, where DSP Scheduled column is set to "Yes"	sr:DSPScheduledServiceReferenceVariant (Restriction of xs:string (Enumeration))	Yes	None	N/A	Non-Sensitive
DeviceID	This is the Device ID to which the DSP Schedule is targeted.	sr:EUI (see Annex section 17)	Yes	None	N/A	Non-Sensitive
Choice of Service Requests to be Scheduled	Name and Request Data Items corresponding to DSPScheduledServiceReferenceVariant to be Scheduled. See Annex section 4 - RS: <ul style="list-style-type: none"> <li>4.6.1 for DSPRetrieveImportDailyReadLog</li> <li>4.6.2 for DSPRetrieveExportDailyReadLog<sup>4</sup></li> <li>4.8.1. for DSPReadActiveImportProfileData</li> <li>4.8.2. for DSPReadReactiveImportProfileData</li> <li>4.8.3 for DSPReadExportProfileData</li> <li>4.10 for DSPReadNetworkData</li> <li>4.12.1 for DSPReadMaximumDemandImportRegisters<sup>4</sup></li> <li>4.12.2 for DSPReadMaximumDemandExportRegisters<sup>4</sup></li> <li>4.14 for DSPReadPrepaymentDailyReadLog<sup>4</sup></li> <li>4.15 for DSPReadLoadLimitData</li> <li>4.16 for DSPReadActivePowerImport</li> <li>4.17 for DSPRetrieveDailyConsumptionLog<sup>4</sup></li> <li>14.1 – for DSPRecordNetworkDataGAS<sup>4</sup></li> </ul>				N/A	

**Table 4 Create Schedule Service Request Data Items**

<sup>1</sup> Each CSP region has one or more "DSP scheduling windows" that specify when DSP Scheduled Service Requests should be sent. The Schedule Execution Start Time (or 00:01:00 if none specified) specifies the earliest time when the Service Request can be considered for execution. The scheduler takes into account both the Schedule Execution Start Time and the DSP scheduling window when determining when to send a Scheduled Service Request. If the Schedule Execution Start Time is inside a "DSP scheduling window", the Service Request should be started during that window. Otherwise it should be started in the next available "DSP scheduling window" (which might occur on the following calendar day). For DSP Schedules that read logs, the Start and End Dates of the period to be read will be calculated without taking into account the "DSP scheduling windows"

<sup>2</sup> Only applicable to OU for those Service Reference Variants for which the Response includes Sensitive data: 4.8.1 and 4.17.

<sup>3</sup> Only applicable to GNO for those Service Reference Variants targeted to a Gas Smart Meter and for which the Response includes Sensitive data: 4.8.1 and 4.10

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

### 5.1.1.3 Applicable Modes of Operation

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

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

Table 5 Create Schedule Modes of Operation

### 5.1.1.4 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	No	No	No	No	Yes
SMETS1	No	No	No	No	No	No	No	Yes

Table 6 Create Schedule Command Variant Values

### 5.1.1.5 Validation

The Validation (Access Control Checks) to be applied is that corresponding to the Create Schedule and to the DSP Schedule Service Requests.

The Create Schedule Service Request specific validation is as follows (see Main Document of this documentation set section 7 for generic access control checks which apply to the Create Schedule and to the Scheduled Service Request and Annex section 17.2 for Create Schedule Device ID existence validation):

Validation Check	Process	Response Code
Is the ScheduleStartDate a future date?	Check that the ScheduleStartDate is a date is in the future	E050101
Is the ScheduleEndDate included?	For User Role "OU" check that the ScheduleEndDate has been included in the Request	E050102
Is the ScheduleEndDate valid?	If included in the Request, check that the ScheduleEndDate is a date in the future and it isn't earlier than the ScheduleStartDate	E050103
Is the DSP Service Reference / DSP ServiceReferenceVariant combination valid?	Check that the combination of DSP Service Reference and DSP Service Reference Variant is correct, i.e. it aligns to the definitions in Main Document of this documentation set Table 33.	E050105

Validation Check	Process	Response Code
Are the DCC Service User's Key Agreement Public Security Credentials included in the Request?	Check that if the DCC Service User's Role is URP to the Device and the DSP Scheduled Service Response contains Sensitive data, the Create Schedule Request includes the DCC Service User's Key Agreement Public Security Credentials and that in all other cases, these credentials aren't included in the Request.  This check is N/A to SMETS1 Services	E050107
Has the maximum number of DCC Service User DSP Schedules / Device been reached?	Check that the number of active DSP Schedules owned by the DCC Service User for the Device is less than 99	E050108
Is the DSP Scheduled Request Format correct for the DSP Scheduled Request?	Check that the format for the DSP Scheduled Request matches the DSP Service Reference Variant in the Create Schedule message	E050109
Is the DSP Scheduled Service Reference Variant valid for a SMETS1 Service?	For SMETS1 Services, check that the DSPScheduledServiceReferenceVariant is one of: <ul style="list-style-type: none"> <li>4.6.1</li> <li>4.8.1</li> <li>4.8.2</li> <li>4.8.3</li> <li>4.10</li> <li>4.15</li> <li>4.16</li> </ul>	E050110

**Table 7 Create Schedule Service Request Validation**

For validation on the Scheduled Service Request at the point the DSP Schedule is created, see Annex section 4.

#### 5.1.1.6 Sample Request

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

```
<CreateSchedule>
  <ScheduleFrequency>Weekly</ScheduleFrequency>
  <ScheduleStartDate>2015-01-31Z</ScheduleStartDate>
  <DSPScheduledServiceReference>4.8</DSPScheduledServiceReference>
  <DSPScheduledServiceReferenceVariant>4.8.1</DSPScheduledServiceReferenceVariant>
  <DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
  <DSPReadActiveImportProfileData>
    <StartDateOffset>-7</StartDateOffset>
    <StartTime>00:00:00.00Z</StartTime>
    <EndDateOffset>0</EndDateOffset>
    <EndTime>23:59:59.00Z</EndTime>
  </DSPReadActiveImportProfileData>
</CreateSchedule>
```

**Figure 2 Create Schedule Service Request (Body) Format**

## 5.1.2 Responses

The response messages for a "Create Schedule" request follow the generic format for all "DCC Only" Service Responses that include specific data in the response.

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

### 5.1.2.1 Service Response (from DCC)

Applicable to cases where a DSP Schedule is successfully created and its ID returned to the DCC Service User.

#### 5.1.2.1.1 Format

This Service Request response is defined in the XSD ResponseMessage DSPScheduleID XML element, which contains the DSP Schedule ID.

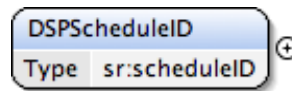


Figure 3 Create Schedule Service Response (from DCC) Structure

#### 5.1.2.1.2 Specific Data Items

Returned if the DCC Data Items successfully create a schedule.

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DSPScheduleID	Schedule ID generated by the DCC Data Systems Valid Set: > 0	sr:scheduleID (See Annex 17)	Yes	None	N/A	Non-Sensitive

Table 8 Create Schedule Service Request Response Data Items

#### 5.1.2.1.3 Sample Responses

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

```

<ResponseMessage>
  <ServiceReference>5.1</ServiceReference>
  <ServiceReferenceVariant>5.1</ServiceReferenceVariant>
  <DSPScheduleID>500</DSPScheduleID>
</ResponseMessage>
  
```

Figure 4 Sample Create Schedule Service Response (from DCC) Format

### 5.1.2.2 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E050101	Failed Validation – Schedule Start Date not in the future	Error	The Schedule Date is not a future date
E050102	Failed Validation – Schedule End Date missing	Error	The Schedule End Date is mandatory for User Role "OU"
E050103	Failed Validation – Invalid Schedule End Date	Error	The Schedule End Date is earlier than the Schedule Start Date
E050105	Failed Validation – DSP Service Reference and DSP Service Reference Variant mismatch	Error	Invalid combination of DSP Service Reference and DSP Service Reference Variant

Response Code	Response Code Name	Response Code Type	Description
E050107	Failed Validation - Invalid DCC Service User's Role / Key Agreement Public Security Credentials combination for DSP Scheduled Response Data (Sensitive / Non-sensitive)	Error	One of: <ul style="list-style-type: none"> <li>DCC Service User's Role is URP to the Device and the DSP Scheduled Service Response contains Sensitive data and Request doesn't include the DCC Service User's Key Agreement Public Security Credentials</li> </ul> Or <ul style="list-style-type: none"> <li>DCC Service User's Role is KRP to the Device and / or the DSP Scheduled Service Response doesn't contain Sensitive data and Request includes the DCC Service User's Key Agreement Public Security Credentials</li> </ul>
E050108	Failed Validation – Maximum Number of DCC Service User DSP Schedules for Device already exist	Error	Unable to create Schedule, because the DCC Service User already owns 99 active DSP Schedules for the Device
E050109	Failed Validation – DSP Service Request Format and DSP Service Reference Variant mismatch	Error	The DSP Service Request format doesn't match the DSP Service Reference Variant in the Create Schedule message
E050110	Failed Validation – Invalid SMETS1 DSP Scheduled Service Reference Variant	Error	The DSP Scheduled Service Reference Variant is not applicable to SMETS1 Services

**Table 9 Failed Create Schedule Service Request Response Codes**

For specific Response Codes returned when the Scheduled Service Request validation fails at the point the DSP Schedule is created, see Annex section 4.

## 5.2 Read Schedule (5.2)

Service Request Name	ReadSchedule
Service Reference	5.2
Service Request Variant Name	ReadSchedule
Service Reference Variant	5.2
Service Request Objective	To enable a DCC Service User to retrieve a named schedule, or all of their schedules, held by the DCC for a specified device.
Business Context Statement	<p>A DCC Service user wishes to determine the data retrieval frequency they have scheduled for a particular schedule ID. Alternatively, a DCC Service User wishes to see all schedules they have created against a particular device.</p> <p>The Main Document of this documentation set Table 33 identifies the Service Request Variants that can be DSP Scheduled.</p>

User Role Access	<ul style="list-style-type: none"> <li>Electricity Import Supplier (EIS)</li> <li>Electricity Export Supplier (EES)</li> <li>Gas Import Supplier (GIS)</li> <li>Electricity Network Operator (ENO)</li> <li>Gas Network Operator (GNO)</li> <li>Other User (OU)</li> </ul>	
Security Classification	Non-critical and non-sensitive SMETS2 or later: <i>GBCS XREF: SME.C.NC</i>	
Service Request Narrative (SMETS2 or later)	<ol style="list-style-type: none"> <li>Each Schedule within the DCC Data Systems can only be read by the Service User who created it i.e. DCC Service Users cannot read other DCC Service Users schedules.</li> <li>When requesting DSP Schedules for a Device, only those schedules that relate to the requestor will be returned so DCC Service Users can only read their own set up DSP Schedules on the specified Device.</li> <li>DCC Service Users can only read active schedules. There is no functionality to read deleted schedules.</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	Yes	Yes
Service Request Narrative (SMETS1)	The behaviour of DCC for this Service Request with regard to SMETS1 Devices is equivalent to the behaviour for SMETS2 or later Devices.	

**Table 10 Read Schedule Service Request**

This section should be read in conjunction with 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).

## 5.2.1 Service Request

### 5.2.1.1 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 ReadSchedule XML element defines this Service Request and contains either the DSPScheduleID or the DeviceID.

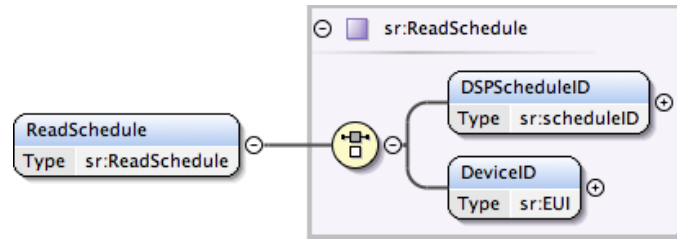


Figure 5 Read Schedule Service Request Structure

### 5.2.1.2 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
DSPScheduleID	Schedule ID generated by the DCC Data Systems when the schedule was created Valid Set: > 0	sr:scheduleID (See Annex section 17)	No <sup>1</sup>	None	N/A	Non-Sensitive
DeviceID	This is the Device ID for which schedules are to be read.	sr:EUI (see Annex section 17)	No <sup>1</sup>	None	N/A	Non-Sensitive

Table 11 Read Schedule Service Request Data Items

<sup>1</sup> Choice, so one of these 2 options is mandatory

### 5.2.1.3 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	No	Yes	No	No
SMETS1	No	No	Yes	No	No

Table 12 Read Schedule Modes of Operation

### 5.2.1.4 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	No	No	No	No	No	No	No	Yes
SMETS1	No	No	No	No	No	No	No	Yes

Table 13 Read Schedule Command Variant Values

### 5.2.1.5 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
------------------	---------	---------------

Validation Check	Process	Response Code
Is the DSPScheduleID valid? <sup>1</sup>	Check that the DSPScheduleID exists and it is owned by the DCC Service User submitting the request	E050201
Is the DeviceID valid?	Check that the DeviceID exists.	E050202
Do schedules exist for the Device?	Check that the DCC Service User has one or more schedules set up against the specified Device.	W050201

**Table 14 Read Schedule Service Request Validation**

<sup>1</sup> This check supersedes the generic Authorisation Check associated to Response Code E4. See Main Document of this documentation set section 7.4

#### 5.2.1.6 Sample Request

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

```
<ReadSchedule>  
  <DSPScheduleID>500</DSPScheduleID>  
</ReadSchedule>
```

**Figure 6 Read Schedule Service Request (Body) Format**

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

**Figure 7 Read (All) Schedules Service Request (Body) Format**

## 5.2.2 Responses

The response messages for a “Read Schedule” request follow the generic format for all “DCC Only” Service Responses that include specific data in the response.

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

### 5.2.2.1 Service Response (from DCC)

Applicable to cases where the DSP Schedule ID in the request is successfully read and its details returned to the DCC Service User or all schedules for the Device ID in the request are read and returned to the DCC Service User. Only the schedules owned by the DCC Service User are returned i.e. the Import Supplier cannot see the Network Operator’s schedules.

#### 5.2.2.1.1 Format

This Service Request response is defined in the XSD ResponseMessage DSPSchedulesRead XML element, which can included between 1 and 99 DSP Schedules and for each DSP Schedule it contains the DSP Schedule ID and the DSP Schedule details.

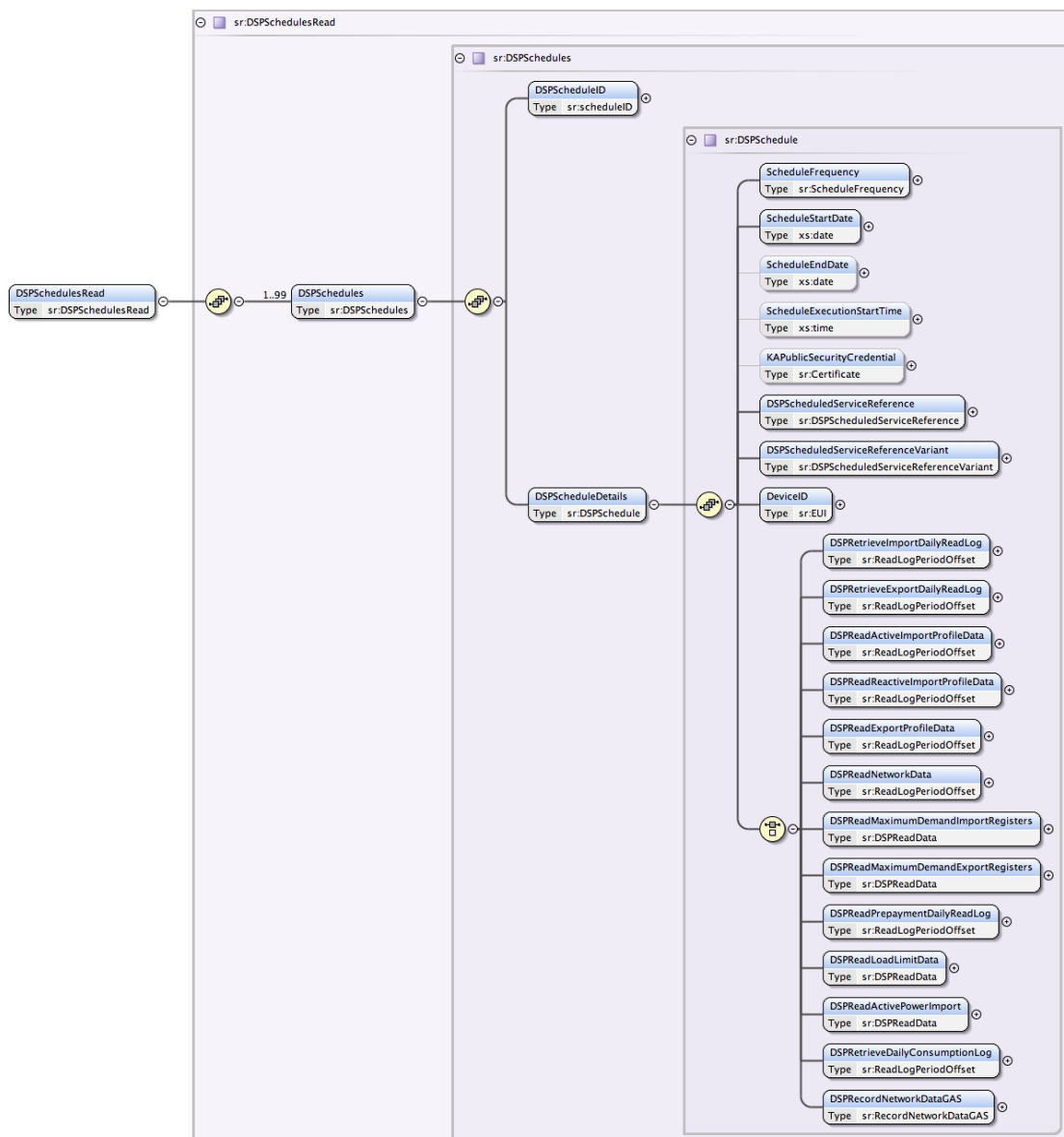


Figure 8 Read Schedule Service Response (from DCC) Structure

#### 5.2.2.1.2 Specific Data Items

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DPSchedules	Details of all the Schedules read	sr:DPSchedules	Yes <sup>1</sup>	None	N/A	Non-Sensitive

Table 15 Read Schedule Service Request Response Data Items

<sup>1</sup> Minimum 1 and maximum 99

#### 5.2.2.1.3 DPSchedules Specific Data Items

Returned for each Schedule successfully read by the DCC Data Systems.

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
-----------	-------------------------	------	-----------	---------	-------	-------------

Data Item	Description / Valid Set	Type	Mandatory	Default	Units	Sensitivity
DSPScheduleID	Schedule ID generated by the DCC Data Systems when the schedule was created Valid Set: > 0	sr:scheduleID (See Annex section 17)	Yes	None	N/A	Non-Sensitive
DSPScheduleDetails	Schedule details provided when the schedule was created	sr:DSPSchedule (See section 5.1.1.2)	Yes	None	N/A	Non-Sensitive

**Table 16 Read Schedule Service Request Response – DSPSchedules Data Items**

#### 5.2.2.1.4 Sample Responses

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

```

<ResponseMessage>
  <ServiceReference>5.2</ServiceReference>
  <ServiceReferenceVariant>5.2</ServiceReferenceVariant>
  <DSPSchedulesRead>
    <DSPSchedules>
      <DSPScheduleID>500</DSPScheduleID>
      <DSPScheduleDetails>
        <ScheduleFrequency>Weekly</ScheduleFrequency>
        <ScheduleStartDate>2015-01-31</ScheduleStartDate>
        <DSPScheduledServiceReference>4.8</DSPScheduledServiceReference>
        <DSPScheduledServiceReferenceVariant>4.8.1</DSPScheduledServiceReferenceVariant>
        <DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
        <DSPReadActiveImportProfileData>
          <StartDateOffset>-7</StartDateOffset>
          <StartTime>00:00:00.05</StartTime>
          <EndDateOffset>0</EndDateOffset>
          <EndTime>23:59:59.05</EndTime>
        </DSPReadActiveImportProfileData>
      </DSPScheduleDetails>
    </DSPSchedules>
    <DSPSchedules>
      <DSPScheduleID>501</DSPScheduleID>
      <DSPScheduleDetails>
        <ScheduleFrequency>Weekly</ScheduleFrequency>
        <ScheduleStartDate>2015-01-31</ScheduleStartDate>
        <DSPScheduledServiceReference>4.8</DSPScheduledServiceReference>
        <DSPScheduledServiceReferenceVariant>4.8.2</DSPScheduledServiceReferenceVariant>
        <DeviceID>99-00-AA-BB-CC-DD-EE-FF</DeviceID>
        <DSPReadReactiveImportProfileData>
          <StartDateOffset>-7</StartDateOffset>
          <StartTime>00:00:00.05</StartTime>
          <EndDateOffset>0</EndDateOffset>
          <EndTime>23:59:59.05</EndTime>
        </DSPReadReactiveImportProfileData>
      </DSPScheduleDetails>
    </DSPSchedules>
  </DSPSchedulesRead>
</ResponseMessage>

```

**Figure 9 Sample Read Schedule Service Response (from DCC) Format**

### 5.2.2.2 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E050201	Failed Validation – Invalid DSP Schedule Id	Error	The DSPScheduleID doesn't exist or it isn't owned by the DCC Service User submitting the request
E050202	Failed Validation – Invalid Device ID	Error	The Device ID doesn't exist.
W050201	Validation Warning – no schedules specified	Warning	The DCC Service User does not have any schedules created against the specified device.

**Table 17 Failed Read Schedule Service Request Response Codes**

### 5.3 Delete Schedule (5.3)

Service Request Name	DeleteSchedule
Service Reference	5.3
Service Request Variant Name	DeleteSchedule
Service Reference Variant	5.3
Service Request Objective	To enable a DCC Service User to delete the details stored by the DCC for the specified schedule or all of their schedules for a specified device, to prevent any future recurring commands to the specified Device.
Business Context Statement	The DCC Service User requires the removal of a specific existing schedule held by the DCC for a defined device ID to no longer be actioned, e.g. as a result of a Change of Supplier. Alternatively, a DCC Service User wishes to delete all schedules they have created against a particular device ID.
User Role Access	<ul style="list-style-type: none"><li>Electricity Import Supplier (EIS)</li><li>Electricity Export Supplier (EES)</li><li>Gas Import Supplier (GIS)</li><li>Electricity Network Operator (ENO)</li><li>Gas Network Operator (GNO)</li><li>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. This Service Request allows the DCC Service Users to remove DSP Schedules created by them via Service Request 5.1 (see section 5.1), that are still active but no longer needed.</li> <li>2. When requesting DSP Schedules for a Device, only those schedules that relate to the requestor will be deleted so DCC Service Users can only delete their own set up DSP Schedules on the specified Device.</li> <li>3. The DCC Data Systems will automatically remove DSP Schedules for the corresponding Device and inform the DCC Service User via a DCC Alert on successful completion of the following Service Requests: <ol style="list-style-type: none"> <li>a. 3.2 Restrict Access For Change of Tenancy (see Annex section 3.2). Other User DSP Schedules. DCC Alert Code N4 (Schedule removal because of CoT)</li> <li>b. 8.5 Service Opt Out (see Annex section 8.5). All Users DSP Schedules. DCC Alert Code N5 (Schedule removal because of Device withdrawal)</li> <li>c. 8.3 Decommission Device (see Annex section 8.3). All Users DSP Schedules. DCC Alert Code N6 (Schedule removal because of Device decommission)</li> <li>d. 6.23 Update Security Credentials (CoS) (see Annex section 6.23). Previously Registered Import Supplier DSP Schedules. DCC Alert Code N17 (Schedule removal because of CoS)</li> </ol> </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	Yes	Yes
Service Request Narrative (SMETS1)	<p>The behaviour of DCC for this Service Request with regard to SMETS1 Devices is equivalent to the behaviour for SMETS2 or later Devices except:</p> <ol style="list-style-type: none"> <li>1. 8.5 Service Opt Out is not applicable to SMETS1 Devices</li> </ol>	

**Table 18 Delete Schedule 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).

## 5.3.1 Service Request

### 5.3.1.1 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 DeleteSchedule XML element defines this Service Request and contains either the DSPScheduleID to be deleted or the DeviceID for which all schedules are to be deleted.

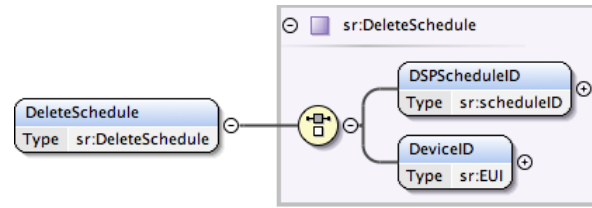


Figure 10 Delete Schedule Service Request Structure

### 5.3.1.2 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
DSPScheduleID	Schedule ID generated by the DCC Data Systems when the schedule was created Valid Set: > 0	sr:scheduleID (See Annex section 17)	No <sup>1</sup>	None	N/A	Non-Sensitive
DeviceID	This is the Device ID for which schedules are to be deleted.	sr:EUI (see Annex section 17)	No <sup>1</sup>	None	N/A	Non-Sensitive

Table 19 Delete Schedule Service Request Data Items

<sup>1</sup> Choice, so one of these 2 options is mandatory

### 5.3.1.3 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 20 Delete Schedule Modes of Operation

### 5.3.1.4 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 21 Delete Schedule Command Variant Values

### 5.3.1.5 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
------------------	---------	---------------

Validation Check	Process	Response Code
Is the DSPScheduleID valid? <sup>1</sup>	Check that the DSPScheduleID exists and it is owned by the DCC Service User submitting the request.	E050301
Is the DeviceID valid?	Check that the DeviceID exists.	E050302
Do schedules exist for the Device?	Check that the DCC Service User has one or more schedules set up against the specified Device.	W050301

**Table 22 Delete Schedule Service Request Validation**

<sup>1</sup> This check supersedes the generic Authorisation Check associated to Response Code E4. See Main Document of this documentation set section 7.4

Only the schedules owned by the DCC Service User are deleted i.e. the Import Supplier cannot delete the Network Operator's schedules.

### 5.3.1.6 Sample Request

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

<pre>&lt;DeleteSchedule&gt;   &lt;DSPScheduleID&gt;50&lt;/DSPScheduleID&gt; &lt;/DeleteSchedule&gt;</pre>
---

**Figure 11 Delete Schedule Service Request (Body) Format**

<pre>&lt;DeleteSchedule&gt;   &lt;DeviceID&gt;99-00-AA-BB-CC-DD-EE-FF&lt;/DeviceID&gt; &lt;/DeleteSchedule&gt;</pre>
--

**Figure 12 Delete (All) Schedules Service Request (Body) Format**

## 5.3.2 Responses

The response messages for a "Delete Schedule" request follow the generic format for all "DCC Only" Service Responses that don't include specific data in the response, the generic responses applicable to this Service Request are;

- Acknowledgement

Sample responses are given in Annex Introduction Appendix 1.

### 5.3.2.1 Unsuccessful Response

The Response Codes specific to this Service Request are:

Response Code	Response Code Name	Response Code Type	Description
E050301	Failed Validation – Invalid DSP Schedule Id	Error	The DSPScheduleID doesn't exist or it isn't owned by the DCC Service User submitting the request
E050302	Failed Validation – Invalid Device ID	Error	The Device ID doesn't exist.
W050301	Validation Warning – no schedules specified	Warning	The DCC Service User does not have any schedules created against the specified device.

**Table 23 Failed Delete Schedule Service Request Response Codes**