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SECMP0062 'Northbound Application Traffic Management - Alert Storm Protection'

Legal text – version 1.0

About this document

This document contains the redlined changes to the SEC that would be required to deliver this Modification Proposal.

These changes have been drafted against SEC Version 6.15.

This document contains all the changes required to deliver the Proposed Solution and specifies which stage of the solution (Part 1 or Part 2) the changes will take effect in.

Section A 'Definitions and Interpretations' – Part 1

Add the following new definitions to Section A1 in alphabetical order:

Alert Management Mechanism	means the mechanism for discarding excess Alerts established in Section H3.29.
Northbound Traffic Management Mechanism Document	means a document established under Section H3.30 that specifies the parameters of the DCC's Alert Management Mechanism and any exempted Alerts.

Section H 'DCC Services' – Part 1

Amend Section H3.14 as follows:

Target Response Times

H3.14 The DCC shall (subject to Section H3.15) undertake the following activities within the following time periods (each such time period being, in respect of each such activity, the "**Target Response Time**" for that activity, subject to Section H3.15):

(a) Transforming Critical Service Requests into Pre-Commands and sending to the relevant User, within 3 seconds from receipt of the Service Request;

(b) sending a User a Service Response in respect of a Non-Critical Service Request for an On-Demand Service that is not a Sequenced Service, within the applicable time period set out in the DCC User Interface Services Schedule measured from receipt of the Service Request from the User;

(c) sending a User a Service Response in respect of a Critical Service Request for an On-Demand Service that is not a Sequenced Service, within the applicable time period set out in the DCC User Interface Services Schedule measured from receipt of the Signed Pre-Command from the User;

(d) sending a User a Service Response in respect of a Service Request for an On-Demand Service that is a Sequenced Service, within the applicable time period set out in the DCC User Interface Services Schedule measured from the receipt by the DCC of the Service Response for the Service Request upon which the Sequenced Service is dependent;

(e) sending a User a Service Response in respect of a Service Request for a Future-Dated Service that is not a Sequenced Service or for a Scheduled Service, within the applicable time period set out in the DCC User Interface Services Schedule measured from the time and date for execution specified in the Service Request;

(f) sending a User a Service Response in respect of a Service Request for a Future-Dated Service that is a Sequenced Service, within the applicable time period set

out in the DCC User Interface Services Schedule measured from the receipt by the DCC of the Service Response for the Service Request upon which the Sequenced Service is dependent;

(g) (except for the Alerts referred to in (h) below and any Alerts discarded in accordance with the Alert Management Mechanism) sending a User an Alert, within 60 seconds measured from the Alert being communicated to (Device Alerts) or generated by (Non-Device Alerts) the Communications Hub Function; or

(h) for the Services Request 'Update Device Configuration (Billing Calendar)', in addition to the above response times applicable to the Service Response confirming the configuration, periodic Alerts will be generated as a result of such configuration, for which the response time for sending the Alert to the User shall be within 24 hours from the relevant data having been communicated to the Communications Hub Function.

H3.15 The Target Response Times set out in Section H3.14 shall not apply to activities in respect of SMETS1 Devices, and the Target Response Times for activities in respect of SMETS1 Devices shall instead be determined in accordance with the DCC User Interface Services Schedule. For the purposes of Section H3.14 and activities in respect of SMETS2+ Devices:

(a) the concepts of 'sending' and 'receipt' are to be interpreted in accordance with the explanation of those concepts in the DCC User Interface Specification;

(b) any time during which an anomalous communication is quarantined by the DCC in accordance with Section H4 (Processing Service Requests) shall be disregarded for the purpose of measuring Response Times; and

(c) the time taken by the Communications Hub Function in communicating with the other Devices forming part of a Smart Metering System shall be disregarded.

Add Sections H3.29 to H3.30 as follows:

Alert Management Mechanism

H3.29 The DCC shall implement an Alert Management Mechanism that will discard repeated Alerts generated by a Device where the number of generated Alerts exceeds specified thresholds within specified timeframes that adheres to the mechanism set out in SEC Appendix AB.

H3.30 The parameters used in the Alert Management Mechanism and any Alerts that are to be exempt from this mechanism shall be documented in the "**Northbound Traffic Management Mechanism Document**". Any changes to this document shall be prepared and consulted upon by the DCC and approved by the Panel.

Add to Section H13.1 as follows:

Code Performance Measures

H13.1 Each of the following performance measures constitute a Code Performance Measure (to which the following Target Service Level and Minimum Service Level will apply, measured over the following Performance Measurement Period):

No.	Code Performance Measure	Performance Measurement Period	Target Service Level	Minimum Service Level
1	Percentage of On-Demand Service Responses delivered within the applicable Target Response Time.	monthly	99%	96%
2	Percentage of Future-Dated Service Responses delivered within the applicable Target Response Time.	monthly	99%	96%
3	Percentage of Alerts delivered within the applicable Target Response Time. Alerts discarded in accordance with the Alert Management Mechanism will not be counted.	monthly	99%	96%
4	Percentage of Incidents which the DCC is responsible for resolving and	monthly	100%	85%

	which fall within Incident Category 1 or 2 that are resolved in accordance with the Incident Management Policy within the Target Resolution Time.			
5	Percentage of Incidents which the DCC is responsible for resolving and which fall within Incident Category 3, 4 or 5 that are resolved in accordance with the Incident Management Policy within the Target Resolution Time.	monthly	90%	80%
6	Percentage of time (in minutes) when the Self-Service Interface is available to be accessed by all Users during the Target Availability Period.	monthly	99.5%	98%

Appendix AB 'Service Request Processing Document' – Part 1

Add new Sections 15.6 to 15.7 as follows:

15.6 The DCC shall ensure that the Alert Management Mechanism adheres to the following mechanism:

a) When the number of Alerts from a given device within time window [T] exceeds the threshold value [A] the system will begin to count the number of Alerts from that device on a per Alert Code basis.

b) If any individual Alert Code count within time window [R] exceeds the configured threshold value [B] then that Originating Device/Alert Code combination will be marked as being 'overloaded'.

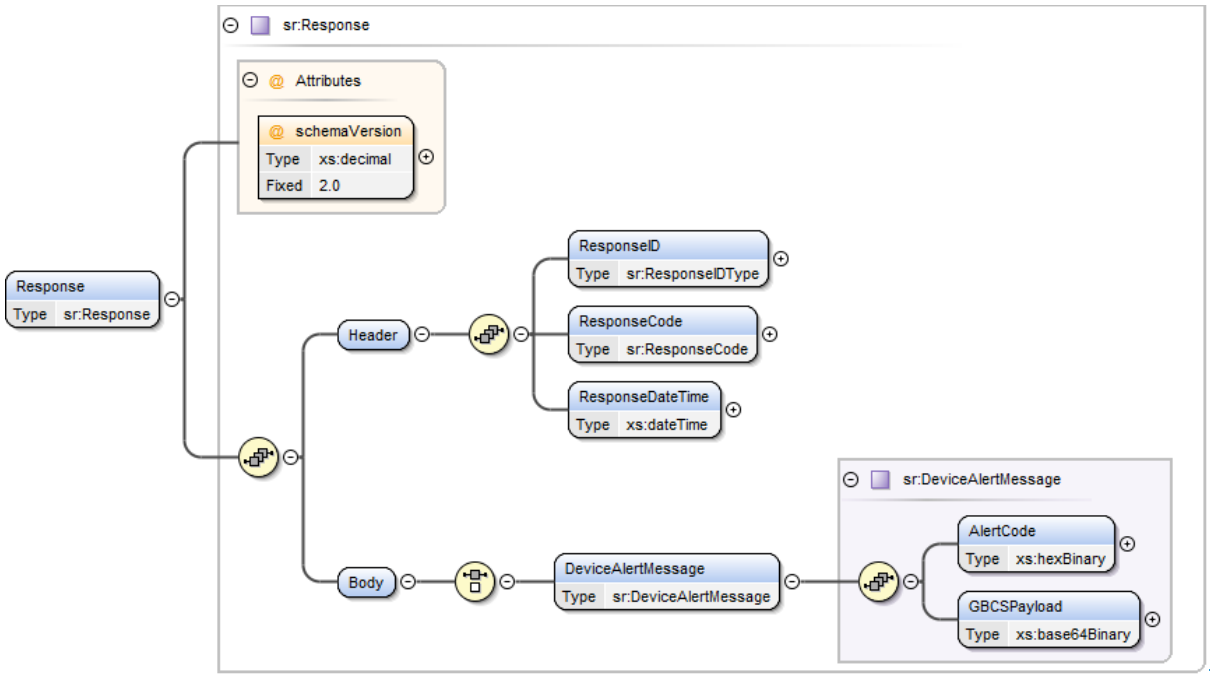
c) If an Alert Code is marked as 'overloaded' for a device, then only one in every [N] such Alerts will be processed. All other Alerts with that same Alert Code from the same device will be discarded.

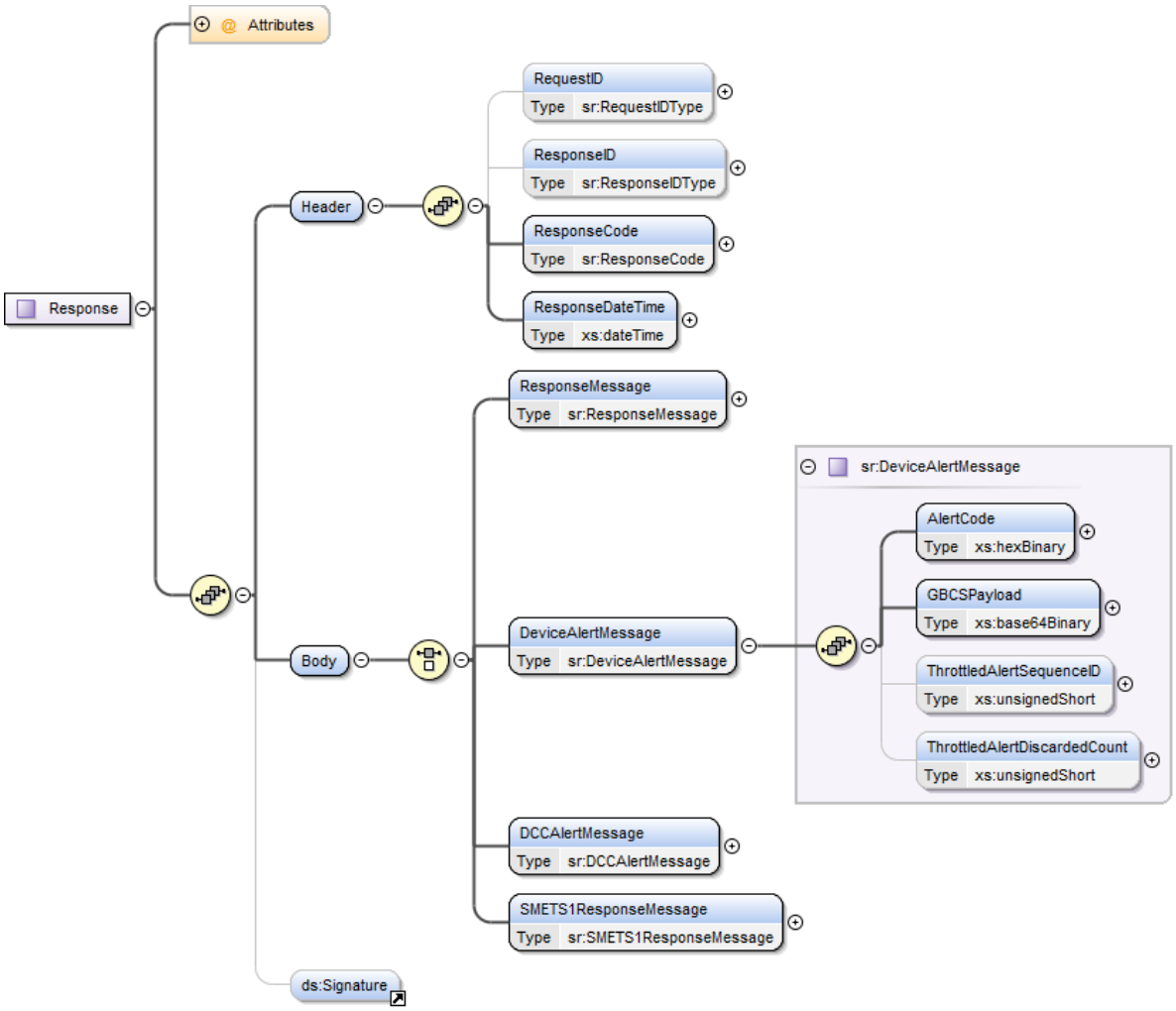
d) Once the rate of Alerts for the device falls below threshold [A] then the specific Alert Code counting will stop, and any overloaded Alert Codes will be cleared. Alert processing will then return to normal.

15.7 The parameters [A], [T], [B], [R] and [N] used in the Alert Management Mechanism and the Alerts that are to be exempt from this mechanism are specified in the Northbound Traffic Management Mechanism Document.

Appendix AD 'DCC User Interface Specification' – Part 2

Amend the Figure 12 illustrated diagram Section 3.6.2 'Device Alerts - DeviceAlertMessage Format' as follows:

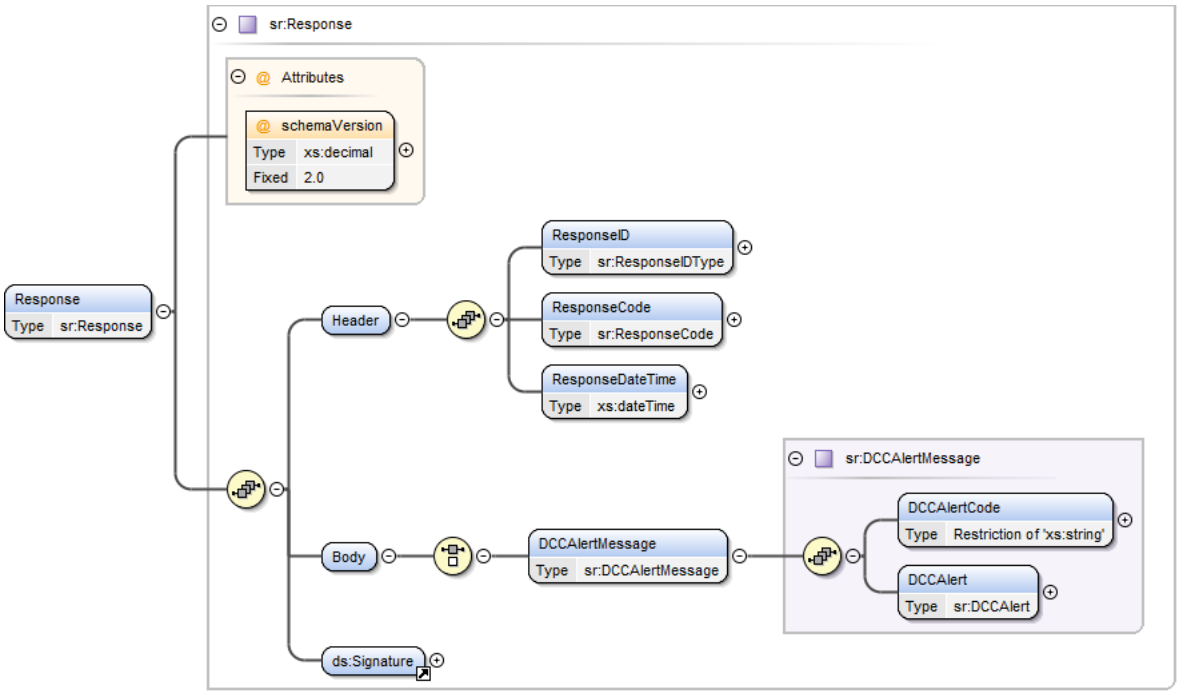


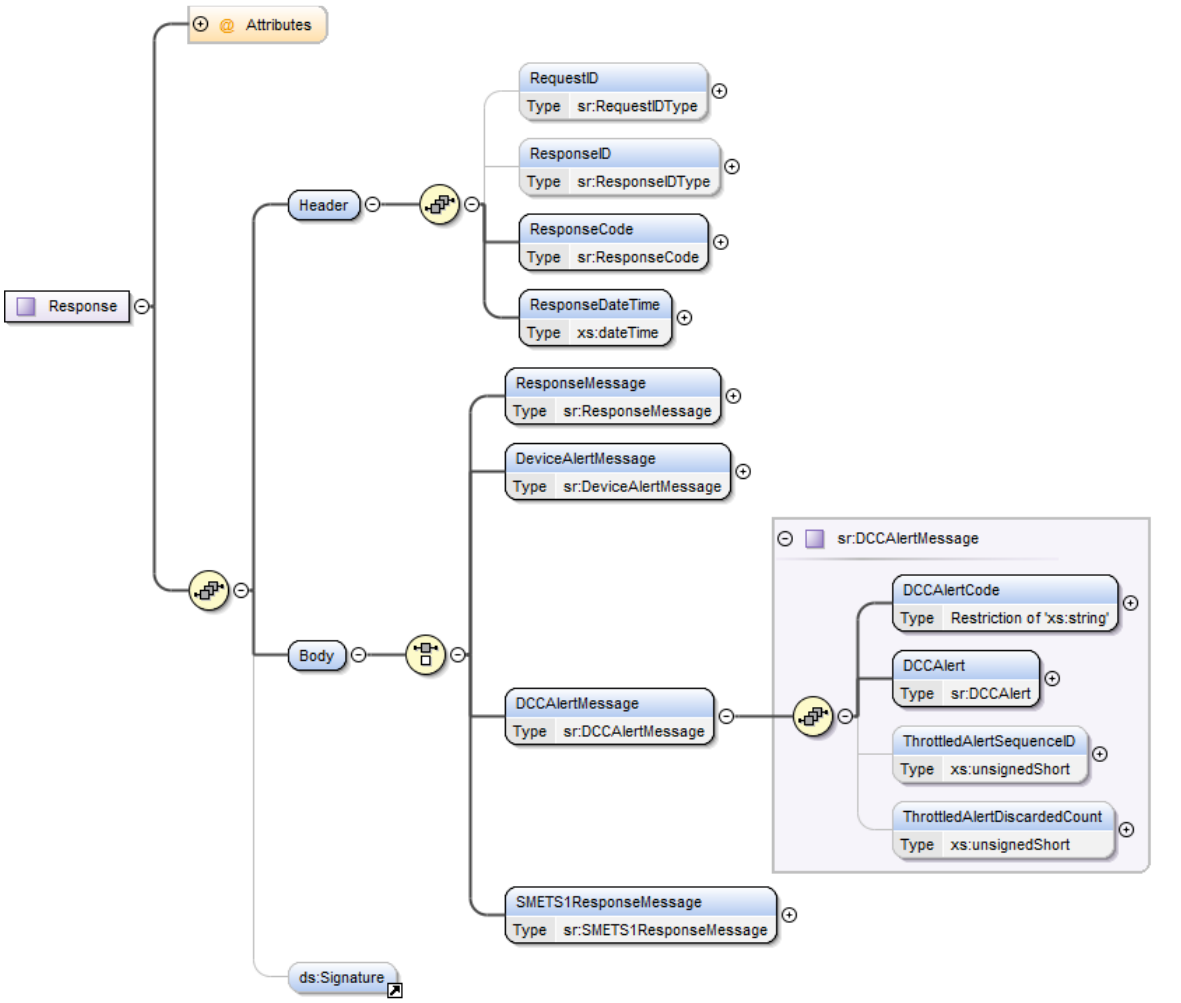

Attributes
Response
Header
RequestID
Type sr:RequestIDType
ResponseID
Type sr:ResponseIDType
ResponseCode
Type sr:ResponseCode
ResponseDateTime
Type xs:dateTime
Body
ResponseMessage
Type sr:ResponseMessage
DeviceAlertMessage
Type sr:DeviceAlertMessage
DCCAlertMessage
Type sr:DCCAlertMessage
SMETS1ResponseMessage
Type sr:SMETS1ResponseMessage
ds:Signature
sr:DeviceAlertMessage
AlertCode
Type xs:hexBinary
GBCSPayload
Type xs:base64Binary
ThrottledAlertSequenceID
Type xs:unsignedShort
ThrottledAlertDiscardedCount
Type xs:unsignedShort

Amend Table 32 in Section 3.6.2.2 'Device Alerts Body Format' as follows:

Data Item	Description	Type	Mandatory	Valid Values
AlertCode	Code indicating the alert or reason for the alert to be generated GBCS includes '0x' at the start of such codes. This definition uses a hexBinary representation for valid values.	xs:hexBinary	Yes	See GB Companion Specification for base list and apply hexBinary representation of these GBCS defined values
ThrottledAlertSequenceId	An optional data item that identifies that this Alert Code is currently subject to throttling by the DCC Data Systems. If this attribute is included in the Alert then it indicates the sequence number for this Alert message since Alert throttling began.	Xs:unsignedShort	No	
ThrottledAlertDiscardedCount	An optional data item used to indicate the number of Alerts that have been discarded by DCC Data Systems since the last Alert was forwarded to the Service User.	Xs:unsignedShort	No	
GBCS Payload	See GB Companion Specification for Details of the format of the GBCS Alert	xs:base64Binary	Yes	See GB Companion Specification for message construction.

Amend the Figure 13 illustrated diagram in Section 3.6.3 'Device Alerts - DCCAlertMessage Format' to the following:




Attributes
Response
Header
RequestID
Type sr:RequestIDType
ResponseID
Type sr:ResponseIDType
ResponseCode
Type sr:ResponseCode
ResponseDateTime
Type xs:dateTime
Body
ResponseMessage
Type sr:ResponseMessage
DeviceAlertMessage
Type sr:DeviceAlertMessage
DCCAlertMessage
Type sr:DCCAlertMessage
SMETS1ResponseMessage
Type sr:SMETS1ResponseMessage
ds:Signature
sr:DCCAlertMessage
DCCAlertCode
Type Restriction of 'xs:string'
DCCAlert
Type sr:DCCAlert
ThrottledAlertSequenceID
Type xs:unsignedShort
ThrottledAlertDiscardedCount
Type xs:unsignedShort

Amend Table 24 in Section 3.6.3.2 'DCC Alerts Body Format' as follows:

Data Item	Description	Type	Mandatory	Valid Values
DCCAlertCode	Code indicating the alert or reason for the Alert to be generated by DCC	Restriction of xs:string (Enumeration)	Yes	See clause **Error! Reference source not found.**
ThrottledAlertSequenceId	An optional data item that identifies that this Alert Code is currently subject to throttling by the DCC Data Systems. If this attribute is included in the Alert then it indicates the sequence number for this Alert message since Alert throttling began.	Xs:unsignedShort	No	
ThrottledAlertDiscardedCount	An optional data item used to indicate the number of Alerts that have been discarded by DCC Data Systems since the last Alert was forwarded to the Service User.	Xs:unsignedShort	No	
DCCAlert	This is body specific content dependent on the DCCAlertCode being sent. See clause **Error! Reference source not found.** for body specific format.	sr:DCCAlert See clause **Error! Reference source not found.**	Yes	See clause **Error! Reference source not found.**

Amend Annex A – DUIS XML SCHEMA with the following code entries to incorporate the ThrottledAlertSequenceID and ThrottledAlertDiscardedCount functions to correspond with Figures 12 and 13 above:

DUIS Schema V3.1 D4.xsd

```
<xs:complexType name="DeviceAlertMessage">
        <xs:sequence>
            <xs:element name="AlertCode" type="xs:hexBinary">
</xs:element>
```

```
<xs:element name="ThrottledAlertSequenceId" type="xs:unsignedInt"
minOccurs="0" maxOccurs="1"/>
            <xs:element name="ThrottledAlertDiscardedCount"
type="xs:unsignedInt" minOccurs="0" maxOccurs="1"/>

            <xs:element name="GBCSPayload" type="xs:base64Binary"
minOccurs="1" maxOccurs="1"/>
        </xs:sequence>
    </xs:complexType>

    <xs:complexType name="DCCAlertMessage">
        <xs:sequence>
            <xs:element name="DCCAlertCode">
                <xs:simpleType>
                    <xs:restriction base="xs:string">
                        <xs:enumeration value="AD1"/>
                        <xs:enumeration value="N1"/>
                        <xs:enumeration value="N2"/>
                        <xs:enumeration value="N3"/>
                        <xs:enumeration value="N4"/>
                        <xs:enumeration value="N5"/>
                        <xs:enumeration value="N6"/>
                        <xs:enumeration value="N7"/>
                        <xs:enumeration value="N8"/>
                        <xs:enumeration value="N9"/>
                        <xs:enumeration value="N10"/>
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                        <xs:enumeration value="N18"/>
                        <xs:enumeration value="N19"/>
                        <xs:enumeration value="N20"/>
                        <xs:enumeration value="N21"/>
                        <xs:enumeration value="N22"/>
```

```
            <xs:enumeration value="N23"/>
            <xs:enumeration value="N24"/>
            <xs:enumeration value="N25"/>
            <xs:enumeration value="N26"/>
            <xs:enumeration value="N27"/>
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            <xs:enumeration value="N55"/>
            <xs:enumeration value="N56"/>
            <xs:enumeration value="N57"/>
            <xs:enumeration value="N58"/>
            <xs:enumeration value="N999"/>
        </xs:restriction>
```

```
                </xs:simpleType>
            </xs:element>
      <xs:element name="ThrottledAlertSequenceId" type="xs:unsignedInt"
minOccurs="0" maxOccurs="1"/>
            <xs:element name="ThrottledAlertDiscardedCount"
type="xs:unsignedInt" minOccurs="0" maxOccurs="1"/>
            <xs:element name="DCCAlert" type="sr:DCCAlert"/>
        </xs:sequence>
    </xs:complexType>
```

Appendix AH 'Self Service Interface Access Control Specification' – Part 1

Previous details that were included in Appendix AH have since the implementation of SECMP0058 'Changes to the governance of the Self-Service Interface' have since been moved to a DCC owned Technical Specification document titled the 'Self-Service Interface (SSI) Baseline Requirements Document'. Amendments are required to this document which are listed below.

SSI Baseline Requirements Document – Part 1

Amend the document by adding "Northbound Traffic Management Report" to the list of pre-defined and parameterised reports to match the obligation set out in the Impact Assessment:

- UC_Reports_001 – Access to the following reports, available to any User and pertaining to that User:
  - Installation Status Smart Meter Report
  - Smart Metering Devices Status and Firmware Report
  - Smart Metering Devices Status and Model Report
  - Communications Hub with No Attached Devices Report
  - Scheduled Service Requests Report
  - Quarantined Requests Report
  - Monthly Transaction Report
  - Smart Metering Device Transaction Report
  - Firmware Activations Service Request Report
  - Load Balance Report
  - Northbound Traffic Management Report