

SEC Modification Proposal, SECMP0105

Sending SR11.2 to Devices in Suspended State

Full Impact Assessment (FIA), DCC CR1397



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1 Executive Summary

The Change Board are asked to approve the following:

- Total cost to implement SECMP0105 of £230,331 (see the Code Red Annex for a breakdown) as a standalone release.
- The timescale to complete the implementation of six (6) months
- Include SECMP0105 as part of the November 2021 SEC Systems Release

Problem Statement

Once a firmware entry is removed from the Central Products List (CPL), the Smart Metering Inventory (SMI) status for the Devices is set to a 'Suspended' state. While the Device is 'Suspended', only a Critical Service Request (SR) can be sent to it, and any Non-Critical SRs are rejected by the Data Services Provider (DSP) with an E5 error.

The E5 validation causes an issue is when the SR11.3 'Activate Firmware' response for successful firmware activation is not received by the DSP. In this case the Device remains 'Suspended' even though the new firmware is now activated on the Device.

This Modification solution proposes:

- a) the DCC shall process SR11.2 'Read Firmware Version' where a Device has a Smart Metering Inventory (SMI) Status of 'Suspended'.
- b) upon a Service User's automated second attempt of SR11.3, the response shall update the SMI with the new firmware version and subsequently the status of the Device.

Without the proposed changes,

- i. there will be a small percentage of Devices that cannot be recovered from the 'Suspended' state, if the SR11.3 Response is not received by the DSP.
- ii. The firmware version on the SMI could be out-of-sync with the actual version of the firmware on the Device
- iii. The only way recover such a Device is to repeat and resend a firmware update

Benefit Summary

The benefits of delivering this change include recovering Devices from 'Suspended' state where firmware activation Response is not received by the DSP and synchronisation of firmware version between SMI and Devices. This would result in:

- Reduction in firmware activation related failure. One Supplier noted that currently around 20% of all SR11.3 responses are "lost" and so it is a big issue for Suppliers.
- Delivery of improved services to Customer

2 Document History

2.1 Revision History

Revision Date	Revision	Summary of Changes
11/01/2021	0.1	Initial compilation from Service Provider
12/01/2021	0.2	Updated following DCC Internal review
13/01/2021	0.25	DCC internal review completed
27/01/2021	0.26	Cost updated following reduced cost submission from the Service Provider

2.2 Associated Documents

This document is associated with the following documents:

#	Title and Originator's Reference	Source	Issue Date
1	MP105 Business Requirements	SECAS	17/07/2020
2	SECMP0105 CR1397 - PIA - Sending SR11.2 to Devices in Suspended State v0.25	DCC	27/08/2020

2.3 Document Information

The Proposer for this Modification is Chun Chen of Data Communications Company (DCC). Here are the timelines of this Modification.

December 2019	Proposal submitted
April 2020	Preliminary Impact Assessment (PIA) requested of DCC
May 2020	PIA submitted by DCC (DCC Change Request 1338)
June 2020	Additional requirement included following Working Group Meeting
July 2020	Revised PIA with additional requirement requested of DCC
August 2020	Revised PIA submitted by DCC (DCC CR 1397)
October 2020	Full Impact Assessment (FIA) requested of DCC
January 2021	FIA submitted by DCC (DCC Change Request 1397)

Table 1: SECMP0105 Timeline

3 Solution Requirements and Overview

In this section, the context of the Modification, assumptions, and the requirements are stated.

3.1 Current Arrangements

Once a firmware entry is removed from the CPL, SMI status for the impacted Devices is set to a 'Suspended' state. While the Device is in a 'Suspended' state, only a Critical SR can be sent to those Devices, and any Non-Critical SRs will be rejected by the DSP with an E5 error, "Failed Authorisation – Invalid Device Status".

As an exception, the following Non-Critical SRs will be allowed if the Device is 'Suspended':

- SR11.1 'Update Firmware';
- SR6.23 'Update Security Credentials ()';
- SR2.2 'Top Up Device' with a Command Variant value of 2 (only for Smart Metering Equipment Technical Specifications (SMETS) 1 Devices).

This means SR11.2 'Read Firmware Version' will be rejected by the DSP E5 validation when the Device is in a 'Suspended' state.

3.2 Business Requirements for this Modification

This section contains the considerations and assumptions for each business requirement as provided by the Proposer and SECAS.

Req.	Requirement
1	The DCC shall process Service Request (SR) 11.2 'Read Firmware Version' where a Device has a Smart Metering Inventory (SMI) Status of 'Suspended'.
2	Upon a Service Users automated second attempt of SR 11.3 'Activate Firmware', the response shall update the SMI with the new firmware version and subsequently the status of the Device.

Table 2: Business Requirements for SECMP0105, CR1397

3.2.1 Requirement 1 Solution Constraints

It is possible for the DCC not to receive the SR11.3 'Activate Firmware' response for successful firmware activation even if firmware has been successfully activated on a Device. This is also the case with future activated firmware, where the Service User may not receive the Alert for successful activation. In this scenario the Device will remain in the 'Suspended' state in the SMI, even though the new firmware is now activated on the Device.

There is currently no other recoverable method unless another new firmware update takes place.

SR11.2 needs to be added to the exception list for the E5 authorisation check. This would allow the DCC Service User to read the new firmware version on the Device and subsequently update this information in the SMI. The SMI status would then be updated based on the SR11.2 response while the Device is in the 'Suspended' state.

3.2.2 Requirement 2 Solution Constraints

Some Supplier systems have an automated retry of SR 11.3 if it does not receive the SR 11.3 response for successful firmware activation.

Currently, if the retry of SR11.3 responds with the correct new firmware version, it does not update the SMI status for the Device. Therefore, the solution should respond to the automated retry of SR 11.3 to update the SMI status in the same way as SR11.2.

The advantage with this method is that for “lost” SR 11.3 responses, the firmware version would be aligned to the SMI not only for ‘Suspended’ Devices, but all Devices. A Supplier noted that around 20% of all SR11.3 responses are “lost” and so it is a big issue for Suppliers.

3.3 Business Case

The Modification looks to address the following issues:

1. If the SR11.3 ‘Activate Firmware’ response for successful firmware activation is not received by the DSP from a Device in ‘Suspended’ state, the Device will remain in the ‘Suspended’ state even though the new firmware is now activated on the Device.
2. When a Response to a SR11.3 is not received, some of the Service Users may send another SR11.3 to the Device using an automatic retry implementation. Since the Device has already activated the new firmware using the previous request, the SMETS2 Device will create the Response with ‘ActivateImageResponseCode’ as ‘ActivationFailure’. However, the ‘Firmware Version’ attribute in the Response will hold the current active firmware version of the Device. Currently DSP actions a Response from a Device for updating the firmware version in the SMI only when the ‘ActivateImageResponseCode’ is ‘success.’ This would cause the version held in the SMI to become out-of-sync with the actual version of firmware on the Device.

Currently there is no other recoverable method unless another new firmware update takes place and successful firmware activation response is received by the DSP – which is a waste of time and effort.

This impact the following SEC Parties as follows:

Suppliers	<p>Suppliers be able to send SR11.2 when a Device is in a ‘Suspended’ state in the SMI instead of it being rejected by the DCC E5 authorisation check.</p> <p>If upon a successful firmware update the SR 11.3 response is not received by the DSP the Supplier can rectify the SMI status without having to attempt another firmware update.</p> <p>Additionally, if a Supplier has an automated retry on SR 11.3 in place and it produces a response this response will be used to update the Device status in the SMI.</p>
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In summary, this modification would reduce the firmware activation related failure and improve the efficiency of recovering devices from ‘Suspended’ state for Energy Suppliers.

4 Solution Overview

This modification only impacts the DSP component of the DCC Total System.

4.1 DSP Solution Overview

Solution for Requirement 1

DCC Data Systems will modify the E5 validation check so that an SR11.2 - "Read Firmware Version", targeted at a 'Suspended' Device, is not rejected by the DCC Data Systems.

If the Response to SR11.2 from a 'Suspended' Device indicates that new firmware has been activated, then the Device will be unsuspended by updating the status in SMI to the status it held immediately prior to its suspension. DCC Alert N29 (Device Restored from Suspension) will also be sent to the Responsible Import Supplier and to the Responsible Network Operator. This behaviour is the same as that of processing the Response to SR11.3 (Activate Firmware) from a 'Suspended' Device.

It should be noted that the Response to SR11.2 received from a Gas Proxy Function (GPF) would not be treated as a valid input for restoring the associated Gas Smart Metering Equipment (GSME) from the 'Suspended' state. The existing functionality is to send the DCC Alert N52 (GSME Firmware Version Mismatch) to the Service Users if the received GSME firmware version, returned by the GPF, is different from the corresponding GSME's firmware version available in SMI. This behaviour will remain unchanged.

Solution for Requirement 2

DCC Data Systems will modify the processing of Service Request 11.3 Activate Firmware such that the value of `ActivateImageResponseCode` in the Response (including in the Firmware Activation Alert for future dated SR) will no longer be considered as criteria for determining whether to update the SMI. If the Device Response contains a valid version (CPL status "Current") of the firmware which is different from the value currently held in the SMI for that Device, DSP will update the `DeviceFirmwareVersion` and `Device Status` (that it held immediately prior to its Suspension) in the SMI, irrespective of the value held by `'ActivateImageResponseCode'`.

The field `ActivateImageResponseCode` can hold the values 'success', 'activationFailure', 'noImageHeld' or 'hashMismatch'. It is assumed that the Response to SR11.3 will always contain the active firmware version on the Device regardless of the outcome of the processing within the SMETS2 Device. This assumption had been validated with the GBCS Working Group.

With the recent approval of SECMP0007, HCALCS are now in scope for SR11.3 and will be subject to the same modified rules for SR11.3 as ESME and GSME.

A retry of SR 11.3 is handled differently by SMETS1 Service Providers (S1SP) and a failed activation response does not contain firmware version if the status is not 'success'. Hence the Response processing of SR11.3 for SMETS1 will remain unchanged as it is today (i.e. update the SMI only if the status is 'success').

4.2 SEC Changes

The DCC and Service Providers have reviewed and approved the legal text changes by SECAS in SEC Appendix AD - DCC User Interface Specification (DUIS) as summarised in Table 3.

Requirement	Changes on SEC Appendix AD	Comments
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1	Section 3.2.4 Table 22 – addition of SR “11.2 (Read Firmware Version)” for the Response Code E5	Agreed
	Section 3.8.124.3 – specific validation indicating SR11.2 is in exception list for E5.	Agreed
	Section 3.8.124.4 – Addition of the fourth sub bullet points under the first main bullet point. <ul style="list-style-type: none"> “If the Firmware Version entry on the CPL for that Device Model has a status of “Current” and the Device Status in the SMI was ‘Suspended’, the DCC Systems shall update the Device Status to the status it held immediately prior to its Suspension. In this case DCC Alert N29 will be sent to the Responsible Supplier and to the Electricity Distributor or Gas Transporter. “ 	Changes proposed
2	Section 3.6.3 Table 41: Removal of the ‘successful’ and addition of Alert Code ‘0x8F67’ for DCC Alert Code N50 and N51.	Agreed
	Section 3.8.125.4 – DCC proposes to the following modification to the existing paragraph. <p>“Where the DCC identifies any Response which indicates the successful processing of the activate firmware Command (execution Outcome = Success) on a Device and where the current Firmware Version returned by the Device matches an entry on the CPL for that Device Model and that Firmware version is different to the value currently held in the Smart Metering Inventory for that Device, an update to the Smart Metering Inventory shall be made by the DCC”</p>	Changes proposed

Table 3: SEMP0105 legal text changes review summary

There will not be any changes in DUIS XML schema or MMC XML schema for this Modification.

4.3 Deliverables

The deliverables of this Modification are described in the table below.

Phase Deliverables	Deliverable	Changes Required
Design	SD2.1.1 Functional Specification - Instant Energy	Update to additional processing for SR 11.2 and SR 11.3
	SD4.1 DCC User Gateway Interface Design Specification (DUGIDS)	The existing description of SR11.2 does not state that the Service Request Variant (SRV) will be rejected if the target Device is suspended. Therefore, no change is required to the narrative for SR11.2.

		The narrative of SR11.3 needs to be changed.
	SD2.2.1.2 CDS - Request Manager	Request Management requires a modification to both Southbound and Northbound processing of the Service Request 11.2. The Northbound processing of Service Request 11.3 will also require modification as described above.
	SD2.2.1.4 CDS - Data Management - SCHED-INV-MSQ	Data Management requires changes for DCC Alert N29 (Device Restored from Suspension) to handle the special case involving GPF (DCC Alert N52).
	SD2.2.1.6 CDS - Security	To be created
PIT Completion	System Test and FAT Completion Report	
Safety	DQ.0019, DSP Failure Modes, Effects and Criticality Analysis	
	DQ.0005, DSP System Hazard Analysis Report	
	DQ.0007, DSP Hazard Log	

4.4 Impact on DSP Components

The following sub-systems and components of the DSP are impacted by this change.

4.4.1 Request Management

Request Management requires a modification to both Southbound and Northbound processing of the Service Request 11.2.

The Northbound processing of Service Request 11.3 will also require modification as for the second requirement of this Modification.

4.4.2 Data Management

Data Management requires changes for DCC Alert N29 (Device Restored from Suspension) to handle the special case involving GPF (DCC Alert N52).

5 Impact on DCC Systems, Processes, and People

This section describes the impact of SECMP0105 on DCC Services and Interfaces that impact Users and/or Parties.

5.1 Impact on DSP Services

Change in Response processing of SR 11.2 and 11.3 require a change in Request Management and Data Management components at DSP.

5.2 Technical Specifications

There will be changes in DUIS (no change in the XML schema) as shown in section 4.2 and corresponding changes in DUGIDS for the changes in DUIS. No other changes required in any Technical Specification.

5.3 Impact on Security

The DSP Security Assurance team has reviewed this change. There is no material impact on the DSP security implementation. The Security Assurance team will provide general security oversight of the implementation throughout its implementation in accordance with DSP's contractual requirements:

- Provide design time guidance through the review of design documentation to maintain alignment with contractual requirements and minimise security risks;
- Review test artefacts and outcomes where there is a potential security consideration;
- Attend meetings where required by the implementation teams;
- Liaise with DCC as necessary on any security related concerns.

No additional Penetration Testing will take place as a result of this change on the basis that:

- there are no material changes to DSP interfaces;
- there are no material changes to the security implementation;
- there is no new infrastructure being introduced.

As a result of the above, there is no requirement to update the Protective Monitoring implementation.

5.4 Impact on Processing, Storage or transmission of DCC Data

This change does not materially increase processing, data storage or data exchange within the DSP solution. Therefore, it is not thought that the change on its own warrants the procurement of additional infrastructure.

Note that the aggregated impact of many such changes to the DSP solution will ultimately result in a reduction of the available processing headroom assumed as part of the original DSP agreement. As such, DSP reserves the right to raise a Change Request for the provision of additional infrastructure should the DCC Data System experience performance problems that are the direct result of such changes.

5.5 Impact on Safety

There are indirect but foreseeable systems safety risks associated with management of device firmware. If a firmware image is not activated when required or an incompatible firmware version is activated, this could impact all communications with the device and the supply of energy to

consumers. DUIS SRVs 11.2 and 11.3 are assessed as safety related (ref. DQ.0005, DSP System Hazard Analysis Report).

Implementation of SECMP0105 would provide mitigation for foreseeable safety risks:

- If a Service User is unable to process SR11.2 on a suspended device because the device fails to send a Service Response, then they would not be able to retrieve its firmware details (Requirement 1 provides mitigation).
- If there is inconsistency between the firmware version held in SMI and the actual version on the SME device this could lead to problems in communicating with that device (Requirement 2 provides mitigation).

These risks could be caused by DSP system failures (e.g. unplanned outage of gateway, heavy network traffic, data misdirection in SMI) or DCC Service User failures (e.g. incorrect device specified, failure to request firmware update in a timely manner). DSP discharges its safety risk assessment and management responsibilities through maintenance of the S&E Case, and implementation of suitable and sufficient mitigations in its solution to reduce the risks to acceptable levels. DSP expects that suitable and sufficient external mitigations will be implemented by DCC, SME device manufacturers and Service Users in line with their legal and licensed safety obligations, to ensure safe operation of the DSP solution in its wider energy supply business environment.

DSP is required to perform safety risk assessment of the functional design at Use Case level via the DSP SHAR and its supporting FMECA, with the resulting hazards managed via the Hazard Log. Depending on the option selected by DCC, this change will impact DUGIDS and the functional design for several DSP components (e.g. Request Management, Data Management). CGI will review the FMECA, SHAR and Hazard Log, in line with the updated DUGIDS and DSP components designs and safety test evidence.

The DSP S&E Case deliverables are required to be updated and reissued for each major DSP release (at least once annually) as agreed with the DCC (ref. DQ.0004, Safety and Environmental Management Plan). This change is expected to be implemented as part of a DSP interim maintenance release. DSP will update and reissue these deliverables to the DCC prior to release go-live consultation for the next major release following implementation of this change to allow for stakeholder review and approval prior to go-live.

5.6 Impact on Performance and Infrastructure

DSP does not expect that there will be a material impact on system performance or infrastructure as a result of this change. Therefore, no performance assurance activities are included in this SEMP0105 FIA. Consideration of the impact of multiple similar changes is given in section 5.4.

5.7 Impacts on Resilience and Disaster Recovery

There will be no change to Resilience, the Disaster Recovery solution or BCDR procedures as a result of this Modification.

5.8 Impacts on Interfaces

This Modification does not change the interface definitions.

5.9 Transition to Operations (TTO) Approach

No TTO-specific charges related to the DSP have been included in this FIA on the basis that it is relatively small. It is assumed that other larger or more complex Change Requests will include partial provision for TTO and that the overall release CR will address any collective shortfall.

5.10 Application Support

The Application Management Support team is responsible for the provision of application level support for the DCC Data System application. This change provides additional functionality that will be subject to support until the end of the DSP contract.

The new functionality could result in calls from Service Users as they become familiar with the new functionality and the potential increase in N29's and also as a result of the SRVs not performing the SMI update due to an invalid version of the firmware in the device response. Calls are likely to request clarification in data content and need investigation as to why the SRV has not been processed as expected.

As a result, DSP has made a conservative estimate that the change will result in four (4) low complexity calls per month that need to be assimilated, investigated, resolved and monitored over the life of the contract.

The Service team will need to be prepared to support the change from the day it goes into live operation. As such, the team must review the functional solution and its technical implementation, ensuring a comprehensive understanding of the solution. The team must understand any configurable options and develop procedures to enable its support. This information must also be shared across the team.

6 Testing Considerations

This Full Impact Assessment includes the cost to develop, fully test and deliver this SEC Modification.

6.1 Pre-Integration Testing

Pre-Integration Testing (PIT) will be required to align DSP functionality and the functionality described above. The PIT phase of implementation will be subject to standard test phases and level of DCC assurance as defined in previous releases. Specifically, the development team will carry out unit testing and the build will be subject to continuous build and automated testing to identify build issues at the earliest opportunity. The implementation team will carry out system testing consisting of positive and negative path testing which will culminate in a short period of Factory Acceptance Testing (FAT), witnessed by DCC test assurance at DSP offices. The FAT tests will be a subset of System Tests.

Acceptance will be defined by:

1. An agreed set of design documentation.
2. DCC approving the Factory Acceptance Testing outcome in accordance with pre-agreed criteria, which shall not be unreasonably delayed or withheld.
3. Meeting Schedule 6.2 PIT exit criteria.
4. Approval for a MAC to be issued will be authorised by DCC's Test Assurance Board.

6.2 System Integration Testing and User Integration Testing

The SIT phase of testing will be aligned with other Modifications and Change Requests in the November 2021 release.

This Modification impacts both SMETS1 and SMETS2. However, the new functionality does not need to be tested against each Device Model Combination (DMC) or repeated for each CSP or S1SP.

SMETS2 testing will include

- Upon successful execution of SR11.2 against ESME, GSME, CHF, HCALCS and PPMID which are in a "Suspended" state, verify that the device's SMI status is updated to that prior to status of "Suspended". Verify alert N29 (Device restored from suspension) sent to the responsible Import Supplier and to the Network Operator.
- Execute SR11.1 followed by SR11.3 update Firmware for ESME, GSME and HCALCS. Where the response from the northbound SR11.3 contains an updated valid firmware version and the response field ActivateImageResponseCode holds one of either 'activationFailure', or 'noImageHeld' or 'hashMismatch' and verify that the SMI is updated. To be executed for all CSPs and SBCH and DBCH.
- Execute SR11.2 against the GPF for a suspended GSME and if there is a mismatch between the F/W returned and the SMI alert N52 is sent to the SU.

For SMETS1

- Upon successful execution of a SR11.2 against ESME, GSME, CHF and PPMID which are in a "Suspended" state, the device's SMI status is updated to that prior to status of "Suspended" verify alert N29 (Device restored from suspension) sent to the responsible Import Supplier and to the Network Operator.
- Execute SR11.2 against the GPF for a suspended GSME and if there is a mismatch between the F/W returned and the SMI alert N52 is sent to the SU.

The scope of this testing will be detailed in a heatmap and Solution Test Plan associated to the release that this will be delivered against, as SIT completes Solution Test Plans for a SEC Release, and not for individual CRs. This will be included as part of the November 2021 SEC Release.

There is no perceived testing that can be carried out in UIT beyond that which will be covered by SIT.

7 Implementation Timescales and Releases

This Modification was expected to be included in a SEC release in November 2021. Implementation timescales will be finalised as part of the relevant SEC Release Change Request.

7.1 Change Lead Times and Timelines

From the date of approval (in accordance with Section D9 of the SEC), to implement the changes proposed DCC requires a lead time of approximately **6 months**.

The broad breakdown of the testing regime is shown in the following table in months after an approval decision date (D).

Phase	Duration
SECAS agreement on scope of release	
CAN signature	D + 1 Month
Design, Build and PIT Phase	4 Months
SIT Phase (functional changes only), aligned with Release Sit Dates	1 Month
Transition to Operations and Go Live	D + 6 Months

7.2 SEC Release Allocation and Other Code Impacts

The allocation to any release may be dependent on other Modification timings and the suitability of a release. No functionality overlaps with other Modifications has been identified.

7.3 Costs and Charges

This section indicates the quote for all phases of application development stage for this Modification. Note these costs assume a standalone release of just this SEC Modification without any other Modifications or Change Requests in the release, which is not truly reflective of what the test costs or programme duration will look like. A calculation of those costs will be carried out when the contents of the future Release are finalised, and the post-PIT costs determined through a "Grouping CR" also referred to as a "Release CR".

Design, Build, Test (PIT)	Post PIT	Application Support
£150,000 - £200,000	£50,000-£100,000	£10,000-£15,000

7.4 Impact on Contracts and Schedules

Contract updates will be required for this change. The detailed updates will be determined as part of the resulting Contract Amendment Note (CAN). Updates will be required to the following schedules:

- Schedule 4.1: Solution Design documents will need to be updated as per section 4.3 Deliverables;
- Schedule 6.1: Inclusion of three new milestones referencing completion of Design, PIT and SIT for this change as detailed in section **Error! Reference source not found.**;
- Schedule 7.1: Update to include a payment against the Schedule 6.1 milestones and the Operational charge uplift.

There will be no change to Schedule 2.2 SLAs due to this Modification.

Appendix A: Risks, Assumptions, Issues, and Dependencies

The tables below provide a summary of the Risks, Assumptions, Issues, and Dependencies (RAID) observed during the production of the Full Impact Assessment. DCC requests that the Working Group considers this section and considers any material matters that have been identified. Changes may impact the proposed solution, implementation costs and/or implementation timescales.

7.5 Risks

None at this time.

7.6 Assumptions

These assumptions have been used in the creation of this Full Impact Assessment. Any changes to the assumptions may require DCC to undertake further assessment, prior to the contracting and implementation of this change.

Ref	Description	Status/Mitigation
D105-A1	This Modification will form part of the November 2021 release. It is assumed that implementation completes prior to the end of March 2021 such that a reduced cost of expenses is achieved (noting that the reduced expenses rate may be extended if travel restrictions persist beyond end of March 2021).	Accepted
D105-A2	It is assumed that no UIT/UTS testing is required for the change. Please refer section 6.2 for details.	Accepted
D105-A3	There is no requirement for a penetration test and no change to the DSP's Protective Monitoring solution	Accepted
D105-A4	For SMETS1 Devices, the implementation within S1SPs are different for firmware download and activation than SMETS2 device behaviour. The second attempt of SR11.3 are not expected to contain the current Firmware Version in the Response to SR11.3 if the status is not 'success'. Hence DSP has been asked to retain the Response processing of SR11.3 for SMETS1 as it is today (i.e. update the SMI only if the status is 'success')	Accepted following the analysis of the SR11.3 implementation at SMETS1 Service Providers.

7.7 Issues

None at this time.

7.8 Dependencies

None at this time.

Appendix B: Glossary

The table below provides definitions of the terms used in this document.

Acronym	Definition
CAN	Contract Amendment Note
CPL	Central Products List
CR	DCC Change Request
CSP	Communication Service Provider
DCC	Data Communications Company
DSP	Data Service Provider
DUGIDS	DCC User Gateway Interface Design Specification
DUIS	DCC User Interface Specification
ESME	Electricity Smart Metering Equipment
FAT	Factory Acceptance Testing
FIA	Full Impact Assessment
GPF	Gas Proxy Function
GSME	Gas Smart Metering Equipment
PIA	Preliminary Impact Assessment
PIT	Pre-Integration Testing
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SIT	Systems Integration Testing
SMI	Smart Metering Inventory
SMETS	Smart Metering Equipment Technical Specification
SP	Service Provider
SR	Service Request
SRV	Service Request Variant
S1SP	SMETS1 Service Provider
UIT	User Integration Testing
UTS	User Testing Services