SEC Modification Proposal, SECMP0125, DCC CR4425

Correcting Device Information for the ESME Variant

Preliminary Impact Assessment (PIA)

Version:	**0.31**
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Author:	**DCC**
Classification:	**DCC Public**

Data Communications Company

Contents

1 Executive Summary

The Change Board are asked to approve the following:

- Total cost to complete the Full Impact Assessment of £9,617
- The timescales to complete the Full Impact Assessment of 30 days
- ROM costs for SECMP0125, up to the end of Pre-Integration Testing (PIT) of up to £150,000

Problem Statement and Solution

When an installing Supplier pre-notifies a Device to the Data Communications Company (DCC) using Service Request 12.2 it provides Device details, including the ESME Variant to be stored in the Smart Meter Inventory (SMI). Once the Device leaves the Pending state then it is not possible to update these details in the SMI. Following a Change of Supplier (CoS), the gaining Supplier would be unable to correct any errors made by the previous installing Supplier and any Device firmware upgrades would not work.

DCC supplied estimates indicate there are over 719,000 Devices with an incorrect ESME Variant in the SMI.

Modification Benefit

The modification will allow the Responsible Supplier to be able to correct the ESME Variant in the SMI after the Device has been commissioned.

2 Document History

2.1 Revision History

Revision Date	Revision	Summary of Changes
30/08/2021	0.1	Initial DCC Review with Service Providers
31/08/2021	0.31	Internal review

2.2 Associated Documents

This document is associated with the following documents:

Ref	Title and Originator's Reference	Source	Issue Date
1	MP125 Modification Report v0.4	SECAS	23/12/2020
2	MP125 Business Requirements v0.3	SECAS	12/07/2021

References are shown in this format, [1].

2.3 Document Information

The Proposer for this Modification is Leon Wright from Utility Warehouse. The problem statement was submitted to SECAS on the 12th May 2020.

The Preliminary Impact Assessment was requested of DCC on 9th August 2021, and accepted on the 16th August 2021.

The Modification was originally titled "Correcting Device Information ESME Variant, Device Model and Device Manufacturer", but on advice from the DCC and TABASC, the scope was reduced by SECAS and the Business Proposer, and the shorter, more accurate title introduced. A manual process has been introduced by the DCC to meet the Business Proposer's request for functionality to update incorrect Smart Metering Inventory (SMI) entries for the Device Model and Device Manufacturer.

3 Context and Requirements

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

The requirements have been provided by SECAS, the Proposer, and the Working Group.

3.1 Context

DCC Users must ensure that all Devices connected to the Home Area Network (HAN) are recorded on the SMI. This is achieved by sending a Device Pre-notification Service Request (SR) 12.2 to the DCC. The SR12.2 contains information regarding the ESME Variant field as shown in the table below. This specifies details about the Device such as if it includes a HAN Connected Auxiliary Load Control Switch (HCALCS).

Upon receiving the SR12.2, the Data Service Provider (DSP) updates the SMI and sets the SMI Status of the Device to 'Pending'.

ESME Variant Code	Device Type
A, AD or ADE	Single Element Electricity Metering Equipment
B, BD or BDE	Twin Element Electricity Metering Equipment
C, CD or CDE	Polyphase Element Electricity Metering Equipment

Table 1: ESME Variant Types

3.2 Problem Statement

A gaining Supplier is unable to update the ESME Variant field of a commissioned Electricity Smart Metering Equipment (ESME) after SR 12.2 has been executed incorrectly by the previous installing Supplier.

If a Device has a status of 'Pending', only the DCC User who added the Device to the SMI may update details of that Device or delete it. Devices with SMI statuses other than Pending can only have their SMI status amended by the Responsible Supplier. SR8.4 Update Inventory can only be used to update the Device details provided via SR12.2 while the meter is still in Pending status

Once the Installation and Commissioning process has started and the Device leaves the Pending state then it is no longer possible to update these details in the SMI. Following a Change of Supplier (CoS), the gaining responsible Supplier would be unable to correct any errors made by the previous installing Supplier. While it is possible for the installing Supplier to amend the ESME Variant field, the Supplier would not know when a CoS occurs. In July 2020, the DCC estimated there were over 719,000 ESME Devices listed under an incorrect ESME Variant in the SMI.

Note there are two checkpoints in place to stop this issue becoming a problem; the Device Manufacturer and the installing Supplier. This issue only becomes problematic if both the Device Manufacturer and installing Supplier overlook the incorrectly identified Device details.

Not resolving the issue means errors identified in the SMI will not be corrected and the volume of incorrect Devices will continue to increase. Operationally, the implementation of firmware upgrades could mean a Device's functionality may change. A change of functionality would mean there would be a discrepancy with the Device variant as listed at the very outset. This could result in a gaining Supplier sending a firmware update to a Device, but the upgrade not completing.

3.3 Business Requirement

There is one Requirement for this Modification.

Requirement 1: The Responsible Supplier shall be able to update the Electricity Smart Metering Equipment (ESME) Variant held in the Smart Metering Inventory (SMI) after a Device has been commissioned.

3.4 Solution Intention

The solution will allow the Responsible Supplier to correct the ESME Variant field in the SMI after a Device has been commissioned. The Responsible Supplier shall be able to send SR8.4 Update Inventory to correct the ESME Variant if the Device Status is 'Whitelisted', 'Installed Not Commissioned' or 'Commissioned'.

This solution shall be applied to Smart Metering Equipment Technical Specification (SMETS) 2+ Devices only.

4 Description of Technical Solution

Changes to the DSP are required for implementing this Modification.

4.1 DSP Solution

DSP will modify the validation rules associated with SR 8.4 Update Inventory as follows to meet the business requirements.

Currently only the DCC Service User who pre-notified the Device details is allowed to update the Device details. This behaviour will be changed to allow the Responsible Supplier to submit SR8.4 for the purpose of updating the ESME Variant of a Device.

In addition, currently the Device details can only be updated if the Device has the status of Pending. This rule will be amended such that it will also be possible to update the ESME Variant of a Device with the status of Whitelisted, Installed Not Commissioned or Commissioned.

Note the existing rules will remain applicable for updating all other Device Details.

5 Impact on Systems, Processes and People

This section describes the impact of SECMP0125 on Services and Interfaces that impact Users and/or Parties.

5.1 Security Impact

The implementation will be security assured throughout. This assurance includes reviewing designs, test artefacts and providing consultancy to the implementation and test teams.

A more detailed Security impact will be carried out as part of the Full Impact Assessment.

5.2 Technical Specifications

DUIS and DUGIDS documentation will be updated to describe the revised behaviour of SR8.4. No changes are required to the DUIS Schema.

Note that all versions of DUIS will reflect this changed behaviour, such that SEC Parties won't need to upgrade DUIS 6.0, and this Modification can be a part of any SEC Release as it doesn't have to be in one where DUIS is being uplifted.

5.3 Request Management

There will be a minor change to Request Management to handle the change to SR8.4.

5.4 Infrastructure Impact

There will be no change to the infrastructure design as a result of this change. Additional processing and storage will be required; however, they are not sufficiently large to warrant the procurement of additional compute power or storage. The change does not impact the DSP resilience or DR implementation.

5.5 Service Impact

It is not thought that the change in behaviour of the DSP system from this Modification will have a material ongoing service impact. No changes to SLAs or reporting are expected as a result of this change. However, a more detailed service impact will be completed as part of the Full Impact Assessment (FIA).

5.6 Business Scenarios

It may be necessary for DCC to update the Change of Supplier Business Scenario to include a verification of the ESME Variant and associated update if in error. This will be checked before the FIA.

6 Implementation Timescales and Approach

This change is expected to be included in a future SEC Release. Design, Build, and PIT is expected to take about three months to complete after the CAN is signed.

Details of the implementation will be finalised in the FIA.

6.1 Testing and Acceptance

There will be an impact to Systems Integration Testing (SIT) as a result of this change. The CGI System Integrator will be prepared and executed for a single SMETS2 device set comprising of a Comms Hub and an ESME. Testing will comprise the following scenarios:

- Install and Commission with SR8.4 to update ESME Variant in each of the Pending, Installed not Commissioned, and Commissioned states
- Change of Supplier
- New Supplier sending SR8.4 to update ESME Variant

The CGI UIT Projects team will test that the Responsible Supplier can send the SR8.4 'Update Inventory' to correct the ESME Variant if the Device Status is Whitelisted, Installed Not Commissioned or Commissioned.

System Regression testing and the SIT and UIT Management/Governance costs are not included in this PIA. The additional costs for SIT and UIT are likely to be relatively small, and will be included in the FIA.

7 Costs and Charges

The table below details the cost of delivering the changes and Services required to implement this Modification Proposal.

The Rough Order of Magnitude cost (ROM) shown below describes indicative costs to implement the functional requirements. The price is not an offer open to acceptance. It should be noted that the change has not been subject to the same level of analysis that would be performed as part of a Full Impact Assessment and as such there may be elements missing from the solution or the solution may be subject to a material change during discussions with the DCC. As a result the final offer price may result in a variation.

The table below details the cost of delivering the changes and Services required to implement this Modification. For a PIA, only the Design, Build and PIT indicative costs are supplied.

	Design, Build and PIT	Days to Create FIA	Cost to Create FIA
DSP	£0 to £150,000	30	£9,617

Table 2: SECMP0125 Standalone Cost

The phases included are as follows.

Design	The production of detailed System and Service designs to deliver all new requirements.
Build	The development of the designed Systems and Services to create a solution (e.g. code, systems, or products) that can be tested and implemented. It includes Unit Testing (also referred to as System Testing), Performance Testing and Factory Acceptance Testing by the Service Provider or supplier.
Pre-Integration Testing (PIT)	Each Service Provider tests its own solution to agreed standards in isolation of other Service Providers. This is assured by DCC.

Based on the existing requirements, the fixed price cost for a Full Impact Assessment is **£9,617** and would be expected to be completed in 30 days.

Appendix A: Glossary

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

Acronym	Definition
CAN	Contract Amendment Note
CoS	Change of Supplier
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
FIA	Full Impact Assessment
HCALCS	HAN Connected Auxiliary Load Control Switch
HAN	Home Area Network
PIA	Preliminary Impact Assessment
PIT	Pre-Integration Testing
ROM	Rough Order of Magnitude (cost)
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SIT	Systems Integration Testing
SLA	Service Level Agreement
SMETS	Smart Metering Equipment Technical Specification
SMI	Smart Meter Inventory
SR	Service Request
TABASC	Technical Architecture and Technical Business Architecture Sub Committee
UIT	User Integration Testing