

SEC Modification Proposal, SECMP0099, DCC CR1297

Incorporation of Multiple Issue Resolution Proposals (IRPs) into the SEC - Batch 4 Preliminary Impact Assessment (PIA)

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1 Document History

1.1 Revision History

Revision Date	Revision	Summary of Changes
09/03/2020	0.1	Initial version
16/03/2020	0.4	Internal DCC reviews complete

1.2 Associated Documents

This document is associated with the following documents:

Ref	Title and Originator's Reference	Source	Issue Date
1	MP099 Business-Requirements	SECAS	19/02/2020
2	DP099 Problem-Statement	SECAS	12/12/2019

References are shown in this format, [1].

1.3 Document Information

The Proposer for this Modification is Chun Chen of SmartDCC. The original proposal was submitted on the 12th December 2019.

The Preliminary Impact Assessment was requested of DCC on 4th February 2020.

2 Context and Requirements

In this section, the context of the Modification and the requirements are stated. These have been provided by SECAS and the Proposer.

2.1 Context

Issue Resolution Proposals (IRPs) identify issues within the SEC Technical Specification documents and put forward a solution to the identified problem. In the early stages of the Smart Metering Implementation Program, BEIS took the lead in developing the Technical Specifications that sit under the SEC. As part of this, BEIS also took responsibility for receiving and responding to issues raised internally, by the DCC, and by other interested industry parties. Since its inception, several hundred issues have been raised in relation to technical specifications under the SEC through the Technical Specification Issue Resolution Sub-Group (TSIRS). In some cases, these queries have been resolved by providing an explanation of the specifications, whilst others have resulted in proposed amendments to the specifications in the form of IRPs.

BEIS has previously implemented the required IRPs via BEIS-led designations; however, this process has now been handed over to SECAS for changes to be implemented through the Modifications Process. To improve efficiency, it was agreed these changes should be progressed under a single proposal at regular intervals. This will be the fourth batch of these changes.

2.2 Issue

In general, IRPs add clarity and corrections to the Technical Specification documents. Device manufacturers are required to follow these documents for the specifications of their Devices. Therefore, any errors or miscommunication of these specifications will mean the Device will not work as intended. TSIRS have agreed that these are issues and have agreed upon the solutions. Not implementing these solutions would mean that these problems would not be resolved.

2.3 Business Requirements

This section contains the considerations and assumptions for each business requirement. Excerpts from each of the IRPs and it is expected that the DCC will develop solution(s) to the consequential changes these IRPs will have on the DCC Systems. The document text changes are contained within each of the IRPs.

The following table contains supporting information about each IRP as well as the IRP title.

#	Requirement	Impacted Users	Impacted Devices	Complexity
1	DCC System changes for IRP571 'Historic Data when Device does not know the time'	Gas Supplier, Electricity Supplier	GSME, ESME	Low
2	DCC System changes for IRP586 'Modify use cases so ESME, GSME, and GPF behave in the same way'	Gas Supplier	GPF	Middle

Table 1: Business Requirements for SECMP0099, CR1297

2.3.1 Req. 1: IRP571 ‘Historic Data when Device does not know the time’

To avoid the risk of sharing historic data with other Home Area Network (HAN) Devices that may relate to a prior tenant, the proposed drafting is that the Gas Proxy Function (GPF) and Electricity Smart Metering Equipment (ESME) should not share historic data from this store with other HAN Devices where:

- The Device has no meaningful time
- There has been at least one change of tenancy recorded on the Device since installation



IRP571 Historic Data

Further details on IRP571 are included in the attached file: when Device does not. Note this file is as provided by BEIS and has not been edited or updated in any way.

2.3.2 Req. 2: IRP586 ‘Modify use cases so ESME, GSME, and GPF behave in the same way’

SEC Schedule 8 ‘GB Companion Specifications’ (GBCS) explicitly requires that, when reading logs, the log entries returned are inclusive of any with a timestamp equal to the ‘toDateTime’ in the Command.

ZigBee is, in a number of cases, explicit on inclusivity, open to interpretation as to such inclusivity or exclusivity and, in one case, at odds with it.



IRP586 Modify use

cases so ESME GSME

Further details on IRP586 are included in the attached file: cases so ESME GSME. Note this file is as provided by BEIS and has not been edited or updated in any way.

3 Description of CSP Solutions

In order to implement the functionality for IRP571 and IRP586, changes are required to the Communication Service Provider (CSP) solutions and documentation.

In general, the required effort will be centred on:

- Design, build and system test modifications to the Communications Hub firmware for all currently produced Production, Remote Test Lab and Instrumented Test Lab Comms Hubs to comply with the IRP 571 and 586 fixes
- Design, build and system test modifications to test tooling required to assure the CSP solution in the PIT environment
- Uplift of the CSP solutions following any accepted CSP defects
- Deployment and testing of the changes in the PIT environments
- Updating documentation, e.g., CHTS, CHDS, SMWAN

3.1 IRP571 Solution

The solution is to ensure the proposed drafting for the GPF and ESME should not share historic data from this store with other HAN Devices where:

- The Device has no meaningful time
- There has been at least one change of tenancy recorded on the Device since installation

Documentation updates relating to six Use Case descriptions use the term 'Smart Meter' but valid target devices include GPF, and so 'Smart Meter' is not accurate. In one of those Use Case descriptions, the term 'householder' is used, but the use case is about sharing with HAN Devices. The six Use Case descriptions are to be corrected.

3.2 IRP586 Solution

This IRP will add drafting in GBCS to make explicit that:

- For GPF the behaviour is to align to the GBCS requirements and so to ESME, in relation both to Remote Party Commands to read logs and in supporting GetSnapshot and GetPrepaySnapshot as a server (so when providing snapshots to HAN Devices);
- For Gas Smart Metering Equipment (GSME) the behaviour is to align to ZigBee, and so be different than GPF and ESME. This affect Use Cases GCS15b, GCS15c, GCS16a, GCS16b, CS10a and CS10b which will need to explicitly state that the GSME returns entries exclusive of the 'toDateTime', unlike other Devices.

Note that, with this resolution, it would not be possible to retrieve, from the GSME Billing Data Log (consumption registers), GSME Security Log, GSME Event Log, GSME Daily Read Log or GSME Prepayment Daily Read Log entries with a timestamp value meaning 'unknown' (so 0xFFFFFFFF in ZigBee).

Documentation updates will include GBCS Section 10.4.2.11 and table 20, SMETS Required Objects Tab.

4 Implementation Timescales and Approach

The scope under this PIA includes design, development (build), system testing, and performance testing within the PIT environments.

4.1 Implementation Approach

Implementation of this change is assumed to follow a waterfall methodology.

Whenever this Modification is implemented, based on the stated requirements in section 2.3 above, the elapsed time for Design, Build and PIT will be between 6 and 8 months following the provision of full commercial cover.

The release lifecycle duration will be confirmed as part of the Full Impact Assessment (FIA). This work would be part of a major release to include a DUIS upgrade.

4.2 Release 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 as assumed now. 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	SIT	UIT	TTO	App. Support	Total
Phase ROM	570,000	n/a	n/a	n/a	n/a	£570,000

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.

Systems Integration Testing (SIT)	All the Service Providers' PIT-complete solutions are brought together and tested as an integrated solution, ensuring all SP solutions align and operate as an end-to-end solution. The System Integrator is responsible for leading this phase with the Service Providers offering testing support services.
User Integration Testing (UIT)	Users are provided with an opportunity to run a range of pre-specified tests in relation to the relevant change. The DCC is responsible for leading this phase with the Service Providers offering testing support services.
Implementation to Live (TTO)	The solution is implemented into production environments and ready for use by Users as part of a live service. The Transition to Operations (TTO) service is subject to implementation costs.
Application Support	Any costs associated with supporting the new functionality.

Based on the existing requirements, the fixed price cost for a Full Impact Assessment is **£18,481** and would be expected to be completed in 50 days.

4.3 Contract Schedules

Schedules will require modification for both the CSPs to reflect the changes necessitated under this Modification. The contract schedules should be updated as part of a CAN which combines schedules updates from other relevant CRs.

Expected contract schedules to be amended include:

- Schedule 12 – to reflect the uplifted GBCS specification version
- Schedule 6.1 – to reflect the delivery milestones under this Modification
- Schedule 7.1 – to reflect any payment milestones under this Modification
- Schedule 11 – to reflect an uplift to the Comms Hub specifications..

5 Risks, Assumptions, Issues, and Dependencies

The tables below provides a summary of the Risks, Assumptions, Issues, and Dependencies (RAID) observed during the production of the PIA.

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.

5.1 Risks

Ref	Description	Status/Mitigation
MP99-RA01	Any changes to the scope or interpretation of the items in scope will need to be agreed with the DCC in the first instance and will require reassessment and therefore agreement from the DCC that they accept the impact in terms of cost and time.	Accepted.
MP99-RT02	There is a risk that incorporating new functionality, such as this Modification, as part of a firmware maintenance release will, should defects be identified related to this, block the progression of maintenance fixes	

5.2 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
MP99-AT01	The environments used to prove the Comms Hub firmware delivery of this Modification will be determined at the point of availability to release into the PIT environments.	Accepted
MP99-AA02	Assume that the scope of the PIT Approach uplift required to support this Modification is limited to changes that are required to assure the IRPs.	Accepted
MP99-AA03	Assume that the DUIS schema version used for the CSP management interface will not be required to increment because of this Modification. If this is not the case, then there will be additional effort to load the updated DUIS schema into CSP systems and to regression test this functionality in PIT.	Accepted
MP99-AA04	Delivery of this Modification will be aligned to a SEC Release	Accepted
MP99-AA05	Assumes that historic data is related only to ZigBee / HAN logs	Accepted

5.3 Issues

None at this time.

5.4 Dependencies

Reference	Dependency	Implication if dependency not met	Status
MP99-DT01	A firmware maintenance release containing the SEC technical specification changes associated with this Modification can be deployed into Production prior to any development commencing on this Modification.	CSPs will be unable to deploy the firmware delivered under this Modification in Production	Open
MP99-DT02	<p>An uplifted GBCS specification to be added within the following documentation prior to the CSPs deploying any Production firmware variants under this Modification attempting into the Production environment:</p> <ul style="list-style-type: none"> - CPL template - SEC schedule 11 installation and maintenance validity periods <p>Noting that the concepts that are introduced in SEC schedule 11 have been incorporated within the CSP contracts.</p>	CSPs will be unable to deploy the Production firmware into Production against the specified GBCS version	Open

Appendix A: Glossary

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

.Acronym	Definition
ACB	Access Control Broker
BEIS	Department for Business, Energy & Industrial Strategy
CH, Comms Hub	Communications Hub
CPL	Central Product List
CR	(DCC) Change Request
CRP	Change Request Proposal
CSP	Communication Service Provider
DCC	Data Communications Company
DSP	Data Service Provider
DUIS	DCC User Interface Specification
ESME	Electricity Smart Metering Equipment
FIA	Full Impact Assessment
GBCS	Great Britain Companion Specification
GFI	GBCS Integration Testing For Industry
GPF	Gas Proxy Function
GSME	Gas Smart Metering Equipment
HAN	Home Area Network
IRP	Issue Resolution Proposal
MMC	Message Mapping Catalogue
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
SMETS	Smart Metering Equipment Technical Specification
SP	Service Provider
SR	Service Request
SRV	Service Request Variant
TSIRS	Technical Specification Issue Resolution Sub-Group
TTO	Transition to Operations
UIT	User Integration Testing