SEC Modification Proposal, SECMP0194, DCC CR4547

Incorporation of Category 2 Issue Resolution Proposals into the SEC – Batch 7

Preliminary Impact Assessment (PIA)

Version:	0.1
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Author:	DCC
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Contents

1   Executive Summary

The Change Board are asked to approve:

- Total cost to complete the Full Impact Assessment of £6.646

- The timescale to complete the Full Impact Assessment of 30 working days

- ROM costs for SECMP0194 up to the end of Pre-Integration Testing (PIT) of up to £150,000

Problem Statement and Solution

Issue Resolution Proposals (IRPs) identify issues within the SEC Technical Specification documents and put forward a solution to the identified problem. IRP617 requires changes to the Great Britain Companion Specification (GBCS) when a Dual Band Communications Hub (DBCH) receives a request to allow a device that is not Gas Smart Metering Equipment (GSME) or Home Area Network (HAN) Connected Auxiliary Load Control Switch (HCALCS) to be added to the Smart Meter Home Area Network (SMHAN) on a Sub GHz frequency. For the DBCH to detect such an Event, the Device Type of the Device being added to the CHF Device Log must be known before that Device attempts to join.

The change is primarily document based but requires an additional testing case and System Integration Testing for the Communications Services Providers (CSP). A DSP change is required to support a new version of GBCS.

Benefits

The main benefit would be for any Suppliers undertaking a Comms Hub swap out. As the criteria for the Event can be met during a DBCH exchange, but the Event would not be generated, installers may spend significant time troubleshooting when re-adding the consumer's existing Devices to the new DBCH. This clarification will aid installers in troubleshooting during a DBCH exchange and reduce delays.

2   Document History

2.1   Revision History

Revision Date	Revision	Summary of Changes
13/01/2022	0.1	Initial version, DCC and DSP review

2.2   Associated Documents

This document is associated with the following documents:

Ref	Title and Filename	Source	Issue Date
1	MP194-Business Requirements v0.1	SECAS	16/12/2021
2	DP194 Modification Report v0.1.pdf	SECAS	16/12/2021

References are shown in this format, [1].

2.3   Document Information

The current Proposer for this Modification is Terry Jefferson, Energy and Utilities Alliance (EUA). The original proposal was submitted on 23rd November 2021.

A Preliminary Impact Assessment was requested of DCC on 16th December 2021.

3   Context and Requirements

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

The problem statement and requirements have been provided by SECAS and the Proposer.

3.1   Problem Statement

IRPs identify issues within the SEC Technical Specification documents and put forward a solution to the identified problem. IRP617 requires changes to the Great Britain Companion Specification (GBCS).

The individual IRP details are included in Appendix B: IRP Information at the end of this document, and reflects the issue, background information and details of the solution that has been discussed and agreed at the Technical Specification Issue Resolution Sub-group (TSIRS). They are an integral part of the SEC Modification.

3.2   Business Requirement

This section contains considerations and assumptions for the business requirement.

Req.	Requirement
1	The following IRP shall be included in GBCS) v4.x series: IRP617 'TCSO Edge Case for DBCH for No More Sub GHz Device Capacity'

Table 1: Business Requirement for SECMP0194, CR4547

GBCS Table 10.6.2.4 requires that certain actions are taken by a Dual Band Communications Hub (DBCH) on the occurrence of a 'No More Sub Gigahertz (GHz) Device Capacity' event. The Event shall occur when:

1. A Device is added to the Communications Hub Function (CHF) Device Log which is not GSME or HCALCS.

2. There are already four Devices in the CHF Device Log, which are not HCALCS or GSME, that joined the SMHAN on a Sub GHz frequency

3. The Device added then attempts to join the SMHAN on a Sub GHz frequency

For the DBCH to detect this event, the Device Type of the Device being added to the CHF Device Log must be known before that Device attempts to join. Normally, this is the case because the Command to add a Device to the CHF Device Log includes the Device Type of the added Device. The proposed changes to GBCS Table 10.6.2.4 clarify that the Event is created following the reception of a CCS01 Command.

3.3   Scope and Impact

Without this clarification, there is confusion as to when this Event should be detected. The above criteria for this Event can also be met during a DBCH exchange. In these instances, the SEC Party would attempt a 'CCS03 Restore Device Log' Command to re-add those Devices to the new DBCH. The Devices would not be able to be paired and the Event would not be generated. The SEC Party would not be able to quickly identify how to resolve the issue to restore the Devices.

As the criteria for the Event can be met during a DBCH exchange, but the Event would not be generated, installers may spend more time troubleshooting when re-adding the consumer's existing Devices to the new DBCH. This clarification will aid installers in troubleshooting during a DBCH exchange.

3.3.1   Information for Suppliers Provided in IRP

The following indicates the steps required to take advantage of this change. In cases where Suppliers are undertaking a Comms Hub swap out, referred to as a Trust Centre Swap Out (TCSO) and the following conditions exist:

a. the Comms Hub in the Premises is a DBCH
b. the Comms Hub needs replacing
c. there are either GSME or HCALCS operating at Sub GHz
d. there are five or more Sub GHz capable Devices on the HAN, not all of which are operating at Sub GHz

Suppliers may wish to make sure that (in this order):

1.   any Sub GHz GSME is powered on and connected first
2.   any Sub GHz HCALCS are powered on and connected
3.   any remaining Sub GHz capable Devices are then powered on

This solution is applicable to SMETS2 Devices.

4 Description of Solution

This section describes the DCC approach to supporting the included IRP in a future GBCS 4.x version, and the Service Provider changes to accommodate these changes.

Any changes required for a new GBCS 4.x version can be accommodated in the DCC Total System by some relatively minor changes at the DSP.

4.1 DSP Changes

A new version of GBCS (4.x) is required that supports IRP617. The DCC Data System will need to support the new version of GBCS. Support for the new version is achieved by updating DCC Data System reference data. There are no changes to the way GBCS commands are built.

DSP changes to support the GBCS 4.x for CPL validation and Command creation are required as follows:

- The Central Products List processing needs to recognize GBCS 4.x as a valid GBCS version

- Service Request processing requires mappings of GBCS Use Cases for GBCS v4.x

DSP have to record the full GBCS version from the CPL and also has to create a mapping table for every GBCS version.

4.1.1 Security Impact

This change is not expected to have a material impact on the DSP security solution. As such, there is no perceived need to perform any penetration testing or change to the DSP's protective monitoring solution. The implementation will be security assured during the implementation phase. This 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.

4.1.2 Infrastructure Impact

There will be no change to the infrastructure design as a result of this change.

The change does not impact the DSP resilience or Disaster Recovery implementation.

4.1.3 Integration Impact

An initial estimate of the costs for PIT testing of the Modification is included in this PIA.

This change will require additional testing in System Integration Testing (SIT) to be led by the System Integrator, and including the CSPs. It should not require any User Integration Testing (UIT).

Specific tests would need to be executed against the new increment of GBCS. SIT testing would involve execution of approximately 140 tests, following on from some test preparation work.

SIT and UIT costs are not included in this PIA, and would be included in any FIA.

4.1.4   Application Support

No changes to Application Support are expected.

4.2   CSP Changes

Adding this IRP to a future GBCS4.x release will not have any impact on Comms Hubs or Comms Hubs firmware, although changes to documentation and integration testing of the changes in SIT is likely to be required. Charges associated with these will be covered in SEC Release costs for the content rather than this PIA.

GBCS4.x Comms Hub development and test is not in scope of this Modification, and will be handled in other DCC Change Requests.

5 Implementation Timescales and Approach

Notwithstanding in which release this change is implemented, and based on the currently stated requirements, the elapsed time for DSP implementation will be up to six (6) weeks to design, develop and System test implement following the provision of full commercial cover, as part of the CAN signature process.

At this stage it is too early to identify which version of GBCS4.x and the SEC release that will be targeted for this change. GBCS4.1 was designated on 4th November 2021, and November 2022 will see the release of the GBCS4.2 specification.

The release lifecycle duration will be confirmed as part of the FIA.

6 Costs and Charges

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

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. This change has not been subject to the same level of analysis that would be performed as part of a FIA and as such there may be elements missing from the solution or the solution may be subject to a material change. 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, DSP Cost Range
SECMP0194	£0 - £150,000

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.

It should be noted the costs of any further additions to the GBCS 4.x version will be shared between this Modification and the other change(s). Post-PIT charges are expected to keep the costs inside the range stated above.

Based on the existing requirements, the fixed price cost for a Full Impact Assessment is **£6,646** and would be expected to be completed in 30 working days.

6.1   Contract and Schedule Changes

Updates to the Design Baseline (Schedule 4.1) and Payment milestones (Schedules 6.1 and 7.1) are anticipated for this Modification.

Appendix A: Glossary

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

Acronym	Definition
CH, Comms Hub	Communications Hub
CHF	Communications Hub Function
CPL	Central Products List
CR	DCC Change Request
CSP	Communications Services Provider
DBCH	Dual Band Communications Hub
DCC	Data Communications Company
DSP	Data Service Provider
EUA	Energy and Utilities Alliance
FIA	Full Impact Assessment
GBCS	GB Companion Specification
GHz	GigaHertz
HAN	Home Area Network
HCALCS	HAN Connected Auxiliary Load Control Switch
IRP	Issue Resolution Proposal
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
SMHAN	Smart Meter Home Area Network
SMETS	Smart Metering Equipment Technical Specification
TCSO	Trust Centre Swap Out
TSIRS	Technical Specification Issue Resolution Sub-group
UIT	User Integration Testing

Appendix B: IRP Information

IRP617 TCSO Edge
Case for DBCH for N