Data Communications Company

SEC Modification Proposal, SECMP0056, DCC CR 1093

IHD / PPMID Zigbee Attributes Available on the HAN

Preliminary Impact Assessment (PIA)

Version:	**0.35**
Date:	**23rd April, 2019**
Author:	**DCC**
Classification:	**DCC PUBLIC**

Contents

1 Document History

1.1 Revision History

Revision Date	Revision	Summary of Changes
27/03/2019	0.1	PIA Compilation from Service Providers
23/04/2019	0.35	Initial version released to SECAS, minor DCC updates

1.2 Associated Documents

This document is associated with the following documents:

Ref	Title and Originator's Reference	Source	Issue Date
1	DCC Change Request 1093	DCC	
2	SECMP0056 Solution Design Specification v0.7	SECAS	07/08/2018
3	BEIS Temporary guidance (TS0893), Historic data on the HAN	BEIS	October 2018

References are shown in this format, [1]

1.1 Document Information

The original Proposer for this Modification was Emslie Law of SSE Retail.

The Preliminary Impact Assessment was requested of DCC in February 2019, after updated requirements were issued by SECAS.

Note that the Risks, Assumptions, Issues, and Dependencies sections are quite significant in this Modification and contains many entries that we request should be considered by the Working Group and Proposer.

2 Solution Requirements and Overview

2.1 Context

This SEC Modification proposal seeks to make Zigbee Attributes available to In-Home Displays (IHDs) and Prepayment Interface Devices (PPMIDs) on the Home Area Network (HAN) to enable them to delete stored consumer consumption data when notified of a Change of Tenancy (CoT).

IHDs, PPMIDs and other Type 2 devices may store historic consumption data, messages addressed to the consumer or Supplier related information which can be considered personal information of the consumer. These devices are currently not notified of a CoT event, potentially allowing a new tenant to access the previous tenant's personal usage data if the devices are used by the new tenant.

With recent changes to data protection rules under the General Data Protection Regulation (GDPR), a mechanism needs to be put in place to ensure compliance.

In October 2018 BEIS set out temporary guidance (TS0893 Historic data on the HAN) and specified the temporary guidance is an interim measure until an enduring solution can be implemented. [3]

2.2 Business Requirements

This section sets out the business requirements for SECMP0056.

2.2.1 Requirement 1 –Delete Consumer Data on IHD/PPMID

The Change of Tenancy event must be made available by the Electricity Smart Meter Equipment (ESME) and the Gas Proxy Function (GPF) to the IHD and PPMID devices on the HAN. The IHD and PPMID must be sent a CoT event setting whenever there is a CoT event and on receipt of this setting, the IHD and PPMID must delete consumer related data stored on the device on a specified date prior to the date indicated in the CoT event.

2.2.2 Requirement 2 –Delete Supplier Messages

Energy suppliers can send messages for display on the user interface of the metering devices, these messages can be also displayed on the IHD/PPMID. Suppliers may choose to customize these messages for individual consumers and this may lead to messages to become personal identifiable information according to the GDPR regulations. The IHD/PPMID should remove supplier messages in case of a CoT event; the ESME and the GPF should clear the active message.

On receipt of a CoT event setting, the IHD or PPMID should delete supplier messages and the ESME and the GPF should delete the active messages related to the supplier.

2.2.3 Out of Scope

Certain parameters can be set by the Suppliers for display on the meter and the IHD; these items may be adjusted for an individual customer. Following on from the discussions in the working group these items are not considered to be subject to protection by GDPR:

• Supplier name and telephone number

• Consumption thresholds

The decision had been made to not clear these items on the IHD or PPMID as part of a CoT event.

2.3 System Requirements

2.3.1 Change of Tenancy– Existing Functionality

Suppliers can send the Service Request (SR) 3.2 "Restrict Access For Change Of Tenancy" via the DCC User Interface Specification (DUIS) interface, which permits to set the time when the CoT event takes place. Note that this time can be in future as well as in the past.

If the SR 3.2 target is the Gas Proxy Function (GPF) this results in Use Case GCS09 being send to GPF. This Use Case contains the elements:

• "Implementation Date/Time" containing the CoT event date and time set by the Supplier

• "Proposed Tenancy Change Control" as fixed value set to 0x00000200, thus indicating with the bit #9 set to 0b1 to "Clear IHD Data – Consumer"

Upon reception of Use Case GCS09 the GPF restricts the forwarding of consumption related data predating the CoT event to the IHD/PPMID.

Note: The current CH implementation for a SRV3.2 targeting the GPF (GCS09) with "Implementation Date/Time" set in the future would restrict the data access as of now for IHDs/PPMIDs. No historic data would be made available until after the date set in "Implementation Date/Time".

In case the SR 3.2 targets the ESME, this results in the Use Case ECS12 being sent. The Use Case contains the date and time of the CoT event in the OBIS object 0-0:94.44.3.2, this is a UK specific OBIS object.

Upon reception of Use Case ECS12 the ESME restricts the forwarding of consumption related data predating the CoT event to the IHD or PPMID.

The settings of Use Cases GCS09 and ECS12 are currently not accessible for HAN devices like the IHD or PPMID.

2.3.2 Change of Tenancy – New Functionality

The CoT parameters must be made available to HAN devices via the ZigBee Device Management cluster.

Upon reception of Use Case GCS09 the GPF must:

• populate the necessary ZigBee Device Management cluster parameters for the HAN and

• clear the last active supplier message

Note that the supplier message was originally targeted at the GSME and then retrieved by the GPF as the Tapping-Off Mechanism (TOM) command. The message will not be cleared on the GSME and still be visible on the GSME display; should this be an issue the scope of this modification proposal needs extending or a new modification proposal needs raising. See Clarification C_7 in section 7.5.

Upon the reception of Use Case ECS12 the ESME must:

- populate the necessary ZigBee Device Management cluster parameters for the HAN and

- clear the last active supplier message

Both the ESME and the GPF must support the Device Management cluster as a server. HAN devices like the IHD or PPMID must support the Device Management Cluster as client.

The IHD/PPMID must send the ZigBee "Get Change of Tenancy" command to ESME and/or the GPF; these must respond with the ZigBee "Publish Change of Tenancy" command.

The ESME and the GPF must also be able to push the "Publish Change of Tenancy" command to the IHD/PPMID.

Upon the receipt of the "Publish Change of Tenancy" command the IHD/PPMID must extract the date and time setting and the flag "Clear IHD Data – Consumer"; (this is bit #9 from ProposedTenancyChangeControl Attribute). The IHD/PPMID then clears

- Historic consumption data. This includes the following restricted data:

    o   Profile Data Log
    o   Daily Consumption Log
    o   Cumulative and historical value store
    o   Debt Repayment Log
- Supplier messages

Note that the "Clear IHD Data – Supplier" (bit# 10) of the ProposedTenancyChangeControl Attribute will not be used to avoid changes to the Great Britain Companion Specification (GBCS) use cases and DUIS.

2.3.3   Change of Tenancy – Modifications to Technical Specifications

Modifications to GBCS Table 7.4 must:

- expand the current mandate for the ESME and the GPF to support the ZigBee Device Management cluster as a server to include the support of the "Publish Change of Tenancy" command

- mandate the IHD/PPMID to support the ZigBee Device Management cluster as a client and mandate the support of the "Get Change of Tenancy" command.

In the Smart Metering Equipment Technical Specification (SMETS), the requirements for the IHD in section 6 and for the PPMID in section 7 must add the functionality to:

- query the ESME and the GPF for CoT events at every power up; once per day in ongoing operation, preferably at midnight; and accept a pushed Publish Change of Tenancy command from the ESME or the GPF

- clear historic data consumption and supplier messages for both fuels upon the reception of any Publish Change of Tenancy command where the *Implementation Date/Time* shall be ignored.

SMETS must mandate the ESME to:

- Include the support of the ZigBee Get/Publish Change of Tenancy commands on the HAN interface and the setting of the necessary ZigBee attributes following the reception of the ECS12 command.

- Clear the current active supplier message based on the implementation time contained in the ECS12 command.

CHTS must mandate the GPF to:

- Support the ZigBee Get/Publish Change of Tenancy commands on the HAN interface and the setting of the necessary ZigBee attributes following the reception of a GCS09 command

- Clear the current active supplier message based on the implementation time contained in the GCS09 command

ZSE defines that the implementation time of a CoT must be 24 hours ahead of the command time and/or the local time whereas DUIS allows unrestricted entries for the implementation time. GBCS sections 2.2 and 25 lists examples where ZigBee parameters are set differently from the requirement in ZSE; the CoT implementation datetime falls into the same category.

2.3.4   Change of Tenancy – Overview

Figure 1 below shows the main aspects of the changes required for the support of the CoT event with minimal changes to existing GBCS Use Cases.
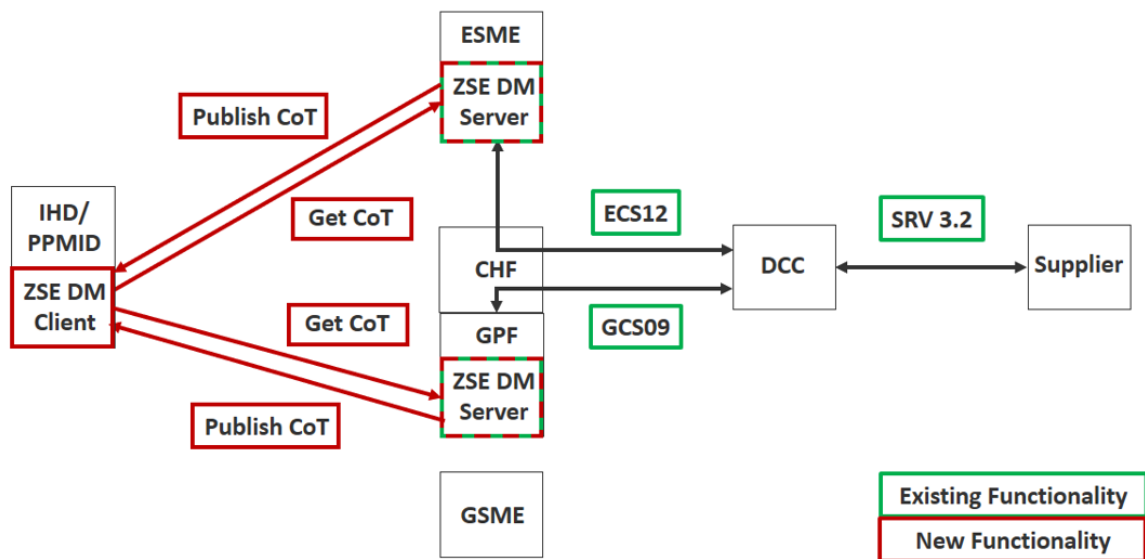
Figure 1: Overview of CoT Functionality

2.3.5   GSME and Comms Hub Exchange

In the case of a Comms Hub exchange, the data held on the GSME will be used to populate the GPF. Since the GCS09 command with the CoT details had been addressed to the previous GPF, all historic and personal data will be shared again with the IHD/PPMID. The supplier should consider repeating the details of the last GCS09 command in a new GCS09 command to prevent the GPF from sharing information which predates the CoT date with the IHD.

2.4   Requirements Summary

Based on the discussions at the Working Group and the Business Requirements as set out in the Solution Design Document, DCC consider the requirements for SECMP0056 to be **STABLE**.

3 Solution Overview

Based on a review carried out by DCC and the key Service Providers in February 2019, the solution is technically feasible. A number of clarifications have been requested, and an associated series of risks, issues, and dependencies are listed in section 7.

3.1 GBCS Integration Test for Industry (GFI) Changes

To meet the requirements specified in this request GFI will need to implement full support of the Change of Tenancy (CoT) event as follows:

- Provide support for ZigBee Data Management Cluster as a Server

- Restrict access to consumer data predating the CoT

- Support binding for Data Management Cluster

- Support Get CoT ZB command / Response

- Push the Publish CoT upon reception of use case GCS09

- Clear last active message from Supplier on GPF

- Functional testing

- System/regression testing

- Release tasks

- Documentation updates

3.2 CSP Impacts

At the highest level, the solution development will include assessments of the impact to Communications Hubs, and adding changes to CHTS documentation.

The CSP scope for this Modification will be to:

- Design, build and system test modifications to the Comms Hub Release 2.0 firmware for all currently produced Production, Remote Test Lab and Instrumented Test Lab Communications Hub variants to comply with

- Design, build and system test modifications to test tooling required to assure the CSP solution within PIT including:

  - meter test stubs

  - DSP test stubs

- Uplift of the solution following any accepted CSP defects identified during PIT testing

- Deploy and test the Modification changes in the PIT environment(s) in accordance with the existing PIT Approach, subject to changes to this document noted in MP56-AT02 in section 7.2 below

• Maintenance of any existing product certification such that the product certification can be reasonably extended to include the functionality in this Modification.

3.2.1   CSP Out of Scope

The following should be considered out of the scope for CSP consideration:

- Modification to any test approaches beyond those defined above

- Any additional hardware or any further hardware modifications

- DCC-L has taken steps to assume responsibility for assuring, procuring and advising on the use of emulators if they feel this is relevant. As a result, Telefónica has not considered further meter emulator procurement as part of this Modification beyond software modifications to assure the Comms Hub functionality within the Telefónica PIT environment. DCC will look to procure Test Stubs suitable for the SIT and UIT environments and instruct both CSPs in the use thereof for SIT and UIT.

- Testing of any or all Test Stubs, including the meter emulator, using the GBCS Integration Test for Industry (GFI) software provided by the DCC. All further Telefónica managed development of the meter emulator will be for the purposes of assuring the Comms Hubs within PIT and as such, Telefónica does not believe it appropriate to perform any testing using GFI software of any revision as part of this Modification.

- Changes to the specifications for the meter emulator beyond those that Telefónica specifically require to assure the Comms Hub functionality confirmed to PIT.

- Provision of any support for any activity to occur beyond the scope of PIT. This includes but is not limited to:

    o Provision of CSP test lab support as outlined further in this PIA, to:

        ▪ permit the Service Integrator (SI) to execute the SI regression test pack for System Integration Testing, hereafter referred to in this document as SIT, of the functionality delivered by this Modification.

        ▪ permit the SI to execute for SIT of any functionality delivered by the DSP[1] to support the scope of this Modification. CSPs expect this activity to occur prior to and separate from the delivery of their scope.

        ▪ permit the SI to execute for UIT, any required regression and / or confidence testing of the functionality delivered by this Modification regarding Comms Hub firmware, prior to Service User test execution;

        ▪ Providing any CSP test lab support to the SI in triage and defect resolution activities during any SI managed integrated testing under this Modification

    o Review of the following SI deliverables as updated via this Modification;

        ▪ SIT Approach

        ▪ SIT Plan

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[1] Note there is no functionality delivered by the DSP in this Modification

- Test Scripts and Use Cases;

o Deployment of this software to:

- Any Comms Hubs currently available in SIT Test Labs as required by the System Integrator to support SIT execution

- Any Comms Hubs currently available in the UIT Test Labs as required by Service Users and in accordance with existing processes

- Any Comms Hubs currently available in the UIT Test Labs used for UIT reference set testing. Standard regression testing will occur on these sets

- Any Comms Hubs used in Service User Remote Test Labs as required by Service Users and in accordance with existing processes

- Deployment of the firmware to any connected Production Comms Hubs installed in consumer premises

- Deployment of the firmware into manufacturing for newly manufactured Comms Hubs on approval of firmware by the Operational Acceptance Board (OAB)

4 Impact on DCC Systems, Processes and People

This section describes the impact of SECMP0056 on DCC's Services and Interfaces that impact Users and/or Parties. These are expected to impact both whichever solution option is selected.

4.1 Security

The solution presented in this PIA will require a security review. The costs within this PIA assume that the functionality does not require a specific security solution.

Further discussion is required in respect of the security solution as part of completing the Full Impact Assessment.

4.2 Release Approach

Following discussion with DCC, this PIA response is based on the possible delivery of SECMP0056 alongside other similar SEC Modification changes as part of a June 2020 release.

4.3 Implementation Approach

Within the SMIP, the Implementation Approach is referred to as Transition to Operations (TTO).

This change will be implemented as part of a larger release. It is assumed that the activities required for TTO will be minimal following completion of contractual test phases. Some updated service procedures will be implemented.

Any required environment uplifts will take place outside of business hours.

4.4 Application Support

On the basis that updates to configuration will be charged under separate Operational Modifications, it is not expected that there will be any change to ongoing levels of support as a result of the change. There will need to be some updates to service procedures in advance of the new solution being deployed to the Production system.

4.5 DCC Service Management System (DSMS) Impact

No specific DSMS requirements or changes have been at this stage.

4.6 Infrastructure Impact

No specific infrastructure requirements or changes have been identified, but there may be an increase in Service Request volumes as a result of this change.

4.7 Safety Impact

No impact expected.

4.8 Contract Schedules

Schedules will require modification for both CSPs to reflect the changes necessitated under this Modification. Contract schedules will be updated as part of a Contract Amendment Note (CAN) which combines schedules updates from other relevant CRs.

Expected contract schedules to be amended include but are not limited to:

- Schedule 7.1 – to reflect any payments under this Modification
- Schedule 11 – to reflect an uplift to the Comms Hub specifications
- Schedule 12 – to reflect the uplifted technical specification versions (such as GBCS and CHTS)

4.9 GBCS Impacts

Any changes to the GBCS Use Cases must match existing standards. This will be reviewed as part of the FIA.

5 Implementation Timescales

Implementation of this change is assumed to follow a waterfall methodology. It is assumed that this change will be implemented as part of the June 2020 release alongside other Modifications and the lifecycle duration is expected to take between 6 and 12 months. However this duration will be confirmed as part of the FIA.

5.1 Testing and Acceptance

This change includes the standard test phases as documented in schedule 6.2 and standard exit criteria will apply:

The SPs will need to plan for PIT testing which will be performed against stubbed HAN devices, assumed to be developed and supplied by the meter suppliers, as part of their Workstream testing. Further modification of Test Stubs may be required to support the testing of this Modification across the CSP solution within the PIT environment.

Testing against actual devices will be performed in SIT but is not included in the following estimates at this time. If SIT testing for this modification is interleaved with other SIT testing, there will be an opportunity to save testing effort.

6 Costs and Charges

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

The ROM shown here describes indicative costs to implement the functional requirements as assumed now. The price is presented as a +/-15% range and 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 outside of the indicative range.

6.1 Design, Build, and Testing Cost Impact

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

Implementation Costs							
Solution Option	**Design**	**Build**	**Pre-Integration Testing**	**System Integration Testing**	**User Testing**	**Implement to Live**	**Total**
Option 1		*£1,309,000*		*Not included*	*Not included*	*Not included*	**£1.3m**
Supplementary Information							
Implementation cost assumptions	*A. Costs are exclusive of VAT and any applicable finance charges* *B. Majority of the costs above represent labour costs.* *C. Costs provided for Design, Build and Pre-Integration Testing are quotes provided by the Service Providers with specific exclusions of costs as identified above. DCC have reviewed and challenged the costs from the Service Providers to ensure this reflects best price to date.* *D. Costs will be refined during future assessments.*						
Explanation of Implementation Phases	*DCC's implementation costs are provided by implementation phases. The following describes the purpose of each phase:* • *Design: The production of detailed System and Service design 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.* • *Pre-integration Testing: Each Service Provider tests its own solution to agreed standards in isolation of other Service Providers. This is assured by DCC.*						

	• *System Integration Testing (SIT): All Service Providers' PIT-complete solutions are brought together and tested as DCC's Total Solution, ensuring all Service Provider solutions align and operate as an end to end solution.*
	• *User Integration Testing (UIT): Users are provided with an opportunity to run a range of pre-specified tests in relation to the relevant change.*
	• *Implementation to Live Costs: The solution is implemented into Production environments and ready for use by Users as part of a live service. This service is subject to implementation costs.*

The fixed price cost for a Full Impact Assessment is **£92,758**, and is expected to be completed in 40 days.

7 Risks, Assumptions, Issues, and Dependencies

In the following sections, Risks, Assumptions, Issues, and Dependencies have been identified, and Clarifications are requested from the Proposer and Working Group.

7.1 Risks

It is likely that further risks will be established as part of the Working Group reviews and FIA.

Ref.	Area	Description	Impact
MP56-RA01	General	Any changes to the scope or interpretation of the items in scope will require re-assessment	H
MP56-RT02	General	There is a risk that this Modification is seen by industry and / or Government to be delivering the wrong technical solution and consequently may not be progressed. We understand that whilst this Change Request is being progressed by SECAS, BEIS have raised concerns on the solution suggested (CH/ESME focused) rather than their preference (IHD focused).	H
MP56-RT03	Cost	There is a risk that this Modification is seen as poor value for money given the expectation that all Test Comms Hub vars Hub variants in operation today have significant overlapping scope and use cases. There is an option to consider reducing the scope and complexity of this Modification by simplifying the Test Comms Hub product line, although this would be a significant change to the overall test approach.	H
MP56-RT04	Technical Specifications	The technical specifications (including GBCS, SMETS and CHTS) associated with the functionality described in this Modification have not been developed, nor has the Change Resolution Proposal (CRP) that would normally be developed to specify new functionality in the technical specifications. To mitigate, normal documentation of the modifications to the technical specifications via CRP should be available prior to the completion of the FIA.	M

7.2 Assumptions

It is likely that further assumptions will be established as part of the Working Group reviews and FIA.

Ref.	Area	Description	Accept
MP56-AT01	Release	Assume that this change will be delivered as part of a wider SEC Modification release.	Open
MP56-AT02	PIT Approach	Assume that the scope of any PIT Approach uplift required to support this is limited to changes that are required to assure the specifications as noted in section 1.2.1 and do not introduce any additional scope including but not limited	

		to: Additional combinations of test stub and Comms Hubs with the test stub running both firmware modified under this Modification and a previous non-CR compliant firmware	
MP56-AT03	DUIS, PIT	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.	Open
MP56-AT04	Firmware Changes	Assume that the firmware changes to support the delivery of this Modification will be managed as part of a release operating in parallel with the maintenance release process.	Open
MP56-AT05	Documentation	Assume that where there is a misalignment between the referenced documents, [2] and [3] and [1] [2], this Modification shall have precedence over the other documents.	Open
MP56-AT06	Specifications	Assume that changes to the GBCS, SMETS, and CHTS specification will be based on a baseline that is currently being updated by changes in DCC CR 1047.	Open
MP56-AT07	Testing	Assume that a single FIA will be created to support this and all Modifications for the SIT and UIT elements of a future release.	Accepted
MP56-AT08	Testing	Assume that later phases of testing of this Modification will be raised via a separate Change Request and will from a testing perspective include the following as a minimum prior to any Go Live of the functionality delivered in this Modification: - SIT - UIT	Open
MP56-AA13		The Security and Protocol Certifications, SIT, UIT and any other test phases will be covered by a DCC release CR	Accepted

7.3   Issues

Further issues are likely to be discovered as part of the Modification refinement process.

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[2] Where [3] is the referenced tactical advisory note from BEIS

Ref.	Description	Mitigate?
MP56-AI1	Future SEC Modification releases are being progressed as a series of separate Modification, such that the Service Providers must price for each Modification independently and in isolation. The result of this is that the aggregation of the charges across each Modification will appear more expensive than if there was one consolidated FIA for the release.	Accept

7.4 Dependencies

Ref.	Area	Dependency	Impact
MP56-DT1	General	There is a dependency to provide Clarifications as detailed in section 7.5 before progressing to the FIA.	Timescales and Cost
MP56-DT3	DCC	Service Providers have a dependency on the provision of technical specifications or CRPs/IRPs related to any additional GBCS functionality related to this Modification prior to agreement of the FIA.	SPs will produce an FIA based on the material provided but this may include (1) additional planned delivery time to review and assess specifications and (2) retaining additional contingency related.
MP56-DT4	Specifications	SPs have a dependency on arranging for uplifted specifications (which may include GBCS, SMETS, or CHTS) to be added within the following documentation prior to the SPs deploying any Production firmware variants under this Modification into the Production environment: • CPL template; • SEC schedule 11 installation and maintenance validity periods. Noting that the concepts that are introduced in SEC schedule 11 have not currently been incorporated within CSP contracts.	Firmware versions compliant with the GBCS version associated with this Modification cannot be submitted to the CPL if the CPL template does not support the specific GBCS version and therefore cannot be pre-notified or OTA'd onto installed Comms Hubs If the SEC schedule 11 has not been updated then the DCC will be non-SEC compliant should the CSPs deploy any Comms Hubs operating the firmware version associated with this Modification in the Production environment.
MP56-DA5	GBCS Version	This development is based on the GBCS 2.0 Draft 5. At the time of writing this is the latest version of GBCS as per the Agreement. There is a likelihood that the GBCS version will be incremented as part of the November 2019 release.	Stability and development risks.

7.5   Clarifications

The following clarifications have been requested which may require the SPs to review the fixed price for the Impact Assessment and the ROM cost for the future activity contemplated as part of the PIA.

Ref	Area	Clarification	Impact	Status
C_1	Specification	DCC to confirm expectations and timeline regarding how TSG specifications (incl. SMETS / CHTS / GBCS) will be iterated as a result of this Modification.	Assume that the specifications and CRPs related to this Modification will not be created until after the FIA has been approved by SECAS. See associated risk MP56-RT03.	Open
C_2	Specifications	DCC-L to confirm how the GPF should treat future dated CoT commands when determining how to present data on the HAN. Note this topic is currently being discussed at GBCS Working Group.	As per the current discussion in GBCS WG, assume that the GPF should execute all commands upon receipt and ignore information relating to execution at a future date.	Open
C_3	PIT Test	Confirm expectations regarding the PIT Test approach for this Modification in relation to the scenarios and variants to be used in PIT testing	Assume that the current PIT test approach as used for the testing of maintenance releases of Firmware will be sufficient for the testing of this Modification subject to the assumed modifications noted in this Modification.	Open
C_4	Firmware approach	Confirm expectations regarding how Comms Hub firmware is to be developed and tested for this Modification in relation to firmware developed as part of the firmware maintenance policy and delivered via maintenance releases.	To be agreed	Open

C_5	Firmware approach	Confirm expectations for how any firmware developed as part of this Change Request and delivered as part of a programme release will incorporate any modifications that have been delivered via maintenance releases.	Assume that: • Code deployed into PIT will be branched off a version of firmware that is delivered via the Firmware Management Process (FMP) • Defects identified in Prod during PIT, will not prevent PIT exit or SIT entry, if the fixes are not in the codebase used in PIT. A SIT test cycle will be used to assure this • The Comms Hub firmware used to exit PIT will be a merge with whatever version of FMP code production candidate if this is reasonable and possible to merge in the timeframes for testing within the PIT window • PIT exit and SIT entry criteria will not use FMP / OAB criteria and in particular defect masks will relate only to the functional change in the Modification • PIT exit and SIT entry is driven only by the production codebase maturity and does not consider RTL / ITCH variants Regression test will include all test products.	Open
		The message will not be cleared on the GSME and still be visible on the GSME display; should this be an issue the scope of this modification proposal needs extending or a new modification proposal needs raising.		

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
CAN	Contract Amendment Note
CH, Comms Hub	Communications Hub
CHTS	Communication Hubs Technical Specification
CoT	Change of Tenancy
CPL	Certified Products List
CR, CRP	Change Request, Change Request Proposal (BEIS Change Request)
CSP	Communication Service Provider
DCC	Data Communications Company
DSP	Data Service Provider
DUIS	DCC User Interface Specification
ES	Electricity Supplier
ESI	Energy Service Interface
ESME	Electricity Smart Meter Equipment
FIA	Full Impact Assessment
FMP	Firmware Management Process
GBCS	Great Britain Companion Specification
GDPR	General Data Protection Regulation
GFI	GBCS Integration Test for Industry
GPF	Gas Proxy Function
GS	Gas Supplier
HAN	Home Area Network
HCALCS	HAN Connected Auxiliary Load Control Switch
IHD	In Home Display
OTA	Over The Air
PIA	Preliminary Impact Assessment
PIT	Pre-Integration Testing
PPMID	PrePayment Meter user Interface Device
ROM	Rough Order of Magnitude (cost)
SEC	Smart Energy Code
SIT	Systems Integration Testing
SMETS	Smart Metering Equipment Technical Specification
SMI	Smart Metering Inventory
SP	Service Provider
SR	Service Request

| TOM | Tapping-Off Mechanism |
| UIT | User Integration Testing |