Data Communications Company

SEC Modification Proposal, SECMP0202, DCC CR4840

Enduring Solution for SMETS1 and SMETS2+ Prepayment Meter Interface Devices (PPMIDs)

Full Impact Assessment (FIA)

Version:	**0.2**
Date:	**11th May, 2023**
Author:	**DCC**
Classification:	**Public**

Data Communications Company

Contents

1 Executive Summary

The Change Board are asked to approve:

- Total Design, Build, and PIT cost to implement SECMP0202 is £393,552
- The timescale to complete the implementation to Production of **11** months
- Include SECMP0202 as part of June 2024 SEC System Release.

Problem Statement and Solution

The Smart Energy Code (SEC) currently differentiates between Smart Metering Equipment Technical Specification (SMETS)1 and SMETS2+ Devices and is drafted in a way such that a Device can be either SMETS1 or SMETS2+, but not both. However a number of PPMID Devices can work as both a SMETS1 Device and a SMETS2+ Device, which is referred to as a 'dual mode Device'. The SEC does not currently make provisions for such Devices even if the device is physically able to behave as such, and the DCC Total System is unable to determine for these whether to construct a Great Britain Companion Specification (GBCS) command for a SMETS2+ Device or forward a Service Request to the S1SP for a SMETS1 Device.

Following a consultation in 2021, DCC implemented a tactical interim solution by creating distinct entries in the Central Products List (CPL) for both the SMETS1 and SMETS2+ with a differentiating firmware version.

This tactical solution resolved the problem for DCC but creates logistical complications for Suppliers. Suppliers will need to ensure they are installing the correct SMETS Device at a premise. If an incorrectly notified Device is installed this will need to be physically replaced which will cause inconvenience to consumers and impact the reputation of the Smart Meter Installation Programme. There is also an issue where Suppliers who gain these Devices on Change of Supplier (CoS) cannot communicate with them or carry out firmware updates. This will result in consumer PPMIDs not being able to be upgraded accordingly.

Benefit Summary

Suppliers reported six million Devices are impacted and it is anticipated this number will increase in the future. The benefit of this Modification is that the proposed enduring solution will reduce the failed installation and commissioning of dual mode PPMIDs. This means Suppliers could install the same model of PPMID on any installation, which will improve efficiency in Suppliers' metering operations, which they can pass on to consumers.

Suppliers who gain these Devices on Change of Supplier (CoS) will be able to communicate with them.

2 Document History

2.1 Revision History

Revision Date	Revision	Summary of Changes
10/05/2023	0.1	Initial compilation
11/05/2023	0.2	Updated following DCC internal review

2.2 Associated Documents

This document is associated with the following documents:

#	Title and Originator's Reference	Source	Issue Date
1	MP202 Modification Report v0.2	SECAS	18/08/2022
2	MP202 Business Requirements v0.1	SECAS	01/05/2022
3	SECMP0202, DCC CR4840, Preliminary Impact Assessment (PIA)	DCC	21/10/2022

2.3 Document Information

This document contains the requirements, design for the proposed solution along with the business requirements and the costing information required to complete the Full Impact Assessment.

The Proposer for this Modification is David Walsh of the DCC. An Initial Modification Report was prepared and published in March 2022.

The Preliminary Impact Assessment (PIA) was requested of DCC on 28th September 2022. The completed PIA was submitted on 21st October 2022.

A Full Impact Assessment (FIA) request was accepted from SECAS on 8th February 2023.

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

A number of PPMID devices support both SMETS1 and SMETS2+ and these dual mode PPMID's could be installed in a Smart Metering System using either Specification.

The SEC does not permit Devices to support both SMETS1 and SMETS2+ functionality and dual mode PPMIDs capable of supporting SMETS1 and SMETS2+ must be listed twice on the CPL.

Following feedback from a consultation in 2021, the DCC stated that it would implement a tactical interim solution and raise a SEC Modification to enable the industry to assess the need for an enduring solution.

The DCC's tactical interim solution involves creating distinct entries in the CPL for both the SMETS1 and SMETS2+ with a differentiating firmware version. Both entries share the same hardware identifiers but SMETS2+ PPMID CPL entry uses the real firmware version whereas the SMETS1 PPMID CPL entry uses a 'fictitious' firmware version.

3.2 Problem Statement

The tactical interim solution creates logistical complications for Suppliers as they must ensure that the correct version of the PPMID is pre-notified and that the correct SMETS version is installed. If the Supplier encounters an issue with the process, the Device will need to be physically replaced.

3.3 Modification Benefits

Suppliers who are impacted by this issue reported six million Devices are impacted, but it is anticipated this number will increase in the future. This also impacts PPMIDs manufacturers and any future Users of PPMIDs that could work with both versions, for instance following a Change of Supplier (CoS). A more enduring solution would better resolve this issue in the longer-term.

3.4 Business Requirements

The table below contains the business requirements provided by SECAS that support the solution(s) for this Modification and are expected to be used by the DCC to shape the solution.

Ref.	Requirement
1	To allow the same Pre-Payment Meter user Interface Device (PPMID) Device Model to be used in Smart Metering Equipment Technical Specifications (SMETS)1 and SMETS2+ Smart Metering Systems.
2	Remove obligation for different Firmware Versions for PPMIDs
3	Retain current arrangements for adding PPMID Device Models to the Central Products List (CPL)
4	Allow the Pre-Notification of a dual mode PPMID
5	Whitelisting of dual mode PPMID

Ref.	Requirement
6	Implement Verification of the SMETS version of the Smart Metering System targeted by Service Request (SR) 8.11
7	Enable Over The Air (OTA) firmware upgrades to a dual mode PPMID enrolled in a SMETS2+ Smart Metering System

Requirement 1: To allow the same PPMID Device Model to be used in SMETS1 and SMETS2+ Smart Metering Systems.

The tactical interim solution creates logistical complications for Suppliers as they must ensure that the correct version of the PPMID is pre-notified and that the correct SMETS version is installed. If the Supplier encounters an issue with the process, the Device will need to be physically replaced.

Any solution proposed must include the ability for the same PPMID model to be active working with both SMETS1 and SMETS2+ Devices.

The following parameters on the CPL define a unique Device Model:

- Device_Model.manufacturer_identifier
- Device_Model.model_identifier
- Device_Model.hardware_version.version
- Device_Model.hardware_version.revision
- Device_Model.firmware_version
- SMETS_CHTS Version.Version_number_and_effective_date
- GBCS Version. version_number

For a dual mode PPMID, the SMETS1 and SMETS2+ Device Model must be allowed to be present twice on the CPL and use the same Device Model parameters expect for:

- SMETS_CHTS Version.Version_number_and_effective_date
- GBCS Version.version_number

As per the Technical Specification Applicability Tables (TSAT) there could be up to four Great Britain Companion Specification (GBCS) versions associated with the Device Model on the CPL, one for SMETS1 and up to three for SMETS2+:

SMETS/CHTS Version	GBCS Version
SMETS V1.2	GBCS Version 0.0
SMETS V4.3	GBCS Version 3.2
SMETS V4.3	GBCS Version 3.3
SMETS V4.3	GBCS Version 4.0

The DCC Total System must distinguish between a dual mode PPMID Device Model for SMETS1 and SMETS2+ by virtue of these two parameters only.

Requirement 2: Remove obligation for different Firmware Versions for PPMIDs.

SEC Appendix Z section 3.3 states:

"Where a PPMID of a particular type is capable of forming part of either a SMETS1 Smart Metering System or a SMETS2+ Smart Metering System, any Device Model added to the Central Products List shall:

a) insofar as it relates to PPMIDs of that type forming part of SMETS2+ Smart Metering Systems, be the Manufacturer of the PPMID, its model, its hardware version and its firmware version; and

b) insofar as it relates to PPMIDs of that type forming part of SMETS1 Smart Metering Systems, be the Manufacturer of the PPMID, its model, its hardware version and a value representing its firmware version that is different to the firmware version of the PPMID of that type that forms part of a SMETS2+ Smart Metering System."

The obligation in the SEC for dual mode PPMIDs to be listed with different Firmware Versions must be reworded to ensure the same Firmware Version is used for SMETS1 and SMETS2+ Device Models.

Requirement 3: Retain current arrangements for adding Device Models to the CPL

The SEC defines two distinct processes for adding SMETS1 and SMETS2+ Device Models to the CPL:

- Only the DCC can add SMETS1 PPMID Device Models to the CPL and the Device must be present on the Eligible Product Combination List (EPCL);

- Manufacturers and Suppliers can add SMETS2+ PPMID Device Models to the CPL.

This modification will not change the current arrangements for adding Device Models to the CPL.

Requirement 4: Allow the Pre-Notification of a dual mode PPMID

Smart Metering Devices must be pre-notified to the DCC using SR12.3 'Device Prenotification'. This Service Request mandates the entry of the 'SMETSCHTSVersion'. To achieve the maximum simplicity it must be possible to pre-notify a dual mode PPMID using the SMETS_CHTS Version.Version_number_and_effective_date associated with either the SMETS1 or SMETS2+ Device Model on the CPL.

Requirement 5: Whitelisting of dual mode PPMID

Smart Metering Devices must be whitelisted on the Communications Hub using Service Request 8.11 'Update HAN Device Log'. This Service Request action ties the dual mode PPMID to either a SMETS1 or a SMETS2+ Communications Hub.

The details of the target Communications Hub in SR8.11 is held in the Smart Meter Inventory (SMI) and the resulting response indicating success must be used to set the supported 'SMETSCHTSVersion' version in the SMI for the dual mode PPMID as per the following table:

PPMID SMETS Version in SMI as per pre-notification	CH SMETS version as per whitelisting	Resulting PPMID SMETS version in SMI
SMETS1	SMETS1	SMETS1
SMETS1	SMETS2+	SMETS2+
SMETS2+	SMETS1	SMETS1
SMETS2+	SMETS2+	SMETS2+

Once the 'SMETSCHTSVersion' in the SMI is set, the dual mode PPMID is then associated with either a SMETS1 or a SMETS2+ Smart Metering System. Any subsequent Service Request involving the PPMID is then constructed as either a SMETS1 message or a SMETS2+ GBCS Command.

Requirement 6: Verification of the SMETS version of the Smart Metering System targeted by SR8.11

The Device Model details are verified against the CPL as part of the Pre-Notification; mismatches will be flagged and result in an error messages being generated and send to the DCC User.

Dual mode PPMIDs are expected to be present with SMETS1 and SMETS2+ Device Models on the CPL which enables the change of the 'SMETSCHTSVersion' in the SMI following the whitelisting (see Requirement 5 in Section 2.6).

The change of 'SMETSCHTSVersion' as part of the whitelisting can be requested in situations where the CPL doesn't contain a corresponding PPMID Device Model:

- The corresponding PPMID Device Model has not yet been added to the CPL;
- The corresponding PPMID Device Model status is set to "removed" on the CPL;
- A non-dual mode PPMID is submitted in SR8.11 and the targeted Smart Metering System is not matched by a corresponding PPMID Device Model on the CPL.

To prevent these scenarios it is necessary to verify SR8.11 prior to execution and the DCC will send an error message to the DCC User detailing the issue.

Requirement 7: Enable OTA firmware upgrades to dual mode PPMID enrolled in a SMETS2+ Smart Metering System.

OTA firmware upgrades to PPMIDs are supported starting with GBCS v4.1. A dual mode PPMID which, following the whitelisting process described in Requirement 3 (see Section 2.6), is listed as a SMETS2+ compatible device in the 'SMETSCHTSVersion' must support the OTA firmware upgrade.

A dual mode PPMID which, following the whitelisting process described in Requirement 3 (see Section 2.6), is listed as a SMETS1 compatible device in the 'SMETSCHTSVersion' must not support the OTA firmware upgrade. This follows from the SMETS1 OTA process where one of the following applies:

1. The SMETS1 PPMID OTA Manufacturer Image requires a SMETS1 Supporting Requirements (S1SR) specific header. This means the Device Model must have its own CPL entry since the Manufacturer Image and the Hash are different from the SMET2+ model. It is not possible to treat this as a dual mode PPMID.

2. The DCC disassembles the OTA firmware data and inserts the S1SR specific header and forwards the re-assembled OTA firmware date to the S1SR. This is deemed out of scope for this modification.

3.5 Business Case

The Modification looks to address the issue defined in Section 3.2 and benefits of this modifications are outlined in Section 3.3.

As this modification reduces the complexity of installation and commissioning of dual mode PPMIDs capability and increases the efficiency of metering operations; this impacts SEC Parties as follows :

Suppliers	Suppliers would need to uplift to a new DUIS version in order to benefit from the proposed solution and make internal changes to accommodate this.

At last two large Suppliers and two PPMID manufacturers have reported this concern for about six million devices, and it is anticipated this number will increase in the future.

4 Solution Overview

The primary change to the DCC solution is on DSP, DCC's Data Science and Analytics (DS&A) Reporting team and Interoperability Checker service.

The key requirement is to allow a single PPMID Device Model (i.e. hardware and firmware version combination) to be applicable to both SMETS1 and SMETS2+.

To support this, two rows of the same firmware version for a Device Model will be included in the CPL: one row for SMETS1 and the other for SMETS2. The data received via CPL is stored in the Firmware Version table in the Smart Metering Inventory (SMI) which, with its current constraint of the Primary Key (comprising of Firmware Version, Device Model, Device Type and the Manufacturer ID), can only accept one record for each firmware version.

The existing structure of the Firmware Version table is shown below for reference.

Firmware Version
Device Model
Manufacturer ID
Device Type
Firmware Version
Firmware Version Status
Firmware Version Hash
GBCS Version
SMETS CHTS Version

Table 1: Existing Firmware Version Table

The active firmware version of a Device is stored within the Device table. However, the data held in the Firmware Version table is used to distinguish SMETS1 Devices from SMETS2 Devices and to determine the status of a firmware version.

The new CPL behaviour necessitates the need for DCC Data Systems to make two key changes:

a) data model changes to allow storing of two records for the same version of firmware; and
b) consequential processing logic changes to all the processing scenarios that rely on the Firmware Version table for SMETS version.

The DCC recognises that a change like this has the potential to have a negative impact on system performance if it is applied across all types of Devices. Therefore, the new processing changes will be applied in such a way that they are limited only to PPMIDs.

The data model changes to the SMI will involve changing the primary key constraints within the physical data model. This will extend the Primary Key of the Firmware Version table, which is currently formed of Firmware Version, Device Model, Device Type and the Manufacturer ID, by including a new SMETS1 Indicator field. The value of the SMETS1 Indicator field will be derived from the GBCS Version.

The data model updates to the SMI will need equivalent changes to the corresponding In-memory database (Volt DB) tables. The in-memory database data model differs from the SMI data model as the structure of the Volt tables is optimised for performance.

The data model changes described above will require changes to the way relationships are established between entities as well as changes to the corresponding processing scenarios.

The ESI-040 (Enterprise System Interface- used for sharing data between DSP and DCC's DS&A team for reporting and Interoperability Checker service) Firmware extract will feature two rows for the same firmware version if the PPMID is applicable for both SMETS1 and SMETS2. The format of the ESI-040 will remain unchanged. However, the SMETS version field will form part of the primary key.

The Device table records the SMETS version when a Device is pre-notified using SRV12.2. Since a Service User may not know whether this PPMID will be installed on a SMETS1 or SMETS2 HAN then either value can be supplied in the SRV12.2 request. When adding this PPMID to a HAN later using SRV8.11, if the currently allocated SMETS version is inconsistent with that of the Comms Hub for that HAN, then the system will consider the SMETS version of the Comms Hub as the valid one and update the active firmware version in the Device table accordingly.

Processing SRV11.1 Update Firmware will be amended such that, in the case of PPMIDs only, where there is a record for both a SMETS1 and SMETS2 Firmware Version (indicating a dual mode PPMID), then the SRV11.1 Update Firmware request will be rejected with a new DUIS error code E110106 indicating that this firmware cannot be applied to a SMETS1 PPMID installation. (For backwards compatibility, this will be mapped to an existing error code E110101 for older DUIS versions).

Introducing a new DUIS error code requires a new version of DUIS, including an update to the DUIS schema (see section 4.4).

Processing of SRV11.2 Read Firmware, SRV11.3 Activate Firmware and Alert 0x8F8B Firmware activation alert for PPMIDs will be amended such that, if there are multiple firmware versions available, the relevant one will be determined based on the SMETS version of the associated Comms Hub.

4.1 Impact on DSP

Component	Changes
Data Management	1. A new column will be added to the Device Model table to store data to indicate if the PPMID is SMETS1 or 2; 2. Amendment to CPL file processing for dual mode PPMIDs; and 3. Amend SRV processing (including SRVs 12.2, 8.11, 11.2, 11.3, 11.4 and validation of SRV11.1a).
DUIS, DUGIDS	1. Changes are required to the DUIS documentation and the DUIS schema to describe the additional validation check and error code for SRV11.1 Update Firmware. 2. Changes are required to DUGIDS Annex 11 to mirror the above changes to DUIS, along with changes to Annex 8 and Annex 12 to provide User Guidance on the behaviour of SRV8.11 Update HAN Device Log and SRV12.2 Device Pre-Notification.
Infrastructure	No infrastructure impact is expected from this Modification. It should be noted 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 Agreement. As such, it may be necessary for DSP to raise a Business as Usual (BAU) CR for the provision/ of additional infrastructure to ensure the DCC Total System does not experience performance problems that are the direct result of the accumulation of such changes. The change does not impact the DSP resilience or Disaster Recovery implementation.

4.2 Impacts on DCC DS&A Reporting

Changes in the ESI-040 Firmware extract report from DSP is going to impact on ETL (Extract, Transformation and Load) process for the data warehouse in reporting produced by the DCC Data Science and Analytics (DS&A) team.

4.3 Impact on DCC Interoperability Checker service

Based on the changes at DSP to the Primary Key on the Firmware Version table and in the ESI-040 Firmware data extract, ETL process for the inventory loader in Interoperability Checker system need to be uplifted.

4.4 SEC Changes, Technical Specifications

The DCC and Service Providers have proposed the following legal text changes in SEC Appendix AD - DCC User Interface Specification (DUIS).

DUIS%20Legal%20Text%20changes%20for

Changes to the DCC User Gateway Interface Design Specification (DUGIDS) will be made available during the design phase of this Modification.

4.5 Deliverables

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

Phase Deliverables	Deliverable
Design	SD2.1.1 Functional Specification - Instant Energy
	SD2.2.1.4 Component Design Spec – Data Management
	SD4.1 DCC User Gateway Interface Design Specification
	SD4.10 Certified Product List Interface Specification
PIT Completion	System Test and FAT Completion Report

5 Testing Considerations

This Full Impact Assessment includes the cost to develop, fully test and deliver this SEC Modification. The following Testing Assumptions were provided to Service Providers for their FIA submissions.

5.1 Pre-Integration Testing (PIT)

Pre-Integration Testing (PIT) will be required to align DSP and CSP functionality for 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.

5.2 System Integration Testing (SIT)

System Integration testing (SIT) will verify the use of a dual mode PPMID for both SMETS1 and SMETS2 Device Sets.

CGI System Integrator will plan, prepare, and coordinate with other DCC Service Providers (e.g. either CSP based on SMETS2 device set available and specific SMETS1 Service Provider) and execute tests that demonstrate the key changes in behaviour across the DCC Total System, comprising:

- add Dual PPMID to the CPL and update the SMI with the CPL changes with SMETS1 and SMETS2 versions of the same PPMID Firmware;
- execute an Installation & Commissioning for SMETS2 device set with a GBCS 4.1 Communications Hub Function (CHF) and the PPMID to be Dual Mode PPMID;
- on an existing SMETS1 device set execute Device Swap Out Business Scenario for PPMID to a SMETS2 PPMID;
- execute SR11.2 against the two PPMIDs and verify that the F/W version is the same;
- execute Firmware Update Business Scenario against the SMETS2 PPMID to update the Firmware of the PPMID;
- execute verification of Dual PPMID entries on the SMI/CPL/Volt Database;
- execute Device Swap Out on Dual Mode PPMID on SMETS1 where the Firmware version on the SMETS1 PPMID is different to the SMETS2 Dual Mode PPMID;
- execute Device Swap Out on Dual Mode PPMID on SMETS2+ where the Firmware version on the SMETS2+ PPMID is different to the SMETS1 PPMID;
- execute SR11.1 using DUIS >=5.x verify E110106 error message sent (negative test);
- execute SR11.1 using DUIS <5.x verify E110101 error message sent (negative test);

- execute ESI-040 Firmware Report – Verify that the Firmware for PPMID is displayed in two rows for SMETS1 and SMETS2 respectively; and
- execute S1SP Management extract S1SP F14 – verification excludes SMETS2 PPMIDs.

5.3 User Integration Testing (UIT)

The scope of UIT testing will comprise test preparation and test execution for the following:

- Pre-Unit Testing Service preparation
  - production of a Pre-UTS Test Plan which includes the test approach, test timeline and the detailed scope of the UIT tests;
  - creation/update of UIT test scripts;
  - preparation of device sets for Pre-UTS testing;
  - preparation of test management system for test evidence capturing and defect reporting;
  - population of test management system to enable test progress to be tracked and to capture test evidence.

- Pre-Unit Testing Service execution : The scope and extent of this testing is expected to include:
    - a SMETS1 Migration with a dual mode PPMID;
    - a test to pre-notify a dual mode PPMID for SMETS2; and
    - an OTA firmware upgrade on the SMETS2 meter set.
- UIT Management

6 Implementation Timescales and Releases

This Modification is expected to be included in a SEC Release in June 2024. Implementation timescales will be finalised as part of the relevant SEC Release Change Request.

6.1 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 11 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	D
CAN signature	D+ 1 Month
Design, Build and PIT Phase	5 Months
SIT and UIT Phase, aligned with Release Dates	5 Months
Transition to Operations and Go Live	D+11 Months

6.2 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 overlap with other Modifications has been identified at the time of undertaking this Impact Assessment.

6.3 Costs and Charges

This section indicates the quote for all phases of application development stage for this Modification. Note these costs assume a release of just this SEC Modification without any other Modifications or Change Requests in the release

£	Design	Build	PIT	SIT	UIT	TTO	SP Total
Phase Total	80,841	250,633	62,078	283,714	72,126	9,160	**758,552**

Note the costs are broken down into Design, Build, and PIT costs of £393,552 with post-PIT costs of £365,000. DCC is required to provide a cost of the Modification as it were a standalone Modification in a SEC Release, and this gives a total of £758,522.

However given that this Modification has already been assigned to the June 2024 SEC Release, which will at least contain the two components of Marketwide Half Hourly Settlement (MHHS), the new MDR User, and the capacity uplift associated with the new MHHS functionality, DCC believes there will be a significant overlap in post-PIT costs for the SEC Release, with a corresponding significant reduction in post-PIT costs for this Modification. DCC have made a heavily caveated estimate for post-PIT Release costs for this Modification into the whole SEC Release. This estimates has no change on the Design, Build, and PIT costs of £393,552 with post-PIT costs of £110,000 which gives a total of **£503,552.** Costs of the changes will be reviewed as part of the planning and implementation for the June 2024 SEC Release.

A further calculation of the post-PIT costs for all the Modifications and Change Requests in the Release will be determined through the June 2024 Release CR also referred to as a “post-PIT CR”.

6.4 Application Support Cost

This change will not result in a material increase in application support required.

6.5 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 2.1: update to reflect the addition of new DCC Requirements to enable achievement of the activities and / or deliverables;
- Schedule 3: update to reflect the addition of new DCC Responsibilities to enable achievement of the activities and / or deliverables;
- Schedule 4.1: Solution Design documents will need to be updated as per section 4.5;
- Schedule 6.1: addition of new milestones;
- Schedule 7.1: revisions to incorporate the charges and payment applicable for this Modification.

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

7 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.

Risks

Ref	Risk	Impact
MP202-RD1	While the costs for a standalone Modification have been calculated as a standalone in the usual style, DCC believes that including this Modification in the June 2024 SEC Release will reduce the Post-PIT costs significantly.	If the June 2024 SEC Release does not contain MHHS, or this Mod moves to a separate Release, the post-PIT costs might not be reduced to the same level.

Assumptions

None at this time.

Issues

None at this time.

Dependencies

Ref.	Dependency	Impact
MP202-AD1	Suitable dual-mode PPMIDs should be available for UIT.	Testing cannot be completed without these devices.
MP202-AD2	Manufacturer firmware image for the OTA upgrade on the SMETS2+ Device set should be available for UIT.	Full testing cannot be completed without the firmware update.

Appendix A: Glossary

Acronym	Definition
BaU, BAU	Business As Usual
CAD	Consumer Access Device
CAN	Contract Amendment Note
CoS	Change of Supplier
CPL	Central Product List
CR	DCC Change Request
DCC	Data Communications Company
DS&A	Data Science and Analytics
DSP	Data Service Provider
DUGIDS	DCC User Gateway Interface Design Specification
DUIS	DCC User Interface Specification
ESI	Enterprise System Interface
ETL	Extracting, transforming and loading of data to databases
FIA	Full Impact Assessment
GBCS	Great Britain Companion Specification
HAN	Home Area Network
OTA	Over the Air
PIA	Preliminary Impact Assessment
PIT	Pre-Integration Testing
PPMID	Prepayment Metering Interface Device
RAID	Risks, Assumptions, Issues, and Dependencies
S1SP	SMETS1 Service Provider
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SIT	Systems Integration Testing
SMETS	Smart Metering Equipment Technical Specification
SMI	Smart Metering Inventory
SP	Service Provider
SR	Service Request
SRV	Service Request Variant
UIT	User Integration Testing