SEC
Smart Energy Code

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MP202

'Enduring Solution for SMETS1 and SMETS2+ PPMIDs'

Modification Report

Version 0.5

15 March 2023

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About this document

This document is a Modification Report. It currently sets out the background, issue, solution, impacts, costs, implementation approach and progression timetable for this modification, along with any relevant discussions, views and conclusions. This document will be updated as this modification progresses.

Contents

This document also has four annexes:

- **Annex A** contains the business requirements for the solution.
- **Annex B** contains the redlined changes to the Smart Energy Code (SEC) required to deliver the Proposed Solution.
- **Annex C** contains the full Data Communications Company (DCC) Preliminary Assessment response.
- **Annex D** contains the collated responses to the Refinement Consultation.

Contact

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1. Summary

This proposal has been raised by David Walsh from the DCC.

The SEC currently differentiates between Smart Metering Equipment Technical Specifications (SMETS) 1 and SMETS2+ Devices and is drafted in a manner so that a Device can be either SMETS1 or SMETS2+, but not both. Therefore, the DCC Systems are designed on the premise that the Devices are exclusively either SMETS1 or SMETS2+ Devices.

The DCC has several Users who have indicated they would like to use the same Prepayment Interface Device (PPMID) for both SMETS1 and SMETS2+ purposes. Where a PPMID is capable of being used for both SMETS1 and SMETS2+ purposes, the DCC is unable to identify which version of SMETS should be used by the DCC when communicating with these Devices. This results in the DCC being unable to determine whether to construct a Great Britain Companion Specification (GBCS) command for a SMETS2+ Device or forward a Service Request to the SMETS1 Service Provider (S1SP) for a SMETS1 Device.

The Proposed Solution involves having two

entries for each Device Model version stored in the Central Products List (CPL), one for SMETS1 and one for SMETS2+. This allows Devices to be pre-notified as SMETS1 or SMETS2+, meaning one type of PPMID can be used for all metering installations.

This modification will impact Suppliers, Meter Installers, The Smart Energy Code Administrator and Secretariat (SECAS), Device Manufacturers and the DCC. The Preliminary Assessment showed costs of between £350,000 and £750,000 for Design, Build and Pre-Integration Testing (PIT). SECAS is recommending an implementation date of 27 June 2024. This is a Self-Governance modification.

2. Issue

What are the current arrangements?

The DCC has established that some models of PPMID can work as both a SMETS1 Device and a SMETS2+ Device. The SEC currently differentiates between SMETS1 and SMETS2+ Devices and is drafted so that a Device can be either SMETS1 or SMETS2+, but not both. This means that a PPMID cannot currently be treated as both a SMETS1 PPMID and a SMETS2+ PPMID, even if it is physically able to behave as such.

SEC Appendix Z section 3:13 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.

PPMIDs must be pre-notified to the DCC by the Supplier. This pre-notification must include the SMETS Version and this determines whether the PPMID must be used in a SMETS1 or SMETS2+ Smart Metering System (SMS). Starting at the time of pre-notifying the PPMID, the Supplier or the installer must currently mark and track the PPMID accordingly until it is fully installed in the target SMS.

Tactical interim solution

In July 2021, the DCC consulted on potential solutions to this issue[1]. Following stakeholder feedback, the DCC stated in its response[2] 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. The SMETS2+ PPMID CPL entry uses the real firmware version whereas the SMETS1 PPMID CPL entry uses a 'fictitious' firmware version.

What is the issue?

Installations of a SMETS1 PPMID in a SMETS2+ Smart Metering System or vice versa may result in aborted installations, cause inconvenience to the consumer, and possibly waste Devices.

The DCC understands that the tactical interim solution creates logistical complications for Suppliers where they must ensure that the correct PPMID is joined to an installation of the same SMETS version even though the Devices are identical. The result of incorrect installation would be that the PPMID cannot be the target of any Service Requests.

The DCC has several Users who have indicated they would like to use the same PPMID model across SMETS1 and SMETS2+ Devices.

The benefit of this modification for Suppliers will mean the tactical interim solution will be replaced with an enduring solution, and chance of failed installation and commission will be reduced.

What is the impact this is having?

Currently this issue is not impacting the DCC due to a tactical interim solution which has been put in place. However, this is impacting Suppliers as they are responsible for handling the PPMID and 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, it must contact the DCC for manual Smart Metering Inventory (SMI) changes following an unsuccessful installation.

There are two known Suppliers who are impacted by this issue and a reported six million Devices which are impacted, but it is anticipated this number will increase in the future. This also impacts PPMID 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.

[1] https://www.smartdcc.co.uk/customer-engagement/smets1-consultation-on-changes-related-to-ppmids-and-chs/
[2] https://www.smartdcc.co.uk/consultations/dcc-response-to-its-smets1-consultation-on-changes-related-to-ppmids-and-chs/

Impact on consumers

Suppliers will need to ensure they are installing the correct SMETS Device at a premise. If an incorrect 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 (SMIP). There is also an issue where Suppliers who gain these Devices on CoS cannot communicate with them or carry out firmware updates. This will result in consumer PPMIDs not being able to be upgraded accordingly.

Resolving this issue would benefit consumers as it will support greater energy efficiency and cost saving for Suppliers. The 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.

3. Solution

Currently, the Primary Key (compromising of Firmware Version, Device Model, Device Type and the Manufacturer ID) held in the CPL can only accept one record for each firmware version.

The Proposed Solution involves having two rows of the same firmware version for a Device Model included in the CPL: one row for SMETS1 and the other for SMETS2. The data received via the CPL is stored in the Firmware Version table in the SMI.

Devices can be pre-notified as a SMETS1 or SMETS2+, but the Data Service Provider (DSP) will use the SMETS version of the Communications Hub (CH) from the relevant SMS to determine which version of SMETS the system is and update the SMI accordingly.

This table shows how this solution will work, with the assumption that all models exist in the CPL.

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

4. Impacts

This section summarises the impacts that would arise from the implementation of this modification.

SEC Parties

SEC Party Categories impacted			
✓	Large Suppliers	✓	Small Suppliers
	Electricity Network Operators		Gas Network Operators
✓	Other SEC Parties	✓	DCC

Breakdown of Other SEC Party types impacted			
	Shared Resource Providers	✓	Meter Installers
✓	Device Manufacturers		Flexibility Providers

Suppliers and the Meter Installers who work on their behalf will be able to install the same model of PPMID during any installation. This will improve efficiency in Suppliers' metering operations, which they can then pass onto consumers. Suppliers will also benefit as they will not need to ensure the PPMID is pre-notified to a certain SMETS version and that selected version is installed.

Device Manufactures are impacted as they can produce PPMIDs which work for both versions, rather than separate Devices for SMETS1 and SMETS2+

DCC System

There will be changes in the DCC User Interface Specification (DUIS) and corresponding changes in the DCC User Gateway Interface Design Specification (DUGIDS) for the changes in DUIS. No infrastructure impacts are expected from this modification.

The changes in this modification are not expected to alter traffic volumes significantly, nor to add to message processing time. No changes to Service Level Agreements (SLAs) or reporting are expected because of this change.

The full impacts on DCC Systems and DCC's proposed testing approach can be found in the DCC Preliminary Assessment response in Annex C.

SEC and subsidiary documents

The following parts of the SEC will be impacted:

- Appendix Z 'CPL Requirements Document'
- Appendix AD 'DCC User Interface Specification' (DUIS)
- Schedule 11 'Technical Specification Applicability Tables' (TSAT)

The changes to the SEC required to deliver the proposed solution can be found in Annex B.

Devices

Devices impacted			
	Electricity Smart Metering Equipment		Gas Smart Metering Equipment
	Communications Hubs		Gas Proxy Functions
	In-Home Displays	✓	Prepayment Meter Interface Devices
	Standalone Auxiliary Proportional Controllers		Home Area Network Connected Auxiliary Load Control Switches
	Consumer Access Devices		Alternative Home Area Network Devices

Some versions of PPMID can currently act as a 'bilingual' device, however the SEC does not allow a Device to work as both a SMETS1 and a SMETS2+ Device. This modification will allow PPMIDs that can behave as SMETS1 and SMETS2+ to work in such a manner.

Consumers

Suppliers currently need to ensure they are installing the correct SMETS Device at a premise. If an incorrect Device is installed this will need to be physically replaced which will cause inconvenience to consumers and impact the reputation of the SMIP. There is also an issue where Suppliers who gain these Devices on CoS cannot communicate with them or carry out firmware updates. This will result in consumer PPMIDs not being able to be upgraded accordingly.

Resolving this issue would benefit consumers as it will support greater energy efficiency and cost saving for Suppliers.

Other industry Codes

There are no cross-Code impacts from associated with implementation of this modification.

Greenhouse gas emissions

This modification has neutral impact on Greenhouse gas emissions.

5. Costs

DCC costs

The estimated DCC implementation costs to implement this modification is between £350,000 and £750,000 up to the end of PIT. Post-PIT costs will be assessed in the DCC Impact Assessment. The breakdown of these costs are as follows:

Breakdown of DCC implementation costs	
Activity	**Cost**
Design, Build and PIT	£350,000 - £750,000

Breakdown of DCC implementation costs	
Activity	**Cost**
Systems Integration Testing (SIT)	TBC
User Integration Testing (UIT)	TBC
Implement to Live	TBC
Application Support	TBC

More information can be found in the DCC Preliminary Assessment response in Annex C.

SECAS costs

The estimated SECAS implementation cost to implement this as a stand-alone modification is two days of effort, amounting to approximately £1,200. This cost will be reassessed when combining this modification in a scheduled SEC Release. The activities needed to be undertaken for this are:

- Updating the SEC and releasing the new version to the industry.
- Updating the CPL.

6. Implementation approach

Recommended implementation approach

SECAS is recommending an implementation date of:

- **27 June 2024 (June 2024 SEC Release)** if a decision to approve is received on or before 27 June 2023; or
- **2 November 2024 (November 2024 SEC Release)** if a decision to approve is received after 27 June 2023 but on or before 1 November 2023.

A 12-month lead time is required for the implementation of this modification. This modification also requires a change to the DUIS. A DUIS technical specification change has already been approved for June 2024, therefore SECAS is recommending this modification to align with this release. This will take place if the decision to approve is received on or before 27 June 2023. If a decision to approve is received after 27 June 2023 but on or before 1 November 2023 then this will be implemented in the November 2024 SEC Release.

7. Assessment of the proposal

Areas for assessment

Cost of MP202 in DCC Assessments

The Technical Architecture and Business Architecture Sub-Committee (TABASC) queried the cost of this modification from the Preliminary Assessment. In particular, the potential that this modification may cost up to £750,000 for an additional line of information to be added to the CPL. SECAS advised that it is likely much of the costs of this modification are associated with DCC testing. SECAS agreed that when the full DCC Impact Assessment is returned, the DCC will be asked to justify how this figure was calculated. This will then be fed back to the TABASC and noted in further documents associated with this modification. Given the wide range in potential costs established during the Preliminary Assessment, the TABASC agreed it would be beneficial for the Full Impact Assessment to be requested from the DCC.

Number of Devices impacted

TABASC members debated the cost of the modification and how this could be justified given the number of Devices impacted. SECAS shared the figure which was provided by two Suppliers that a reported six million Devices are impacted, but it is anticipated this number will increase in the future. The TABASC queried this figure and requested to see how many SMETS1 PPMIDs were installed in the last year. SECAS is working with the DCC to calculate this information, and this will be presented to the TABASC once the Impact Assessment is returned.

Observations on the issue

Change Sub-Committee

This was presented to the Change Sub-Committee (CSC) on 19 April 2022. The CSC noted the modification and agreed the timetable for the modification but had no further comment.

SECAS then presented this to Change Board on 25 January 2023 with the recommendation to approve the Impact Assessment. One member highlighted that there may be some costs for Manufacturers because of implementation of this modification.

Solution Development

Working Group Discussion

Working Group members enquired about whether a different approach was needed when pre-notifying a Device, with SECAS confirming to continue as they currently do. The discussions with the TABASC regarding 'DCC Costs' and the 'Number of Devices Impacted' were raised, with SECAS confirming this would be investigated. The DCC suggested that new, more updated figures could be available and that once the full DCC Impact Assessment has been provided, this can be compared with the figures about how many Devices will be impacted. This will then enable the business case to be more accurately assessed by the Working Group. Members also debated the benefits of the

modification, highlighting how the rise in energy bills may lead to an increase in the number of prepayment customers, and in turn the number of customers needing PPMIDs.

OTA SMETS1 Firmware upgrades

Whilst conducting the Impact Assessment, the DCC contacted SECAS to highlight a consequential impact from implementation of business requirement 7. The requirement will only allow Over-the-air (OTA) firmware upgrades to dual mode PPMIDs which are enrolled in SMETS2+ Smart Metering Systems. Because of this action, OTA firmware upgrades would no longer be available to PPMIDs enrolled in SMETS1 SMS.

The DCC presented MP202 to the March Working Group for comment to see which SEC Parties would be impacted by this change. One member who is a Device Manufacturer said they would prefer to keep the existing arrangements.

SECAS and the DCC discussed the impact of this change and whether there should be any alteration of requirement 7. If OTA firmware upgrades were allowed to PPMIDs enrolled in SMETS1 SMS, then this would require an S1SR specific piece of information in OTA firmware payloads. This would require three entries on the CPL for SMETS1 Devices . This would lead to four different entries on the CPL, rather than the two as part of the solution for this modification. In addition, the DCC System is currently unable to distinguish the three SMETS1 CPL entries apart. This would require a new process to be developed alongside this modification to enable the CPL entries to be identifiable from one another. In addition, another business requirement for this modification is to allow the DCC System to be able to distinguish between a single SMETS1 and a single SMETS2 entry for the same PPMID entry.

Having four different entries on the CPL would require the installing party to note which variant is required at every premises. This would cause problems during installations as the correct firmware would need to be sent to the PPMID. Only one firmware image can be included in the Service Request which distributes the firmware to the PPMID, which would require the DCC to flag and reject those PPMIDs which cannot handle the selected firmware image. This process does not currently exist and is not proposed to be introduced by MP202.

As a result of this discussion, SECAS and the DCC agreed not to alter Requirement 7 and continue with the Impact Assessment. The DCC confirmed that a DCC internal Change Request had been raised to examine the issue of firmware upgrades to PPMIDs in a SMETS1 SMS and this could be resolved outside the scope of this modification.

The DCC agreed to make the discussions on Requirement 7 clear in the DCC Impact Assessment.

8. Case for change

Business case

Currently, the DCC is using a tactical interim solution to resolve this issue. This enduring solution was proposed to resolve continuing logistical issues with the tactical solution.

Several SEC Parties have highlighted the current tactical interim solution does not work for them. Feedback gained during the Refinement Stage from the TABASC and the Working Group has highlighted Parties feel the costs raised in the Preliminary Assessment are high.

Suppliers will benefit as they will be able to install these PPMIDs more efficiently, without potential install and commission errors and increased times at installs. Consumers will benefit as it is more likely that they will receive a fully working PPMID.

Views against the General SEC Objectives

Proposer's views

The Proposer believes that this modification will better facilitate SEC Objective (a)[3] as it will allow these multifunctional PPMIDs to be installed more easily and with fewer install and commission failures.

Industry views

SECAS received five responses to the Refinement Consultation, four from Large Suppliers and one from a Network Party.

The Network Party respondent supported the modification, with little further comment. One Large Supplier was also supportive, noting only that the legal text could be amended to include clarity over the CPL entry using the SMETS1 and SMETS2+ values for Communications Hub Technical Specifications (CHTS) version and GBCS version respectively.

The second Large Supplier was supportive of the modification, however highlighted several issues they would like clarifying. The sought to find out the precise reason why the current DCC tactical interim solution does not work and the reasoning as to why this hasn't been fixed. They also noted the implementation timeline for this modification and that this is a long time to wait for a change if the current solution doesn't work. The costs presented in the DCC Preliminary Assessment were also discussed, with this Supplier seeking to find out exactly what changes are taking place to justify the potential costs of between £350,000 and £750,000. This Large Supplier also noted that if this is an issue with the CPL, this should be paid for by SECAS and the DCC, rather than by SEC Parties.

The third Large Supplier was unsupportive of this modification given the costs in the DCC Preliminary Assessment and the lack of benefits they felt they would receive. They also questioned whether the figure of six million Devices that could be impacted was correct.

The fourth Large Supplier was not supportive of this modification. They stated that the issue identified in this modification could be fixed by Supplier implementation changes, rather than this modification. They questioned whether the costs were valuable given the implementation timeline highlighted in this modification report.

The full responses to the Refinement Consultation can be found in Annex D.

Working Group Discussion

[3] Facilitate the efficient provision, installation, operation and interoperability of smart metering systems at energy consumers' premises within Great Britain.

Working Group members enquired about whether a different approach was needed when pre-notifying a Device, with SECAS confirming to continue as they currently do. The discussions with the TABASC regarding 'DCC Costs' and the 'Number of Devices Impacted' were raised, with SECAS confirming this would be investigated. The DCC suggested that new, more updated figures could be available and that once the full DCC Impact Assessment has been provided, this can be compared with the figures about how many Devices will be impacted. This will then enable the business case to be more accurately assessed by the Working Group. Members also debated the benefits of the modification, highlighting how the rise in energy bills may lead to an increase in the number of prepayment customers, and in turn the number of customers needing PPMIDs.

Views against the consumer areas

Improved safety and reliability

This modification will improve reliability as there is less likely to be install and commission failures with these PPMIDs.

Lower bills than would otherwise be the case

This modification has a neutral impact on lowering bills.

Reduced environmental damage

This modification has a neutral impact on reduced environmental damage.

Improved quality of service

This modification would improve the quality of service that Suppliers provide their consumers.

Benefits for society as a whole

This modification has a neutral impact on benefits for society as a whole.

Appendix 1: Progression timetable

SECAS will present this to Change Board on 25 January 2023 with the recommendation that an Impact Assessment should be requested from the DCC to further understand the costs associated with this modification. SECAS expects the Impact Assessment to be returned within 40 working days of submission to the DCC. SECAS will then present this modification to the CSC for further comment to determine whether this should progress to Report Phase.

Timetable	
Event/Action	**Date**
Draft Proposal raised	8 Mar 2022
Presented to CSC for initial comment	15 Mar 2022
CSC converts Draft Proposal to Modification Proposal	19 Apr 2022
Business requirements developed with Proposer and DCC	19 Apr – 1 May 2022
Preliminary Assessment requested	28 Sep 2022
Preliminary Assessment returned	21 Oct 2022
Modification discussed with TABASC	1 Dec 2022
Modification discussed with Working Group	7 Dec 2022
Refinement Consultation	20 Dec 2022 – 13 Jan 2023
Impact Assessment costs approved by Change Board	25 Jan 2023
Impact Assessment requested	25 Jan 2023
Impact Assessment returned	*5 Apr 2023*
Modification discussed with Working Group	*3 May 2023*
Modification discussed with TABASC	*4 May 2023*
Modification Report approved by CSC	*16 May 2023*
Modification Report Consultation	*22 May 2023 – 12 June 2023*
Change Board Vote	*21 June 2023*

Italics denote planned events that could be subject to change

Appendix 2: Glossary

This table lists all the acronyms used in this document and the full term they are an abbreviation for.

Glossary	
Acronym	**Full term**
CHTS	Communications Hub Technical Specification
CoS	Change of Supply
CPL	Central Products List
CSC	Change Sub-Committee
DCC	Data Communications Company
DSP	Data Service Provider
DUGIDS	DCC User Gateway Interface Design Specification
DUIS	DCC User Interface Specification
GBCS	Great Britain Companion Specification
OTA	Over-the-air
PIT	Pre-Integration Testing
PPMID	Pre-Payment Interface Device

Glossary	
Acronym	**Full term**
S1SP	SMETS1 Service Provider
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SIT	Systems Integration Testing
SLA	Service Level Agreements
SMETS	Smart Metering Equipment Technical Specifications
SMI	Smart Metering Inventory
SMIP	Smart Meter Installation Programme
SMS	Smart Metering System
TABASC	Technical Architecture and Business Architecture Sub-Committee
TSAT	Technical Specification Applicability Tables
UIT	User Integration Testing