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MP176 'Customer Analytics Reporting'

Modification Report

Version 0.8

27 July 2022

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About this document

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

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This document also has five 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) Impact Assessment response for the Proposed Solution.
- **Annex D** contains the DCC Customer Analytics Reporting guidance document.
- **Annex E** contains the DCC Preliminary Impact Assessment response for the Alternative Solution.

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1. Summary

This proposal has been raised by Easton Brown from the DCC.

The Smart Energy Code Administrator and Secretariat (SECAS) implemented [MP122A 'Operational Metrics'](#) in the February 2021 SEC Release, in order to increase the transparency and accuracy of the Performance Measurement Report (PMR). The PMR is a report produced by the DCC (in accordance with SEC Section H13.4) which sets out the Service Levels achieved in respect of a list of metrics (or Performance Measures) relating to Users' business processes, outlined in SEC Section H13.1A. This report is then provided to the Panel, the SEC Parties, and the Authority.

Following the implementation of MP122A, the DCC held workshops with SEC Parties which identified a need for additional metrics for reporting which are not currently listed in SEC Section H13.1A. The workshops also identified that for SEC Parties to drive performance improvements more effectively, they require a view of their own performance within each metric, set against anonymised performance data from their peers.

By extending the scope of the PMR to Device and Party levels, the DCC has identified significant variations in performance levels across DCC Users. MP176 aims to provide this same level of insight to DCC Users, to help them overcome these disparities by exposing the root causes.

The Proposed Solution is to mandate a standardised reporting suite which the DCC will provide to its Users in a static PDF/CSV file format. The Alternative Solution would deliver the same reporting but would also deliver the data via an interactive customer portal, allowing for more dynamic analysis.

This modification will impact the DCC and will indirectly impact Large Suppliers, Small Suppliers, Electricity Network Operators, and Other Users, as these Parties will receive the reporting but are not obligated to act on it. The cost of implementation for the Proposed Solution is currently estimated at £135,720 and is targeted for the June 2023 SEC Release. The Alternative Solution is currently estimated to cost £190,000 to implement. This will be progressed as a Self-Governance Modification.

2. Issue

What are the current arrangements?

Following the implementation of MP122A, the DCC is able to provide SEC Parties with an industry-wide level of reporting on the success or failure and Round Trip Times of Service Reference Variants (SRVs) relating to key customer business processes. The SRVs for which reporting is available are listed in SEC Section H13.1A.

What is the issue?

The current SEC reporting regime provides SEC Parties with an industry-wide level of reporting. This does not provide Parties with a view of their own performance, how they compare with other SEC Parties, or the ability to simply diagnose factors (Devices, Firmware, Geographic Location, Orchestration) that could be affecting their performance against key business processes.

Following implementation of MP122A, the DCC held workshops with DCC Users to understand if the PMR, while suitable for reporting on the overall health of the smart metering network, meets the reporting needs of individual Parties. These workshops returned the feedback that while the PMR provides an industry-wide view of performance, there is no way for the DCC or any individual SEC Party to view Party-specific performance within each metric. This reduces the ability of Users to drive improvement, and the ability of the DCC to assist them in doing so.

What is the impact this is having?

During the development of MP122, before it was split into MP122A and MP122B, the reporting requirements were dimensioned by SRV and Region. To better understand the shortcomings in performance, the DCC extended the reporting model to Device and Party levels, which revealed a significant disparity in performance levels between DCC Users across several key business processes. As not all SEC Parties have the reporting capabilities to assess their own performance against these key metrics, they have a reduced ability to drive improvement within their own businesses and in their interactions with the DCC. The DCC is also less able to assist them in doing so. This results in continued poor performance, and poor data quality, which can affect any other DCC Users those Parties interact with. The inability to identify areas of concern can lead to delays in industry processes and have financial and reputational costs across all Parties.

It is therefore the Proposer's view that a SEC Modification is required, to mandate a standardised performance report for all DCC Users. The Proposer believes that if this were provided as an elective service the Parties with the worst performance would have the lowest uptake, and the performance of all other Parties would continue to suffer as a result.

Impact on consumers

Doing nothing prevents DCC Users from identifying poor performance areas within their business processes and making any relevant improvements. The DCC is less able to support DCC Users in meeting their performance targets, negatively affecting the experience of the end consumer.

Implementing the proposal would give DCC Users and industry the insight to drive up overall performance for all components of the smart metering ecosystems.

3. Solutions

Proposed Solution

The Proposer seeks to provide a standardised set of benchmarked reporting to all DCC Users which will enable them to identify their performance for key business processes in comparison to their peers and to enable them to diagnose reasons for poor performance so that they can take steps to address it. The DCC's workshops with DCC Users (including Import Suppliers, Export Suppliers, Gas Suppliers and Electricity Distributors) and via the DCC's Quarterly Finance Forum provided a unanimous view that this should be implemented via a SEC Modification as it would mandate receipt of this information by all Parties and therefore offer equal benefit to them.

Following workshops and consultations with Users, the DCC Technical Operations Centre (TOC) has proposed three categories to be included in the Customer Analytics Reporting suite:

- inventory;
- business process; and
- Alert reporting.

The solution must include the scope to add or amend metrics to the reporting suite in future, and how such changes will be costed. Full details can be found in Annex D 'DCC Customer Analytics Reporting guidance document'.

During the DCC's Preliminary Assessment, it was determined that the requirements of the modification could be met in full using existing data available in the TOC. The reporting is to be delivered in Comma-Separated Values (CSV) file and Portable Document Format (PDF) file formats.

Inventory reporting

The DCC will provide inventory reporting identifying the User's Smart Metering estate for the following User Roles as a snapshot view for the end of the calendar month:

- Import Supplier;
- Export Supplier;
- Gas Supplier; and
- Electricity Distributor.

Inventory reporting will include:

- a bar graph for each Device Type, identifying volume of Device Models and firmware versions;
- a bar graph for each Device Model, showing a breakdown of the report recipient's firmware versions against the industry average and anonymised data for other Parties; and
- a data file identifying all data fields (defined in Annex D) against all Devices in the report recipient's metering estate.

Business process reporting

For each of the business processes and related SRVs defined in Table 1, the DCC will provide separate graphs identifying:

- a measure of the report recipient's monthly average success/failure rates against anonymised data for other Users operating in the same User Role;
- a monthly view of Round Trip Time or Alert delivery time, identifying the report recipient's best, worst, mean, and median times against the same metrics at an industry level for other Users operating in the same User Role; and
- a breakdown of the report recipient's daily average success/failure rates and Round Trip Times against the industry average, split by Meter Type, Region and Smart Metering

Equipment Technical Specifications (SMETS) version where relevant, and highlighting 'Category 1 & 2' Incidents. The report will identify all failures by Reason Code alongside all additional signifiers to enable Users to diagnose common themes.

Table 1		
Business Process	Service Reference Variant	Description
Install and Commission	8.11	Update HAN Device Log
	6.21	Request Handover of DCC Controlled Device (Update Supplier Certificates)
	8.1.1	Commission Device
	8.7.2	Join Service (Join GPF with GSME)
	6.20.1	Set Device Configuration (Import MPxN)
	1.1.1	Update Import Tariff (Primary Element)
	6.8	Update Device Configuration (Billing Calendar)
	8.14.1	Communications Hub Status Update Install Success
	8.7.1	Join Service (Critical)
	No meter read received within 30 days of 8.14.1	
	Measure daily total volume of installs for the period against the predicted number of installs based upon historic install volumes	
	Measure daily total volume of Install and Commission (SRV 8.14.1) versus Install and Leave (SRV 8.14.2)	
Change of Supplier (Gain)	6.23	Update Security Credentials (CoS)
	1.1.1	Update Import Tariff (Primary Element)
	6.8	Update Device Configuration (Billing Calendar)
	Identification of whether there was a successful read within 30 days prior to CoS Gain	
	Identification of whether 8.14.1 or 8.14.2 was sent by old supplier prior to CoS Gain	
Change of Tenancy	3.2	Restrict Access for Change of Tenancy
Tariff Updates	1.1.1	Update Import Tariff (Primary Element)
	1.2.1	Update Price (Primary Element)
Prepayment	1.6	Update Payment Mode (Payment Mode = Prepayment)
	2.1	Update Prepay Configuration
	2.2	Top Up Device (Update Balance with positive value)
	2.3	Update Debt
Security and Key Management	6.15.2	Update Security Credential (Device) – Credential Type = Digital Signature
	6.15.2	Update Security Credential (Device) – Credential Type = Key Agreement

Table 1

Business Process	Service Reference Variant	Description
	6.17	Issue Security Credentials – Credential Type = Digital Signature
	6.17	Issue Security Credentials – Credential Type = Key Agreement
	6.21	Request Handover of DCC Controlled Device (Update Supplier Certificates) – other than use in Install and Commission process
Update Device Firmware	11.1	Update Firmware Note: In respect of SMETS2+ Devices the DCC must ensure that the associated firmware update has been delivered to all relevant Communications Hub Functions within five days of receipt of the Service Request.
	11.3	Activate Firmware (Individual SR for each GUID for firmware activation) Note: SMETS1 five-day Target Response Time.
Logistics Communications Hub Ordering and Returns	8.14.3	Communications Hub Status Update – Fault Return
	8.14.4	Communications Hub Status Update – No Fault Return
Distribution Networks Post I&C Activity	6.15.1	Update Security Credentials (Update Network Operator Certificates)
	6.5	Update Device Configuration (Voltage)
	6.22	Configure Alert Behaviour (Update ENO Alter Configuration)
Meter Reads	4.6.1	Retrieve Import Daily Read Log
	4.6.2	Retrieve Export Daily Read Log
	4.8.1	Read Active Import Profile Data
	4.8.2	Read Reactive Import Profile Data
	4.8.3	Read Export Profile Data
	4.10	Read Network Data
	4.17	Retrieve Daily Consumption Log
Read Registers	4.1.1	Read Instantaneous Import Registers
	4.1.2	Read Instantaneous Import Time Of Use (TOU) Matrices
	4.1.3	Read Instantaneous Import TOU With Blocks Matrices
	4.2	Read Instantaneous Export Registers
	4.12.1	Read Maximum Demand Import Registers
	4.12.2	Read Maximum Demand Export Registers
	4.15	Read Load Limit Data
	4.16	Read Active Power Import

Table 1		
Business Process	Service Reference Variant	Description
Scheduling	5.1	Create Schedule
	5.2	Read Schedule
	5.3	Delete Schedule
Read Device Information	6.2.2	Read Device Configuration (Randomisation)
	6.2.4	Read Device Configuration (Identity Exc MPxN)
	6.2.7	Read Device Configuration (MPxN)
	6.13	Read Event Or Security Log
	7.4	Read Supply Status
	8.2	Read Inventory
	11.2	Read Firmware Version
Maximum Demand	6.18.1	Set Maximum Demand Configurable Time Period
	6.18.2	Reset Maximum Demand Registers
Auxiliary Load	7.7	Read Auxiliary Load Switch Data
	7.14	Read Auxiliary Controller Configuration Data
	7.15	Read Auxiliary Controller Operational Data
Other SRVs	4.4.2	Retrieve Change Of Mode / Tariff Triggered Billing Data Log
	6.27	Update Device Configuration (RMS Voltage Counter Reset)
	8.4	Update Inventory
	12.1	Request WAN Matrix
	12.2	Device Pre-notification

Alert reporting

The DCC will provide reporting against all Alerts (defined in Annex D) for each User, which will include:

- a daily average view of success/failure and delivery times for the sending of Alerts for the report recipient against the same metrics at an industry level;
- a monthly summary of success/failure for the sending of Alerts against the industry average; and
- a data file identifying all data fields (defined in Annex D) against each Alert type.

In addition, Electricity Distributors will also receive:

- a breakdown of Alerts N13 'Failure to receive Response from Device' and N55 'SMETS1 Service Provider (S1SP) Service Request Validation Failure' split by Meter Type, Model, and firmware version;

- a report identifying volumes of N42 'Security Credentials Updated on the Device' Alerts received within the service level agreement of seven days following an N16 'Device Identity Confirmation' Alert, split by Energy Supplier; and
- reporting identifying Power Outage Alerts with no subsequent Power Restoration Alert.

Customer Analytics Reporting guidance document

The guidance document consists of the below sections:

- Background & Scope;
- Overview of Reporting;
- Change Process (which outlines how changes to existing reporting and requests for additional reporting will be managed); and
- Reporting Contents.

SECAS and the DCC will consult Parties and relevant Sub-Committees on the contents of the guidance document as the modification progresses and update accordingly. The final document will be owned by the DCC, hosted on the DCC Website and accessible to all DCC Users. The DCC will consult with the affected Parties on any changes to the reporting suite (and subsequently to this document) that are identified after this modification has been implemented.

Full details can be found in Annex D 'DCC Customer Analytics Reporting guidance document'.

Alternative Solution

The Alternative Solution would still deliver the reporting described in the Proposed Solution, and would be subject to the same guidance and change process. It would also deliver an online customer portal service for the aggregated performance and reporting data, which will contain interactive versions of the PDF documents for customers to interact with and download from.

Full details can be found in Annex E 'DCC Preliminary Impact Assessment for the Alternative Solution'.

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

DCC Impact

The impact on the DCC will be the increased resource required to support and deliver the enhanced reporting suite. The full impacts on the DCC can be found in the DCC Preliminary Assessment response in Annex C.

Impact on Supplier Parties

There will be no direct impact on Supplier Parties from this modification, however they will receive a more detailed level of reporting from the DCC and may wish to amend their internal processes accordingly.

Impact on Electricity Network Operators

There will be no direct impact on Electricity Network Operators from this modification, however they will receive a more detailed level of reporting from the DCC and may wish to amend their internal processes accordingly.

DCC System

There is not expected to be any impact on DCC Systems as a result of implementing this modification.

SEC and subsidiary documents

The following parts of the SEC will be impacted:

- Section H 'DCC Services'

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

Devices

This modification will have no impact on Devices.

Consumers

This modification is expected to have a positive impact on Consumers. It will allow SEC Parties to better identify shortcomings in performance and address the root causes, reducing the time taken to resolve issues and improving customer experience.

Other industry Codes

This modification is expected to have no impact on other industry Codes.

Greenhouse gas emissions

This modification is expected to have no impact on greenhouse gas emissions.

5. Costs

DCC costs

Proposed Solution

The estimated DCC cost to implement the Proposed Solution for this modification is £139,320. This cost covers design, development, and testing within a selected DCC Data Science & Analytics (DS&A) environment.

Breakdown of DCC implementation costs – Proposed Solution	
Activity	Cost
Design, Test & Implement	£72,000
Application Support ¹	£67,320

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

Alternative Solution

The estimated DCC cost to implement the Alternative Solution for this modification is £190,000. This cost covers design, development, and testing within a selected DCC Data Science & Analytics (DS&A) environment.

More information can be found in the DCC Preliminary Impact Assessment for the Alternative Solution in Annex E.

SECAS costs

The estimated SECAS implementation cost to implement this as a stand-alone modification is one day of effort, amounting to approximately £600. 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.

SEC Party costs

There are not expected to be any costs to SEC Parties to implement this modification.

¹ The quoted Application Support costs are for one year only. After that time, the costs will be considered as part of Business as Usual, and will be covered by annual DS&A costs.

6. Implementation approach

Recommended implementation approach

SECAS is recommending an implementation date of:

- **29 June 2023** (June 2023 SEC Release) if a decision to approve is received on or before 29 December 2022; or
- **2 November 2023** (November 2023 SEC Release) if a decision to approve is received after 29 December 2022 but on or before 2 May 2023.

7. Assessment of the proposal

Observations on the issue

Views of the Change Sub-Committee

During its initial assessment, the Change Sub-Committee (CSC) agreed that further development was required to understand whether a SEC modification was the correct route to progress this change. The Proposer clarified that this was the option preferred by all DCC Users surveyed, their view being that if this reporting were to be provided as an elective service the uptake would be lowest among the poorest performers, negatively impacting all Parties. Following this clarification, the CSC agreed that this modification was ready to progress to the Refinement Process.

Views of the Working Group

A Working Group member noted that there may be data privacy implications when reporting Device Alerts if they are not specific to the User receiving the report.

The Working Group also noted that Distribution Network Operators (DNOs) already receive reporting which shows Power Outage Alerts (POAs) with no subsequent Power Restoration Alerts. It was agreed that the DCC would provide an explanation of exactly what the Customer Analytics Reporting suite adds in this area that is not covered by existing reporting, so that Parties can assess if this should be included in the modification's requirements. These details can be found in Annex D 'Customer Analytics Reporting guidance document'.

At the Working Group meeting in January 2022 it was agreed that the Customer Analytics Reporting guidance document referenced in the legal text should be provided during the Refinement Process to allow Parties to consult on its contents and implementation. Further details can be found in the 'Solution development' section below.

Solution development

Following implementation of MP122A, the DCC held workshops with DCC Users to understand if the PMR, while suitable for reporting on the overall health of the smart metering network, meets the reporting needs of individual Parties. These workshops returned the feedback that while the PMR

provides an industry-wide view of performance, there is no way for the DCC or any individual SEC Party to view Party-specific performance within each metric.

The DCC extended the scope of the reporting to a Device and Party level and, following further workshops and consultations with its Users on what reporting metrics would be most beneficial, the DCC proposed three categories to be included in the Customer Analytics Reporting suite: inventory reporting, business process reporting, and Alert reporting. The Working Group highlighted that any solution must include the scope to add or amend metrics to the reporting suite in future if necessary, and how these changes will be costed. The reporting change process can be found in Annex D 'Customer Analytics Reporting guidance document'.

As part of its Preliminary Assessment response, the DCC proposed the provision of a secure self-service portal for its Users to obtain a 'dynamic' view of the reporting. The Working Group discussed the addition of this solution option as a 'Part B' to this modification but agreed that this was not suitable as the development of tools for customer access should be assessed within the context of the wider DCC service and there would be no cost benefit to tying this in with the implementation of the reporting suite.

A respondent to the Refinement Consultation noted that there could be synergies between the solutions for MP176 and [MP096 'DNO Power Outage Alerts'](#), and recommended that any enhancements to the Alert reporting within MP176 are reflective of the changes agreed in MP096. This was seconded by another Refinement Consultation response, which highlighted a concern that implementation of MP176 may lead to a duplication of efforts in DCC reporting. SECAS will request that the DCC investigates any synergies as part of its Full Impact Assessment and liaise with the DCC to ensure Parties are not receiving duplicated reporting.

8. Case for change

Business Case

Implementing this modification will provide DCC Users with insights into a variety of business processes, highlighting where focus for improvement is required. By delivering a baselined report which shows the same level of data to each Party within the same User Role, there is no competitive advantage conferred to one Party over another. Instead, Parties will be able to develop their internal processes in addition to improving processes which involve interacting with other Parties, leading to a shared benefit across the industry.

The combined improvements in performance, data quality and data visibility will have a positive impact on the experience of Energy Consumers. Empowering DCC Users to identify issue root causes will lead to fewer faults, fewer site visits and ultimately a lower cost to service.

It is difficult to quantify the positive impact of implementation, as this will depend on DCC Users taking the subsequent actions to capitalise on the reporting enhancements this modification will deliver. However, as the purpose of this modification is to provide a baseline which can then be built on, benefits to industry costs and reputation could continue to be seen well into the future.

Views against the General SEC Objectives

Proposer's views

The Proposer's view is that implementing this modification will better facilitate SEC Objective (a)² by allowing Parties to identify potential shortcomings in their key business processes and implementing the necessary fixes.

Industry views

All respondents to the Refinement Consultation agreed that this modification will better facilitate SEC Objective (a) by driving performance enhancements leading to an improved Smart service.

Views against the consumer areas

Improved safety and reliability

This modification will result in a greater level of reporting to Supplier Parties, allowing them to identify and resolve potential faults.

Lower bills than would otherwise be the case

This modification will result in a greater level of reporting to Supplier Parties, allowing them to streamline their processes and potentially pass savings onto customers.

Reduced environmental damage

This modification will have a neutral effect on this area.

Improved quality of service

This modification will result in a greater level of reporting to Supplier Parties, allowing them to identify the root causes of performance issues more quickly and improve customer experience.

Benefits for society as a whole

This modification will have a neutral effect on this area.

² To facilitate the efficient provision, installation, and operation, as well as interoperability, of Smart Metering Systems at Energy Consumers' premises within Great Britain.

Appendix 1: Progression timetable

SECAS received the DCC Impact Assessment response on 1 June 2022. The DCC has concluded its Preliminary Assessment on an Alternative Solution. Both solutions will be discussed at the Working Group on 3 August 2022.

Timetable	
Event/Action	Date
Draft Proposal raised	8 Jul 2021
Presented to CSC for initial comment	27 Jul 2021
CSC converts Draft Proposal to Modification Proposal	31 Aug 2021
Solution developed with Proposer	Sep-Oct 2021
Modification discussed with Working Group	3 Nov 2021
Preliminary Assessment requested	17 Nov 2021
Preliminary Assessment returned	14 Dec 2021
Modification discussed with Working Group	5 Jan 2022
Modification discussed with Working Group	2 Feb 2022
Refinement Consultation	7 – 25 Mar 2022
Impact Assessment costs approved by Change Board	20 Apr 2022
Impact Assessment requested	21 Apr 2022
Impact Assessment returned	10 Jun 2022
Alternative Solution Preliminary Assessment requested	15 Jul 22
Alternative Solution Preliminary Assessment returned	21 Jul 2022
Modification discussed with Working Group	3 Aug 2022

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
CoS	Change of Supply
CSC	Change Sub-Committee
CSV	Comma-Separated Values
DCC	Data Communications Company
DNO	Distribution Network Operator
ENO	Electricity Network Operator
GPF	Gas Proxy Function
GSME	Gas Smart Metering Equipment
GUID	Globally Unique Identifier

Glossary	
Acronym	Full term
HAN	Home Area Network
I&C	Install & Commissioning
MPxN	Meter Point Administration/Reference Number
PDF	Portable Document Format
PMR	Performance Measurement Report
POA	Power Outage Alert
S1SP	SMETS1 Service Provider
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SMETS	Smart Metering Equipment Technical Specifications
SR	Service Request
SRV	Service Reference Variant
RMS	Root Mean Squared
TOC	Technical Operations Centre
TOU	Time Of Use
WAN	Wide Area Network