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MP176 'Customer Analytics Reporting'

Modification Report

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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 three 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 Customer Analytics Reporting guidance document.

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1. Summary

This proposal has been raised by Easton Brown from the Data Communications Company (DCC).

[MP122A 'Operational Metrics'](#) was implemented 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.

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 is currently estimated at £130,000 and is targeted for the February 2023 SEC Release. 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 customers 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 is provided as an elective service the Parties with the worst performance will have the lowest uptake, and the performance of all other Parties will 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 their performance targets, negatively affecting end-consumer experience.

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 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.

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)

Table 1		
Business Process	Service Reference Variant	Description
	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
	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
	11.1	Update Firmware

Table 1

Business Process	Service Reference Variant	Description
Update Device 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
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

Table 1		
Business Process	Service Reference Variant	Description
	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.

Full details can be found in Annex D 'Customer Analytics Reporting guidance document'. SECAS and the DCC will consult Parties and relevant sub-committees on the contents of the guidance document as the modification progressed and update accordingly. The final document will be hosted on the DCC Website and accessible to all DCC Users.

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.

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

The estimated DCC implementation costs to implement this modification is £130,000. This cost covers design, development, and testing within a selected DCC Technical Operations Centre (TOC) environment. Activities out of scope of this cost include application support and infrastructure improvements, which will be addressed during the DCC's Full Impact Assessment.

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 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.

6. Implementation approach

Recommended implementation approach

SECAS is recommending an implementation date of:

- **23 February 2023** (February 2023 SEC Release) if a decision to approve is received on or before 23 August 2022; or
- **10 Working Days after approval** if a decision to approve is received after 23 August 2022.

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 has since 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 have 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.

It was 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 has 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 addition of this solution option as a 'Part B' to this modification was discussed with the Working Group, but it was 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.

Support for Change

Views of the Change Sub-Committee

The Change Sub-Committee (CSC) agreed at its August 2021 meeting that the issue and its impacts were clear. A member noted that as the implementation of MP176 will deliver extensive reporting, Users will need to be vigilant against duplication.

Views against the General SEC Objectives

Proposer's views

The Proposer's view is that implementing this modification will better facilitate SEC Objective (a)¹ by allowing Parties to identify potential shortcomings in their key business processes and implementing the necessary fixes.

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 passing savings onto customers.

Reduced environmental damage

This modification will have a neutral effect on this area.

¹ To facilitate the efficient provision, installation, and operation, as well as interoperability, of Smart Metering Systems at Energy Consumers' premises within Great Britain.

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.

Appendix 1: Progression timetable

On 2 February 2022 the Working Group agreed this modification was ready to be issued for Refinement Consultation. Following its conclusion, an Impact Assessment request will be issued to the DCC.

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	8 – 28 Feb 2022
Impact Assessment costs approved by Change Board	23 Mar 2022
Impact Assessment requested	24 Mar 2022
Impact Assessment returned	5 May 2022
Modification discussed with Working Group	1 Jun 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
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