SEC Modification Proposal, SECMP223

WAN Coverage Reporting

Preliminary Impact Assessment (PIA)

Version:	**1.0**
Date:	**14th July, 2023**
Author:	**DCC**
Classification:	**DCC Public**

Contents

1 Executive Summary

The Change Board are asked to approve the following:

- Total cost to complete the Full Impact Assessment (FIA) of £2,000

- The timescales to complete the Full Impact Assessment of 30 days

The total ROM costs to deliver SECMP0223 are £45,000 (including optional validation of postcodes / addresses in CSP coverage data), which includes Design, Build and PIT, with a tolerance of ±20%.

Problem Statement

There is currently no obligation or requirement in the SEC on the DCC to report current WAN coverage percentages or any work which is ongoing to improve them.

Although the WAN Coverage Checker is provided to SEC Parties, the Proposer believes reporting could be improved through the provision of reporting that highlights addresses where there is no WAN or the WAN status has changed.

Benefit Summary

The additional reporting requested will provide a periodic overview to DCC Users of WAN coverage in each CSP Region, which in effect summarises the WAN coverage data available to DCC and to Users. The applicability of that reporting to the planning of Smart Meter installations at specific consumer premises is unclear.

2 Document History

2.1 Revision History

Revision Date	Revision	Summary of Changes
04/07/2023	1.0	Issued

2.2 Associated Documents

This document is associated with the following documents:

Ref	Title and Originator's Reference	Source	Issue Date
1	MP223 Modification Report v0.3	SECAS	23/05/2023
2	MP223 Business Requirements v0.4	SECAS	23/05/2023

References are shown in this format, [1].

2.3 Document Information

The Proposer for this Modification is Emslie Law from the OVO.

The initial Preliminary Impact Assessment was requested of DCC on 5th June 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 Problem Statement

There is currently no obligation or requirement in the SEC on the DCC to report current WAN coverage percentages or any work which is ongoing to improve them.

The Bmax targets required of the DCC (target coverage for WAN, as set in the DCC Licence) are:

- 99.25% coverage in the CSP Central region.

- 99.25% coverage in the CSP South region.

- 99.50% coverage in the CSP North region.

Although the WAN Coverage Checker is provided to SEC Parties, the Proposer believes reporting could be improved by highlighting addresses where there is no WAN or the WAN status has changed.

Currently there is no measure or way to understand the current WAN coverage that is critical to Users wanting to enrol Devices in the DCC Service. Without reporting on WAN Coverage, SEC Parties may waste resources by organising smart metering installs in areas reported on the WAN Coverage Checker as having WAN but when attending site there is no WAN.

3.2 Business Context and Requirements

WAN Coverage for CSPN is described at postcode level, not for individual addresses. DCC has discussed the possibility of increasing the granularity of CSPN WAN Coverage data to identify individual addresses, which would require a major system change, with SECAS and the Proposer and, noting the statement in the Modification Report that the Proposer wishes to keep implementation costs to a minimum. Further to those discussions, DCC has responded to the business requirements on the basis that the CSPN WAN Coverage data will remain at postcode level only.

DCC also notes that the requirements listed for SECMP223 imply a solution that will summarise WAN Coverage data already available to DCC Users via the Self-Service Interface and, while the additional reporting will provide an overview to Users periodically, the applicability of that reporting to the planning of Smart Meter installations at specific consumer premises is unclear.

With respect to WAN related incidents, and reporting thereon, it should be noted that when a DCC User submits a Communications Hub Status Update – Install No SM WAN Service Request (SRV 8.14.2), an incident is created automatically in the DCC Service Management System and a series of diagnostic checks, similar to those described in the CH Installation and Maintenance Support Materials, are carried out automatically. If the checks identify that the Comms Hub was installed in a location where no WAN coverage is reported, according to the CSP coverage data, or if the Comms Hub is found to be communicating, the Incident will be closed.

3.3 Business Requirements

Requirement 1: The DCC to produce a figure of the WAN coverage level for each CSP region, every three months.

The DCC to report quarterly on WAN coverage levels for each CSP region. This figure should be calculated by the number of 'covered' addresses which have some level of WAN coverage against the total addresses in that CSP region.

In CSP South this means covered addresses are those which have a status 'TRUE' with 'LOW', 'MEDIUM' or 'HIGH' on the WAN coverage checker. These addresses should be compared against the total number of addresses in this CSP region to calculate the WAN coverage percentage.

In CSP Central this means covered addresses are those which have a status 'TRUE' with 'LOW', 'MEDIUM' or 'HIGH' on the WAN coverage checker. These addresses should be compared against the total number of addresses in this CSP region to calculate the WAN coverage percentage.

In CSP North, this means addresses which are classified as TRUE/HIGH against the total number of addresses in this CSP region to calculate the WAN coverage percentage.

Requirement 2: The DCC to produce reporting on addresses where there is no WAN or the WAN status has changed, every three months.

At sites where there is no WAN coverage, or the WAN coverage level has changed since the last quarterly report, this should be recorded and provided to SEC Parties.

In CSP South this means all addresses which do not have WAN or where the WAN status has changed are reported on at property level.

In CSP Central this means all addresses which do not have WAN or where the WAN status has changed are reported on at property level.

In CSP North, this means all addresses which do not have WAN are reported on at postcode level.

Requirement 3: The DCC to produce monthly reporting on sites where Suppliers raise WAN-related incidents in each CSP region.

The DCC to record when Suppliers raise WAN-related incidents to the DCC Service Desk and the address where this has been raised. This information should be made available to SEC Parties monthly.

Requirement 4: The DCC to ensure the WAN coverage checker is updated accordingly when Suppliers raise WAN-related incidents to the DCC Service Desk.

All WAN incidents raised to the DCC Service Desk to be recorded. This should be passed onto CSPs to ensure the WAN overage checker is accurate. If found to be inaccurate, the WAN coverage checker should be updated accordingly.

Requirement 5: The DCC to produce monthly reporting on work which is ongoing to improve WAN coverage in each CSP region at sites which are currently declared to be no WAN.

The DCC to report monthly on work which is ongoing to improve WAN coverage at sites which are currently declared to be no WAN.

This should include work which is ongoing in each CSP region to improve WAN where coverage is planned to be available.

In CSP North this reporting should exclude any properties which are classed in the WAN coverage checker as 'postcode valid but not planned to be covered'.

Requirement 6: All planned WAN outages which are passed between CSPs and the DCC Service Desk to be passed to SEC Parties.

The DCC to ensure all information regarding planned WAN outages which are provided to the DCC Service Desk by CSPs are provided to SEC Parties.

4 Description of Solution

Following analysis of the Requirements above, the DCC Data Science & Analytics (DS&A) Team proposes the following Solution:

- Coverage data-marts with associated reporting

- Remedy template creation

- Custom Remedy reporting

4.1 DCC Data Science and Analytics

DCC's Data Science and Analytics (DS&A) function was formed from a specific sub element of the Technical Operations Centre (TOC). It has particular focus on underpinning the existing TOC capability with dedicated emphasis on utilising the considerable data DCC generates and captures. This team is responsible for all aspects of the data across the Data Analytics lifecycle from initial structuring and organisation, ensuring its timeliness availability across TOC and wider DCC. Within DS&A however, further data-analytical processing techniques are employed in order to derive insights for industry. The DS&A function also has DCC responsibility for its regulatory reporting.

DS&A operate secure and scalable cloud computing with powerful analytic software to help identify and understand how the DCC service is used with objectives to evaluate application execution, message flow and orchestration performance, device, HAN configuration compliance and more. The team is staffed by dedicated DCC sourced system experts, experience data scientists supported by cloud technologists and database developers and administrators.

DS&A have developed much of the DCC operational capability incorporating Service Visualisation of Operational Management dashboards, proactive alerting of operational metrics and anomaly detection systems. It is, however, it's Operations Analytics tools that will be utilised to fulfil this modification. Operational Analytics allow highly accurate monitoring of key DCC KPI's across many aspects of the end-to-end service and is operatable at Device, Meter-point, or transactional request identity level for a forensic analysis of specific behaviour and troubleshooting. It is when such seemingly discreet data is connected and aggregated that allow the correlation of trend analysis and generation of meaningful insights such that will drive this Modification.

DCC DS&A will be responsible for the design, development, implementation and BAU maintenance of the solution for this Modification.

4.2 DS&A Solution Overview

Utilising the coverage datasets provided by the CSPs, the DS&A team will create and maintain a bespoke, automated Extract, Transform and Load (ETL) processes to import the data from our Data Lake and from there create a new data model which can be used to satisfy Requirements 1 and 2.

The data from this data model will be used to create a single report in excel format that includes the output based on Requirements 1 and 2.

Report 1 - Requirement 1 & Requirement 2

For Requirement 1, a new report will be created that will be produced every 3 months. The new report will contain a high-level summary of the percentage WAN coverage level in each CSP region.

The new report will also contain the details of WAN Coverage changes as stipulated in Requirement 2.

The excel spreadsheet format has been chosen as it's an accepted standard. It isn't expected that the data within the report will exceed the limits of an excel spreadsheet, but if it is deemed necessary, the report output will be changed to be 2 separate reports in csv format, combined into a single zip file.

Report 2 - Requirement 3 & Requirement 4

For Requirement 3 a new template will be created in Remedy that will allow WAN-related incidents to be easily logged and reported on. Work Instructions will be created to explain how the new template should be completed. A new report that satisfies Requirement 3 will be created and produced as per the agreed timescales and will be published to SEC Parties to their area on SharePoint.

To satisfy Requirement 4, a CSP version of the report will also be produced showing incidents relevant to CSPN, CSPC and CSPS.

Requirements 5 & 6

For Requirement 5 there is no contractual obligation for CSPs to report on planned or in-progress work or planned WAN outages. In lieu of a contract change to require this to be provided, DCC will ask for this on an informal basis from CSPN, CSPC and CSPS.

4.3   Solution Constraints and Changes

DCC will only use the data contained within the coverage data provided by CSP North, CSP Central and CSP South. CSPs are required to ensure that coverage data is accurate and up-to-date, therefore there will be no independent validation of postcode / address data. This is relevant to Requirement 1 and Requirement 2.

Should independent validation of postcode and address data be required (i.e. reconciliation of addresses in each CSP Region vs those reported in the CSP coverage data, there will be an additional charge, as set out in section 7.

Coverage data provided by CSP Central and CSP South is provided at the address level whereas CSP North data is provided at the postcode level. Changes for CSP North to provide data at the address level are out of scope.

Requirement 4 - DCC is not able to implement changes to the WAN coverage checker as this is a service that is provided by the CSPs and would likely require a change to implement.

Requirement 5 – There is no contractual requirement for CSPs to inform DCC of work planned or in-progress. Without a contractual change the reporting would only be on an informal basis.

Requirement 6 – There is no contractual requirement for CSPs to inform DCC of planned outages. Without a contractual change the reporting would only be on an informal basis

DS&A have reviewed the requirements and concluded they can be met in full and delivered using existing data available and subsequently working within the constraints of the current solution should involve no commercial change to the DCC Solution.

If data sources are identified in the future that may help customers in managing performance, DCC will seek to introduce this source and adapt the reporting solution to accommodate, DCC reserves the right to cover any costs in the obtaining, productionising and presenting this information.

The DCC DS&A team will make reasonable endeavours to configure the reporting / templates in a way that accommodates future changes – the introduction of the next generation of Comms Hubs is an example of this. As this isn't a live service yet it will not be possible to test this logic completely.

4.3.1   Delivery Mechanism

Across all reporting requirements stated within this Modification, DCC will publish all relevant files at the stated frequency to DCC's secure SharePoint repository. The files will be Excel Spreadsheets of type xlsx unless the volume of data within the report renders this format inappropriate. The alternative to Excel spreadsheets would be csv files compressed and incorporated into compressed zips.

For Requirement 1 & 2, a single report will be produced and shared via the "Information for SEC Parties" location on SharePoint.

For Requirement 3, reports will be created at an individual Service User level and shared via their individual Service User area in SharePoint

Where possible and upon request, other file formats may be accommodated where a Service User has a different and specific preference.

4.4   Working Methodology

During the requirement gathering and refinement, principally as part of the SECMP0223 process which has driven this Modification requirement, the DCC and SECAS hosted workshops with the Working Group. These workshops aimed to validate the proposals in the Operational Metrics Review (OMR) in terms of the viability of implementing the recommendations, to refine the requirements further, and to enable fast delivery of new requirements and improvements.

It is proposed that the reporting will be delivered by the DCC DS&A team via an iterative delivery mechanism, whereby a Minimum Viable Product (MVP) will be available in a first prototype release in the Implementation phase and following consultation with the Working Group, further functionality can be delivered in a fast and frequent continuous delivery mechanism until the final product is complete.

4.5   Data Delivery, Testing, and User Acceptance

The development and testing will not follow the PIT, SIT, and UIT pattern associated with a "conventional" SEC Release, and will not require the testing services of the System Integrator or CSPs.

5 Impact on Systems, Processes and People

As defined the change included in this document is confined to data already within the DCC, with no expected changes impacting SMETS1 or SMETS2 Service Providers.

5.1 Infrastructure Impact

No impact to existing infrastructure.

It should be noted that the solution as proposed should not add noticeable traffic or processing to the Smart Metering System or network.

5.2 Security Impact

The solution will need to ensure that only data related to the relevant SEC Party is made available, and will be security assured during the implementation phase through standard DS&A reviews, however no impact from such assessments is anticipated.

5.3 Data Science & Analytics Team and Wider DCC Operations

The full range of activities required to implement these requirements including design, development, testing, and implementation would be performed by DCC DS&A utilising in-house contractors and permanent staff.

6 Implementation Timescales and Approach

A key factor in planning and delivering this Modification's implementation and release is that the changes are neither part of the Smart Metering System, nor do they impact any Technical Specifications, such that they can be implemented separate from the now-standard SEC Release dates.

This work should be completed within six (6) months of approval.

6.1 Testing and Acceptance

It is assumed that the change will be implemented and tested as a separate release, and will include testing iteratively during development. The development and testing will not require the testing services of the System Integrator or the CSPs.

It is likely that selected Service Users would be engaged in the design, development, and test phases for this Modification. A full analysis of the testing methodology will be defined as part of the Full Impact Assessment.

7 Costs and Charges

The table below details the cost of delivering the changes and Services required to implement this Modification Proposal. The Rough Order of Magnitude cost (ROM) shown below describes indicative costs to implement the business requirements.

7.1 Design, Build, and Testing Cost Impact

The table below details the cost of delivering the changes and Services required to implement this Modification. The scope of supply under this PIA includes design, development (build), testing within a selected TOC environment.

£	Design, Build and Test
Implement reports and new Remedy template	£40,000 with a tolerance of +/- 20%
Optional Postcode Data to facilitate independent validation of addresses / postcodes contained in CSP WAN coverage data	£5,000 with a tolerance of +/- 20%

Based on the existing requirements, the fixed price cost for a Full impact Assessment is £2,000 and would be expected to be completed in 30 days.

Appendix A: Glossary

The table below provides definitions of the terms used in this document.

Acronym	Definition
BAU, BaU	Business As Usual
CPL	Central Products List
CSP	Communication Service Provider
CSV	Comma Separated Variable
DCC	Data Communications Company
DNO	Distribution Network Operator
DSP	Data Service Provider
DUIS	DCC User Interface Specification
ESME	Electricity Smart Metering Equipment
FIA	Full Impact Assessment
FTE	Full Time Employees
GBCS	Great Britain Companion Specification
GSME	Gas Smart Metering Equipment
I&C	Installation and Configuration
IHD	In Home Display
KPI	Key Performance Indicators
MVP	Minimum Viable Product
OMR	Operational Metrics Review
PIA	Preliminary Impact Assessment
PIT	Pre-Integration Testing
PMR	Performance Measurement Report
PPMID	Payment Meter Interface Device
ROM	Rough Order of Magnitude (cost)
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SIT	Systems Integration Testing
SLA	Service Level Agreement
SMETS	Smart Metering Equipment Technical Specification
SMS	Smart Metering System
SRV	Service Request Variant
SVP	Speed, Volume, Payload
S1SP	SMETS1 Service Provider
TOC	Technical Operations Centre
UIT	User Integration Testing