

SEC Modification Proposal, SECMP241, DCC CR5173

Interoperability Checker Update Full Impact Assessment (FIA)

Version:	2.0
Date:	12th August 2024
Author:	DCC
Classification:	DCC Public

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1 Executive Summary

The Change Board are asked to approve the following:

- Total cost to implement SECMP241 of £86,901, which includes Design, Build, Pre-Integration Testing (PIT), Systems Integration Testing (SIT) and deployment costs
- A timescale of six (6) months to implement

Problem Statement

Citizens Advice, as the statutory consumer champion, has a remit to provide independent information and advice to consumers. Citizens Advice offers information on smart meters, including a tool to check whether a SMETS1 Meter is operating in Smart Mode and DCC is mandated by the SEC to provide the data (the Interoperability Checker Service) that is displayed on the Citizens Advice website.

Currently, the Interoperability Checker's results may not reflect a consumer's actual experience with their Smart Meter. The indication of whether a consumer's SMETS1 Meter is operating in Smart Mode is generalised and can lead to confusion for the consumer, since it may be inconsistent with their experience.

The lack of a source of personalised information from an independent source for consumers waiting for a Smart Meter installation also leads to frustration. There is a need to improve this user experience by providing additional information on the likelihood of having a Smart Meter installed.

Benefit Summary

By enabling Citizens Advice to provide personalised results, derived from up-to-date data held by DCC, consumers will benefit from unambiguous and reliable information on whether their SMETS1 Meter is operating in Smart Mode.

By providing independent advice on the likelihood that a SMETS2 Meter can be installed, based on DCC data, Citizens Advice will enable consumers to make more informed choices about Smart Meters.

In both cases, Citizens Advice's own advisers will be better able to support consumers who contact them seeking help and advice with issues relating to energy and smart meters.

2 Document History

2.1 Revision History

Revision Date	Revision	Summary of Changes
06/06/2025	1.0	Issued to SECAS
12/08/2024	2.0	As directed by SECAS, removed requirement 4

2.2 Associated Documents

This document is associated with the following documents:

Ref	Title and Originator's Reference	Source	Issue Date
1	Annex A - MP241 Business Requirements v0.2	SECAS	28/06/2023
2	DP241 Modification Report v0.4	SECAS	13/01/2024
3	SECMP241 - PIA - Interoperability Checker Update V1.0	DCC	13/10/2023

References are shown in this format, [1].

2.3 Document Information

The Proposer for this Modification is Robin Seaby from DCC.

The initial Preliminary Impact Assessment was requested of DCC on 23rd February 2024.

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

Currently, the Interoperability Checker's results may not reflect a consumer's actual experience with their Smart Meter. This inconsistency has resulted in misunderstanding among some consumers.

The Interoperability Checker Service has issues with providing accurate information to consumers about their Smart Meter's capabilities and the likelihood of having one installed. The current generalised results are based on Device Model rather than personalised information. This has contributed to misperception and inconsistency in results which can be frustrating for consumers.

The lack of a source of personalised information for consumers waiting for a Smart Meter installation also leads to queries being raised to the DCC. There is a need to improve the Interoperability Checker's user experience and provide additional information on the likelihood of having a Smart Meter installed.

3.2 Business Context and Requirements

The Interoperability Checker Service is a tool available on the Citizens Advice website that advises consumers on whether their Smart Meter is operating in Smart Mode. The tool also informs consumers about which Suppliers they could switch to whilst retaining or regaining Smart functionality on their Smart Metering System (SMS). The data used to populate the Interoperability Checker is based on the Responsible Supplier's indication of which Smart Metering Equipment Technical Specification (SMETS) Device Models it is capable of operating. The Interoperability Checker Service was designed to assist SMETS1 consumers to identify whether their meters would lose functionality if they moved Supplier, as well as helping them to see whether the smart functionality was currently being used.

The Smart Energy Code (SEC) Section H16 'Provision of Data by Suppliers to the DCC' requires the DCC to collaborate with Citizens Advice to provide the tool.

3.3 Business Requirements

Requirement 1: Provide consumers with specific data to indicate whether their smart meter is capable of operating in Smart Mode.

This requirement is to ensure transparency and avoid any confusion. This information would help customers understand the capabilities of their smart meter. Providing clear and concise information would also help customers make informed decisions on whether to upgrade their meter if necessary.

Requirement 2: Provide consumers with specific data to indicate whether their smart meter is currently operating in Smart Mode.

This information would ensure that customers are aware of the current functionality of their meter.

Requirement 3: Provide consumers with specific data as to whether, if they switched Supplier, their meter would continue to operate in Smart Mode.

This information would give customers the confidence to switch providers without worrying about their smart meter capabilities changing.

Note that a Requirement 4 was previously supplied, but has been deemed out of scope.

4 Description of Solution

Following analysis of the Requirements above, the DCC proposes the following Solution:

- Coverage data-marts with associated reporting
- Smart mode data-marts with associated reporting
- Supplier operable device model data-marts with associated reporting
- Smart meter take-up data-marts with associated reporting
- Additional DCC API endpoints for smart mode, smart meter take-up and WAN coverage
- Citizens Advice back-end system integration with new DCC API endpoints
- Citizens Advice website development

4.1 DCC Data Science and Analytics (DS&A) Solution

Utilising the coverage datasets provided by the CSPs and Smart Metering Inventory data provided by the DSP, the DS&A team will create and maintain 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, 2, and 3.

The data from this data model will be used to create three separate reports in csv format that will be consumed by the Interoperability Checker Service ETL applications and loaded to the database.

Report 1 - Requirements 1 & 3

For Requirements 1 & 3, a new report will be created that will be produced each week. The new report will indicate, for each Domestic Energy Supplier, which SMETS1 Device Models it is operating in Smart Mode. To determine this information, DCC will apply the following criteria:

- The Supplier has sent at least one Service Request from a configurable list of SRVs (initially 4.6.1, 4.8.1, 4.8.2 or any variant of Service Reference 4.1 or 4.4) that targets a Device of that Device Model and that was successfully processed.

Report 2 - Requirement 2

For Requirement 2, a new report will be created that will be produced each day. The new report will indicate, for each Enrolled SMETS1 Smart Metering System, whether the Responsible Supplier is operating that Smart Metering System in Smart Mode. To determine this information, DCC will apply the following criteria:

- The Supplier has sent at least one Service Request within a configurable period (initially 60 days) from a configurable list of SRVs (initially 4.6.1, 4.8.1, 4.8.2 or any variant of Service Reference 4.1 or 4.4) that targets the Device and that was successfully processed.

4.2 Critical Software Solution

The Modification adds three new requirements to the DCC Interoperability Checker solution. The following is a description of the technical changes required for the Interoperability Checker.

4.2.1 Changes for the new API endpoint /smart mode

The data from both SMETS1 and SMETS2 smart meters will be stored in a daily 'Report 2' CSV file delivered by DCC DS&A to an S3 bucket. Each file represents a complete update and replaces the previous data.

The new /smartmode endpoint provides a straightforward response, either 'yes' or 'no', to indicate whether a specific meter (identified by its MPXN and postcode) is currently operating in smart mode as determined by the energy supplier. Over time, the criteria for what constitutes smart mode can be adjusted, leveraging the source data from the Data Communications Company (DCC) reporting platform, which we have control over.

List of activities to implement the new smart mode functionality:

- A loader for the new "smart mode support list" CSV file will be created.
- A new table will be added to the data model.
- A new endpoint for smart mode will be created.
- New data access logic will be required for this data along with the service implementation.
- New tests will be created for the smart mode functionality, including the production of the associated data sets.

4.2.2 Changes to current file processing

Suppliers will no longer be required to provide Interoperability Data (indicating 'Yes' or 'No' for each Device Model) in the current files. However, they will still need to furnish exceptions and brand names. Instead, the 'Yes' or 'No' status for SMETS1 Device Models will now be sourced directly from DCC.

As a result, the SDID file format (used by Suppliers to provide Interoperability Data) will no longer include the "OPERATE" field. Instead, DCC will derive this information from the Service Audit Trails.

A weekly full update 'Report 1' will be delivered by DCC DS&A to an S3 bucket, containing operate data. The format will resemble the SDID file format, with the Exceptions field replaced by the Operate field.

4.2.3 Changes to current /consumer and /supplier API endpoints

The response for the /consumer endpoint includes a 'supplier' element, which contains a 'SMETS1' element.

This 'SMETS1' element represents an array of manufacturers and provides details about the types of SMETS1 meters that the supplier can operate. Following the implementation of this change to the Interoperability Checker, this array will be populated with data derived from the logs of actual smart meter communications across DCC network.

Despite this update, the format will remain unchanged. Additionally, the introduction of a new endpoint may lead Citizens Advice to no longer rely on the data returned from this endpoint for determining whether a meter is operating in smart mode.

Similarly, for the /supplier endpoint, the source data used to populate the response entries will change but the format of the response and its underlying meaning will remain consistent.

List of activities to update the current functionality:

- Update SDID file processing, remove the exceptions, read from the file.
- A loader for the new "Exceptions" CSV file will be created but the data model is expected to remain intact.
- Tests need to be created/updated to cover this functionality change, including the production of the associated data sets.

4.3 Citizens Advice Solution

Requirements 1 & 3

In response to a consumer query, the Citizens Advice smart meter checker website currently displays a list of Energy Suppliers who support SMETS1 Meters of the same Device Model as the consumer's Meter, provided by the DCC Interoperability Checker Service API.

DCC's solution to fulfil Requirements 1 & 3 changes how this data is populated in the DCC system, however there is no change to the interface with Citizens Advice.

Requirement 2

Currently, in response to a consumer query, the Citizens Advice smart meter checker website checks whether that consumer's SMETS1 Meter is of a Device Model that is listed as being supported by the Responsible Supplier, as provided by the DCC Interoperability Checker Service API.

To fulfil Requirement 2, the Citizens Advice smart meter checker website will call an additional endpoint to the DCC Interoperability Checker Service API to establish whether the consumer's Meter is operating in Smart Mode, as indicated by Report 2. The result will be presented to the consumer, which will replace the current output derived from the list of supported Device Models.

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

There is no impact on the security architecture for the Interoperability Checker Service - existing security controls will be applicable to the new API endpoints.

DCC has reviewed the Data Privacy Impact Assessment (DPIA) prepared for the Interoperability Checker Service to assess what changes may be required as a result of the updates to the service proposed by this Modification.

In response to Requirements 1, 2, and 3, DCC will introduce new source data to the Interoperability Checker Service, originating from the Service Audit Trails, but the interaction between consumers and the service is unchanged, as is the nature and processing of the personal data involved. As a result, DCC will make minor updates to the DPIA to reflect the change of data source prior to deployment.

5.3 DCC Functions and Capabilities

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

DCC Enterprise IT will support deployment of the updates to the DCC Interoperability Checker SIT and Production environments.

DCC Enterprise Testing will execute tests in the DCC Interoperability Checker SIT environment to validate the deployment.

DCC Service Centre procedures and knowledge articles will be updated to reflect the extended scope of the service provided to Citizens Advice.

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 ten (10) months of approval. This delivery timeline is anticipated as within six (6) months.

6.1 Testing and 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, DSP or CSPs.

Unit testing will be carried out during the build phase and all changes will be continuously built and tested throughout the development work.

After these changes are developed, the application will be tested at system level. For this, Critical will need to make changes to the system test campaign that run in PIT, namely:

- Refactoring existing system tests in line with the split of the SDID file in two due to the removal of exceptions. Existing data sets will need to be reworked too.
- Create new tests for "smart mode support" and "location data", including the production of the associated data sets.
- Execution of PIT tests.
- Resolve defects.
- Extract results for the test report.
- Preparation and Meetings with the DCC Test Assurance.

Following PIT completion, the application code will be deployed to the DCC Interoperability Checker SIT environment, where DCC will carry out further testing to validate the DCC solution end-to-end.

This is a non-breaking change (i.e. with no changes to existing API endpoints) and DCC will deploy the new API endpoints to the DCC Production environment following SIT completion.

Citizens Advice will carry out User Acceptance Testing against the new API endpoints in the DCC Interoperability Checker SIT environment prior to deploying its own website changes to its Production environment.

Consumer focus groups will be used during the development of website content to ensure clarity and ease of understanding of the information presented.

7 Costs and Charges

This section indicates the quote for all phases of development and testing for this Modification. Note that, in contrast to SEC Modifications that impact smart metering motorway components, changes to the Interoperability Checker Service do not need to be tested and released as part of an overarching “Release CR”, therefore the costs presented in this FIA include all development, testing and deployment activities required for a standalone release to the Production environment.

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 FIA includes design, development (build), testing within the Critical Software PIT environment, validation by DCC and Citizens Advice against the DCC Interoperability Checker SIT environment and deployment to Production.

Work package	£
Design, Build, Test & Deploy Interoperability Checker Update Requirements 1, 2 and 3	£86,862

Design	The production of detailed System and Service designs to deliver all new requirements.
Build	The development of the designed Systems and Services to create a solution (e.g. code, systems, or products) that can be tested and implemented.
Pre-Integration Testing (PIT)	Each Service Provider tests their own solution to agreed standards in isolation of other Service Providers. This is assured by DCC.
Systems Integration Testing (SIT)	All the Service Provider's PIT-complete solutions for a Release are brought together and tested as an integrated solution, ensuring all SP solutions align and operate as an end-to-end solution.
Implementation to Live (TTO)	The solution is implemented into production environments and made ready for use by Users as part of a live service.

8 RAID

No Risks, Assumptions, Issues, or Dependencies identified at this time.

Appendix A: Glossary

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

Acronym	Definition
API	Automated Programming Interface
BAU, BaU	Business As Usual
CPL	Central Products List
CR	Change Request
CSP	Communication Service Provider
CSV	Comma Separated Variable
DCC	Data Communications Company
DNO	Distribution Network Operator
DPIA	Data Privacy Impact Assessment
DSP	Data Service Provider
DS&A	Data Services and Analytics
DUIS	DCC User Interface Specification
ESME	Electricity Smart Metering Equipment
ETL	Extract, Transform and Load
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
PIA	Preliminary Impact Assessment
PIT	Pre-Integration Testing
RAID	Risks, Assumptions, Issues, and Dependencies
ROM	Rough Order of Magnitude (cost)
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SIT	Systems Integration Testing
SMETS	Smart Metering Equipment Technical Specification
SMS	Smart Metering System
SRV	Service Reference Variant
SMWAN	Smart Meter Wide Area Network
UIT	User Integration Testing
WAN	Wide Area Network