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DP179 'DCC Boxed'

Modification Report

Version 0.2

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Corporate member of
Plain English Campaign
Committed to clearer
communication

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About this document

This document is a draft 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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1. Summary

This proposal has been raised by Tom Rothery from the Data Communications Company (DCC).

Currently, a User wishing to test its systems or Devices against the DCC Systems must do so through remote or in-situ testing as set out in Smart Energy Code (SEC) Section H 'Testing Services' and SEC Appendix J 'Enduring Testing Approach Document' (ETAD). These include a range of associated User-entry and connectivity steps which take time and incur cost.

The DCC has developed an end-to-end testing tool, known as 'DCC Boxed', which replicates the end-to-end DCC system, as an expansion from the existing Great Britain Companion Specification (GBCS) for Industry (GFI) toolset. DCC Boxed was developed to meet the need to enhance the existing GFI tool to provide a holistic testing environment beyond the Home Area Network (HAN).

The DCC has undertaken a cost benefit analysis of making the tool available through an Explicit Charge, which has the potential to recover the development costs and potentially, over time, provide a means for the DCC to reduce its fixed costs to its customers.

The purpose of this modification is to add the necessary wording to the SEC to allow the DCC Boxed product to be provided through an Explicit Charge to those Parties that wish to purchase it.

2. Issue

What are the current arrangements?

Currently, a User wishing to test its systems or Devices against the DCC Systems must do so through remote or in-situ testing as set out in SEC Section H 'Testing Services' and SEC Appendix J 'Enduring Testing Approach Document', with a range of associated User-entry and connectivity steps which take time and incur cost.

DCC Boxed is an end-to-end testing tool developed by the DCC which replicates the end-to-end DCC system. Whilst DCC Boxed can be utilised for internal testing and could be used to support programme testing, several parties (including Suppliers, Device Manufactures, and other SEC and non-SEC Parties) have requested DCC Boxed be made available as a testing product. The DCC has engaged with stakeholders through industry forums and a survey on the requirements and the regulatory and funding options.

What is the issue?

The DCC currently offer several testing products to its customers, which are set out in SEC Section H and Appendix J. There are currently no explicit provisions within the SEC for the DCC to provide DCC Boxed as a testing product to its customers. Similarly, there is currently no Explicit Charge in SEC Section K 'Charging Methodology' that is specific to the charging for DCC Boxed.

As a result of the costs involved, and due to the nature of the DCC's release schedule, it is often the case that there is limited time available in the regulated User Integration Testing (UIT) environment for the development of new products and services.

The Proposer believes that making DCC Boxed available for early testing will increase the quality of any new products and services because they will have been more rigorously tested over a longer timeframe. The Proposer believes a SEC modification is the correct route to deliver this product as it doesn't meet the scope of existing Elective Communication Services, and to be implemented as a 'value-added service' a product must sit outside of the energy sector¹.

What is the impact this is having?

The DCC has conducted a survey to understand the appetite for DCC Boxed to be made available as a testing product, and received interest from several parties including Suppliers, Device Manufacturers, and other SEC and non-SEC Parties. A summary of these survey responses is available on [the DCC's website](#).

The DCC's survey results provided several examples of issues with time and cost-effectiveness for testing, defect resolution and Device proving under the approaches currently available. These include:

- For organisations without access to test environments provided under the SEC, early development of HAN Connected Auxiliary Load Control Switches (HCALCS) or Standalone Auxiliary Proportional Controllers (SAPCs) is currently unavailable.
- Testing participants without access to Remote Testing Labs (RTLs) are unable to undertake testing outside of scheduled testing hours at DCC test labs.
- For Device manufacturers, Device proving with smaller Supplier Parties is difficult when relying only on GFI and RTLs available under the SEC.

Without more accessible and robust testing of new products and Devices in a realistic simulation of a live environment, design issues will continue to go unidentified prior to implementation, resulting in lower performance and higher costs to resolve across all industry Parties.

It is also the DCC's view that doing nothing would inhibit its ability to comply at all times with the DCC Licence Conditions, primarily its first General Objective, which is outlined in the Smart Meter Communication Licence. This requires that the DCC carries on the Mandatory Business in the manner that is most likely to ensure the development, operation, and maintenance of an efficient, economical, co-ordinated, and secure system for the provision of Mandatory Business Services under the SEC². This also relates to SEC Objective (a)³. This is because the use of DCC Boxed as a saleable tool for SEC Parties and Testing Participants should enable the DCC to reduce its overall fixed cost charges to SEC Parties.

Impact on consumers

Limitations in access to an end-to-end testing environment for some Users can lead to new products going live without a full understanding of how they will interact in a live environment. Many issues that arise once a product is live will negatively impact consumer experience, as they may result in reduced Device operability, increased Round Trip Times (RTTs) of System messages relating to key customer business processes, and increased cost of service if Device repair or replacement is required.

¹ Value Added Services are defined in the DCC's Licence as services that 'are not related solely to the Supply of Energy (or its use) under the Principal Energy Legislation'

² [Smart Meter Communication Licence Condition 5.9](#)

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

3. Assessment of the proposal

Observations on the issue

Views of the Change Sub-Committee

The Smart Energy Code Administrator and Secretariat (SECAS) presented a summary of this modification to the Change Sub-Committee (CSC) on 31 August 2021 for initial comment. A CSC member noted the importance of understanding the cost/benefit case, and it was agreed that further development was required to define and understand the issue. When this modification was initially raised, the issue was defined by the need for the improvement of available testing services; however it has since been redefined as the need to provide a commercial vehicle for the delivery of an existing testing and development tool.

Views of the SMKI PMA

A Smart Metering Key Infrastructure (SMKI) Policy Management Authority (PMA) member questioned whether the testing tool has an interface with the SMKI, and if so, how this is configured internally. The SMKI PMA considered that investigation would be required to determine if the DCC Boxed tool could be used to 'reverse engineer' sensitive data concerning SMKI configuration. The Proposer has since confirmed that DCC Boxed offers no more insight than the SMKI documentation already in the public domain and that no sensitive material is shared between DCC Boxed and the SMKI. The DCC has been asked to provide further clarifications which will be provided as part of the Refinement Process.

Views of the SSC

SECAS noted to the Security Sub-Committee (SSC) that no sensitive material is shared between DCC Boxed and DCC Systems or any of the interfaces which are emulated by tool.

The SSC queried why this is not being provided as an elective service. SECAS advised that DCC Boxed doesn't meet the scope of existing Elective Communication Services, so a SEC modification would still be required to deliver via this route.

The SSC queried how the tool would be security assured. SECAS advised that an independent security assessment had already been completed and no substantive issues were found. SECAS has requested that the DCC provide the full results of the security assessment during the Refinement Process.

The SSC requested the following information:

- whether the emulator Universal Serial Bus (USB) sticks would be encrypted and how;
- what protections are in place on the mini-PC to prevent other USBs being used to interrogate Devices;
- whether DCC Boxed connects to the internet or uses a separate operating system; and
- what controls are built in for protection in the event of physical theft of the mini-PC.

The DCC believes these will be addressed by provision of the independent security assessment results, and this will be discussed as part of the Refinement Process.

The SSC confirmed it supported the modification, subject to the understanding that all the security concerns would be addressed during the Refinement Process.

Views of the TAG

The Testing Advisory Group (TAG) considered that the issue had not been clearly defined, as it had not been made clear exactly what uses the tool is intended to have. Following a discussion with the Proposer and the TAG chair, the Modification Report summary has been amended to address this.

The TAG requested the following information:

- whether emulators would have to be updated ahead of Communication Service Provider (CSP) and Data Service Provider (DSP) uplifts, and how this would be aligned with governance;
- what limitations there are on DCC Boxed uses due to its configuration;
- whether the projected cost of DCC Boxed covers all uplifts or only once annually; and
- what steps are in place to triage any issues encountered by DCC Boxed users.

The answers to all these questions and any others that arise will be addressed during the Refinement Process.

Views of the TABASC

The Technical Architecture and Business Architecture Sub-Committee (TABASC) had similar concerns to the TAG regarding the issue not being clearly defined.

The TABASC requested the following information:

- how many years' use the intended Explicit Charge covers when the tool is bought;
- how the tool is intended to increase the uptake of smart metering systems by Suppliers;
- whether the tool would provide access to early versions of firmware; and
- whether more detail could be provided around uplifting of functionality and availability of Communications Hubs.

The answers to all these questions and any others that arise will be addressed during the Refinement Process. The TABASC also requested SECAS provide all feedback from this discussion to the Working Group.

The TABASC confirmed its support, subject to the understanding that a full technical assurance assessment would be carried out as part of the Refinement Process.

Appendix 1: Progression timetable

This Draft Proposal has been discussed with all relevant Sub-Committees to capture initial views on the problem statement. The updated Modification Report will be presented to the CSC on 26 October 2021 for approval to convert the Draft Proposal to a Modification Proposal.

Timetable	
Event/Action	Date
Draft Proposal raised	23 Aug 2021
Presented to CSC for initial comment	31 Aug 2021
Modification discussed with Sub-Committees	Sep 2021 – Oct 2021
CSC converts Draft Proposal to Modification Proposal	26 Oct 2021
Discussion with Working Group	3 Nov 2021
Refinement Consultation	8 – 26 Nov 2021
Discussion with Working Group	1 Dec 2021
Modification Report approved by CSC	22 Dec 2021
Modification Report Consultation	27 Dec 2021 – 14 Jan 2022
Change Board Vote	26 Jan 2022
Authority Decision (anticipated date)	9 Feb 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
CSC	Change Sub-Committee
CSP	Communication Service Provider
DCC	Data Communications Company
DSP	Data Service Provider
ETAD	Enduring Testing Approach Document
GBCS	Great Britain Companion Specification
GFI	GBCS for Industry
HAN	Home Area Network
HICALCS	HAN Connected Auxiliary Load Control Switch
RTL	Remote Testing Lab
RTT	Round Trip Time
SAPC	Standalone Auxiliary Proportional Controller
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat

Glossary	
Acronym	Full term
SMKI PMA	Smart Metering Key Infrastructure Policy Management Authority
SSC	Security Sub-Committee
TABASC	Technical Architecture and Business Architecture Sub-Committee
TAG	Testing Advisory Group
UIT	User Integration Testing
USB	Universal Serial Bus