

# Consultation

## SMETS1 MOC SIT: Proposed DMC Selection and Rationale

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## 1 Introduction

On 3 May 2018, DCC issued the initial Request For Information (RFI) to Suppliers and Smart Meter Systems Operators (SMSOs) regarding the SMETS1 Device Model Combinations (DMCs) that currently form their installation base. This information included:

- Each Device Type – Manufacturer & Model Name, Hardware (H/W) version and revision; Firmware (F/W) version, and provider factory installed configuration.
- Additional information requested for the Communications Hub: Smart Metering Systems Operator ID (SMSO ID) and WAN Provider.

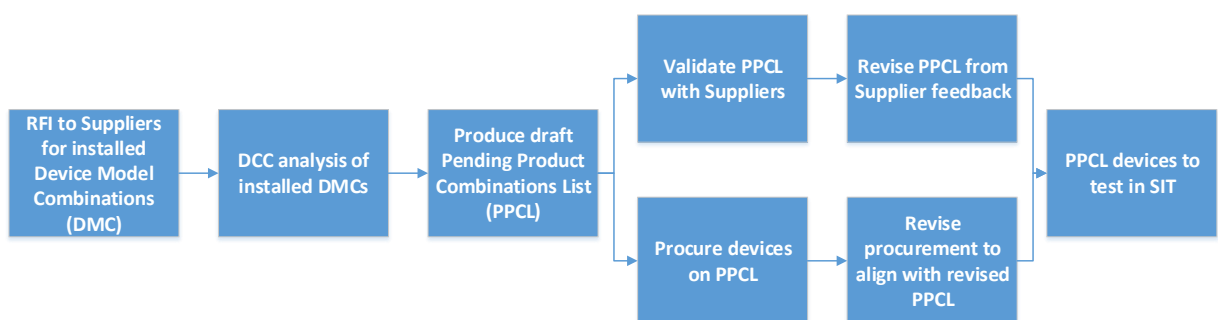
The deadline for responses was 20 May 2018.

After initially sending RFIs every quarter we will now be issuing them every two months in order to continuously update the device plans before the start of System Integration Testing (SIT) for each operating capability, as well as Device Model Combinations Testing (DMCT) plans throughout the course of the programme. DCC's proposals for DMCT will be consulted on shortly. Suppliers' fleets of installed meters are constantly evolving, and it is important that we adapt our planning to the most up to date information to ensure effective testing of devices against the DCC SMETS1 solution.

Clause 13 of Appendix AK of the Smart Energy Code (SMETS1 SVTAD) requires DCC to discuss with stakeholders the selection of Device Model Combinations for use in testing to support each SMETS1 Operating Capability release as well as the associated rationale. The selection of devices should meet the objective of facilitating, as soon as reasonably practicable, the enrolment of all SMETS1 Smart Metering Systems that are in scope.

This consultation is seeking views on DCC's Device selection rationale for MOC SIT and Migration Testing, which is explained in further detail below.

## 2 Background and Selection Process



**Figure 1 – DMC Selection Process**

There are several hundred SMETS1 DMCs in use today. These range from DMCs where there are hundreds of thousands in use, to DMCs where there are below ten.

The regular RFIs, which cover all Operating Capabilities and DMCs, provide a snapshot of the Smart Metering Systems Suppliers intend to enrol when DCC's SMETS1 Service(s) in respect of those Smart Metering Systems becomes available. In making our selection of DMCs which will be tested in MOC SIT, we have used the data provided by Suppliers as well as data from the SMSOs and have targeted what will be the dominant DMCs at the time of enrolment whilst balancing this against the amount of testing that this will require in SIT. This has, in our opinion, enabled us to select the optimum DMCs for SIT based on the planned upgrade paths.

We consider that the most efficient way to enrol eligible SMETS1 Smart Metering Systems is to limit DMCs in SIT and test additional Device Model Combinations (DMC) in Device Model Combination Testing (DMCT) following SIT Completion; this will enable a faster enrolment process overall for Suppliers and their SMETS1 Devices. Our rationale is detailed in section 2.1 below.

## 2.1 Selection Rationale and Proposal

As part of the MOC SIT/Migration Testing DMC Selection process, several assumptions were inherited from the selection process used for the SMETS1 Initial Operating Capability (IOC). These have been refined based on lessons learnt from IOC and are set out below:

- Although single fuel DMCs were listed in the Supplier returned information, when selecting device combinations for SIT, these were not included where a Dual Fuel DMC with the same CHF & ESME FW/GSME, CHF and GPF F/W, that was selected already exists: We are currently in the process of assessing whether single fuel sets with equivalent F/W could become eligible for enrolment based on dual fuel test evidence without the need for separate additional testing.
- Only major iterations of firmware are considered for SIT. Testing of an additional combination may not be required if there is no material difference that will affect DCC interoperability in
  - Firmware
  - Hardware
  - Configuration

The test requirements for these 'other DMCs' will be assessed as part of the DMCT process.

- If a consumer device is capable of having its firmware upgraded, it will be referred to and tested as a SMETS1 PPMID<sup>1</sup> as this has greater functionality than enrolling the Device as an IHD. A SMETS1 PPMID is capable of a firmware upgrade after enrolment while an IHD is not.

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<sup>1</sup> For the purposes of Enrolment & Adoption, a SMETS1 PPMID is an IHD that is capable of a firmware upgrade. It does not have to meet the same requirements as a SMETS2 PPMID

## 2.2 RFIs to Suppliers and SMSOs for Installed Device Model Combinations (DMCs)

Within MOC there are two SMSOs. Secure Meters SMSO manages the Secure Meters population and Morrison Data Services SMSO manage a population of Smart Metering Systems comprising Elster Honeywell Devices.

### 2.2.1 DCC Analysis of installed DMCs

DCC analysed Supplier submissions to ascertain unique DMCs, applying the following assumptions:

- a. All meters managed by Secure Meters SMSO and Morrison Data Services SMSO are potentially eligible for enrolment
- b. Some devices differed in Hardware version, but not in Firmware version. The meter manufacturers confirmed to us that there are no material differences in the H/W that would affect functionality. Some variants feature differences in mechanical parts that cannot affect communications behaviour, or changes that do not affect the communication of messages between the SMSO/S1SP and SMETS1 Device. A specific hardware variant will be selected for SIT and further variants assessed during the DMCT Process and tested if necessary.

### Secure Meters SMSO

To successfully integrate Secure Meters with the Dual Control Organisation (DCO), which is part of the DCC SMETS1 security controls, a firmware change is required. The Communications Hub and meters will be upgraded to a single firmware set before Enrolment & Adoption. It is, therefore, essential that SIT is conducted on meters with the proposed firmware upgrade. Data from Secure Meters SMSO indicates that this upgrade programme will put >95% of the Secure installed base on a unified firmware version. The meter manufacturer has confirmed that this new firmware release will be available for the start of MOC SIT.

The remaining 5% of the Secure Meters population comprise different device models of the ESME and will not have DCO compatible firmware available for MOC go-live. These DMCs can be added to the EPCL via the DMCT process when suitable firmware becomes available.

**Table 1 - Proposed core Secure Device Model for enrolment**

Item	
<b>Fuel Type</b>	<b>DF</b>
<b>GSME Model</b>	EG4v10, EG4v11 or, EG4v15
<b>GSME F/W</b>	Q4X2G0E
<b>ESME Model</b>	Liberty 100
<b>ESME F/W</b>	P4X9G01
<b>CH Model</b>	Skyline i-510
<b>CH F/W</b>	HUB3F0X
<b>% Installed Base</b>	95%

We confirmed that 95% of the Secure Smart Metering Systems in operation were based around the same core device models which may be upgraded to the DCO compatible version, providing a high degree of coverage for the core devices. However, as per the selection methodology outlined above, this splits into many different DMCs where the key difference is minor hardware variants or a different SMETS1 PPMID.

Superficially, this does reduce the coverage figure for devices that will become eligible for enrolment due to the many possible combinations of hardware revision in the core DMCs. In fact, for the exact DMC selected for SIT the coverage figure sits at less than 1%. However, testing additional combinations of devices with different hardware revision through SIT would add little value as they have the same firmware and are functionally equivalent. Because of this when we decide which devices are substantively equivalent at the start of DMCT, this coverage figure will quickly climb as we may be able to add many of them without any additional testing. We estimate that up to 54% of the Secure Meters population could be added using test evidence from this single DMC.

As well as Secure Meter's own SMETS1 PPMID, which will be used in SIT, there are 3<sup>rd</sup> party SMETS1 PPMIDs deployed which will require a separate assessment in DMCT with the core Devices. However, as the core devices remain the same, and the testing requirement for SMETS1 PPMIDs is low, there is a high probability that these DMCs will pass testing without any issues and become eligible for enrolment. If the variations in hardware revision are judged to be substantively equivalent to a DMC that has already successfully passed SIT or DMCT these will be proposed to be added to the Eligible Product Combination List (EPCL) without the need for further extensive testing.

**DCC proposes that only one Secure Meters DMC will be tested in SIT**, as this will have the only firmware that will be in the field that the Suppliers have identified to be enrolled. This will speed enrolment overall: once the system is proven, additional DMCs can be added more quickly using the shorter device-focused DMCT process.

### **Morrison Data Services**

Morrison Data Services are the SMSO for a population of Elster Honeywell meters. Since IOC device selection, new solution releases for these devices have become available from Elster Honeywell which contain customer approved change requests and fixes for known issues. As these changes and fixes have been tested and assured by suppliers, there is a high degree of confidence that MOC testing with one of the solution releases will yield a positive outcome. The primary Supplier, in their role as a Meter Asset Provider (MAP), has indicated that they will be upgrading their SMETS1 Devices to a solution release designated 8.0.12g and DMC selection has been made based on what they plan to enrol rather than the current DMCs that are in the field.

**Table 2 Solution releases for Elster Honeywell meters**

<b>Solution Release</b>	<b>8.0.12g</b>
<b>ESME</b>	ASP 04.04.01-55497
<b>GSME</b>	10.94
<b>CH</b>	03.07.09 (49) - REV09

The solution release does not include a consumer device. As such the RFI data was analysed and the most common consumer device was selected. This shall be treated as a SMETS1 PPMID as it is capable of having its firmware upgraded. DMCs with other consumer devices can be added to the eligible list later through the DMCT process. The primary Supplier and SMSO have confirmed to us that there are two hardware revisions of CH and ESME in use, Rev07 and Rev09. While we have had confirmation from the manufacturer that these two versions are functionally equivalent, for the purposes of SIT the more numerous Rev09 version has been selected and an assessment as to the testing requirement for the Rev07 version will be made following SIT in the DMCT process.

**DCC proposes that only one Elster-Honeywell DMC will be tested in SIT**, as this will have the dominant firmware in the field that the Suppliers have identified will enrolled. This will speed enrolment overall: once the system is proven, additional DMCs with different SMETS1 PPMIDs or IHDs or minor hardware revisions can be added more quickly using the shorter device-focused DMCT process.



## 2.2.2 Draft Pending Product Combinations List (PPCL)

Table 3 - Draft PPCL

PPCL V1.0	Secure	Elster
Fuel Type	DF	DF
Solution Release	-	8.0.12g
GSME Model	Liberty EG4v11	BK-G4E EI2
GSME F/W	Q4X2G0E	10.94
GSME hardware version	0x12A	00
GSME hardware revision	N/A	00
ESME Model	Liberty 100 - 1 Auxiliary Relay (100mA)	AS 300P Electricity
ESME F/W	P4X9G01	ASP04.04.01-55497
ESME hardware version	0x131	01
ESME hardware revision	N/A	01
CH Model	Skyline i-510	AM110R
CH F/W	HUB3F0X	03.07.09 (49) - REV09
CH Hardware variant	0x02	10
PPMID Model	Pipit 500	SED V3
PPMID Firmware	IHDAE05	2.08.01
PPMID Manufacturer	Secure	Chameleon
%installed now	0%	11%
%installed at migration	<1% (Up to 54% with equivalent DMCs)	35%

Coverage figures were arrived at by examining the active and dormant population on the firmware both now and when all planned upgrades were complete. These figures also include single fuel and no PPMID versions of the same DMC which we expect to be able to be add to the EPCL, based on dual fuel evidence, pending any necessary migration testing. Whilst we acknowledge that the SIT coverage, based on the table above, appears to be less than optimal, this is due to the wide range of hardware variants, PPMIDs and their respective firmware versions that are deployed. In the case of Secure Meters, an estimate of the number of DMCs that will become available for migration, because they differ by non-functional affecting hardware has been included. This is based upon discussions with meter manufacturer and is based on their assurance that there is little if any functional difference between these variants that will affect DCC Interoperability.

Further DMCs with different PPMIDs (the balance of the 54%) which need further tests will quickly be added via the DMCT process.

For the Elster Honeywell cohort, the coverage figure assumes that 100% of the Rev 09 meters installed by the primary Supplier (Active and Dormant) are uplifted to solution release 8.0.12g.

### 3 Risk Management

Where a testing issue or defect is found affecting the DMC an assessment will be made as to the severity of the issue using the Testing Issue Resolution Process. This process will be used to identify a solution to the issue, be it documentation of the device specific behaviour in the SMETS1 Supporting Requirements or an S1SP workaround. Only in extreme cases, where it is not possible to workaround the problem will a fix in the meter firmware be needed. In the unlikely event that is needed the DMC will be de-selected and a new DMC with a fix to the problem identified will be chosen for SIT.

Testing one DMC through SIT does slightly increase the risk of finding defects relating to interoperability later in DMCT however the Secure Meters DMC is the only option that is available for test (discounting minor hardware revisions and PPMIDs, testing of which will add little value), and for the Elster Honeywell DMC the Supplier intention is to upgrade their meters to this DMC.

### 4 Consultation Question

DCC is seeking views on the following consultation question:

Do you agree with rationale used and therefore the DMCs selected for SMETS1 MOC SIT?

The closing date for responses to this consultation is 18 July 2019.

### 5 How to Respond

Please provide responses by 17:00 18 July 2019 to DCC at [consultations@smartdcc.co.uk](mailto:consultations@smartdcc.co.uk). If you have any questions about the consultation documents, please contact Daniel Leonard at [daniel.leonard@smartdcc.co.uk](mailto:daniel.leonard@smartdcc.co.uk).

Consultation responses may be published on our website [www.smartdcc.co.uk](http://www.smartdcc.co.uk). Please state whether all, or any part, of your consultation response is confidential. Please note that responses in their entirety (including any text marked confidential) may be made available to the Department of Business, Energy and Industrial Strategy (BEIS) and the Gas and Electricity Markets Authority (the Authority). Information provided to BEIS or the Authority, including personal information, may be subject to publication or disclosure in accordance with the access to information legislation (primarily the Freedom of Information Act 2000, the Data Protection Act 1998, and the Environmental Information Regulations 2004). If BEIS or the Authority receive a request for disclosure of the information they will take full account of your explanation (to the extent provided to them), but [we/they] cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded by us as a confidentiality request.