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DP247

‘Future Dating of Service Requests for SMETS1 Devices’

Modification Report

Version 0.2

14 November 2023



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 Rosie Davies from the Data Communications Company (DCC).

It is possible for the majority of Smart Metering Equipment Technical Specifications (SMETS) 1 Devices to receive Future Dated Service Requests and hold them at the Device to be executed at the specified time and date. However, there is also a clause within the Smart Energy Code (SEC) that states that Future Dated Requests for SMETS1 Devices are required to be held by the DCC and released accordingly to meet their specified date. This means that even if a DCC User sends a Service Request (SR) in advance of the execution date, these requests are held at the Data Service Provider (DSP) and released once the execution date and time of the request is due.

Whilst there is existing functionality within DCC systems to control the rate at which these requests are released, there is no obligation for Suppliers to send Future Dated Requests and Supplier behaviour seen by the DCC is to send the requests as on-demand requests.

The DCC has investigated Device capability with Manufacturers and advised that the majority of SMETS1 Devices currently have some capacity to support Future Dated Service Requests, but it is prevented by the clause in SEC Appendix AD 'DCC User Interface Specification' (DUIS).

In times of peak traffic, such as price change events, there are a large number of SRs sent through DCC systems in a very short period of time. This short-term peak in capacity usage has caused incidents for SMETS1 Service Providers (S1SP) during previous events, although work is on-going to mitigate this. Due to the short-term nature of the increased load, capacity that was provisioned to support this peak would be unnecessary at other times. This would result in an increased cost to industry with there being little benefit realised.

The Proposer argues that allowing Users to send SRs to SMETS1 Devices in advance of these events would help to smooth the peak usage on the DCC system and reduce likelihood of incidents.

2. Issue

What are the current arrangements?

Service Requests sent by DCC Users are either 'on-demand', 'future-dated' or 'scheduled'. The DCC User Interface Services Schedule (UISS) identifies these Service Requests as:

- 'future-dated' - User specifies the relevant time and date for execution (also known as "Future-Dated Services");
- 'scheduled' User sends specifies the initial time and date for execution as well as the frequency at which execution is to recur ("Scheduled Services"); or
- 'on-demand' – User specifies the SR to be executed immediately.

However, SEC Appendix AD 1.4.4 states:

Future Dating of Service Requests for SMETS1 Devices

Where, as identified in clause 3.1 (Service Request Matrix), a SMETS1 Service Request has a Future Dated Response Pattern of 'Device', the DCC, and not the Device, shall undertake

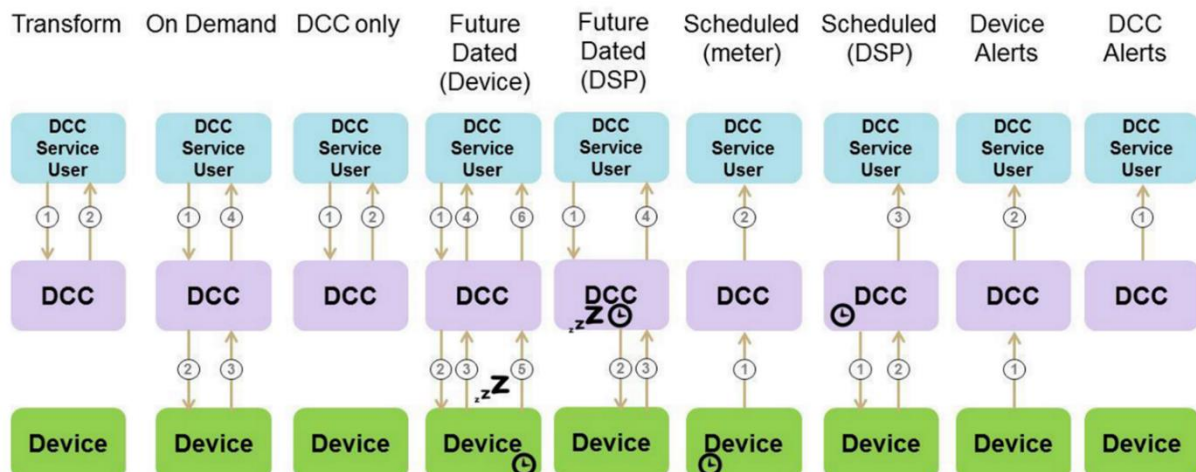
the required processing to implement the future dating, in line with the requirements of the Service Request Processing Document.

SEC Appendix AD categorises Future-Dated Services further:

- Future Dated Response Pattern (Device) - The DCC immediately sends the Command associated with the received SR to the Device. The Command is then stored on the Device and to be executed at the specified date/time in the future by the Device.
- Future Dated Response Pattern (DSP) - The DCC holds the SR and sends the Command to the specified Device at the specified date/time in the future.

This means that all Future Dated Requests for SMETS1 Devices are effectively Future Dated Response Pattern (DSP).

The following diagram from DCC User Gateway Interface Design Specification (DUGIDS) Section 2.3 shows the interactions between DCC Users and Devices of the variations of Service Request:



There is existing functionality within DCC systems to control the rate at which the SMETS1 requests are released to Devices, however when the volumes are very high, it takes a considerable time to run through all the SRs for that day. Current User behaviour seen by the DCC, is to send both SMETS1 and SMETS2 requests as on-demand requests, which could potentially be due to a User's mixed Device portfolio.

What is the issue?

The DCC has investigated Device capability with Manufacturers and advised that all SMETS1 Devices currently have some capacity to support Future Dated Service Requests. If Devices can receive Future Dated Service requests, it would be sensible that the SEC wording would not hinder this capability.

The DCC is currently in the process of migrating SMETS1 Devices onto their network. Once this migration is complete, it is expected there will be approximately 13-15 million SMETS1 Devices that could possibly use Future Dated Service Requests which will go direct to the Devices. Without the proposed change, these Service Requests will continue to be held with the DSP and handled as an

On-Demand Service Request when the date on the Service Request is reached. This will continue to contribute to large spikes in DCC traffic.

The DCC currently has SMETS1 SMS Overage charges to support spikes in traffic, and this modification would help reduce the need for some of this.

What is the impact this is having?

There are certain periods where the DCC receives a very large amount of traffic. In a scenario where there is a price change event for example, there are a large number of SRs sent through DCC systems in a very short period of time as Suppliers seek to update pricing and/or tariff information on Devices on the same date. This short-term peak in capacity usage has caused incidents for S1SP during previous events (though work is on-going to mitigate this). Due to the short-term nature of the increased load, capacity that was provisioned to support it would be unnecessary at other times. This would result in an increased cost to industry with there being little benefit realised.

Historically, price change events occur at infrequent intervals, and Ofgem has stated its desire to move to four monthly price change events per year. While the price control event is relatively short-term, DCC has suspended specific daily reads as a mitigation.

The DCC Services, as per its licence, are managed under the Price Control arrangements, which are overseen by Ofgem and measured by the Ofgem Operational Performance Regime (OPR). If the DCC fails to meet System performance, Ofgem may determine a reduction in the baseline margin that the DCC may retain for the Regulatory Year.

Impact on consumers

There is impact on all consumers, if there is a delay in receiving the relevant tariff change SRs on time and therefore are not being charged accurately.

3. Assessment of the proposal

Areas for assessment

Current Future-Dating usage

The DCC noted that some Users already use future-dated SRs for SMETS2+ Devices, however the DCC is working with DCC Users to encourage them to move to future-dated requests as much as they possibly can. Initial feedback indicated that current User behaviour for not using SRs as future-dated could be linked to either DCC User internal system restrictions or lack of resource. This will be verified in the Refinement Process.

Business case

The Smart Energy Code Administrator and Secretariat (SECAS) questions whether industry consider it more economical to upgrade DCC System capacity now, which will accommodate large volume events such as Price Changes. As SMETS1 installations decrease this capacity will then be available

for SMETS2 messages. As opposed to industry paying for a SMETS1 system change which will then become obsolete as SMETS1 installations decrease. Although SMETS1 Smart Metering Systems (SMS) are decreasing and will eventually cease, it is envisaged that SMETS1 Devices in the Smart Metering ecosystem will remain in use and relevant for at least another 10 or more years. The Proposer believes that investing now to accommodate Future-Dated SRs for SMETS1 Devices will help smooth out events of high network traffic across the DCC system for the medium-term.

Sub-Committee input

SECAS has engaged with the Chairs from the Operations Group (OPSG), the Technical Architecture and Business Architecture Sub-Committee (TABASC), the Security Sub-Committee (SSC), the Smart Metering Key Infrastructure Policy Management Authority (SMKI PMA) and Testing Advisory Group (TAG) to confirm what input is required from these forums. SECAS believes the following Sub-Committees will need to provide the following input to this modification:

Sub-Committee input	
Sub-Committee	Input sought
OPSG	Would this modification support reduction in system traffic by driving behaviour changes for Suppliers?
SMKI PMA	We do not believe this has any SMKI impacts
SSC	We do not believe this has any security impacts
TABASC	Would this modification have any Technical or Business Architecture impact if the DSP controls where and when the Future-Dated SR is sent?
TAG	We do not believe this has any testing impacts

Observations on the issue

Early feedback

SECAS has received feedback from Parties querying why there is a request to make changes to SMETS1 Devices. SMETS1 Devices will be replaced with SMETS2 Devices due to 2G/3G sunsetting, and SMETS1 numbers will reduce over the next five to 10 years.

SECAS has also received feedback from SEC Parties noting their support of this modification. One SEC Party noted that over 40% of Devices connected to the DCC are SMETS1 Devices and it would be sometime before SMETS1 meters are a negligible minority. Another SEC Party noted that the Smart Metering estate will likely experience a significant number of SMETS1 Future-Dated price changes over the next five to 10 years, and this modification would provide business benefit if such a capability were enabled. They added that their customers experienced failure of timely price changes in July 2023 due to a Middle Operating Capability (MOC)¹ time-out issue caused by the large spike in network traffic for the SMETS1 price changes. They noted that prepayment consumers suffered financial detriment which needed to be remedied.

¹ The DCC has set out the meaning of Middle Operating Capability in its delivery plan for its SMETS1 services pursuant to Condition 13 of the DCC Licence.

SMETS1 Device with Future-Dating Capabilities

The DCC highlighted that all SMETS1 Devices have some future dating capabilities; however, it is unclear if all SMETS1 Devices have full or partial Future-Dating SR capabilities. In the development stage, the DCC and SECAS investigated further and all but one SMETS1 Device manufacturer has confirmed their SMETS1 Devices have partial Future-Dating SR capabilities (one SMETS1 Device manufacturer noted it has full Future-Dating SR capabilities). The SRs available in the partial capability are those used in high volumes during price change events and therefore the Proposer believes this is strong enough to support the business case to proceed with the modification. (Service Reference Variant (SRV) 1.1.1 'Update Import Tariff (Primary Element)', SRV 1.2.1 'Update Price (Primary Element)' and SRV 6.8 'Update Device Configuration (Billing Calendar)').

Current Future-Dating usage

The DCC noted that some Users already use future-dated SRs for SMETS2+ Devices, however the DCC is encouraging Users to move to future-dated requests as much as they possibly can. Feedback will need to be obtained to understand current User behaviour for not using SRs as future-dated more often.

Solution development

The Proposer has noted a high-level Proposed Solution whereby the DSP will filter incoming Future Dated Response Pattern (DSP) SRs, if the targeted Device has the capability to accept the Future Dated Response Pattern (Device) SR, the DSP will send the SR down to the Device. If the Device is unable to accept Future Dated Response Pattern (Device) SR, the SR will be held at DSP to be sent as per current business as usual (BAU) process. Therefore, the Proposer believes there will be no DCC User business process nor System impact.

4. Appendix 1: Progression timetable

Timetable	
Event/Action	Date
Draft Proposal raised	12 Sep 2023
Presented to CSC for initial comment	19 Sep 2023
Obtained feedback from Device Manufacturers and Suppliers	Sep 2023
CSC converts Draft Proposal to Modification Proposal	21 Nov 2023
Business requirements developed with Proposer	22 Nov – 31 Dec 2023
Modification discussed with the Working Group	3 Jan 2024
Business requirements discussed with TABASC	4 Jan 2024
Business requirements discussed with OPSG	9 Jan 2024
Preliminary Assessment requested	15 Jan 2024
Preliminary Assessment returned	9 Feb 2024
Preliminary Assessment discussed with Working Group	6 Mar 2024

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Timetable	
Event/Action	Date
<i>Preliminary Assessment discussed with TABASC</i>	4 Apr 2024
<i>Preliminary Assessment discussed with OPSG</i>	9 Apr 2024
<i>Refinement Consultation</i>	17 Apr – 10 May 2024
<i>Modification discussed with Working Group</i>	5 Jun 2024
<i>Impact Assessment costs approved by Change Board</i>	26 Jun 2024
<i>Impact Assessment requested</i>	27 Jun 2024
<i>Impact Assessment returned</i>	10 Sep 2024
<i>Modification discussed with Working Group</i>	2 Oct 2024
<i>Modification discussed with OPSG</i>	9 Oct 2024
<i>Modification discussed with TABASC</i>	7 Nov 2024
<i>Modification Report approved by CSC</i>	19 Nov 2024
<i>Modification Report Consultation</i>	20 Nov – 11 Dec 2024
<i>Change Board Vote</i>	19 Dec 2024

Italics denote planned events that could be subject to change

5. 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
BAU	Business as usual
CSC	Change Sub-Committee
DCC	Data Communications Company
DUGIDS	DCC User Gateway Interface Design Specification
DUIS	DCC User Interface Services
DSP	Data Service Provider
MOC	Middle Operating Capability
OPR	Operational Performance Regime
OPSG	Operations Group
S1SP	SMETS1 Service Provider
SEC	Smart Energy Code
SECAS	The Smart Energy Code Administrator and Secretariat
SMETS	Smart Metering Equipment Technical Specifications
SMKI PMA	Smart Metering Key Infrastructure Policy Management Authority
SMS	Smart Metering System
SR	Service Request

Glossary	
Acronym	Full term
SRV	Service Reference Variant
SSC	Security Sub-Committee
TABASC	Technical Architecture and Business Architecture Sub-Committee
TAG	Testing Advisory Group
UISS	User Interface Services Schedule