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DP156 'Unit Inconsistency'

Modification Report

Version 0.2

23 April 2021

Corporate member of
Plain English Campaign
Committed to clearer
communication

592



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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 David Walsh from the Data Communications Company (DCC).

For DCC User Interface Specification (DUIS) Tables 97 and 98, the Maximum Meter Balance and Maximum Credit Threshold are measured in millipence (1,000th of a pence or cent) and it is the same for Credit Maximum Credit Threshold and Maximum Credit Max Meter Balance in Message Mapping Catalogue (MMC) Table 101. This differs for the Great Britain Companion Specification (GBCS), where Table 14.1 measures Maximum Credit Threshold and Maximum Meter Balance Threshold in Currency Units (whole currency units only).

2. Issue

What are the current arrangements?

The Maximum Credit Threshold is set by the Supplier as the maximum total credit value that can be recorded on the Electricity Smart Metering Equipment (ESME) or the Gas Smart Metering Equipment (GSME). Its value is interpreted by the Device in Currency Units (either pound sterling or euro).

There is currently a discrepancy between the unit values stated in DUIS Tables 97 and 98, MMC Table 101 and the unit values in GBCS Table 14.1. This is causing a defect for Suppliers where the value they set can be interpreted as a much larger sum of money by the Device.

SEC Appendix AD 'DCC User Interface Specification'

DUIS Tables 97 and 98 state the Max Meter Balance Threshold and Max Credit Threshold is in 1,000th (thousandths) of a pence or euro cent (0.001p).

UpdatePrepayConfigElectricity Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units
MaxMeterBalance	The Meter Balance threshold in Currency Units above which an Add Credit Command is rejected.	xs:int	Yes	None	1000 th pence / cent
MaxCreditThreshold	The maximum credit which can be applied by any Add Credit Command	xs:int	Yes	None	1000 th pence / cent

Table 1 : UpdatePrepayConfigElectricity (sr: UpdatePrepayConfigElec) data items

UpdatePrepayConfigGas Definition

Data Item	Description / Valid Set	Type	Mandatory	Default	Units
MaxMeterBalance	The Meter Balance threshold in Currency Units above which an	xs:unsignedInt	Yes	None	1000 th pence / cent

	Add Credit Command is rejected.				
MaxCreditThreshold	The maximum credit which can be applied by any Add Credit Command	xs:unsignedInt	Yes	None	1000 th pence / cent

Table 2 : UpdatePrepayConfigGas(sr: UpdatePrepayConfigGas) data items

SEC Appendix AF ‘Message Mapping Catalogue’

The same logic applies to MMC Table 101:

Specific Body Data Items

Data Item	Description / Valid Set	Type	Units	Sensitivity
CreditMaxCreditThreshold	Maximum amount of credit permitted per top up.	xs:integer	1000 th pence / cent	Unencrypted
MaxCreditMaxMeterBalance	Maximum amount of credit permitted on the meter.	xs:integer	1000 th pence / cent	Unencrypted

Table 3 : Read Prepayment Configuration MMC Output Format Body data items

SEC Schedule 8 ‘Great Britain Companion Specification’

DUIS Tables 97 and 98 and MMC Table 101 are inconsistent with GBCS Table 14.1, which states that the Maximum Credit Threshold and Maximum Meter Balance Threshold are to be interpreted by the Device in whole currency units only (pounds or euros):

Defined Term	Meaning
Maximum Credit Threshold	Shall be the maximum value of any single Prepayment Top Up. Its value shall be interpreted by the Device in Currency Units (whole currency units only)
Maximum Meter Balance Threshold	Shall be the maximum total credit value recorded on the ESME / GSME. Its value shall be interpreted by the Device in Currency Units (whole currency units only)

Table **Error! Reference source not found.**: Meanings of Defined Terms

Current DCC processing for SMETS1

It is worth noting that Maximum Credit Threshold and Maximum Meter Balance Threshold are not part of Smart Metering Equipment Technical Specifications (SMETS) 1 functionality.

For SMETS1, Meter Manufacturers’ Devices behave in the below way:

- Aclara – Hold the value in whole currency units on the meter (for ESME and GSME). Instant Energy receives in millipence and converts to whole currency units for the Aclara Device

- Elster – Holds the value in millipence on meter, aligned with DUIS
- Itron – MaxMeterBalance and MaxCreditThreshold are not supported
- Secure – Holds the value in millipence on meter, aligned with DUIS
- L+G – Holds the value in millipence on meter, aligned with DUIS

This indicates the DUIS is correctly reflecting the DCC System for SMETS1.

What is the issue?

During User Integration Testing (UIT) for the SMETS2, a defect was raised by a customer who highlighted an inconsistency between the DUIS & the MMC and the actual DCC System behaviour for Max Credit Threshold and Maximum Meter Balance within Service Request (SR) 2.1 for SMETS2 meters (which aligns to what is stated in GBCS Table 14.1).

This issue has been previously raised with the Technical Specification Issue Resolution Sub-group (TSIRS). The behaviour of the DCC Total System for SMETS2 is in line with the GBCS. As per the explanation to the [TSIRS document TS0319](#), published in January 2016, the units of measure for both Maximum Credit Threshold and Maximum Meter Balance in Commands to ESME and GSME are whole numbers of pounds or euros.

- The DCC populates the values in the GBCS Command (to set the values on a Device) using the same values as supplied by the DCC User in the corresponding fields in the Service Request.
- The DCC takes the values in the GBCS Response (when they are read from the Device) and places the same values in the corresponding fields of the Parse & Correlate (P&C) XML output.

Therefore, the units of the corresponding fields in the Service Request and Parse and Correlate XML output are also integers of pounds or euros. The relevant Anomaly Detection Attributes (ADA) values are also integers of pounds or euros.

What is the impact this is having?

Without this correction, incidents (error messages) will occur due to the inconsistency between the DUIS and the GBCS. This will result in DCC Users receiving error messages when the described scenario occurs. The defect can also result in Suppliers becoming financially impacted, which has already been experienced by a User when their meter interpreted the MaxCreditThreshold as ten times what was intended.

Impact on consumers

The Proposer has stated that there is no known impact on Consumers.

3. Assessment of the proposal

Observations on the issue

Technical Specification Issue Resolution Sub-Group

The issue this modification aims to address has been discussed previously with the TSIRS. An instance was given where a Supplier believed that it had set the MaxCreditThreshold to £500; however, it was reported that a top-up of £5,368 had been accepted and added to the meter balance. The issue arose from the Supplier working to the DUIS document, meaning that the Max Meter Balance Threshold and Max Credit Threshold is measured in millipence, whereas the meter adhered to the GBCS. This resulted in the meter interpreting the Supplier's input as 100 times what was intended. This is causing additional work and the DCC is unable to resolve the customer's defect without clarification.

The DCC confirmed that it populates the values in the GBCS Command using the same values as supplied by the DCC User in the corresponding fields in the Service Request. Furthermore, the DCC takes the values in the GBCS response and places the same values in the corresponding fields of the P&C XML output. This means that the units of the corresponding fields in the Service Request and P&C XML output are also in whole numbers of pounds or euros. As a result, the values are 100,000 times greater than the 1,000th of a pence or cent stated in the DUIS and the MMC.

Appendix 1: Progression timetable

This Draft Proposal was raised on 22 February 2021. The Proposal will be taken to the Change Sub-Committee (CSC) for initial comment on 30 March 2021. SECAS will then issue a request for information (RFI) document to better understand the scale of the issue. Once the RFI is closed, SECAS will return DP156 to the CSC for further discussion on 1 June 2021.

Timetable	
Event/Action	Date
Draft Proposal raised	22 Feb 2021
Presented to SEC Sub-Committees for initial comment	Mar 2021
Presented to CSC for initial comment	30 Mar 2021
Request for information	23 Apr – 17 May 2021
Presented to CSC for final comment and recommendations	1 Jun 2021

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
ADA	Anomaly Detection Attributes
CSC	Change Sub-Committee
DCC	Data Communications Company
DUIS	DCC User Interface Specification
ESME	Electricity Smart Metering Equipment
GBCS	Great Britain Companion Specification
GSME	Gas Smart Metering Equipment
MMC	Message Mapping Catalogue
P&C	Parse & Correlate
RFI	Request for information
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SMETS	Smart Metering Equipment Technical Specifications
SR	Service Request
TSIRS	Technical Specification Issue Resolution Sub-Group
XML	Extensible Markup Language