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Stage 02: Draft Modification Report

SECMP0005:

Include Tariff and Register Labels in SMETS Devices

What stage is this document in the process?

01	Initial Assessment
02	Refinement Process
03	Modification Report
04	Decision

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Summary

SECMP0005 seeks to include Tariff and Register Labels in Electricity Smart Metering Equipment (ESME) and Gas Smart Metering Equipment (GSME). It also proposes the ability to share these labels with other Devices via the Home Area Network (HAN).

Working Group View



- The Working Group unanimously believes that SECMP0005 should be approved

Impacts



- Supplier Parties
- Device Manufacturers
- DCC
- DCC Central Systems
- Party Interfacing Systems

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About this Document

This document is a Draft Modification Report (DMR). It provides detailed information on the issue, solution(s), impacts, costs and Working Group discussions and conclusion on SECMP0005.

The Smart Energy Code (SEC) Panel will consider this report to ensure that due process has been followed and determine whether to issue the modification for Modification Report Consultation (MRC).

1. Summary

What is the issue?

Supplier Parties can set Tariffs and Time of Use (TOU) Tariffs¹ on ESME and GSME by sending a DCC User Interfacing System (DUIS) service request to the Data and Communications Company (DCC). However, this service request does not currently allow Suppliers to set price labels or names for the overall tariff or the four TOU Tariffs on a smart meter. Furthermore, these tariffs are only displayed on the ESME/GSME and are not shared over the Home Area Network (HAN) to other SMS Devices, such as In Home Displays (IHDs) and Prepayment Interface Devices (PPMIDs).

This means that Consumers may not be able to identify the tariffs as they will just be labelled R1, R2, R3, R4 etc. The Proposer highlights that this is not user friendly and has a negative impact on how Suppliers manage their tariff and energy usage.

What is the Proposed Solution?

The Proposer (E.ON) seeks to allow the setting of tariff and TOU price labels on ESME and GSME as part of the setting of the tariff via the existing service request. The modification also proposes that these labels are shared via the HAN to other SMS Devices (such as IHDs and PPMIDs).

Impacts

Party

Large Supplier Parties	X	Small Supplier Parties	X
Electricity Network Parties		Gas Network Parties	
Other SEC Parties	X		

System

DCC Systems	X	Party interfacing systems	X
Smart Metering Systems	X	Communication Hubs	X
Other systems			

¹ Prices for Time-of-Use Pricing



Implementation Costs

The total estimated implementation cost to deliver SECMP0005 is approximately £4,138,269. This total cost consists of:

- **£1,200** in SEC Administration effort; and
- **£4,137,069** in DCC effort.

Implementation Date

The Working Group recommends an implementation date of:

- **7th November 2019**, if a decision to approve is made by 7th November 2018.
- **25th June 2020**, if a decision to approve is made after 7th November 2018 but on or before 25th June 2019.

Working Group's views

The Working Group believes **unanimously** that SECMP0005 better facilitates the SEC Objectives. The Working Group therefore believes that this Modification Proposal should be **approved**.

2. What is the issue?

Background

Smart Metering Equipment Technical Specifications (SMETS) requires ESME and GSME to have a Tariff TOU Price Matrix (plus a Secondary Tariff TOU Price Matrix for Twin Element ESME²). These matrices contain four tariffs for TOU Pricing. Suppliers are currently able to set these tariffs by sending service request 1.1 'Update Import Tariff'³.

Tariffs are therefore displayed on the ESME/GSME User Interface in numerical values (R1, R2, R3, R4).

There is currently a ZigBee Smart Energy⁴ parameter (in the ZigBee Publish Tariff Information command) called 'TariffLabel'. This parameter can hold a label for a tariff of up to 24 UTF-8 characters. The current Technical Specifications do not require this label but ZigBee requires it is set to a value. Therefore, the current Technical Specifications set this label to a zero-length string on GSME. ESME configuration data is not set using ZigBee and so no value is currently set on ESME.

There are also ZigBee parameters (in the PublishTierLabels command) that can hold 'tier price labels' for up to 48 Time of Use (ToU) prices in a tariff (although there is no ZigBee mechanism for block / ToU with blocks or export related price labels to be set or shared). Each price label can hold up to 12 characters. The current Technical Specifications do not require these labels and so do not provide a way to set them.

GBCS maps each of the ToU prices to a specific, unique ToU register. Thus, ZigBee's price labels could, if required by GBCS, be considered as register labels. The term 'Price Label' is used in the remainder of this document, to align to ZigBee.

What is the issue?

The Proposer (E.ON) believes that the current arrangements are not Consumer friendly and may cause confusion. This is because the lack of tariff labels means that Consumers may not be able to identify their price tariff.

The Proposer noted that the ability to set Tariff labels, and share them with other Devices via the HAN (IHDs and PPMIDs) will reduce potential Consumer confusion because:

- Tariff labels will enable Suppliers to use consumer-friendly naming conventions for the tariff in operation e.g. "Economy 7"; and

² The Secondary Tariff TOU Price Matrix relates to Supply via the secondary measuring element of the ESME.

³ This includes two SR Variants – 1.1.1 'Update Import Tariff (Primary Element)' and 1.1.2 'Update Import Tariff (Secondary Element)'.

⁴ The technical protocol that is used to share information between Devices on the HAN.



- Price Labels will enable Suppliers to give Smart Meter Tariff Price Labels (registers) a consumer-friendly name such as 'Day' or 'Night' or 'Weekend' rather than R1, R2 or R3.

It has also been suggested that introducing these labels will improve the Consumer's ability to manage their energy usage because they will be more aware of the tariff they are on.

3. Proposed Solution

Solution

SECMP0005 proposes to allow the setting of tariff and TOU price labels on ESME and GSME as part of the setting of the tariff via the existing service request. It also proposes that these labels are shared via the HAN to other SMS Devices (such as IHDs and PPMIDs).

This table below provides an overview of the business requirements for SECMP0005. Further information on the business, system and testing requirements can be found in the Solution Design Specification (Attachment C).

Business Requirements	
1	Tariff and Price Labels shall be required as data items on ESME and GSME.
2	Tariff and Price Labels shall be shared over the HAN to other HAN Devices.
3	Tariff and Price Labels shall be displayed on IHDs and PPMIDs. <i>(Note there is no requirement for ESME and GSME User Interface to display the Tariff and Price Labels)</i>
4	The existing service request 1.1 Update Import Tariff Service Requests (SRV 1.1.1 and SRV 1.1.2) shall be updated to provide Supplier Users the ability to set Tariff and Price Labels on ESME or GSME that support this modification.
5	Upon success/failure of setting of Tariff and Price Labels, Supplier Users shall receive two alerts: one for Tariff Label and one for Price Labels.
6	Supplier Users shall have the ability to read Tariff and Price Labels via the existing service request 4.11 'Read Tariff' (SRV 4.11.1 and SRV 4.11.2).

Draft legal text

The proposed legal text changes to SEC Appendix AD, SEC Appendix AF, SEC Schedule 8, SEC Schedule 9 and SEC Schedule 10 are provided in Attachment B.

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4. Impacts

The following section sets out the impacts associated with the implementation of SECMP0005.

SEC Party impacts

Large Supplier Parties	X	Small Supplier Parties	X
Electricity Network Parties		Gas Network Parties	
Other SEC Parties	X		

Large and Small Supplier Parties

The use of the new functionality to set labels is optional. However, if a Supplier sends a service request to a Device that supports this change, they will be impacted as it will require updates to their DCC User Interface. Suppliers that wish to use the new service request will have the ability to set Tariff and Price Labels.

Other SEC Parties

Other SEC Parties, specifically Meter Manufacturers, will be impacted by this modification. This is because SECMP0005 adds additional ESME and GSME requirements into the SMETS.

This modification does not require retrospective changes and therefore there are no updates required to ESME and GSME already installed.

Central System impacts

DCC Systems	X	Party interfacing systems	X
Smart Metering Systems	X	Communication Hubs	X
Other systems			



Testing

The existing service request 1.1 will now have optional parameters for Suppliers to populate. This is to allow tariff / price labels to be specified in the triggering service request. Supplier Parties will be impacted as they will need to update their User Interfacing Systems

The DCC will provide Testing Services to support the implementation of SECMP0005 to assess the communications and interoperability of User Systems with DCC Systems and Smart Metering Devices, provide analysis including supporting assumptions and rationale of any testing required to the DCC Total System, and will prepare a report detailing the scope, phases, timetable, Testing Participants, any assumptions and rationale relating to SECMP0005 testing.

The DCC will allow Users to add Type 1 and Type 2 Devices to their test Smart Metering Systems. Such devices will be supplied by the Users.

As required, the DCC will provide:

- A reasonable number of Test Communication Hubs for use in the testing environment which represent every combination of HAN and Wide Area Network (WAN) variant; and
- Test Stubs (or other alternative arrangements) to emulate meter behaviour of version(s) of SMETS in force prior to the Release as well as the version of SMETS which will be effective on the Release date.

The testing environment that the DCC provides as part of Testing Services will be open to all User Roles eligible to send the Service Request (Import and Gas Suppliers). This environment should be made available for a minimum of 15 Working Days, depending on the impact of the change. The DCC must provide the costs and assumptions associated with providing this Testing Service, including whether the testing costs are based on a set number of users utilising the Testing Service, i.e. up to 10 Users, noting that at least two large Suppliers may test the functionality. This is to ensure it operates correctly before it is put into the End-to-End and Production environments.

SEC and Subsidiary Document impacts

SEC Appendix AD 'DUIS v2.0', SEC Appendix AF 'MMC', SEC Schedule 8 'GB Companion Specification', SEC Schedule 9 'SME Technical Specification 2' and SEC Schedule 10 'CH Technical Specifications' will be impacted by this modification.

Impacts on other industry codes

There are no anticipated impacts on other industry codes.

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Greenhouse Gas Emission impacts

There are no anticipated Greenhouse Gas Emission impacts.

5. Costs

Estimated Implementation costs

The total estimated implementation cost to delivery SECMP0005 is approximately **£4,138,269**.

SEC costs

The estimated SEC implementation cost is detailed in the table below:

SECAS implementation costs		
Implementation Activity	Effort (man days)	Cost
Application of approved changes to the SEC. Publication of new version of the SEC on the SEC Website and issuance to SEC Parties. Review and updated any impacted SEC guidance materials.	Two	£1,200 ⁵

DCC costs

The estimated DCC implementation cost is detailed in the table below:

DCC implementation costs (excluding VAT)	
Implementation Activity	Cost
Design	£4,137,069
Build	
Pre-Integration Testing	
System Integration Testing	Not provided
User Testing	
Implementation to Live	
Total estimated DCC implementation cost:	£4,137,069

⁵ SEC man day effort based on a blended rate of £600 per day.



6. Implementation

Recommended implementation date

The Working Group is recommending an implementation date for SECMP0005 of:

- **7th November 2019**, if a decision to approve is made by 7th November 2018; or
- **25th June 2020** if a decision to approve is made after 7th November 2018 but on or before 25th June 2019.

DCC notes a lead time of 12 months for implementing SECMP0005, meaning the November 2019 SEC Release is the earliest release that this change can be targeted for. In accordance with the Panel's Release Management Policy, modifications that impact DCC Systems will only be targeted for June or November releases.

7. Working Group Discussions

Working Group discussions

Should there be a naming convention for labels?

The Working Group believed that naming conventions would ensure consistency and avoid mixed consumer experience. A member highlighted that a Master Registration Agreement (MRA) Issue Form (MIF194) had been raised for naming conventions of meter register labels that may provide ideas.

The Working Group noted that there are constraints on the number of characters in Zigbee Smart Energy but considered the number of characters (between 12 and 20) should be sufficient.

The Working Group also agreed that it would be beneficial to use the same convention for both ESME and GSME.

Which Devices should be able to support these labels?

The Working Group agreed that ESME and GSME need to be capable of displaying Tariff and Register Labels. The Gas Proxy Function would need to be able to make the data available and capable of being displayed over the HAN IHDs. PPMIDs would also need to display the Tariff Label.

The Working Group discussed implications for IHD displays. It was noted that there may be technology impacts arising from parts of the screen needing to be flexible to the characters to be displayed.

How might this impact the size of messages?

It was noted that this Modification Proposal would result in the relevant service request message sizes increasing. Bigger messages increase the risk of failures, which could have a negative impact, e.g. of a customer's tariff label not updating. Therefore, there was general agreement that any solution should consider the impact larger messages would have on Users and the DCC's network. Any estimates of packet size that could be obtained would be useful to inform the modification.

Should labels be mandatory?

Discussions around the pros and cons of requiring Suppliers to support this functionality noted that making it mandatory could make it more difficult for industry to support the modification. However, the Working Group agreed that it would be beneficial to require Suppliers to support this functionality. One benefit of making it mandatory would be

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ensuring all Suppliers can update incorrect labels. The Working Group also agreed that there should be no deprecation of the existing service requests, and that this would create the option of whether to use the labelling functionality.

What is the impact of not making this change?

The Working Group considered the impact that SECMP0005 could have on the customer experience. Currently, if the customer is on a tariff which uses more than one register, they would not be able to tell easily which register applies to which time of the day, and so would not be able to tell easily what they are consuming during each time period. This can result in the customer contacting their Supplier with queries over these registers. One member also noted that they see customers with smart meters continuing to contact them to provide readings, even though they are able to obtain the readings themselves through the DCC Systems. Overall, members felt that effects such as these are resulting in a negative customer experience, and could contribute to customers not wanting to move to a smart meter.

Suppliers note that there is no rule that requires Suppliers to use specific registers for specific times of the day (e.g. always using R1 for day and R2 for night). This means that a customer that moves Supplier may then find different registers recording consumption for each time periods compared to their previous Supplier, which would add to their confusion. Although the SMETS is set up to allow for registers to be used in the same way across all Devices, not all Suppliers will follow the same approach.

The Working Group also considered how this might affect other parts of the arrangements. One member queried what might happen if the WAN was down, and Suppliers were unable to obtain meter readings via the DCC Systems. In such a case, manual reads would need to be obtained, either through a site visit or by the customer calling to provide the readings. In either case, if it wasn't clear which register applied to which time period, there would be the risk of allocating consumption incorrectly, resulting in Settlement errors.

One member noted that the impact of not implementing SECMP0005 would be a reputational impact on Suppliers, arising from this negative perception from customers. They did not believe that this impact could be quantified in comparison to the £4.1m central implementation costs. However, they believed that further information about the impacts of not making this change should be sought from the wider industry via the Working Group Consultation, in order to build the case for change. The Working Group was concerned that the impacts of not making the changes proposed by SECMP0005, and what issues and workarounds would be needed in the interim, were not fully understood by all Suppliers.

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Why was this not included in the original design?

One Working Group member noted that including a tariff label field, as per the proposed solution, was identified in the original design of the smart metering arrangements, and believes that it being left out of the final design was an error. SECMP0005 was subsequently raised in order to correct this error.

Input from Sub-Committees

SSC Input

New Use Cases were mentioned as being subject to packet inspection and would therefore fall within the scope of threshold anomaly detection. This was raised with the Security Sub-Committee (SSC). The SSC confirmed that the new service request will require packet inspection as the existing and similar service requests also require it.

TABASC Input

The Technical Architecture and Business Architecture Sub-Committee (TABASC) raised concerns related to supporting the old and new Use Cases in conjunction with one another to the Working Group. It was noted that the TABASC had strongly suggested that the old Use Cases should be dropped to maintain stability, reduce complexity and lower unnecessary costs for the Parties involved. The TABASC raised that supporting the old Use Case would contradict BEIS's policy intent and conflicts with previous Issue Resolution Processes (IRPs).

MRA Change Proposals

SECAS noted there are currently two Master Registration Agreement Change Proposals (MRACP); DTC CP3491 and DTC CP3491a.

DTC CP3491 and DTC CP3491a are change proposal forms that seek to standardise use of Meter Register IDs on DCC serviced smart meters to ensure time of use register readings are correctly recorded.

The cited reasons for these changes are that it will facilitate standardisation of completion rules for Data Flows where previously there was no such standardisation. This will improve coordination between parties and the efficiency for all parties sending and receiving said Data Flows.

The solution these forms propose is to make changes to Annex C, amending the rules of completion of the D0010, D0149, D150 and D300 dataflows for DCC serviced smart meters.

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8. Working Group's Conclusions

The Working Group's **unanimous** view is that SECMP005 better facilitates General SEC Objective (c) and should be **approved**.

Benefits and drawbacks of SECMP0005

The Proposer and the Working Group have identified the following benefits and drawbacks related to SECMP0005:

Benefits

The main benefit of this modification is that it will introduce a standardised list of labels for tariffs and registers which should increase interoperability between smart meter devices. This will be beneficial because it helps facilitate efficient practices between smart meters in terms of creating tariff rate displays that are viewed by consumers which will be easier to understand, e.g. a day or night rate tariff, rather than viewing 'R1' or 'R2' on their device. This should reduce consumer confusion, help improve the take-up rate of smart meters and improve general ease of use. In turn, this will reduce the amount of time and effort Suppliers may have to spend resolving customer queries about registers.

Another benefit to this modification is that it doesn't require retrospective changes in order to operate effectively. This is beneficial because it means that it means updates will not be necessary to ESME and GSME that is already installed and operational. Had there been updates required, there may have been a significant logistical cost incurred in order to address the issue of fixing the smart metering equipment in order to function properly with any potential updates.

Drawbacks

The main drawback discussed in the Working Group is that the Impact Assessment estimates the cost of the modification to be around £4.1m. This cost is significant and the Working Group members have noted this as a difficult cost to justify given that the benefits this would bring would be very difficult to quantify. One Working Group members believed that the cost associated with the modification could be justified as the cost that would be incurred by consumer confusion and issues surrounding a lack of interoperability would be greater than the cost being quoted for the modification.

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Views against the General SEC Objectives

Objective (c)⁶

The Working Group believes that this modification better facilitates General SEC Objective (c), due to providing information to consumers with greater clarity through the implementation of the standardised list of Tariff and register labels. As this would be delivered through the displays on the smart meters, this corresponds with General Objective (c).

For the avoidance of doubt, the Working Group believes that SECMP0005 is neutral against all other SEC Objectives.

⁶ To facilitate Energy Consumers' management of their use of electricity and gas through the provision to them of appropriate information by means of Smart Metering Systems

Appendix 1: Glossary

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

Acronym	Definition
DCC	Data and Communications Company
DMR	Draft Modification Report
DUIS	DCC User Interfacing System
ESME	Electricity Smart Meter Equipment
GBCS	GB Companion Specification
GSME	Gas Smart Meter Equipment
HAN	Home Area Network
IHD	In Home Display
IRP	Issue Resolution Proposal
MMC	Message Mapping Catalogue
MRA	Master Registration Agreement
MRACP	Master Registration Agreement Change Proposal
MRC	Modification Report Consultation
PPMID	Prepayment Interface Device
SEC	Smart Energy Code
SMETS	Smart Metering Equipment Technical Specifications
SSC	Security Sub-Committee
TABASC	Technical Architecture and Business Architecture Sub Committee
ToR	Terms of Reference
TOU	Time of Use
WAN	Wide Area Network

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