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SECMP0056

'IHD / PPMID ZigBee Attributes Available on the HAN'

Modification Report

Version 1.2

14 December 2020

Corporate member of Plain English Campaign
Committed to clearer communication
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About this document

This document is a Modification Report. It sets out the background, issue, solution, impacts, costs, implementation approach and progression timetable for this modification, along with any relevant discussions, views and conclusions.

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This document also has four annexes:

- **Annex A** contains the business requirements for the solution.
- **Annex B** contains the redlined changes to the Smart Energy Code (SEC) required to deliver the Proposed Solution.
- **Annex C** contains the full Data Communications Company (DCC) Impact Assessment response.
- **Annex D** contains the full responses received to the first Refinement Consultation.

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1. Summary

This proposal has been raised by Emslie Law from OVO Energy.

Currently under the SEC, Smart Metering Equipment Technical Specifications (SMETS) 2 In-Home Displays (IHDs) and Prepayment Interface Devices (PPMIDs) are not notified of a Change of Tenancy (CoT) event. This could allow a new tenant to access the previous tenant's personal information and place the Supplier in potential breach of the General Data Protection Regulation (GDPR). This is the case for all IHDs and PPMIDs.

In SMETS1 the ZigBee attributes available to connected Devices on the Home Area Network (HAN) allow Devices to be notified of a CoT and so these do not display data prior to these events. The solution proposes to make Zigbee attributes for CoT parameters available in SMETS2 to HAN Devices such as IHDs and PPMIDs and also mandate IHDs and PPMIDs to query the Electricity Smart Metering Equipment (ESME) and Gas Proxy Function (GPF) for CoT information.

Suppliers, the DCC and Other SEC Parties (Device Manufacturers) will be impacted by this modification. The DCC Impact Assessment states that the changes required for this modification will cost approximately £1.7m if implemented in the June 2022 Sec Release alongside other modifications. If approved this modification is targeted for the June 2022 SEC Release. This is an Authority Determined Modification.

2. Issue

What are the current arrangements?

SMETS1 and 2 include CoT Zigbee attributes which are available over the HAN and notifies the ESME and GPF when a CoT has taken place. This means that the EMSE and GPF do not display historical data after that date.

In SMETS1 this attribute is also available to the IHD and PPMID over the HAN. This means that HAN Devices such as IHDs and PPMIDs do not display the previous occupier's personal data once the CoT notification has taken place, and the data has been cleared from the IHD or PPMID memory.

In SMETS2 this Zigbee attribute is not made available to the IHD/PPMID and therefore the IHD/PPMID does not know a CoT has taken place. Any data downloaded to the Device will continue to be displayed to the new occupier.

The possible data an IHD or PPMID can display that could be deemed personal is:

- Consumption data (at half-hourly granularity, if the Device displays data at this level)
- Personal messages received from the Supplier (if a Supplier has sent messages)
- Debt information (specifically on PPMIDs)

In order to, ensure data is cleared from a PPMID the Supplier is able to set ESME and GPF to credit mode, to clear the debt and then it would also be removed from the IHD / PPMID.

What is the issue?

Due to the Zigbee attributes not being included in SMETS2 as being available to IHDs and PPMIDs, connected Devices can display a previous occupier's data following a CoT. This would allow a new occupier to view this potentially personal data, which could include consumption data (possibly available at a half-hourly level) and possibly personal messages relating to tariffs or debt information of the previous tenant if the Supplier has sent this type of information. In terms of displaying a previous tenant's information relating to debt, a PPMID will calculate the level of debt automatically. Without a clear signal when to remove this data it is likely that if the new occupier is using prepayment mode, the previous occupiers' data will be displayed. Along with the new occupant knowing the previous occupants name and former address, this could be considered a potential GDPR breach.

What is the impact this is having?

If this issue is not addressed, connected Devices adhering to SMETS2 specifications will continue to potentially display personal data to unintended Consumers. This will mean that electricity and gas Suppliers may not be providing an adequate level of data protection and privacy for their Consumers. This could lead to a potential breach of GDPR.

3. Solution

Proposed Solution

The solution proposes to make Zigbee attributes for CoT parameters available to SMETS2 HAN Devices such as IHDs and PPMIDs. Furthermore, the solution will mandate IHDs and PPMIDs to query the ESME and GPF for CoT information. This will allow the HAN Device to be notified when a CoT has taken place and will subsequently clear all data belonging to the previous occupier.

The business requirements for this solution can be found in Annex A.

4. Impacts

This section summarises the impacts that would arise from the implementation of this modification.

SEC Parties

SEC Party Categories impacted			
✓	Large Suppliers	✓	Small Suppliers
	Electricity Network Operators		Gas Network Operators
✓	Other SEC Parties	✓	DCC

Supplier Parties

This modification will enable the functionality in SMETS2 for the ESME, GPF and other Devices to remove the historical information upon notification of a CoT so it is no longer available for Devices to display. There will be no additional work for Suppliers, but as this modification will involve a change to the Great Britain Companion Specification (GBCS) and SMETS, there will be an associated technical specification uplift.

Other SEC Parties

Device Manufacturers will need to ensure their Devices are able to request the information regarding a CoT from the ESME and GPF. As previously stated, this modification will involve a change to GBCS as well as an associated firmware upgrade to prevent a previous occupier's personal data being displayed on the IHD / PPMID after the relevant CoT has taken place.

DCC System

Minor changes are required to the Communications Hubs and the DCC noted in the Preliminary Assessment that there may be an increase in Service Request volumes as a result of this change. No specific infrastructure requirements or changes have been identified.

The full impacts on DCC Systems and DCC's proposed testing approach can be found in the DCC Impact Assessment response in Annex C.

SEC and subsidiary documents

The following parts of the SEC will be impacted:

- Schedule 8 'Great Britain Companion Specification' (GBCS)
- Schedule 9 'Smart Metering Equipment Technical Specifications' (SMETS)
- Schedule 10 'Communications Hub Technical Specifications' (CHTS)
- Schedule 11 'Technical Specification Applicability Tables' (TSAT)

The changes to the SEC required to deliver the proposed solution can be found in Annex B.

Technical specification versions

This modification will be implemented in the latest versions of the Technical Specifications issued at the relevant SEC Release. The current expectation is that the June 2021 SEC Release will incorporate the Enduring Change of Supplier (ECoS) changes to DCC Systems. There will therefore be an uplift to the Principal Technical Specification version and the sub-versions. SECMP0056 will be included in a SMETS2 Principal version and an uplift to the sub-version.

Consumers

The Proposed Solution of this modification will result in a higher level of data protection for Consumers. A Consumer's data will no longer be available on an IHD or PPMID once a CoT has occurred.

Other industry Codes

There are no anticipated impacts on other industry Codes.

Greenhouse gas emissions

There are no anticipated impacts on greenhouse gas emissions.

5. Costs

DCC costs

The DCC implementation cost to implement this modification is £1,686,068. The breakdown of these costs are as follows:

Breakdown of DCC implementation costs	
Activity	**Cost**
Design, Build and Pre-Integration Testing (PIT)	£1,434,761
Post-PIT	£251,307

The DCC have provided a revised breakdown of implementation costs for this modification. As this modification is targeted for the June 2020 SEC Release, the cost of implementation has been recalculated as part of a scheduled SEC Release, as opposed to a standalone release. Post-PIT costs will be split across all modifications included in this release.

More information can be found in the DCC Impact Assessment response in Annex C.

SECAS costs

The estimated Smart Energy Code Administrator and Secretariat (SECAS) implementation costs to implement this modification is two days of effort, amounting to approximately £1,200. The activities needed to be undertaken for this are:

- Updating the SEC and releasing the new version to the industry.

SEC Party costs

The majority of Refinement Consultation respondents believe that SEC Parties will incur costs due to testing and development although no estimated costs were provided. A respondent also flagged that costs will be incurred due to ZigBee certificate recertification.

Further information was sought from SEC Parties when investigating the business case. One respondent had stated that the costs their Party would incur would be negligible. Another respondent commented that it would be dependent on whether they would need to procure new Devices or upgrade Devices currently installed to prevent any potential data breach.

6. Implementation approach

Recommended implementation approach

SECAS is recommending an implementation date of:

- **30 June 2022** (June 2022 SEC Release) if a decision to approve is received on or before 30 July 2021; or
- **3 November 2022** (November 2022 SEC Release) if this is a technical specification uplift and if a decision to approve is received after 30 July 2021 but on or before 3 December 2021.

As the change impacts Technical Specifications, the modification should be implemented in a SEC Release that includes an uplift to the Technical Specifications. Due to the 11-month lead time, the earliest release this modification can be implemented in is the June 2022 SEC Release. New versions of the Technical Specifications usually go live in November SEC Releases, however, the DCC have advised that due to the planned implementation of ECoS, including updates to the Technical Specifications in the June 2022 SEC Release will allow for cost savings relating to testing.

If, following a decision and allowing enough lead time, an earlier Release made updates to the Technical Specifications, the Panel may request that this modification be moved to that Release.

If the ECoS change does not go ahead in June 2022 and the Technical Specification uplift becomes November 2022 then this modification will be included in the November 2022 Release. If however the ECoS change does go ahead in June 2022, resulting in technical specification uplift but this modification misses the cut off date it will then be implemented in the next Release which requires a technical specification update,

7. Assessment of the proposal

Observations on the issue

The Proposer was initially concerned about GDPR issues around CoT, Change of Supplier (CoS), and threshold data. This has been discussed with SEC Parties to determine which items could be considered ‘personal data’ under GDPR.

SEC Parties had agreed that under SMETS1 the ability of the ESME and GPF to restrict data sent to IHDs after a CoT event was present but in SMETS2 this was missing, which presents a risk to Suppliers’ compliance with GDPR. The Working Group also noted that TS0893 (an issue raised at the Technical Specifications Issue Resolution Sub-group (TSIRS)) resulted in an interim measure issued by BEIS to allow the best possible alignment with the requirements of GDPR until the final solution of this modification is implemented. This involved assuming a long period of non-consumption was a CoT however it could be considered that most CoTs involve an occupant moving out and another occupant moving in on the same day (such as a house move).

Solution development

The development of the Proposed Solution discussed whether the solution should be for the ESME and GPF to ‘publish’ the CoT information or to ‘push’ the information to the other Devices. The

majority of the Working Group believed that the 'publish' method proposed was the best way to implement the changes needed and further expressed that they would rather not have two methods.

It agreed that changes to the Communications Hub software are required in order for the GPF to support this method, which will require the DCC to make changes.

The ZigBee attributes (bits #9 and #10 of the ProposedTenancyChangeControl Attribute) were discussed and the solution put forward is that the information on bit #9 (currently 'clear data – customer') could be expanded to include Supplier messages data. The use of bit #10 has been discussed but it has been agreed to use only bit #9.

During a Working Group session, a member asked whether the Device should clear Top-Up history and information regarding Debt Recovery in addition to historic consumption data and Supplier messages which are already stated in the proposed legal text. SECAS responded that these attributes were not listed in SMETS to be displayed on the PPMID. If the attributes are not requirements in the SEC, and are being displayed, the Device Manufacturer is building Devices that are providing functionality that is additional to the Technical Specifications. This was investigated by SECAS and discussed offline with the respondent and the Proposer. It was agreed that the legal text cannot request that the information is deleted as it is not required to be displayed.

The group agreed that the ESME and GPF Servers needed to be able to publish the CoT and the IHD Client must be able to receive the CoT. In addition, the IHD client must be able to request CoT information and the ESME or GPF Server must be able to provide the information.

The group discussed the speed of the IHD clearing old data. It agreed that the Supplier would need to send appropriate Service Requests to set up the parameters (tariffs, pricing, payment mode, user message etc) for a new customer prior to sending the CoT notification. Alternatively, the Supplier should ensure that the applicable time in the CoT is selected such that tariffs, pricing, payment mode and user message are updated prior to the CoT being applied.

Assessing the GDPR risk

Details surrounding what constitutes a breach of GDPR were considered by the Working Group and during the first Refinement Consultation and the Modification Report Consultation (MRC). A breakdown of each scenario can be found below.

Change of Tenancy

The Working Group agreed that consumption data, which could be considered to be 'personal data', is currently available in SMETS2 to the IHD and PPMID after a CoT event has taken place. This could lead to the risk that a new tenant may be able to view a previous tenant's consumption history. One respondent to the MRC believed that consumption data was aggregated up for display on IHDs and PPMIDs. They believed little 'personal data' could be gleaned from this information.

Change of Supplier

The Working Group discussed what information was passed from the ESME or GPF to the IHD or PPMID and who could view this information in a CoS scenario. It concluded that as a CoS scenario is most likely to be the same tenant simply changing energy Supplier (i.e. no simultaneous CoT), there is no need to restrict access to previous information stored on the ESME or GPF. The most likely scenario is for a CoT to occur followed by a CoS.

The Working Group further discussed possible future proposals that could potentially allow Consumers to change Supplier every half hour; implementing an IHD information wipe every half hour would mean no consumption data would be available on the HAN for the customer to view.

Dual Supplier situations

Working Group members discussed the dual Supplier scenario where one Supplier might be informed of a CoT and send a CoT Service Request and the other Supplier is either not informed or does not send this until sometime later (if at all). The group agreed that where one CoT is received, both sets of consumption data should be removed (gas and electricity). Where two CoTs are received on different days the data on the IHD and PPMID should be removed on both occasions. This might lead to the information being removed twice, but the group agreed that this was the most reliable method to prevent the IHD retrieving and re-populating the historical data.

Supplier Messages

The Working Group considered the messages sent by Suppliers to PPMIDs and whether these messages are stored or deleted on a CoT. The group agreed that consumption data and Supplier messages which could be personal to the Consumer should be cleared. No Suppliers confirmed that Devices they procured had this functionality or they had sent these type of messages so we are seeking information on this as part of the second Refinement Consultation.

Threshold Values

The Working Group considered whether threshold information was considered personal information and would allow identification of a consumer. This would likely depend on if the Supplier was setting the thresholds or the Consumer. The group agreed that data such as thresholds and Supplier name and telephone number could not be considered personal data and does not need to be cleared.

Debt

The Working Group considered a customer's debt information to be personal. However, in order to, ensure data is cleared from a PPMID the Supplier is able to set ESME and GPF to credit mode, to clear the debt and then it would also be removed from the IHD / PPMID. The Supplier could then set the meter back to Prepayment mode. We are seeking more information on this as part of the second Refinement Consultation.

Power-Cycling Solution

At a further suggestion was whether or not completing a 'power-cycle' of the IHD / PPMID would clear the data displayed. This may be possible; however, it would have to be carried out either by the new tenant or by an engineer visiting site. The only way to ensure that the IHD / PPMID respect the CoT is for the ESME and GPF to pass on the CoT to the relevant Device.

Information Commissioner's Office views

To further understand the business case for the modification, SECAS sought the views of the Information Commissioner's Office (ICO). The ICO gave their opinion on the issue identified under SECMP0056.

The ICO stated that if the Consumer were to suffer a personal data breach, they are legally obligated to inform the ICO if there is a risk of detriment to the rights and freedoms of the effected Consumer. They also advised that this may have to be treated on a case-by-case basis. It would be the Consumer's responsibility to assess the risk of detriment and make a decision on whether to report a breach to the ICO. The ICO commented that it is difficult to speculate the level of regulatory action that may need to be taken at the enquiry stage and so commented no further on this.

To summarise, the ICO stated the following points:

- Personal data must be collected and processed fairly and lawfully.
- Personal data must only be used for the specified purposes for which they were collected, and that any further processing of personal data is compatible and that the data subjects are well informed.
- Parties must minimise the data collected and retained.
- Consumers must be able to exercise all of their information rights.
- Data must be aggregated where possible so that information about individuals cannot be identified from the data.

The Gemserv Data Protection Team's views

Further to the engagement with the ICO, SECAS discussed the modification with the Gemserv Data Protection team. The team provided a formal response to the modification which was taken to the SEC Working Group. The key points of the response were:

- Currently, the situation involving the potential for a SMETS2 Device to display personal information belonging to a previous Consumer / tenant of a premise, to a new tenant at the same premise would lead to a breach of provisions I1.2 and I1.5 of the SEC, in addition to Articles 6(1) and 32 of the GDPR, due to the unauthorised processing and disclosure of Consumption Data and other personal data without consent;
- At a maximum, this breach could involve two separate fines of up to £17,860,000 and £8,930,000 respectively. The likelihood of a Consumer complaint or ICO investigation occurring, which could lead to such fines being applied to energy Suppliers, is moderate;
- The mitigations suggested in SEC Modification SECMP0056 will avoid a violation of provisions I1.2 and I1.5 of the SEC, in addition to Articles 6(1) and 32 of the GDPR.

Views against the consumer areas

Improved safety and reliability

If approved, the implementation of SECMP0056 will provide an improved level of Consumer safety as there will be mitigations against potential data breaches.

Lower bills than would otherwise be the case

SECMP0056 will have no impact on the cost of the Consumer's energy bills.

Reduced environmental damage

SECMP0056 will have no impact on reducing environmental damage.

Improved quality of service

The Proposed Solution of SECMP0056 will provide an improved quality of service to the Consumer, as the previous tenants' data will no longer be available on the IHD / PPMID. The Consumer's relationship with their Supplier could be jeopardised if a potential data breach were to occur.

Benefits for society as a whole

The Proposed Solution of SECMP0056 will benefit society as a whole as it will mitigate potential risks of GDPR breaches. The purpose of GDPR is to protect individuals' fundamental rights and freedoms, particularly their right to protection of their personal data and SECMP0056's implementation will ensure that Suppliers are taking the necessary steps to provide security to their customers.

Views against the General SEC Objectives

Proposer's views

The Proposer feels that this modification will better facilitate SEC Objective (f)[1]. The Proposer believes the Proposed Solution will ensure that customer data is protected and allows the Supplier to remain compliant with GDPR requirements for data security.

Industry views

The majority of respondents to the first Refinement Consultation believe this modification better facilitates SEC Objective (f). This is due to the Proposed Solution preventing personal data from being viewed by a new tenant, and thus not breaching GDPR requirements.

Two respondents felt that the modification better facilitates SEC Objective (a)[2] as Smart Metering Operation will be maintained and only information relevant to the current tenant will be available.

One respondent felt that this modification better facilitates SEC Objective (c)[3]. This is because the proposal provides the new tenant with the appropriate information for them to manage their electricity and gas consumption.

[1] Ensure the protection of data and the security of data and systems in the operation of the SEC.

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

[3] Facilitate energy consumers' management of their use of electricity and gas through the provision of appropriate information via smart metering systems.

Business Case

The modification has been taken to the SEC Working Group several times during the Refinement Process for SEC Parties to fully realise the impact and scope of the modification, and to allow the business case to be understood.

Following the MRC, SECAS requested that, due to the high cost of implementation and the presentation of costs as a standalone release, the modification could return to the Refinement Process to allow SEC Parties to discuss the Modification Report Consultation (MRC) responses and for SECAS to engage with the DCC to collaborate on reducing costs and presenting them in a more representative manner.

SECAS provided a breakdown of the initial implementation cost of £2,949,147. It was agreed that a higher level of transparency under DCC assessment costs was needed. The DCC responded stating that a large part of the cost is to pay for stringent testing by the Service Providers as testing issues had occurred previously. SECAS sought further detail from the DCC to better understand the costs associated with the modification. The DCC confirmed that the modification had been costed as a standalone release, however the costs would be reduced significantly if costed as part of a scheduled SEC Release. SECAS confirmed that, if approved, this modification will be implemented as part of a scheduled SEC Release, specifically the June 2022 SEC Release. This reduces the implementation costs to £1,686,068.

The Working Group considered that a breach of the GDPR would be seen as the responsibility of the Supplier and would incur a fine of up to €20m or 4% of a company's annual turnover. It was stated that a potential GDPR breach is serious and that each Supplier should mitigate the costs of the modification against their own risk of causing a breach. Comments were received that even if a Device Manufacturer does not include the relevant Zigbee CoT attributes, it will still be the Supplier that is held accountable for any potential breach in GDPR.

However, questions were raised as to whether the information being made available could be considered 'personal' and how much of a risk the availability of this information constitutes considering:

- consumption data is likely to be aggregated;
- it is unknown if any Suppliers procure Devices with messaging functionality;
- it is unknown if Suppliers use the messaging functionality and if the messages contain information likely to be considered personal;
- debt can be cleared from PPMIDs by changing the meter to credit mode and then changing back to Prepayment mode which will also clear the IHD/PPMID data;
- power-cycling can be utilised, however, this may involve a site visit or asking the new occupant to perform the cycle;
- information is only displayed to the new occupant, not widely broadcast; and
- the new occupant can only view the previous tenant's information, not many consumers' information.

SECAS is seeking views on the Supplier messaging functionality in the second Refinement Consultation.

Appendix 1: Progression timetable

SECAS will issue the second Refinement Consultation on 14 December 2020. Once the consultation has closed SECAS will update the Modification Report and present the modification to the SEC Panel. The modification will then proceed to Change Board for vote before the Authority makes its decision.

Timetable	
Event/Action	**Date**
Modification raised	5 Jul 2018
Modification discussed at Working Group	6 Aug 2018
Modification discussed at Working Group	17 Sep 2018
Preliminary Assessment requested	Feb 2019
Preliminary Assessment returned	23 Apr 2019
Modification discussed at Working Group	1 May 2019
Impact Assessment costs approved by Change Board	22 May 2019
Refinement Consultation	30 May – 20 Jun 2019
Impact Assessment requested	25 Jun 2019
Impact Assessment returned	20 Aug 2020
Modification Report approved by Panel	11 Sep 2020
Modification Report Consultation	14 Sep – 2 Oct 2020
Modification discussed at Working Group	7 Oct 2020
Change Board Vote (to return modification to Refinement Consultation)	21 Oct 2020
Modification discussed at Working Group	2 Dec 2020
Second Refinement Consultation	14 Dec 2020 – 8 Jan 2021
Modification Report approved by Panel	12 Feb 2021
Change Board Vote	24 Feb 2021
Authority decision (anticipated date)	1 Apr 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**
CADs	Consumer Access Devices
CHTS	Communications Hub Technical Specifications
CoT	Change of Tenancy
CoS	Change of Supplier
DCC	Data Communications Company
ECoS	Enduring Change of Supplier
ESME	Electricity Smart Metering Equipment
GBCS	Great Britain Companion Specification
GDPR	General Data Protection Regulation
GPF	Gas Proxy Function
HAN	Home Area Network
ICO	Information Commissioner's Office
IHD	In-Home Display
MRC	Modification Report Consultation
PPMID	Prepayment Meter Interface Device
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SMETS	Smart Metering Equipment Technical Specifications
TSAT	Technical Specification Applicability Tables