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Solution Design Specifications

SECMP0038:

Sending Commands via PPMIDs

Summary

This modification seeks to offer the option for Prepayment Meter Interface Devices (PPMIDs) to be able to pass fully formed Great Britain Companion Specification (GBCS) Remote Party Commands onto the Home Area Network (HAN). It is expected that the commands would usually be routed from the Supplier to the PPMID via Wi-Fi connectivity.

Impacts

- Data and Communications Company (DCC)
- DCC Users

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About this Document

This is the Solution Design Specification (SDS) document for SECMP0038, which contains the detailed

- context;
- business requirements;
- solution;
- system requirements;
- testing requirements; and
- implementation approach.

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1. Context

This section sets out the context for SECMP0038.

Context

Each Great Britain Companion Specification (GBCS) Remote Party Command ("Command") is a large number¹ which can be sent via a range of mechanisms to the target Device. Each Command is to instruct the target Device to take specific actions. All GBCS Remote Party Commands must have been validated by the DCC (and a cryptographic DCC check added that the target Devices validate) before they can be communicated to target Devices (nothing in this modification affects that requirement for DCC validation before issue of GBCS Remote Party Commands).

A Command is typically delivered to the Consumer's premises via a Communication Service Provider's (CSP's) network to the Communications Hub (CH). A Command can also be delivered to the CH using a Hand Held Terminal (HHT). Regardless of the route by which it arrives at the CH, the CH then sends the Command on to the target Device specified in the Command. The target Device is unaware of the delivery route to the CH – the target Device applies the same security checks in all cases.

This modification is to extend the range of mechanisms used to deliver Commands to the CH in Consumers' premises to include delivery via an 'enhanced PPMID'. The modification would not affect the mechanisms the CH uses to forward on the Command to the target Device, nor does the modification affect any processing undertaken by the target Device.

Note that PPMID must already be capable of delivering two types of GBCS Commands via the CH. This modification extends the range of such Commands from the PPMID delivered via the CH, but uses the same PPMID to CH mechanism as the existing two Commands.

The reason for extending the range of delivery mechanisms is to allow for alternatives when there are issues with the CSP's Wide Area Network (WAN) connection to the CH (e.g. interference).

Note that HHT cannot be used either to distribute firmware to Smart Meters or to carry Commands resulting from the 'Commission Device' Service Request (SR). The same limitations would apply to a delivery via PPMID.

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¹ When represented as binary, the number which is a Command is typically in the range from a few hundred to a few thousand bytes.





2. Business Requirements

This section sets out the detailed business requirements for SECMP0038.

Business Requirements

The business requirements are to:

- Require that a CH delivers any GBCS Command received from a PPMID to the target Device identified in the Command. This extends the range of GBCS Commands from the PPMID that the CH is required to deliver;
- Implement this facility in all new and already installed CHs. This would require firmware upgrades on installed CHs. Thus, this change is to be included in the next available release which already contains requirements to update firmware on all installed CHs. This is understood currently to be Release 4.

Use of this facility would also require that the Supplier in question provides the Consumer with an 'enhanced PPMID' i.e. one that has additional capability beyond that in SMETS (PPMIDs are Supplier Devices and so cannot be bought by the Consumer or provided by any other DCC User). There would be no requirement on any Supplier to provide such 'enhanced PPMIDs', and so no change to SMETS (which details the minimum PPMID specification).

Rather, Suppliers may elect to provide such Devices to those Consumers where 'enhanced PPMIDs' may be needed to provide required services (e.g. those where CSP WAN connection is of intermittent reliability). Where Suppliers so elect, they would need to have in place some mechanisms in the 'enhanced PPMID' to receive Commands (e.g. internet connection via WiFi; mobile network connection, etc.). It would be for the Supplier to decide such provision, which is outside the scope of SEC technical standards².

Such 'enhanced PPMIDs' would not be able to use the functionality in the modification until the CH to which it is attached has been updated.

The change to the CH does not affected interoperability with other types of types or with PPMIDs supporting SMETS mandated functionality.

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² SEC Technical Standards relate to Zigbee Home Area Network (HAN) interactions, and do not extend to other network in the premises





3. Solution

This section details the required changes to SEC and wider documents that are proposed to implement the requirement for SECMP0038.

GBCS changes

To the version of GBCS in which this change is to be implemented³, add the underlined bullet to specify the additional CH requirement:

10.8.2 CH Routing of Remote Party Commands and SME.C.PPMID-GSME and Alerts

Whenever a CH receives either:

- a Remote Party Message via its WAN interface; or
- a Remote Party Message in the Data parameter payload of a Transfer Data command which is from an HHT;
- a Remote Party Command in the Data parameter payload of a Transfer Data command which is from a PPMID; or
- an SME.C.PPMID-GSME Message in the Data parameter payload of a Transfer Data command from a Device, which is in its CHF Device Log,

the CH shall:

- process the Message Header Structure(s) in that Message sufficiently to identify the target Device's Entity Identifier; and
- where the identified Device is in the CHF Device log and is not an HHT, GPF or CHF, attempt to deliver that Message to the identified Device.

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³ This section of GBCS is to be introduced by BEIS IRP521 at Release [DN: TBC]



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4. Implementation

Implementation Date

The recommended implementation date for SECMP0038 is:

• June 2019 (earliest potential implementation date, assuming a potential DCC lead time to implement of 12 months)



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Appendix 1: Glossary

Acronym	Definition
СН	Communications Hub
CHF	Communications Hub Function
CSP	Communication Service Provider
DCC	Data and Communication Company
GBCS	Great Britain Companion Specification
GPF	Gas Proxy Function
GSME	Gas Smart Metering Equipment
HAN	Home Area Network
ННТ	Hand Held Terminal
PPMID	Pre Payment Meter Interface Device
SEC	Smart Energy Code
SMETS	Smart Metering Equipment Technical Specifications
SR	Service Request
WAN	Wide Area Network

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

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