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MP202 ‘Ensuring Solution for SMETS1 and SMETS2+ PPMIDs’

Business requirements – version v0.1

About this document

This document contains the business requirements that support the solution for this Modification Proposal. It sets out the requirements along with any assumptions and considerations. The Data Communications Company (DCC) will use this information to provide an assessment of the requirements that help shape the complete solution.

1. Business requirements

This section contains the functional business requirements. Based on these requirements a full solution will be developed.

Business Requirements	
Ref.	Requirement
1	To allow the same PPMID Device Model to be used in SMETS1 and SMETS2+ Smart Metering Systems.
2	Remove obligation for different Firmware Versions
3	Retain current arrangements for adding Device Models to the CPL
4	Allow the Pre-Notification of a dual mode PPMID
5	Whitelisting of dual mode PPMID
6	Verification of the SMETS version of the Smart Metering System targeted by SR8.11
7	Enable OTA firmware upgrades to dual mode PPMID enrolled in a SMETS2+ Smart Metering System

2. Considerations and assumptions

This section contains the considerations and assumptions for each business requirement.

2.1 General

Several PPMID devices support both SMETS1 and SMETS2+ functionality and these dual mode PPMID could be installed in a Smart Metering System using either technology.

The Smart Energy Code (SEC) does not permit Devices to support SMETS1 and SMETS2+ functionality and dual mode PPMIDs capable of support SMETS1 and SMETS2+ must be listed twice on the CPL. Both entries share the same hardware identifiers but use a different Firmware Version, the SMETS1 CPL entry may use a fictitious Firmware Version.

PPMID are currently pre-notified to the DCC as either SMETS1 or SMETS2+ Devices. Suppliers have expressed their interest to install these dual mode PPMID in SMETS1 and SMETS2+ Smart Metering Systems and, instead of defining SMETS1 or SMETS2+ compatibility during pre-notification, suggest to use the whitelisting of the PPMID in the target Smart Metering System as a criteria determine whether the PPMID supports SMETS1 or SMETS2+.

Using a dual mode PPMID allows the Supplier to handle SMETS1 and SMETS2+ PPMID in the same way elimination the need define and maintain two distinct PPMID models in forward logistics. This improves the efficiency of the supply chain and simplifies the installation and commissioning process, resulting in savings for the energy Supplier.

This applies only to the installation of new PPMIDs; PPMID already installed in a Smart Metering System are out of scope of the modification.

2.2 Requirement 1: To allow the same PPMID Device Model to be used in SMETS1 and SMETS2+ Smart Metering Systems.

Any solution proposed must include the ability for the same PPMID model to be active working with both SMETS1 and SMETS2+ Devices.

The following parameters on the CPL define a unique Device Model:

- Device_Model.manufacturer_identifier
- Device_Model.model_identifier
- Device_Model.hardware_version.version
- Device_Model.hardware_version.revision
- Device_Model.firmware_version
- SMETS_CHTS Version.Version_number_and_effective_date
- GBCS Version.version_number

A dual mode PPMID the SMETS1 and SMETS+ Device Model must be allowed to be present twice on the CPL and use the same Device Model parameters expect for:

- SMETS_CHTS Version.Version_number_and_effective_date
- GBCS Version.version_number

The DCC Total System must distinguish between a dual mode PPMID Device Model for SMETS1 and SMETS2+ by virtue of these two parameters only.

2.3 Requirement 2: Remove obligation for different Firmware Versions

The SEC Appendix Z states:

“3.13 Where a PPMID of a particular type is capable of forming part of either a SMETS1 Smart Metering System or a SMETS2+ Smart Metering System, any Device Model added to the Central Products List shall:

- (a) insofar as it relates to PPMIDs of that type forming part of SMETS2+ Smart Metering Systems, be the Manufacturer of the PPMID, its model, its hardware version and its firmware version; and
- (b) insofar as it relates to PPMIDs of that type forming part of SMETS1 Smart Metering Systems, be the Manufacturer of the PPMID, its model, its hardware version and a value representing its firmware version that is different to the firmware version of the PPMID of that type that forms part of a SMETS2+ Smart Metering System.”

The obligation in the SEC for dual mode PPMID to be listed with different Firmware Versions must be reworded to ensure the same Firmware Version is used for SMET1 and SMETS2+ Device Models.

2.4 Requirement 3: Retain current arrangements for adding Device Models to the CPL

The SEC defines two distinct processes for adding SMETS1 and SMETS2+ Device Models to the CPL

- Only the DCC can add SMETS1 PPMID Device Models to the CPL and the Device must be present on the EPCL;
- Manufacturers and Suppliers can add SMETS2+ PPMID Device Models to the CPL.

This modification will not change the current arrangements for adding Device Models to the CPL.

2.5 Requirement 4: Allow the Pre-Notification of a dual mode PPMID

Smart Metering Devices must be pre-notified to the DCC using Service Request 12.3 'Device Prenotification'. This Service Request mandates the entry of the 'SMETSCHTSVersion'. In order to achieve the maximum flexibility, it must be possible to pre-notify a dual mode PPMID using the SMETS_CHTS Version.Version_number_and_effective_date associated with either the SMETS1 or SMETS2+ Device Model on the CPL.

2.6 Requirement 5: Whitelisting of dual mode PPMID

Smart Metering Devices must be whitelisted on the Communications Hub using Service Request 8.11 'Update HAN Device Log'. This Service Request action ties the dual mode PPMID to either a SMETS1 or a SMETS2+ Communications Hub.

The details of the target Communications Hub in Service Request 8.11 held in the Smart Meter Inventory (SMI) and the resulting response indicating success must be used to set the supported 'SMETSCHTSVersion' version in the SMI for the dual mode PPMID as per the following table:

PPMID SMETS Version in SMI as per pre-notification	CH SMETS version as per whitelisting	Resulting PPMID SMETS version in SMI
SMETS1	SMETS1	SMETS1
SMETS1	SMETS2+	SMETS2+
SMETS2+	SMETS1	SMETS1
SMETS2+	SMETS2+	SMETS2+

Once the 'SMETSCHTSVersion' in the SMI is set the dual mode PPMID is then associated with either a SMETS1 or a SMETS2+ Smart Metering System. Any subsequent Service Request involving the PPMID is then constructed as either a SMETS1 message or a SMETS2+ GBCS Command.

2.7 Requirement 6: Verification of the SMETS version of the Smart Metering System targeted by SR8.11

The Device Model details are verified against the CPL as part of the Pre-Notification; mismatches will be flagged and result in an error message being generated and sent to the DCC User.

Dual mode PPMID are expected to be present with SMETS1 and SMETS2+ Device Models on the CPL which enables the change of the 'SMETSCHTSVersion' in the SMI following the whitelisting (see Requirement 5 in Section 2.6).

The change of 'SMETSCHTSVersion' as part of the whitelisting can be requested in situations where the CPL doesn't contain a corresponding PPMID Device Model:

- The corresponding PPMID Device Model has not yet added to the CPL;
- The corresponding PPMID Device Model status is set to "removed" on the CPL;
- A non-dual mode PPMID is submitted in SR8.11 and the targeted Smart Metering System does is not matched by a corresponding PPMID Device Model on the CPL.

To prevent these scenarios, it is necessary to verify SR8.11 prior to execution and send an error message to the DCC User detailing the issue.

2.8 Requirement 7: Enable OTA firmware upgrades to dual mode PPMID enrolled in a SMETS2+ Smart Metering System

OTA firmware upgrades to PPMID are supported starting with GBCS V4.1. A dual mode PPMID which, following the whitelisting process described in Requirement 3 (see Section 2.6), is listed as a SMETS2+ compatible device in the 'SMETSCHTSVersion' must support the OTA firmware upgrade.

A dual mode PPMID which, following the whitelisting process described in Requirement 3 (see Section 2.6), is listed as a SMETS1 compatible device in the 'SMETSCHTSVersion' must not support the OTA firmware upgrade.

3. Glossary

This table lists all the acronyms used in this document and the full term they are an abbreviation for.

Glossary	
Acronym	Full term
CH	Communications Hub
CHTS	Communications Hub Technical Specifications
CPL	Central Products List
DCC	Data Communications Company
EPCL	SMETS1 Eligible Product Combinations List
GBCS	Great Britain Companion Specifications
HAN	Home Area Network
OTA	Over The Air
PPMID	Prepayment Interface Device
SEC	Smart Energy Code
SMETS	Smart Metering Equipment Technical Specifications
SMI	Smart Meter Inventory
SR	Service Reference