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SECMP0007 ‘Firmware updates to mandated HAN devices’

27th June 2016

Meeting 3 Minutes

Attendees:

Working Group 1 Member	Organisation
Mark Pitchford (SECMP0002 and SECMP0007 Proposer)	Npower
Graham Smith (SECMP0003 Proposer)	Western Power Distribution
Sam Charlton (SECMP0005 Proposer Representative)	EON
Emslie Law (SECMP0006 Proposer)	SSE
Alan Bowman	Chameleon Technology
Andy Knowles	Utilita Energy
Elias Hanna	Landis + Gyr (representing EUA)
Marc Bowden	In Home Displays
Rainer Lischetzki	EDMI (representing BEAMA)
Tim Boyle	Chameleon Technology

Representing	Other attendees
DECC	Relve Spread
DCC	Pankaj Jain
SECAS	Adam Lattimore (Chair)
	Kevin Atkin (Technical Support)
	Urszula Thorpe (Technical Support)
	David Barber (Modifications Lead)
	Sebastian Rattansen (Modifications Support)
	Sasha Townsend (Meeting Secretary)

1. SECMP0007: Firmware updates to mandated HAN devices

1.1 Actions update

SECAS provided the WG with updates on the outstanding actions from the previous WG1 meetings. It was noted that the British Electrotechnical and Allied Manufacturers Association (BEAMA) and the Energy and Utilities Alliance (EUA) had sent representation to this WG meeting.

SECAS advised that the Solution Design Document and supporting documents were presented to the Technical Sub-Committees (TSC) on 16th June 2016. The WG were advised that the TSC questioned the longer term use of the proposed mechanisms, due to new technology being made available to consumers in the future, which may reduce the usage of in-Home Displays (IHD) and Prepayment Interface Devices (PPMID). It was highlighted that the TSC expressed the importance of the WG exploring alternative solutions and a cost benefit analysis should be a key focus during further refinement. SECAS highlighted that it is at the WG's discretion to take the input provided by the TSC into consideration.

SECAS informed the WG that the updated Solution Design Document had been sent to the DCC, so they can carry out a PA, on 10th June 2016.

1.2 Process to upgrade PPMID/IHD with large firmware

SECAS presented the WG with a diagram showing the proposed step-by-step process to upgrade PPMIDs and IHDs with large firmware images.

A WG Member questioned whether firmware images on PPMIDs and IHDs would be activated in the same manner as on Meters. SECAS clarified that the WG had previously agreed that the process would differ as distribution and activation would be covered by one command in the case of PPMIDs/IHDs. It was highlighted that authenticity and integrity of the image would be verified by the device by verifying the Manufacturer's signature within the image.

A WG Member also asked how to identify associations between PPMIDs/IHDs and Communication Hubs (CHs). SECAS advised that this information can be obtained from the Smart Metering Inventory (SMI).

A WG Member highlighted current industry discussions surrounding fragmentation and security. SECAS advised that it was agreed during earlier WG discussions that there would need to be mechanisms in place to support distribution of images over 750 kilobytes (kB), which requires fragmentation. It was noted that the Solution Design Document will be presented to the Security Sub-Committee (SSC) in order to seek input on potential security risks. The Chair also advised that security matters can be flagged in the Modification Report for consultation.

A WG Member asked whether there will be a mechanism to delay the activation of the firmware image. SECAS advised there will be an option to specify activation 'date-time' in the command. It was also noted that populating this field as 'zero' will activate the image immediately if a single image is distributed to PPMID/IHD. If an image is fragmented, the WG discussed that setting activation date-time to 'zero', when the first part of the image is sent, would mean that the image is downloaded by the PPMID/IHD and stored until the second part of the image is downloaded. SECAS advised that both parts of the image would be activated on the activation 'date-time' specified in the second command. SECAS also clarified that the Manufacturer will provide guidance on how to activate multiple images within a release note.

A WG Member then asked whether the PPMID/IHD can inform the CH that it has rejected the first image, for example if the PPMID/IHD finds Manufacturer signature within the images cannot be

verified. SECAS confirmed that they can build a provision for this in to the 'UpgradeEndResponse' command from the PPMID/IHD to the CH. This Zigbee Cluster Library (ZCL) command would specify whether the image has been successfully downloaded. If the download is unsuccessful, the CH would then create a Device Alert containing an indication that the image was invalid and send it to the DCC. The DCC would forward the Device Alert to all Responsible Suppliers.

SECAS highlighted that once the PPMID/IHD has successfully downloaded the image, the CH would read the current firmware version on the PPMID/IHD after the activation time plus a specified time period. SECAS asked the WG how long this time period should be. The WG agreed to initially propose 10 minutes and noted that this should be highlighted as a question in the consultation document. A WG Member then queried whether the firmware can be downloaded and activated if the PPMID/IHD's is switched off. It was discussed that the CH would only communicate with PPMIDs/IHDs when they are switched on. The WG therefore decided that the download and activation would fail and the process for sending, downloading and activating images would need to start from the beginning as and when the PPMID/IHD is switched on. It was also noted that Suppliers can ascertain whether PPMID/IHDs are on or off by checking the current device's firmware version in the SMI.

Discussions followed on to what alerts Suppliers will receive during the process. SECAS clarified that Suppliers would receive two alerts, as agreed upon at the last WG. The first alert would be sent to all Responsible Suppliers (except for the sender as the sender would receive a Service Response) when DCC processed the Service Request to distribute image. The alert would include a list of specific Device IDs and hash of the image and the activation date-time specified in the Service Request.

The second alert would be sent to all Responsible Suppliers confirming the firmware version on the PPMID/IHD after activation date-time specified in the Service Request + 10 minutes.

EUA also asked if an upgrade would succeed in a Change of Supplier (CoS) event during a firmware update with multiple images. SECAS advised that the new Supplier will not have access to the images as they may not have an established relationship with the Manufacturer.

1.3 Liability scenarios

SECAS presented liability scenarios, in light of an outstanding action from the second WG meeting, in order to facilitate discussion on the existing liability limitations, loss recovery provisions, and dispute resolution procedures, and whether they are sufficient with regard to this Modification Proposal.

It was highlighted that the SEC does not currently extend supplier responsibilities to Devices that form part of other Smart Metering Systems (SMS) in the same premises for which the Supplier is not the Responsible Supplier. This means that if an Import Supplier damaged a GSME by upgrading firmware of a PPMID/IHD that forms part of Gas SMS and Electricity SMS, they would not be liable for that damage to the GSME, and vice versa. However, it was noted that that if a Supplier damages a CH that forms part of a SMS for which they are the Responsible Supplier, they would be liable to the DCC for that damage.

SECAS also clarified that the SEC definition of SMS excluded IHDs. SECAS asked the WG to confirm whether the IHD should be included in the SMS definition. The WG agreed that a Supplier responsible for damage to an IHD should be required to replace it and it should therefore be included.

The WG discussed who the liability for physical damage should lie. The WG agreed that the sender of the image should be liable.

The WG questioned how a Supplier will find out who sent the image. SECAS advised that the DCC will keep this in their audit trail, however there are constraints on the information that can be shared.

The WG suggested that the affected Supplier should raise an incident per event and request that the DCC releases the information on who sent the image.

SECAS asked the WG whether liabilities for damage to physical property should remain as currently set out in the SEC (limited to £1million per incident). The WG confirmed this should be the provisions. It was also noted that disputes and appeals can be raised with the SEC Panel, in line with the current procedures, for larger scale problem.

The WG enquired who would be responsible for ensuring that damaged devices are un-joined and decommissioned, and new devices are whitelisted, joined and commissioned to ensure that the Smart Metering Inventory is up to date. SECAS stated that currently there is no obligation to unjoin devices and agreed to look into whether any of the existing provisions surrounding the maintenance of the SMI would need to change.

ACTION WG1_03_01: SECAS to look into existing provisions surrounding the maintenance of the SMI for discussion at the next WG meeting.

1.4 Buffer space rules

SECAS presented a slide to prompt discussion on the buffer space rules when upgrading a PPMID/IHD with large firmware. A WG Member questioned why it has not been proposed to date, to create additional buffer space on the CH. SECAS advised that DCC had previously stated that this is possible but will cost considerably more to implement. The Proposer also stated that they would not want to propose an additional or increased buffer space as part of this Modification Proposal and felt that this should be done in a separate Modification Proposal. The WG agreed that this should not be included in the scope of this Modification Proposal.

The WG also agreed that the firmware images for PPMID/IHD should be stored in the same buffer space as Electricity Smart Metering Equipment (ESME) and Gas Smart Metering Equipment (GSME) firmware images. SECAS asked the WG to confirm that in the event of an ESME or GSME image arriving whilst an IHD/ PPMID image is in process and there is insufficient buffer space, the one in process will be overwritten. The WG agreed that ESME and GSME upgrades were higher priority than PPMID/IHD updates. SECAS asked the WG to confirm that in the event of a PPMID/IHD image arriving whilst another PPMID/IHD image is in process and there is insufficient buffer space to store the new image, the newly arrived image would overwrite the one in process. A WG Member questioned whether there would be a greater advantage for the PPMID/IHD image in process to complete in order to prevent two suppliers competing to upgrade. It was also noted the overall process will take approximately 10-15 minutes and therefore the probability of two Suppliers sending firmware images to PPMID/IHD at the same time is unlikely. The WG also agreed that if another PPMID/IHD image arrives whilst another PPMID/IHD image is in process and there is insufficient buffer space, the one in process will be overwritten by the most recent image.

1.5 Next steps

SECAS informed the WG that they will update the Solution Design Document with legal text based on the discussions on liabilities and agreed buffer space rules. SECAS also advised that they will begin drafting the consultation document, for discussion at the next WG meeting.

ACTION WG1_03_02: SECAS to update Solution Design Document with legal text.

ACTION WG1_03_03: SECAS to begin drafting consultation document.

2. Modification Proposals and DCC PAs

The DCC informed the WG that there had been delays in receiving information from Service Providers (SP) in order to complete the PAs. They advised that this issue had been discussed at the last smart metering chairing group and they expect that further communication will be issued to industry in the near future. SECAS noted that this will also need to be raised with the SEC Panel before informing SEC Parties.