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Elster Response

To

Smart Metering Implementation Programme:

Consultation on Second Version of the Smart Metering Equipment Technical Specification

Ref: 12D/258

Submission Date: 08th October 2012

DECC Consultation Co-ordinator
3 Whitehall Place
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**Elster Response Smart Metering Implementation Programme:
Consultation on Second Version of the Smart Metering Equipment
Technical Specification - Ref: 12D/258**

Dear Sir / Madam

Elster Metering Limited welcome the opportunity to respond to the DECC Smart Metering Implementation Programme: Consultation on Second Version of the Smart Metering Equipment Technical Specification.

The consultation questions have been discussed and our views expressed.

We are look forward to further discussions on these responses.

Yours faithfully

Digest of consultation questions:

1.
Do you have any comments on the criteria used in the evaluation of the application layer standards?

Elster support the criteria and the resulting proposals

2.
Do you agree with the proposal to adopt ZigBee SEP / DLMS as the HAN application layer standards for GB?

Elster support the proposals with the use of DLSM COSEM for Electricity meter data flows to and from the DCC and ZigBee 1.X for all other HAN communications (IHD and Gas meter).

This is also supported by the vast majority of meter manufacturers in EUA and BEAMA, many of which are working in SSWG to ensure the protocols have the required data extensions to support the full SMETS functionality. We are not aware of alternative protocols that have the equivalent feature sets and required security.

3.
Do you agree that equipment should be required to comply with SMETS and a GB Companion specification for ZigBee SEP / DLMS?

Elster support the proposals for equipment for the mandated rollout with SMETS2. Care is needed in applying this to foundation period SMETS1 with a logistics changeover timeframe to SMETS2.

A GB Companion specification is needed to support device interoperability.

4.
Do you agree with the overall approach proposed in relation to the HAN physical layer? If not, please provide a rationale and evidence for your position.

Elster agree with the overall approach, there is no single technology to meet all the requirements for all property types so the compromise solution of starting with 2.4GHz (while 868 solutions are developed, tested and standardised) is essential.

5.
Do you have any comments on the criteria used in the evaluation of the physical layer of the HAN?

Elster support the overall approach however we have some concerns about the lack of consideration of modulation scheme impacts. We believe further testing with modulation schemes is appropriate for the bandwidth and inter-network interference needs to be done before 868MHz is considered a reliable solution.

6.
What are your views on the compatibility of the reserved spectrum 870-876MHzwith 868 MHz and the value of considering the use of this band?

Elster support the consideration of this but any solution must be able to support the unlicensed section of spectrum as there is no guarantee of gaining the licensed element. We support every attempt to secure this spectrum for HAN usage.

7.

Do you consider that additional measures should be taken to encourage the development of an 868 MHz solution?

Elster believe that this should be taken forward with meter manufacturers and silicon providers via SSWG and the ZigBee Alliance. We recognise that this requires effective reporting and monitoring with DECC via the associated industry advisory group.

8.

Do you agree with the approach to allow the market to determine the balance between 2.4 GHz and 868 MHz? If not, please provide rationale and evidence.

Elster agree with the market led approach.
At this stage we would expect further work to optimise 2.4GHz performance in metering designs and we have yet to see the cost of 868 designs and propagation improvements on real designs (including the modulation impacts to support the required data rates). As this becomes available then DECC can monitor and determine if additional guidance is required.

9.

What are your views on the costs and benefits of the three options identified for deploying wireless solutions (i.e. 2.4 GHz as the default; dual-band communications hubs; or market led)?

Elster support the manufacturer view that this should be market led.
There is insufficient data to properly assess this at this stage. We believe it is highly desirable for a single 2.4 interface for CAD devices and IHDs.
As refinements to 2.4 solutions are made and the 868 technology becomes available this approach can be reviewed.

10.

Do you agree with the proposal for a 'fit for purpose' installation obligation on suppliers?

The proposals appear appropriate, the details are for DECC to agree with Energy Suppliers.

11.

Do you have any views on the proposed approach to developing a wired HAN solution?

We support the proposed actions.
Elster are part of the BEAMA team supporting DECC in its work in this area and will continue to do so.

12.

Do you agree with the proposed scope of functional requirements for a communications hub? Are there any other functions that should be included and

what would be your rationale for including those functions (including estimated costs and benefits)?

Elster have supported the BEAMA and EUA responses to draft specifications via the DECC Industry Advisory group SSAG. We support the main proposals in the consultation and would like to expand on the following points:

- Provision of the Gas meter mirror is essential to support the battery powered Gas meter and the responsive provision of data to the DCC Users and the In Home Display.
- As previously reviewed through SSAG. The Gas meter mirror is the most appropriate place for access reasons and minimising cost impacts to store the bulk of the historic data required by IHD/CAD devices. Previous industry and DECC review in the IDTS proposed 13 months half hourly data on the Gas meter mirror, with a limited backup (e.g. 3 months to minimise cost impacts) on the Gas meter.
- The specification needs to avoid excessive data and going from the Comms Hub to the gas meter and back again where data from the DCC user is needed both by the Gas meter and IHD, we will be happy to advise on this as part of the industry work,
- The Comms Hub should support buffering of data for firmware updates at a minimum to the Gas meter and one In Home Display.
- We support the requirements for both an intimate and stand alone Comms Hub to be included in SMETS2.
- We have concerns on 2 classes of HAN device (Supplier IHD and CAD) and how this could be realised in a secure design with existing HAN technology avoiding a second HAN modem. This requires further industry work to assess.
- Further work is required with the Security architecture to ensure the Comms Hub is a trusted device, define the process options for installation and the interfaces with a Hand Held terminal.

Elster welcome the opportunity to support DECC in assessing these points via EUA and BEAMA in the industry advisory group.

13.
Do you have views on the specification for an 'intimate' interface between electricity meters and communications hubs?

We believe both stand-alone Comms Hubs and Intimate Comms Hubs should be made available for smart meter deployments. An intimate interface is likely to be the most cost effective solution for dual fuel installs both in terms of installation time, revenue protection/safety and equipment costs.

A data port should be supported in the Intimate Comms Hub this can enable the Electricity meters to be supplied without a HAN modem, reducing costs and removing HAN technology risks. For this approach the Comms hub would, then provide the electricity meter data to IHD/CADs.

Elster believe that any power supplied for a stand-alone Comms hub from before the disconnect switch or the measuring element itself should be contained within the secure and safe housing of the Electricity Meter. Flying leads to external Comms hubs should only be used when an intimate hub cannot be utilised (such as gas first or a very restricted meter position). Such cables will be a target for tampering which can reduce

revenues but also create a fire or health hazard. The intimate Comms hub secures both power and data connections to the Electricity Meter.

14.

Do you agree with the Government's marginal preference for the CSP-led model for communications hub responsibilities, or do you prefer the supplier-led model? Please provide clear rationale for the advantages and risks associated with your preferred option.

Elster recognise this is a complex issue and there are many pro's and con's on each side.

Ultimately this is for DECC with the CSPs and Energy Suppliers, but we do believe that a decision must be given to the industry after this consultation.
Elster believe that it is critical that the Suppliers, the CSP/DSP bidders and the meter manufacturers are involved in the specification as they both have legitimate interests in its operation.

15.

Do you agree with the proposal that a CHTS-compliant communications hub should not be mandated for opted out non-domestic sites and that suppliers should be free to use whatever type of communications equipment best supports their processes and WAN service?

Elster agree with this proposal.

16.

Do you agree that the gaining supplier should bear the costs of installing an appropriate communications hub if they decide to switch between opted in and opted out?

No Elster comment

17.

Do you agree that the design and implementation of outage reporting functionality should be assigned to CSPs, documented in the communications hub technical specification?

Elster believe that outage reporting functionality is best placed with the CSPs. They have the means of detecting loss of supply and communicating the situation to DCC for the benefit of the DNOs.

18.

Do you agree that it would be inappropriate to require meters operated outside DCC to be required to implement outage reporting? Please provide rationale to support your views

Elster agree with the proposal. We think it inappropriate to require meters operated outside DCC to have to implement outage reporting, it should be a commercial decisions between the Supplier and customer.

19.
Do you agree that maximum demand registers should be included in SMETS? Please provide evidence to support your position and provide evidence on the cost implications of delivering this functionality via back office systems or via the meter.

The maximum demand functionality that is proposed from the ENA working group has been agreed with BEAMA and the functionality is already incorporated into the SSWG data definitions, therefore Elster would support the inclusion of this functionality.

20.
Do you agree with the proposal not to include the capability to generate additional voltage alerts based on counter thresholds in SMETS 2? Do you have any evidence that could justify including this functionality in SMETS 2?

Elster agree that the ability to create an alert is based on a counter of the threshold should not be included. We do not believe it is necessary to add this functionality as there are other methods to understand the occurrence of these events - these are either:
-   A bit string representing which events have occurred can be read daily to give an indication if the event has occurred
-   The counter associated with this particular event could be read to determine if additional information is needed

Elster believe that the notification of events to relevant parties (Suppliers and DNOs) will be needed and therefore this operation should be done in an automated manner by the DCC.

21.
If DNOs were permitted to access remote disablement functions, should control logic be built into DCC systems or meters? If the logic should be built into meters, should the logic be specified in SMETS 2? Please provide rationale to support your position including estimates of the cost of delivering this functionality under the different options being considered and any evidence relating to safety issues associated with each option.

Decision logic where there are different instructions from multiple DCC users should be centralised and communicated within the DCC. The logic should not sit in the meter. Putting this logic in the meters will cause programme delays and is likely to cause confusion to DCC users as well as consumer problems in the event of DCC to meter communication Failures.

22.
Do you agree that variant smart electricity meters should be specified in SMETS 2 and that the cost uplift for variant smart meters is similar to that for variant traditional meters? Please provide evidence of costs to support your views on cost uplifts.

Elster agree that variant meters should and could be specified in SMETS 2, however we believe a specific number of variants should be specified, currently the working group definition allow 100s of different variants to be created, and this will not be cost effective and will lead to considerable complexity in configuration of the meters. We believe the cost uplifts would be similar to those with similar variants today.

23.

Do you agree that randomisation offset capability should be included for auxiliary load control switches and registers as described above? Do you have views on the proposed range of the randomisation offset (i.e. 0 – 1799 seconds)? Please provide evidence on the cost of introducing this functionality.

Yes Elster agree with the randomisation proposal.

24.

Do you support Option 1 or Option 2 for 'pairing' a CAD to the HAN? Please present the rationale for your choice and your views on the implications that these options have for the technical design of the solution.

As stated in our answer to question 12 we believe there are issues with realising the DECC proposals for CADs with existing technology and this requires further work if we are to avoid a delay.
We believe CAD devices will need to be authorised by the DCC in the same way to IHDs, hence option 2 is preferred to meet the expected security requirements.

We agree with BEAMA and CEDIG that IHDs and CADs are really the same device interface.
We do not understand why the CAD is treated distinctly from the IHD. They are logically and functionally the same thing from viewpoint of the SMS. So we would make the following points:
1) It is important to minimise the number of different elements in the SMS, to keep rollout simple and maximize confidence in success
2) Technically, the CAD and the IHD have the same interface to the SMS (they both read the same data out of the SMS, and to ZigBee they look exactly the same).
3) Functionally, both the CAD and the IHD must be installed by a consumer.
4) The consequence of these first 3 points is that the CAD should use the same security model as the IHD.
5) Treating the CAD as a different, optional element seems likely to lead to it never happening, as everyone focuses on getting the mandatory SMS elements deployed. Whereas if the CAD has the same interface and security model as the IHD, it can ride on the back of all that work, and we get all that consumer enablement almost for free.

25.

If Option 2 were adopted, do you agree that obligations should be placed on energy suppliers to support this process by submitting 'pairing requests' to the DCC on request from their consumers?

We believe that for Option 2, the Supplier would needs to ensure that cost does not deter the consumer from purchasing products or services that would assist in the reduction or more efficient use of energy.

26.

Do you consider that other CAD installation options should be pursued? If yes, please explain the approach you favour and your reasons.

We propose the same approach should be used for the IHD and CAD see above.

27.
Do you agree with the proposal to include in SMETS 2 a specification for a PPMID, connected via the HAN, as described above?

Subject to the answer to 28 (below) Elster would support this approach.
Today there is an obligation on Suppliers to install meters in positions accessible for consumers. This is especially important for those provided with prepayment meters. Since changing from credit to prepayment will be much simpler in a smart metered world, and there will be payment tariffs needing interaction with the meter, each premise needs to be considered a prepayment consumer. For this reason a PPMID needs to be part of SMETS 2.

28.
Would including the capability to enable gas and electricity supply through a PPMID connected via (a) a wireless HAN or (b) a wired HAN meet GB safety requirements? What impact would including this capability have on the cost of smart metering equipment? Please provide evidence to support your answers.

We have significant concerns on the implementation.
Electricity should be assessed further with BEAMA and the HSA, Gas with EUA and the HSA. It should be noted that for gas the consumer must have access to the Emergency Control valve, and if this is not the case then it may be necessary to relocate the metering installation anyway.

29.
Do you agree with the proposal that the communications hub should be specified such that it can support multiple smart electricity meters? How many smart electricity meters should be supported by each communications hub?

Supporting a simple metering interface for one or two generation meters can be supported with minimal impact as long as the security architecture is clear and only a minimal data interface is required.

30.
Do you agree that a specification for a HHT interface to the HAN should be defined? If yes, please identify the functions that this interface would need to support and the scenarios in which such functionality could be required.

Elster believe that if an HHT can be used with the SM HAN, without breaching the end to end security of the whole system, then the functionality requirements for the device should be specified in SMETS 2.
The main purpose of the HHT would be to provide installation and maintenance of smart metering installations and hence Elster would expect that BEAMA and EUA are part of any future work with stakeholders to decide the functions required.

31.
Do you agree with the proposed approach to the governance of security requirements? If you propose alternative arrangements please provide evidence to support your views.

Elster support the proposal that the maintenance is best achieved through a technical sub-committee to the SEC panel, however we have 2 concerns on this

1) We need to ensure the technical sub-committee needs effective representation from manufacturers via EUA and BEAMA and that may require manufacturer trade association representation in the SEC panel where the sub-committee reports are discussed.

2) We need to quickly establish something to cover the evolving security requirements that could affect enrolment of Foundation SMETS1 equipment as an urgent priority, Please see our answer to question 34 which expands on this point.

32.
Do you agree with the proposal to establish independent assurance procedures for DCC and DCC users? Please explain your views and provide evidence, including cost estimates where applicable, to support your position. Comments would also be welcome in relation to the impacts and benefits of the proposed approach with regard to small suppliers.

Elster have no position on this.

33.
Do you agree with the proposal that re-testing should occur at least at set intervals and more frequently when significant changes to systems or security requirements are introduced? Please explain your views.

Elster have no position on this.

34.
Do you agree with the proposal to establish an independent security certification scheme for smart metering equipment? Do you have any views on the proposed approach to establishing a certification scheme or evidence of the costs or timelines for setting up such a scheme or submitting products for certification?

At this stage the impact of the proposals to use the CPA scheme are not clear. Our understanding is that these have yet to be developed for Smart Metering, and to date we have only had some outline information on parts of this. Further work is required to assess the following;

- Meter design/manufacture implications requirements to fulfil these,
- Likely timescales to set up the CPA scheme and approve test houses
- Likely timescales and costs for approvals for the manufacturer's equipment.

Based on the information available so far we believe it will have a significant impact on the programme timeline for approved SMETS2 equipment availability – indeed this could well become the critical path for equipment.

We have major concerns with the proposals in clause 187 where the same criteria are proposed to assess whether SMETS1 meters are eligible for enrolment. This could have significant impact on Foundation volumes as it would not be clear whether equipment being provided now and in the next 18 months could be enrolled until they are all installed in consumer premises.

We fully support inclusion in the enrolment criteria of strong compliance evidence measured against defined security requirements. However we believe an alternative

approach needs to be taken forward urgently with DECC, their security advisors and manufacturer representatives to determine appropriate criteria for enrolment fitting the immediate foundation timescales. This is something Elster, EUA and BEAMA have been pressing for throughout the last year with the work on SMETS1 and security.

The next steps should be that DECC meet with manufacturers and CESG to assess how manufacturers could implement an early self-assessment for Foundation enrolment. This could be based on clarifications regarding the current DECC STEG security requirements together with an assessment of target protocols being used with Foundation deployments.

With reference to paragraph 186, Elster agree that security certification should be a one off process and that re-certification should only be required if the products design or firmware is changed. If the expiry date of the security certificate is reached, Elster believe that a valid certificate should be automatically re-issued, unless there is a good reason not to, and that no re-certification testing should be required, if no changes have been made to the product

35.
Do you agree that sanctions for non-compliance with security requirements should be included in the SEC? Do you have views on the nature of the sanctions that might be imposed?

No Elster comment

36.
Do you agree with the proposal to, in effect, extend the arrangements already proposed for SMETS installations prior to DCC operation, to all installations being operated outside DCC? Please provide evidence of the costs that might be incurred and the impact of this approach on small suppliers.

Elster do not agree with the proposals.

We believe it is too early at this point and we recommend this is reviewed as the security certification process matures.

For domestic installations in Foundation, applying this would reinforce any supplier concerns as any Foundation meters installed could then retrospectively have to comply with the new security certification and therefore limit volumes (see our response to the question above regarding foundation and enrolment criteria).

For non -domestic meters the risk profile is significantly different for gas, as the gas valve is not mandated and there is unlikely to be a consumer HAN.
Therefore different metering protocols could be used with equivalent but different security mechanisms and the CNI risk is significantly reduced (or removed). Including this requirement today would delay SME deployments which would in turn adversely affect the Impact assessment.

However we would welcome work with DECC to assess the extent of "comparable level of security" for these meters to ensure the meters deployed do not add risk to the programme. It would be more appropriate to have defined criteria for self-assessment initially then re-assess once the new domestic meter certification scheme is operational.

37.
Do you agree that interoperability is central to the development of a successful smart metering solution and that activities related to the assurance of SMETS equipment should be governed by SEC? Please provide views on the governance arrangements that would be appropriate for assuring interoperability of smart metering equipment.

Interoperability is central to the successful roll out of technologies. The work carried out by SSWG supported by Elster has established the basis for this interoperable system. With current SSWG ZigBee SEP and DLMS Cosem specification platforms industry is well placed to complete the work required to deliver the end- to-end interoperable solutions required.
Elster believe that industry should manage the governance in the future, with other stakeholders including potentially BSI and a compliance and testing company. We support proposals for Meter manufacturers represented by EUA and BEAMA to be members of the SEC sub group covering this area.

38.
Do you agree with the creation of an 'approved products' list and the requirement on suppliers and CSPs to obtain, retain and provide evidence of appropriate certification should apply regardless of whether they intend to enrol the equipment in DCC?

The planned industry led initiative to cover all smart metering products mandated by the program would allow products to be approved and placed on a list. Significant work is required to achieve this while ensuring there is appropriate access to all market entrants and avoid unnecessary red-tape but in principle Elster support the approach.

39.
Do you agree that protocol certification (against a GB Companion Specification) should provide adequate assurance that a product will meet interoperability requirements? Please explain your views and identify any additional assurance testing that you consider to be necessary and the rationale for including such testing.

Yes Elster agree the GB companion specification should provide the reference point for protocol certification to a level required to test interoperability between the components.
This need should to be a critical part of the GB companion specification work to ensure it provides clear testable outputs as the reference for device interoperability.

40.
Do you agree with the Government's proposals to require energy suppliers to operate specific aspects of smart metering equipment functionality for domestic consumers? Please provide rationale to support your position.

No Elster comment

41. What are your views on the Government's proposals to require energy suppliers to operate specific aspects of smart meter equipment functionality for microbusiness, but no other non-domestic, customers?

No Elster comment

42.
Do you agree that the licence conditions as drafted effectively underpin the Government's policy intentions for consumer operational requirements?

No Elster comment

43.
What are your views on the Government's proposals for obligations to be included in the SEC for information to be made available to Network Operators and ESCOs via the DCC?

No Elster comment

44.
Do you agree with the Government's proposals for the timing of the introduction of operational requirements? Please explain your reasoning.

No Elster comment

45.
Do you agree with the proposed changes to the smart metering regulatory framework to reflect the CSP-led model for communications hub responsibilities? Are any other changes necessary?

No Elster comment

46.
Do you agree that the equipment development and availability timelines are realistic? Please give evidence.

The timescales outlined have been developed in conjunction with BEAMA members and are largely achievable. However there are a number of potential issues that could still cause significant delays.
We recommend further work to assess this with BEAMA and EUA following the consensus feedback on this consultation plus resolution of the security architecture and security certification proposals.

47.
Do you agree that SMETS 2 should only be designated when the Government has confidence that equipment to satisfy the new requirements is available at scale? Should a further period of notice be applied to ensure suppliers can manage their transition from SMETS 1 to SMETS 2 meters?

Agreed; from whatever point the designation occurs there should be an overlap period of 12 months between SMETS 1 and SMETS2 to allow training and logistics and avoid stranding of products in the supply chain .

48.
What are your views on when responsibility for the SMETS modifications process should transfer from the Government to the SEC?

We believe the proposals for transfer of responsibility should only be effective once the SEC governance is fully operational and this should also be linked to SMETS2 designation above.

49.
Which of the options (standing sub-committee or non-standing sub-committee) would you prefer in relation to modifications to the SMETS?

Standing committee with seats and voting rights by appropriate trade bodies such as EUA and BEAMA.

50.
Are there any particular areas of expertise that the sub-committee will need to fulfil its role, in terms of membership composition?

The committee will need expertise from equipment manufacturers, Suppliers, Security experts and test experts, DSP's, and CSPs and representation of consumer interests to ensure that requirements are efficiently implemented.