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SMDG Deliverable 1:- Technical Assessment

A technical assessment of the Smart Metering Services and the Functional Requirements Catalogue	Project Manager	Adrian Rudd
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DRAFT	Directorate	Smart Metering
	Audience	PRB
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Contents

SMDG Sub Group 1 (Technical Assessment) Contributors

Shading indicates that representatives were unable to attend the first two sub-group 1 meetings.

AMO
BEAMA
British Gas
EDF Energy
ENA
Engage-consulting (ERA)
Eon-UK
ESTA
First Utility
Gemserv
ICoSS
Intellect UK
RWE Npower
SBGI
Scottish Power
SSE
Utilita

Consumer Focus
Good energy
Ofcom

1. Summary of Assessment

1.1.   The group agreed that a technical specification is essential to ensure interoperability.

1.2.   The group agreed that functional requirements are the basis for the technical specification.

1.3.   There was a consensus view that it should be possible to achieve the technical specification within the time outlined in the Prospectus. However, this will be influenced by the requirements interaction with EU standards, intellectual property (e.g. proprietary technologies) issues and the adoption of existing industry standards.

1.4.   The group shared emerging options on delivering the technical specification.

1.5.   The group analysed all 118 functional requirements and 28 services in the Ofgem prospectus over the course of two two-day workshops.

- 71 functional requirements were identified by the group members prior to the meetings. After group discussions the majority were clarified through simple word changes (no cost impact) and three were suggested for removal or rewording (with some cost impact), which are set out below.

- The most significant change is the suggested removal of the "Last Gasp" functional requirement on the basis of cost benefit analysis undertaken by ENA.

- Other significant proposed changes include: addition of a messaging capability to the mandated In-Home Display (IHD)– this is a networks and supplier requirement and is subject to cost benefit analysis;

- making the five second update rate a target rather than a requirement on the grounds that some of the leading Home Area Network (HAN) technologies cannot meet this requirement;

- reduction of the 12 month consumption data storage requirement;

- All 28 services were clarified in terms of removing ambiguity and bringing them in line to have similar levels of high-level detail.

1.6.   A reassessment of the cost of the smart metering equipment/units should be carried out following the recommendations of the group and incorporation of consultation responses. (e.g. removal of last gasp and addition of IHD messaging).

2. Summary of Proposed Changes to the Functional Requirements

2.1.   The main issues raised with the proposed functional requirements are detailed below. Suggested rewordings are detailed in a separate spreadsheet.

2.2.   The functional requirement "last gasp" should be removed on the basis of cost benefit analysis work undertaken by the ENA which shows a £2.2m per annum benefit against a cost range of £27 million to £135 million. The existing industry definition of last gasp is based on is the ability to send a message five minutes after supply has been lost. It was noted that by some members of the group that consumers may not feel the meter is particularly smart if it cannot automatically notify loss of supply.

ACTION 1: Sub-group 1 will develop an options paper exploring the range of "last gasp" solutions possible both within the premises and at substation level. The

paper will be due within Phase 1A to inform the technical specification work in Phase 2.

2.3.   The functional requirements for 12 months of half hourly consumption data storage should be removed on the basis that this should be stored elsewhere and that consumers will find it difficult to access over the HAN. It is not an existing industry requirement.

ACTION 2: Sub-group 1 will develop a paper exploring the cost implications of 12 months storage of half hourly data. The paper will also include views from the security / privacy working group as to the implications of local versus remote data storage. The paper will be due within Phase 1A to inform the technical specification work in Phase 2.

2.4.   A number of proposed changes were made to functional requirements that were too technology prescriptive / proscriptive. For example, the security requirements implied the use of keys and certificates (i.e. these are solutions).

2.5.   The IHD functional requirements suggested changes include addition of messaging functionality and changing the wording of "accurate" to "metered" (as there is no agreed definition of accurate). The inclusion of messaging is subject to cost benefit analysis.

ACTION 3: Sub-group 1 will develop a paper setting out the cost implications of adding messaging to the minimum specification of the IHD. Where possible, industry benefits will be quantified. The paper will be due within Phase 1A to inform the technical specification work in Phase 2.

2.6.   The significant HAN interface functional requirements suggested change is that the five second update rate is now an aspirational target as some HAN technology contenders cannot deliver this rate.

ACTION 4: SMDG agreed that the wording in the functional requirements should be changed to "an update rate less than ten seconds" (as this retains a limit)

2.7.   The suggested change for the power consumption functional requirement of the smart metering system is that clarifies that the 2.6W is in line with (but in addition to) the current baseline defined in standards for credit and prepayment meters.

2.8.   The data log and alarm items in the diagnostic requirements were clarified to provide a common group understanding of these items. The log items will be further defined in the technical specification. Some of these items may increase meter cost due to multiple tamper switches (beyond the ones already included in the impact assessment).

2.9.   Data items associated with power quality have been clarified. In addition work has started on a list of meter data items. This was agreed by the group as something that will be essential for interoperability.

2.10.   It was noted by the group that 15 years life for the gas meter battery would be a challenge, but until there is a more detailed technical specification which further defines the burden on the battery (communications, security, valve operations etc.) it will be difficult to give a definitive answer.

2.11.   The requirement for Welsh language needs further clarification in terms of the legal basis and what exactly it applies to.

ACTION 5: Ofgem will clarify within Phase 1A what this requirement applies to in terms of the smart metering system components.

2.12.   The granularity of data capture for gas was an area of debate. The functional requirements call for support of five seconds (but not storage). It was suggested that this should be changed to minutes, the exact figure to be defined. There was concern that five second data capture may be impossible in terms of the 10 year battery life stated in the European Measuring Instruments Directive.

3. Summary of Proposed Changes to the Services

3.1.   Within the given time the group were able to remove ambiguity and rationalise the 29 services down to 18 which now sit at a similar level of high level granularity. It was felt that the original list was a mixture of detailed and less detailed service titles. There is a need for a review of the services to ensure they are comprehensive. This will be undertaken with DCG.

3.2.   Once the high level service areas are agreed with DCG, development of more detailed requirements can then move forward and be completed within phase 1a.

3.3.   It was the group consensus that the SMDG Sub-group 1 (rather than DCG) was better placed to provide minimum latency requirements for the services.

3.4.   The service level agreements need to be clarified so that they are unambiguous. For example, between the requestor and the WAN module, rather than requestor and IHD.

4. Other Issues Raised

4.1.   A number of recurring issues adjacent to Sub-group 1 activities were raised. These are detailed below.

4.2.   Understanding the governance of the functions defined in the functional requirements and where they will be defined was a recurring theme. This includes issues such as 'who controls the disconnect switch?'

4.3.   What defines where the functionality is delivered and why does it have to be within the consumer premises. There was disagreement in the group as to whether the meter should be "thin" or "fat" in terms of its functionality. Examples included data storage and billing calculations.

4.4.   The interaction of the smart metering system and microgeneration requires further detail and interactions with the Feed-in Tariff (FITS) programme. There is currently some ambiguity as to the requirements for the FITs meter.

ACTION 6: Sub-group 3 (technical issues) is looking at this issue and will develop options to remove the ambiguity.

4.5.   The legality of trickle charge and load limiting (for prepayment customers as opposed to demand side management) was discussed.

ACTION 7: Sub-group 1 will develop an options paper setting out robust definitions and solutions in the area of trickle charge and load limiting (supply into premises) and how they could be used for fuel poor and demand side management.

4.6.   Some functional requirements were clarified so that they only applied to variants (e.g. for specific consumer requirements).

4.7.   Although the security functional requirements are a start and are acceptable as "principles" the requirements for Privacy and Security should be decided by security expert

groups. Security is an issue that requires specialist knowledge and may dictate some of the current non-security functional requirements.

4.8.   There may need to be further requirements around approval / accreditation. This could include arrangements for dealing with consumer devices that join to the HAN and requirements for a utility robust HAN that has limited connectivity with a bridging device to a consumer HAN.

4.9.   The HAN requirements are critical for producing the technical specifications. One way to achieve this is to look at 'Use cases' for the HAN (similar to the services exercise carried out for the WAN). This will be used to augment the HAN interface requirements.

ACTION 8: Sub-group 1 will develop use cases that will further inform the functional requirements. In addition Sub-group 3 (technical issues sub group) will hold a workshop in Phase 1A to gather views on the technology readiness of the various HAN options against the functional requirements.