

Smart Meters Consultation : Observations from ARM Holdings

Introduction

A basic observation is that the Government should be mandating meters which provide real benefits for consumers. By the date envisaged for roll out, technology will have moved on. It should be possible to introduce very smart meters which assist consumers to use energy more efficiently, instead of simply telling consumers what they are using at any given time. The risk is that if low end meters are introduced, consumers will become disillusioned, having been asked to pay in some way for a meter which is not delivering easy wins for them.

In addition, the smart meters need to be deployed for many years and we really don't have agreement on the best WAN or HAN technology to include. We should be promoting the use of modules that can be changed or upgraded if a different connectivity system is needed.

ARM Holdings

ARM Holdings is a FTSE 100 listed global High Tech Company with its Headquarters in Cambridge, UK where the company was founded over 20 years ago.

Our core activity is the design of microprocessors. We licence our designs to silicon chip manufacturers all over the world who in turn sell them to equipment manufacturers. Our designs are used in over 90% of smart phones, plus a wide range of other products, including tablets, digital cameras, tvs, set top boxes, microcontrollers etc . We pride ourselves on the fact that our designs lead to chips which are low power and energy efficient.

We have a unique business model. We work with over 900 companies worldwide, extending far beyond our direct customers to include software designers, major product developers, graphics designers etc. These are companies which have decided to work with our designs, and whose contribution is essential to turn our designs into the products which consumers want. This partnership model, as we call it, is now a core competency of our business. Our organization is more than the boundaries of our company: it is not just our employees, but also our customers and our customers' customers. This model enables a vibrant and dynamic ecosystem that we feel is best suited to driving sustained innovation in the complex and continuously coevolving markets that have arisen from the information age.

We also work closely with innovative SME companies in the UK, assisting them to develop products using our designs.

Questions

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

None

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

Agree. IP is becoming the common factor for convergence to support different physical layers. Actually ZigBee is the current leader for HAN. Their Smart Energy 2.0 profile (based on Internet Protocol) is believed to be the eventual winner.

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

That will be good to drive this market for deployment.

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.

Agree

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

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

Compatibility is necessary as there are already many products based in 868 Mhz band.

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

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

As a free band resource, 2.4 Ghz is very popular and attracts many companies to invest on that. Although its wireless robustness to penetrate walls is worse than 868Mhz, it's acceptable for HAN functionality.

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)?

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

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

Yes, we should not forget wired technology such as PLC.

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)?

Agree.

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

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.

This is a difficult decision. A supplier-led model might stimulate the production of value-added services besides energy supply, but on the other hand suppliers might not bother, relying solely on energy supplies. So a CSP led model might be best.

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?

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?

Yes.

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?

Yes.

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

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.

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?

Seems OK because this capability may be not vital for SMETS.

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.

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.

Agree

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.

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.

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?

Agree

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

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

Yes: pre-payment is widely used for many places for billing now.

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.

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?

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.

This is an important topic ranging wider than installation and maintenance of terminals, since we expect consumers to want to access their smart energy networks via smartphone or tablet. But usually we do not find ZigBee transceiver integrated in iPad or iPhone.

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.

Agree.

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.

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.

Agree

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?

A certification scheme is a good idea. It will help build trust and confidence. More work needs to be done on the details.

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?

Would it be possible to take technical actions to disconnect the non-compliance devices ?

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.

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.

Agree: interoperability is key. The proposal for two certificates may seem bureaucratic but is probably necessary.

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?

Agree.

39. Do you agree that protocol certification (against a GBCompanion 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.

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.

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 not other non-domestic, customers?

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

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?

This kind of information from DCC could be useful.

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

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?

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

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?

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

The timing is difficult to forecast. It would be easier to move forward after SMETS has got a good reputation.

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

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

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