

Margaret Coaster
Smart Metering Team
Ofgem E-Serve
9 Millbank
London
SW1P 3GE
(submitted by email to smartmetering@ofgem.gov.uk)

Real Wireless Ltd.
PO Box 2218
Pulborough
West Sussex
RH20 4XB
United Kingdom
www.realwireless.biz
info@realwireless.biz
Tel: 0207 117 8514
Fax: 0808 280 0142

27/10/2010

Re: Response to Smart Metering Consultation by Real Wireless Ltd

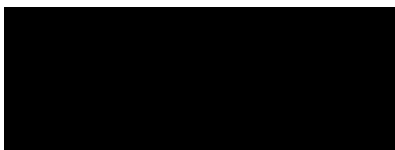
Dear Margaret,

Please find attached the second batch of responses from Real Wireless Ltd to questions in the *Consultation on Smart Metering for Electricity and Gas*. We have previously provided responses to those questions relating to the communication function which were due on 28th September and this second submission covers responses to those questions relating to the communications function that are due on 28th October.

Real Wireless Ltd is a UK-based consultancy with deep expertise in wireless communication technology and systems, with an independent capability to assess and advise on the fit of differing technology approaches to complex technical and market requirements. Our consultants also have many years experience of deploying and operating such systems and dealing with the associated real world challenges. We think we are therefore well placed to comment on certain aspects of this complex programme.

We would like to be included in any relevant briefings, meetings, workshops and communications regarding the Smart Metering project, could you please clarify how we formally register our interest?

Yours sincerely



Document : Smart Metering Implementation Programme: PROSPECTUS

Question 8: Do you have any comments on the proposals that energy suppliers should be responsible for purchasing, installing and, where appropriate, maintaining all customer premises equipment?

We think this is the most efficient approach. By making the energy suppliers take responsibility for the purchase, installation and maintenance of the customer premises equipment (CPE) it puts the onus on them to ensure that the CPEs are fit for purpose – both in terms of functionality and longevity. It also ensures that the CPEs are maintained to the necessary standards to ensure that the overall system performance is maintained over the lifetime of the equipment.

Whilst we wouldn't expect consumers or businesses to have to pay any specific charge associated with smart metering, clearly the cost of the entire smart metering programme will represent costs incurred by the energy suppliers that they will need to recover in their tariffs. We therefore believe that 'checks and balances' will need to be put in place to ensure that the supply and ongoing maintenance of CPE's is undertaken at the lowest possible total cost of ownership commensurate with the specification and performance requirements.

Question 9: Do you have any comments on the proposal that the scope of activities of the central data and communications function should be limited initially to those functions that are essential for the effective transfer of smart metering data, such as data access and scheduled data retrieval?

To answer this question we believe it is necessary to consider three areas, what is realistic for DCC to take on in the timescales, which business configuration delivers best value and how easily can the competitiveness of DCC be assessed.

- a) What is realistic for DCC to take on in the timescales? As we have previously suggested we consider that the timescales for the smart metering programme are very aggressive. Getting the connectivity services of DCC fully operational within the stated timescales is in our view a significant challenge and therefore carries major risks. Adding more responsibilities to DCC can, in our opinion, only serve to increase the challenges faced by DCC and therefore increase the already considerable risks of timescale and cost overrun.
- b) What business configuration delivers best value? We believe that currently the only way to answer this question is to obtain firm pricing from a number of competing suppliers for each area of work in different work package configurations. This is time consuming and expensive to undertake and due to the leading edge nature of national smart metering projects somewhat imprecise. Inevitably there will be a balance between establishing effective competition for various work packages and the inefficiencies of too many separate parties involved in the end to end process. Our view is therefore that there currently isn't a clear answer available to this

question or a simple way to obtain an answer. We would therefore recommend setting up the initial business configuration as one that delivers the lowest project risk and then looking to optimise this downstream once the overall business processes are embedded and capable of being measured and accurately costed.

- c) DCC Competitiveness? All activities that are considered suitable for DCC to take on should be market tested in order to obtain benchmark pricing. Careful consideration needs to be given as some activities should be grouped together for operational, commercial or technical reasons. Splitting such activities between separate delivery organisations might prove to be inefficient and/or open potential security issues.

Based on the above our suggestion at this stage is therefore to have DCC take on the absolute minimum of tasks necessary to get the smart metering programme operational. We think these initial activities should therefore be limited to: secure communications, access control and scheduled data retrieval. We believe that meter registration should not be included in these initial DCC activities. Once the start up hurdles have been overcome then options for re-configuration of the business processes, including meter registration, should be examined with performance and cost benchmarks being gathered to inform decision making.

Question 10: Do you have any comments on the proposal to establish DCC as procurement and contract management entity that will procure communications and data services competitively?

We believe that this is the most effective approach for the provision of communication and data services. The alternative of having DCC build and operate its own network makes little sense given the highly competitive nature of the telecommunications market. In addition the rapid and continuous changes in telecommunications technology may require one or more technology refresh cycles to the telecommunications infrastructure – such financial risk would be better managed by commercial telecommunication providers. DCC should therefore place and manage the overall contracts to supply and integrate the telecommunications and related services necessary to operate the smart metering service. In doing this DCC will take on considerable obligations under its contracts with the suppliers and networks. The success of DCC will therefore hinge on its effectiveness in passing down these obligations to its service providers and managing these suppliers to deliver to contract.

Care will therefore need to be taken in establishing the ‘value add’ of DCC in relation to:

- the work it undertakes and the costs and resources it requires to do this
- the risks it is managing and
- the margin it adds to the bought in services

DCC customers will want to understand these details and therefore DCC will need to operate on an ‘open book’ basis working to an agreed profit margin. There should also be claw back arrangements put in place should DCC profits rise above an agreed amount. Such claw back arrangements should still allow DCC to pursue operational efficiency

improvements and cost reductions through regular retendering of the services and the introduction of new technologies and new processes from its suppliers.

Clarity will also be needed with regard to the ownership of DCC and to the entities that DCC is allowed to place contracts with to understand for example if DCC intends to place contracts with related organisations including DCC shareholders or organisations related to DCC shareholders. This raises the question whether DCC should be truly independent of its customers and suppliers. Our view is that for reasons of impartiality DCC should be independent of its customers but that telecommunication and data service suppliers – including parent or subsidiary companies - should be able to join consortia to bid for the DCC contract.

Question 11: Do you have any comments on the proposed approach for establishing DCC (through a licence awarded through a competitive licence application process with DCC then subject also to the new Smart Energy Code)?

We agree with the proposed approach of appointing the DCC through a competitive process although it isn't clear at this stage how the licence application process compares to a normal service procurement process in terms of timescale, complexity and risk. However due to the complexity of the DCC's deliverables we think that the timescales given for appointing the DCC and then the DCC appointing its suppliers are somewhat optimistic. Drawing up the legal agreements for such a complex service which is critical to the whole smart metering programme will take an extended period of time due to the need for customers' agreements to align with supplier agreements. It is therefore likely that the DCC's licence can only be finalised once the tendering of communication services by DCC is in its final stages because the contracts agreed by the suppliers to DCC will need to reflect the obligations contained in the DCC's licence. This complex inter-relationship will extend the timescales to get both agreements completed. Consideration will also need to be given to the process and timescales for the DCC role to be retendered at say the 10 year point. The incumbent DCC operator will be in a far better position than any competing bidders in terms of understanding what has to be done and the associated costs and they must therefore have obligations to provide detailed information to potential bidders in order to allow effective competition.

Question 12: Does the proposal that suppliers of smaller non-domestic customers should not be obliged to use DCC services but may elect to use them cause any substantive problems?

We think that this requires further consideration and that perhaps smaller business suppliers should be obliged to use the DCC, certainly for an initial period. Also the term smaller non-domestic customers should be defined in terms of size – possibly in relation to their energy usage.

Our concerns relate to price and potential inter-operability problems:

1. We believe that DCC services – given their scale - will actually be the lowest possible cost of providing connectivity services for consumer and smaller business installations. We therefore think that many micro businesses, SME's and their

agents will find that using the DCC does actually provide the lowest priced service and they should not need to use alternative solutions. We therefore believe that the time and cost of finding such alternative solutions would consume management time that small businesses can ill afford and would not lead to better solutions.

2. We think that using other technical solutions may give rise to potential interoperability problems – particularly at the start of the programme given the scale of the transition.

We would suggest that the use of DCC is mandatory for businesses below a certain size and that this requirement is reviewed once the main consumer installation is substantially complete.

Question 15: Is there anything further we need to be doing in terms of our ensuring the security of the smart metering system?

This project provides one of the largest deployments of connected infrastructure yet seen in the UK. It raises security concerns at the critical national infrastructure level as well as data privacy concerns for the individual. Dealing with the security threats and concerns is a complex task requiring continuous assessment and the ability to 'raise the bar' over time as the criminal and terrorist fraternity become more sophisticated. Restricting our response to the communications aspects of the programme we agree with the suggestion that external stakeholders should be included in the Privacy and Security Advisory Group. We also agree that a detailed threat and risk assessment needs to be carried out, however this is a crucial stage in determining the specifications of DCC services and the data that it gathers, stores, processes and passes on. We believe that some parts of the DCC requirements will need to be prescriptive, specifying a range of mandatory security and privacy technical requirements. Some of these requirements can be standards based although we feel that the scale of this project is somewhat ahead of the current state of security standards.

Furthermore there will need to be a continuous assessment of the security functionality and framework to ensure that, over time, DCC services remain fit for purpose in terms of security and privacy as the sophistication of threats increases. This carries with it potential cost implications, as further expenditure might be required to resolve threats that could not have been foreseen or costed for at the initiation of the project. We believe the security and privacy aspects will be a very complex part of the procurement as will the associated sub contracting arrangements as DCC passes down its obligations to its sub-contractors.

Document: Smart Metering Implementation Programme: Communications Business Model

Question 1: Do you agree that access control to secure centrally-coordinated communications, translation services and scheduled data retrieval are essential as part of the initial scope of DCC?

Yes – we believe that this is the optimum functionality to be provided by DCC at the start of the project as we believe that grouping these functions together is likely to provide the most economic approach to the provision of these services. Decisions regarding the translation and data retrieval aspects will impact the requirements of the communications service and we therefore believe that these should be bundled together under DCC to maximise the efficiency of the network.

The procurement activity should however, where feasible, obtain separate prices for all activities in order to demonstrate best value when activities are bundled together.

Question 2: Do you agree that meter registration should be included within DCC's scope and, if so, when?

Possibly – but only after detailed economic and technical analysis. In order to minimise the overall programme risk we believe that meter registration should initially be excluded from DCC's scope. There are numerous activities for DCC to complete in order to reach its in service date and we therefore consider that its obligations should be kept to a minimum. Once DCC is fully operational then meter registration should be investigated and if appropriate this activity should be procured from DCC on a competitive basis. It may or may not be the most efficient solution to add it to DCC's role. We suggest that an add-on price for meter registration should therefore be obtained at the same time as the core DCC services are being procured as this would allow this service to be easily added to the DCC service catalogue at a known price once DCC is fully operational.

We suggest that the existing suppliers should therefore continue to provide meter registration services until a decision has been taken regarding the longer term provision.

Question 3: Should data processing, aggregation and storage be included in DCC's scope and, if so, when?

Possibly – our answer follows the same thinking as expressed above. These activities should be excluded from the initial DCC responsibilities and then investigated once DCC is operational. In our opinion these services are somewhat removed from the core responsibilities of DCC and whilst it might make economic sense for these services to be undertaken centrally the procurement exercise would need to determine whether best value would be obtained if these services were carried out by DCC. Compute and storage requirements such as these are becoming commodity cloud services – we acknowledge

however that the security requirements impose additional safeguards that could make DCC the most sensible option.

Question 4: Do any measures need to be put in place to facilitate rollout in the period before DCC service availability and the transition to provision of services by DCC, for example requiring DCC to take on communications contracts meeting certain pre-defined criteria?

In our previous response on 27 Sept 2010 to Question 17 from the main prospectus we gave our reasons why we consider that the smart meter installation should only commence after DCC is operational. Our reasoning was essentially based on the complexity associated with these short term communication contracts. We are still of the same opinion and therefore in such circumstances this question wouldn't come about. If however the smart meter roll out does commence ahead of DCC being operational then DCC should be obliged to take on the communication contracts and we suggest that all of these communication contracts be of a pre negotiated type drawn up by DCC to enable a rapid commercial and technical transition.

Consumers should also be protected against any interoperability problems caused by the transition to DCC. Determination of who pays to resolve such problems will need to be set out in the procurement documents to minimise any potential delays in resolving such problems should they occur.

Question 5: Do you agree that the licensable activity for DCC should cover procurement and management of contracts for the provision of central services for the communication and management of smart metering data?

Yes we believe this provides maximum flexibility whilst likely to deliver best value and so is more appropriate than DCC itself being a full service provider. The downside of this approach is that it imposes an extra stage in the process of DCC becoming operational and adds an extra dimension of contractual complexity due to the need for DCC to pass the vast majority of its obligations to its suppliers. All of this therefore lengthens the procurement cycle thereby extending the DCC's in service date and because DCC is on the critical path this effectively delays the commencement of the smart metering roll out. The option to use other communication service providers before DCC is operational would remove this delay but is not a strategy that we support as explained in our answer to Question 4 above.

Question 7: Do you have any comments on the steps DCC would need to take to be in a position to provide its services and the likely timescales involved?

We believe that the steps would be along the following lines assuming that significant discussions have been held with interested parties regarding the DECC deliverables. The details below apply to a large and complex telecommunications procurement process, as stated earlier it isn't clear how the licence approach would affect these timescales.

- a) Requirements finalised, procurement process commences, tender issued.
- b) Tender close date – 4 months after a)

- c) Detailed review of the responses, go to a shortlist and revised requirements formulated based on the responses. 'Best and Final' offer request issued - 6 months after b)
- d) 'Best and Final' offers submitted against revised requirements – 3 months after c)
- e) Detailed review of 'Best and Finals' with several rounds of detailed meetings with all bidders. Preferred bidder announced (NewCo) and negotiations commence – 6 months after d)
- f) NewCo commences detailed parallel negotiations with its suppliers – at point e)
- g) Negotiations conclude and NewCo signs contracts with suppliers and energy network operators – 12 months after e)
- h) NewCo suppliers commence procurement of equipment and services and begin to assemble delivery teams – at point g)
- i) NewCo suppliers ready with their pilot services, control rooms operational at basic level – pilot integration commences – 6 months after h)
- j) Pilot integrated service trials commence – 4 months after i)
- k) Pilot complete, service specification changes defined and negotiations between NewCo, its suppliers, its customers, Ofgem and DECC to agree technical and commercial changes completed – 6 months after j)
- l) First area in service date – 3 months after k)

Based on this outline approach we believe that DCC will be operational around 4 years after procurement commences. Some of the timescales above could perhaps be seen as pessimistic, others optimistic leaving little room for unexpected problems – overall we feel it is a reasonable view taking in to account the leading edge nature of the project and the scale of deployment that the system must support. In terms of a range we think this could take from 3.5 – 6 years to the point when DCC is fully operational with a proven design delivering the required services in all locations.

Question 8: Do you have any comments on the proposed approach to cost recovery and incentivisation for DCC?

The ownership of the DCC and that of its service suppliers would need to be reviewed to understand where profits are being made if there is related ownership e.g. if a service provider or parent company of a service provider is a shareholder in the DCC consortium. This contracting and financial arrangement is similar to a PFI/PPP structure where the Special Purpose Vehicle contracts with the customers - suppliers and network companies in this case – and undertakes its responsibilities and obligations by flow down contracts to suppliers, who typically form the consortium in the first place. In this case we would expect communication service providers and other specialists to form consortia to bid for DCC. As suggested we envisage DCC being a small organisation that merely manages contracts up to the customers – the networks and suppliers - and down to the suppliers - the service providers and other specialists - and as such DCC doesn't carry out any operational activities.

In such a structure understanding where the profits are made determines how best to set out the incentives. In addition to the sharing of cost reductions that are achieved by DCC – through its suppliers - we would suggest that DCC operates under an (RPI – x) price

reduction formula as this actively forces ongoing cost optimisation. In this case such reductions will all be achieved by the service providers and other suppliers to DCC.

Document: Smart Metering Implementation Programme: Data Privacy and Security

Question 5: Do you agree with our approach for ensuring the end-to-end smart metering system is appropriately secure?

Yes – the risk assessment is clearly the key activity that determines how DCC will manage the security and data privacy aspects of its activities. This risk assessment is therefore crucial and must cover all possible known threats and include the risk of increasing sophistication and resources of the attacker over time. In view of this and the leading edge nature of this project all known security expertise must be brought to bear on determining what is appropriate in terms of technologies and processes to ensure complete security. With respect to DCC services we think that protection of the information stored by DCC is crucial both from external attack and internal mishandling.

Document: Regulatory and Commercial Framework

Question 5: Do you agree with the proposals concerning the roles and obligations of suppliers in relation to the WAN communications module?

Yes we believe that giving the suppliers responsibility for procurement and ownership of the WAN module does provide a clear responsibility and should ensure lowest costs. We believe it will be relatively straightforward to identify module or networks faults and hence ensure the correct action is taken regarding resolution of a problem.

Document: Smart Metering Implementation Programme: Non-Domestic Sector

Question 4: Do you agree with the proposed approach that use of DCC should be optional for non-domestic participants in the sector?

We are concerned that this approach may give rise to future interoperability problems and feel that on balance it would be more efficient to mandate the use of DCC for such customers. It is probably likely that DCC's services will evolve to provide targeted services for this sector and the agents who sell to these customers. It may therefore be more appropriate to start the rollout with this as optional service with a stated intent to move to a mandatory position for a specified maximum size of business within a narrow window – say 1 or 2 years.

Question 6: To what extent does our proposed approach to the use of DCC for non-domestic customers present any significant potential limitations for smart grids?

We believe that electricity Smart Grids will demand short term usage data in order to manage peak loads. Without the centralised data availability of DCC we believe that the smart grid deployment will be compromised, whilst accepting that this data could be provided through other routes. We also accept that such an approach does change the role that agents perform however with such a market changing initiative as smart metering we think industry has to accept that some lines of business will be closed off whilst at the same time new opportunities will open. For these reasons we think that mandating the use of DCC for these businesses is necessary to force the introduction of smart grids.

[REDACTED]

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