

BSI Smart Cities Interoperability Technical Committee Meeting Report

Friday 17th May 2013

Welcome & Introductions

Trevor Gibson welcomed the members and introduced himself. A round table introduction followed. The following members were in attendance:

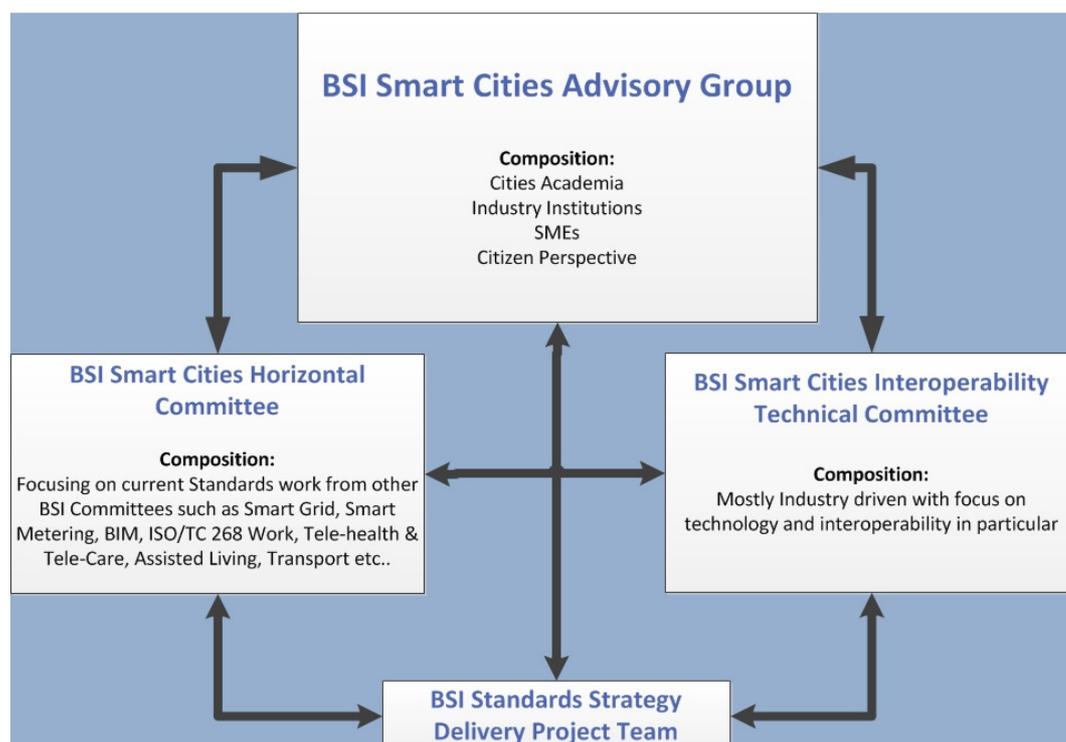
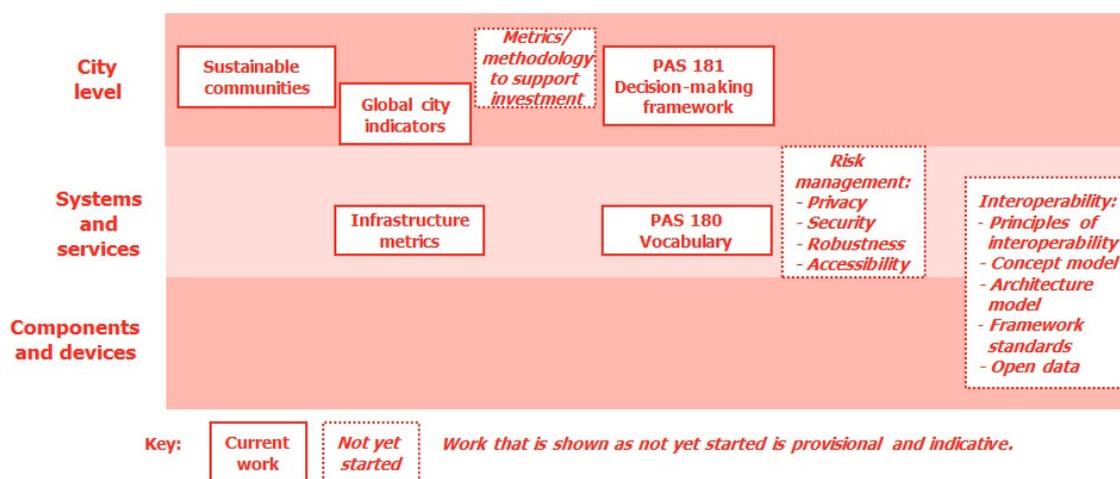
1. Glasgow City Council – Steven Revill, TSB Future Cities Demonstrator – City Data Lead
2. Chairperson, Peterborough City Council – Trevor Gibson, Programme Manager Peterborough Future Cities Demonstrator
3. Bristol City Council – Keith Billingsley
4. Sedgemoor D.C. – Paul Davidson, CIO for Local eGovernment Standards Body (LeGSB)
5. Heriot-Watt University – Zhen Chen (George), Megaproject Management, Institute for Building & Urban Design
6. Imperial College London – Koen H. van Dam, Research Associate, Digital City Exchange
7. University Campus Milton Keynes – Matthew Clifton, Strategic Projects Executive (Smart Cities)
8. University of Bristol – Dritan Kaleshi, Senior Lecturer in Communication Networks
9. IBM – Jamie Caffrey, Client Solutions for Smarter Cities
10. Schneider Electric – Shawn Moore
11. BRE – Mike Perry, Principal Consultant
12. SCISYS PLC – Pete Green, Vice CTO
13. Ethos Smart - Adrian Ulisse, Partner
14. Mobius Networks – Peter Simm, Strategic Planning and Development Manager
15. Digi International – Mark Gates, Business Development Smarter Infrastructure
16. SH&BA – Stephen Pattenden, Secretariat
17. Intellect UK – Sherington Gaskin, Connected Home Project Manager
18. W3C
19. BSI - Dan Palmer, Head of Market Development, Manufacturing and Services
20. Secretary, BSI - Saviour Alfino, Project Manager, Smart Cities Standards Strategy

Smart Cities and the role of BSI

Saviour Alfino presented a brief introduction on the work of BSI in the area of Smart Cities and standards. This covered the key four issues BSI is currently addressing when it comes to Smart Cities and standards:

- How will the **devices and systems** across the city **communicate**?
- How should cities set **objectives** and **measure** progress?
- How can cities create the **shared understanding** to deliver the vision?
- How can the **risks be managed** to maximize the chances of success?

Summary of the current work and organisational structure are shown below:



Output from 1st March 2013 Interoperability Workshop - key interoperability standardization needs that need to be addressed now

Saviour Alfino presented the output from the Interoperability workshop held on 1st March 2013. Executive summary was presented as follows:

The workshop took place in London on the 1st March 2013 at the CBI Conference centre when 51 people representing cities, software and hardware vendors and academics gathered to discuss the needs for interoperability standards in the development of Smart Cities.

There was a great deal of discussion about the objectives and priorities for standardisation in terms of interoperability and service areas. Three aims emerged as key objectives.

1. Situational awareness and decision support systems, local authorities and stakeholders need dashboards to contextualize information.
2. Event response platforms for wide variety of situations such as drought – flood – transport to allow cities to develop more integrated approaches to emergencies and other critical events.
3. Lowering the costs of acquisition/integrating/operating to allow Cities to cope with shrinking budgets.

A number of key themes emerged from the day as critical to making progress and moving all the players to a common understanding of the requirements for interoperability.

1. The need to define the requirement for the interoperability Eco-system for smart cities at the Framework Level.
2. The requirement for a concept model to give a common language to the Smart City. Paul Davidson's model could help here.
3. A Code of Practice for Open Data covering definition and access.
4. A requirement for technical specifications or a catalogue of existing technical standards.
5. A General Guide covering infrastructure and data use in cities.

To move this initiative forward an Advisory Group needs to be created to develop these themes into practical programmes of work. This should consist of a relatively small group of people, 15, from the different areas involved. This group would include people from a range of perspectives and organisations.

They would examine a program of standardization in conjunction with other standards work BSI is undertaking in the area of smart cities.

A general discussion followed and the key points captured are as follows:

- Interoperability needs to be at the heart of everything and open aspect of standards are critical in order to enable innovation. Hence a Framework of open standards is what is needed.
- There is a need to be talking about smart communities not just cities. There is a need to scale up and scale down.
- There is a need to also invite smaller 'new' cities to the discussion since they can also be very 'smart'.
- LGA should be invited to be part of the Advisory group.
- Citizen perspective is not well represented in either groups. There is need to bring these to the advisory group.
- From workshop 2 key aspects emerged: (1) Infrastructure side of things and (2) Understanding communities within cities. The "Public Sector Concept Model" tried to address the latter.
- There is also a need to address the aspects of timing, incidence response and historical/predictive information in order to complement the "Public Sector Concept Model".
- There is a need to develop a hierarchy of standards that details the infrastructure required. This should define a set of processes and open ended taxonomy.
- There is a key need to define what is the problem we are trying to solve and why standards are the solution.
- A need was identified to tackle "soft" aspects of interoperability in terms of shared willingness to collaborate.
- The importance of establishing use cases was discussed – what use cases failed and what can we learn from them?
- There is a need to understand which areas is BSI trying to address and where other standard bodies such as W3C fit.
- It was generally recognised that to exchange information seems to be the easy part of the problem. The biggest challenge is on how information is described. PAS 180 will try to address this issue.
- There is also a need to define "Smart People". Smart is more addressing the ICT side of things in the built environment. How can we get data from

users and pass data to them? The term of “Intelligent City” was proposed in this context.

- The aspect of BIM (Building Information Modelling) were mentioned and the need to make distinction between BIM and interoperability and link the two activities.
- There is no overarching “bringing together” standard. There is no “helicopter view”. The fewer the standards the better and there is need for a recommendation to put things together.
- There is a need for a knowledge base. More than just a vocabulary. A sort of catalogue is more useful.
- It is essential to work closely together with the TSB and the demonstrator projects in order to bring learning into the standards programme. The standards created will be offered to demonstrator projects to be tested out.
- Critical to start from existing standards and hence integrate what is already available rather than building new systems.
- Experience from the Olympic Park was outlined: Interoperability was indeed a problem more due to lack of processes rather than lack of standards. Guidance on such processes is required rather than more specifications. There is a need of a collaboration standard.
- SHABA’s “IoT” TSB demonstrator project was mentioned and it was agreed that this will be presented at the upcoming meeting. It was noted that 8 consortium won the bid with £6.4 million. There will be a Hub platform with taxonomy work coming out of this project.
- The issue is not just about data but also about decisions needed around services/applications that are required to respond to such data.

The work of BSI, and their approach aims for the Interoperability Technical Committee and wider organisational structure

Dan Palmer provided his view on the creation of the Smart Cities interoperability technical committee. He referred to the link with BIS. He also gave a brief overview of current activities with particular mention to PAS 181 “Smart Cities Framework”.

There is a big issue on interoperability and the sharing of data between systems and services. BSI needs advice from this committee since it is very easy to create the wrong standards or develop them too early or too late.

The aspiration is to create open standards without introducing barriers. We need to bring key issues for discussions to determine:

- What type of standardization is required
- Sense of priorities
- Which stakeholders should be involved

BSI is not interested in competing with other standards bodies but more in alignment of activities and filling-in standardization gaps. Hence close co operation with OASES, IEEE, ETSI, ITU, W3C etc.. is being established.

He concluded that not all issues discussed will lead to a standards solutions but that is why the establishment of this committee was deemed essential.

The Public Sector Concept Model Approach

Paul Davidson presented the “Public Sector Concept Model” approach. Please refer to presentation circulated separately.

Paul also mentioned the LeGSB document on ‘how to do Linked Data’ which the Department for Communities and Local Government (DCLG) commissioned LeGSB to write, and which we are about to promote to Local Authorities.

This is at <http://legsb.i-network.org.uk/publishinglocal5stardata/>

Committee members were invited to comment on how relevant this is to the vision of a Smart City at the upcoming meeting.

Open discussion – The Public Sector Concept Model

- Linked data concept is useful within the concept of interoperability. However, one cannot address all data since city needs are different.
- It was generally agreed that it is almost too big if all data is considered. If one can demonstrate it with 3 to 4 value sets of data it would prove the concept.
- There is still a need to understand the stakeholder needs. What are the effects on the environment and effects on the citizen? How are businesses interfacing? And why would they want to interface?
- It was generally agreed that this concept model would only address half of the problem and a “Framework” standard still needs to be produced.

- There is also the issue that not all data is open data. For instance, supermarkets collect huge amount of data and such data will not be open.
- It was however argued that the concept model will still be valid with this issue since it does not address the issue of “Syntax” i.e. whether the data is open or closed.
- It was also noted that the concept model presented is a “relationship” one and does not cover “data definition”. How will thinking around interoperability be mapped? Issues such as sensors and data source resources and mapping of data feed will be difficult with such a model.
- It was argued that the smart cities concept model might look different to the public sector model just presented and could be the basis of interoperability and be able to address such issues. As it stands it is not there quite yet.
- It was also argued that with “Code of connectivity” it will be difficult to put such a concept model into practice.
- It was argued that open data does not have such an issue, however, addressing sensitivity data will still be a challenge.
- It was noted that model seems quite useful and powerful, however, does it support the decision making process?
- It was argued that this is the main reason why the public concept model was created in the first place, i.e. to help engage people in the decision making process.
- The issue whether this group will be looking at APIs was raised: is this group looking at APIs or just focusing on the “conceptual” model? It was noted that the 4 layers just presented are all data! Is there a blocking point from industry for this group to develop Taxonomies, Ontologies and APIs?
- It was argued that the group has to be careful in addressing APIs. BSI should specify processes/formats rather than APIs.
- It was generally agreed that the concept model is excellent, however, only part of the story. There is also a need to look at what is “out there” already, such as the OASES standards etc..

Open discussion – Other Suggestions for Work

1. There is a clear need to have an overall view of the landscape and map what is out there already. There is also a need of guidance on how to use various bits out there. Such a mapping should have a clear structure/framework and not just be a list.

A structure around “layers” would be very helpful as a reference and to structure such a mapping.

2. There is also a clear need to identify the problems and what needs to be used in order to address these problems.

It was argued that this matter should be brought to the Smart Cities Advisory group. What are the problems that need to be addressed?

A smart cities model could then be built/defined from explaining such problems.

It was also noted that some of the TSB bids have some of these problems outlined. The committee members were encouraged to have a look at the bidding documents which are all publicly available on the TSB website.

3. Need to address softer issues around interoperability and link this work to the PAS 181 project. There is a key need to address the area around collaboration.

The secretary agreed to circulate BS11000 standards on collaboration to the committee together with the current draft of PAS 181.

4. Need to address needs around lowering cost and measuring the benefits. There is hence need to address issues around financial modelling and procurement needs.

It was argued that the last point is outside the scope of this committee. It was mentioned that the Advisory Group will explore this latter point together with issues around investment appraisal.

5. There is also a need to explore incentives for people to use such standards. Exploring business models from the private sector would help in informing this part of the work. The typical “What’s in it for me?” issue needs exploring.
6. High level principles of how data is captured and shared in a city needs also to be addressed.

It was agreed that a summary of the current metrics work should be circulate to the committee members.

Date & Place of next meeting

It was agreed that the next meeting will be held on Friday 21st June 2013 at BSI in Chiswick starting at 10.30am

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Annex 1: Trevor Gibson Notes – 17th JUNE 2013

DISCUSSION POINTS

- Need to ensure standard is “open” and concern that ISO are not. How do we link to ISO in that case?
- The standards for smart cities should have wider applicability across a range of sectors and not be confined to “Future Cities”. It should also be applicable to communities of all scales.
- The standard should ensure interoperability *between* cities too. (Essential, for example, in relation to regional response to incidents).
- It was suggested that a representative of the Local Government Association (LGA) would add value to the work and ensure its profile in the local government sphere.
- “Civil Society” may also be useful, particularly in relation to metrics.
- It was noted that utility companies were not represented. SA advised that BSI had tried to involve them.
- Identifying the challenge a city or community is attempting to address, and getting consensus on this amongst partners, is an important early step. Leaping to a solution ahead of this is rarely effective. Shared understanding, shared approach and shared agreement on the challenge are essential.
- Framework standards can help clients ask the *right* questions of contractors.
- Visualisation of data to ensure wide accessibility needs to be considered.
- W3C, as a common standard, needs to be linked to the PAS work. (?)
- Often, the barrier to an integration lies with the ability/desire of partners to work in that way rather than the lack of a technological “fix”.
- Mapping exist work around Smart City (or similar) standards could help the Committee identify gaps which it’s own work could fill.
- An “eco-system” of standards needs to be developed.
- Need to develop protocols around linked data.
- New Financial Models for procuring “smart” solution” need to be developed.