

International Workshop on Spatial Information for  
Sustainable Management of Urban Areas  
FIG Commission 3 Workshop 2009  
Mainz, Germany, 2 – 4 February 2009

Final Summary of Workshop  
Version 1.0, 5<sup>th</sup> February 2009

### **General**

1. The workshop confirmed that urbanisation is a serious issue for all countries, with 60% of the world's population due to be urbanised by 2030.
2. The consequences are significant slums and informal developments for a large proportion of the population.
3. The workshop also confirmed that the availability of appropriate spatial information delivered through an SDI at local, regional and national levels can lead to sustainable development.
4. At the European level, we have seen a considerable number of SDI examples at the local and regional levels. This has occurred through the adoption of open standards and the strong influence of the INSPIRE initiative.
5. These SDI's are increasingly providing decision makers and citizens with access to spatial information, leading to greater transparency.

### **Economic Context**

6. We live in economically challenging times and an upturn may only occur in a 3 to 4 year timeframe.
7. There is an inextricable link between financial services and property and this significantly contributed to the current financial crisis.
8. The relationship between the financial and property sectors needs to be reviewed to identify lessons learned from the precipitation of this crisis. Lessons can certainly be learned from Sweden from their economic crisis in the 1990s and the close relationship between the development (40 years) of the Land Information Services and the Financial Services.

### **INSPIRE**

9. The workshop detailed the INSPIRE programme and highlighted many projects that have adopted the information model being prescribed by INSPIRE.
10. The challenge will be its understanding and adoption across the wide range and levels of providers of spatial information, especially in a financially challenging period.

### **Valuation**

11. Germany has successfully implemented Automated Valuation Methods and is currently integrating GIS within this process.
12. Most German states now provide a portal for real estate market data that complements information services from the private sector. Although the dividing line between government information services and Value Added Services by the private sector is not clearly defined.

### **Urban Information Capture**

13. The workshop explored a range of new urban information sources available from citizen based sensors – 'Urban Sensing'. These techniques can provide valuable sources of up-to-date information, but raises serious issues around privacy.
14. 3-D urban information is being increasingly captured Microsoft, Yahoo and Google to support their 'earth viewers' and end users are now expecting 3-D interfaces. However, the accuracy of this information is limited and not suitable for engineering applications, i.e.  $\pm 10 - 30$ cms. However, new techniques that combine photogrammetry and LiDAR are showing promise for automating the capture of 3-D urban environments.
15. The maintenance of urban information is an on-going challenge with the high degree of change occurring in urban areas (some cities will double in size in a decade)

### **Integrating Urban Information (Information Interoperability)**

16. The implementation of INSPIRE will impose implementation rules and provide standard data models. This will simplify the collation and integration of datasets once the data models have been adopted.
17. Several examples were presented on the definition and implementation of standard data models (schemas) across Local Government stakeholders' datasets. However, there are still significant semantic differences to be overcome in the process; the tools being developed to support the Web 3.0 (the semantic web) will be fundamental in supporting this data interoperability.

### **Accessing Urban Information**

18. Many examples of 'geoportals' were highlighted at the workshop. These varied from just providing information about datasets (metadata) to web mapping services that allow users to collate and view a variety of data sources from diverse data providers.
19. This proliferation of geoportals at local, regional and federal levels will have to be carefully managed to provide a seamless and simple interface to users.
20. These geoportals have significantly increased the collaboration across stakeholder groups; a very positive effect.
21. One issue not addressed at the workshop was 'business interoperability' that would solve the problem of each of the data providers having separate and different licensing agreements, leading to difficulties in stakeholders having ease of access to datasets.

### **Role of the Surveyor in Urban Design**

22. Traditionally, the surveyor has been involved in the physical aspects of urban design, but increasing they could have a potential role in also contributing social and environmental information to the urban design process.

### **Informal Developments**

23. Several papers identified the enormous scale and expansion of slums / informal developments in urban areas. In Cairo, a survey estimated that the problem was five times the size of the official figures.
24. Each country has different causes of the problem and even within a country, requires different solutions for different areas. Therefore, a toolkit of solutions needs to be generated.
25. In most cases, however, the development control / building regulations were too complex, expensive and time consuming. This led to many citizens building

properties outside of the formal system. Therefore, laws and regulations need to be reviewed to initially provide a simpler land administration solution that can be upgraded over time.

### **Innovation**

26. Many of the surveying and building regulations in countries are too rigid, expensive and outdated. This leads to the suppression of innovation in approaches, products and services. This also adds a considerable and often unnecessary financial overhead to the administration. This imposition of rules and regulation raised the issue of the role of the public sector and its relationship with the private sector. It also raised the issue of the just how appropriate the government institutional arrangements are in this modern age – especially since the arrangements were designed 60 years ago and have not fundamentally changed.

### **Challenges**

27. The majority of projects that use a variety of sources of spatial information expend between 50% and 80% of their resources in collating, cleansing and merging the spatial information. This only leaves a small proportion of the resource to analyse and to apply the spatial information to solving the problem. The introduction of system and information interoperability open standards, e.g. through the INSPIRE initiative, should reverse this ratio to allow professionals to more efficiently use spatial information.
28. The adoption of more sensors and more citizen centric sensors in urban areas is advantageous in providing a richer set of information to more effectively manage our urban environment. However, it does present further challenges in managing the enormous amount of information and raises difficult privacy issues.
29. However, the biggest urban challenge is finding and applying effective solutions to the slums / informal development explosion in our cities. This must be a priority for Commission 3 and FIG.