EIP- SCC General Assembly 'Shape' Table Discussions, 27th – 28th June, 2018

Space for Cities (SFC) "Shape" Table Discussion

Headlines

- Great potential to exploit satellite signals and data to support public and private actors at city level
- Lack of knowledge and training about such data among local public managers
- Opportunities to exploit satellite data and signals across different city depts. and different cities in the same area.

Participants

Name		Organisation	
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Piero	**Pelizzaro**	Italy (IT)	
David	**Beeton**	United Kingdom (UK)	
Jo	**Lindstad**	Sweden (SE)	
Miguel	**Arana Catania**	Spain (ES)	Madrid City Council
Andres	**Jaadla**		European Committee of the Regions
Trinidad	**Fernandez**	Germany (DE)	University of Stuttgart IAT
Arne	**Debruyne**	Belgium (BE)	City of Ostend
Dirk	**Van der Ven**	Netherlands (NL)	Walas Concepts - World of Walas
Martin	**Hadzhistoykov**	Bulgaria (BG)	eCars
Axelle	**Pomies**	France (FR)	Telespazio France
Małgorzata	**Szumniak**	Poland (PL)	City od Warsaw - Infrastructure Department
Kristina	**Filipovski**	OTHER	City of Skopje
Elisaveta	**Peneva**	Bulgaria (BG)	Sofia University "St. Kliment Ohridski"
Oleksandra	**Sladkova**	OTHER	LME "Institute of spatial development", Lviv, Ukraine
Anabela	**Bento**	Portugal	ISQ Internacional

Agenda

Space and satellite technologies offer new ways to tackle city planning and operations (incl. real-time mobility, environmental monitoring, and urban planning) that deliver game-changing benefits. How can the cities market best understand, and get ready to embrace these gains?

The Space4Cities "Shape" table was animated by Eurisy, a non-for-profit agency of space agencies and offices promoting the exchange of know how among LRAs and SMEs on current and potential uses of satellite applications. Elisaveta Paleva, representing Bulgaria at the Copernicus User Forum, contributed to the contents of the table by presenting the EU Copernicus services and support mechanisms made available by the European Commission to use Copernicus data and services.

Four principal questions were addressed:

1. ***What are the current applications of satellite data and signals in cities?***

2. ***What is the Copernicus programme and how can cities profit from it?***

3. ***What are the areas of application of satellite services that are more interesting for cities?***

4. ***What challenges do cities face to access and use satellite applications?***

Objectives and output desired

- Get clear on the potential gains for cities and stimulus interest
- Identify the blockers to action
- Shape an emerging plan for this new EIP-SCC (II&P) initiative

Synthesis of discussions

1. What are the current applications of satellite data and signals in cities?

Opening the discussions, Eurisy gave a brief explanation of the three applications of satellites: Satellite navigation, satellite communication, and satellite imagery.

Satellite navigation allows to position objects and people in real time. It is already embedded in smartphones and other portable devices. Sat Nav is a precious tool to improve city management, in particular to monitor and optimise public and private transport. Indeed, satellite navigation has today a crucial role in providing real-time information on public transport and in the implementation of intermodal transport systems in cities and their hinterlands. Numerous apps use satellite navigation signals, e.g. to help persons with disabilities in their daily movements or to enable residents to access information about public services and provide feedback to their local authorities.

Satellite communication allows to connect where cables do not arrive or when radio and telephone connections are not stable enough or are temporarily unavailable. Is also used in cities, to connect rescue teams when other connections are down, or to perform health checks in public spaces, among others.

Satellite imagery allows for an integrated view of land uses and infrastructures. It is already employed by city managers, for example to target soil and infrastructure maintenance works where they are most needed, or to decide on where to build a new park. Earth Observation also provides information on air temperature and quality, which helps local authorities to identify urban heat islands, to make predictions about the impact of different traffic scenarios on air quality, and to intervene on areas where construction materials retain too much heat.

The table introduced the participants to satellite applications for city management by presenting six cases from cities using satellite applications to improve city management and sustainability.

- Barcelona using satellite imagery to monitor coastal water quality
- Diemen relying on satellite imagery to monitor soil subsidence and prioritise infrastructure works
- Exeter using satellite navigation to monitor waste collection trucks in real time
- Lyon using satellite imagery to decide on where to place PV panels and monitor their functioning

- London using satellite imagery to monitor air quality and inform residents with respiratory diseases
- Trieste using satellite navigation to geolocate and manage residents' requests to city authorities

2. What is the Copernicus programme and how can cities profit from it?

Copernicus is the European Union's Earth Observation Programme, looking at our planet and its environment. It offers information services based on satellite Earth Observation and in situ (non-space) data. Vast amounts of global data from satellites and from ground-based, airborne and seaborne measurement systems are being used to provide information to service providers, public authorities and other international organisations. The information services provided are freely and openly accessible to its users. The services address six thematic areas: land, marine, atmosphere, climate change, emergency management, and security. They support a wide range of applications, including environment protection, management of urban areas, regional and local planning, agriculture, forestry, fisheries, health, transport, climate change, sustainable development, civil protection, and tourism.

Several funding instruments exist which can help developing Copernicus-related business. Some of these instruments are designed by the European Commission and other public institutions, in particular the H2020 programme, the EU Innovation procurement and the ESA ARTES 20 Integrated Applications Promotion Programme. Others come from the private sector.

3. What are the areas of application of satellite services that are more interesting for cities?

Among the examples presented, participants showed a particular interest towards the use of satellite imagery to prevent floods, through the monitoring of the evolution of green areas beside inland rivers, and for the assessment of the damages after floods or other natural hazards.

Participants to the table were also interested in the use of satellite imagery to monitor air quality and temperature in cities and to the use of satellite imagery to monitor and foresee soil subsidence.

Interest was also shown in the use of satellite navigation to monitor and manage waste collection bins.

The key opportunities identified by the participants are: for satellite imagery the possibility to monitor changes (of land, air, water, buildings and infrastructures) over time; for satellite navigation, the possibility to collect real-time information on transport and mobility. Moreover, for both applications, there is the possibility to share data collected through satellites among different city services or departments and among cities in the same area.

4. What challenges do cities face to access and use satellite applications?

Despite their interest towards satellite-based services, city actors still need to be educated on the features and potential uses of satellite-based services.

In order to foster knowledge about such services, case studies are needed. The production of short videos on concrete uses of satellite applications in cities would be particularly useful to reach out to the biggest number of city actors.

Workshops and seminars should be organised locally and involve not only academia, but especially private companies and city departments directly involved in city management.

Cities interested in satellite data, still do not know where to find the data. This should not be confined to scientific or expert databases, but should be included in the webportals that are usually consulted by city actors looking for data about cities' land, air and water.

In order to overcome their technical challenges, the following measures have been envisaged: training on GIS for city managers, to help cities to autonomously access and use satellite-based data; the creation of regional image processing tools; the inclusion of space-based data into city portals.

Immediate activities

1. Create a WG on Space for Cities within the EIP SCC Integrated Infrastructure Action Cluster
2. Roll out the "Space for cities" surveys to collect information on current uses of satellite applications within the EIP6SCC network and to assess the main needs of cities that do not use satellite applications yet (https://www.eurisy.org/event-Space4Cities/survey).
3. Involvement in the working group of networks of service providers specialised in satellite imagery, such as the European Association of Remote Sensing Companies (EARSC)

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