CIB TG88

Smart Cities Roadmap
(open for comments)

Last February 23, 2016 CIB Task Group TG88 Smart Cities held a consultation webinar on the Smart Cities Roadmap, which is now open for comments.

The webinar included a presentation of the CIB roadmap and 3 different perspectives on Smart Cities from Europe, Northern America and Asia.

Deadline for comments is April 10, 2016. Any comments can be send to Miimu Airaksinen by mail: miimu.airaksinen@vtt.fi

The Smart City Roadmap can be downloaded **here**.

Background
Urbanization had been rapid, currently 54% of the global population lives in cities and this is projected to rise to 70% by 2050. New cities have emerged, and hundreds are expected to be built in coming years.

Cities are engines of economic growth, accounting for 80% of the global GDP. But they also consume around 75% of global primary energy and are responsible for 70% of the global greenhouse gas (GHG) emissions. All sectors associated with urbanization (transport, building construction and maintenance, housing, waste management, energy, etc.) are registering trends that raise sustainability issues.

Urbanization trends pose a need for strategic and innovative approaches to urban design, planning, management and governance. The accompanying trends in technologies play a significant role in 21st Century urbanization as technologies are increasingly supporting business functions, city logistics and grids, transport, delivery of basic services, environmental management systems, government operations, data-driven industries like finance, and people-to-people interactions.

CIB Smart City Roadmap
CIB Task Group TG88 has created a smart city roadmap. Technologies have a crucial role and potential in addressing the urban challenges and, presenting new opportunities and smart approaches for the global community to make cities inclusive, safe, resilient, and sustainable.

Due to climate change and lack of critical resources, energy management and technologies to transform our cities to low carbon societies becomes important. Digitalisation and new technologies enables us to use more and more data in real time. In addition Internet of Things (IoT) makes it possible to use, combine and enrich data from many different sources. The future city actors and stakeholders are changing Internet of Things to Internet of Meaningful Information.

New technologies enable also service based solutions. Future construction business is in transformation. Todays' construction of buildings and roads will change to service business like living as a service, energy as a service, X- as a service.

Future Smart Cities are sustainable and resilient, and constructed from self-healing materials and systems. Zero carbon resource efficient solutions are created without compromising peoples' well-being.

Themes
The following main themes were identified:

• Energy: increasing the use of renewable energy, optimisation of the energy system and the management and balancing of energy supply and demand.

• Buildings: new solutions for renovation, living comfort and replication of building services and solutions.

• Land use, infrastructure and asset management: adaptive use and integration to existing systems.

• Transport and mobility: Easy and fast mobility, smart management systems, reducing the need and time for travelling.

• Communities and users: people participation, on-demand services, increasing awareness, trust and security, and good well-being.

Conclusions
The main cross-cutting conclusion in specific roadmap areas were the following:
- Digitalisation in enabling new services and innovation as well as more efficient systems
- Integrated planning and management
- Many stakeholders, value-chains and new eco-systems
- Energy management at building and district level and low carbon energies
- New services, e.g. mobility as a service, building as a service…
- Resiliency, safety and security issues (personal safety and data privacy)
- Upgrading existing building stock and new business concepts including new models for ownership

The integral recording of the consultation webinar can be seen **here.** The three stand-alone presentations can be watched through the Youtube CIB Secretariat channel.

Perspectives of smart cities from Europe, Northern America and Asia

Dr Gillian Hobs, Gilli Hobbs, Strategy Director from BRE United Kingdom gave insights on the future cities programme in Europe. She highlighted that the Smart Cities aspect should help to create better cities taking into account all sustainability pillars (people, planet, profit). In her presentation Ms Hobbs also gave practical examples of how to measure and monitor the performance of different sub-systems and components cities, e.g. building performance, good indoor air quality and optimising the use of material resources.
Video presentation
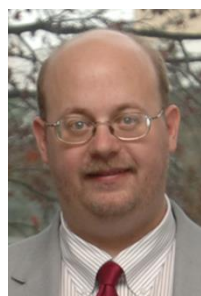
Dr David Wollman, Deputy Director for Smart Grid and Cyber-Physical Systems from NIST U.S.A, provided an interesting presentation about how to bring communities and innovators together through the Global Cities Teams Challenge, and to encourage collaboration on a range of issues from disaster response to energy management to mass transit improvement. Dr Wollman highlighted that a key goal is to help communities and businesses connect to improve resource management and quality of life by using effective networking and use of computer systems and physical devices, often called Internet of Things (IoT) or cyber-physical systems.
Video presentation

Prof Geoffrey Shen Shen from The Hong Kong Polytechnic University Hong Kong showed an innovative approach of building Smart Cities via process innovations. Prof Shen showed practical examples how new technologies can be used for simulating impacts of different urban plans and also to visualise the different urban plan alternatives and to help the communication with many stakeholders from different background in the urban planning process.
Video presentation