Smart District Data Infrastructure

The smart city is a complex system i.e. a system of systems (ISO/IEC JTC 1 Information technology, 2014). It needs collaboration between various parties in the cities which is inherently a difficult task in terms of implementation of solutions. Besides, the unique characteristics of each city make the translation of the solutions from one place to another very difficult. These difficulties encourage different societies, from academia to standardization bodies, to start thinking about a solution which can be replicable as well as reliable and stable.

There are different sets of goals that cities are setting for themselves to become smart and sustainable cities such as carbon neutral, energy neutral, factor 10 or even factor four. Talking about the cities and the areas and domains they focus on, has shown how difficult is to achieve the goal of having such such smart and sustainable solutions. Hence, there is an interest to look at cities in smaller scale such as region or district. however, these territories have also different definitions in different countries and cities. Anyhow, in any of this scale, the challenges are very common (e.g. environmental noise, air quality and particulate matter, energy usage and production, traffic flow, etc.). The key point here is, in order to achieve or maintain a high quality of living in an urban area in whatever scale we are talking, municipalities, companies, service providers, private bodies, even citizens (in general all stakeholders involved) must take into account many different concerns simultaneously.

The given definition by Yin et al (Yin, Xiong, et al., 2015) stresses the role of smart data infrastructure in approaching toward sustainability, smartness and dealing with diverse challenges of a city: “a smart city is a system integration of technological infrastructure that relies on advanced data processing with the goals of making city governance more efficient, citizens happier, businesses more prosperous and the environment more sustainable”.

Nowadays, there are many districts in European cities that have individual preferences for reaching different level of factor four standard. To do so, districts should know what they need to acquire and which measures and solutions can be applied to achieve factor four. Throughout a European project funded by EIT Climate-KIC, called “Smart Sustainable District (SSD)” a general concept has been developed which addresses the current issues of districts. This project work which is still under progress, has brought together different districts with real challenges. This opportunity helps both stakeholders and local partners as well as European experts from private companies and universities to gather together and exchange their knowledge in order to improve the situation of districts in terms of behaving in a smart and sustainable manner.

To know more about SSD, visit the official web page under: http://www.climate-kic.org/programmes/smart-sustainable-districts/
Notably, amongst different challenges and opportunities, data management is one of the biggest challenges for the districts to cope with. We, at the chair of Geoinformatics from the Technical University of Munich, as one of the partners in the SSD project, have been responsible for developing a concept to cover and address the data issues. In this project, by working with different districts and communicating with different stakeholders, we have learned about the existing challenges and requirements of districts in relation to the data management field. This helps us together with our SSD partners to drive a solution which can cover these issues and can provide a way to move towards sustainability and smartness. The proposed solution is indeed a data infrastructure smartly designed for the districts. It is named "Smart District Data Infrastructure", in short "SDDI". This solution is currently being tested in different districts in European cities such as London, Utrecht, Paris, and Berlin. However, it can be applied also in other districts and on different cases. In fact, the main purpose of SSD is to offer a concept/tool/solution which is suitable for different districts with different cases and situations.

This wiki page is allocated to the SSD Data driven district transformation solution "SDDI". This includes the concept, the structure, the process, a warehouse of different tools developed and linked to SDDI and the prototypes and tools tested in the SSD districts network. You can also find plenty of extra material in order to better understand the idea behind SDDI and related activities.

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**Germany - Land of Ideas**

As one of 100 winners from about 1000 candidates the project has been awarded "Landmarks in the Land of Ideas" 2016. The goal of the "Germany – Land of Ideas" initiative and Deutsche Bank is to make innovations visible in Germany and abroad and to strengthen the economic potential and sustainability of Germany as a location. This year, in 2016, the competition "CommUnityInnovation – a model for success" is awarding projects that show the added value and potential of joint action, whether in business partnering, scientific networks, or neighbourhood initiatives.
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Thomas H. Kolbe

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Moshrefzadeh, Mandana

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Berlin, Moabit west updated 20.March 2018 • view change
SDDI Key Elements updated 12.February 2018 • view change
Related Work and References updated 29.January 2018 • view change

Space contributors

- Thomas H. Kolbe (49 days ago)
- Moshrefzadeh, Mandana (920 days ago)
- Hijazi, Ihab (1149 days ago)
- Kohler, Andreas (1299 days ago)

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