GrowSmarter
Transforming cities for a smart, sustainable Europe

FACTSHEET

Urban ENVIRONMENT

PART OF SMART SOLUTION 8: BIG DATA MANAGEMENT

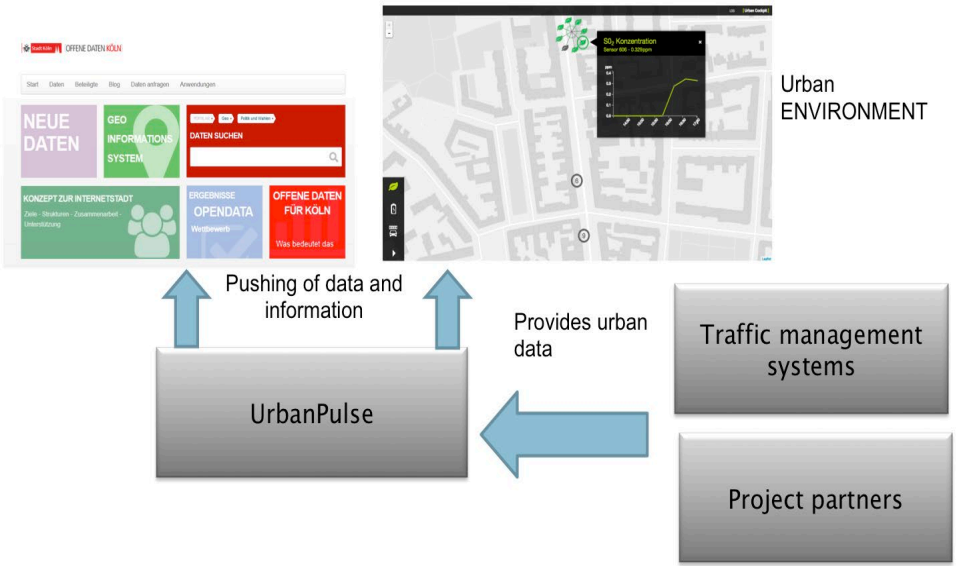

Figure 1: UrbanPulse as multisided open big data platform in the backend

INTEGRATED
INFRASTRUCTURES

- Provides a fast and easy overview of current environmental conditions in your city
- Data and information can be used for environment management optimisation by exploiting historical data and to detect unusual situations
- Data can also be provided on open data platforms of cities. All urban data can be included independently of the manufacturer of the data provider

Cologne

Technical partner: [ui!] – the urban institute, RheinEnergie
Contact: Stephan Borgert: stephan.borgert@the-urban-institute.de

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no 646456. The sole responsibility for the content of this document lies with the author and in no way reflects the views of the European Union.

What is the solution?

The picture below (Figure 2) shows the Urban ENVIRONMENT app of the City of Cologne. The sensors measure data including CO2, ambient light, air pressure, humidity, temperature, dust and noise level. This is a street map of Cologne, which draws information from sensor packages installed at lampposts throughout the city. The app merges the data from them when the user zooms out. When zooming in, all sensors are shown individually and every sensor of every package can be viewed.

How does it work?

The picture on the front page provides an overview of the whole system. The UrbanPulse module in the middle is a multisided big open data platform.

This means it is open to any kind of urban data on the urban data side and can provide data and information via open standards to different data consumers.

Urban data is provided by traffic management systems, from project partners, and from urban companies like energy provider. Additionally environment data from sensors can be used. All data will be processed in real time by the UrbanPulse to generate value added data (=information). The data will be stored to provide a historical perspective for the data analytics.

Data and information are provided to apps like Urban ENVIRONMENT or as Data Services to consumers. In this case, the Urban ENVIRONMENT app is the data consumer.

www

Figure 2: Urban ENVIRONMENT App

Business Model Used

The Urban Software Institute GmbH (=[ui!]) is developing the UrbanPulse and the Urban ENVIRONMENT app and offers them to cities and urban management companies. Furthermore [ui!] is analysing the data to determine value added data which can be sold. Cities could sell the urban data and information to interested parties.

The business models can be adapted for the cities to fit their needs and requirements.

Integration with other Smart Solutions

The Urban ENVIRONMENT app is a good addition to other urban apps like the Urban COCKPIT, which is described in another fact sheet.

Expected Impact

The Urban ENVIRONMENT app delivers important information about the current environmental situation of a city. Developments of different environmental measures can be monitored to detect the impact of measures and to improve selective certain aspects. The displayed information will also be provided as Data as a Service on the open data platform of Cologne. The service and app developer are able to develop new ideas of how to exploit these information for new value added information and data for users.

Potential for replication

The solution can be replicated in all other European cities as it is not dependent on proprietary standards and therefore connectors from the data source to the UrbanPulse can be developed for every sensor/service interface. The connection to the Urban TRAFFIC app and the open data platform also relies on open standards.