

FACTSHEET

Urban TRAFFIC

PART OF SMART SOLUTION 8: BIG DATA MANAGEMENT

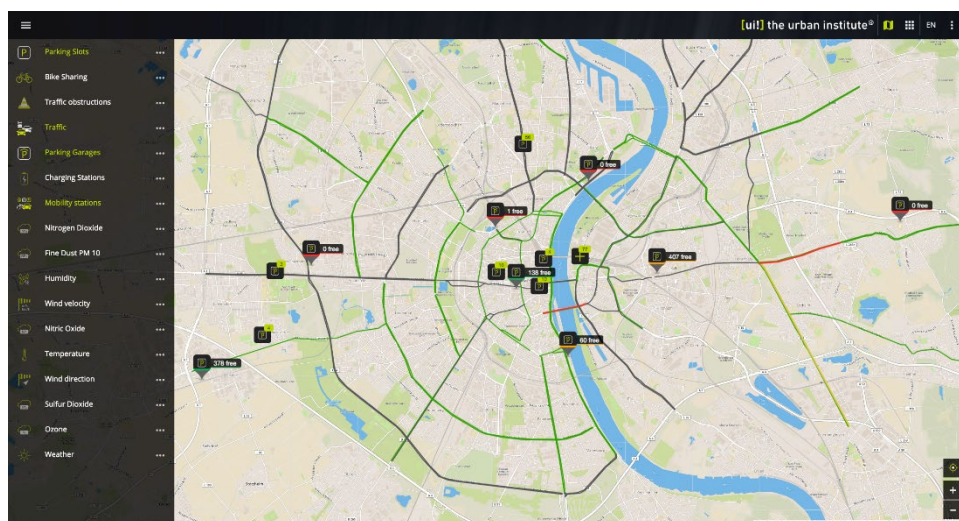


Figure 1: Urban TRAFFIC

- Provides a fast and easy overview of the current traffic situation within your city
- Data and information can be used to improve traffic management by exploiting real time and historical data to detect unusual situations
- Data can also be provided on open data catalogs or data market places, so external app developers can use these data as well. All urban data can be included independently of the manufacturer of the data provider system

INTEGRATED
INFRASTRUCTURES



Cologne

Technical partner: [ui!] – the urban institute

Contact: stephan.borgert@the-urban-institute.de



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What is the solution?

The City of Cologne's Urban TRAFFIC app above is a view of Cologne's street map, with the different colours indicating current traffic flow in each street. In the current version of the app, 4 different colour indicators are used: green, yellow, red and grey. Green indicates a good traffic situation with no traffic jams. Yellow is less good and red is bad. Grey indicates a disconnection from the sensor source. The map gathers its data from the UrbanPulse data backend which is described in the next paragraph. The data source are traffic sensors installed next to streets, which capture the current traffic flow and real time data from traffic computers. Real time traffic data provided by traffic computers as well as floating car data can be integrated as well. Value added services like traffic predictions and

signal phase predictions of signal lights can be applied on city areas with modern traffic hardware. Furthermore the app delivers more traffic information such as available parking spaces, and the location of bike sharing and car sharing spots.

How does it work?

The image below depicts the high level architecture of the overall system. On the bottom layer urban data, produced by different urban subsystems, are delivered to the Open Urban big data Platform (OUP). The connections are realized using open data standards and open protocols for web services.

The OUP is normalizing, storing and processing the data and applies different modules and services to generate value added data like KPIs, predictions or recommendations. The OUP supports the

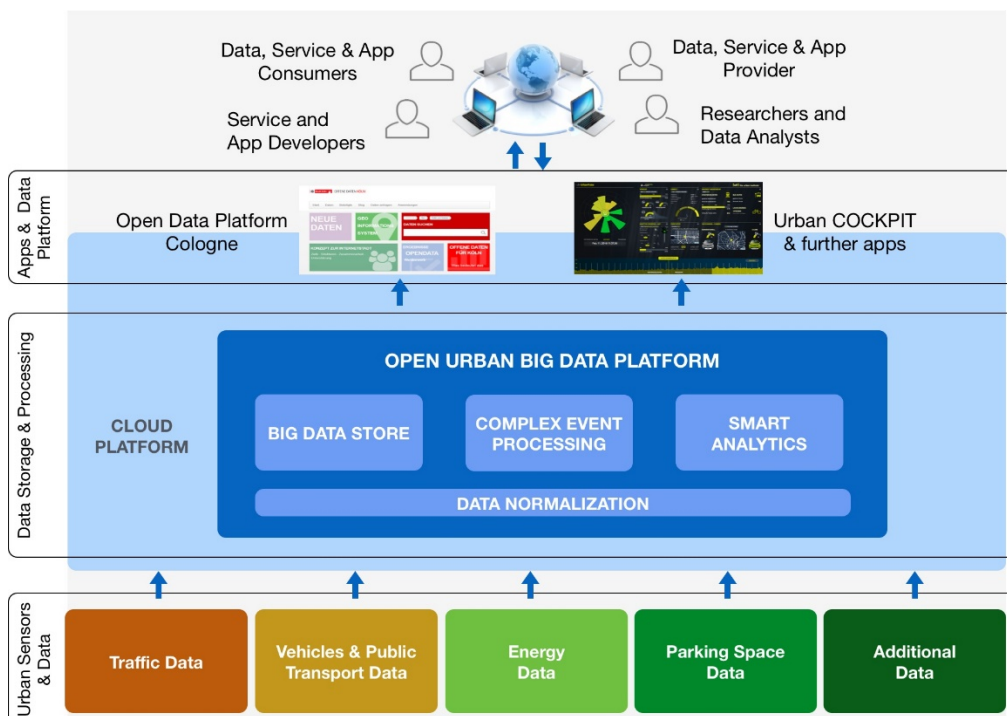


Figure 2: High Level Sociotechnical System Architecture

reuse, repurpose and recombination of different data types. Thus, advanced use case like intermodal traffic or mobile tickets, which can be used for different transport modes, can be developed. The use cases are not limited on the traffic domain but can also be developed for infrastructures like smart grid, smart districts, smart waste or smart home.

Application programming interfaces to stored data as well as to new generated data and services can be provided to data catalogues or data market places. Cologne uses a CKAN based platform called Open Data Platform Cologne.

Business Model Used

The Urban Software Institute GmbH (= [ui!]) is developing the UrbanPULSE platform and Urban TRAFFIC as part of the Urban COCKPIT and offers them to cities and urban management companies. Further more [ui!] offers services for data integration, analytics, development use cases, designing and implementing the COCKPIT and more. Customers, who want to do the development connectors and services by their own, can buy a developer licence including access to the full source code of the platform. Purchasing a reseller licence is another option. Value added real time data services, like traffic situation or traffic light switch predications, are part of the offer as well. Real time traffic control predictions can be used e.g. to environment sensitive traffic management. The business models can be

adapted to every city needs and requirements.

Integration with other smart solutions

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

Expected Impact

The Urban TRAFFIC app provides important information about the current mobility situations of a city. It can be used to monitor mobility developments in order to detect the impact of measures and to improve certain aspects such as improving traffic navigation algorithms. The displayed information can also be provided as Data as a Service on open data catalogs and market places.

This will enable service and app developers to develop new methods of using the information for new value added information and data for users. E.G. they can use these data in their own apps and enrich them with their own data to offer their customers a better solution.

Potential for replication

The solution can be replicated in any European cities easily as it not dependents on proprietary standards and is not limited to certain urban data domains. As cloud solution it can be scaled and adapted to the city needs. Small cities can be supported as good as very big cities.