

# The Urban TEP – Analysis of Multi-Source Data for Innovative Urban Monitoring

Thursday, 11 October 2018 14:30 (15 minutes)

Settlements and urban areas represent the cores of human activity and development. Besides climate change, urbanization represents one of the most relevant developments related to the human presence on the planet. Both global trends challenge our environmental, societal and economic development. In this context, the availability of and access to accurate, detailed and up-to-date information will impact decision making processes all over the world. The suite of Sentinel Earth Observation (EO) satellites in combination with their free and open access data policy contributes to a spatially and temporally detailed monitoring of the Earth's surface. At the same time a multitude of additional sources of open geo-data is available –e.g. from national or international statistics or land surveying offices, volunteered geographic information or social media. However, the capability to effectively and efficiently access, process, and jointly analyze the mass data collections poses a key technical challenge.

The Urban Thematic Exploitation Platform (U-TEP), funded by the European Space Agency (ESA), is developed to provide end-to-end and ready-to-use solutions for a broad spectrum of users (experts and non-experts) to extract unique information/ indicators required for urban management and sustainability. The key components of the system are an open, web-based portal, which is connected to distributed high-level computing infrastructures and providing key functionalities for

- i) high-performance data access and processing,
- ii) modular and generic state-of-the art pre-processing, analysis, and visualization,
- iii) customized development and sharing of algorithms, products and services, and
- iv) networking and communication.

U-TEP aims at opening up new opportunities to facilitate effective and efficient urban management and the safeguarding of livable cities by systematically exploring the unique EO capabilities in Europe in combination with the big data perspective arising from the constantly growing sources of geo-data. The capabilities of participation and sharing of knowledge by using new media and ways of communication will help to boost interdisciplinary applications with an urban background. The services and functionalities are supposed to enable any interested user to easily exploit and generate thematic information on the status and development of the environment based on EO data and technologies.

The innovative character of U-TEP platform in terms of available data and processing and analysis functionalities attracted already a large user community (>300 institutions from >40 countries) of diverse users (i.a. from science, public institutions, NGOs, industry).

## Type of abstract

Presentation

## Summary

To facilitate the systematic exploration of new opportunities the open and collaborative Urban Thematic Exploitation Platform (U-TEP) has recently been set-up. This platform represents a virtual environment that combines high-performance access to multi-source data repositories with efficient data processing, analysis and visualization functionalities. It includes mechanisms for the development and sharing of knowledge between different communities. It is expected that U-TEP can effectively support scientists and decision makers in deriving new facts and empirical evidence that help to develop and implement new or improved strategies for sustainable urban planning and management.

**Primary author:** Dr BACHOFER, Felix (German Aerospace Center (DLR))

**Co-authors:** Dr METZ-MARCONCINI, Annekatrin (German Aerospace Center (DLR)); Mr MATHOT, Emmanuel (Terradue Srl); Mr BOISSIER, Enguerran (Terradue Srl); Mr PACINI, Fabrizio (Terradue Srl); Mr PERMANA, Hans (Brockmann Consult GmbH); Mr BALHAR, Jakub (GISAT s.r.o.); Mr ZEIDLER, Julian (German Aerospace Center (DLR)); Mr BOETTCHER, Martin (Brockmann Consult GmbH); Dr MARCONCINI, Mattia (German Aerospace Center (DLR)); Mr UEREYEN, Soner (German Aerospace Center (DLR)); Dr ESCH, Thomas (German Aerospace Center (DLR)); Mr SOUKUP, Tomas (GISAT s.r.o.); Mr SVATON, Vaclav (IT4Innovations, VSB-Technical University of Ostrava)

**Presenter:** Dr BACHOFER, Felix (German Aerospace Center (DLR))

**Session Classification:** Thematic Services

**Track Classification:** Area 1. Cross-Domain challenges / Data exchange across domains: researchers, technologist and policy makers perspectives