

Urban Thematic Exploitation Platform – A Novel Concept for the Exploration of Earth Observation Data and Derived Thematic Information Products for Urban Studies.

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The upcoming suite of Sentinel satellites in combination with their free and open access data policy will open new perspectives for establishing a spatially and temporally detailed monitoring of the Earth's surface. The Sentinel fleet will provide a so-far unique coverage with Earth observation (EO) data and new possibilities with respect to the implementation of innovative methodologies, techniques and geo-information products and services. However, the capability to effectively and efficiently access, process, analyze and distribute the mass data streams from the Sentinels and high-level information products derived from them poses a key challenge. This is also true with respect to the necessity of flexibly adapting the processing and analysis procedures to new or changing user requirements and technical developments. Hence, the implementation of operational, modular and highly automated processing chains, embedded in powerful hard- and software environments and linked with effective distribution functionalities, is of central importance.

This contribution introduces the TEP Urban project that aims at the utilization of modern information technology functionalities and services to bridge the gap between the technology-driven EO sector and the information needs of environmental science, planning, and policy. Key components of such a system are currently developed in the TEP Urban project. This includes the implementation of an open, web-based platform employing distributed high-level computing infrastructures (Platform as a Service – PaaS) as well as providing key functionalities for i) high-performance access to thematic data (Information as a Service – IaaS), ii) modular and generic state-of-the-art pre-processing, analysis, and visualization (Software as a Service – SaaS), iii) customized development and dissemination of algorithms, products and services, and iv) networking and communication. These 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 TEP Urban platform is supposed to initiate a step change in the use of EO data by providing an open and participatory platform based on modern ICT technologies and services that enables any interested user to easily exploit and generate thematic information on the status and development of the built environment.

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