TEP Urban

Urban Thematic Exploitation Platform (UTEP) for SDG Monitoring

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Motivation

Urban challenges

- Water
- Energy
- Waste
- Air pollution
- Climate
- Food
- Risk adaptation and mitigation
- Growth management
- Living conditions
- Basic services
- Transportation
- ...
Portfolio

Data provision
Data processing
Analysis & Visualization
Knowledge exchange

...all *data* and *tools* needed...

...available in *one place*!

*end-to-end solutions ready to use*
User community

Number of users: > 465
Number of organizations: 46

Key users:
- World Bank Group
- United Nations
- OECD
- World Food Programme
- Bill & Melinda Gates Found.
- Group on Earth Observation (GEO)
- WorldPop
- Columbia University (CIESIN)
- MININFRA Rwanda
- ....
Live Demo
World Settlement Footprint (WSF) layer now available

Discover DLR’s new World Settlement Footprint (WSF) data at the Urban TEP platform and inspect the urban and rural human settlements pattern in a so far unique precision and consistency.
Data and Products Showroom
Product Portfolio
Product and Service Portfolio

- TimeScan Landsat on-demand
- TimeScan Sentinel-2 on-demand
- Functional Urban Area Definition
- Visualisation and Analytics Toolbox
Tracing Global Urbanization: New Data from Space

- **Global Urban Footprint (GUF)**
  - Data base: 182,249 TerraSAR-X/TanDEM-X images (3m) collected in 2012 (308 TB)
  - Spatial resolution: 12 m (scientific use), 84 m (non-profit use)
  - Release: November 2016
  - Users: >300 institutions from 43 countries

- **World Settlement Footprint (WSF)**
  - Use of free and open data
  - Multi-sensor (Sentinel-1, Landsat/Sentinel-2)
  - Multi-date (use of all scenes available)
  - Multi-facility (DLR, U-TEP, GEE)

*Product portfolio*
- WSF 2015 (10m, binary mask)
- WSF 2015 Density (30m, imperviousness)
- WSF 2015 Network (settlement pattern)
- WSF Evolution (30m, 1984-2015)
- WSF/GUF 3D (average building volume)
World Settlement Footprint: TimeScan Landsat 2015

- ~460,000 Landsat-8 scenes collected in 2014-2015
- 6 spectral indices
- 5 temporal statistics
- 30m spatial resolution
- > 1.5 PB intermediate products
- 25 TB final product
Earth Observation Processing Services
Processing of On-Demand Services
Sentinel + Landsat Archive - Search and Access
Visualisation and Analytics Toolbox (VISAT)

Objectives
EO4SD-Urban aims at demonstrating the benefits of EO-based geo-information products and services to support urban planning tasks in the context of programs related to the IFIs and stakeholders in Client States. Specifically, its goals are:

- To provide convincing demonstrations of the benefit and utility of EO-based information in the urban framework;
- To provide the intended services on a regional basis for about 40 cities;
- To ensure that the product and services are user-driven via a strong engagement with IFIs, stakeholders, and Client States;
- To provide an operational urban service portfolio offering quality controlled products;
- To provide a technology transfer via capacity building exercises in the selected study regions;
- To ensure a robust organization of service networks with the regional counterparts via dedicated local offices;
- To develop new business opportunities in urban EO services for the European industry.

In cooperation with the ESA Urban Thematic Exploitation Platform (UTE) project, the EO4SD-Urban project results are made available also via the UTEP visualisation and exploration platform. This shall further streamline the EO4SD Urban information services visibility and support further open dialog with MDB staff, Client State government representatives and other stakeholders. It shall also promote best practice examples sharing in more interactive way and thus support the overall exploitation, dissemination, and promotion activities in Phase 2.

Find out more on EO4SD-Urban project website.

- Land cover
  This dataview provides the information about Land cover. Land use structure of selected cities based on HR and VHR imagery. The theme is divided into three basic visualizations: Structure of artificial land, Land cover structure - overview and Land cover structure - detail. All cities are comparable up to the level III for two horizons 2006 and 2016.

- Land cover change
  This dataview provides information about land cover change based on VHR imagery and showing detailed structure of formation and consumption of land cover classes for chosen land cover flows.

- Urban greenery - Overview
  The information about the urban greenery status and change are visualized at this dataview.

- Informal settlements
- Open and Green Areas
- Transportation network
Kigali / Rwanda – Housing Inventory
Map: WSF Bangkok 1985, 1995, 2005 and 2015. Bar Chart & Table: SDG 11.3.1 Indicator: Population Change normalized by Settlement Area Change. The higher the ratio the more unbalanced the development between population and settlement area.
A: Accumulated nightlights intensity of 2015 in relation to the total population of a country in 2015
B: Number of geotagged tweets per capita 2016
C: Accumulated nightlights intensity of 2015 in relation to the electric power consumption per capita [kWh]
B: Gross national Income per capita (US$) (Development 1985 – 2015)
C: Urban population in % of total population (1985 – 2015)
Outlook

- Kick-Off for the pre-operational phase October 2018
- Streamlining of operations, design and functions (until May 2019)
- Release of more functions and datasets to the urban community (e.g. processing services, WSF products)
- Striving for sustainability during operational phase

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