

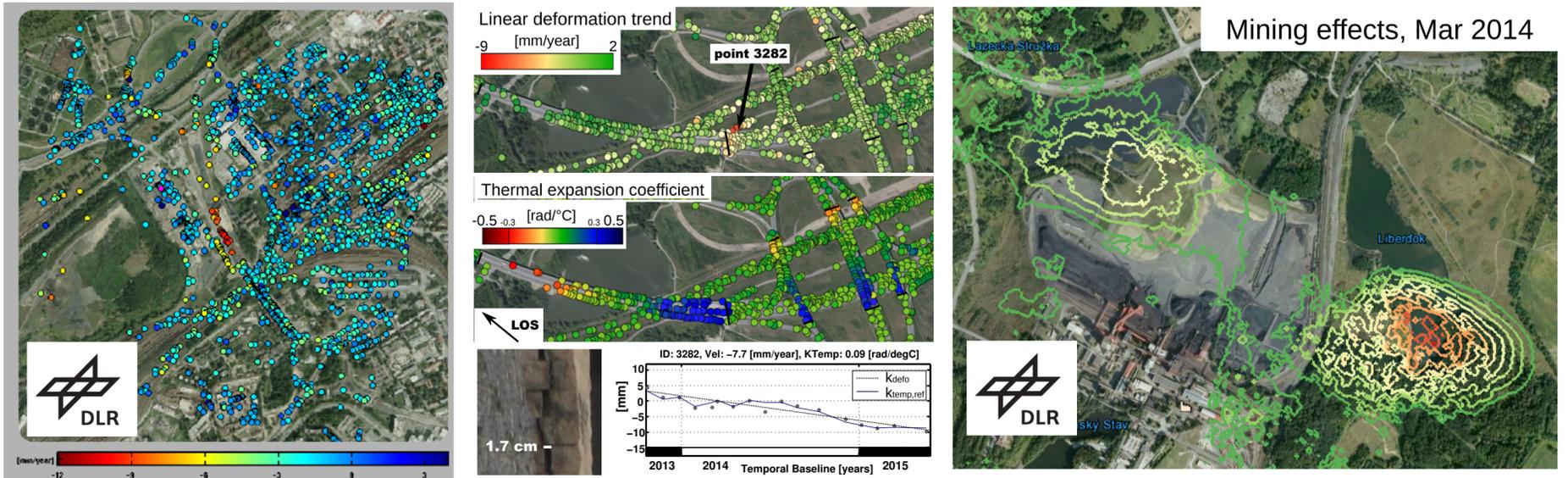
Remote sensing activities at VSB-TU Ostrava: IT4Innovations

Various areas are routinely observed for terrain and object deformations with the view of risk prevention and to support risk management in the Czech Republic but also supporting international researchers from other countries, including Slovakia, Portugal or Turkey. The applications are based mainly on results from Sentinel-1 multitemporal interferometry and deal with subsidence, landslides and deformations of infrastructure objects. The facility offers data storage and various processing techniques for appropriate exploitation of Copernicus Sentinel-1 data.

ESA Urban TEP (U-TEP) in collaboration with DLR, Brockmann Consulting, Terradue and GISAT aims at bridging the gap between the technology-driven EO sector and the information needs of urban and environmental science, planning, and policy. U-TEP provides a web-based, open and participatory platform to easily exploit and generate thematic information on the status and development of the urban environment.

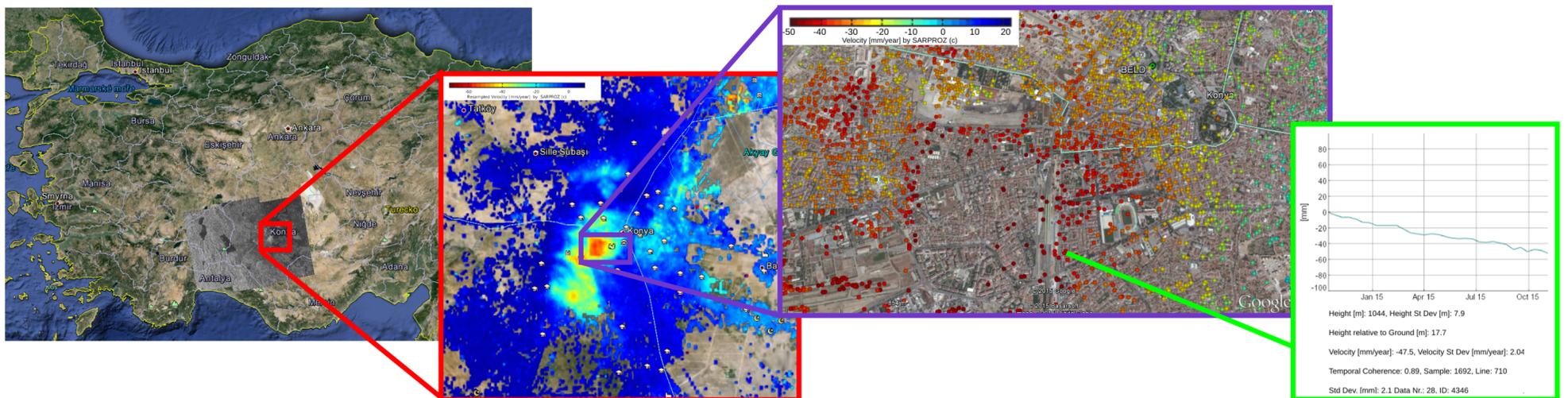


Czech Republic: deformations at bridges; mine-induced subsidence



Data from various projects over Czech Republic include ERS, Envisat, TerraSAR-X, Cosmo-SkyMed, Alos-1 and Sentinel-1. Continuous work being done by Milan Lazecky from VSB-TU Ostrava consists mainly in application for detection of mining-induced subsidence and deformations of infrastructure objects.

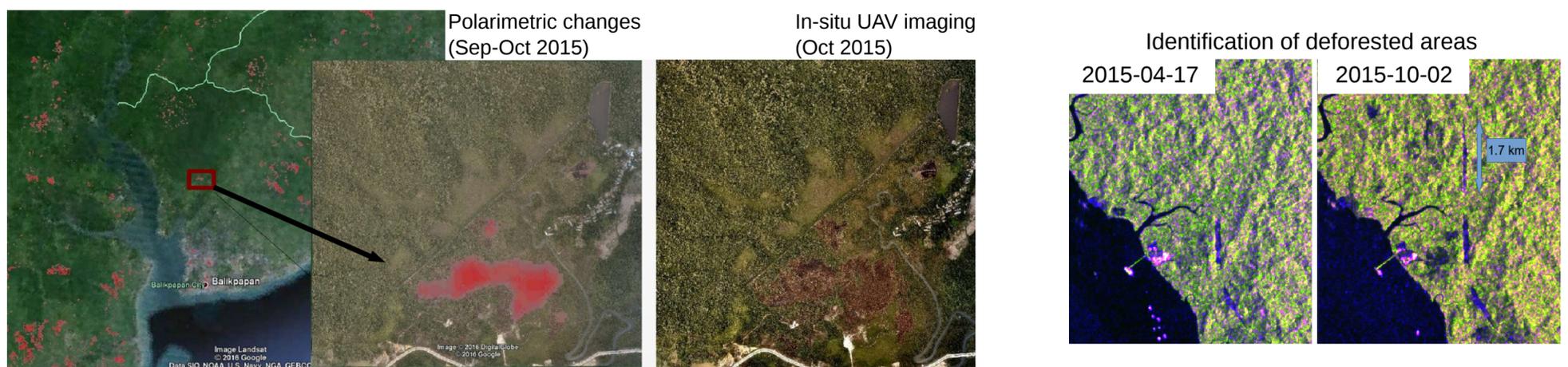
Turkey: Konya city subsidence



The Czech supercomputing facility offers SAR processing to international partners. A processing result at IT4Innovations as performed by Fatma Canaslan Comut from Selcuk University and AFAD Denizli shows subsidence in the Konya Closed Basin that is caused by depletion of groundwater. The processing result over Konya City was conducted using Cosmo-SkyMed and Sentinel-1A data using PS InSAR implemented to SARPROZ software.

Indonesia: Balikpapan bay forest loss

Forest loss due to 2015 fires at Indonesian islands



IT4Innovations center supports non-commercial research applications to Czech users. The volunteering work managed in collaboration with CULS Prague and Lestari Czech Republic is aiding experts for environmental protection in the Balikpapan bay, Indonesia. The radar cloud penetration abilities and Sentinel-1 revisit time showed a high potential in detection of temporal changes of vegetation cover, detecting deforestation, either due to fire or e.g. illegal expansion of oil palm plantations. The processing was done using ESA SNAP software.

International sites: landslide areas



Landslide activity at Babadag, Turkey (Envisat)

Slope activity at Sarez dam, Tajikistan (Sentinel-1)

In order to support international risk management and contribute to the disaster prevention, ESA SAR data is used for detection of landslides. Various world areas are observed using SAR Interferometry at IT4Innovations center upon request (mailto: milan.lazecky@vsb.cz).