

IAF EARTH OBSERVATION SYMPOSIUM (B1)  
Earth Observation Data Management Systems (4)

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A CLOUD-BASED PLATFORM FOR GEO-ANALYTICS PRODUCTION FROM BIG SATELLITE  
DATA: RHETICUS®

**Abstract**

The cloud-based platform developed by Planetek Italia, called Rheticus® from the name of the unique pupil of Nicolaus Copernicus, provides application services, based on open data, such as satellite images and geospatial, environmental and socio-cultural data available online. The main services already available on the platform are based on Sentinel-1, Sentinel-2 and Sentinel-3 satellite data. Thanks to these data, Rheticus® is capable of delivering continuous monitoring services of Earth's surface transformation phenomena, as the urban evolution, landslides, fires, or the quality of marine waters. Web interfaces providing business intelligence tools, for the extraction of knowledge derived from continuously processed satellite imagery, simplify the use of this information for non-expert users. Whether it's land monitoring or infrastructure, perimeter of the fires or monitoring the quality of coastal marine waters, Rheticus® works as a big hub that processes the data automatically to deliver geoinformation services ready-to-use in users' final applications. Automatic data analysis allows creating geo-analytics and dynamic indicators, and providing actionable knowledge to decision makers. This way engineering and utilities companies, public and private organizations can now easily integrate geospatial free and open information in their business processes, without having to worry about technical data analysis and having the skills to process data. An easy to use mobile and web interface provides dynamic indicators and reports derived from the massive data processing of big satellite data. Thanks to Rheticus® applications, as an example, the information derived by the Sentinel-1 RADAR satellite data is quickly converted into business intelligence insights, thus demystifying the complexity of SAR interferometry. Planetek Italia is continuously working in the creation of new monitoring services through collaborations with academic and research centers. New applications may benefit from multi-source and multi-sensor analysis, as well as from merging data from heterogeneous platforms. At the same time, the new EO data exploitation scenarios, in order to cope with the increasing data availability, require massive data mining processing infrastructures.