

EarthServer: 1-plus Petabyte Analysis-ready Datacubes



EarthServer, the European Union big data initiative, has reached the next milestone: in the second phase extending through April 2018, the Italian data provider MEEEO S.R.L. exceeds 1 Petabyte of spatio-temporal, analysis-ready data processed through its operational Earth Observation Data Service.

The intercontinental [EarthServer initiative](#) unites Europe, the USA and Australia in the quest for scalable datacubes on 3D x/y/t satellite image time series and 4D x/y/z/t weather data, based on the European datacube technology, rasdaman. After 6 years project running, a particularly spectacular milestone has been reached: operational real-time data analytics on more than a Petabyte of satellite time series through open OGC standard interfaces.

[EO Data Service](#) has crossed the 1 PB data providing access and exploitation capabilities to the Copernicus Sentinel-2A (launched on 23 June 2015) and Sentinel-2B (launched on 7 March 2017) satellites. The Sentinel 2 archives are growing at a rate of 3TB/day and allow the Earth observation scientists to monitor variability in land surface conditions, said Simone Mantovani, CEO of MEEEO S.R.L.

Petabyte frontier

With the European partners funded by the European Commission, the EarthServer initiative was launched in 2011 to establish a standards-based, highly scalable framework for providing analysis-ready Earth science data. The underlying distinguishing principle is a geospatial datacube analytics language, the OGC Web Coverage Processing Service (WCPS), and scaling its use into the Petascale.

It was planned like this, but still it is still exciting to see the Petabyte frontier finally crossed. Building such a datacube allows for new science and applications using both new and old data, commented EarthServer coordinator, Prof Dr Angelo Pio Rossi from Jacobs University, Bremen, Germany.

And the next challenge is already being tackled, added Prof Dr Peter Baumann, rasdaman architect and technical coordinator of EarthServer. Now they are working closely with the European Centre for Medium Range Weather Forecast (ECMWF) to unleash their 220 PB archive via rasdaman and OGC datacube standards.