The Earthnet Data Assessment Pilot Project: Paving the Way for New Space Players

Samuel Hunt¹, Nigel Fox¹, Kevin Halsall², Andrea Melchiorre², Sébastien Saunier², Alessandro Piro³, Davide Giudici⁴, Clément Albinet⁵, Valentina Boccia⁵, and Philippe Goryl⁵

¹National Physical Laboratory, London, United Kingdom
²Telespazio VEGA, Luton, United Kingdom
³Serco, Frascati, Italy
⁴Aresys, Milan, Italy
⁵ESA, Frascati, Italy

In recent years, the increasing range of applications of Earth Observation data products and availability of low-cost satellites has resulted in an increasing number of commercial satellite systems. These services may provide complementary capabilities to those of Space Agencies. Adoption of these data products for many applications requires that they meet an assured level of quality that is fit for the given purpose. For the most efficient exploitation of EO data, therefore, assessment of data quality, calibration and validation are indispensable tasks, forming the basis for reliable scientific conclusions.

In this context, the European Space Agency has established the Earthnet Data Assessment Pilot (EDAP) project, which aims to enable maximum exploitation of growing data availability by performing early data assessment for various missions that fall into one of the following instrument domains number of missions, in the Optical, SAR and atmospheric domains. These assessments are intended to evaluate and report the quality of a satellite mission with respect to what is “fit for purpose” within the context of its stated performance and application. This activity compliments similar activities from other international partners, including NASA.

Such quality information is often communicated to users in an ill-defined or incomplete manner. We show the development of a generic satellite mission quality assessment framework, developed within EDAP, which is designed to provide a thorough review of all important aspects of mission quality. The assessment results are conveyed at a top-level to the user in a quality assessment matrix diagram. The framework itself is based on the principles of CEOS QA4EO (Quality Assurance for Earth Observation) and builds on the experience of several European projects that worked towards practically implementing
them.

In a wider context, such a framework has potential for more general use in both institutional and commercial Earth Observation helping mission providers to understand the information their users need and empowering users to make informed decisions about which data is fit for their purpose. As such, there is potential for international collaboration, between space agencies, to synergise quality assessment approaches and to work towards the development of a common standard.