

EARTH OBSERVATION SYMPOSIUM (B1)

Big Data, Data Cubes and new platforms to exploit large-scale, multi-temporal EO Data (6)

Author: Mr. Jonathon Ross

Committee on Earth Observation Satellites, Australia, jonathon.ross@ga.gov.au

Dr. Brian Killough

National Aeronautics and Space Administration (NASA), Langley Research Center, United States,

Brian.D.Killough@nasa.gov

Dr. Trevor Dhu

Geoscience Australia, Australia, Trevor.Dhu@ga.gov.au

Mr. Matt Paget

CSIRO, Australia, matt.paget@csiro.au

THE COMMITTEE ON EARTH OBSERVATION SATELLITES DATA CUBE INITIATIVE

Abstract

The Committee on Earth Observation Satellites (CEOS) was established in September 1984 and brings together 32 space agencies to coordinate their satellite Earth observation programs.

CEOS promotes the uptake of satellite Earth observation data for societal benefit. CEOS Agencies are regularly bringing new missions, increasingly with free and open data policies, and within the framework of operational programs, on stream. CEOS Agencies are also increasing engagement with user communities, through initiatives such as GFOI (the Global Forest Observations Initiative) and GEOGLAM (GEO GLobal Agricultural Monitoring Initiative), to ensure availability of accepted methodologies for applying satellite data to important real-world challenges like deforestation and food security. In recent years, CEOS Agencies have greatly increased the discoverability of their datasets, including through the CEOS OpenSearch Project.

However, major challenges still face users trying to put the enormous volume of satellite Earth observation data collected by CEOS Agencies to work. The traditional tools users have for bringing methodologies and data together are not well suited to the volume, velocity and variety of data that is now coming on stream. Ironically, domains where a lack of data supply and methodology were the key problems a few years ago may now be struggling to cope with the amount of data that is available and the sophistication of available methodologies.

Through the CEOS Data Cube Initiative, CEOS Agencies are working together to provide part of the solution to this challenge. Leveraging and enhancing open source Data Cube technology, the CEOS Data Cube Initiative provides a range of ‘wrapper services’ that help countries: install the tools; learn how to use and support them; and start exploiting to develop products that meet their needs. The Initiative has a strong emphasis on promoting ‘ownership’ by countries, and respecting issues around sovereignty and sustainability. Moreover, the Initiative aims to build a community of users who can support each other as well as sharing their efforts so that others can benefit from them.

Reflecting the commitments CEOS Agencies made at the 2015 CEOS Plenary in Kyoto, the Initiative has a particular focus on supporting countries to engage with three key international agendas: The Global Goals for Sustainable Development, the Sendai Framework for Disaster Risk Reduction and the Paris Climate Agreement. This includes providing a platform that can support application of new techniques developed through intergovernmental Group on Earth Observation activities.