NEODAAS: more than a just a makeover

Following its recommissioning for a further five-year term, the NERC Earth Observation Data Acquisition and Analysis Service (NEODAAS) has relaunched its website and announced a host of behind-the-scenes changes

NEODAAS, hosted at Plymouth Marine Laboratory and overseen by NERC's National Centre for Earth Observation (NCEO), is a unique operation of national importance that provides processed and 'analysis-ready' Earth observation (EO) data to the UK's scientific community (more at https://www.neodaas.ac.uk).
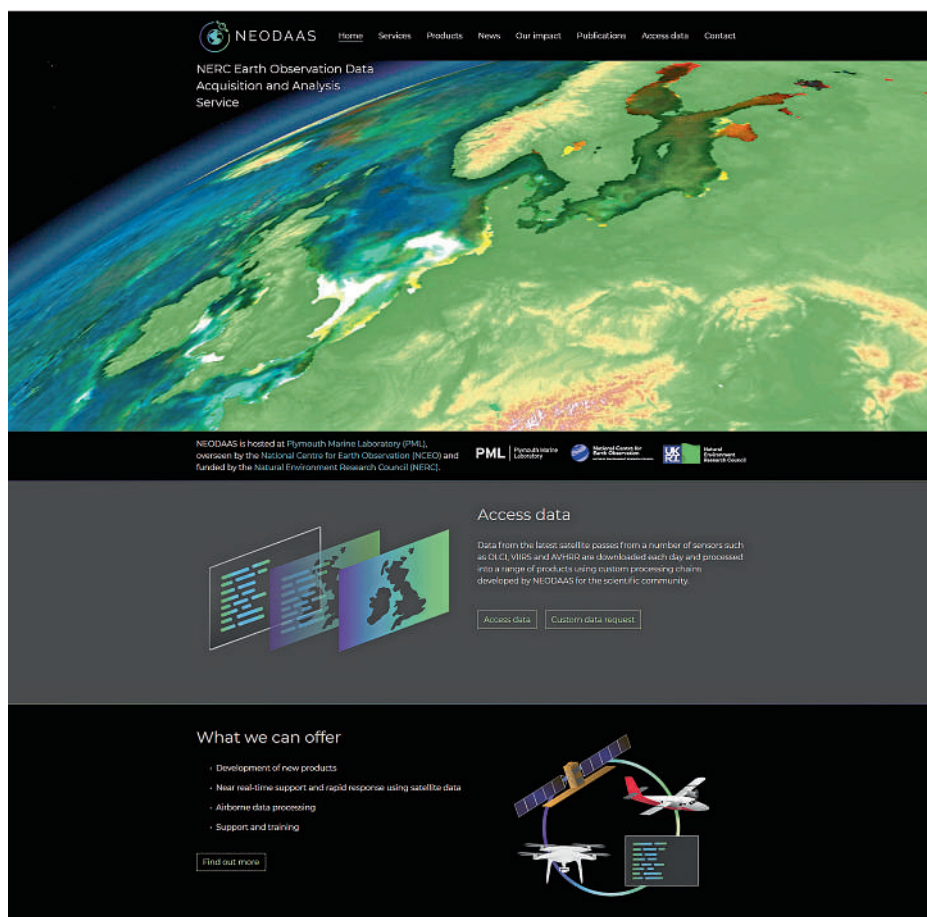
The first year of NEODAAS recommissioning has seen many behind the scenes changes, as well as rebranding. These have mainly focused on modernising the systems used for data processing and research cruise support, allowing standard products to be delivered in an easier and much faster manner, and providing a good foundation for adding new satellite sensors, as well as the creation of custom products in consultation and collaboration with the user community.

Supporting science

Science supported in 2019 included the Carbon Uptake and Seasonal Traits in Antarctic Remineralisation Depth (CUSTARD) project in the Southern Ocean, where daily satellite imagery was supplied in near-real time, to support sampling from gliders and the NERC RSS Discovery. These support data were found to be "extremely useful" and "made a big difference" to the project.

Other work supported included processing of airborne hyperspectral data collected in summer 2019 as part of the NET-SENSE project. These data will be used to help improve understanding of processes such as the exchange of energy and water between the land surface and atmosphere as well as monitoring fires and help inform future spaceborne missions. A follow-up airborne campaign was planned for summer 2020 but this has now been postponed until 2021.

Looking to the future, this new phase of NEODAAS will focus on: streamlining operational satellite data processing for the scientific community; introducing the Massive GPU Cluster for Earth Observation (MAGEO) that will allow NEODAAS to take advantage of the latest deep learning and Artificial Intelligence approaches to help derive scientific information from very large volumes of EO data; enhancing the use of EO data for near-real time and rapid response support; developing new EO-based products to aid researchers; evolving an airborne data processing capability (previously provided through the NERC Airborne Research Facility Data Analysis Node and now linked to the NCEO

A relaunched website is one of many new and improved products and services

Airborne Remote Sensing Capability); expanding the user base, and offering training for both the current and next generation of EO scientists.

Engaging more widely

Steve Groom, Head of Science for Earth Observation at Plymouth Marine Laboratory and NEODAAS' Head of Service, commented: "We are very pleased that NEODAAS has new branding and a new, user-focused website to present the expanded range of activities of the recommissioned NEODAAS to the UK environmental science community. We are also keen to support our users engaging with sectors outside the scientific community, such as industry and policy."

Professor Martin Wooster of NERC NCEO and King's College London, who coordinate and oversees the work of NEODAAS on behalf of NERC, said: "NEODAAS provides unique

and important capabilities at a national level, enabling environmental scientists to benefit from the enormous information content of EO data, even if they are not experts in the discipline, and providing really rapid mapping of changing environmental conditions to those on field campaigns and research cruises – helping them target their data collections more efficiently and effectively at the phenomena they seek."

The NEODAAS team is soliciting feedback on the current products and services offered, aiming to gather thoughts on how these can be even further evolved to meet the expanding requirements of environmental researchers. Responses are welcomed from researchers who have used or plan to use NEODAAS, or from those who use EO data. To participate in the survey, and for the chance to win a NEODAAS T-shirt, please visit https://www.smartsurvey.co.uk/s/NEODAAS.