

Status report - ARD activity & UK examples

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General

The UK Space Agency's overall objective in Earth Observation (EO) is to maximise its potential for the economy, science and society. Space EO is an essential component of the UK's infrastructure and contributor to economic growth. The UK's participation in EO is highly recognised for the role it plays in delivering a sustainable service-based economy. By 2040 satellite EO will provide the data underpinning mass market and business applications, global cutting-edge science and policy, and operational decision making.

The UK will be a world leading access point for global users, providing trusted, quality assured satellite derived products. We intend to deliver growth over the long term by maximising the exploitation of EO data and services by public, academic and private sector users. We will do this through building and maintaining a reliable, open, secure and sustainable capability and infrastructure.

UK examples of ARD activity

- ❑ Drought and Flood Mitigation Service (DFMS) in Uganda - <http://www.dfms.co.uk/> supported by a number of ARD datasets (LST - Landsat-8 TIRS, Aqua/Terra MODIS and Sentinel-3 SLSTR; soil moisture - SMOS/MIRAS and METOP/ASCAT; vegetation – Sentinel-1 & Sentinel-2) within an ODC deployment. The service is addressing the following questions: How much water is there, how long will it be there and when is it likely to be replenished. The project is funded by UKSA and led by RHEA Group.
- ❑ ARD supplied by JNCC – *Scottish Environment Protection Agency (SEPA)* - 40 Sentinel-2 granules provided supporting work around Perth, Grangemouth Estuary and Scotland-wide for various test projects; *Scottish Natural Heritage (SNH)* – ARD supplied for upland mapping projects, seagrass mapping work and wildfire assessments throughout Scotland; *Forest Research/Commission* – GB wide coverage supplied to support generation of in-year National Forest Inventory statistics; *Natural England* – Over 800 Sentinel-1 and -2 scenes contributing to England Living Map work. The work is funded by DEFRA and led by JNCC.
- ❑ Satellite Data Services providing monthly composites of the UK from Sentinel-1 & Sentinel-2: <https://data.envsys.co.uk/>. Operated and funded by Environment Systems.

UK examples of ARD activity

- ❑ Combined interoperable Landsat-8 & Sentinel-2 products for Ghana, to achieve high revisit intervals (3-4 days). Critical for monitoring agri, water quality, urban areas. This work is funded by NCEO and led by Department of Geography, UCL.
- ❑ SEN2LIKE a tool to generate Sentinel-2 harmonised surface reflectance products. Funded by ESA and led by Telespazio Vega.
- ❑ IPP Common Sensing is working to improve national resilience towards climate change in small island developing states. It is supported by a number of ARD datasets (SPOT 1-5, Sentinel-1, Sentinel-2 & Landsat-5, -7, -8) within an ODC deployment. This project is funded by UKSA and led by UNOSAT.
- ❑ SEDAS: <https://geobrowser.satapps.org/>. Access to Sentinel-2 spectral reflectance product. Soon to be access to NovaSAR backscatter products. Operated and funded by Catapult.
- ❑ Interoperability testing of Sentinel-1, led and funded by the Catapult. In collaboration with University of Jena, UNEP/GRID and University of Zurich.
- ❑ Working Group on Calibration & Validation (WGCV). Funded by UKSA and led by NPL. (General Cal/Val work).