



Delivering the Copernicus land monitoring service, production of the CORINE Land Cover Map in the UK. A forward looking perspective to the Sentinel-2 mission.

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The Copernicus land monitoring service became operational in 2012 as the GIO Land (initial operations of the land monitoring service) initiative and builds upon work under FP7 geoland2 project. The Centre for Landscape and Climate Research (CLCR), part of the UK National Reference Centre (NRC) for land cover, is responsible for the production of the UK contribution to the Pan-European component of GIO Land. The CORINE Land Cover (CLC) map is now the most up to date national land cover product for the UK. The national plan for future production of CLC data will incorporate the increased capability of the Copernicus space component, utilising data from the Sentinel missions. Monitoring land cover and change will be assisted by the increased performance and the reduced revisit time interval of the Sentinel-2 satellites. Repeat coverages are essential to remove the effects of vegetation phenology and identify land cover changes. Also, UK data acquisitions opportunities are limited by cloud cover, as has been seen in the GIO-Land monitoring program, therefore more frequent imaging increases the likelihood of suitable data being available. The vegetation classes are the most difficult aspects of the nomenclature in the UK, in particular discrimination between the arable, pasture and the natural grasslands. The spectral capabilities of Sentinel-2 allow the automatic correction of atmospheric effects so that reflectance features in the images can be more easily linked to land cover features on the surface. It is also envisaged that the increased spectral resolution, with 5 bands around the red edge, will benefit the discrimination of difficult vegetation features. Finally the improve calibration of Sentinel-2 will allow the production of biophysical variables which are import for condition assessment and landscape modelling. The methodological shift in land cover mapping in the UK is described here, also incorporating a look forward to overcoming challenges in the production flow with data from Sentinel-2.