

Towards an operational production of surface albedo in the GMES Land Monitoring Core Service

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The European GMES initiative provides a political framework for future implementations of Services Centres in charge of products and services related to environmental applications. The geoland2 project constitutes a major step forward in the implementation of the GMES Land Monitoring Core Service (LMCS), and addresses the 3 components (local, continental, and global) of the LMCS. The goal of geoland2 is to prepare, validate, and demonstrate pre-operational service chains and products that will underpin the LMCS, and to propose and demonstrate a concrete functional organisation of the LMCS. The architecture of geoland2 is made of two different layers, the Core Mapping Services (CMS), and the Core Information Services (CIS). The CMS produce "basic" land state products covering a wide variety of thematic content, whereas the CIS are a set of thematic elements to generate "elaborated" information products addressing specific European policies.

The Biogeophysical Parameters (BioPar) CMS aims at setting-up pre-operational infrastructures for providing regional, continental, and global variables describing the vegetation state, the radiation budget at the surface, and the water cycle, both in near real time and off-line mode. It takes a further step towards the visible integration of European operational services (Eumetsat/LSA SAF, FP6/VGT4africa, MARS Food), and R&D projects (ESA/Globcabon, FP5/Cyclopes, ESA/Globcover), and of national initiatives. The BioPar CMS is a user-driven service whose portfolio has been designed to suit the needs of institutional users, future downstream services, and the international science community involved in agri-environmental activities, natural resources monitoring, crop production, water management, and carbon cycle modelling.

Two global surface albedo (directional albedo & hemispherical albedo over the visible (PAR) band, the near-infrared band and the total short-wave band) products will be generated in the BioPar CMS based on geostationary sensor products (GEO Albedo) or based on polar orbiting SPOT/VEGETATION products (VGT Albedo). The major expected benefit of GEO Albedo product comes from the better temporal sampling of geostationary sensors (a fusion with AVHRR for improving the quality at high latitudes is expected at the end of the project life). The expected benefit of VGT Albedo is the compatibility of current near real time products with the historic products. The scientific validation of albedo products will be based on inter-comparison mainly with MODIS albedo product and ground-truth following international guidelines for validation.

The aim of this presentation is to introduce first the concept, the objectives, and the structure of geoland2, and of the BioPar CMS, in the European GMES context. After that, the research, development, production and validation activities planned for surface albedo will be presented.

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