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JECAM project in Ukraine: current status

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Global Earth Observation System of Systems (GEOSS) is one of the most meaningful initiatives in the area of Earth. This system is actively evolving during past ten years under the GEO Committee global activities. The main aim of the GEO Committee is availability and applicability increasing of space observations by means of coordination activities on the base of modern remote sensing possibilities for decision maker’s support. Now, GEO includes more than 80 country-level participants (including Ukraine), European Commission and 56 inter-governmental, international and regional organizations.

Agriculture is one of the 9 social benefit areas of GEO Group. Within these activities there are two global projects, Joint Experiment for Crop Assessment and Monitoring [1] and, the most recent and ambitious, Global Agriculture Monitoring system (GLAM) [2].

The overall goal of JECAM is to reach a convergence of approaches, develop monitoring and reporting protocols and best practices for a variety of global agricultural systems. JECAM will enable the global agricultural monitoring community to compare results based on different sources of data, using various methods, over a variety of global cropping systems. It is intended that the JECAM experiments should facilitate international standards for data products and reporting, eventually supporting the development of a global system of systems for agricultural crop assessment and monitoring. The JECAM initiative is developed in the framework of GEO Global Agricultural Monitoring and Agricultural Risk Management.

Ukrainian specialists are participating in several international projects and initiatives related to JECAM [3-4] such as

Global project GEO-GLAM: winter wheat yield forecasting for the whole Ukraine - all work is based on satellite data, meteorological observations, crop growth model;

SOAR-JECAM Project “SAR parameters optimization for crop classification: activities are intended to optimization of SAR parameters to provide timely and economically efficient crop maps/area estimates for Ukrainian landscape based on the new capabilities of RADARSAT-2;

ESA Sentinel2-Agriculture participation as a “Champion User”: project is preparing for the launch of the Sentinel-2 mission, which will increase the Earth Observation capacity for agricultural monitoring, in terms of resolution, revisit frequency and coverage. Main activities will focus on user driven development of agricultural EO products, benchmarking and validating required algorithms and demonstration of resulting Sentinel-2 EO products and services to users of the global agricultural community;

ImagineS FP 7 Project: The main objectives of IMAGINES are to improve the retrieval of basic biophysical variables, mainly LAI, FAPAR and the surface albedo, identified as Terrestrial Essential Climate Variables, by merging the information coming from different Sentinel sensors and other GMES contributing missions; developing qualified software able to process multi-sensor data at the global scale on a fully automatic basis.

Activities among *ImagineS FP 7 project* on JECAM test site are held accordingly to *VALERI* protocol (at 30 ESU (elementary sampling unit) per square 3*3 km) and aimed to validation of such global products as LAI, FAPAR:

compliant with CEOS Land Product Validation (LPV) guidelines;

CAN-EYE software.

In the presentation the current state of JECAM-related projects will be described in details.

References

1. Joint Experiment for Crop Assessment and Monitoring, www.umanitoba.ca/outreach/aesb-jecam.
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