SENTINEL-2 FOR AGRICULTURE PROJECT: NATIONAL DEMO FOR UKRAINE

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With launch of new modern satellites with high spatial resolution new prospects for integration of satellite technologies in agriculture are open [1-2]. For precise crop monitoring besides spatial resolution the other one really important characteristic of satellite data is temporal resolution.

Sentinel-2 mission launched by ESA in 2015 gives really new experience in satellite agromonitoring domain with high temporal (5 days of revisit) and spatial resolution satellite data [3-4].

Ukrainian agriculture with wide range of main crops (both winter and summer), big fields and high enough climate variability over the territory of the country is uniq object for benchmarking Sentinel-2 data.

Taking into account presence in Ukraine high professional remote sensing experts such characteristics of Ukraine caused selection of our country as one of 3 national demonstration for Sentinel-2.

Within this demonstration phase main objectives of the project are following: i) assessment of the quality of Sentinel products and their suitability for the territory of Ukraine; ii) demonstration in order to convince decision makers and state authorities; iii) assessment of the personnel and facilities required to run the Sen2-Agri system and creation of Sen-2 Agri products (crop type maps and LAI).

Successful execution of this project will help with achieving such long term objectives as i) building capacity (both personnel and facilities) for participation of Ukraine in GEGLAM; ii) creation of live demo for participation of Ukraine in GEO program for next 10 years (with national GEO program establishing); iii) strengthening of participation of Ukraine in international scientific cooperation (in terms of projects and initiatives). Also this project will help to involve wide range of users (Ministry of agriculture, local agri authority, farmers, scientists, traders, statisticians, Ukrainian Hydrometeorological Cente etc) in exploitation of satellite products in agriculture domain.

Project main tasks, prospects, results and plans for involving new users will be discussed at the conference.

References

1. Kussul, N., Lemoine, G., Gallego, J., Skakun, S., & Lavreniuk, M. (2015, July). Parcel based classification for agricultural mapping and monitoring using multi-temporal satellite image sequences. In 2015 IEEE International Geoscience and Remote Sensing Symposium (IGARSS), 165-168.

2. Parcel-based Crop Classification in Ukraine Using Landsat-8 Data and Sentinel-1A Data Kussul N., Lemoine G., Gallego J., Skakun S., Lavreniuk M, and Shelestov A.Y. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing. - 2016. - DOI: 10.1109/JSTARS.2016.2560141.

3. Kussul, N., Skakun, S., Shelestov, A., Lavreniuk, M., Yailymov, B., & Kussul, O. (2015). Regional scale crop mapping using multi-temporal satellite imagery. The International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences, 40(7), 45-52.

4. Shelestov, A., Kolotii, A., Camacho, F., Skakun, S., Kussul, O., Lavreniuk, M., & Kostetsky, O. (2015, July). Mapping of biophysical parameters based on high resolution EO imagery for JECAM test site in Ukraine. In 2015 IEEE International Geoscience and Remote Sensing Symposium (IGARSS), 1733-1736