



## **Assessment of user-driven requirements to define potential opportunities for the Italian National Copernicus User Forum of a future hyperspectral imaging Sentinel mission**

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In the framework of Copernicus Programme – the EU Earth Observation and monitoring programme – the EU Commission issued in 2016 the tender "Hyperspectral Imaging Mission Concepts" to fund two parallel studies on hyperspectral imaging in support of the 2nd generation of Sentinel satellite.

The study coordinated by Italy has investigated which remote sensing data could be useful and valuable to be integrated in current operational monitoring and risk management systems for the environment, focusing in particular on hyperspectral imaging data. This has been possible by collecting and analysing user requirements provided by the Italian National User Forum Entities.

The interaction methodology applied is based on the interest of the user communities in specific application domains and/or in specific objectives from environmental legislations and policy, and on their current and past experiences on space-based techniques for monitoring the environment. Hence, it has been requested to the users to identify the important value associated with the different requirements investigated and the optimal “operational” characteristics (in terms of revisit time and spatial resolution) of the envisaged downstream services. The results assessment has provided derivations and proxies for a future hyperspectral mission design:

- the list of the considered parameters with associated the importance values given by the different user communities;
- the list of existing and consolidated hyperspectral remote sensing-based layers related to the considered parameters;
- the list of the parameters for which a hyperspectral remote sensing-based layer is not yet available, even if the user communities have expressed an interest in using them; and
- an expression of interest concerning the downstream services achievable with the considered parameters.

In addition, the results show how the user requirements assessment could be useful to explore and understand the potential opportunities provided by the National Strategic Plan for the EU Space Economy (Mirror Copernicus) in terms of Earth Observation products and services, representing the first attempt in Europe to engage the user communities in a bottom-up approach.