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## Expanding the capacity and capabilities of an Earth Observation application by means of the European Open Science Cloud

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Scientific services are becoming increasingly data intensive, not only in terms of computationally intensive tasks but also in terms of storage resources. In this scenario, Earth observation applications handle huge amounts of data, mainly large satellite imagery, to perform a wide variety of studies: from the monitorization of different land and water variables to the prediction of the evolution of an Earth area in a given period of time. For this kind of services, the usage of the Cloud Computing paradigm allows them to meet these demands. However, adapting applications and services to this set of complex technologies and solutions is not trivial.

In the context of the EOSC-Synergy project, there has been an effort with ten different thematic services in refactoring their architecture and integrating EOSC services from the EOSC marketplace, leading to increased performance and capacity and enhanced functionality. SAPS is one of these thematic services, an Earth observation application that employs Energy Balance algorithms to estimate evapotranspiration, a value that can be applied to analyze, among other aspects, the evolution of forest masses and crops. The output of this service is especially relevant for researchers in Agriculture Engineering and Environment, because it depicts the impact of human and environmental actions on vegetation, leading to better forest management and analysis of risks.

Furthermore, thanks to the EGI ACE project and its open call for use cases, SAPS is enjoying the EOSC cloud infrastructure (involving both computational and storage resources), and several platform services, like the EGI Checkin to manage authentication and authorization of its users, and the the EC3 tool to dynamically manage the underlying Kubernetes cluster where SAPS is deployed. This contribution provides a summary analysis of the adaptations made in the SAPS thematic service to take advantage of the EOSC ecosystem, including infrastructure, services and tools.

### Any relevant links

SAPS service in EOSC Synergy: <https://www.eosc-synergy.eu/supporting-science/saps/>

EC3 - <https://marketplace.eosc-portal.eu/services/elastic-cloud-compute-cluster-ec3>

### Topic

EOSC Compute Platform

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