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EUXDAT e-Infrastructure for Sustainable Development

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EUXDAT proposes an e-Infrastructure for sustainable development. The project partners form a cross-domain group of agricultural experts together with software engineers and technology experts. Agriculture, land monitoring and energy efficiency are addressed, to support planning policies, as opposed to simply increasing current productivity.

One of the major challenges to achieve our goals is the management and processing of huge amounts of heterogeneous data, with the added requirement of data and computational scalability, given that the amounts of data will only increase, and so will the complexity of processing it.

The EUXDAT e-Infrastructure builds on existing components, and provides an advanced frontend for users to develop applications. The frontend provides monitoring information, visualization, various parallelized data analytic tools, and data and processes catalogues, enabling Large Data Analytics-as-a-Service. A large set of data connectors will be supported, including unmanned aerial vehicles (drones), Copernicus data, and field sensors, for scalable analytics.

The infrastructure resources are based on HPC and Cloud, however the choice and usage of physical resources are transparent to the user. EUXDAT aims at optimizing data and resources usage, by on the one hand supporting data management linked to data quality evaluation, and on the other proposing a hybrid orchestration of task execution, by identifying whether the best target is an HPC center or a Cloud provider. The latter will be achieved by using monitoring and profile information and deciding based on trade-offs related to cost, data constraints, efficiency and availability of resources.

Throughout the development of the 3-year project, EUXDAT will be in contact with scientific communities, in order to identify new trends and datasets, which will help guide the evolution of the e-Infrastructure. The project aims to result in an integrated e-Infrastructure which will encourage and facilitate end users to create new applications for sustainable development.

Type of abstract

Presentation

Summary

EUXDAT proposes an e-Infrastructure for sustainable development. Agriculture, land monitoring and energy efficiency are addressed, to support planning policies, as opposed to simply increasing current productivity. The project aims to result in an integrated e-Infrastructure which will encourage and facilitate end users to create new applications for sustainable development.

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