Realising Spatial Data Infrastructure Solutions in ENVRI

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Abstract
ENVRI is an FP7 EU project specifically conceived to provide a cluster of Environmental Research Infrastructures (EISCAT 3D, EMSO, EPOS, Euro-Argo, ICOS, and LifeWatch) with a collaborative framework to develop common components and services. The ENVRI services contribute to realise a Spatial Data Infrastructure offering facilities to publish, discover, access, visualize, and process large geospatial datasets. State-of-the-art technologies and standards have been largely used, including OGC CSW, WCS, WPS, WMS.

For the data discovery and access, the results of the GENESI-DEC project have been reused and enhanced to realise an approach for easily discovering geospatial data across a federation of distributed catalogues. For geospatial data processing and visualisation, a number of components have been developed by relying on the gCube open source technology, a comprehensive software system supporting the creation and management of an HDI. In particular, a service supporting data analytics has been developed to offer a rich yet open set of algorithms to process geospatial data. All these components have been integrated in a dedicated Virtual Research Environment, a web-based environment aggregating the services.

ESFRI RIs can exploit the set of components according to three exploitation models:
• Software as a Service;
• Platform as a Service;
• Open Source.

The two as a Service models are for free to the ENVRI partners via the D4Science Infrastructure and the GENESI-DEC.

The benefits are evident, the management is outsourced to expert operators that can leverage economies of scale and use elastic approaches to scale.

Available at https://www.d4science.org/group/envri

Solutions are part of the gCube system (www.gcube-system.org)
• an open source technology for building and operating Hybrid Data Infrastructures resulting from a series of EU Projects
• offering a rich array of services and facilities well beyond SDI
• 500+ software components
• enabling the creation of Virtual Research Environments, i.e. collaborative working environments dynamically built by acquiring sw, hw, data and services from the underlying infrastructure