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OpenAIRE Open Science publishing for Research Infrastructures: the EPOS use-case

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OpenAIRE is the European infrastructure in support of Open Science. It fosters and monitors the adoption of Open Science across Europe and beyond, at the National and international level and at the research community level. It advocates the importance and the uptake of Open Science-oriented research life-cycles and publishing workflows, in support of reproducible science, transparent assessment, and omni-comprehensive scientific reward. To this aim OpenAIRE leverages the required cultural shift via a pervasive network of people in Europe (NOADs) and beyond ("global alignment"via CORE), and facilitates the technological shift by providing technical services and interoperability guidelines. Among its technical services OpenAIRE provides the Research Community Dashboard (RCD), which offers research communities the functionality to publish, aggregate, and discover their research outputs via a set of underlying OpenAIRE services that interlink publications, datasets, software, experiments and other products to produce a fully-fledged view of a specific scholarly discipline.

The European Plate Observing System (EPOS) is a pan-European distributed Research Infrastructure for solid Earth science to support a safe and sustainable society. Through the integration of National research infrastructures and data, EPOS will allow scientists to make a step change in developing new geo-hazards and geo-resources concepts and Earth science applications to help address key societal challenges. CNR-IREA is an Italian service provider of EPOS whose portfolio includes satellite Earth Observation services aimed at generating value-added products for Solid Earth applications & natural disaster analysis, prevention and mitigation.

In collaboration with OpenAIRE, CNR-IREA will integrate its EPOS services with the RCD service in order to ensure publishing of research products and experiments in a way that supports their use, reuse and reproducibility. This presentation will describe the use-case selected to drive the integration: in EPOS user interested in Solid Earth analyses through satellite applications. Such a user can benefit from the on-demand EPOSAR service, that implements an advanced Synthetic Aperture Radar interferometric technique to retrieve Earth surface displacements. In particular, EPOSAR allows the user to select from the Copernicus Programme repositories a dataset of Sentinel-1 satellite images in order to generate ground displacement time series and velocity maps suitable to investigate both natural (earthquakes, volcanic unrests, landslides) and man-made (tunnelling excavations, aquifer exploitation, oil and gas storage and extraction, infrastructures monitoring) hazards. The EPOSAR workflow will interoperate with an EPOS RCD to allow the users to publish in Zenodo.org: the list of processed satellite images as Input Dataset; the output results as Datasets; and the configuration of EPOSAR service, with links to input and output Datasets, as Experiment. Each of these products will have its own DOI, citation metadata, semantics links with other products if needed, and be discoverable through the EPOS RCD. It is of course up to the users to opt when their experiment is mature enough to published in OpenAIRE as a citable and preserved Experiment object, and eventually cite the object from any articles they produce.

Type of abstract

Presentation

Summary

This presentation will show-case how OpenAIRE technical services can support research infrastructures at implementing Open Science publishing policies by minimizing their technical efforts, without modifying their current practices, and without renouncing, modifying or replacing their thematic services. In particular, we shall present how EPOS RI will endow one of its current and established scientific workflows, based on the EPOSAR service, with a "continuous publishing" approach, which transparently (and on user-request) publishes an experiment and its ancillary products in OpenAIRE for other scientists or funders to discover.

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