EOSCpilot
The European Open Science Cloud for Research Pilot Project

Science Demonstrator

Physical Sciences / Astronomy

LOFAR - Astrophysics Data

Brief Overview

Data integration and data interoperability allow users to exploit the sensitivity of multiple instruments, and are the driving force behind new discoveries. The open science enabled by this project, in combination with the EOSC ecosystem, will be a catalyst to make this happen with LOFAR (Low-Frequency Array) data as well. Existing LOFAR data will be made readily available to a much larger and broader audience, enabling novel scientific breakthroughs. Important discoveries are regularly made by re-analysing existing astronomy data.

Objectives

- Ease the process to locate, access, and extract science from the LOFAR archive without being an expert on data retrieval and data analysis tools.
- Enable the creation of new scientific results based on archived data products.
- Provision of large-scale compute resources

Main achievements

- Migration of processing workflows to EOSC infrastructure
- Registration of LOFAR data in a FAIR-principle based data repository
- Development of a pilot processing portal, allowing users to initiate workflows to analyze data from the LOFAR

EOSCPilot.eu has received funding from the European Commission's Horizon 2020 research and innovation programme under the Grant Agreement no 739563.

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Long Term Archive

Recommendations for the implementation

- Support high throughput applications through integration of distributed large-scale data storage facilities with high throughput processing clusters.
- Support portable workflows through containerized deployment and standardized definitions such as the Common Workflow Language.
- Provide standardized solutions for services, if overlapping solutions exist, provide guidance for communities to decide on the most appropriate solution to integrate with.

Partners of the SD

ASTRON, NLeSC, Pythonic, CWL, SURFsara, INAF

"The EOSCpilot LOFAR Science Demonstrator allows us to explore services that will form the basis for a Radio Astronomical Competence Center and take concrete steps towards porting some of the main processing worklows, enabling our community to more easily utilize the vast computational resources that are connected to the European Open Science Cloud."

Contacts

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