



# OSCARS

Open Science Clusters' Action  
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## Funded Project No. 01-454

# Federation of Solar Data (FSD)

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Implemented by



**UiO**  
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## **What problem(s) are you going to solve?**

Main goal of this project is archiving, curation and dissemination of solar data using standards defined in the frame of the SOLARNET project and by the International Virtual Observatory Alliance (IVOA).

We plan to achieve this goal by using existing data produced by present facilities (solar observational instruments and sophisticated computer codes for astrophysical simulations) and archived at different sites, to develop tools for making them comply with FAIR (Findability, Accessibility, Interoperability, and Reusability) and EOSC (European Open Science Cloud) principles and make them accessible through Virtual-Observatory (VO) tools (as, e.g., SOLARNET Virtual Observatory, Virtual Solar Observatory).

## What are you planning to do to solve the problem?

Works on the project will mainly concern dissemination of data observed by multiple space-born and ground-based solar instruments or obtained as results of astrophysical modelling operated by participating institutions (both hereafter referred to as **facilities**) through the SOLARNET Virtual Observatory (SVO) and also via other astronomical databases.

For this reason, special standards (SOLARNET and IVOA) should be applied to the data obtained with the **facilities** and then suitable network solutions (as EPN-TAP – the EPNcore framework using the Table Access Protocol – TAP) should be used to make them FAIR for their dissemination among the solar researchers and also in general astrophysical community. Then, data of instruments which are archived in the SOLARNET compliant format (they contain the SOLARNET meta-data) and/or are EPN-TAP compliant can be made easily available through SVO.

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## What will be the results and how do you plan to make them available to the broader community?

Firstly, we will work on curation (applying the SOLARNET and IVOA standards) and archiving of the data obtained with the **facilities** (observed solar data and results of computer simulations).

Subsequently, solving dissemination of the data obtained with the **facilities** via the SOLARNET Virtual Observatory (SVO) will be solved.

Moreover, implementation of the IVOA standards (except those SOLARNET ones) will provide possibility to make data available also via other astronomical catalogs.

Experiences learned and tools developed during works on this project are directly applicable to data obtained by instruments mounted on the prepared European Solar Telescope (EST) as soon as this telescope starts to operate.

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## What risks could limit the success of the project, and how can they be mitigated

The final version (2.2) of the ‘SOLARNET Metadata Recommendations for Solar Observations’ document is not yet fully completed. This document is important for applying uniformly the SOLARNET standards to data obtained with the involved **facilities**. This makes the data FAIR and universally suitable for dissemination via SVO and also other virtual observatories or platforms. Anticipated date of completion of this document is end of the year 2025.

To mitigate these risks, we are considering discussions and formal collaborations with other projects within the ESCAPE consortium (e.g. Virtual Research Environment initiative at IT CERN) or other virtual-observatory projects (as for example, the Solar Data Analysis Center NASA’s project or International Heliophysics Data Environment Alliance).

## Who is doing it?

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