

# Achieving FAIRness with Environmental Data Platform

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# Why FAIRness

Findability Accessibility Interoperability Reuse

“The principles emphasise **machine-actionability** (i.e., the capacity of computational systems to find, access, interoperate, and reuse data with none or minimal human intervention) **because humans increasingly rely on computational support** to deal with data as a result of the increase in volume, complexity, and creation speed of data.”

Credits: <https://www.go-fair.org/fair-principles/>



 [Data discovery](#)

 [Documentation](#)

## Processing and analysis web tools

[Jupyter hub](#)

[openEO editor](#)

 [10.25504/FAIRsharing.f9de28](https://doi.org/10.25504/FAIRsharing.f9de28)

[Maps](#)

 [10.25504/FAIRsharing.8ee7f1](https://doi.org/10.25504/FAIRsharing.8ee7f1)

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[edp-portal.eurac.edu](https://edp-portal.eurac.edu) 

# Environmental Data Platform – components

## Based on open-source solutions

- **Web portal**  
Provides access to all EDP functionalities.
- **Data repositories**  
Organizes, stores and provides access to datasets.
- **Metadata catalog**  
Describes datasets, provides documentation and snippet codes.
- **Web tools**  
To view, process and manage.
- **Documentation**  
A collection of documentation pages to work with our datasets.

# Environmental Data Platform - components

## ➤ Web portal

Provides access to all EDP functionalities.

## ➤ Data repositories

Organizes, stores and provides access to datasets.

## ➤ Metadata catalog

Describes datasets, provides documentation and snippet codes.

## ➤ Web tools

For viewing, processing and managing.

## ➤ Documentation

A collection of documentation pages to work with our datasets.



# Automated FAIR Data Assessment Tool

F-UJI is a web service to programmatically assess FAIRness of research data objects at the dataset level based on the FAIRsFAIR Data Object Assessment Metrics

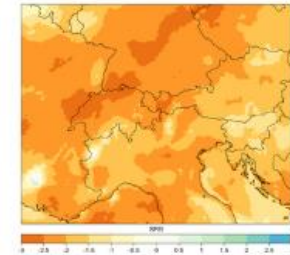


## Standardised Precipitation-Evapotranspiration Index - ERA5\_QM SPEI-2 detail

[Go to full metadata](#) [Linkset \(json\)](#) [Linked data \(json\)](#)

### Abstract

The Standardized Precipitation-Evapotranspiration Index (SPEI) represents a standardized measure of what a certain value of surface water balance (precipitation minus potential evapotranspiration) over the selected time period means in relation to expected value of surface water balance for this period. SPEI is calculated on different time scales (1, 2, 3, 6, 12 months). The value of the SPEI index around 0 represents the normal expected conditions for the surface water balance in the selected period based on the long-term average (1981-2020). The value of 1 represents approximately one standard deviation of the surplus in the surface water balance, while the value of -1 is about one standard deviation of the deficit. Drought is usually defined as period when SPEI values fall below -1. Input precipitation data is downscaled from ERA5 reanalyses using quantile mapping. Contains modified Copernicus Climate Change Service information [1978-current year]; Contains modified Copernicus Atmosphere Monitoring Service information [1978-current year].



### Digital Object Identifier (DOI)

<https://doi.org/10.48784/d50a0be8-09cf-11ed-8e5d-02000a08f4e5>

### Citation

Slovenian Environment Agency, & Central Institution for Meteorology and Geodynamics. (2022). Standardised Precipitation-Evapotranspiration Index - ERA5\_QM SPEI-2 (Version 1.0) [Data set]. Eurac Research. <https://doi.org/10.48784/d50a0be8-09cf-11ed-8e5d-02000a08f4e5>

### Keywords

Land use, Land cover, collection, SPEI, standardised precipitation-evapotranspiration index, surface water balance anomalies, ERA5, ADO project, ADO, cct, N/A

### Legal constraints

[Creative Commons Attribution 4.0 International, cc-by-4.0](#)

### Contact for resource

- Slovenian Environment Agency, <https://ror.org/05e75yx66> ROR
- Central Institution for Meteorology and Geodynamics, <https://ror.org/048daqk17> ROR

### Contact for metadata

eurac research - Institute for Earth Observation

[bartolomeo.ventura@eurac.edu](mailto:bartolomeo.ventura@eurac.edu)

Viale Druso, 1 / Drususallee 1, eurac research, Bolzano, Autonomous Province of Bolzano, 39100, Italy

### Bounding box



### Coordinate reference system

WGS-84 (3035:EPSG)

### Spatial representation

Grid

### Presentation form

mapDigital

### Topic category

Imagery base maps earth cover

### Type

Dataset

### Publisher

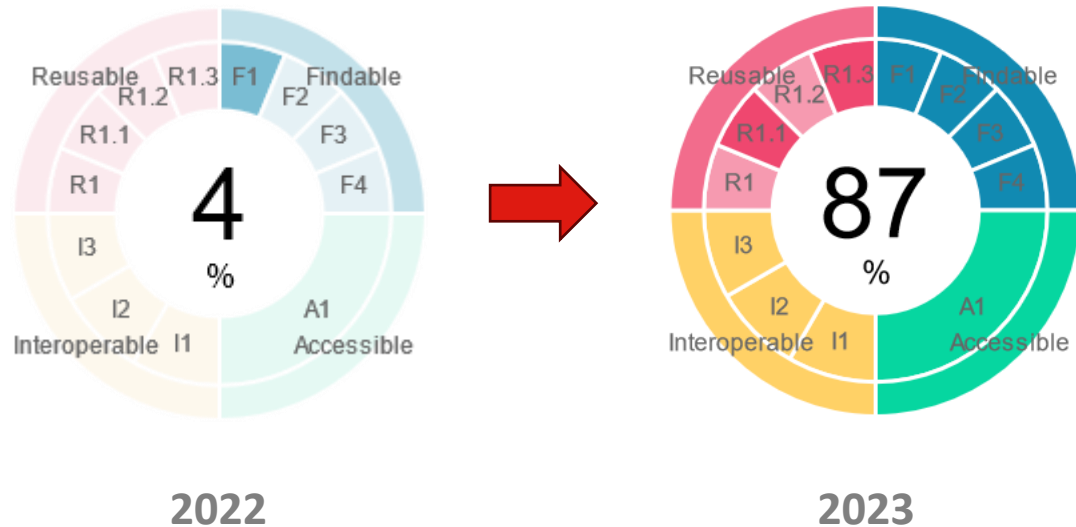
Eurac Research





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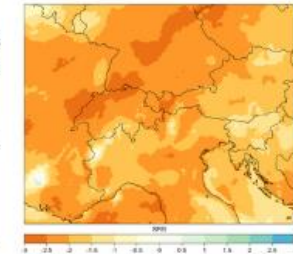


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# DOI for EDP components



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Awaiting DOI

Type: knowledge base

# DOI for EDP components

“Knowledgebases synthesise data from a number of sources including published literature, databases and other types of data sources. They often have a manual curation component. They can be considered secondary databases as they store data derived from primary sources”

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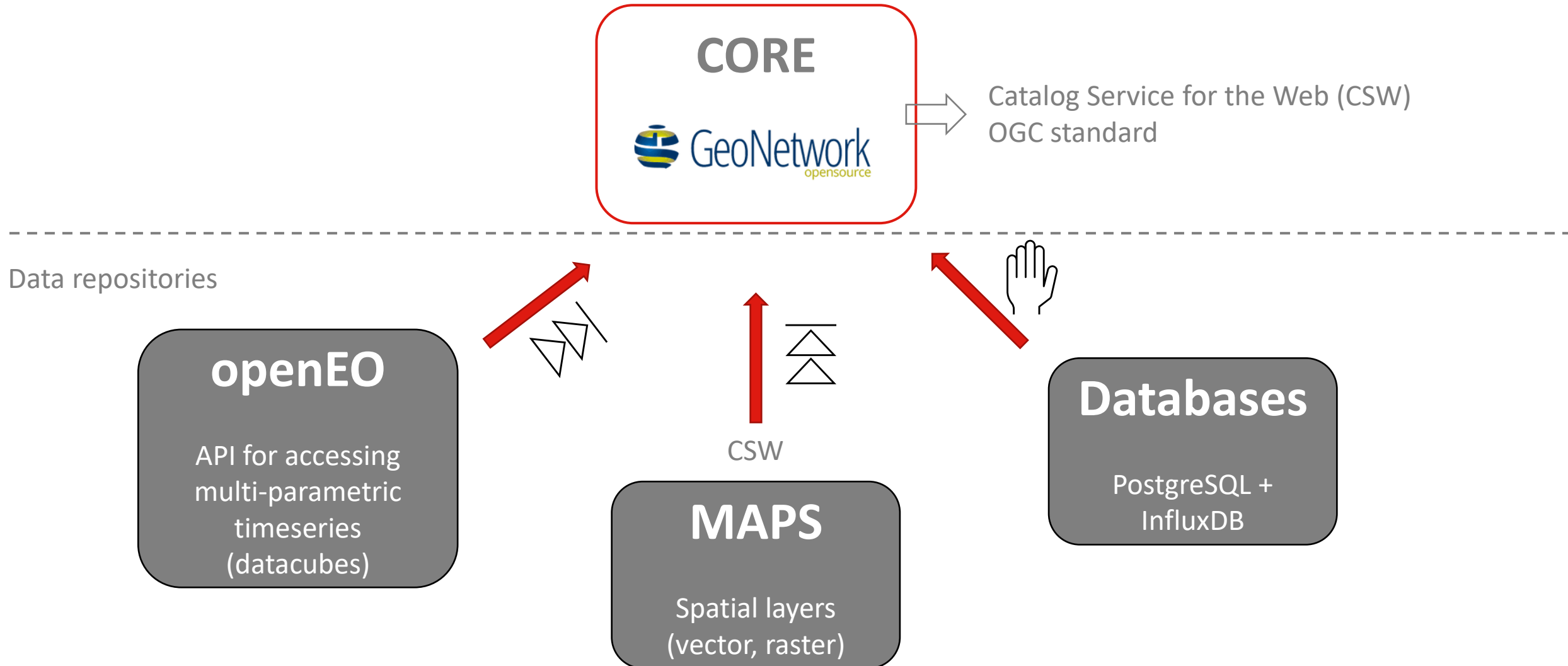
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doi Awaiting DOI

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# Metadata catalog

# EDP-discovery architecture:



# EDP – discovery



CSW – OGC standard



## EDP-Discovery

metadata +  
documentation +  
snippet codes +  
more user-friendly GUI



# EDP – discovery



CSW – OGC standard



## EDP-Discovery

metadata +  
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## STAC-catalog

SpatioTemporal Asset Catalogs  
specification

proposed as new OGC-standard



# Work on metadata

## ➤ Metadata improvements

We have improved the completeness of metadata content.

## ➤ Signposting

We provide linked-data and linkset json files customized for each record.

# EDP – discovery

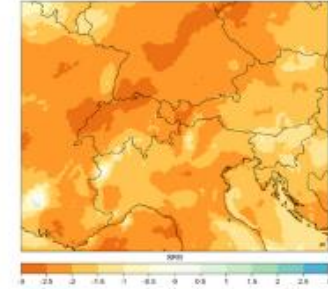
For humans we improved metadata quality, we added DOI and citation

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Dataset

# EDP – discovery

For machines interoperability we added **signposting**

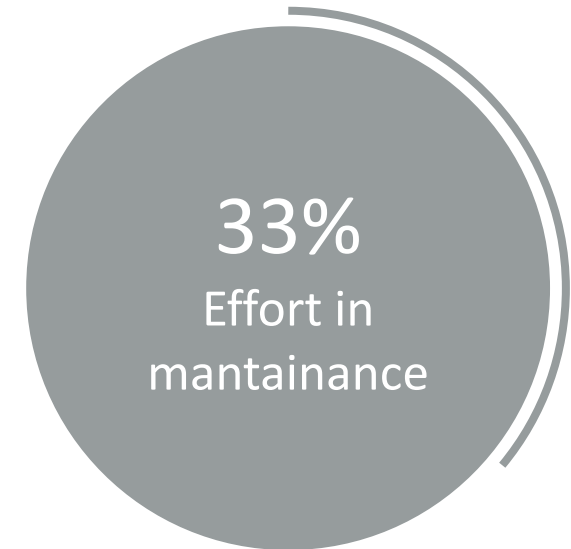
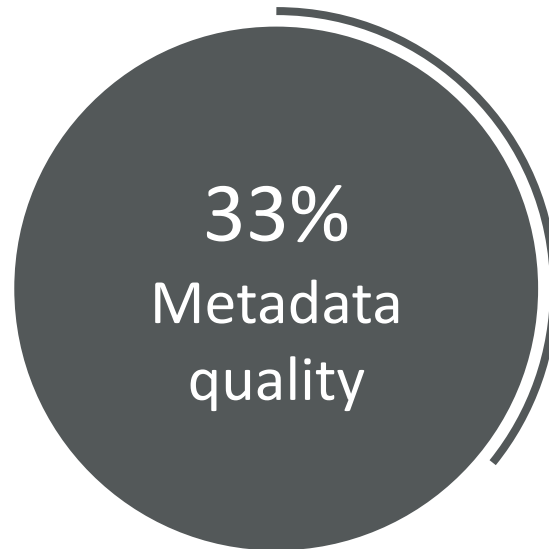
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JSON Raw Data Headers
Save Copy Collapse All Expand All Filter JSON
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  author:
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      href: "https://ror.org/048dqk17"
    1:
      href: "https://ror.org/05e75yx66"
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      type: "application/rdf+xml"
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# Conclusion: FAIRness effort



Don't underestimate the effort required to maintain metadata

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research

## Contact us

Eurac Research

<https://ror.org/01xt1w755>



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