FAIR: A project to make weather information more usable

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CISS TDI GmbH
https://www.fair-opendata.de
about us
The greatest sight there is is the world
- go see it.

– Kurt Tucholsky
CISS TDI GmbH

Established: 1982

HQ: Sinzig / Rhein

Employees: ~37
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motivation
Why to talk about weather?

It's the #1 topic for small talk.*

So, after this presentation, let's talk about weather ;)

* citation needed
Why to talk about weather?

Around 80% of the world-wide economy depends on weather conditions (and the climate).*

* https://www.op-online.de/offenbach/wenn-stuerme-gewitter-bilanzen-verhageln-2295582.html
Open data is the basis for new business ideas, 

**allow for economic growth**

and support innovation in business, administration and society.*

*http://datenwirken.de
Where is the data coming from?

- transport
- air traffic
- traffic
- industry
- energy
What is the task of the German weather service?

- Offer open geo data and allow usage for third parties.

- transport
- air traffic
- traffic
- industry
- energy
What is the goal of the project?

Target: Make weather information of the DWD more usable
current situation
Access open data via https://opendata.dwd.de

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so we’re done, aren’t we?

(I think next on the agenda is lunch anyways)
Current situation in Germany

**Nice:** Open weather data is available!

**Not so nice:** Just a part of the data is handy to use

Most data is published at [https://opendata.dwd.de/](https://opendata.dwd.de/)

**Still challenging**

- Little Metadata
- Few Interfaces
- Huge Data files
- No (on demand) pre-processing

→ Additional resources are required for processing and integration of the provided data
FAIR approach
The FAIR-enrichment process

Aquire
- Automatic download
- Automatic updating

Process
- Coordinate transformation
- Remove redundancy and unneeded data
- Enrichment (e.g., wind speed and direction) with further sources
- Import to PostGRES for accessing, filtering, ...

Provide
- FAIR-Portal
- API
- Apps

https://opendata.dwd.de/
The FAIR applications

**Event management**
- Enriched weather information
- Weather-App

**Energy industry**
- Enriched weather information
- FAIR-Portal

**Traffic**
- Weather along route (SmartMaps)
- E-Range (API)
FAIR-Portal

Example: COSMO-REA6

Points of interest:
- Shopping cart
- Filtering
- Convert in formats
- Derived products
- Planned payment for services

Specification of your data request

Preview of available data and products
To generate an energy rose
- Visualization of the energy contained in the wind in $W/m^2$
- Delivery as vector graphic in SVG
- Delivery of the data in CSV
Integration into a GeoNetwork Catalog at https://fair-metadata.de/geonetwork
For metadata-based search of meteorological data
- Fast findability
- Clear data description
- Link to source and other submitting agencies (FAIR portal)
summary
Summary in three points

1. Weather information is difficult to assess
2. FAIR makes weather data easy to assess
3. FAIR enriches raw data and provides easy-to-use formats
Architecture