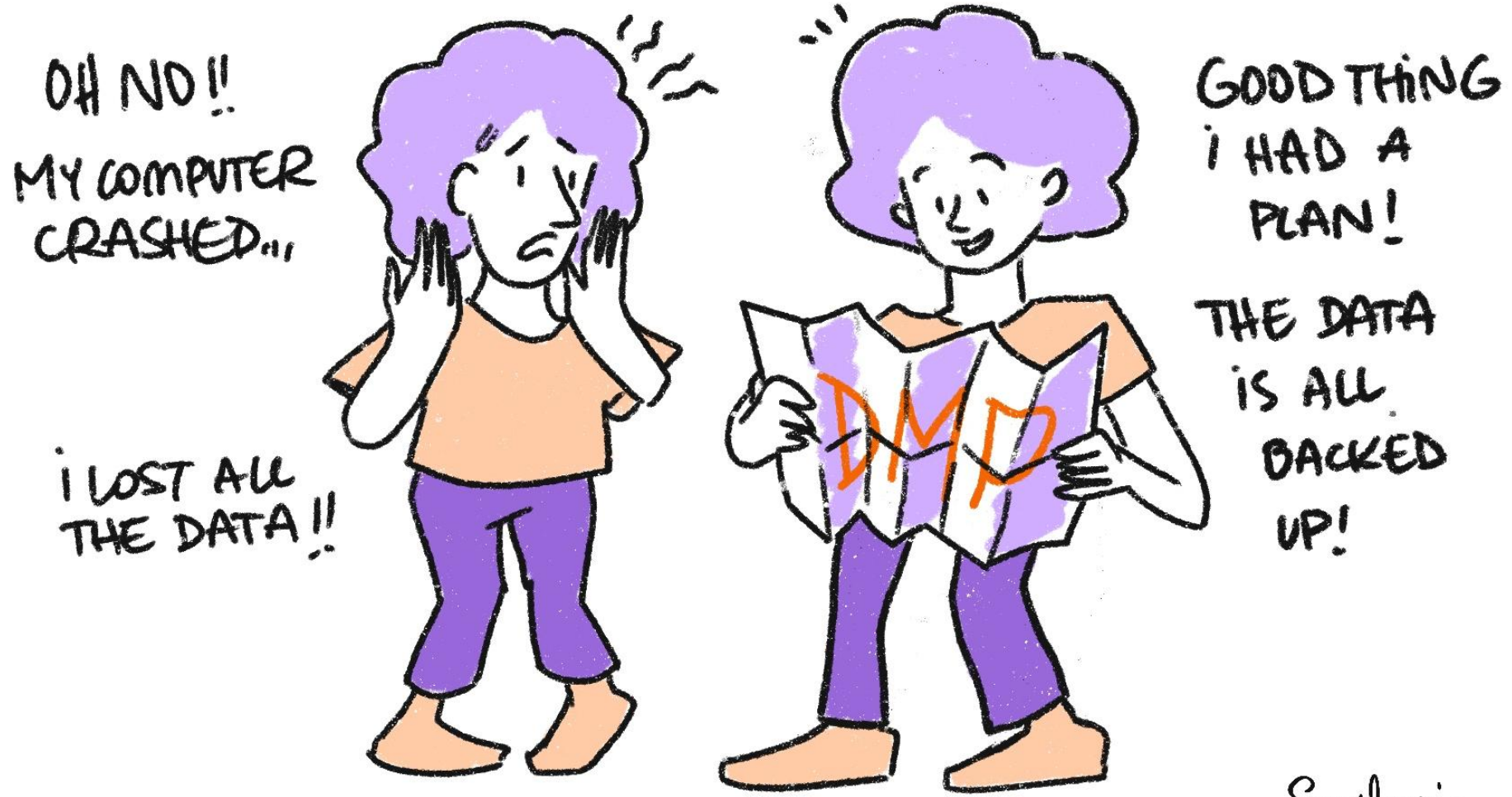
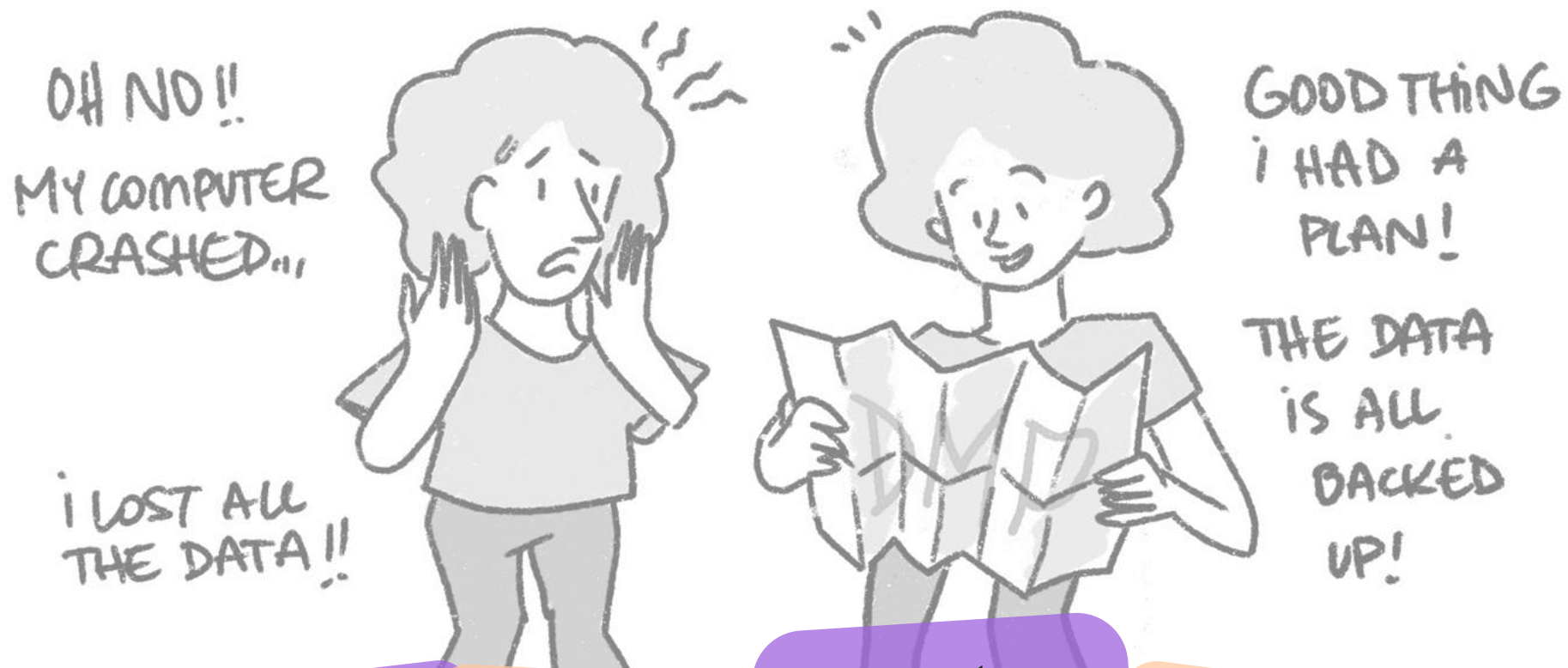


# Data Lifecycle and Management

LETSEMA Capacity Building Training on "Project Concept to Completion, Proposal, Management and Quality Assurance"



Scriberia 



Who's responsible ?

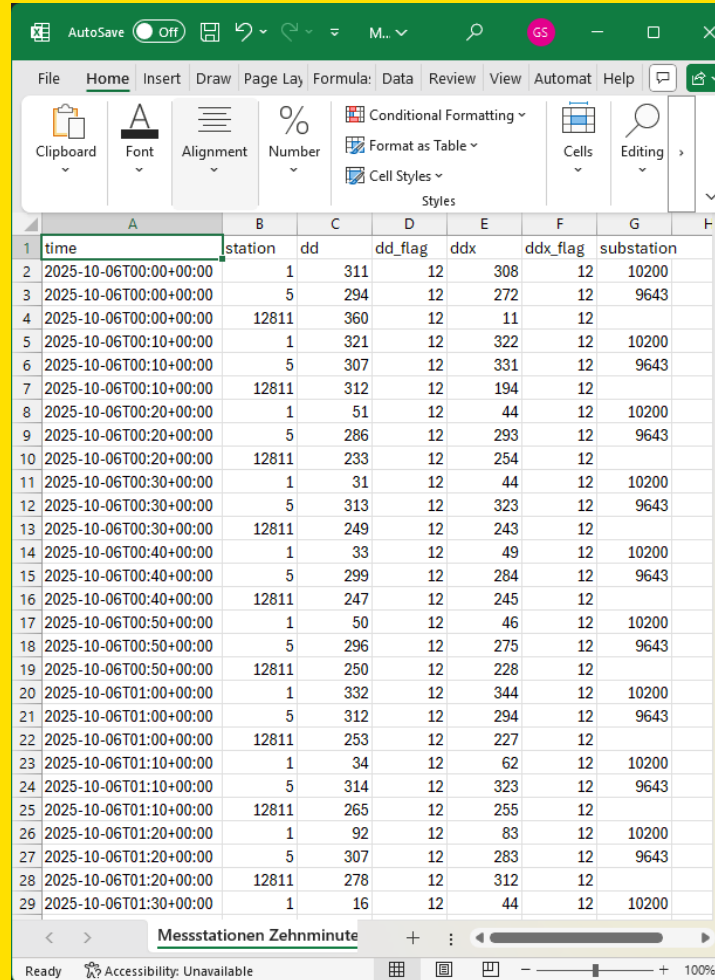
What is the plan (DMP) ?

Where to store? And for how long?

Who should access ?

*Scriberia* 

**Meteorological  
sensor data**  
from 270 Austrian  
semi-automatic  
measuring  
stations, *across  
multiple resolutions*



time	station	dd	dd_flag	ddx	ddx_flag	substation
2025-10-06T00:00+00:00	1	311	12	308	12	10200
2025-10-06T00:00+00:00	5	294	12	272	12	9643
2025-10-06T00:00+00:00	12811	360	12	11	12	
2025-10-06T00:10+00:00	1	321	12	322	12	10200
2025-10-06T00:10+00:00	5	307	12	331	12	9643
2025-10-06T00:10+00:00	12811	312	12	194	12	
2025-10-06T00:20+00:00	1	51	12	44	12	10200
2025-10-06T00:20+00:00	5	286	12	293	12	9643
2025-10-06T00:20+00:00	12811	233	12	254	12	
2025-10-06T00:30+00:00	1	31	12	44	12	10200
2025-10-06T00:30+00:00	5	313	12	323	12	9643
2025-10-06T00:30+00:00	12811	249	12	243	12	
2025-10-06T00:40+00:00	1	33	12	49	12	10200
2025-10-06T00:40+00:00	5	299	12	284	12	9643
2025-10-06T00:40+00:00	12811	247	12	245	12	
2025-10-06T00:50+00:00	1	50	12	46	12	10200
2025-10-06T00:50+00:00	5	296	12	275	12	9643
2025-10-06T00:50+00:00	12811	250	12	228	12	
2025-10-06T01:00+00:00	1	332	12	344	12	10200
2025-10-06T01:00+00:00	5	312	12	294	12	9643
2025-10-06T01:00+00:00	12811	253	12	227	12	
2025-10-06T01:10+00:00	1	34	12	62	12	10200
2025-10-06T01:10+00:00	5	314	12	323	12	9643
2025-10-06T01:10+00:00	12811	265	12	255	12	
2025-10-06T01:20+00:00	1	92	12	83	12	10200
2025-10-06T01:20+00:00	5	307	12	283	12	9643
2025-10-06T01:20+00:00	12811	278	12	312	12	
2025-10-06T01:30+00:00	1	16	12	44	12	10200

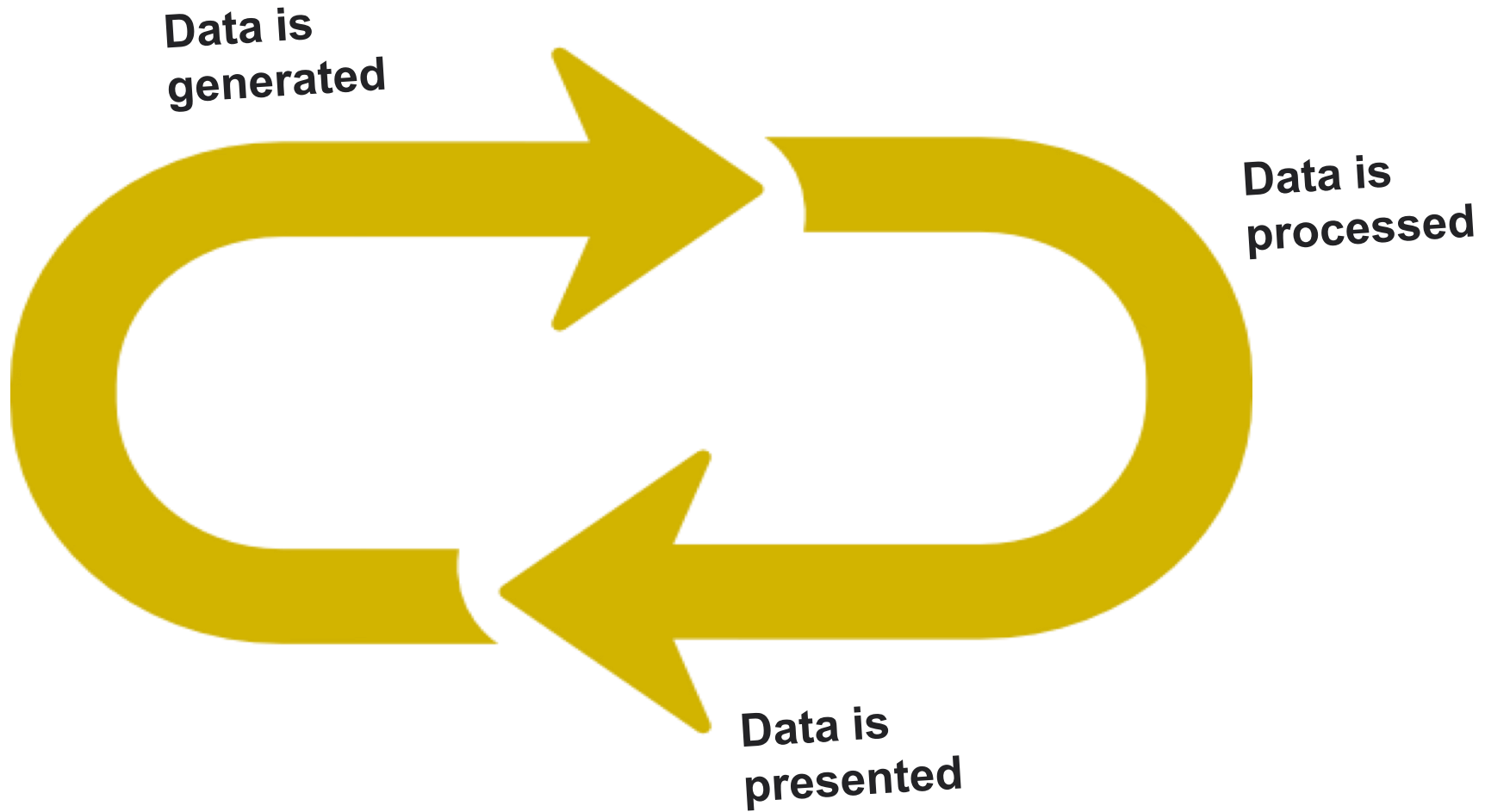


**A Data Management Plan** covers 6 topics:

1. Roles and Responsibilities
2. Type and size of data collected and documentation/metadata generated
3. Type of data storage used and back up procedures that are in place
4. Preservation of the research outputs after the project
5. Reuse of your research outputs by others
6. Costs

**Meteorological  
sensor data**  
use of enriched  
machine-readable,  
open-standard  
formats











## Findable

**F1.** (Meta)data are assigned a globally unique and persistent identifier

**F2.** Data are described with rich metadata

**F3.** Metadata clearly and explicitly include the identifier of the data they describe

**F4.** (Meta)data are registered or indexed in a searchable resource

▸ Makes data easy to locate by humans and machines, increasing visibility and impact.

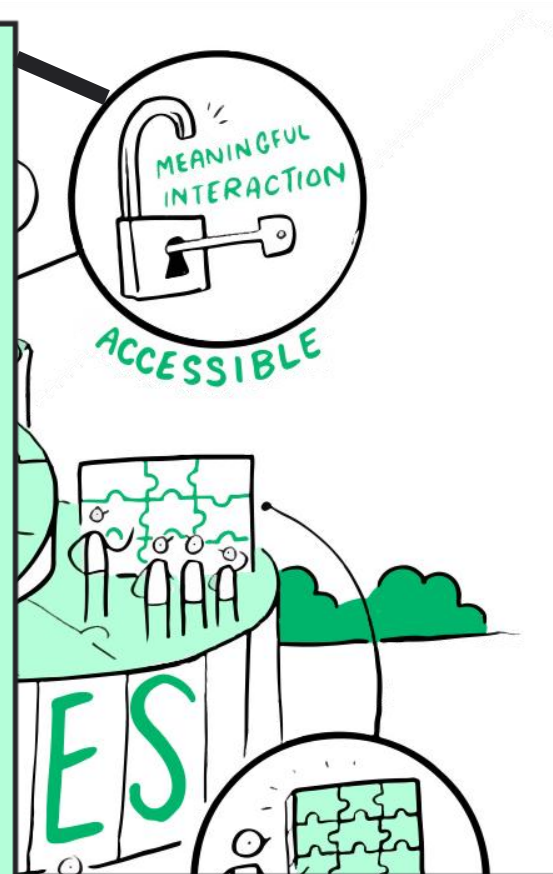
## Accessible

**A1.** (Meta)data are retrievable by their identifier using a standardised communications protocol

**A1.1** The protocol is open, free, and universally implementable

**A1.2** The protocol allows for an authentication and authorisation procedure, where necessary

**A2.** Metadata are accessible, even when the data are no longer available



Ensures data can be retrieved securely and legally, fostering trust and compliance.



## Interoperable

- I1. (Meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.
- I2. (Meta)data use vocabularies that follow FAIR principles
- I3. (Meta)data include qualified references to other (meta)data

↳ Enables seamless integration across systems and disciplines, supporting collaboration.

REUSABLE  
Scriberia 

## Reusable

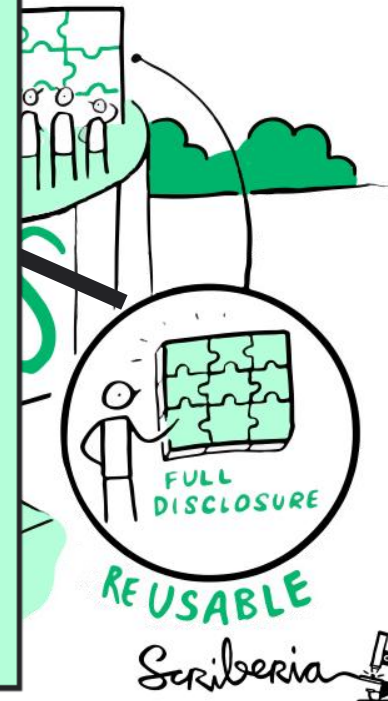
**R1.** (Meta)data are richly described with a plurality of accurate and relevant attributes

**R1.1.** (Meta)data are released with a clear and accessible data usage license

**R1.2.** (Meta)data are associated with detailed provenance

**R1.3.** (Meta)data meet domain-relevant community standards

Maximises the long-term value of data, reducing duplication and accelerating innovation.



**Meteorological  
sensor data**  
consolidate data  
and meta-data,  
adhering to FAIR  
principles



The screenshot shows a web browser window displaying a FAIRsharing.org record. The browser tab is titled 'Vivaldi'. The page header includes the FAIRsharing.org logo and search options. The main content area is titled 'GENERAL INFORMATION' and contains the following text:

**2025-06-05**

**code-list support**

Parameter metadata now supports... part of a parameter metadata. A dictionary in the metadata body

e.g.:

```
# metadata body
{
  # ...
  "parameters": [
    # ...
    {
      "name": "rrm",
      "long_name": "Niederschlag",
      "description": "Niederschlag",
      "unit": "min",
      "code_list_ref": "c1"
    },
    {
      "name": "zeitx_flag",
      "long_name": "Qualitätsflagge",
      "description": "Qualitätsflagge",
      "unit": "code",
      "code_list_ref": "q21"
    }
  ],
  "code_lists": {
    "c1": [
      {
        "key": 0,
        "value": "Kein Niederschlag"
      },
      {
        "key": 1,
        "value": "Niederschlag"
      }
    ],
    "q21": [
      {
        "key": null,
        "value": "undefiniert"
      }
    ]
  }
}
```

**GENERAL INFORMATION**

This record replaces or incorporates the following deprecated resources:  
[Climate Change Centre Austria Data Server](#)

 **GeoSphere Austria** GeoSphere Austria Datahub

 [10.25504/FAIRsharing.1382c6](https://doi.org/10.25504/FAIRsharing.1382c6)

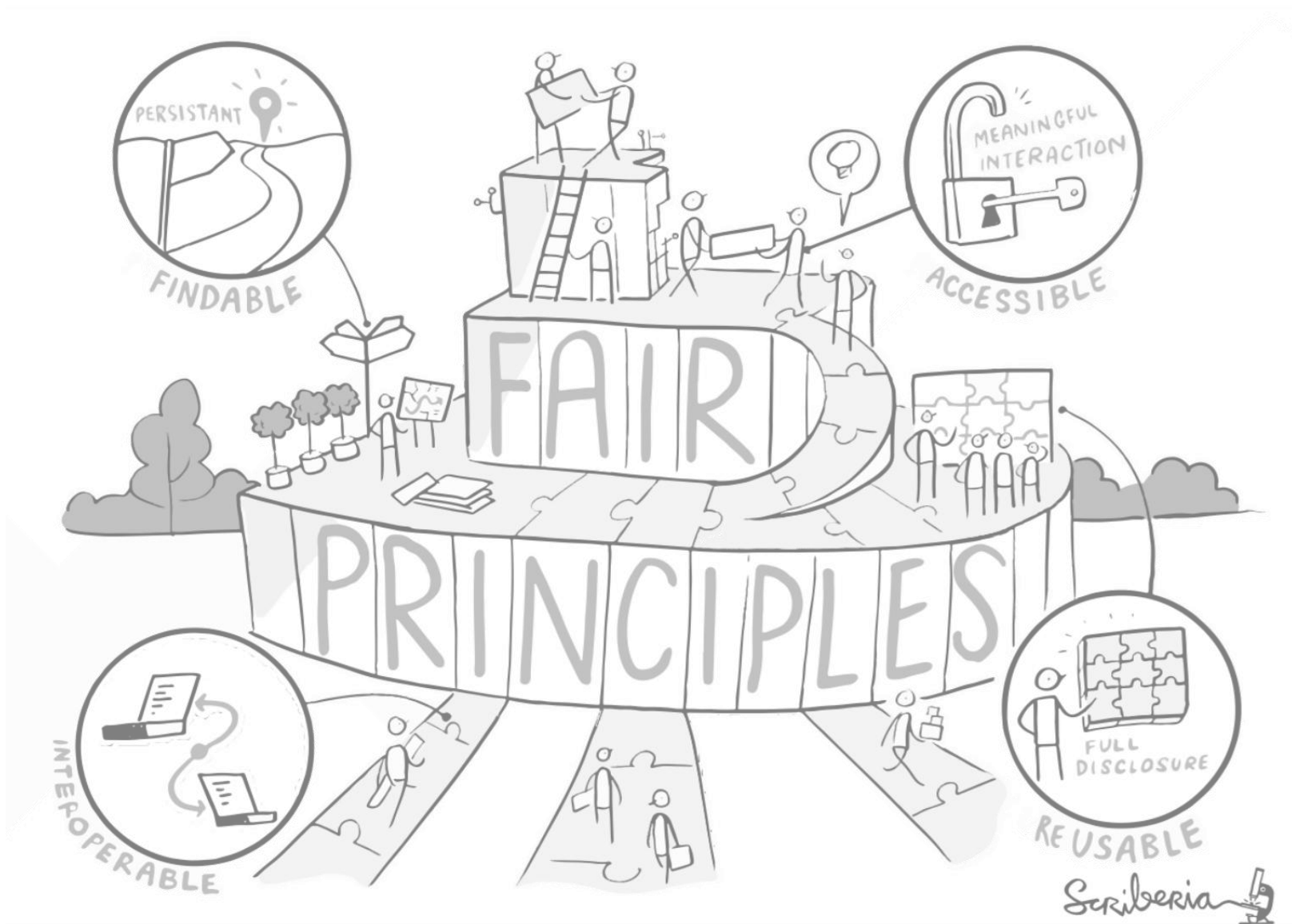


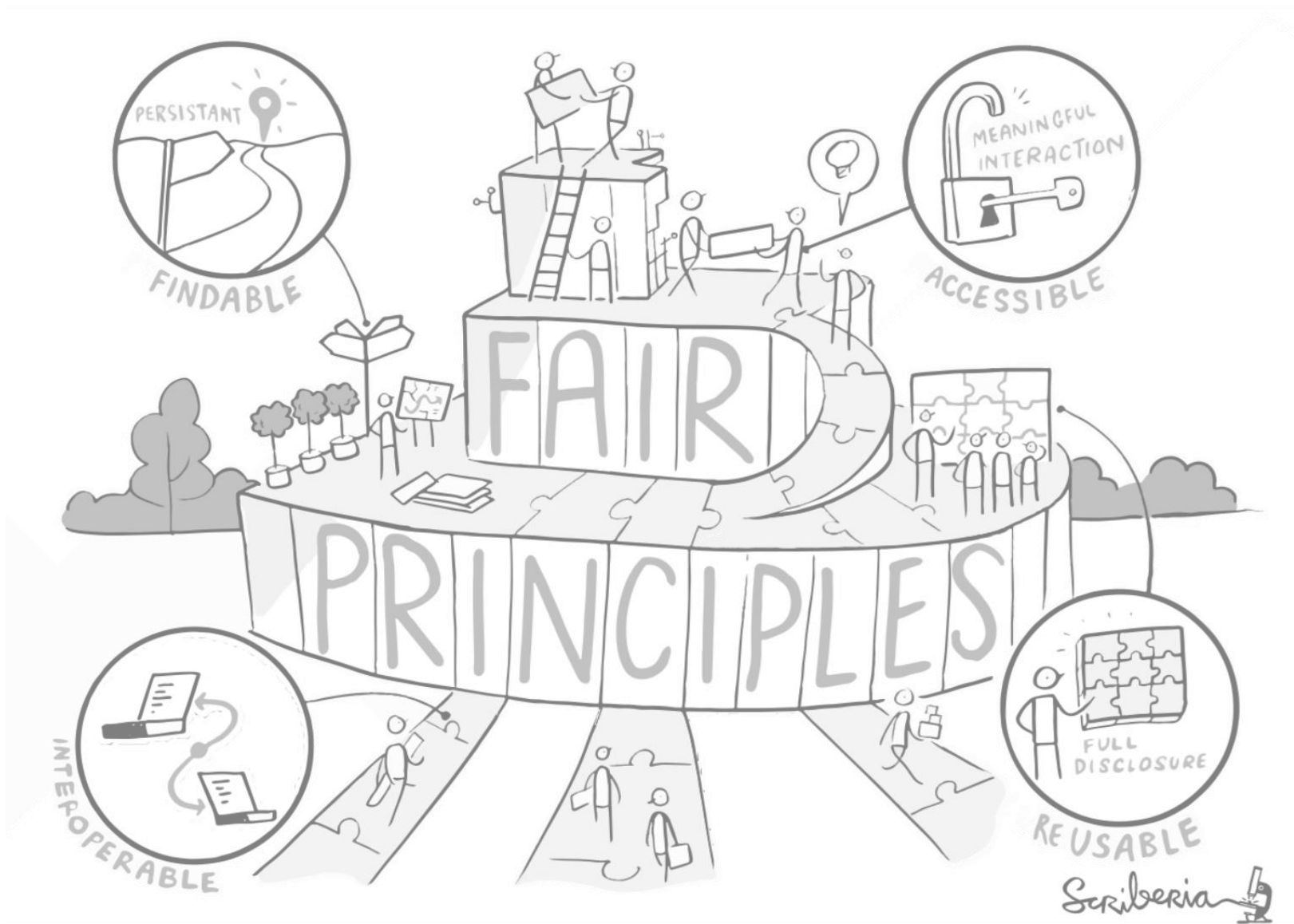
**Type** Repository

**Registry** Database

**Description** The GeoSphere Austria Data Hub provides high-quality datasets for research, public, and commercial use. It provides a wide range of data from the fields of weather, climate, environment and geophysics. Note that it is primarily a German-language site.

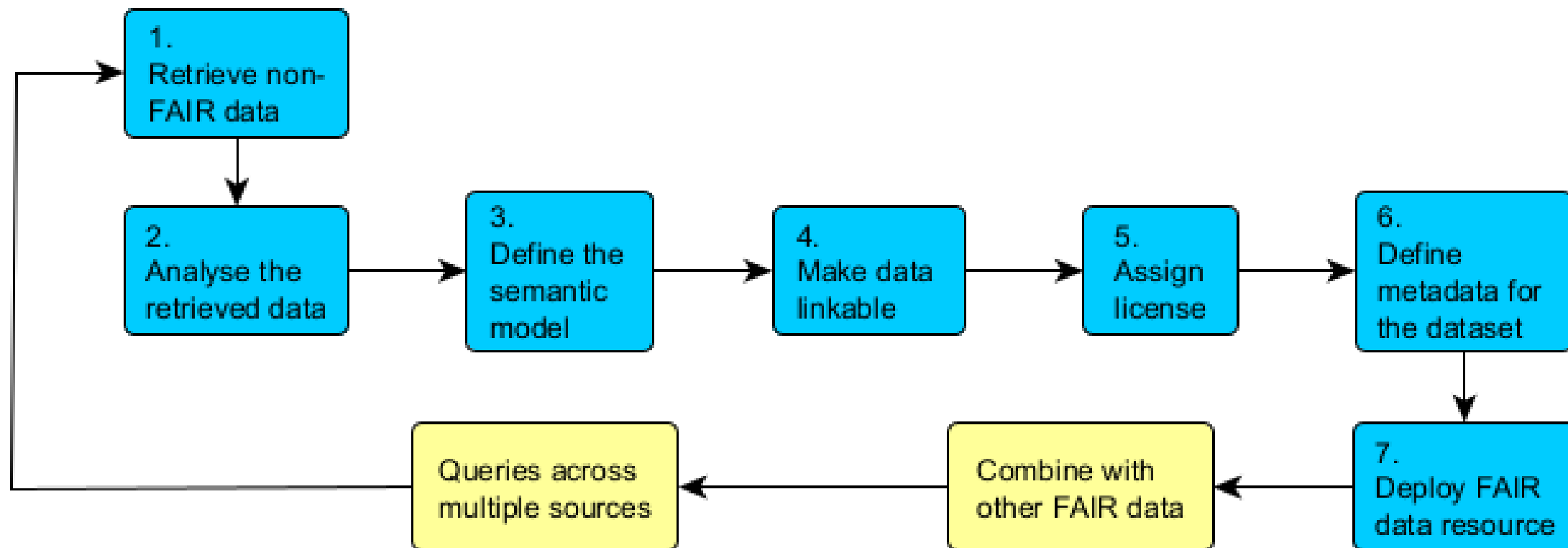
**Homepage** <https://data.hub.geosphere.at/>



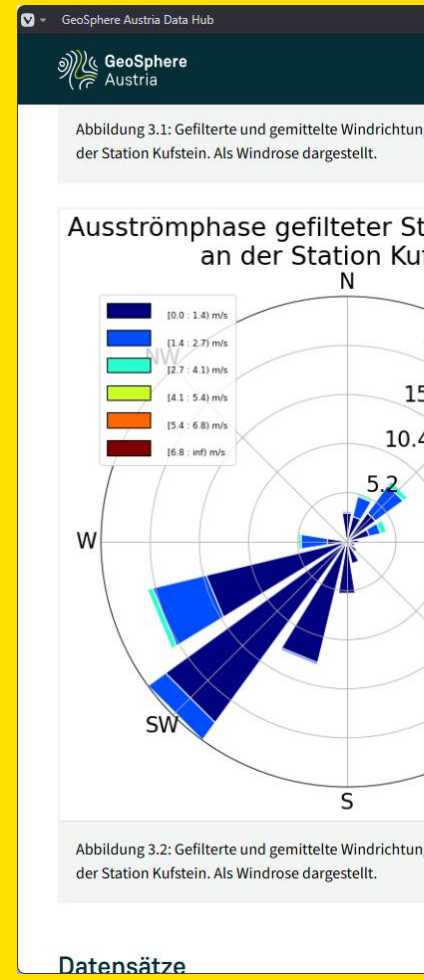


*“FAIR practices can result in highly efficient code implementations, reduce the need to retrain models, and reduce unnecessary data generation/storage, thus reducing the overall carbon footprint ... and ... financial costs.”*

*- Lannelongue et al., 2023*



**Meteorological sensor data**  
to present, share,  
connect, re-use  
and query data



GeoSphere Austria - Dataset API Frontend

Messtationen Zehnminutendaten v2

Bitte wählen Sie hier Ihre Stationen mittels Tabelle oder Karte aus!

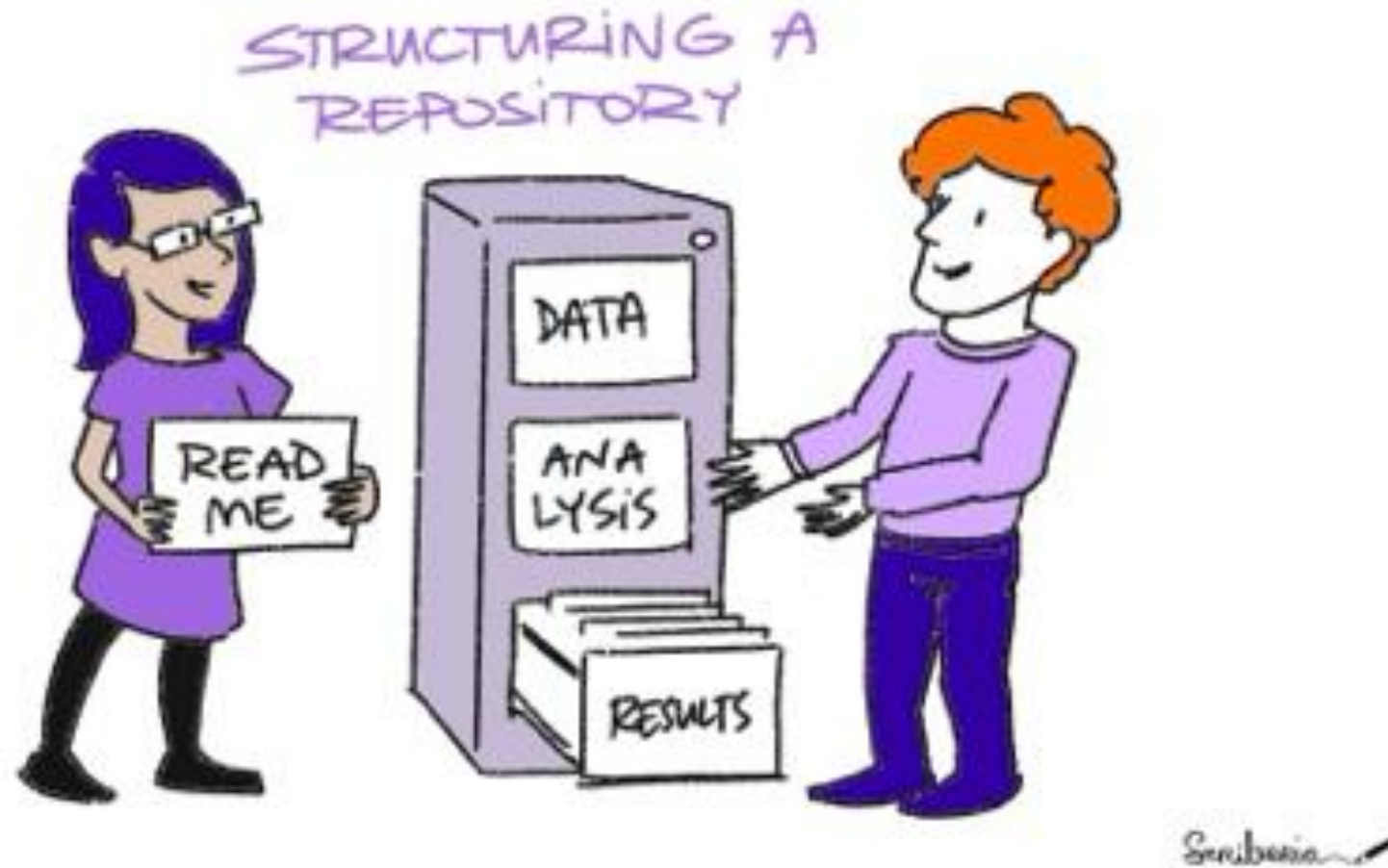
FILTER 523/523 KARTE

Enddatum	Bundesland	Höhe [m]
31.12.2100	Steiermark	783.2
31.12.2100	Steiermark	641
31.12.2100	Niederösterreich	598.8
31.12.2100	Niederösterreich	266
31.12.2100	Steiermark	743.1
31.12.2100	Kärnten	908.7

Suche

Zeilen pro Seite 6 1 - 6 von 523

ABBRECHEN ZURÜCK WEITER





- DMPTool (California Digital Library)
- MIT Libraries DMP Guide
- Tri-Agency DMP Guide (Canada)
- Intone DMP Checklist
- FAIR Process Framework (CABI & Gates Foundation)
- F-UJI FAIR Assessment Tool
- FAIR-Aware
- ArcGIS FAIR Support



- **Data Management Plans (DMPs):** Required in Horizon 2020 and Horizon Europe projects, DMPs outline how data will be handled during and after the project.
- **FAIR Principles:** Data should be *Findable, Accessible, Interoperable, and Reusable*. These principles are widely adopted in EU-funded research projects.
  - **Use of Data Spaces:** Projects should aim to automate and secure the full data life-cycle for large-scale, distributed data sources, enabling integration into EU data spaces
  - **Open Access:** EU promotes open access to both publications and research data, with flexible opt-out options for sensitive or proprietary data.

# Meteorological sensor data how FAIR is the project?

**Assessment Results:**  
Evaluated Resource:

FAIRsharing record for: GeoSphere Austria Datahub

FAIR level: **moderate**

Resource PID/URL: <https://doi.org/10.25504/FAIRsharing.1382c6>

DataCite support: enabled

Metric Version: metrics\_v0.8

Metric Specification: <https://doi.org/10.5281/zenodo.6461229>

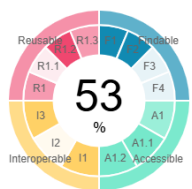
Software version: 3.5.0

Download assessment results: [\(JSON\)](#)

Save and share assessment results:

Harvested metadata: [show metadata](#)

**Summary:**



	Score earned:	Fair level:
<b>Findable:</b>	4 of 7	<b>moderate</b>
<b>Accessible:</b>	3 of 7	<b>moderate</b>
<b>Interoperable:</b>	4 of 6	<b>moderate</b>
<b>Reusable:</b>	3 of 6	<b>initial</b>

**Report:**  
*Findable*

the target research community.

ation protocol is used ✓

ccessible through a hich supports ✓

ng a formal knowledge ✓

mantic resources ?

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ent of the data. ✓

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ormat recommended by ?

## Technical Challenges:

- Lack of interoperable infrastructure across Member States.
- Difficulty in automating data processing pipelines for heterogeneous data sources.

## Legal and Ethical Constraints:

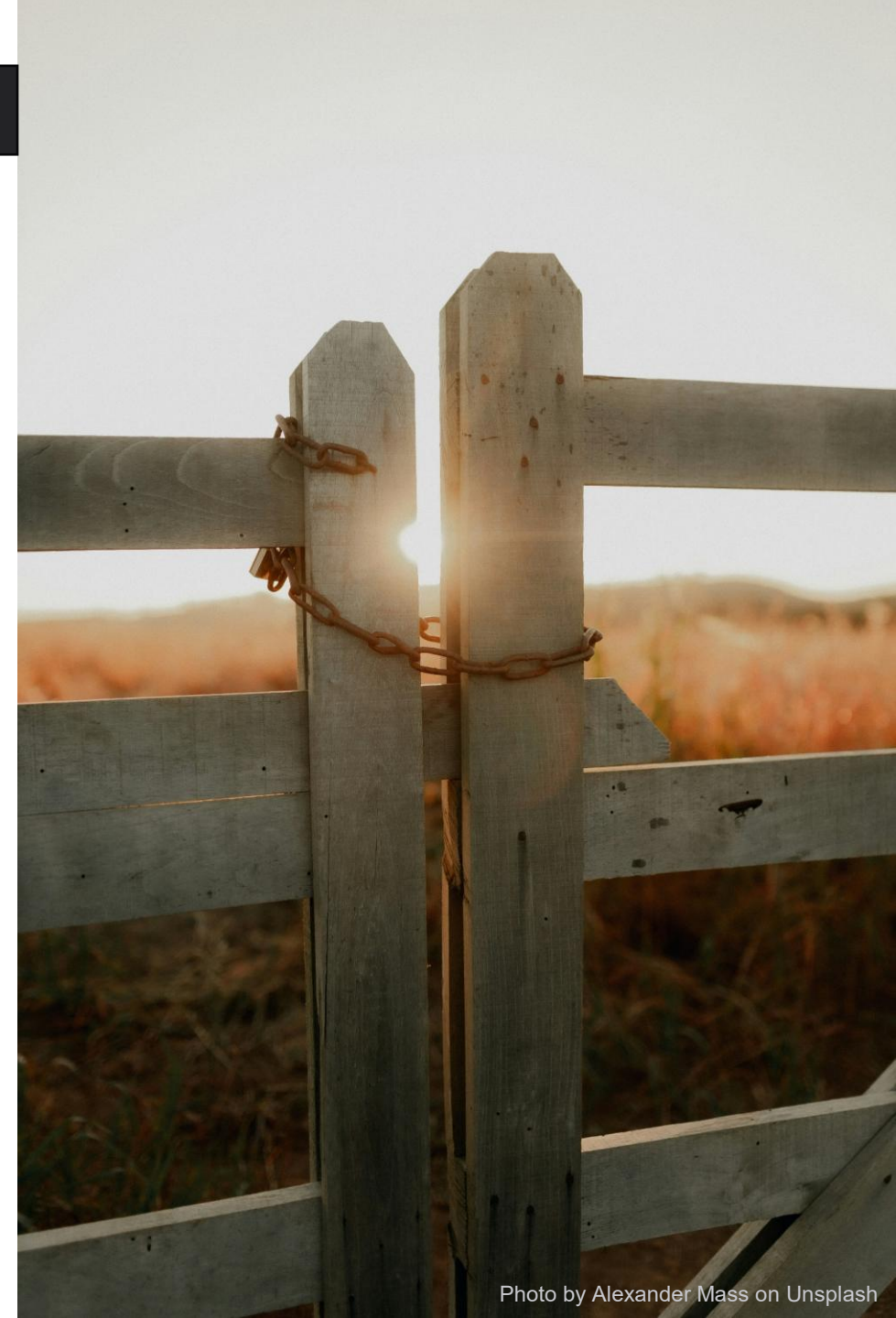
- GDPR compliance for personal data.
- Intellectual Property Rights (IPR) and commercial sensitivity.

## Organizational Issues:

- Limited institutional support and training for data management.
- Fragmented policies and inconsistent implementation across institutions.

## Cultural Resistance:

- Hesitancy to share data due to fear of misuse or loss of competitive advantage.



## 1. **Maximise Data Value**

A structured data life-cycle ensures that every dataset collected is properly managed, analysed, and reused, turning raw data into actionable insights and long-term assets.

## 2. **Ensure Compliance and Trust**

Adhering to EU regulations (GDPR, Data Governance Act) and FAIR principles builds trust with stakeholders, protects sensitive information, and avoids costly legal risks.

## 3. **Enable Open Science and Innovation**

By promoting data sharing and reuse, research projects accelerate discovery, foster collaboration, and increase the visibility and impact of results.

## 4. **Reduce Costs and Risks**

Proper storage, archiving, and disposal prevent data loss, reduce duplication, and optimize infrastructure costs, while mitigating security and ethical risks.

## 5. **Future-Proof Projects**

A life-cycle approach supports interoperability and integration with EU data spaces, ensuring your data remains usable and valuable in the long term.

**Thank you!**