FAIR Principles

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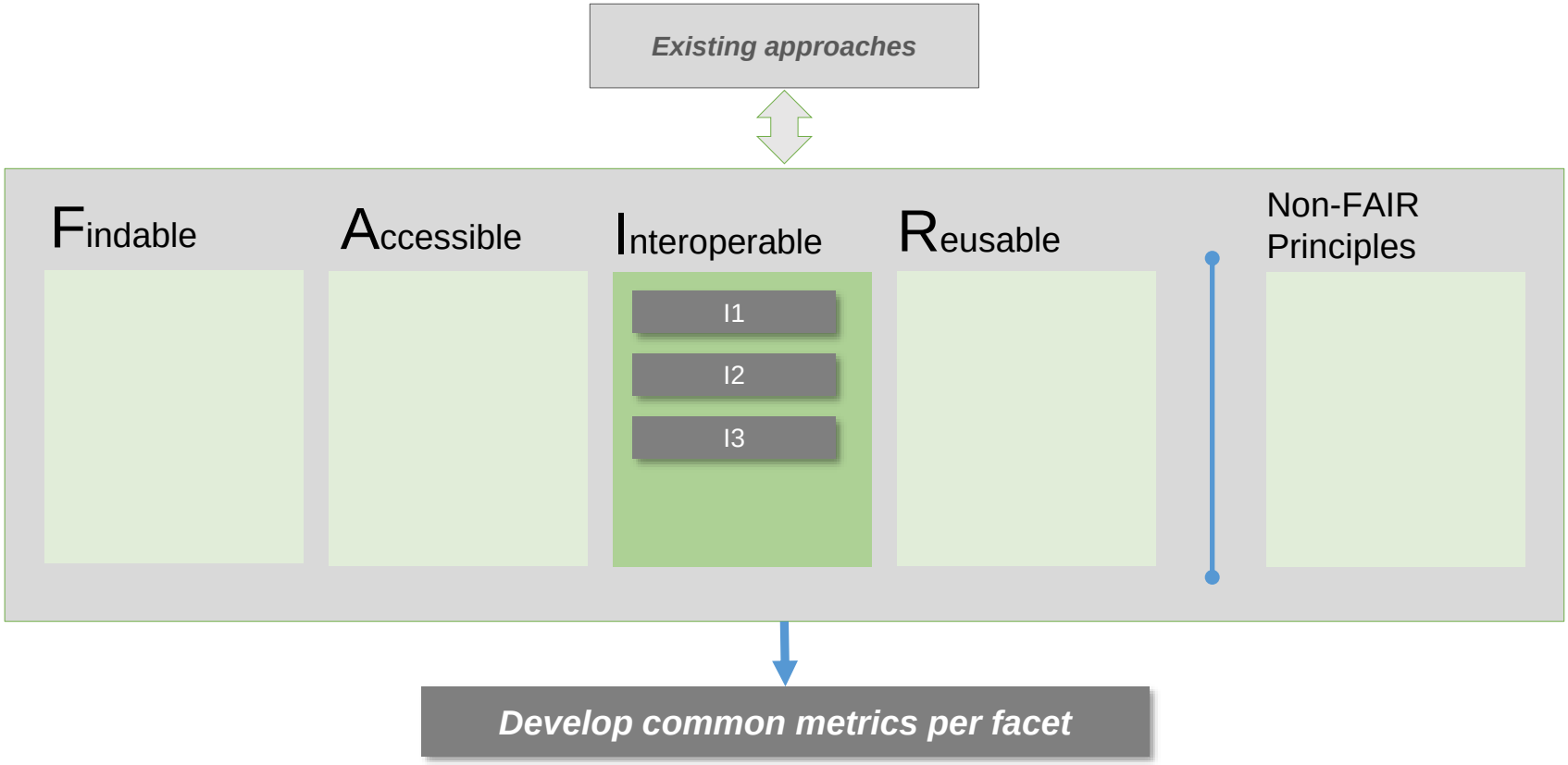
Interoperable

Analysis of existing approaches


Existing approaches
Findable
Accessible
Interoperable
I1
I2
I3
Reusable
Non-FAIR Principles
Develop common metrics per facet

FAIR Principles

To be interoperable :

I1. (meta)data uses a formal, accessible, shared, and broadly applicable language for knowledge representation

I2. (meta)data uses vocabularies that follow FAIR principles

I3. (meta)data includes qualified references to other (meta)data

LEGEND

1	ANDS-NECTAR-RDS-FAIR data assessment tool	ARDC
2	DANS-Fairdat	DANS
3	DANS-Fair enough?	DANS
4	The CSIRO 5-star Data Rating tool	CSIRO
5	FAIR Metrics Questionnaire	The FAIR Metrics Group
6	Stewardship Maturity Mix	NOAA's CICS-NC, NOAA's NCDC
7	FAIR Evaluator	GO FAIR, LUMC CBGP, IDS, OeRC, IQSS
8	Data Stewardship Wizard	ELIXIR NL/CZ
9	Checklist for Evaluation of Dataset Fitness for Use	Assessment of Data Fitness for Use WG (WDS/RDA)
10	RDA-SHARC Evaluation	SHARC IG (RDA)
11	WMO-Wide Stewardship Maturity Matrix for Climate Data	The SMM-CD WG
12	Data Use and Services Maturity Matrix	The MM-Serv WG

Principle

 # Facet

1 Question
- Option #1
- Option #2
- Option #3

Potential Overlap

I1 (meta)data uses a formal, accessible, shared, and broadly applicable language for knowledge representation

1 What (file) format(s) is the data available in?
- No access to data
- By individual arrengement
- File download from online location
- Non standard web service
- Standard Web Service API

1 What best describes the types of vocabularies/ontologies/tagging schemas used to define the data elements?
- Data elements not described
- No standards have been applied in the description of data elements.
- Standardised vocabularies/ontologies/tagging schemas without global indentifiers
- Standardised open and universal using resolvable global identifiers linking to explanations

2 Is the data file in a proprietary format?
- No
- Yes

2 Are all of the data files in a proprietary format?
- No
- Yes

2 Please indicate which of these statements is the most applicable to the dataset:
- Most of the data files are proprietary
- Around half of the data files are proprietary
- Few of the data files are proprietary
- None of the data files are proprietary, they are all in a preferred format

3 Are the data stored and archived in preferred archival formats? *R1.3*
- No
- Yes

5 Please provide the URL to the specification of the language

RESEARCH DATA ALLIANCE

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7 Use of a formal, accessible, shared, and broadly applicable language for knowledge representation.

8 Will you be using common ontologies?

- No
- Yes

9 metadata includes community accepted keywords and/or terms associated with relevant standards or terminologies

- No
- Somewhat
- Yes

10 Are standard vocabularies, thesaurus or ontologies used for all data types present in datasets, to enable interdisciplinary interoperability between well defined d

- Never /NA
- If mandatory
- Sometimes
- Always

10 Are the interoperability criteria explained?

- Never /NA
- If mandatory
- Sometimes
- Always

11 Data Portability

- Non-machine readable
- Basic machine readable
- Standards-based machine readable
- Machine independent, self-describing, interoperable format
- Previous + capability of providing user required format

I2 (meta)data uses vocabularies that follow FAIR principles

3 Did you use standardized vocabulary?

- No
- Yes

4 Comprehensible - supported with unambiguous definitions for all internal elements

- Local field codes or labels
- Labels with full text explanations
- Community standard labels (e.g. CF Conventions, UCUM units)
- Some fields linked to externally managed definitions
- All fields linked to standard, externally managed definitions

5 Please provide one or more (max 3) IRIs representing the vocabularies used within the (meta)data that is returned by resolving the RESOURCE ID

7 The metadata values and qualified relations should themselves be FAIR

I3 (meta)data includes qualified references to other (meta)data

2 Is there extensive metadata and rich additional documentation available? *R1, R1.2*

- No
- Yes

3 How is the metadata linked to other data and metadata (to enhance context and clearly indicate relationships)?

- There are no links to metadata
- The meta data records includes URI links to related metadata, data, definitions
- Metadata is represented in a machine readable format e.g. in a linked data format such as RDF

4 Linked - to other data and definitions using public identifiers (e.g URIs)

- No links
- In-bound links from a catalogue or landing-page
- Out-bound links to related data and definitions

5 Please provide the URL to a formal Linkset or copy/paste the content of a formal linkset that describes at least a portion of the content at RESC *R1.2*

7 Relationships within (meta)data, and between local and third-party data, have explicit and 'useful' semantic meaning

11 Usage

- No or weak citations in scientific publication in peer-review journal or as institutional reports.
- Intermediate citations + referenced in institutional climate assessment reports (e.g., by NOAA).
- Strong citations + referenced in national climate assessment reports (e.g., by USGCRP).
- Previous + referenced in international climate assessment reports (e.g., by IPCC).
- Previous + referenced in international decision/policy making published reports (e.g., by UNFCCC, UN-ISDR, World Bank, etc.).