Moderated discussion:
Identifying how to support the WaterML development in the domain of Water Quality

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WEATHER CLIMATE WATER

WWQA World Water Quality Alliance

WORLD METEOROLOGICAL ORGANIZATION

WMO HydroHub

UN environment programme 50 1972-2022

UNESCO

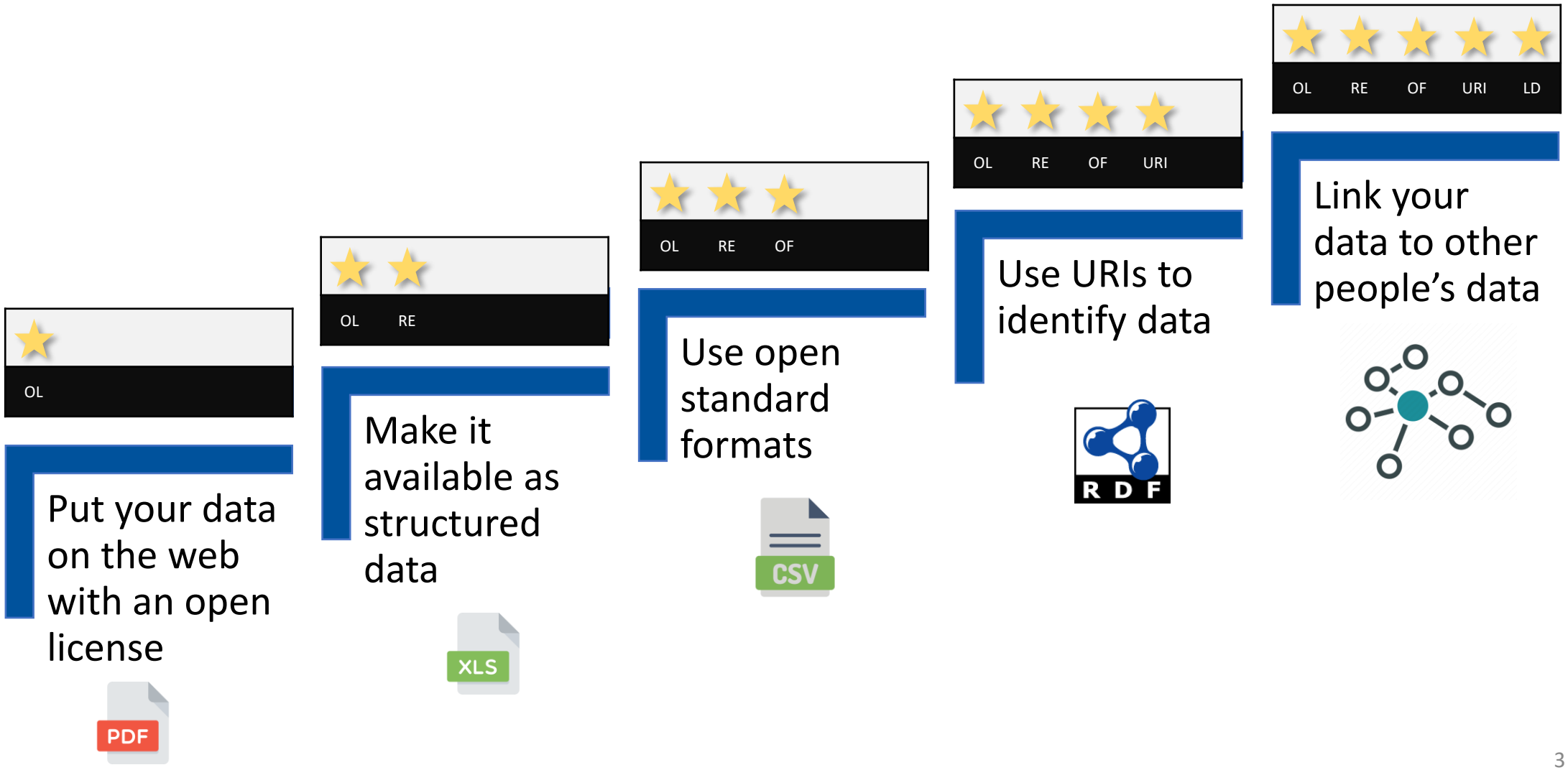
World Health Organization

Open Geospatial Consortium

Introduction

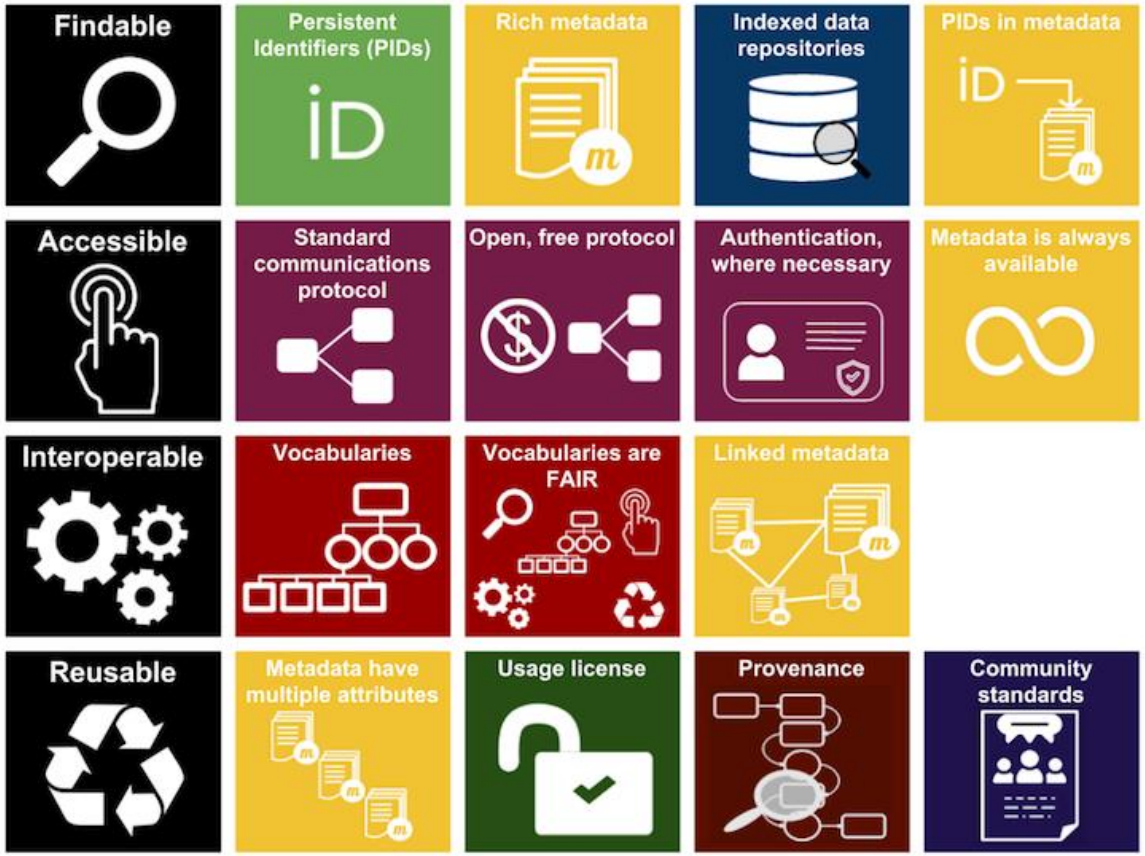
The Vision: Producing high-quality water quality monitoring data through standardized procedures and sharing the data using common semantics in open standard formats through standard web services as the basis for water quality management and decision making.

5 Star Deployment Scheme for Open Data

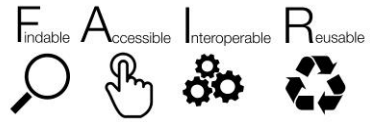


https://www.w3.org/DesignIssues/LinkedData.html

FAIR data



5 Stars of FAIR water quality data



Water quality monitoring data is published online

★ using essential discovery metadata and (open) data license

=> Kind of findable and re-usable, but hard to understand and work with

★★ + as structured data (e.g. proprietary format as Excel)

=> Can be used with COTS

★★★ + using open standard formats (e.g. CSV)

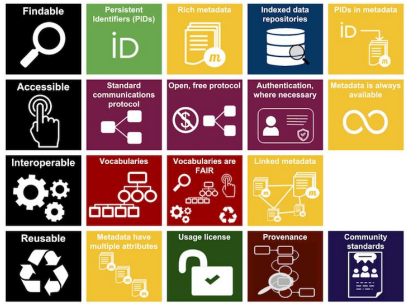
=> Can be used with FOSS and is portable

★★★★ + using community standard formats (e.g. WaterML) with persistent identifiers/URIs for data and metadata

=> Data has recognizable structure but not semantics

★★★★★ + using FAIR vocabularies (observation metadata: monitoring location, procedures, observed properties, units, data quality and provenance) and open, free communication protocols in a linked data format

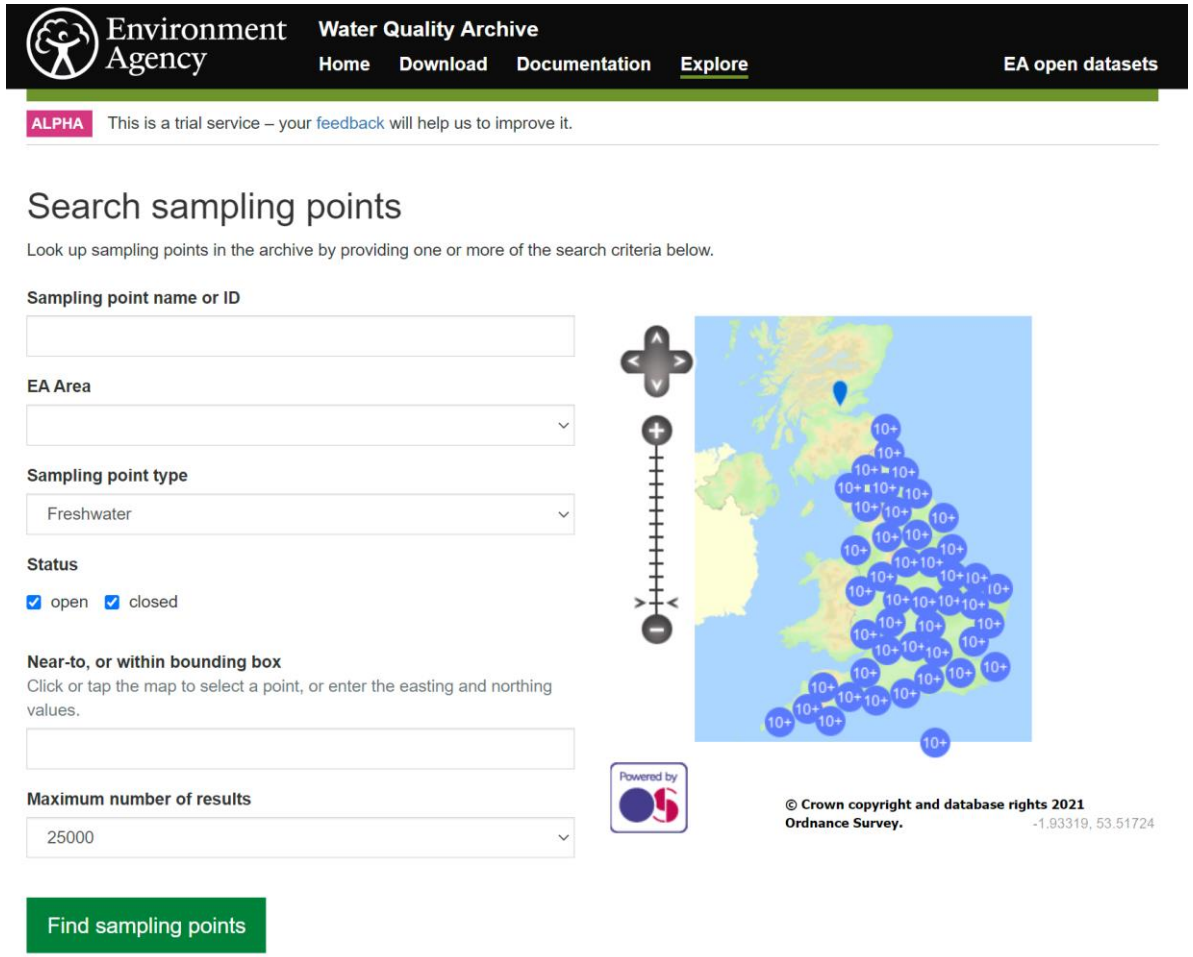
=> Data has recognizable structure and semantics



5 Stars of water quality data - The UK Water Quality Archive

- Publishes data using (open) licenses
  - UK Open Government License ✓
- Provides access through standard protocols/web services and formats ✓
  - REST API => JSON, CSV, RDF
- Uses open application schemata/ontologies to encode water quality (meta)data ✓
- Uses linked water quality vocabularies to facilitate harmonization and interoperability:
  - Water quality parameters: https://environment.data.gov.uk/water-quality/def/determinands.html?_limit=100&_sort=label ✓
  - Units: https://environment.data.gov.uk/water-quality/def/units.html?_sort=label ✓
  - Sampling and analytical methods ✗
  - Data quality, provenance

https://environment.data.gov.uk/water-quality/view/landing



How many stars would you give to your WQ data?

Water quality monitoring data is published online

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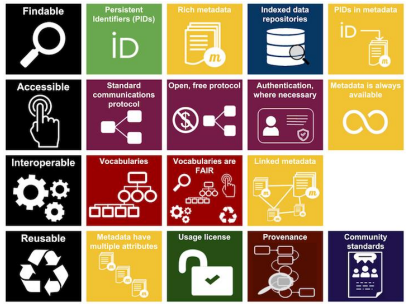

What do you expect from the WQ standard community to upgrade your WQ data?

- An open community
- Training
- Guidance material
- Workshops
- Tools
- Coordination
- Endorsing standards
- Other

Which communities should we also engage with, to ensure proper coverage of what needs to be achieved for a 5* WQ data exchange?

- Research communities (e.g. RDA)
- Governmental authorities
- Software/tool developers
- ….

What organizations could also step up in this activity to support & follow these developments?

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Thank you!

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