Aligned semantics to advance data interoperability across the ocean value chain

- from raw data to societal goals **AUTHORS:** Adam Shepherd, Scott Caltagirone, Alexandra Kokkinaki, Adam Leadbetter, Gwen Moncoiffe, Pauline Simpson, Rob Thomas, Pier Luigi Buttigieg

Why?

We all use different labels to describe the same thing.

Aligning terms from controlled vocabularies, thesauri & ontologies helps software agents navigate the spaghetti of our natural language.

How?

Capturing complex and essential data information using semantic technology

Collaborative effort to connect existing semantic resources

By creating a strong open network of:

- data producers & publishers,
- thesauri developers,
- ontology creators
- information managers

Results

Workshop in Dublin, Ireland in March 2019 gathered technical & content experts:

- Strategies for linking
 - observations to authoritative thesauri
 - authoritative thesauri to domain ontologies
- Initiated alignment between:
 - NERC Vocabulary Server
 - Open Biological and Biomedical Foundry
- Plan future alignments of well-adopted marine terminologies
- Collective strategy for sustained interoperability
- Use case featuring UNESCO-IOC Ocean Best Practices System

oceanbestpractices.org

Take a picture to visit the website

Linking **authoritative thesauri** to domain ontologies is critical in leveraging **ocean observation data & information** in response to the grand challenges of the UN Decade of Ocean Science.

Efficient data publication workflows require easily extensible authoritative thesauri able to support

- Complexity & diversity of scientific observations
- Novel methodology & techniques
- Operational terminologies & concepts
- Data transformation, aggregation & re-use

Data can be of maximum benefit to society if labelled using authoritative thesauri that are then connected to domain ontologies

- Greater interoperability across sources, systems & domains
- Easier to connect to broad concepts
 - GOOS' Essential Ocean Variables
 - UN Sustainable Development Goals
- Greater scope for developing trusted automated processing in software applications & VREs
- Easier access to related information & data

Biological & Chemical Oceanography Data Management Office

Foras na Mara

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