

Metadata and data management principles for underwater acoustic data

Kim Mortimer¹, Ryan Gosse¹, Ines Hessler¹, Stan Matwin^{1,2}

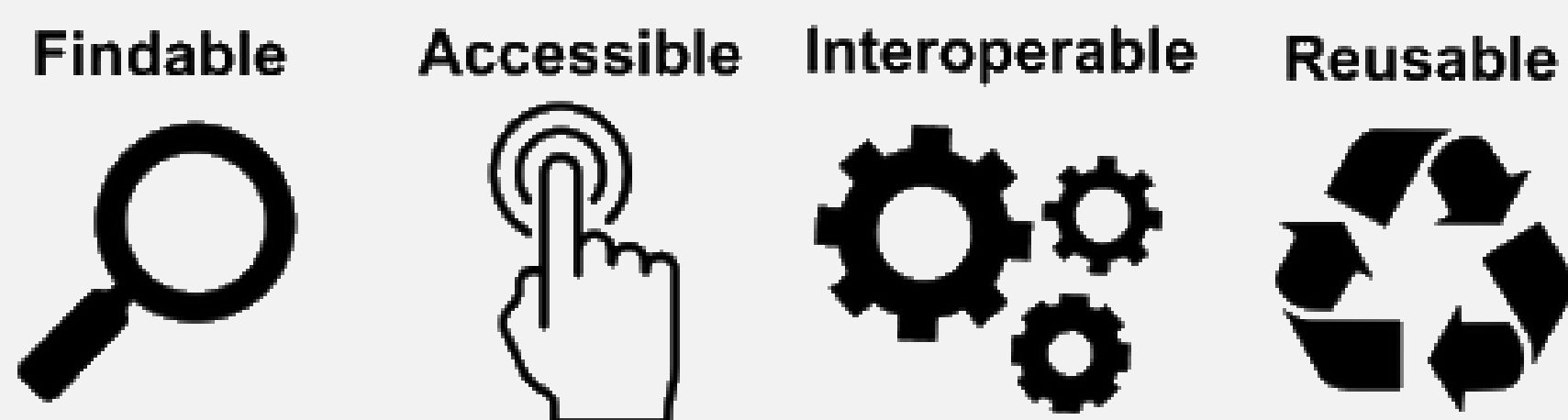
✉ K.mortimer@dal.ca

🐦 @MERIDIAN_CFI



1: INTRODUCTION

- 69% of researchers shared data in 2016, but only 16% of that was through a discipline-specific or general-purpose repository (Wiley, n.d.).
- In addition, 17% of research data is lost per year (Vines et al., 2014).
- One vision to addressing these issues can be found in the FAIR Data Principles.

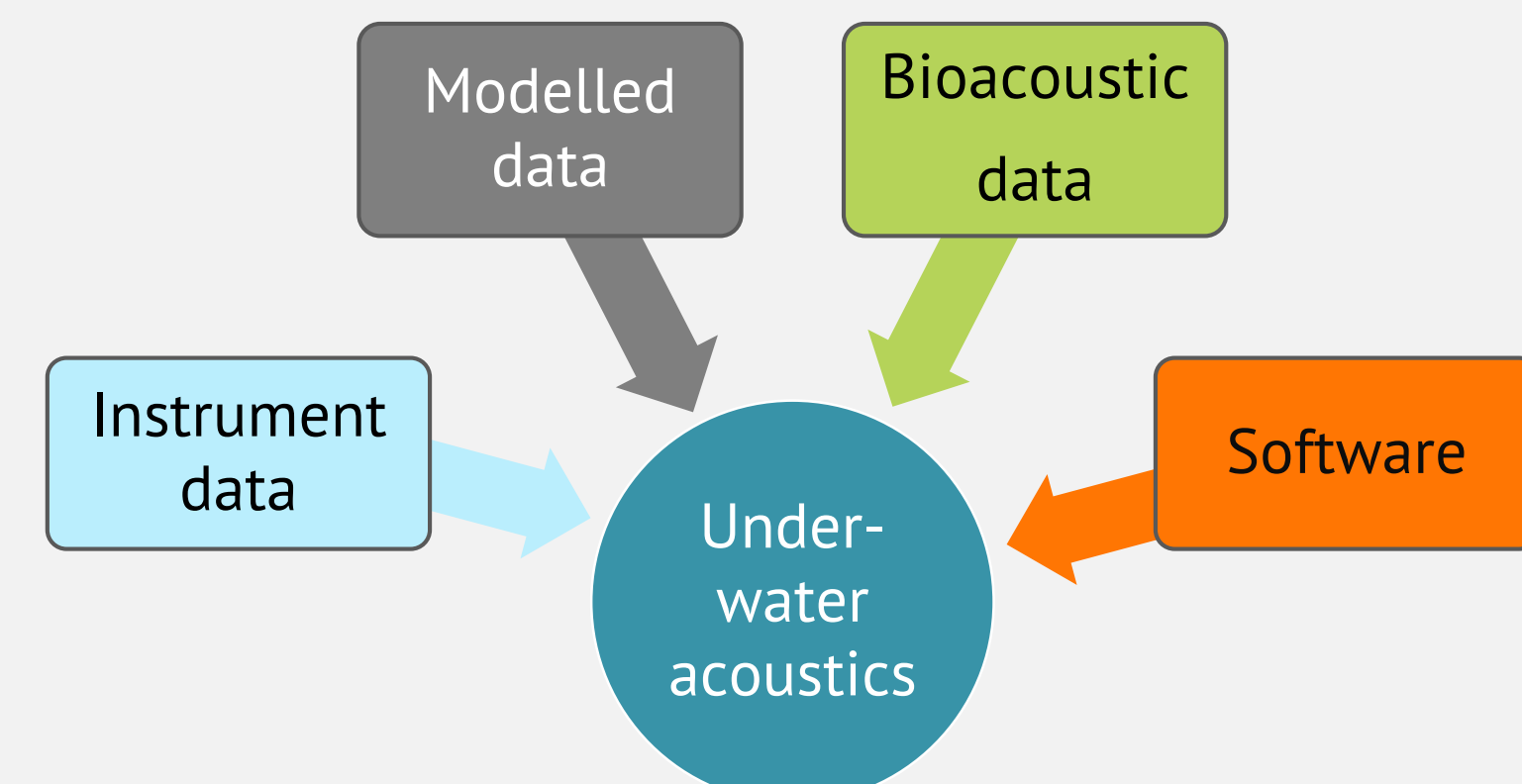


For more info about FAIR, visit force11.org

- Good subject specific metadata can improve findability and interoperability of datasets in particular.

2: UNDERWATER ACOUSTICS

- To date no widely accepted metadata standard has been widely deployed to serve the underwater acoustics community.
- Each facet of underwater acoustics allows a discipline-specific approach to metadata, despite certain common elements.

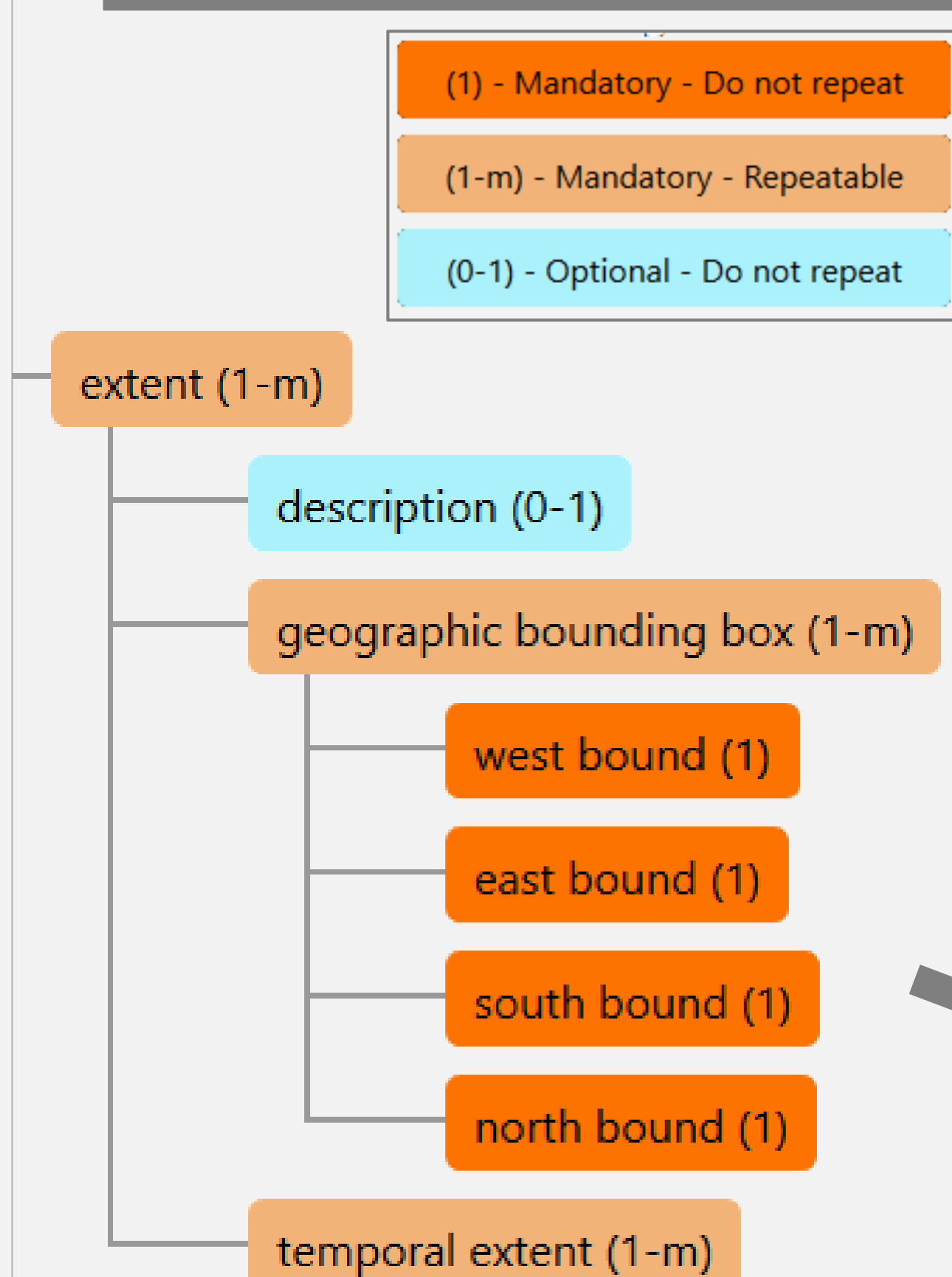


Simplified depiction of some facets of underwater acoustics

- Bioacoustics may use Darwin Core or Tethys, while software may use OntoSoft or CodeMeta metadata.

How can we make underwater acoustic data more FAIR?

3: OUR APPROACH



- We developed a metadata profile combining ISO 19115-2:2009 and Darwin Core, to serve as many facets of underwater acoustics as possible.

- Our profile will be freely available, documented, and downloadable as a GeoNetwork plugin.

Above, a tree diagram of a segment of our metadata profile. On the right, how that segment (might) appear to a user during metadata submission. The goal is to make the input user friendly with understandable input fields and tooltips.

4: NEXT STEPS

Official release of the MERIDIAN discovery portal is coming! soon

- Profile and mappings will be updated based on stakeholder consultations.
- Infrastructure, workflow, and UI tuned based on user feedback (refer to my colleague Ryan's poster!)
- **GOAL:** to be *the* single-service-point for discovering Canadian ocean acoustic data.

¹ Marine Environmental Research Infrastructure for Data Integration and Application Network, Dalhousie University, Halifax, Canada

² Institute for Big Data Analytics, Faculty of Computer Science, Dalhousie University, Halifax, Canada

Citations:

- FAIR graphic modified and retrieved from the Australian National Data Service under the Creative Commons Attribution 4.0 license. Retrieved from <https://bit.ly/2VADEtT>
- Vines, T. H., Albert, A. Y., Andrew, R. L., Débarre, F., Bock, D. G., Franklin, M. T., ... & Rennison, D. J. (2014). The availability of research data declines rapidly with article age. *Current biology*, 24(1), 94-97. doi.org/10.1016/j.cub.2013.11.014
- Wiley Open Science Researcher Insights Survey 2016. (n.d.). *Global Data Sharing Trends* [Online image]. Retrieved from <https://bit.ly/2ISes2o>