Marine Environmental Research Infrastructure for Data Integration and Application Network

MEOPAR-MERIDIAN workshop | August 16 - 17, 2018
Overview: initial MERIDIAN Goals

Year 1
- Integrating acoustic metadata in interoperable Meridian data catalogue

Year 2
- Interactive (dynamic) data visualization and analysis

Year 3
- Algorithms and data structures for scalable processing of marine data

Today
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Goal 1: Integrating acoustic metadata in interoperable Meridian data catalogue

Year 1
- Inventory of Canadian ocean acoustic data
- Selection of a suite of use cases
- Methods for horizontal data integration

Sustainable Metadata curation strategy

Year 2
- Methods for vertical data integration
- DMS prototype including data governance/access
- Metadata standard

Year 3
- Connected ocean acoustic community Outreach and support for researchers - perhaps through CIOOS?
- Connected related physical, chemical and biological data
Goal 2: Interactive data visualization and analysis

Year 1
- Connection to Google Global Fishing Watch initiative
- Selection visualization tools for MERIDIAN
- Focus on user-centered experience - metadata forms, discovery layer
- Explore user types
  - Scientific
  - Citizen scientists
  - Other?

Year 2
- Extension to other media (e.g. voice narrative generation).
- Implementation of interactive data exploration tools
- Researcher’s customized notebooks tool developed
- Different access modes for different types of users/uses
  - Web version (low res)
  - Workstation (high res)
- Represent and display uncertainty

Year 3
- Visualize & understand Canadian ocean soundscape
- Basin-level, layered, 3D/4D interactive visualization tools
- GIS accessibility/Meridian layers

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MERIDIAN
DALHOUSIE UNIVERSITY
Springboard
Springboard
MEOPAR
Goal 3: Algorithms and data structures for scalable procession of marine data

Year 1
- Algorithms for streaming data and time series data
- Tools for time series and spatial data analytics
- What data sets are appropriate for Meridian to develop tools for? Size, quality?

Year 2
- Data summaries & query techniques for sensor data
- Implementation of outlier detection (esp. for AIS data)
- Lightweight algorithms for instruments
- Augmented data
- Generalized training of classifiers

Year 3
- Ocean scientists enabled with big data analysis tools
  Training for new acoustic data users
- Tools to enable ocean data for policy development
  Tools for non-experts e.g. managers
- Data storage - will Meridian store data in the future? Does Meridian have the data storage it needs?
- Metadata creation e.g. sonograms
Collaborations

- Plotly
- Hacky hour
- Oceans 2.0
- IntraMeridian crosswalking
- Become a thematic node of CIOOS
- Librarians
- Industry
- FRDR
- DFO, Environment Canada, Transport Canada
- Ocean Navigator

Workshops

- This year
  - Spec sheet for soundscape atlas
  - Reach out to other cross-disciplinary big data/machine learning experts
- Next year
  - Data classification workshop sometime next year
Other needs? Other projects?