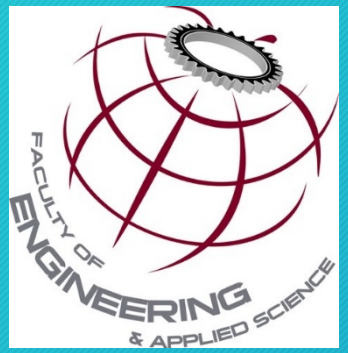
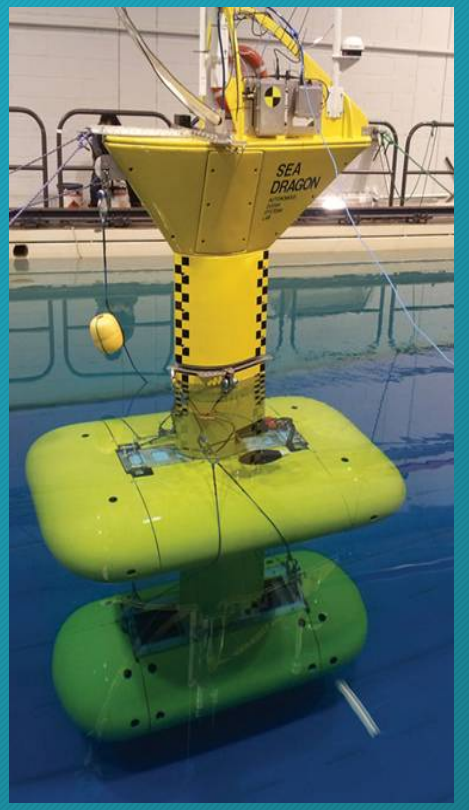
Creating a Framework for the Newfoundland Ocean Data Exchange

Alexander Clark



Previous Work

- Autonomous Ocean Systems Laboratory (AOSL)
  - Mechanical design and fabrication for the Seadragon Spar surface craft
  - Conducted glider testing
- Composite Buoy Research
  - Created a lightweight program to simulate ice loading on a cylindrical buoy
  - Used dimensional analysis and FEM to verify results

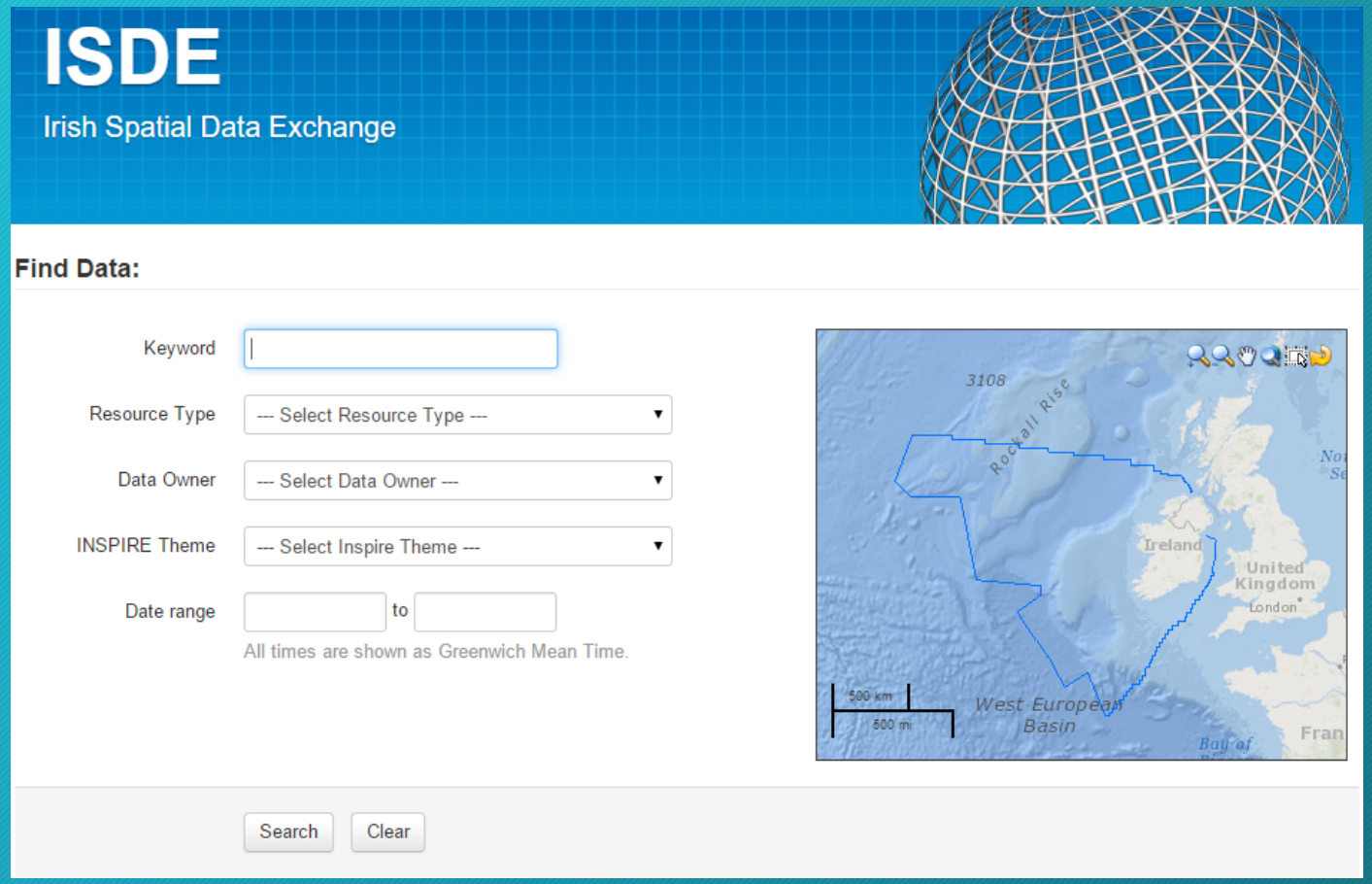


Current State of NL Ocean Data

- Data almost exclusively exists on personal computers
- Very behind on data organization compared to other provinces
- Data collectors that wish to make their data available do so through many different databases
- Almost impossible to search for data

Starting Blocks

- Building off of the NL Seabed Data Atlas
- Basing the design off the ISDE



Metadata

- Only Metadata will be included in the database
  - Small data storage capabilities
  - Rights of use decided by data owners

Discovery of Data Sources

- Creation of survey
- Survey must be:
  - Short
  - Identify owners of large amounts of data
  - How impactful the data is
  - Test for data quality
  - Determine ease of integration
- In person meeting were the most effective

Survey Response

- Data collections were put into four categories
  - Easy to integrate small
  - Easy to integrate large
  - Moderately difficult to integrate
  - Difficult to integrate

Metadata Template Creation

- Google Forms was used
  - Several alternatives were researched
  - Easy to use
  - Integration with Excel
  - Exports to .csv
- Template follows a light ISO standard

Survey Response

- Easy to Integrate Small
  - Included data collectors who only had small amounts of data
  - Normally only one or two papers published on Newfoundland Ocean Data
  - Highly impactful
- Google Forms was used
  - Several alternatives were researched
  - Easy to use
  - Integration with Excel
  - Exports to .csv

Survey Response

- Easy to integrate large
  - Key area to begin
  - Already have metadata storage in place and can be easily accessed
  - REALM Project
  - AOSL
- Integration involves communication with data owners

Survey Response

- Moderately Difficult to Integrate
  - Makes up the majority of the data owners
  - Data is organized to the extent that someone in the lab can access it
  - Metadata is spotty
  - Would require a student to go to each lab to create information

Survey Response

- Difficult to integrate
  - Not worth looking into
  - Data owners are either very unorganized or unwilling to contribute

Conclusions

- Easy to integrate must be pursued immediately
- For moderately difficult a student might have to be hired
- Data owners see the usefulness of this project and if it gets off the ground it is believed that they will contribute

Thank you

Alexander Clark