

## **Position Paper - ESRI Oceans Summit**

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### **Summary of organization's ocean GIS activities:**

Ocean Networks Canada is a non-profit organization that oversees and manages the cabled ocean VENUS and NEPTUNE Canada networks.

GIS activities include:

- Cable lay preparation
- Deployment and tracking of cables
- Site selection, analysis, planning, and deployment of instrumentation
- Mapping for a variety of media and audiences (scientific journals, websites, posters)
- Collection and archiving of high resolution bathymetric data
- Providing free access of collected bathymetric data to the scientific community through an online interface (in progress)

### **Brief description of the ocean GIS issues that most concern you and impact your work:**

1. Since we collect bathymetry data from a variety of sources and in a variety of formats, it's often difficult to properly archive the data in a meaningful way that is also accessible to our users. It seems that the new bathymetry extension and ArcGIS Online tools might be able to help in creating an interface here.
2. 4D visualization of data is always a challenge for us. Showing animations of vector data overlapping bathymetry would help in the analysis and understanding of current flows and other directional data.

3. Our position and scalar scientific data are all stored in an Oracle database. We have an ArcSDE connected, but we would like to use the two together (i.e. pull data from Oracle and plot it in the Arc Environment). This should be possible with views, but we have run into roadblocks when trying to implement these.
4. Ocean observing systems are setup in areas of scientific interest. These are as a general rule in less than ideal regions for cable lays. It is difficult to find software solutions that allow for 3D analysis of these routes, which take both surface distance and slopes into account. Currently, we use a combination of ArcGIS, Fledermaus, corpscon, and Matlab. It would be nice to streamline this process or increase their interoperability.
5. On a minor note, ocean observing systems have a need for a set of symbols that describe the networks. Although it is possible to create them from the initial design Solidworks files, perhaps we can share these symbols through a common forum to avoid too much duplication of efforts.