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Workplan

Project Title: Global Bathymetric Coverage Metadata Service

Project Overview:

Understanding what has and has not been mapped in the global oceans, and by whom, is an overly complicated task requiring specialized expertise. This project aims to demonstrate the ability to create a single service showing bathymetric survey coverage and coverage provenance from multiple sources hosting subsets of the global coverage that can be utilized to understand where bathymetric coverage exists, with minimal technical expertise.

In order to achieve this aim, the project will work initially to build and improve underlying infrastructure and existing service capabilities, including the creation of a metadata coverage service (ie: a coverage footprint, either raster or polygon, with attribution) for the GEBCO bathymetry database.

This project will focus on the North Pacific region as defined by Seabed2030, with the goal to build on the lessons learned and expand the service globally.

Project Goals:

- Generate a metadata coverage service, first for the North Pacific region, and then eventually for the GEBCO grid, that provides insight as to the origin and characteristics of the data at the grid cell level, by creating metadata records for every data contribution to the grid.
- Generate a metadata coverage service for global bathymetric data hosted by other agencies by harvesting metadata based on to-be-established protocols.
- Provide a demonstration of integrating multiple coverage layers/sources into a single layer showing worldwide mapping coverage.
- Demonstrate use of that layer in the CCOM BathyGlobe GapFiller (web, offline) and other applications that support web services.
- Demonstrate potential use cases built on improvements to metadata.
- Work with other TSCOM subcommittees and/or working groups on improved documentation guidelines, etc. for metadata, geometries, and web service types that will improve the usability and functionality of external service and in turn allow for the expansion/improvement of the combined coverage service generated as part of this project.
- Create a plan for future hosting and improvements to this combined coverage service.

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Timeline:

Evaluation of feasibility from UNH-CCOM Team: 15 August 2024

Demonstration of services: 1 November 2024, for presentation to the GEBCO Guiding Committee at GEBCO GGC-41, 4-8 November 2024

Handover of deliverables: 31 December 2024

Task Description	Start Date	End Date	Responsible Party
Phase 1: Planning	8 July 2024	15 August 2024	
1.1 Define project scope			TSCOM, CCOM
1.2 Identify key stakeholders			TSCOM, CCOM, DCDB
1.3 Develop project plan			TSCOM, CCOM
Phase 2: Execution	1 August 2024	1 November 2024	
2.1 Task 1: Set up coverage server			CCOM
2.2 Task 2: Create GEBCO coverage service, North Pacific			CCOM
2.3 Task 3: Create local coverage service for one or more additional services			CCOM
2.4 Task 4: Integrate coverage services for GEBCO and at least one additional layer to create demonstration of a single data/no data layer/service			CCOM
2.4 Task 5: Identify bottlenecks and necessary improvements related to existing external services and build communication with service providers to address those issues			Heffron, TSCOM, CCOM, DCDB
2.5 Task 6: Document workflows and improvements for dissemination to the broader ocean mapping community			Heffron, TSCOM
2.6 Task 7: Develop use case demonstrations for presentation at GEBCO GGC-41			Heffron, TSCOM
Phase 3: Monitoring & Control	8 July 2024	1 November 2024	
3.1 Regular progress updates			Heffron, TSCOM, CCOM, DCDB
3.2 Address any issues/risks			Heffron
Phase 4: Closure	1 November 2024	31 December 2024	
4.1 Review project outcomes			TSCOM, CCOM, DCDB
4.2 Document lessons learned			Heffron
4.3 Handover deliverables			TSCOM, CCOM

Deliverables:

- Metadata coverage server for GEBCO and external layers
- Working GEBCO metadata coverage service for defined area
- Integrated coverage service layer for two or more sources, for a defined area
- Guidelines and protocols for Seabed2030 Data Centers and for external data service providers
- Plan for future hosting and improvements
- Budget estimate for full development and ongoing maintenance

Roles and Responsibilities:

- **Project Manager**: Erin Heffron, Ocean Mapping Services, TSCOM Member. Responsibilities - facilitate communication, develop documentation and demonstration/use case scenarios for presentation and communication.
- **Coordinator**: George Spoelstra, TSCOM Co-Chair.
- **Team Member 1**: CCOM. Responsibility - Primary Funding Agency (contribution in kind), Technical Leads.
  - Larry Mayer, CCOM Director, Co-Head Seabed 2030 Arctic and North Pacific Center: Project funding and support.
  - Paul Johnson, CCOM: Create and populate metadata coverage services.
  - Tom Butkiewicz: BathyGlobe Gap Filler improvements.
  - Ilya Atkin: Coverage service generation and code optimization.
- **Team Member 2:** DCDB. Responsibility - Service improvements, potential future host.
  - Jennifer Jencks, DCDB Director, TSCOM Member: Represent DCDB as the IHO data center host, an external service provider, and the potential host and future responsible party for the coverage services generated as part of this project.
  - Additional DCDB staff (Jesse Varner, others): Service improvement request feedback and implementation.
- **Team Member 3:** TSCOM. Responsibility - Expert input.
  - Federica Foglini, TSCOM Co-Chair, Metadata Working Group Lead: Provide input into the requirements for GEBCO and external metadata coverage services.
  - Vicki Ferrini, TSCOM, GMRT, Head Seabed 2030 Atlantic and Indian Ocean Center: Technical expertise/input, represents an external data service provider (GMRT) and provides additional guidance on metadata requirements.
- **Team Member 4:** Seabed2030. Responsibility - funding agency?

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Communication Plan:

- Online meetings to discuss progress, generate feedback
  - Primary Team Members (CCOM, TSCOM, DCDB): Monthly
  - Technical group (CCOM, Heffron): Bi-weekly
- Centralized documentation location - Google Drive

Risk Management:

- The primary risk is lack of time. All project members are participating in this in addition to extensive responsibilities elsewhere. In order to address this risk, we are restricting the scope of the project to a specific region and only a few services.
- Further restrictions/project reductions may have to be made to meet the November demonstration goal.

Budget:

- Project management and facilitation: $8000
- Travel support: ?
- Technical development: ?

Funding:

- CCOM: Contribution in kind
- DCDB: Contribution in kind
- Ocean Mapping Services: Contribution in kind
- GEBCO GGC: *$$$$?*
- Seabed2030: *$$$$$?*

Approval:

- Evert Flier, GEBCO GGC Chair
- Jamie McMichael-Phillips, Seabed 2030 Project Director?