



USCHC-42



NAVOCEANO Hydrographic Initiatives: Unmanned Systems (UxS) for Hydrography

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Hydrographic Initiatives – UxS for Hydrography



- **(1) USV Hydrographic Survey Operations in Gulf of Mexico**
 - **Award: Firm Fixed Price (FFP) service contract for evaluation of three USV platforms**
 - **Scope: “...to observe and evaluate the contractor’s ability collect and process meteorological and oceanographic information from an unmanned surface vehicle(s) (USVs)”**
 - *Emulate existing Naval METOC hydrographic survey missions*
 - **Operations to take place throughout FY19**



Hydrographic Initiatives – UxS for Hydrography



• (2) Hydrographic Survey Launch (HSL) Conversion

- **Pending award: Firm Fixed Price (FFP) service contract**
- **Scope: Conversion of existing HSLs to support variable manning levels during survey operations**
 - *Modes of operation to include fully-manned (status quo), partially manned, unmanned*
 - *Contract supports conversion of multiple HSLs (within 36 months of award)*
 - *Software maintenance*
- **Extensive requirements covering:**
 - *Platform controls (console and remote)*
 - *Communications*
 - *Situational awareness*
 - *Collision avoidance / grounding avoidance*
 - *Launch and recovery*

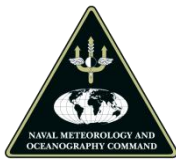




Hydrographic Initiatives – UxS for Hydrography



- **(3) Advanced Naval Technology Exercise (ANTX) 2019**
 - **Co-hosted by Naval Undersea Warfare Center Division, Newport (NUWC Newport) and Commander, Naval Meteorology and Oceanography Command (CNMOC)**
 - **Open invitation via Federal Business Opportunities (FBO) website**
 - “...where scientists, engineers, and sailors can evaluate technology at the research & development level before they become militarized”
 - “Survey, analyze, and explore the maritime domain”
 - **Scenario: “Multi-domain UxS operations supporting seafloor characterization”**
 - *Unmanned air, surface and subsurface platforms*
 - *C², collision avoidance, onboard processing of sensor data, data transmission*
 - **Q(s)2,3,4 - FY19**
 - **Success of ANTX 2018 to be presented as US Hydro 2019**



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NAVOCEANO Hydrographic Initiatives: Geospatial Enablement of Hydrographic Data

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Hydrographic Initiatives – Geospatial Enablement of Hydrographic Data



- *RDBMS for oceanographic datasets (NAVOCEANO and non-NAVOCEANO)*
- *Ship track and swath coverage geometry for each hydro/bathy file*
- *Contains pointers to source data files*
- *Established metadata*



- *Best resolution gridded bathy generated per survey (BAG)*
- *Populated after dataset validation efforts*
- *Programs available for viewing, extraction, combination*
- *BAG metadata fully populated*



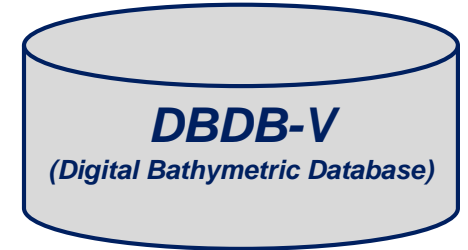
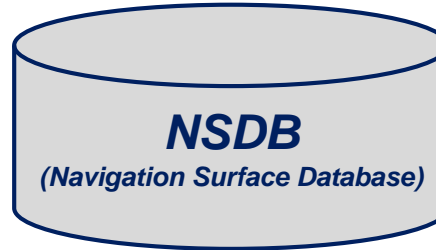
- *Seamless product resolution gridded bathymetry, variable resolutions*
- *Varying levels (organized by class/distro), multiple resolutions per level*
- *Programs available for extraction / combination, API available*
- *Limited metadata (no direct tie to data source)*



- *Branch level products*
- *Unique implementation for each group, no standardization*
- *Limited metadata*
- *Reside in various locations, no central repository*



Hydrographic Initiatives – Geospatial Enablement of Hydrographic Data



Goals (2017):

- Develop a comprehensive solution that reduces data discovery timelines – not necessarily replacing current resources or methods
- Ensure all relevant hydrographic / bathymetric data and products are geospatially enabled and accessible



Considerations:

- Solution must be accessible from a single interface
- Solution must be agile
- Solution must be fast and user friendly





Hydrographic Initiatives – Geospatial Enablement of Hydrographic Data

