

DATA ITEM DESCRIPTION

Title: Hydrography

Number: HNC-004

Approval Date: 20140718

AMSC Number:

Limitation:

DTIC Applicable: No

GIDEP Applicable: No

Office of Primary Responsibility: CEHNC-EDC-G

Applicable Forms: Attachment A – Hydrographic Data Submittals & Due Dates

Use/Relationship: This Data Item Description contains instructions for preparing UFP-QAPP Worksheets and data requirements when addressing hydrographic investigations for Munitions Response or other munitions related projects. This DID specifies naming and formatting conventions for data deliverables associated with hydrographic activities. This DID shall be used in association with EM 1110-2-1003. Additional references include the National Oceanic and Atmospheric Administration Hydrographic Surveys Specifications and Deliverables (NOAA, 2012) and the International Hydrographic Organization (IHO) Manual on Hydrography, Publication C-13 (IHO, 2011).

Requirements:

1. Hydrographic Survey Plan. The Contractor shall incorporate all aspects of the Hydrographic Investigation into the UFP-QAPP for MEC and related SOPs. The plan shall provide details of the approach, methods, and operational procedures to be employed to perform hydrographic surveys at Munitions Response or other munitions related projects. The plan shall describe how hydrographic surveys and related activities will meet the project's Data Quality Objectives (DQOs). Hydrographic data needs and operating procedure requirements shall be identified and specified to support project DQOs. Additionally, the following topics shall be addressed in the hydrographic survey plan:

- a. Specific Area(s) to be investigated, including a Survey Mission Plan Map.
- b. Account for and address all known project specific constraints, adverse conditions or features potentially affecting surveys (i.e. endangered species, hazards to navigation, wind/waves.)
- c. Hydrographic equipment and field procedures (i.e. Side-scan Sonar, Multibeam Sonar)
- d. Required field documentation (e.g. QC checklists)
- e. Data processing, corrections and analysis
- f. Descriptions of final data formats and final map formats.

2. Quality Control. The hydrographic sections of the QC plan shall follow guidance provided in EM 1110-2-1003 (see Table 11-2) and be incorporated into the UFP-QAPP for MEC and related SOPs. At a minimum, the quality control plan shall address horizontal and vertical accuracy of the data. Additional quality control elements may be identified by the PDT dependent on the IHO standards being met to satisfy project needs. The quality control plan shall identify meaningful and reasonable QC checking and testing procedures to define and document the quality achieved by the work processes performed and in the data generated. The QC plan shall include procedures for performing root-cause analyses when failures occur. Results of QC tests and calibrations shall be documented in an Access database, Excel spreadsheet or some other format as determined by the PDT.

3. Data Format Requirements. The formats specified in this paragraph are REQUIRED to be exactly followed, although the Contractor may choose to submit the data in additional formats as well. All hydrographic data shall be accompanied by metadata in the form of a read-me file or a database or spreadsheet table documenting the processing performed and data naming conventions. Metadata shall fully describe all measurements recorded in each data file, and shall include all information necessary to successfully associate all hydrographic system measurements to their correct geographical location.

a. Raw Hydrographic Survey Data Format and Storage. Raw survey data will be stored in a logical file directory (folder) structure to facilitate its management and dissemination to PDT members. Raw field data is defined as all digital data generated from the hydrographic system in its native format, and includes any other peripheral or instrument measurements collected or recorded during data acquisition. All raw field data shall have a time stamp associated with each measurement event. At the discretion of the PDT, raw field data may include hydrographic system data that has been checked, corrected and processed into ASCII files, either individually by instrument or merged with positioning data.

b. Final Processed and Advanced Processed Data Format and Storage. Final and Advanced (as required) processed data shall be produced and presented in ASCII formatted files and native hydrographic processing software formats (e.g. Fledermaus). Final processed data is defined as data that represents, to the best of the Contractor's ability, the true nature that exists at each actual location measured by the hydrographic system. Final processed data shall have all corrections applied needed to correct for positioning offsets, roll-pitch-yaw-angle offsets, sound speed corrections, and tide corrections. Advanced processed data is defined as Final Processed data that has been subjected to additional advanced processing (e.g. editing) techniques. All corrections and processing steps will be documented in metadata. Metadata for final processed and advanced processed data shall include UTM zone, coordinate units and datum (the PDT or PWS may require additional coordinate units and projections be included). All measurement events shall have a time stamp. Each data file will be logically and sequentially named so that the file name can be easily correlated with the project-specific naming conventions used by the PDT. Naming conventions of files and data fields shall be included with metadata.

c. GIS Format. For final hydrographic data submittals, the contractor shall provide geospatial files in standard ESRI ArcGIS formats; to include shapefiles, Geo-Tiffs, ASCII Grids, etc. Map images in a common image format (e.g. JPEG) for viewing without the software used to produce the maps shall also be provided. Maps will include all the following basic map features in addition to any other necessary site information.

(1) General: Map scales should be even multiples of the base units presented in the map. Map sizes should be designed to fit standard printer or plotter sizes. Grid ticks or grid lines should be visible and labeled.

(2) Title block: Include Figure number, the map Title and sub-title (e.g. instrument and type/component) and the location of the information being presented (e.g. site/area name and property/grid ID).

(3) Legend: All objects/symbols shown on the map should be identified in the legend. Map Scale bar, coordinate system and North arrow shall be included. Color scale bars should use a typical color scheme that clearly shows depth variation.

(4) Additional Project Information: minimum requirements are to have boxes for the following information: Client, Project, Contractor, Map creator, Map approver, Date created.

4. Data Submittals

The Contractor shall furnish all hydrographic data, maps and QC records to USAESCH, via internet using USACE-approved FTP, E-mail attachment for small files under 5 Mb, CD/DVD or other approved method, for inspection. The delivery schedule shall be in accordance with Attachment A, unless otherwise established by the PDT. The Contractor shall also provide a digital planimetric map in ESRI ArcGIS, Geosoft, or other approved format, and coincident with the location of the hydrographic survey, so that

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each day's data set can be registered within the original mission plan survey map. Any QC failures shall be identified and the corrective action that is being taken shall be described. The final report deliverable shall include two copies on External Hard-drive/DVD of final project data and one copy of the raw data.

6.0 Contractor Minimum Performance And QC Requirements

The Contractor shall include in their QC plan specific tests to document the minimum standards for the hydrographic survey (e.g. IHO Order 1). The specific quality metrics may be adjusted upon request provided the Contractor supplies supporting documentation and rationales for Government concurrence. All reported QC results and documentation will be reviewed as part of Government QA. In the event a requirement is not met and the contractor submits the data to the Government, the contractor shall provide rationales for accepting them. All such rationales will be reviewed as part of government QA. If the rationales are either insufficient or technically unfeasible, or are attempts to justify non-conformances that should be corrected to meet project needs, the Government will issue a Corrective Action Request to the contractor and the submittal(s) will be rejected.

7. End of DID HNC-004.

DID USERS-TBD
Attachment A

Hydrographic Data Submittals & Due Dates

	With Each Submittal	24 hours after collection	24 hours after request by government representative	14 days after survey is complete, per survey area	HD/DVD With Final Report
ReadMe File	X				
Index Map	X				
Updated QC Access Database / Spreadsheet	X				
First Week's surveying and QC data		X			
Special Request Draft Data			X		
Initial Processed Data Package for each week's data collection (Geospatial data, Maps, Field Data Sheets, & QC documentation)				X	
All Raw & Final Digital Data, Maps, Final QC Access Database, Final QC documentation					X