



United States of America



Progress toward Safe Navigation U.S. National Report to the 40th U.S.-Canada Regional Hydrographic Commission

Rear Admiral Shepard M. Smith, NOAA
Captain John Lowell (NOAA ret.), NGA
Rear Admiral Tim Gallaudet, U.S. Navy

April 20, 2017 Galveston, Texas, USA



US Hydrographic Leadership Recap

• NOAA

- Director Office of Coast Survey
 - **RDML Shepard M. Smith** *(as of August 2016)*
- Chief, Coast Survey Development Lab
 - **Captain Edward J. (“E.J.”) Van Den Ameele** *(as of February 2017)*
- Chief, Nautical Services
 - **Captain Jim Crocker** *(as of April 2017)*

• NGA

- Chief Hydrographer
 - **Captain John Lowell (NOAA, ret.)**
- Director Maritime Safety Office
 - **Captain Brian Connon**

• Navy

- Commander Naval Meteorological and Oceanography Command (CNMOC) and Hydrographer of the Navy and Navigator of the Navy
 - **RDML Timothy Gallaudet**



A Few Key Points for NOAA priorities

- New National Charting Plan (RDML Smith/Ence)
- New focal areas in hydro surveys (Capt. Brennan)
- Unmanned systems roadmap (Capt. Van Den Ameele)
- External Sources of Data (Capt. Brennan)
- Seabed 2030 (Capt. Lowell)

Each of these will be presented in more detail later today



A few other highlights...


A new public geoportal webpage describing all of our NOAA in-house hydro surveys projects

Story Map: NOAA Planned Hydrographic Survey Projects - 2016 NOAA's Office of Coast Survey

North Coast of Kodiak Island | North Coast Unalaska (Dutch Harbor) | Approaches to Wilmington | Approaches to Savannah | South Coast of Kodiak Island | West Prince of Wales Island | George and Carol Inlets | Behm Canal | **Southern Chesapeake Bay**

Southern Chesapeake Bay -- OPR-E350-TJ-2016
Planned project dates: March 2016 - May 2016
Planned days at sea: 36
Area: Approx. 40 square nautical miles

This project will provide contemporary surveys to update Coast Survey's nautical charting products. It will cover approximately 40 square nautical miles. Local constituents have raised concerns over the accuracy of nautical charts in the area, directly affecting their ability to safely navigate. Survey data from this project is intended to supersede all prior survey data in the common area and address the constituent concerns. NOAA Ship Thomas Jefferson will complete this survey with Survey Launches only.

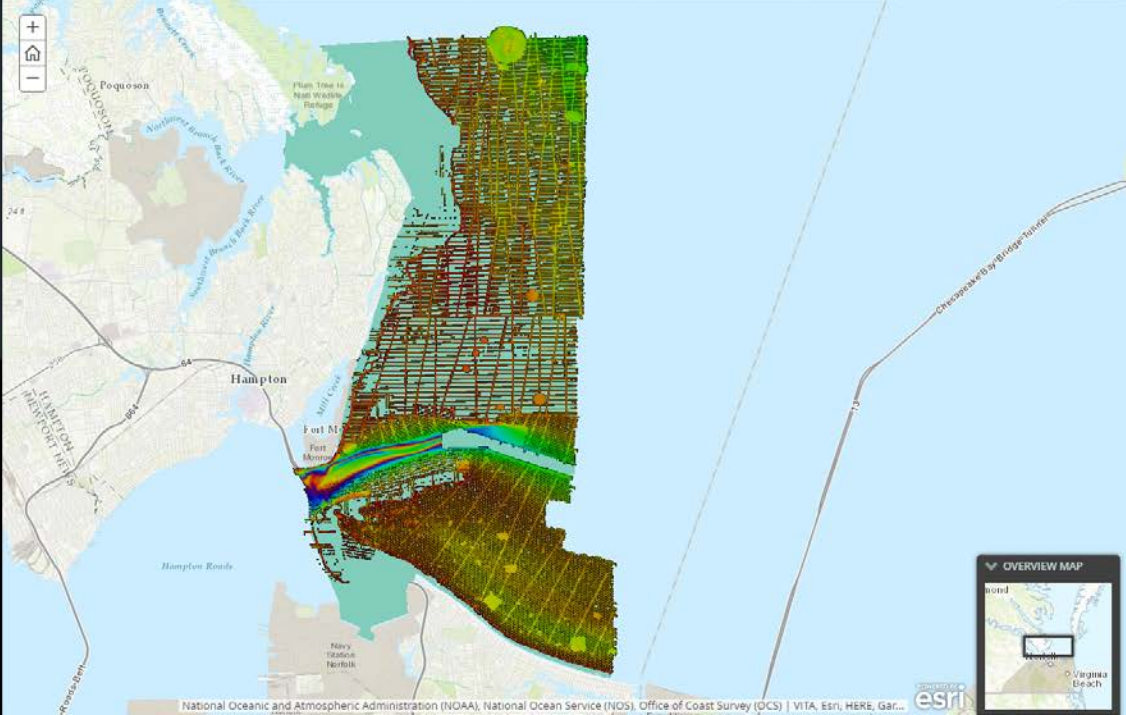


NOAA Ship *Thomas Jefferson*

For more information about Coast Survey activities, you can sign up for our newsletter or blog.

NOAA's Office of Coast Survey is responsible for planning hydrographic surveys. Planned hydrographic surveys are derived from NOAA's Hydrographic survey priorities, constituent requests submitted through navigational managers, and other factors. Note that these plans are tentative and subject to change based on each fiscal year's budget allocation, developing priorities and emerging constituent requests. Planned hydrographic surveys can be accessed via [REST service](#).

Project Progress Sketch
H12866 Progress as of 8/22/2016

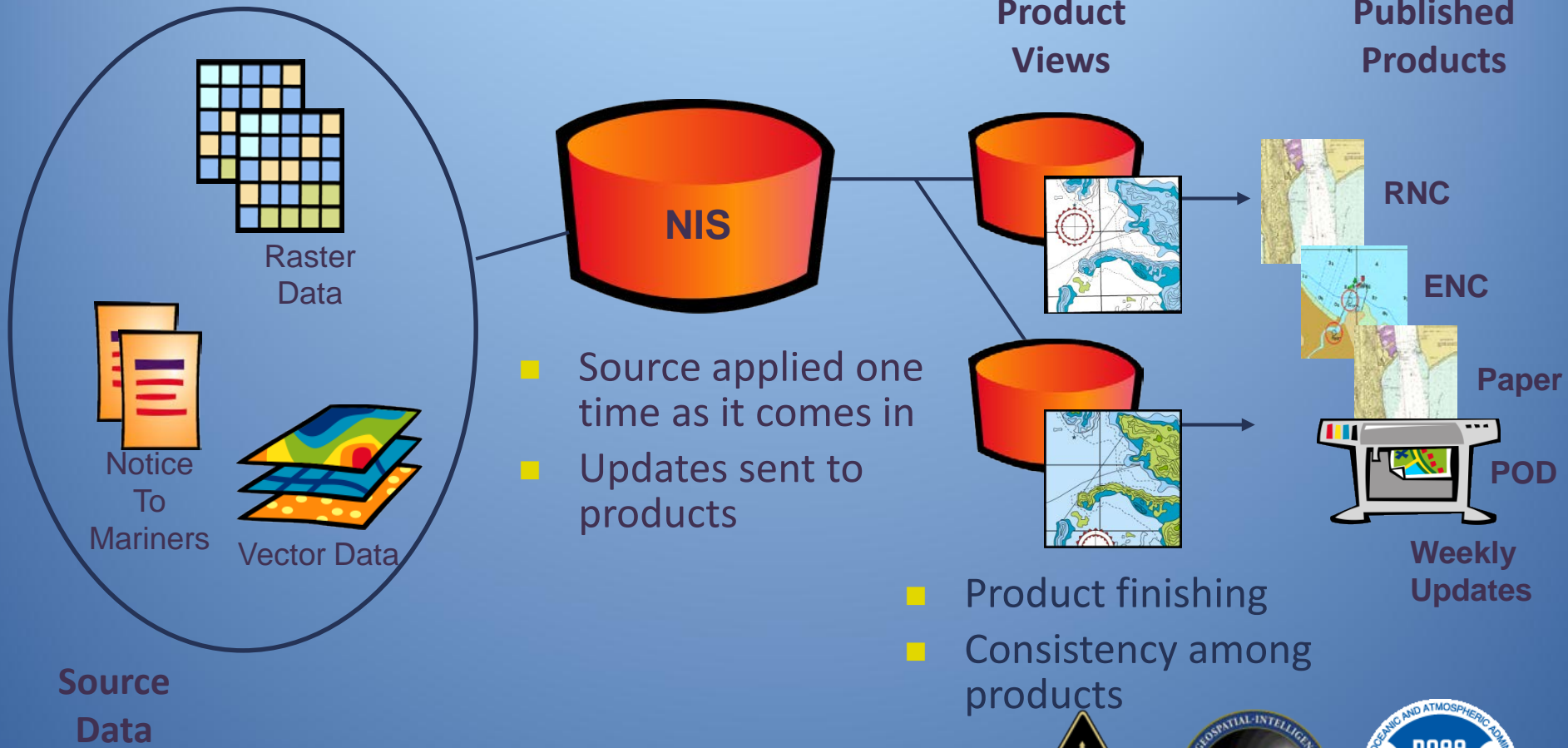


National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Coast Survey (OCS) | VITA, Esri, HERE, Garmin

<http://noaa.maps.arcgis.com/apps/MapSeries/index.html?appid=c04dbc f9398d4933b9bfacd01758b5e1>

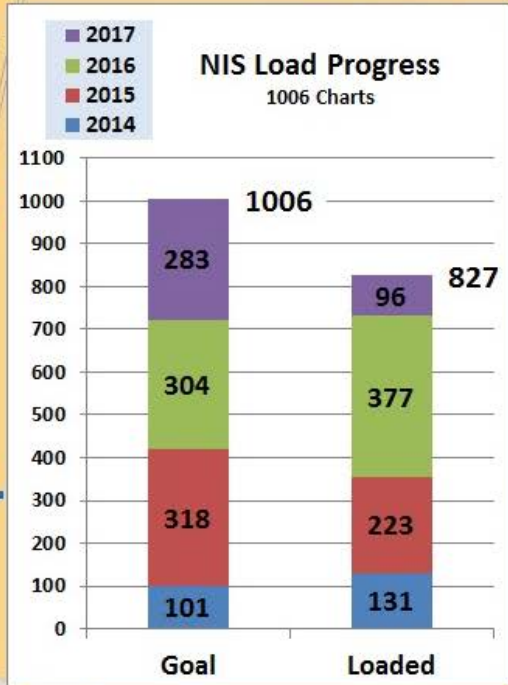


We have completed the transition to the new chart production system



Charts Loaded into the NIS

■ 300K and Larger
■ Small Scale



**WEST COAST
LOAD
COMPLETED**

**Alaska
LOAD
COMPLETED**

**FLORIDA
LOAD
COMPLETED**

Pacific Islands

**LOAD
COMPLETED**

Caribbean Islands

**LOAD
COMPLETED**



Aging Survey Ships & Ship Recapitalization

Fairweather and Rainier - 48 years old



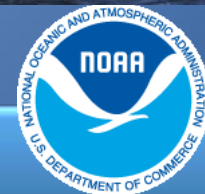
Ferdinand R. Hassler - 4 years old

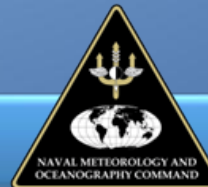
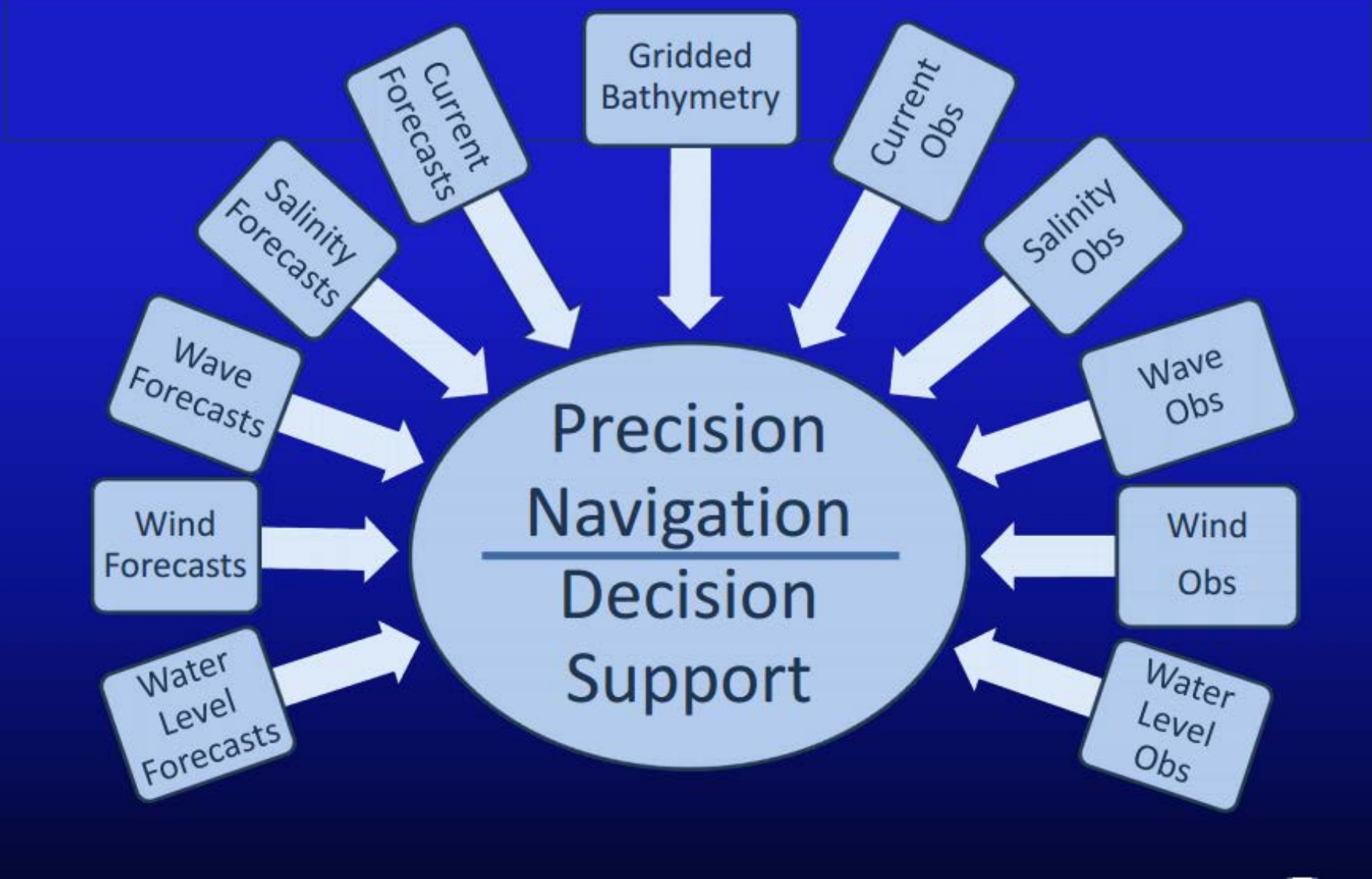


Thomas Jefferson - 25 years old



GAO Report:



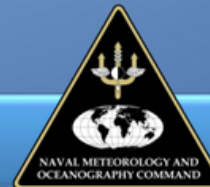
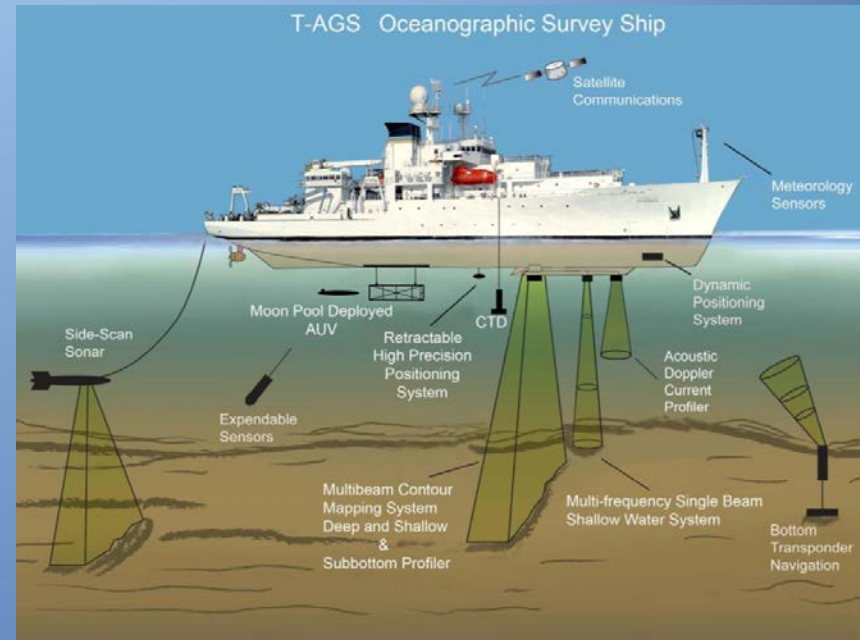


USNS Maury



- **Contract Award** 22 Dec 09
- **Start of Construction** 22 Sep 10
- **Keel Laying** 01 Feb 11
- **Launch** 27 Mar 13
- **Delivery Date** Feb 16
- **FCT** Dec 16

- **Length 353 ft / Beam 58 ft**
- **Draft, Load Line 19 ft**
- **Displacement 4,888 LT**
- **Max Speed > 12 kts**
- **Range (10% reserve) 12,000 NM**
- **Endurance (on Station) 29 days**
- **Propulsion (4) Diesel Gens, (2) Azimuth Z-drives**
- **Accommodations 67**
- **ABS Classed to A1 Circle E, AMS and ACCU**
- **Designed to ABS 1989 Ice Class C**



LBS-AUV Operations

Vehicle Status

-6 operational

-1 in acceptance testing

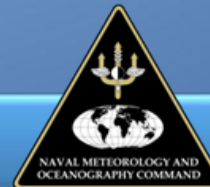
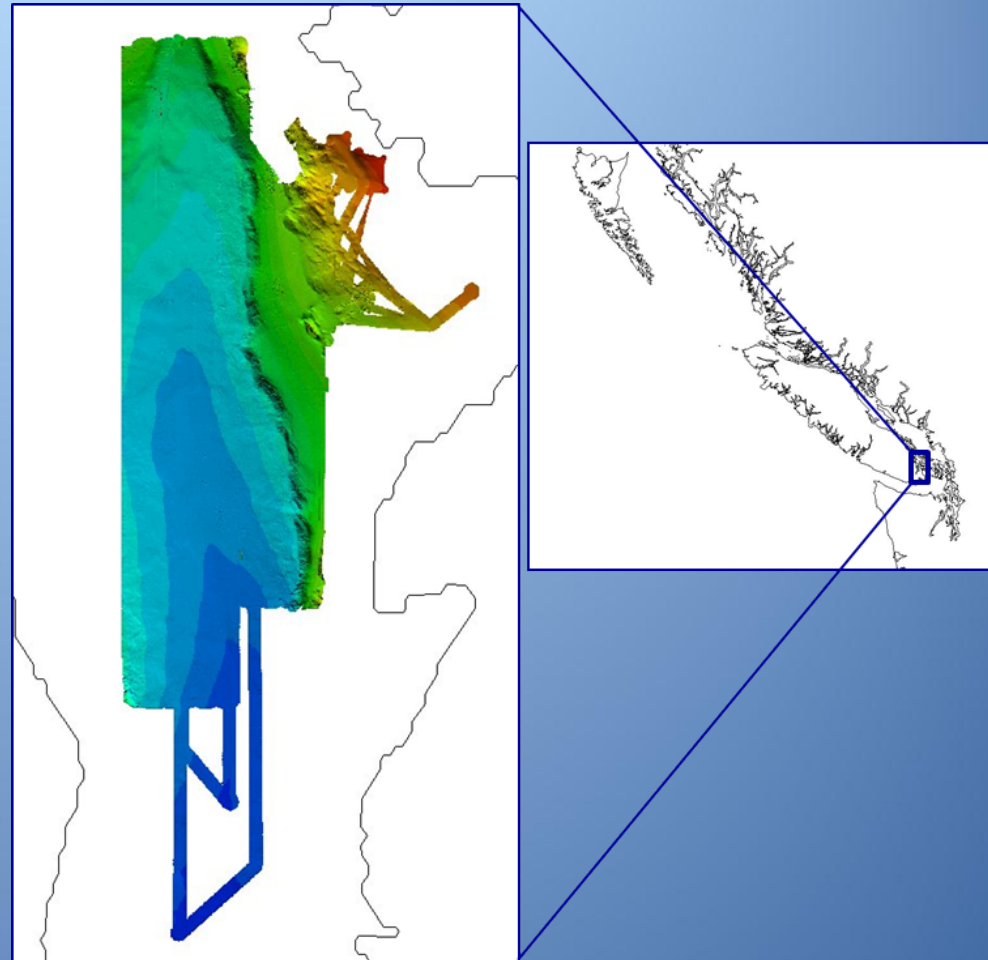
IOS - Sidney, BC

13 June – 13 July 2015

-4 vehicles tested

-Data compared to HSL EM2040

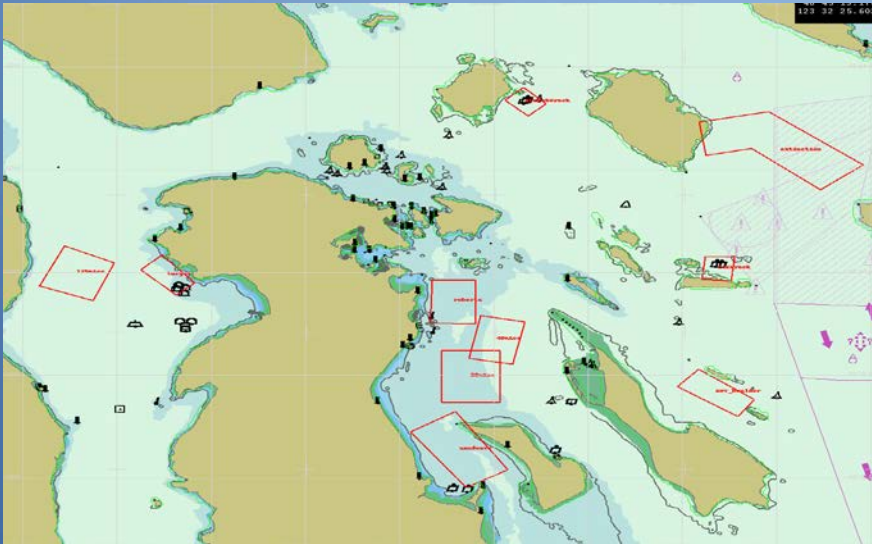
-Capable of meeting IHO Order 1
uncertainty requirements



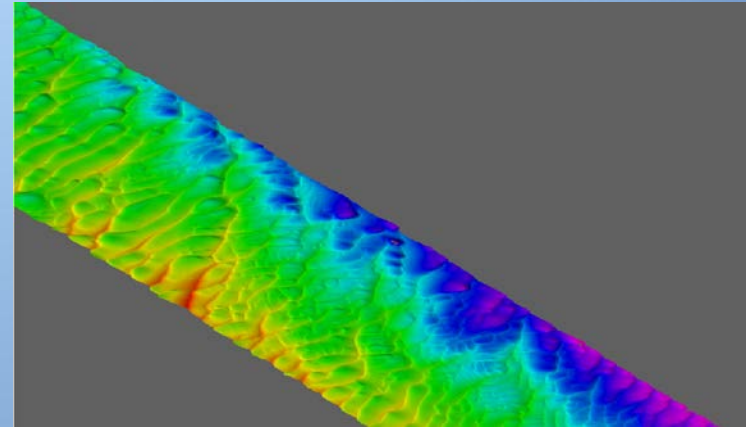
HSL Multibeam Replacement Progress

Cooperative multiyear effort performed with IOS
2011 – Development of ground truth data and assessment of initial capabilities
2012 – 2016 – SAT of two to four sets of transducers and PUS
2011 & 2015 – SAT of two and four LBS AUVs
2016 will conclude HMR program

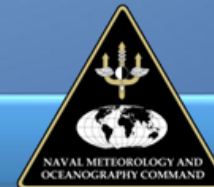
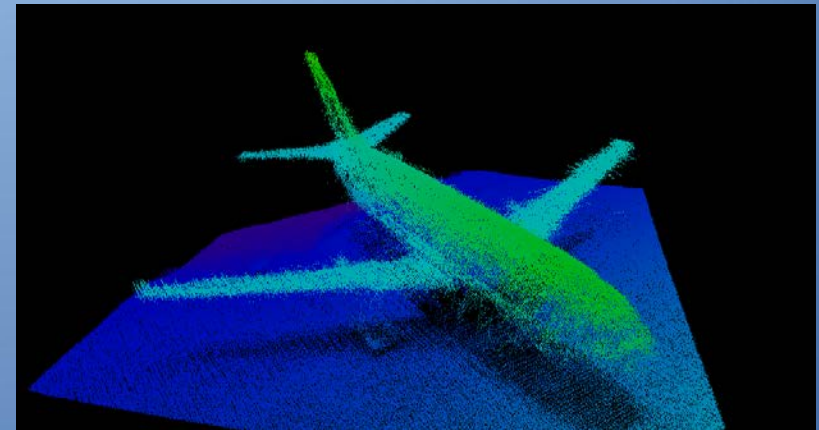
Sidney / IOS Test Areas



Sand Waves

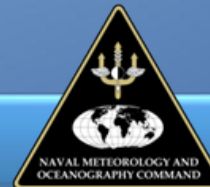


Chemainus 737



NGA Proposed Chart Production in USCHC Region 2017

- A. 11493 – Kings Bay Cumberland Sound (North)
 - 1:10000
 - Conversion from feet to meters
- B. 11494 – Kings Bay Entrance Channel –Cumberland Sound (South)
 - 1:15000
 - Conversion from feet to meters
- C. 17003 – Strait of Juan de Fuca to Dixon Entrance
 - 1:1250000
- D. 18766 – San Diego to Isla De Todos Santos
 - 1:180000



A plug for the our speakers this week

- Do we want to list speakers and titles out?
- NOAA OCS speakers about 13, NGA 2, Navy 2
- We could offer this as a handout to supplement what will likely be small font on this slide.





Questions?



Zones of Confidence Diagrams

- Enable mariners to assess the limitation of hydrographic data
- Equivalent to the CATZOC attribute used on the ENC
- Based on the IHO S-4 Charting Specification
- All charts produced from NCSII will use ZOC diagrams

ZOC CATEGORIES (Refer to Chapter 1, <u>United States Coast Pilot</u>)				
ZOC	DATE	POSITION ACCURACY	DEPTH ACCURACY	SEAFLOOR COVERAGE
A1	2008 - 2009	± 16.40ft	= 1.64ft + 1% <i>d</i>	All significant seafloor features detected.
B	1949	± 164.04ft	= 3.28ft + 2% <i>d</i>	Uncharted features hazardous to surface navigation are not expected but may exist.
C	1949	± 1640.42ft	= 6.56ft + 2% <i>d</i>	Depth anomalies may be expected.
D	-	Worse than ZOC C	Worse than ZOC C	Large depth anomalies may be expected.

