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**

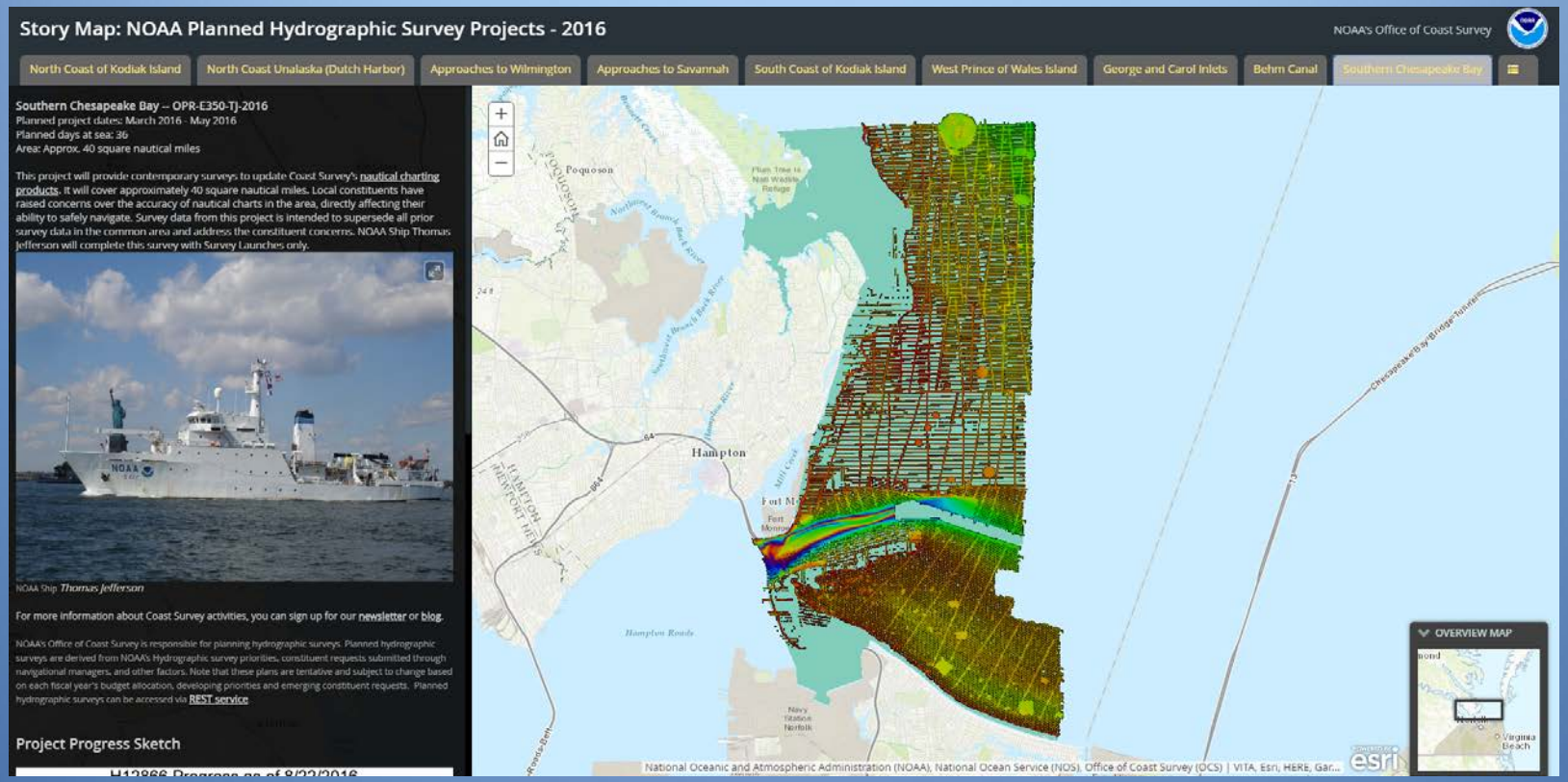
A Few Key Points for NOAA priorities

- 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

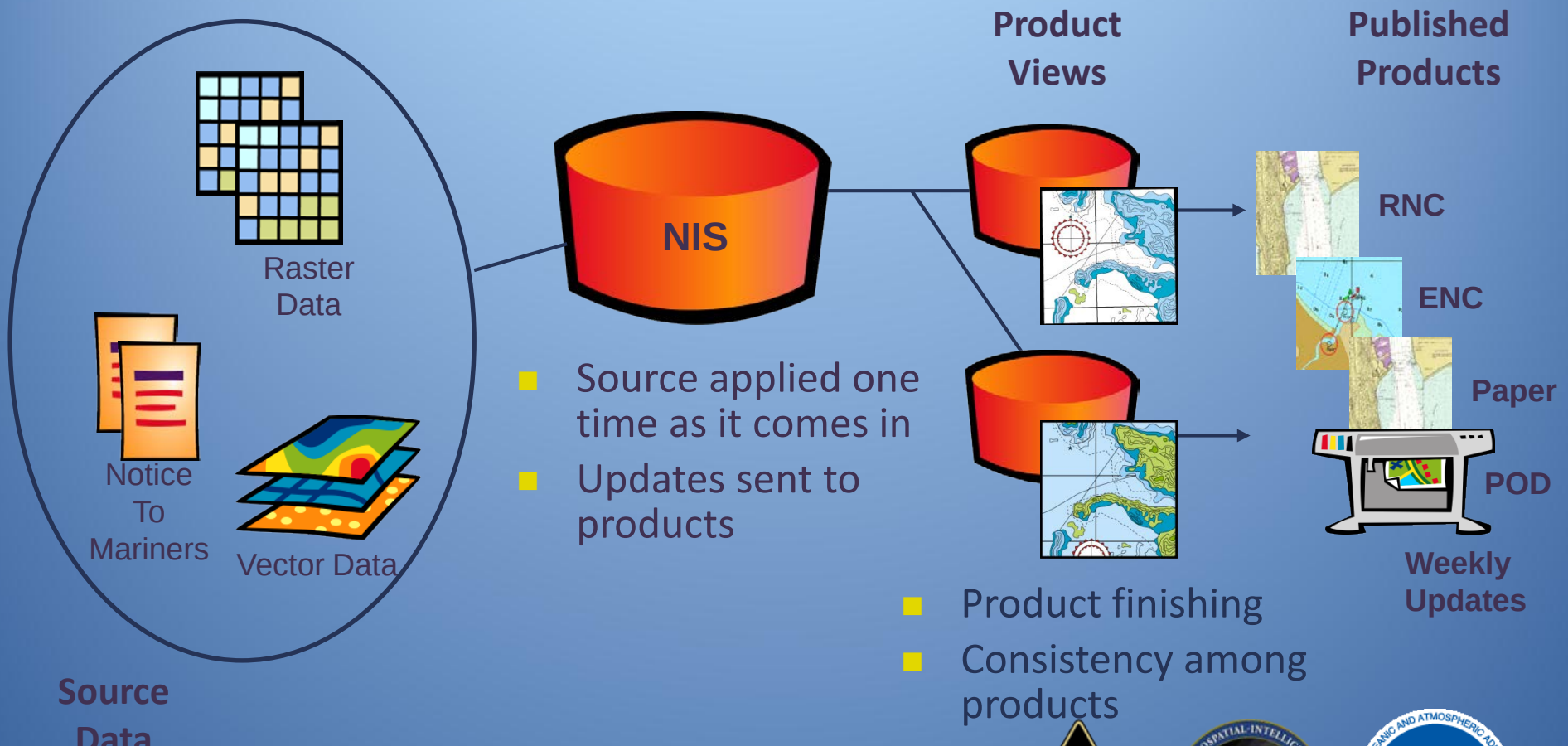
A few other highlights…

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



http://noaa.maps.arcgis.com/apps/MapSeries/index.html?appid=c04dbcf9398d4933b9bfacd01758b5e1

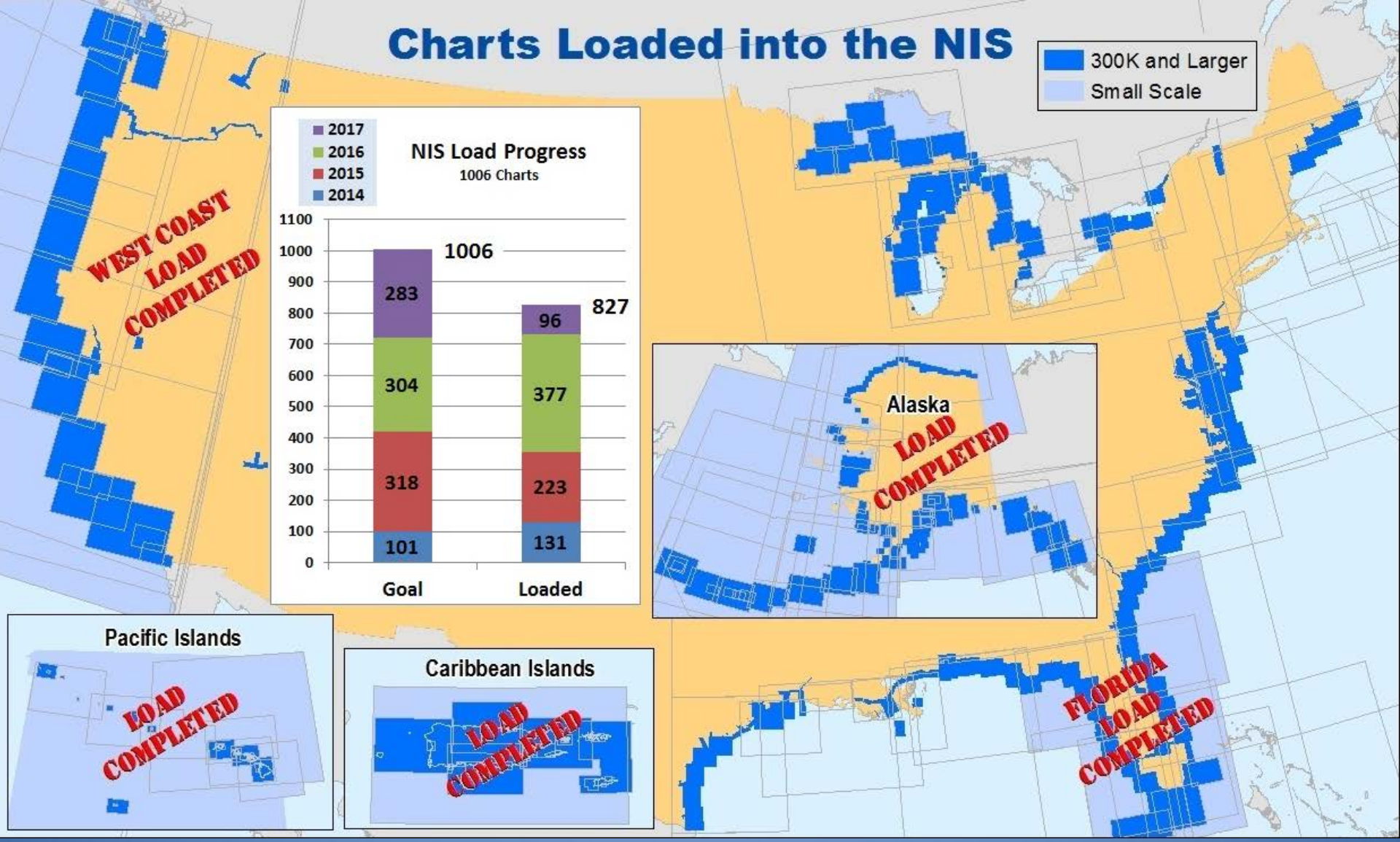
We have completed the transition to the new chart production system



- Source applied one time as it comes in
- Updates sent to products

- Product finishing
- Consistency among products

Charts Loaded into the NIS



NAVAL METEOROLOGY AND OCEANOGRAPHY COMMAND

NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY UNITED STATES OF AMERICA

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION U.S. DEPARTMENT OF COMMERCE

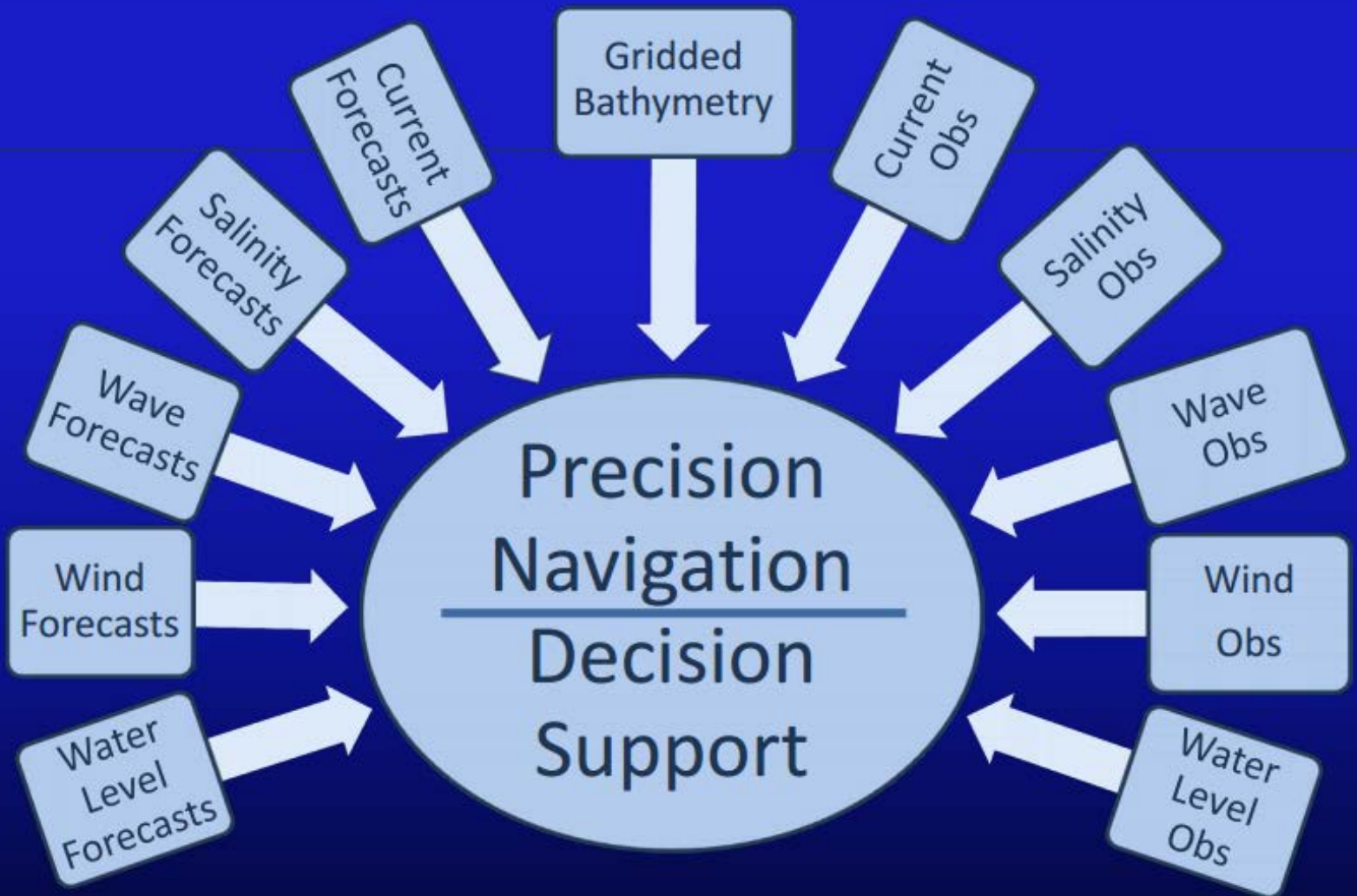
Aging Survey Ships & Ship Recapitalization

***Fairweather* and *Rainier* - 48 years old**

***Ferdinand R. Hassler* - 4 years old**

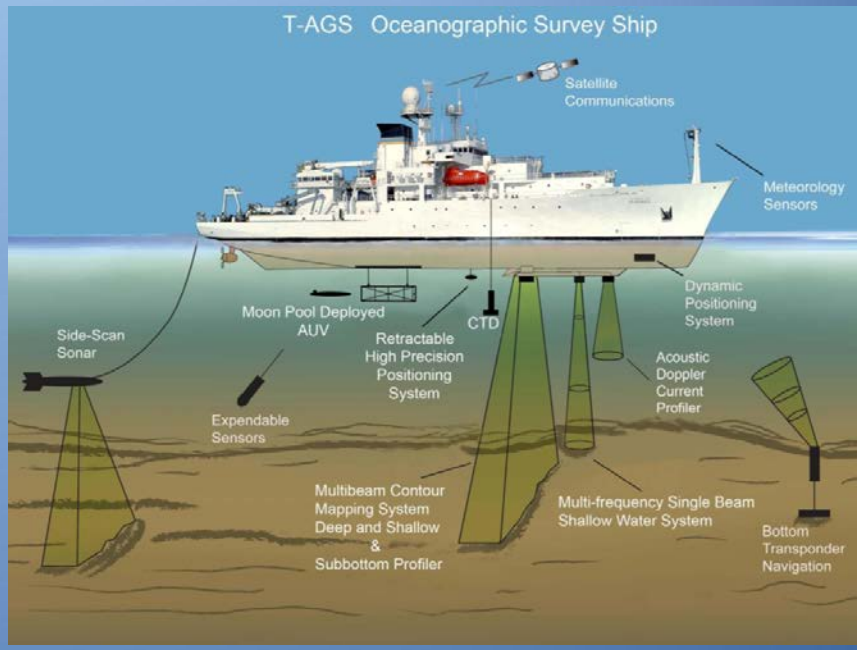
***Thomas Jefferson* - 25 years old**

GAO Report:


Gridded Bathymetry
Current Forecasts
Current Obs
Salinity Forecasts
Salinity Obs
Wave Forecasts
Wave Obs
Wind Forecasts
Wind Obs
Water Level Forecasts
Water Level Obs
Precision Navigation
Decision Support

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**

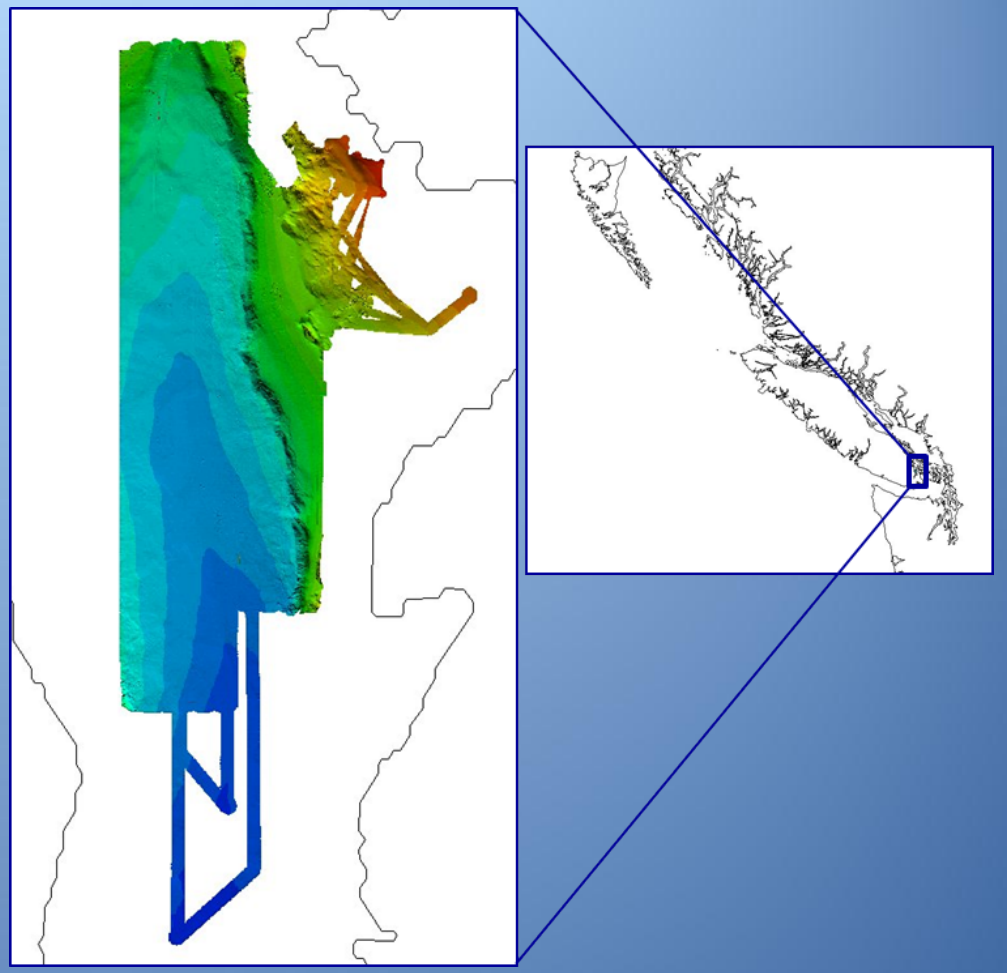


- **Length 353 ft / Beam 58 ft**
- **Draft, Load Line 19 ft**
- **Displacement 4,888 LT**
- **Max Speed > 12 kts**
- **Range (10% reserve) 12,000 NM**
- **Endurance (on Station) 29 days**
- **Propulsion (4) Diesel Gens, (2) Azimuth Z-drives**
- **Accommodations 67**
- **ABS Classed to □A1 Circle E, □AMS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

LBS-AUV Operations

Vehicle Status
-6 operational
-1 in acceptance testing

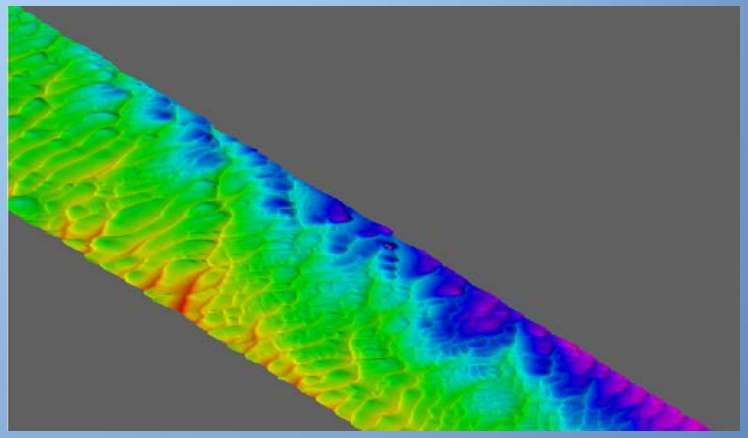
IOS - Sidney, BC
13 June – 13 July 2015
-4 vehicles tested
-Data compared to HSL EM2040
-Capable of meeting IHO Order 1 uncertainty requirements



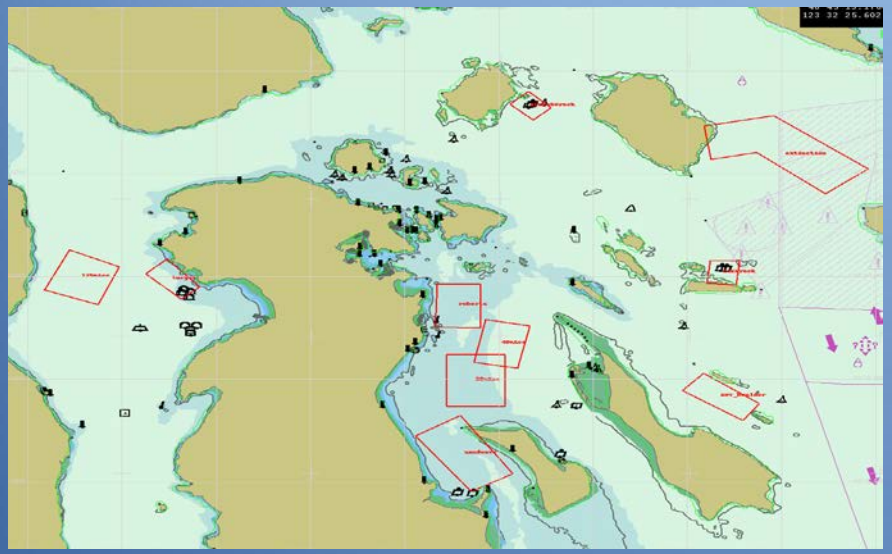
HSL Multibeam Replacement Progress

<u>Cooperative multiyear effort performed with IOS</u>
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

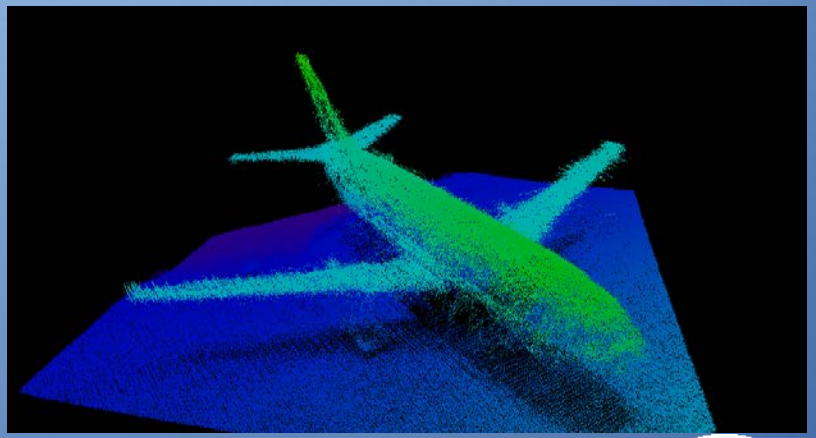
Sand Waves



Sidney / IOS Test Areas



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, United States Coast Pilot)

ZOC	DATE	POSITION ACCURACY	DEPTH ACCURACY	SEAFLOOR COVERAGE
A1	2008 - 2009	± 16.40ft	= 1.64ft + 1%d	All significant seafloor features detected.
B	1949	± 164.04ft	= 3.28ft + 2%d	Uncharted features hazardous to surface navigation are not expected but may exist.
C	1949	± 1640.42ft	= 6.56ft + 2%d	Depth anomalies may be expected.
D	-	Worse than ZOC C	Worse than ZOC C	Large depth anomalies may be expected.