



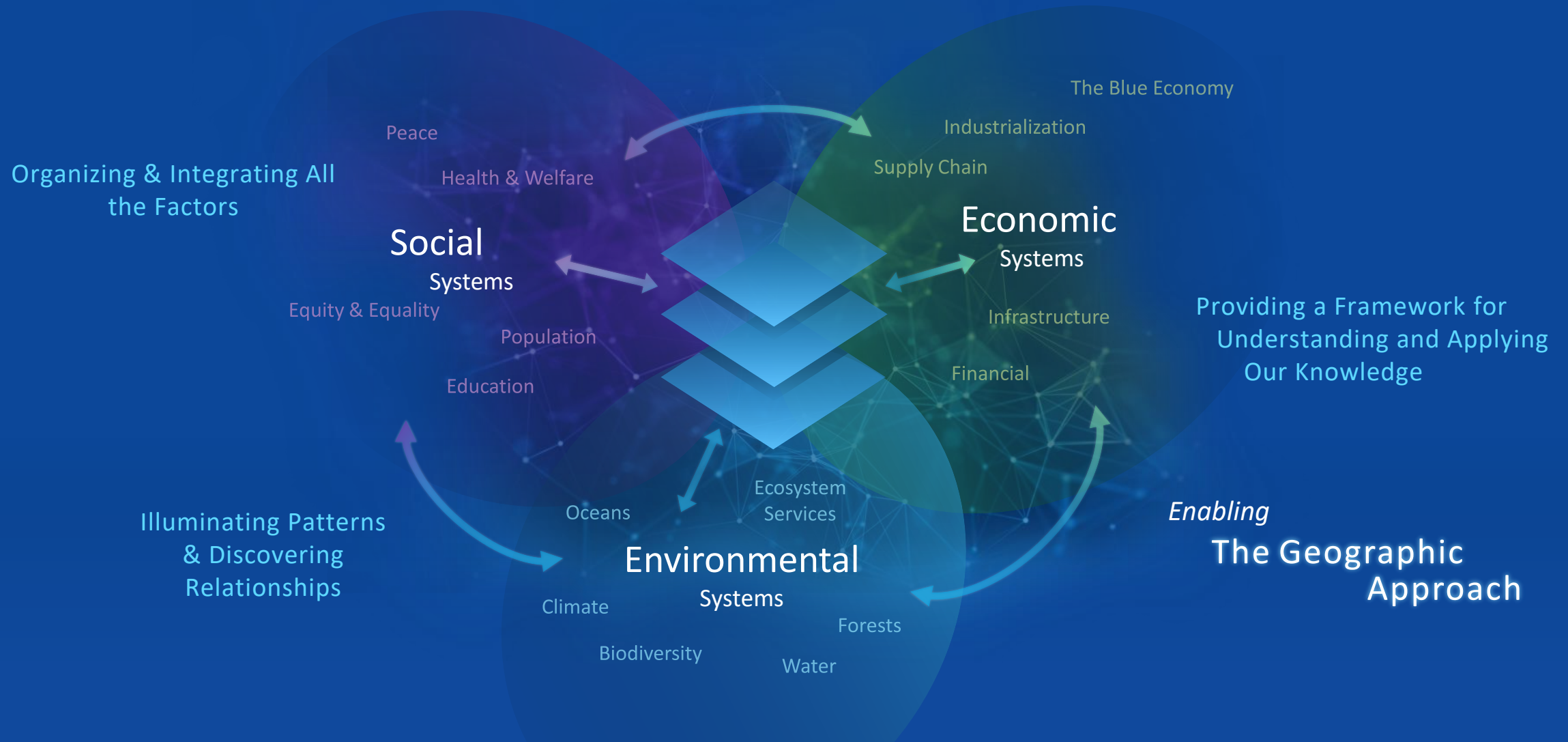
A GIS Perspective on Data-Driven Products & Services

Geoff Dean
Sr. Business Development Manager - Maritime



The Geographic Approach

Geography provides the science & language



ArcGIS

A System for managing, sharing & applying the geographic approach



*Delivering Value Across Organizations
Improving Efficiency, Communications, Decision Making and Collaboration*

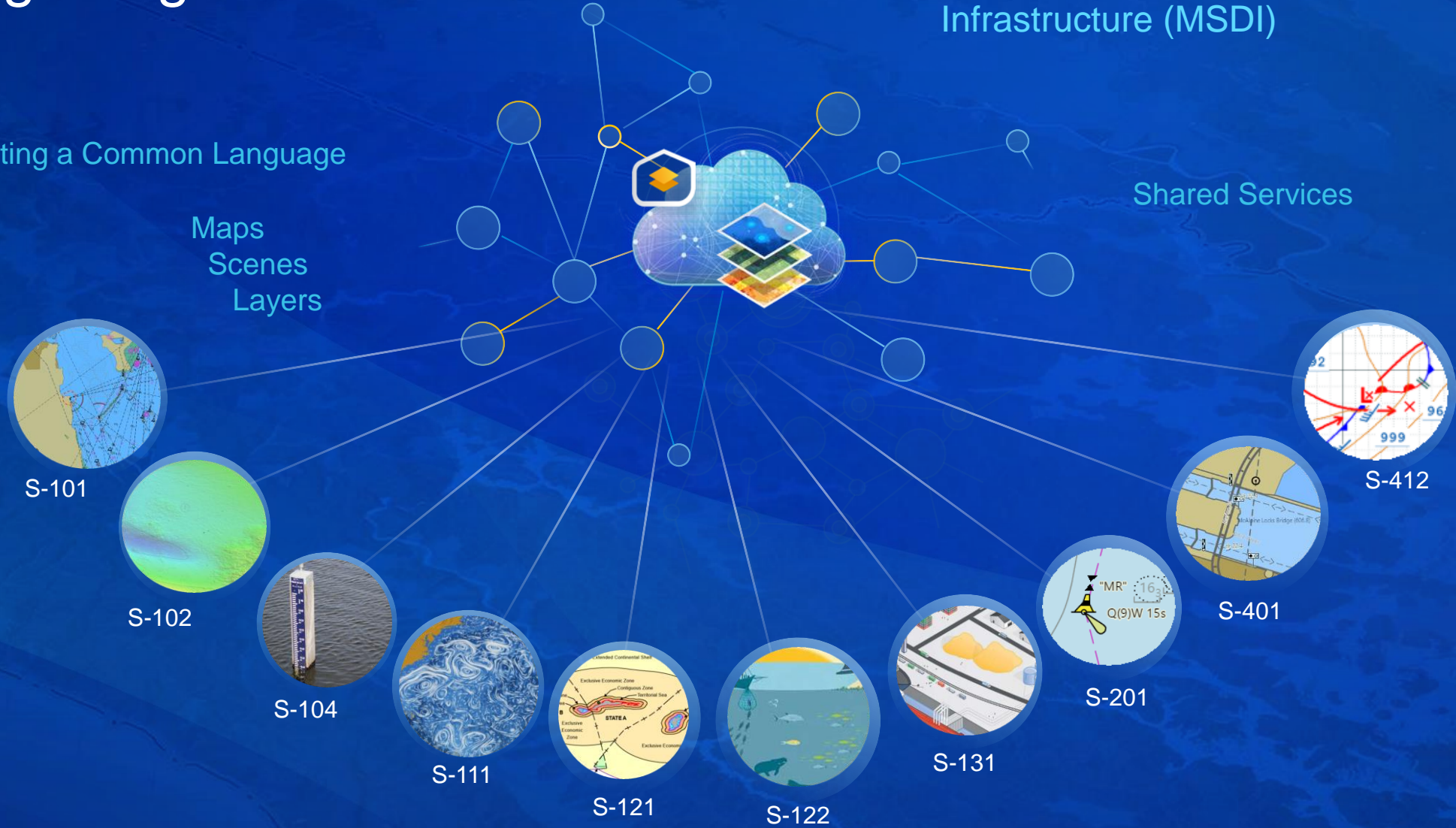
Integrating S-100 Data

Geospatial
Infrastructure (MSDI)

Creating a Common Language

Maps
Scenes
Layers

Shared Services



S-101

S-102

S-104

S-111

S-121

S-122

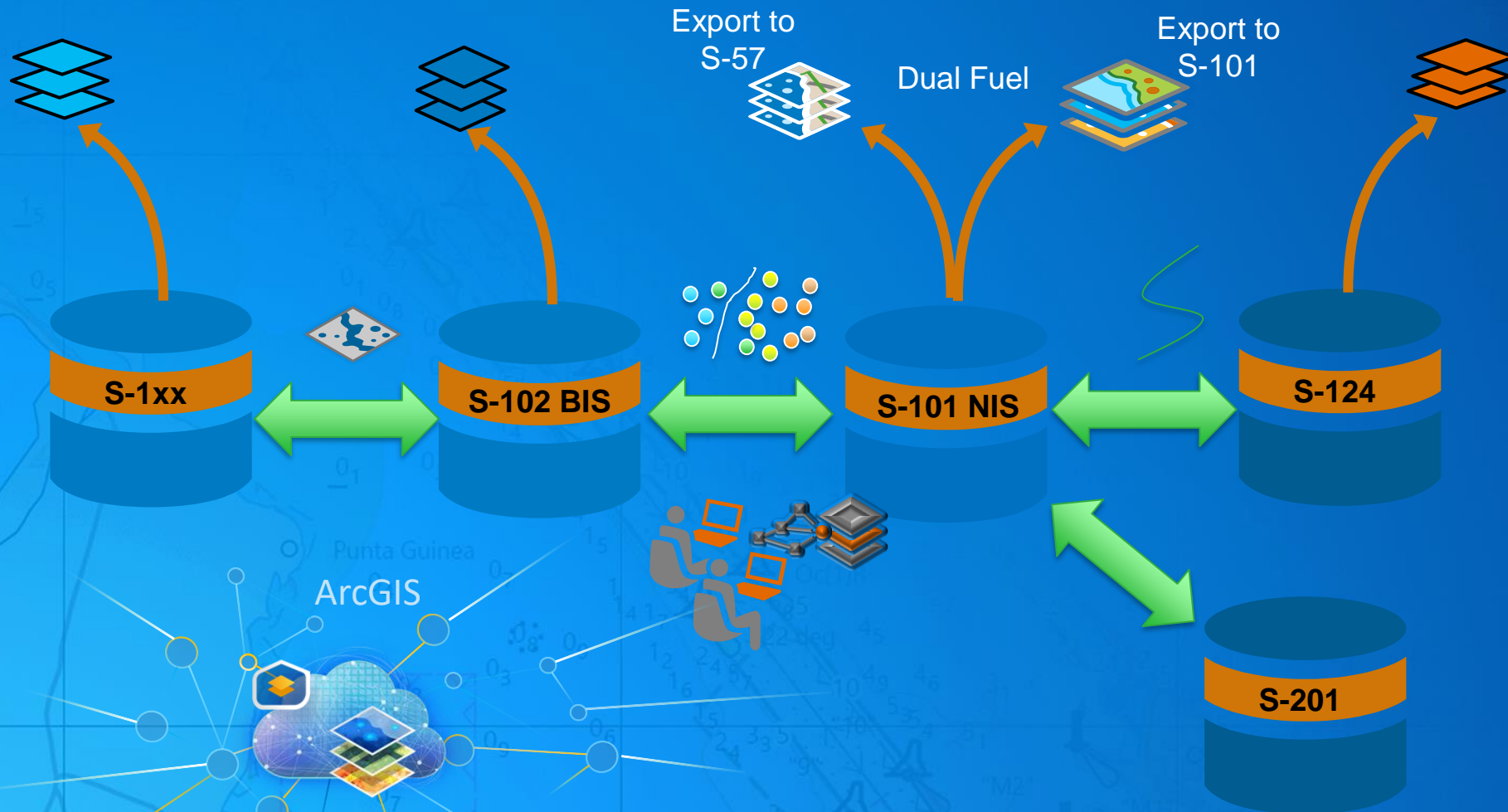
S-131

S-201

S-401

S-412

S-100 Data Sharing & Collaboration



Enabling Agency Collaboration

Hydrographic office

- S-101 (ENC)
- S-102 (Bathymetric Surface)

Maritime Safety Authority

- S-124 (Navigational Warnings)
- S-201 (Aids to Navigation Info)

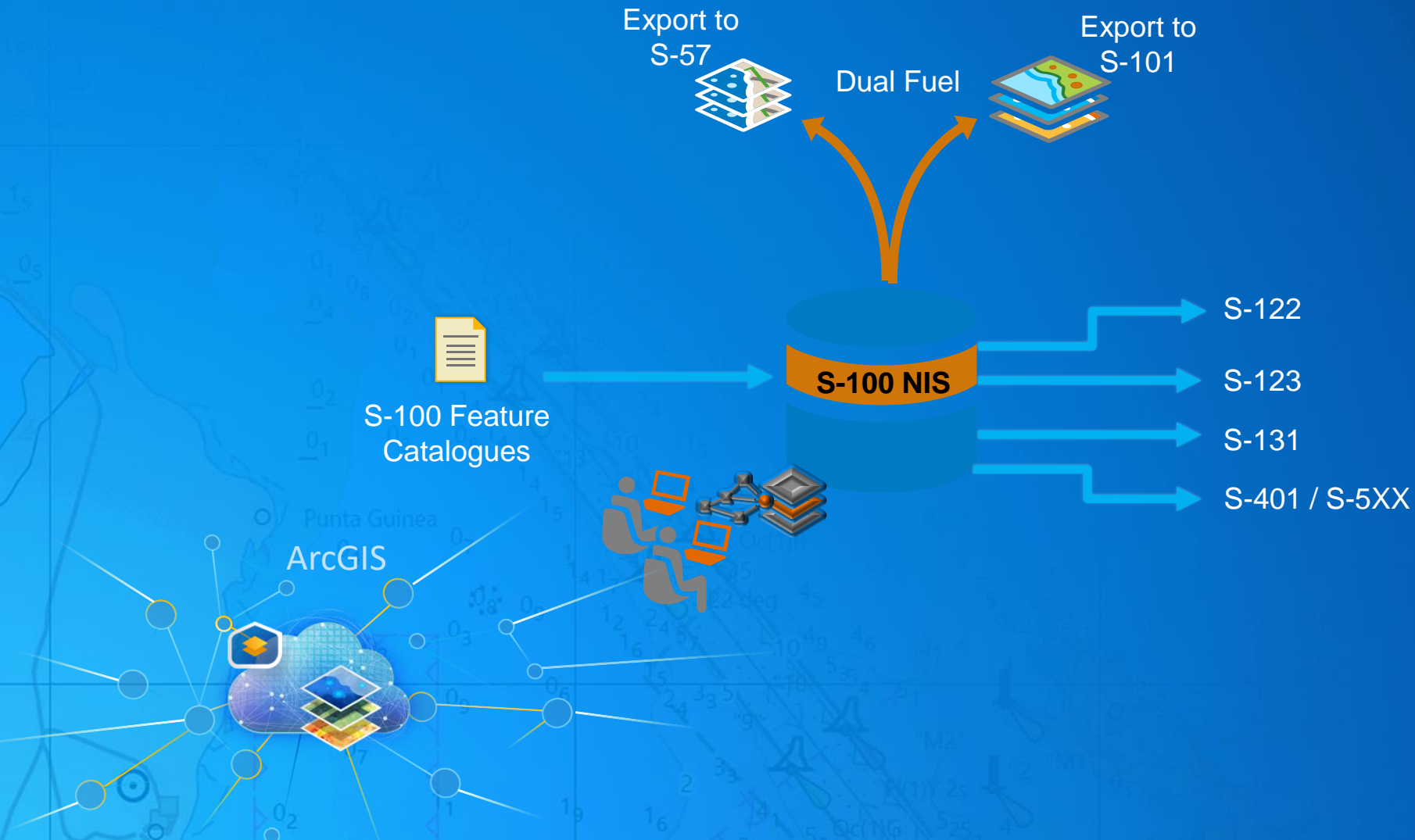
GEOINT

- S-103 (Sub Surface Navigation)
- S-126 (Marine Physical Environment)

Dept of Infrastructure, Transport...

- S-131 (Marine Harbour Infrastructure)

S-100 Data Sharing & Collaboration





ArcGIS Pro

Analytics, Models,
and Data Exploration



ArcGIS Maritime

Production
S-57, S-100



ArcGIS Enterprise

Engagement
Collaboration

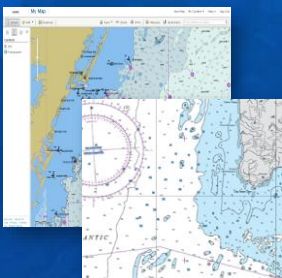


ArcGIS Maritime

A Complete Production and Dissemination System

System of Record
Desktop

Paper Nautical Charts



NIS / BIS

ArcGIS Maritime

ArcGIS Bathymetry



System of Engagement
Server



System of Insight

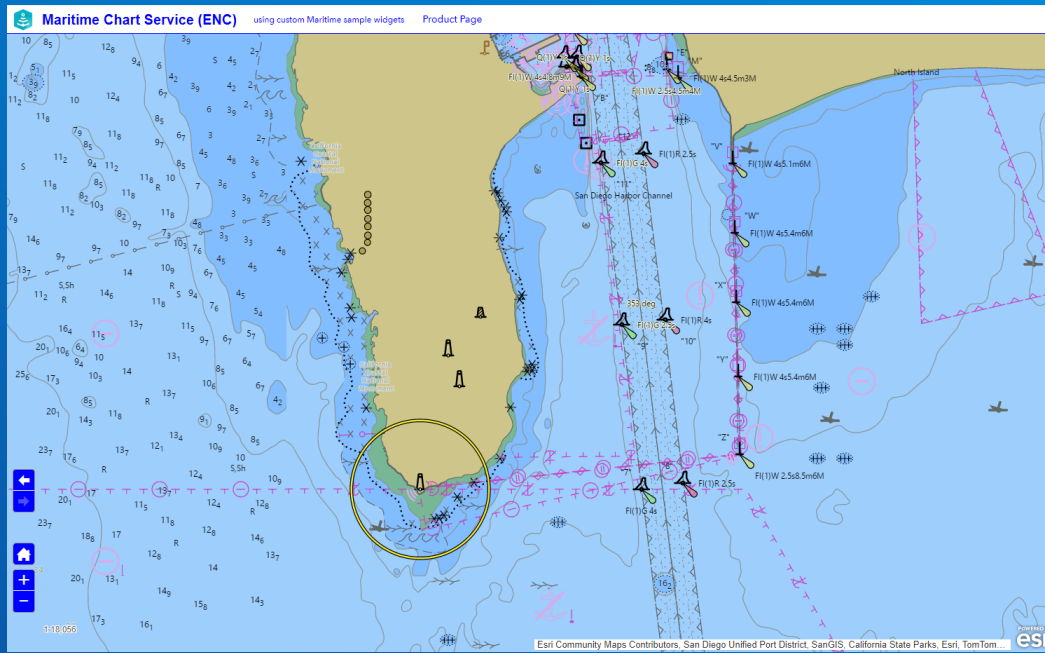
Analytics, Models,
and Data Exploration



S-100 Compliance



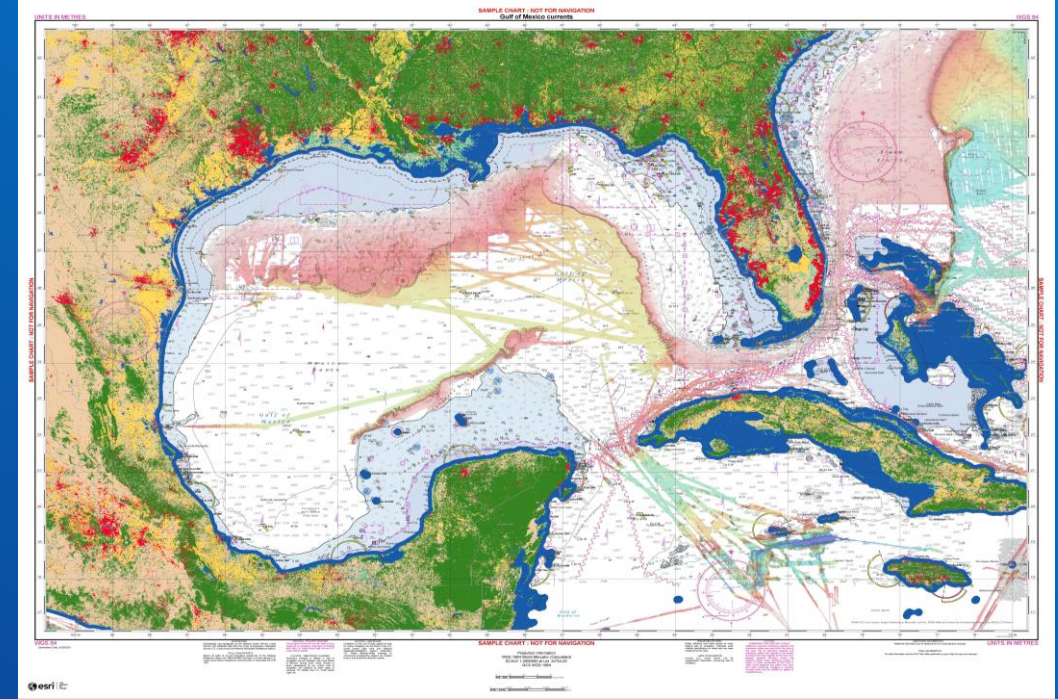
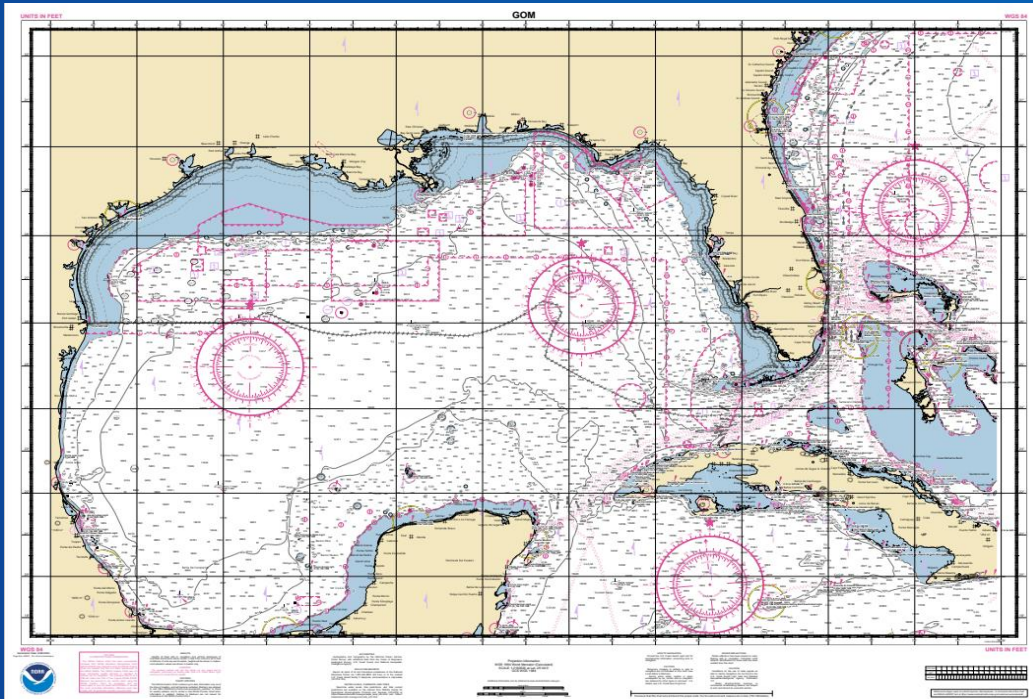
ArcGIS Maritime
ENC Production
Paper Chart Automation
Custom Chart Builder



ArcGIS Maritime
Server



ArcGIS
Pro



Custom Chart Builder

.000 to Custom Charts and Products

ArcGIS Maritime server extension
Custom Chart Builder (CCB): Custom Product Type

Find address or place

esri | Sign In

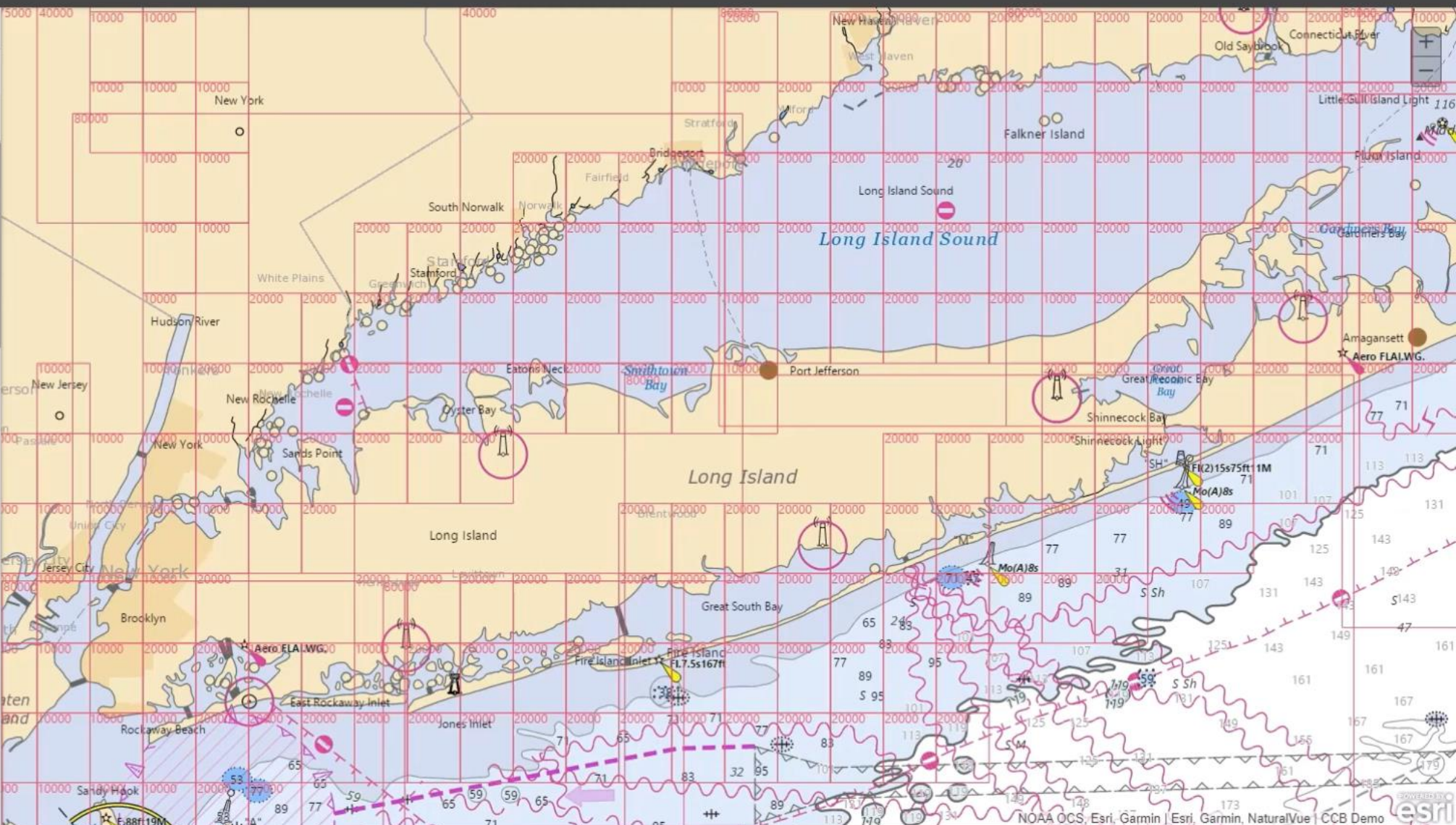
Search URL File

ArcGIS Online Search...

Within map Type Relevance

- Bundesländergrenzen 2018
Feature Service by esri_DE_content
ADD DETAILS
- ncov_cases
Feature Service by CSSE_covid19
ADD DETAILS
- JHU Centers for Civic Impact Covid-19 C...
Feature Service by CivioImpactJHU
ADD DETAILS
- Covid-19 kommunalt data
Feature Service by MKTH_SSerumInstitut
ADD DETAILS
- Nc2VaCYFoAEOFCG5JSI6
Feature Service by PD_EsriLAWResponse
ADD DETAILS
- Pm06oUpJizhI0jM8pu3n
Feature Service by PD_EsriLAWResponse
ADD DETAILS
- USA States (Generalized)
Feature Service by esri_dm
ADD DETAILS
- Limiti regionali ISTA 2019
Feature Service by Sistemteritoriale
ADD DETAILS
- Coronavirus_0122
Feature Service by edong1_GISandData
ADD DETAILS
- Regioes_Portugal
Feature Service by EsriPTDEV
ADD DETAILS

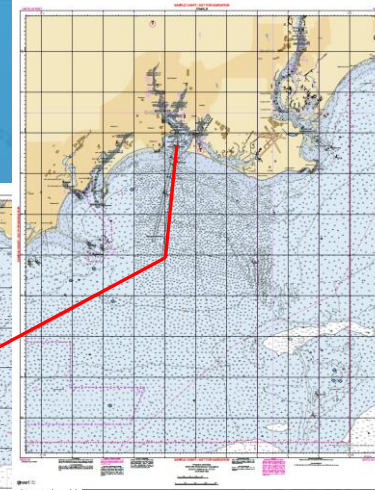
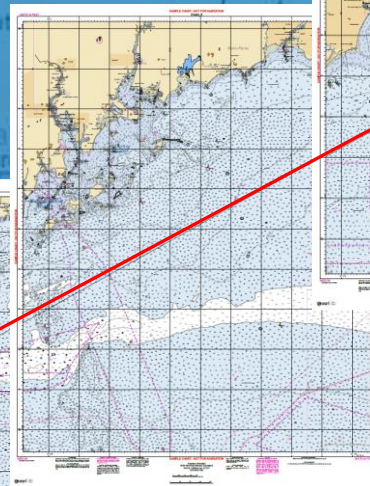
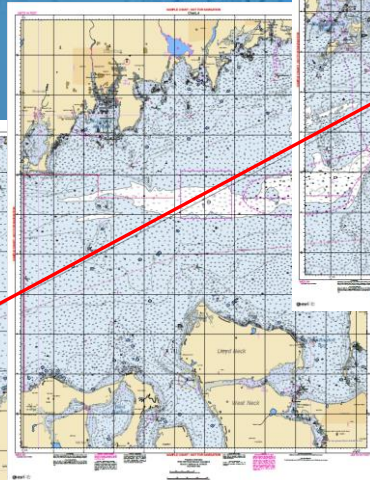
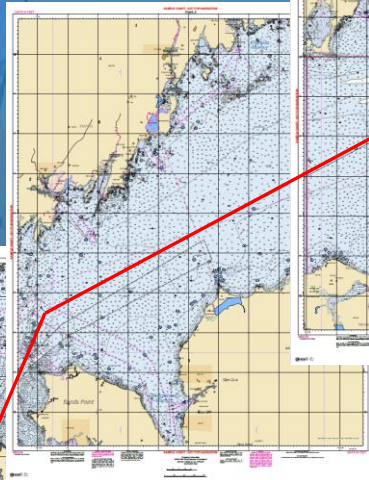
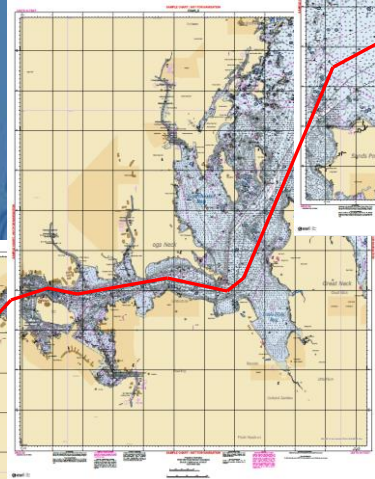
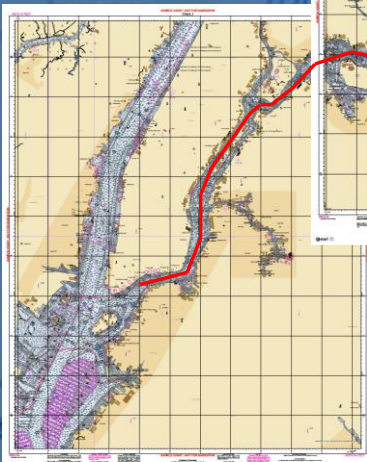
10,000 Items LAYERS



Custom Chart Builder

.000 to Custom Charts and Products

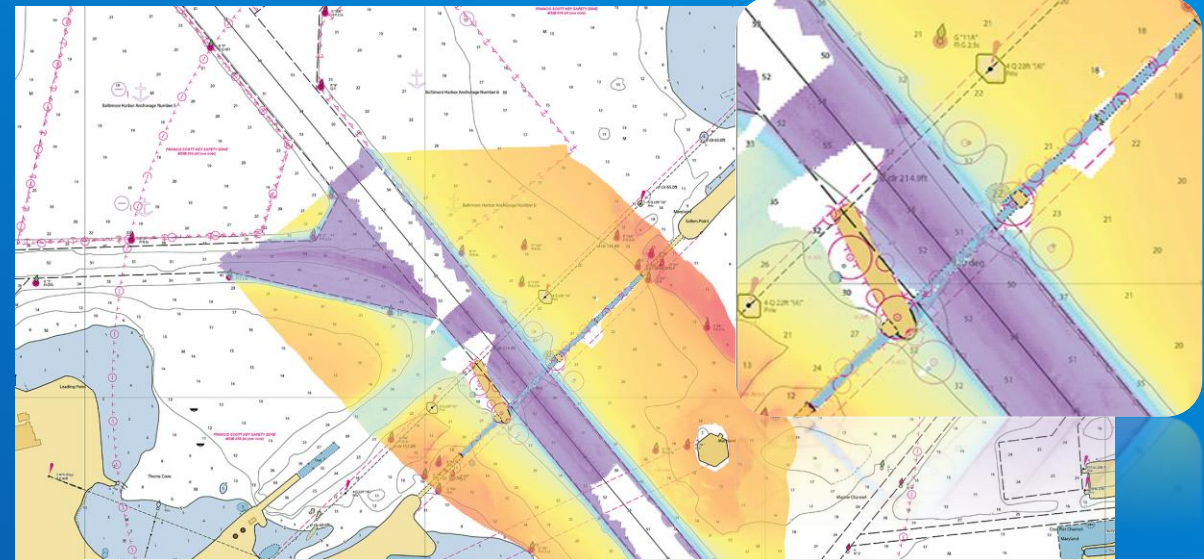
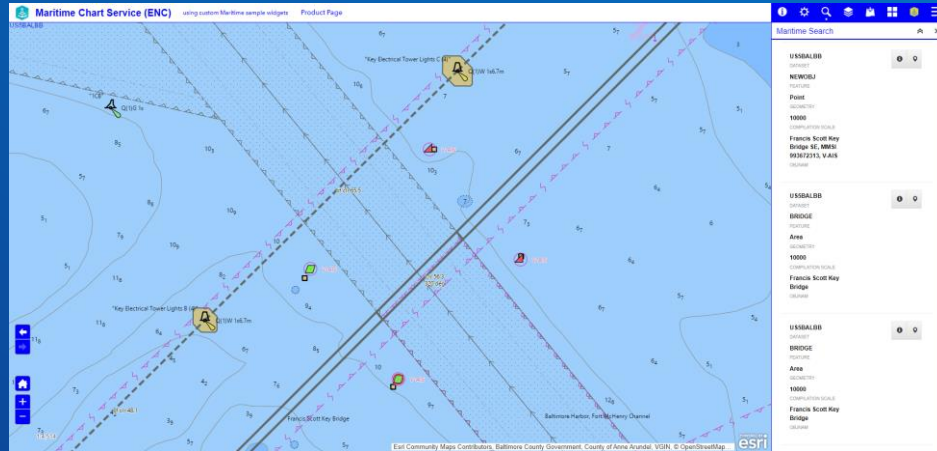
Chart_1	0:01:47 Export Succeeded Open
Chart_2	0:01:24 Export Succeeded Open
Chart_3	0:01:20 Export Succeeded Open
Chart_4	0:01:19 Export Succeeded Open
Chart_5	0:01:20 Export Succeeded Open
Chart_6	0:01:19 Export Succeeded Open



- COTS solution
- From .000 ENC files
 - No conversion
 - Up-to-date (includes ER's)
 - No integration with Chart Production System
- Includes imported data
 - Shape file
 - CSV
 - KML
 - GPX
 - Geo Json
 - ArcGIS Online
 - ArcGIS Living Atlas
 - S-421 Route Plan ???
 - Other S-100 layers ???

Key Bridge Rapid Response

Image from NOAA Office of Coast Survey News and Updates website.



Office of Coast Survey
National Oceanic and Atmospheric Administration
U.S. Department of Commerce

NOAA Custom Chart Version 2.0
Choose your own chart scale and location
Save charts to a personal chart catalog



Help Documentation

Use these links to open the two-page Quick Start Guide or the detailed-instructions in the User Guide. U.S. Chart No. 1 describes the meaning of symbols used on nautical charts.

- Quick Start Guide
- User Guide
- Creating a Custom Chart and a Personal Chart Catalog (12.23)
- Legend (U.S. Chart No. 1)
- NOAA Custom Chart PDF Printing

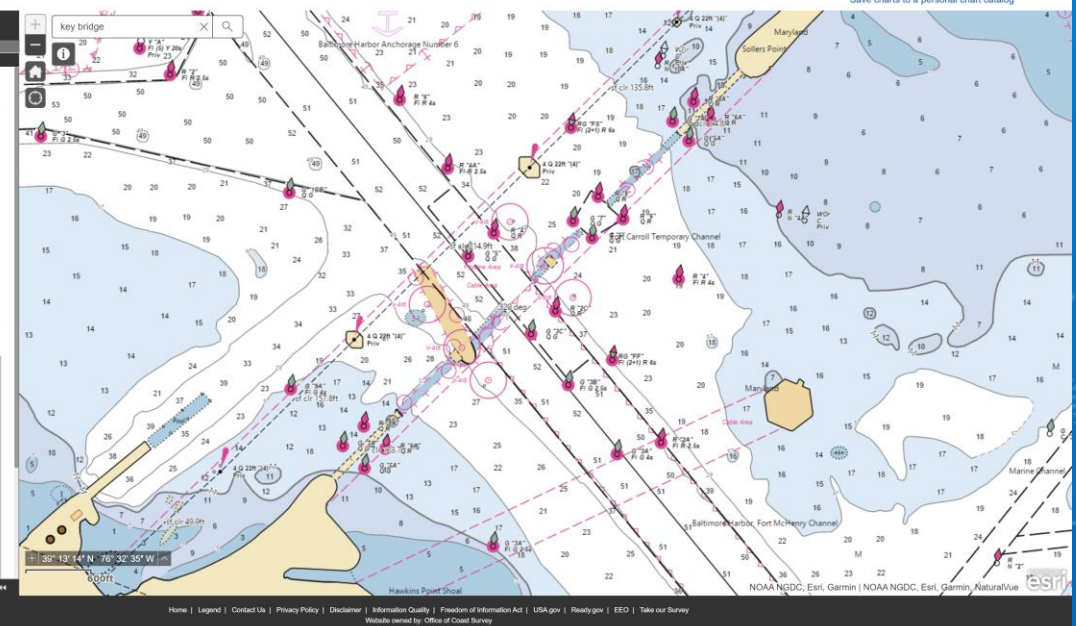
New in NOAA Custom Chart Version 2.0

- Enhancements**
- Added Personal Chart Catalog functionality
 - Enables users to save their own custom chart parameters for later use.
 - Enables users to share their custom chart parameters with others.
 - Enables users to reload saved chart parameters to recreate charts with newly updated information.
 - Streamlined user interface with clearer icons and descriptions for each step.
 - Modified additional symbology to emulate paper chart.
 - New 36" x 48" Plotter page size.

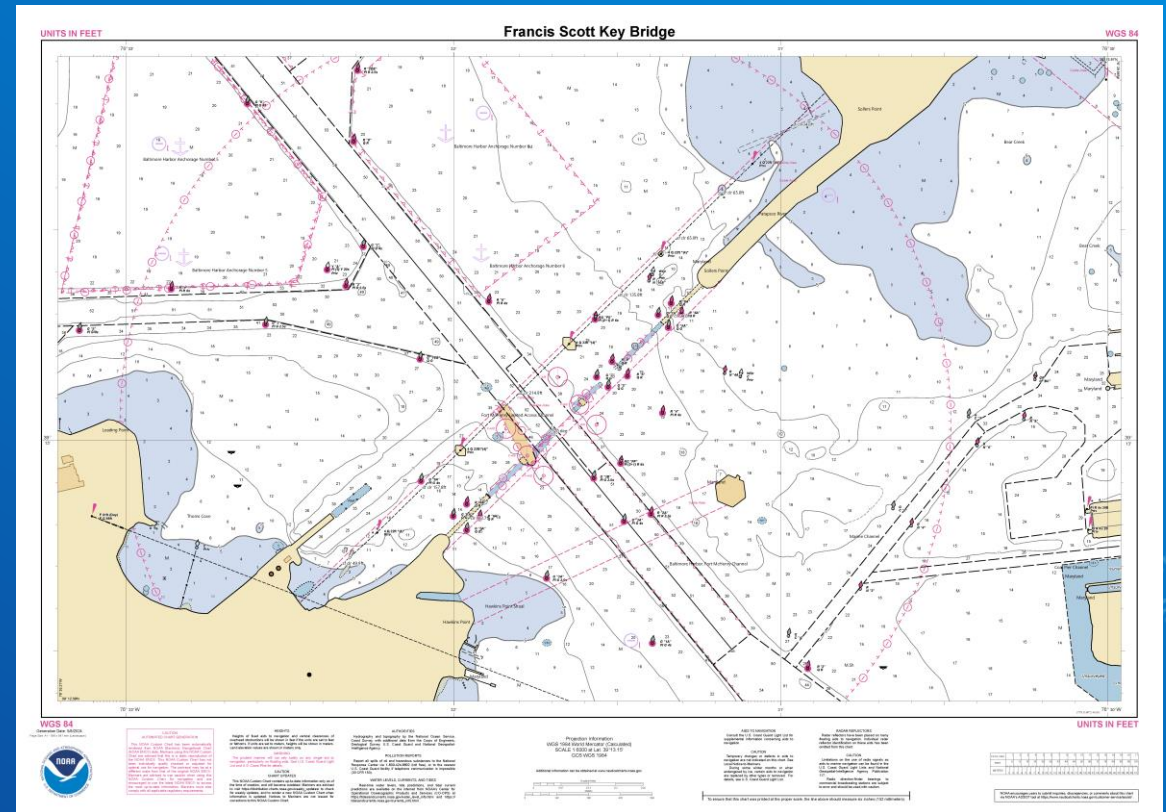
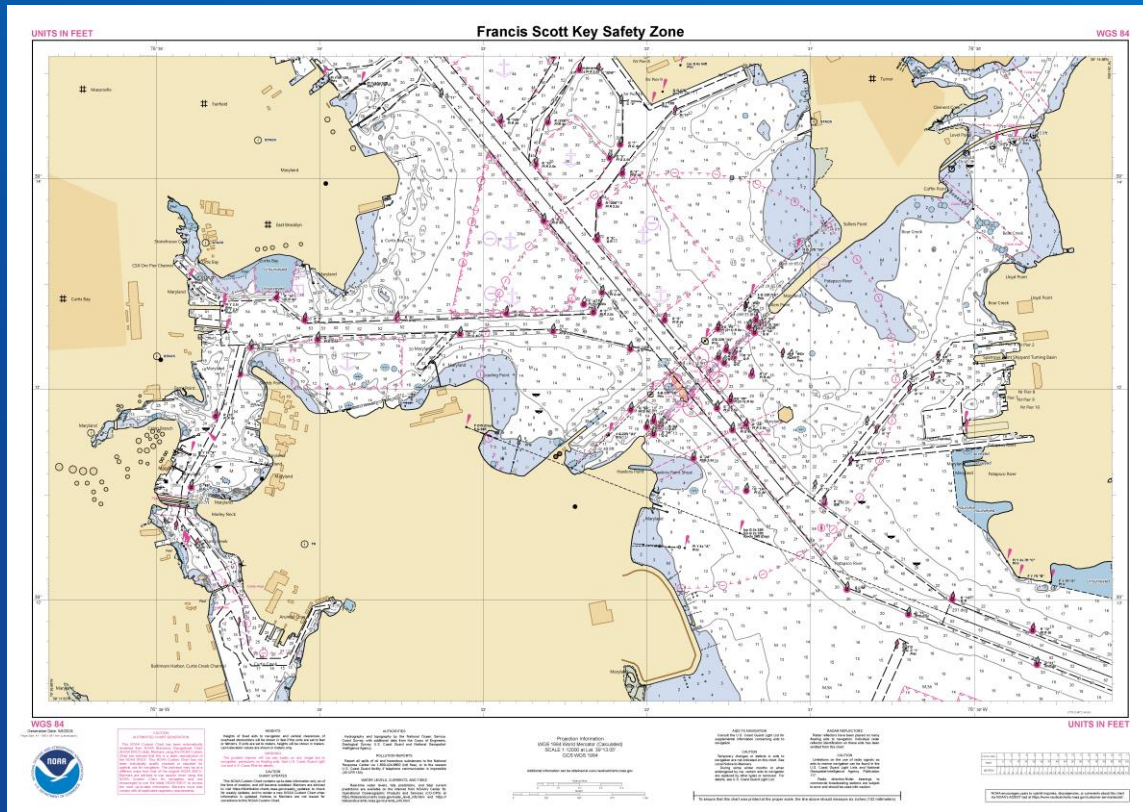
Bug Fixes

- Fixed a bug where the chart would not load correctly.

<https://nauticalcharts.noaa.gov>



Key Bridge Rapid Response

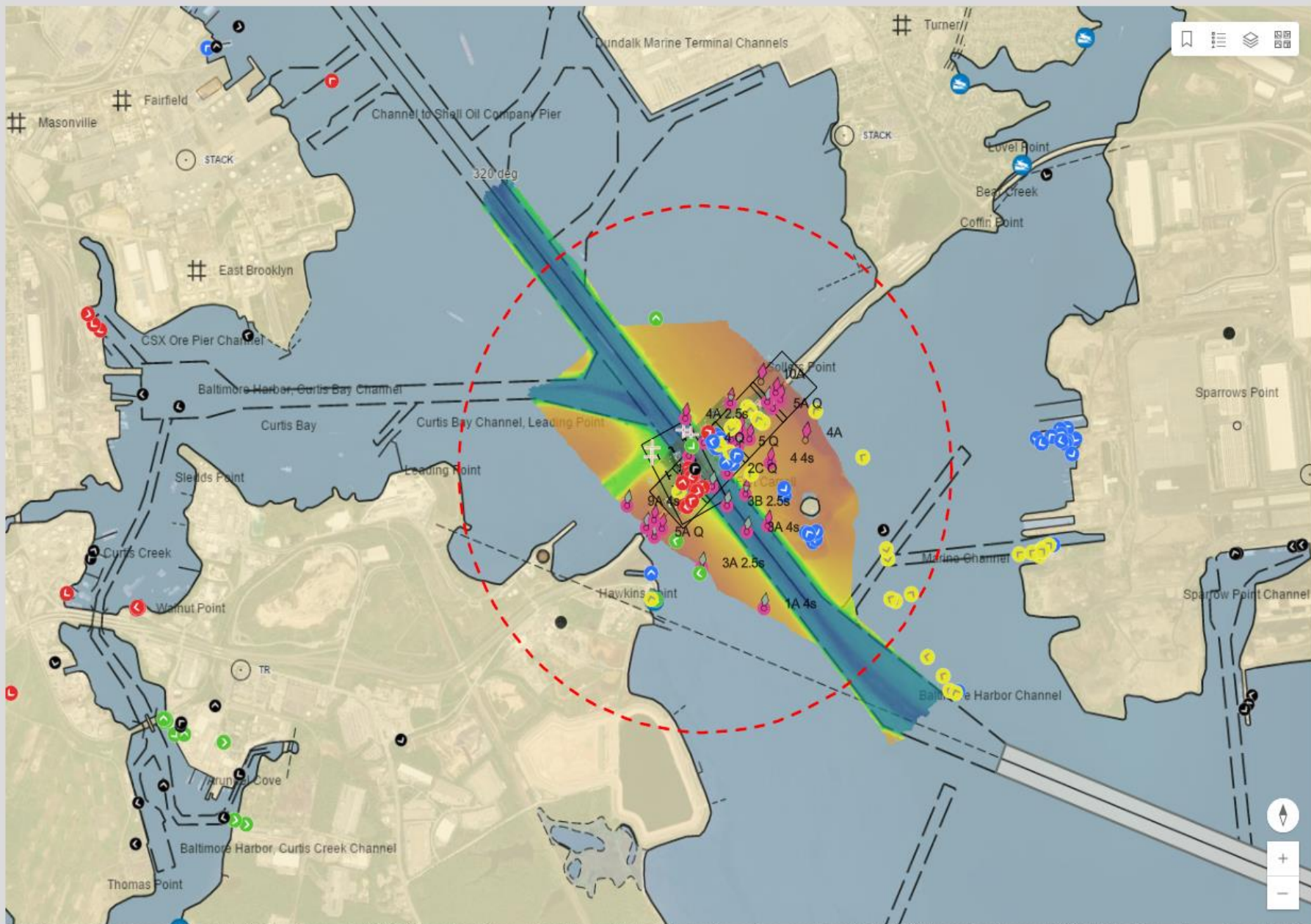


Wind
0.5 kts
from 320 ° T

Curtis Bay Ent Wx buoy
Last update: 1 minute ago

Air Temp
33°F

Curtis Bay Ent Wx buoy
Last update: 1 minute ago



AIS with Joined Data (sanitized for public)

Response Vessels by Contrator

- ▲ DONJON
- ▲ RESOLVE
- ▲ SKANSKA
- ▲ Government Vessel
- Non-Response Vessels

SAFETY ZONE



KBR-COP Dive Zone 5 sub boxes



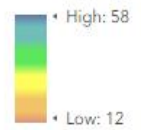
Dali Anchor Positions



Dive Safety Zones



NOAA 24April combined



Imagery updated: 23 Apr
Survey Updated: 23 Apr

Technology demonstrator: "Revealing the potential of the LINZ ENC service beyond Navigation"

Provided courtesy of:

Richard Wells - GEOINT New Zealand, New Zealand Defence Force

John Plunkett - Eagle Technology, April 2024



[Eagle web app demonstrator](#)

Demo for Presentation

Open in Map Viewer Classic | Sign In

Layers

Get started
You can explore maps, add layers, and more without signing in. To save your work, sign in before creating your map.
[Learn more about Map Viewer](#)

- ShippingTracks_GMT12plus
- NIWA offshore faults
- All Commercial Fishing Regulations
- BathymetricData2
- S63 ENC with INT1 Symbology
- S63 ENC with S52 Symbology

Add

1/31/2022 4:04:00 AM | 1/31/2022 4:21:00 AM

4:04 AM | 4:24 AM | 4:44 AM | 5:04 AM | 5:24 AM | 5:44 AM | 6:04 AM | 6:24 AM | 6:44 AM

1/31/2022 6:54:00 AM

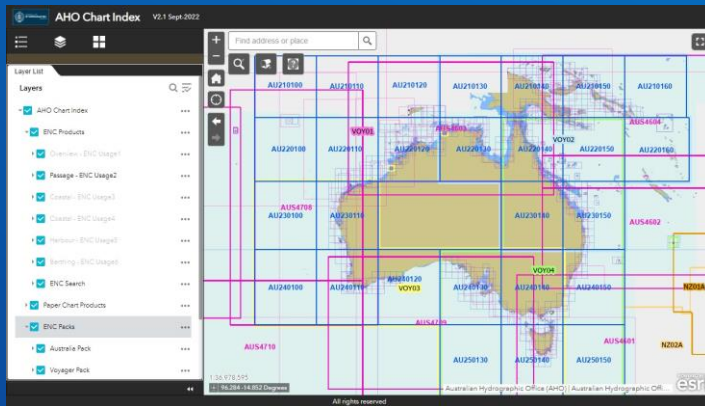
Earthstar Geographics | JFP123 | Powered by Esri



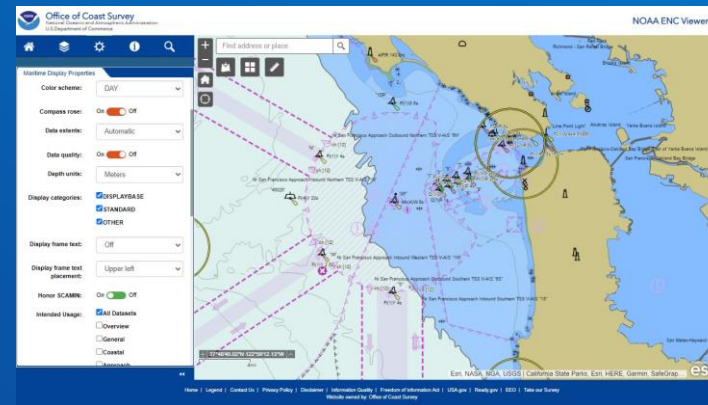
EAGLE
TECHNOLOGY



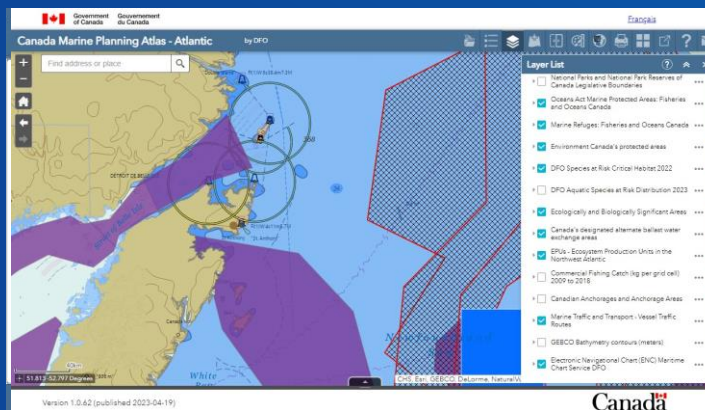
Public Examples using MCS



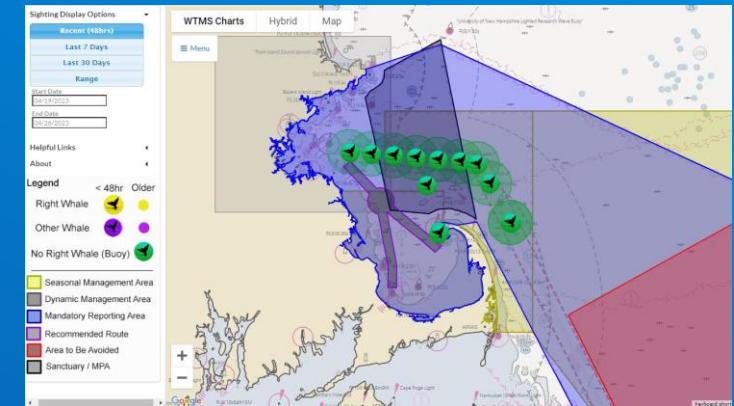
Australian Hydrographic Office: Chart Index
<https://services.hydro.gov.au/AHOChartIndexPUBLICApplication/>



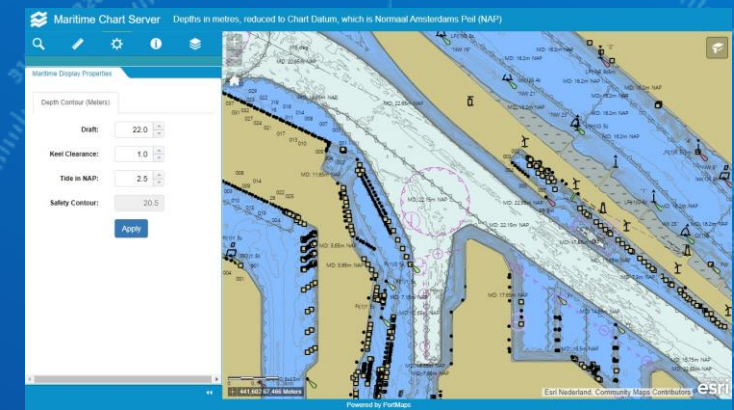
NOAA ENC Online Viewer
<https://nauticalcharts.noaa.gov/enconline/enconline.html>



Canada Marine Planning Atlas: Atlantic
<https://gisp.mpo.gc.ca/apps/Atlantic-Atlas/?locale=en>



ConservIO: Whale Alerts
<https://whalealert.conserve.io/>



Port of Rotterdam: Harbour Masters
https://gis.portofrotterdam.com/apps/mcs_nap/



ArcGIS Pro



ArcGIS Maritime



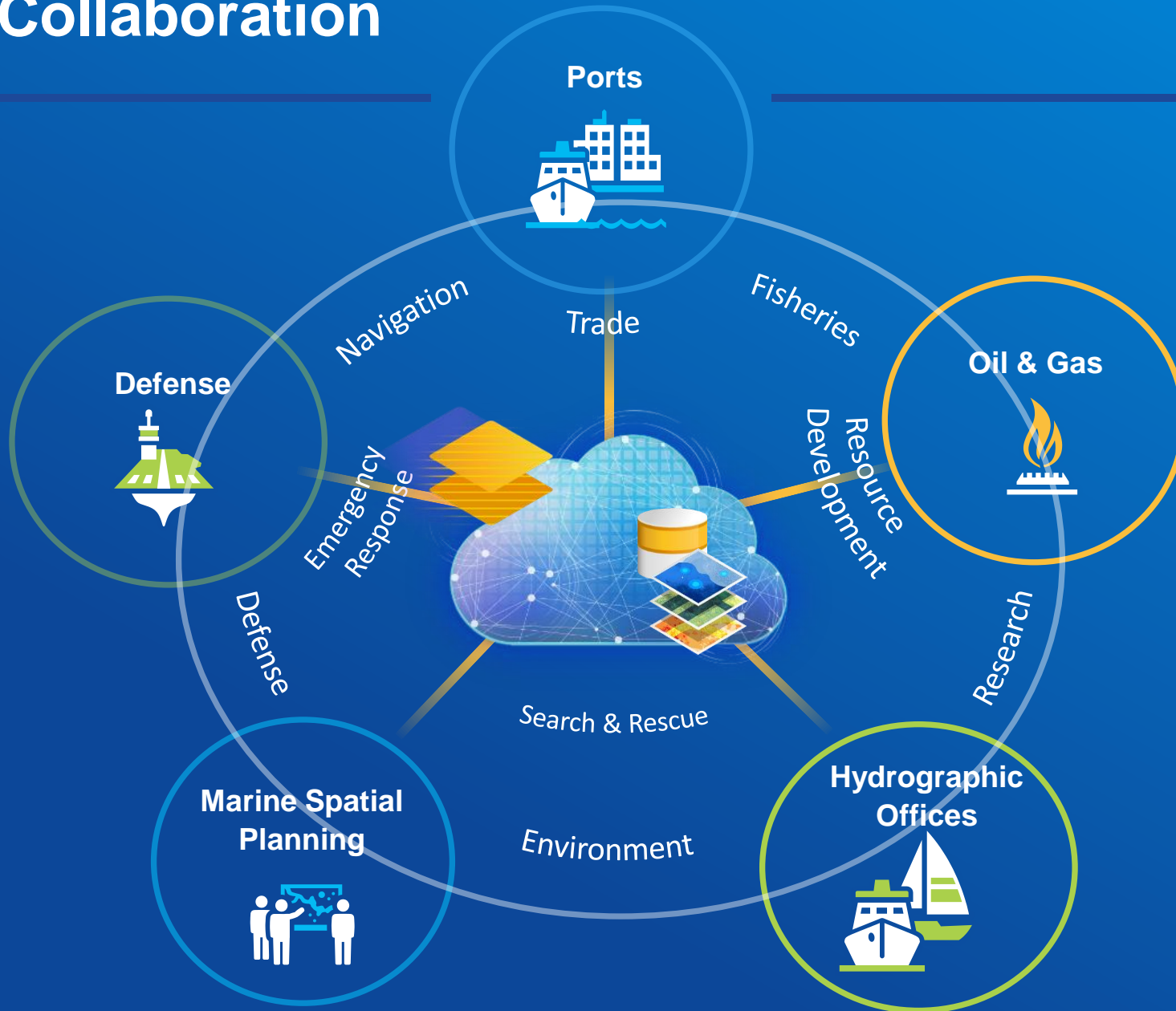
ArcGIS Enterprise



ArcGIS Products



Collaboration



Types of Users

- Nat Hydrographic Office
- Naval Oceanographic
- Hydrographic Surveying
- Marine Cadaster
- National EEZ
- Ocean Land Cadastre
- Coast Guards
- Ports (bathymetry)
- Inland Waterway Agencies
- Recreational Industry

Industry Overlaps

- Defense & Intelligence
- Transportation
- Energy
- Science
- Local Government
- Land Cadaster





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WHERE®

