



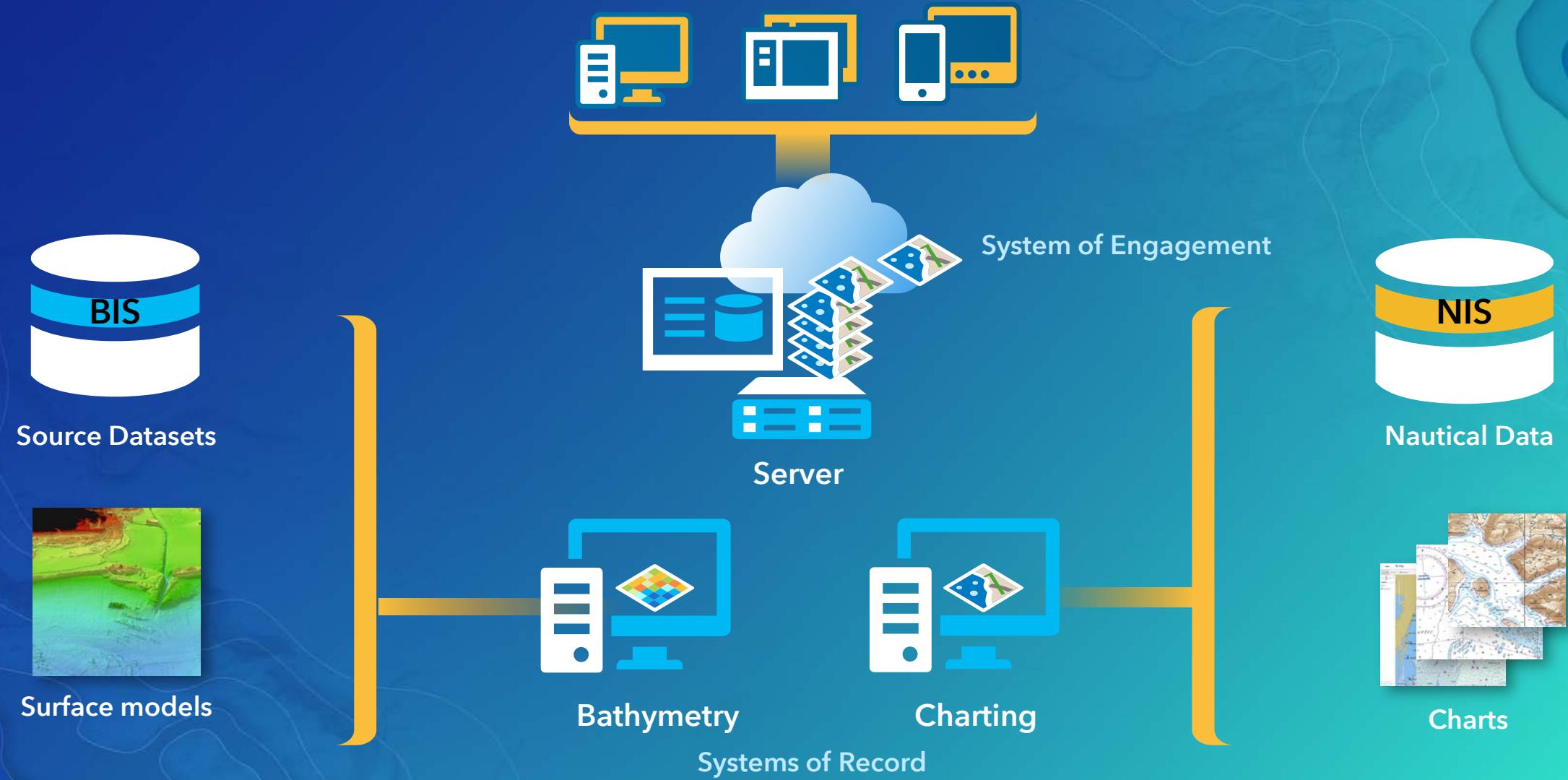
# ArcGIS for Maritime

Tom De Puyt

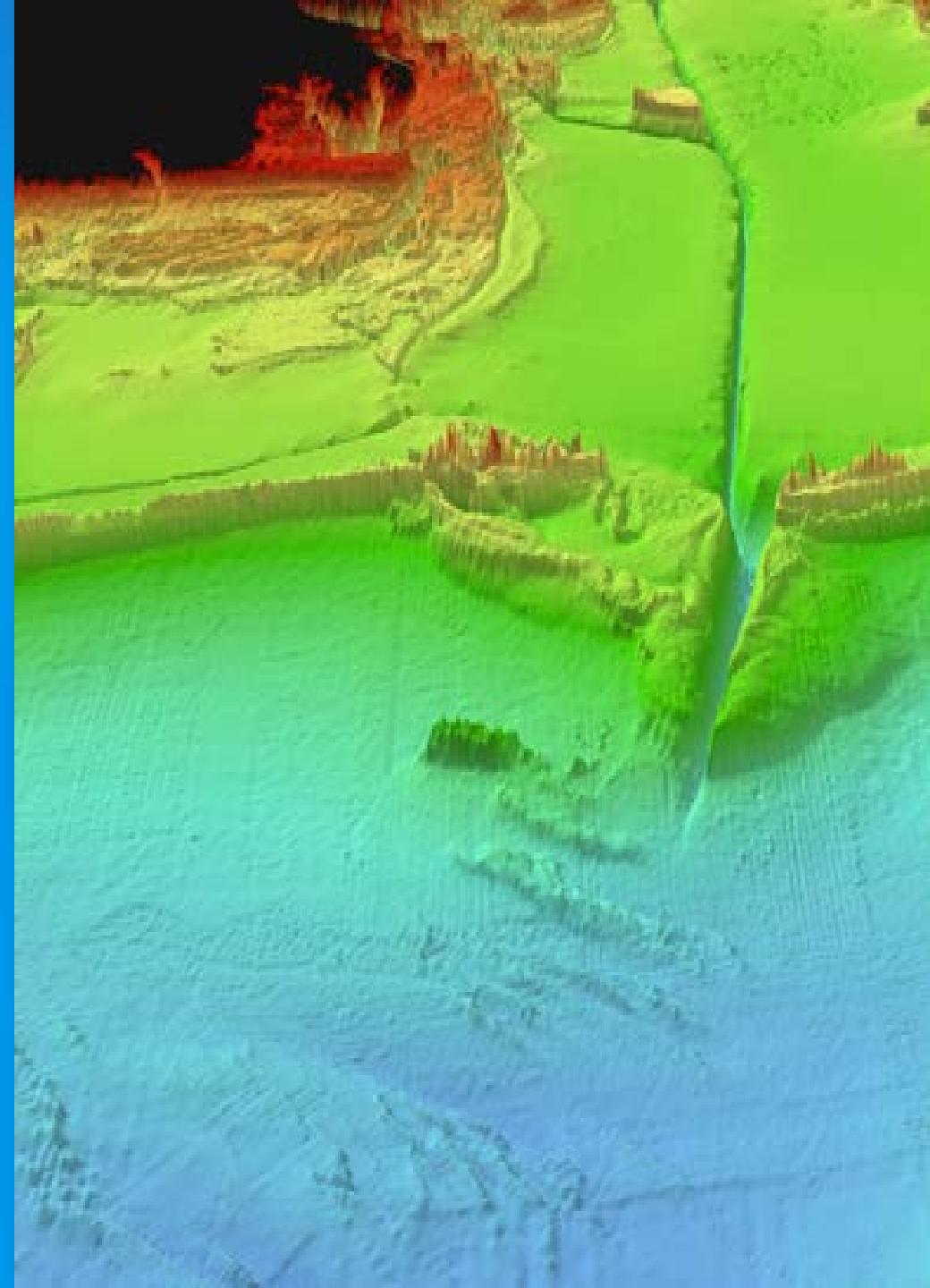
14<sup>th</sup> IEHG, Brazil

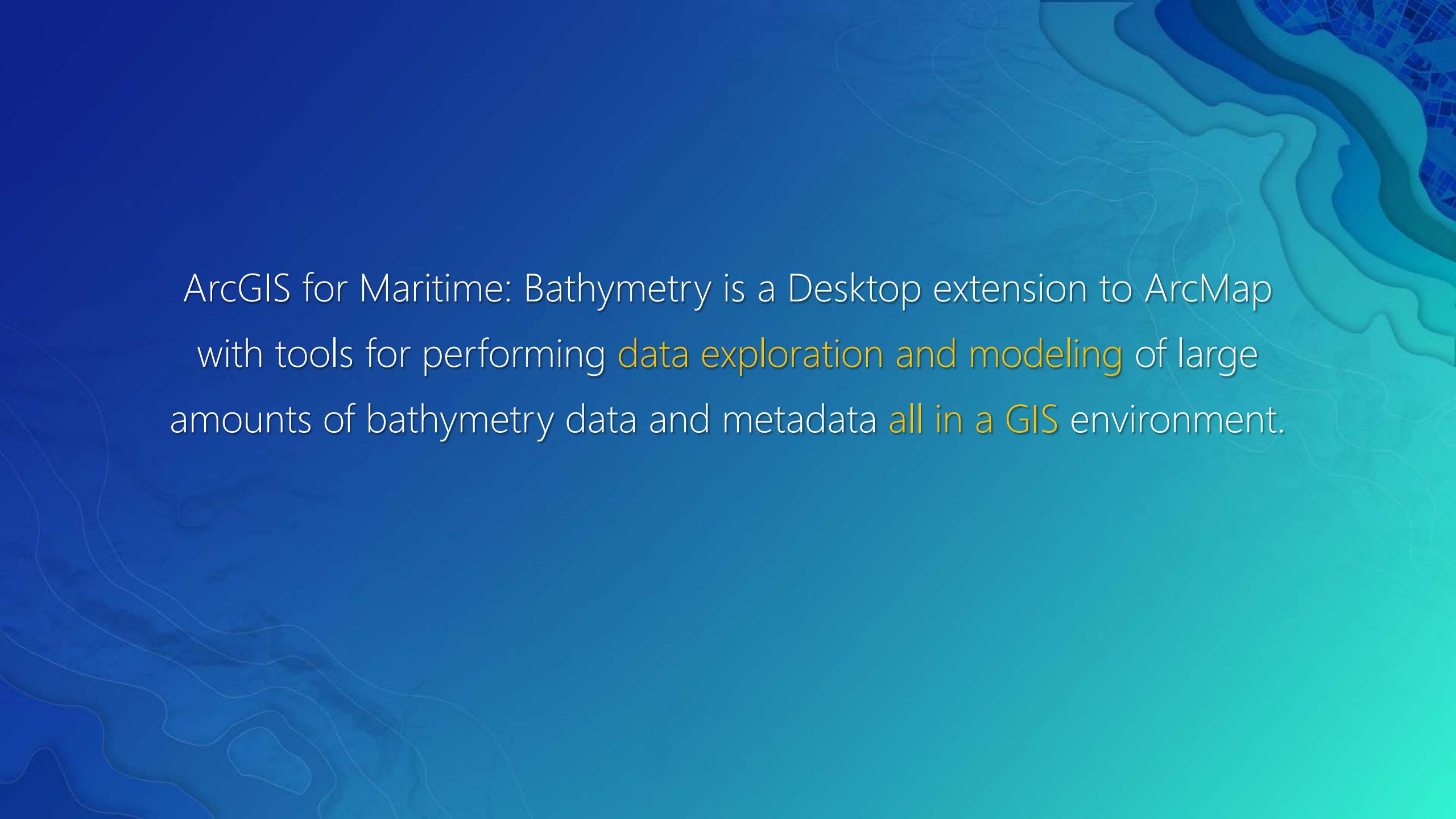


# ArcGIS for Maritime



# Bathymetry



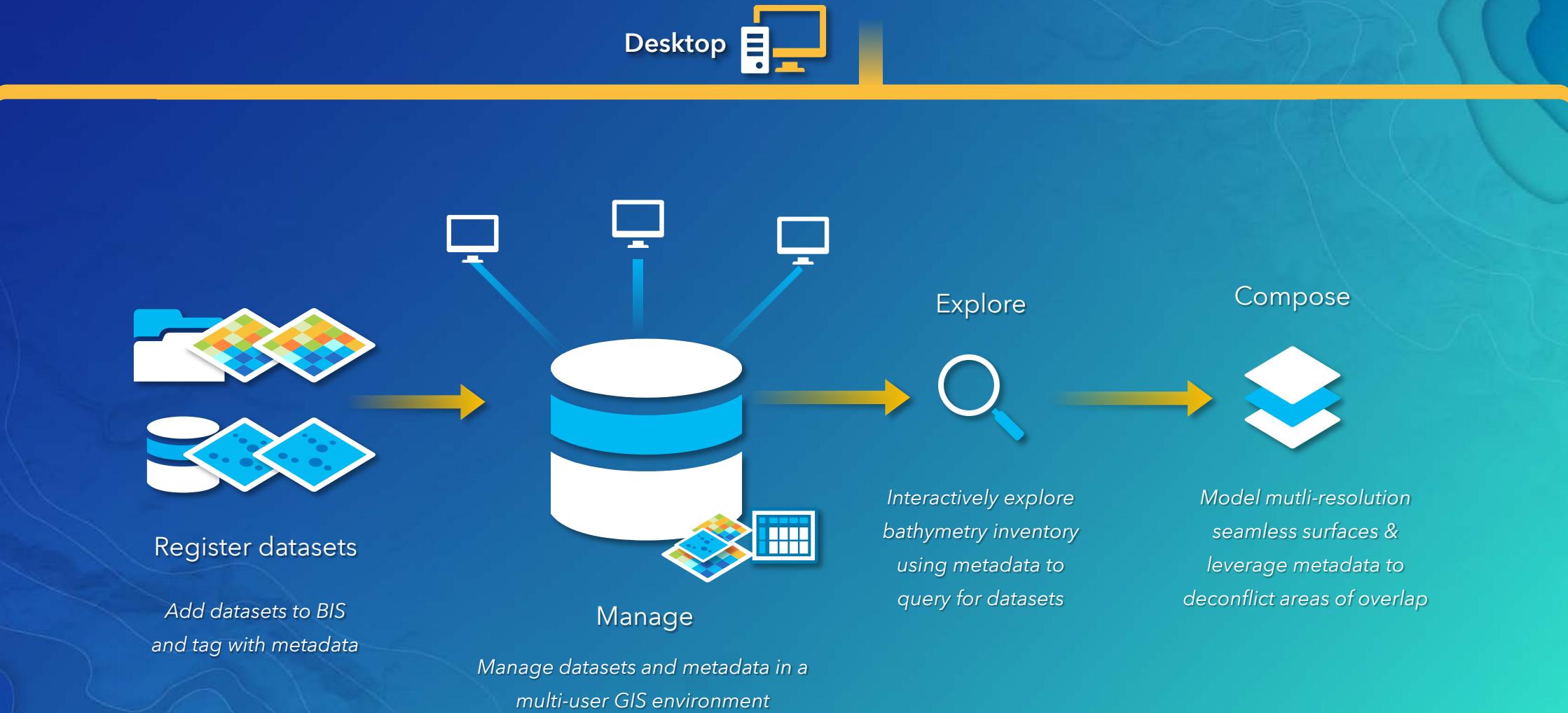


ArcGIS for Maritime: Bathymetry is a Desktop extension to ArcMap with tools for performing data exploration and modeling of large amounts of bathymetry data and metadata all in a GIS environment.



Workflow

# Data Management Workflow



## Technical **Highlights**



Unlock data from stovepipes



Store once, reuse many times



Visualize multi-resolution surfaces



Leverage metadata



Query and model

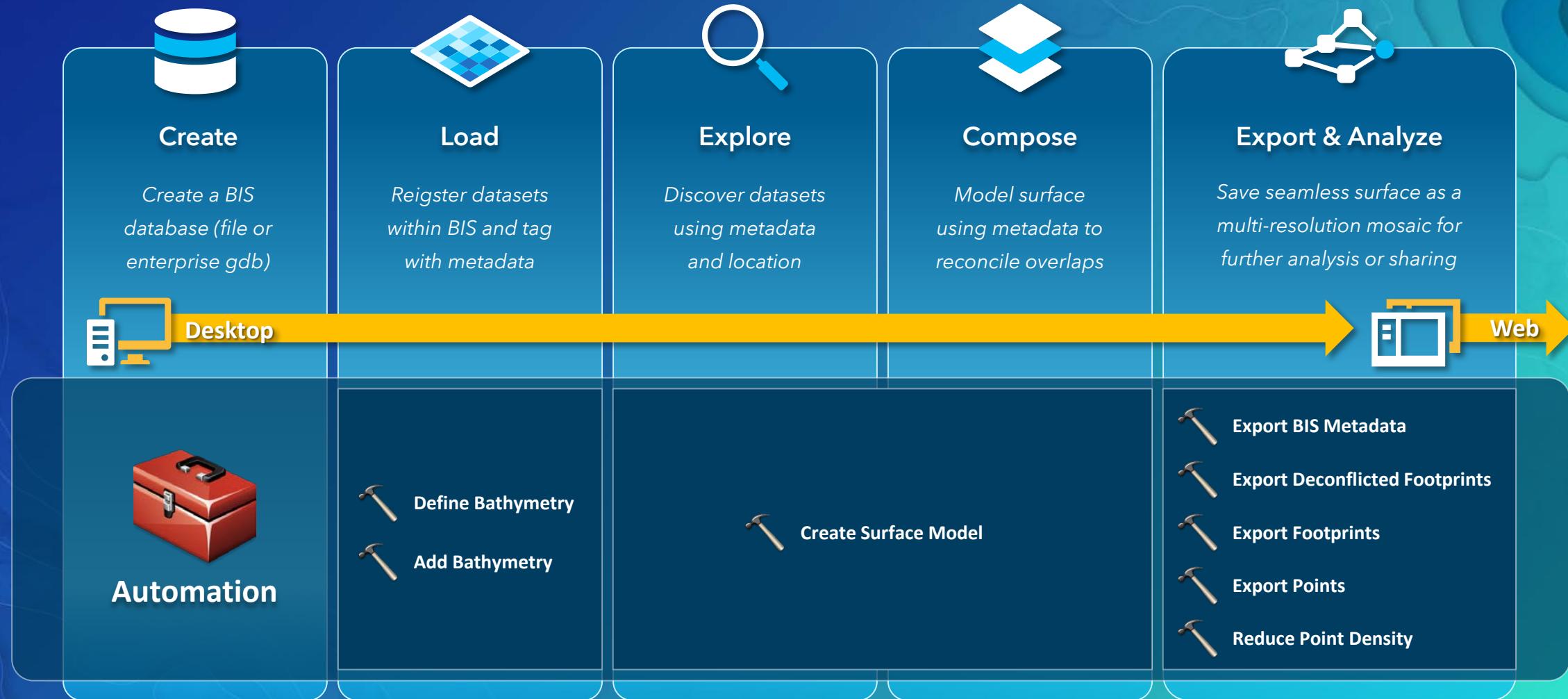


Enable traceability and archiving



# To Interact or Automate?

You can do both!



# Charting

A nautical information system



# What is ArcGIS for Maritime: Charting

More than just nautical charts

- **Capabilities**

- **Production**

- Official and special products

- **Automation**

- **Ingest S-57 data**

- For S-57 vector/raster Chart Production
    - For basic GIS - analysis
    - For Ad-hoc maps/charts
    - Data warehouse

- **Symbolize**

- INT1
    - S-52

- **Maintain**

- Edit and create S-57 and cartographic features

- **Publish**

- Updates
    - New Editions
    - Rasters - broad raster support including BSB

- **Hydrographic Standards Support**

- **AML 2.1**

- Plans to support 3.0

- **IENC 2.3**

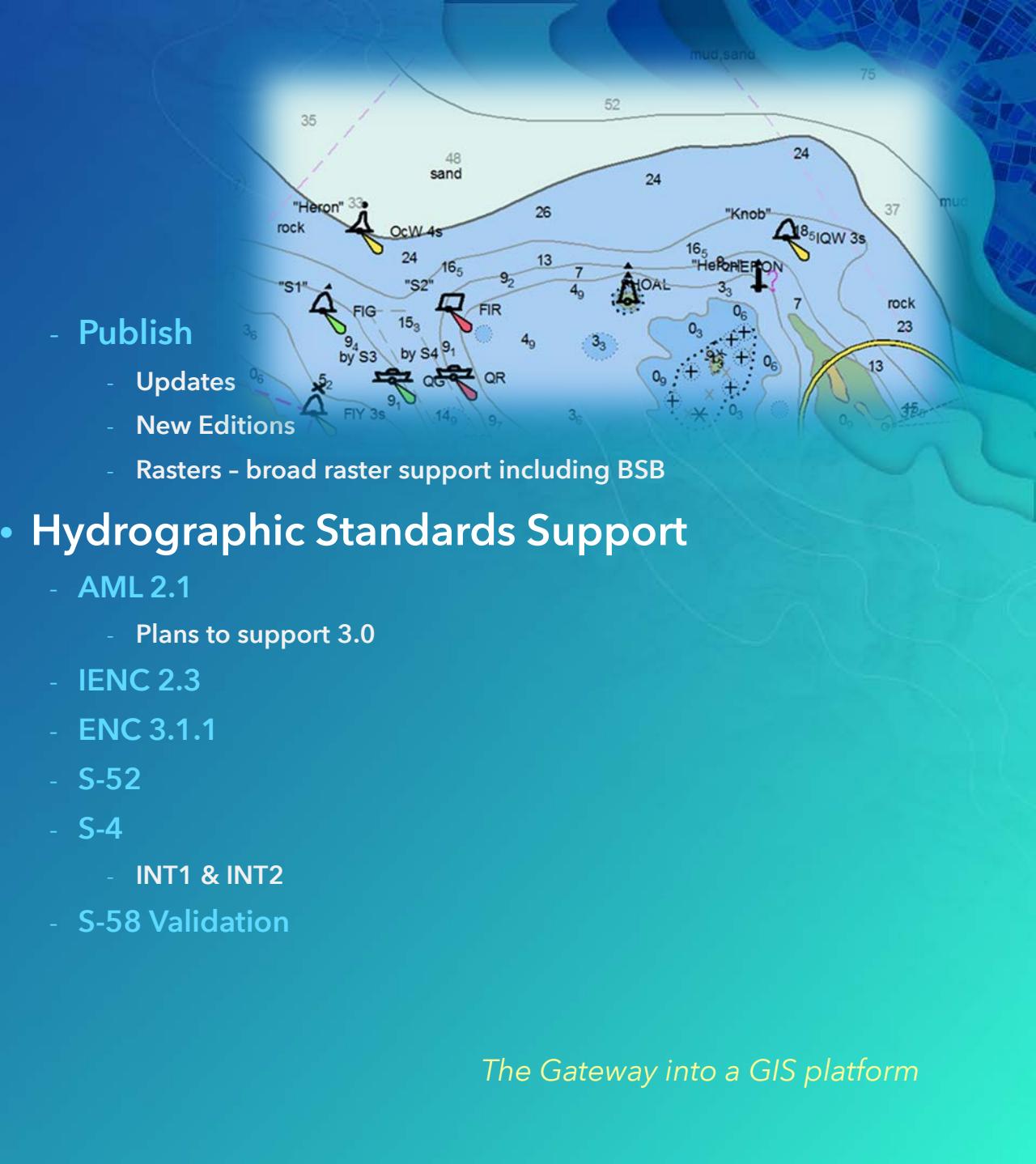
- **ENC 3.1.1**

- **S-52**

- **S-4**

- INT1 & INT2

- **S-58 Validation**



*The Gateway into a GIS platform*

## System of Record

## System of Engagement

Source & Workflow



Maintenance & Validation



Charts & Outputs



Product Library



Server



Portal

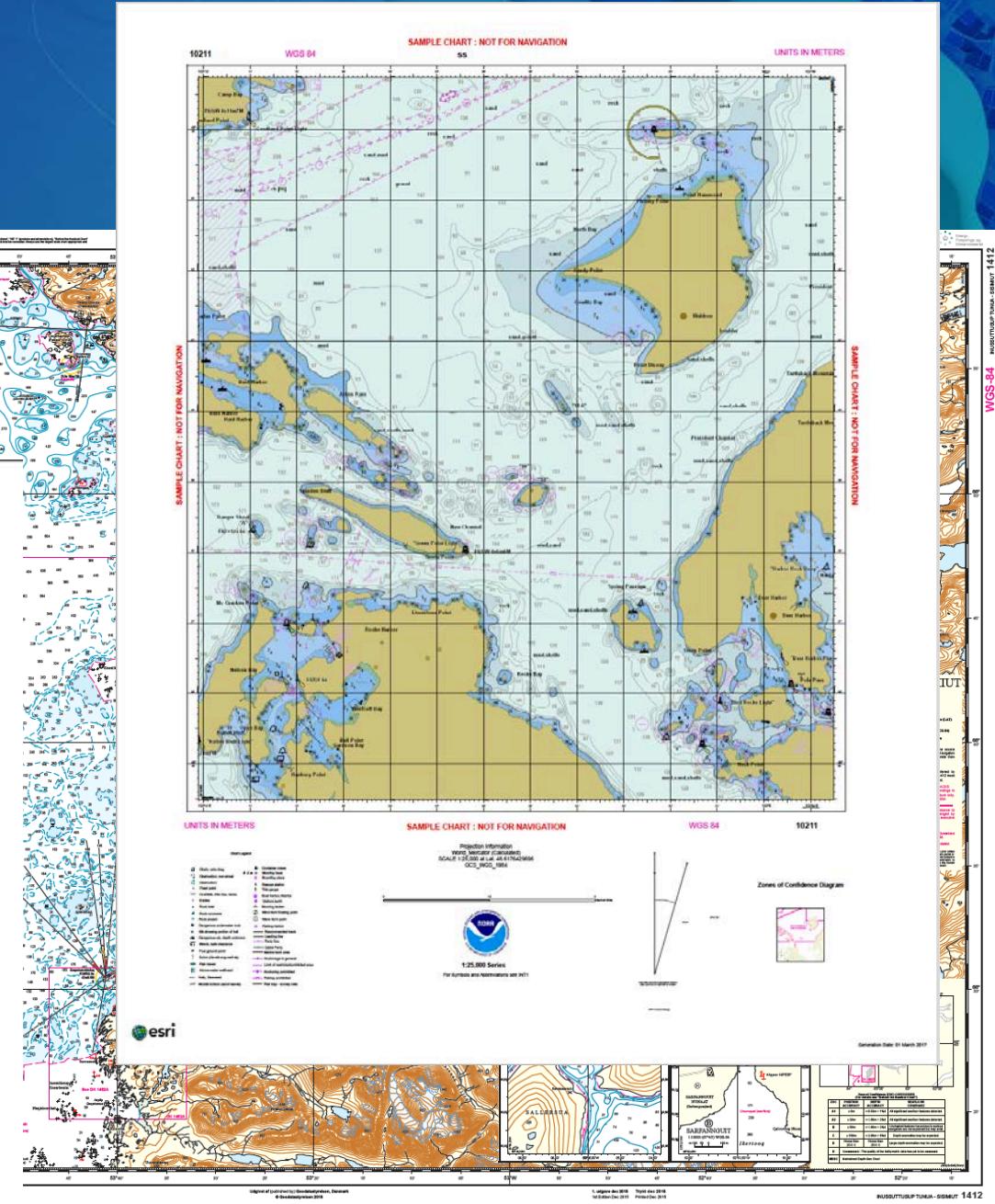
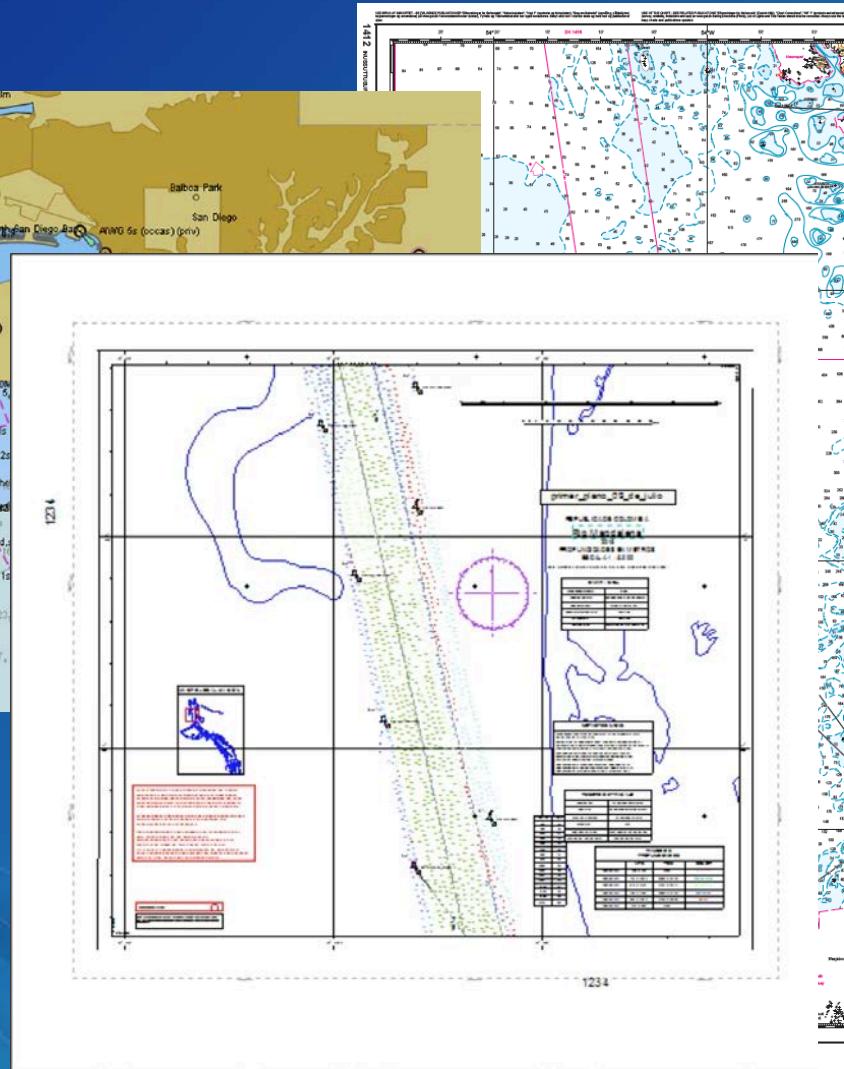
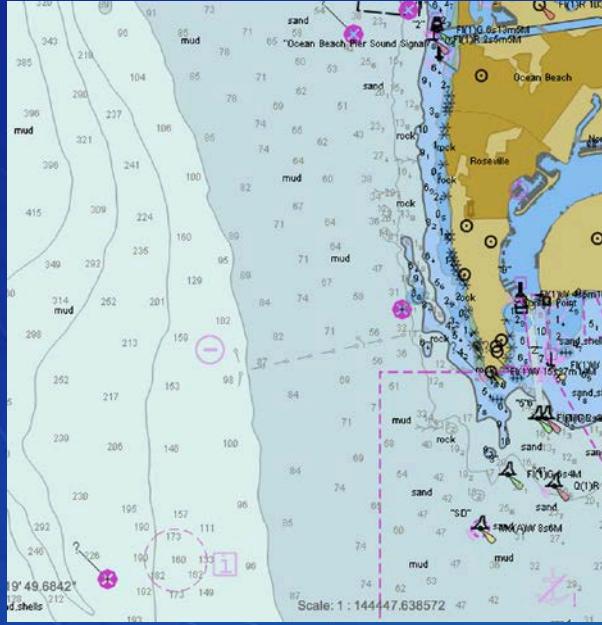
MCS

MSDI



*The Gateway into a GIS platform*

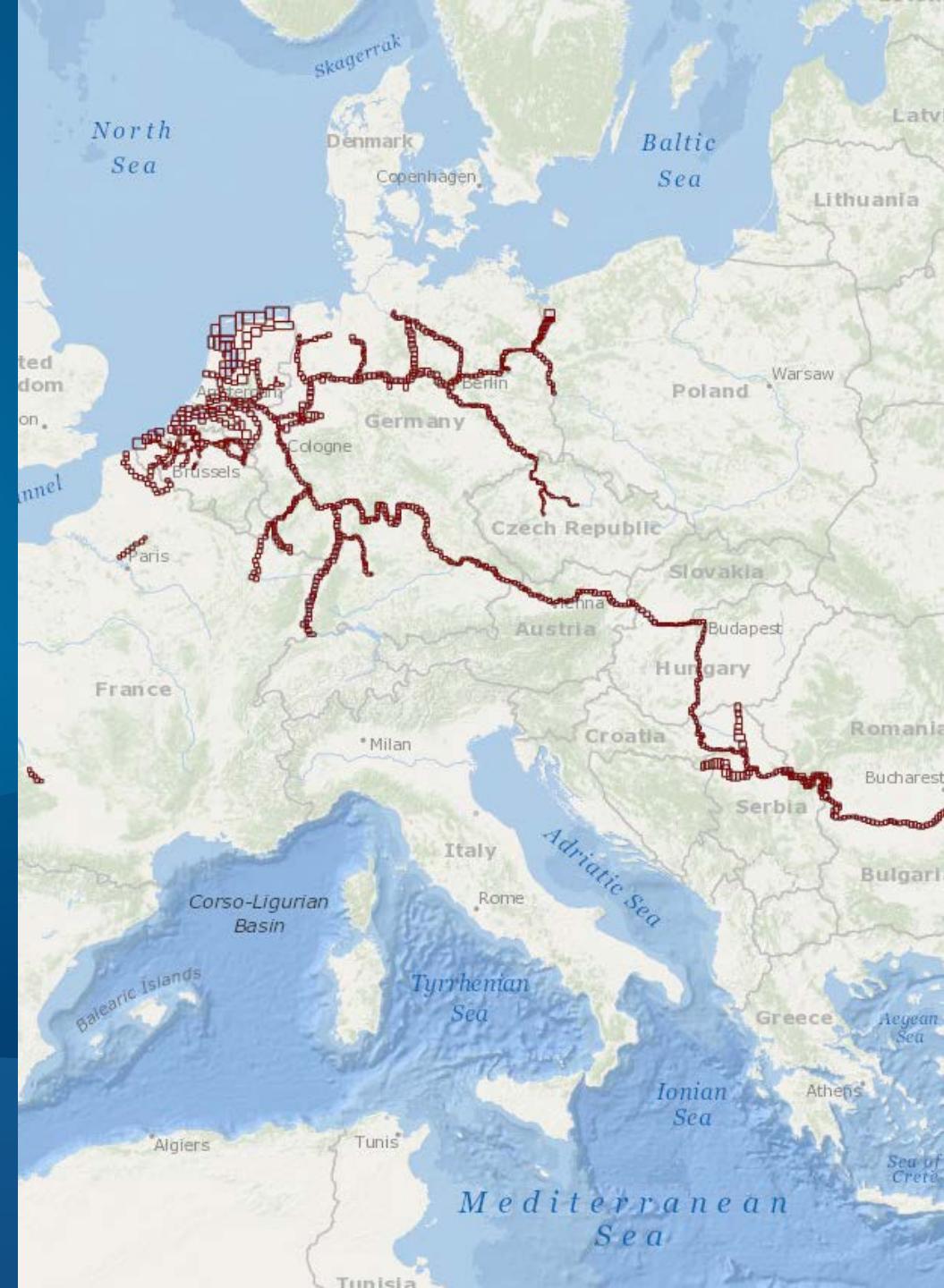
# Nautical products and more



# Server

The use of S-57 data beyond the bridge

- Maritime Chart Service (MCS)
- Products On Demand (POD)



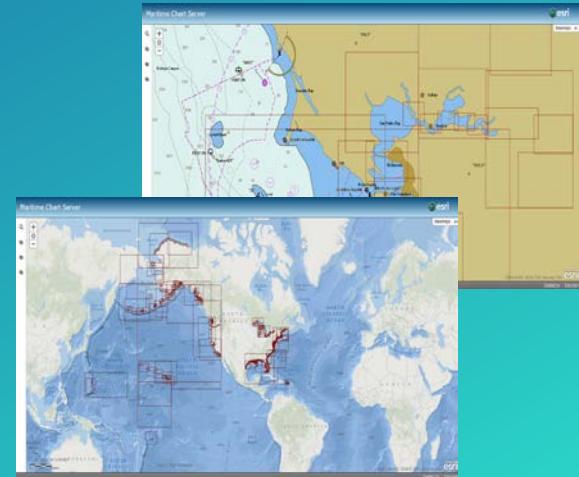
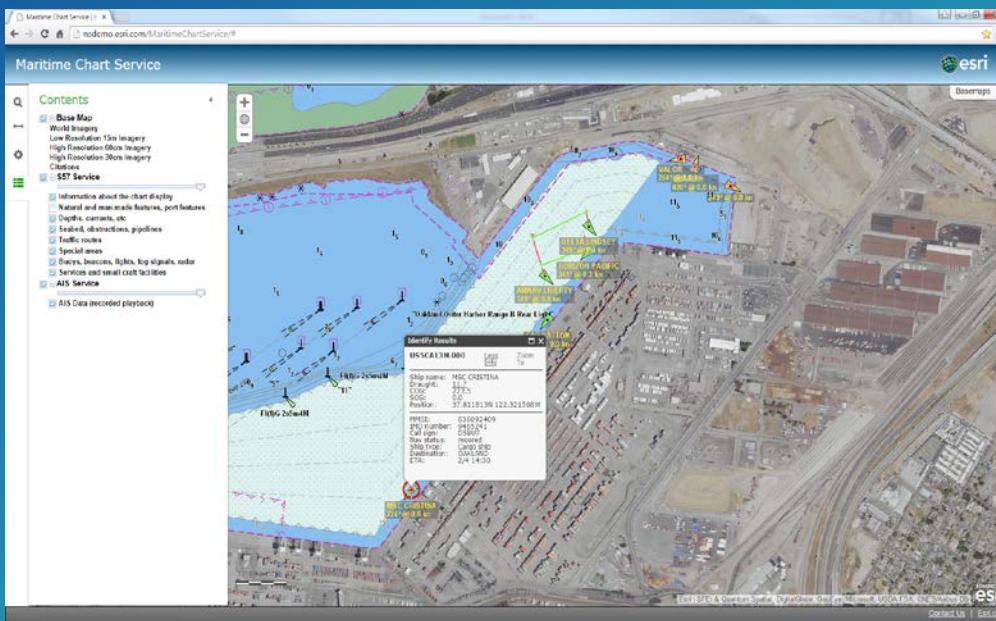
# Maritime Chart Service

10.5.1 ArcGIS for Maritime: Server

# ArcGIS for Maritime: Server Overview

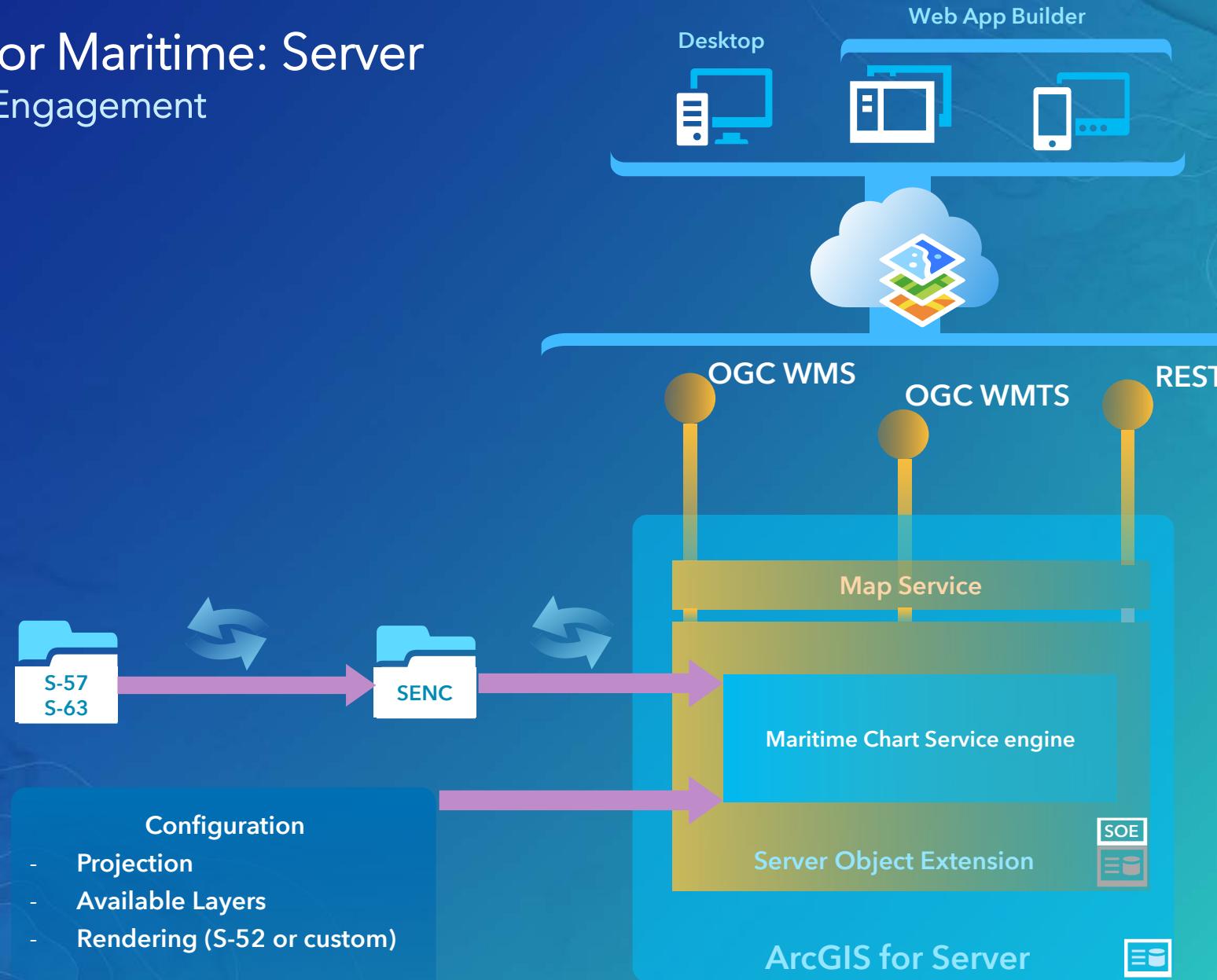
- All your charts in one seamless view
- Unlock the value of Maritime data
- Using IENC beyond the bridge: [ArcGIS for Maritime: Server](#)
- Using [JavaScript](#) to create web applications
- Esri REST and OGS WMS support

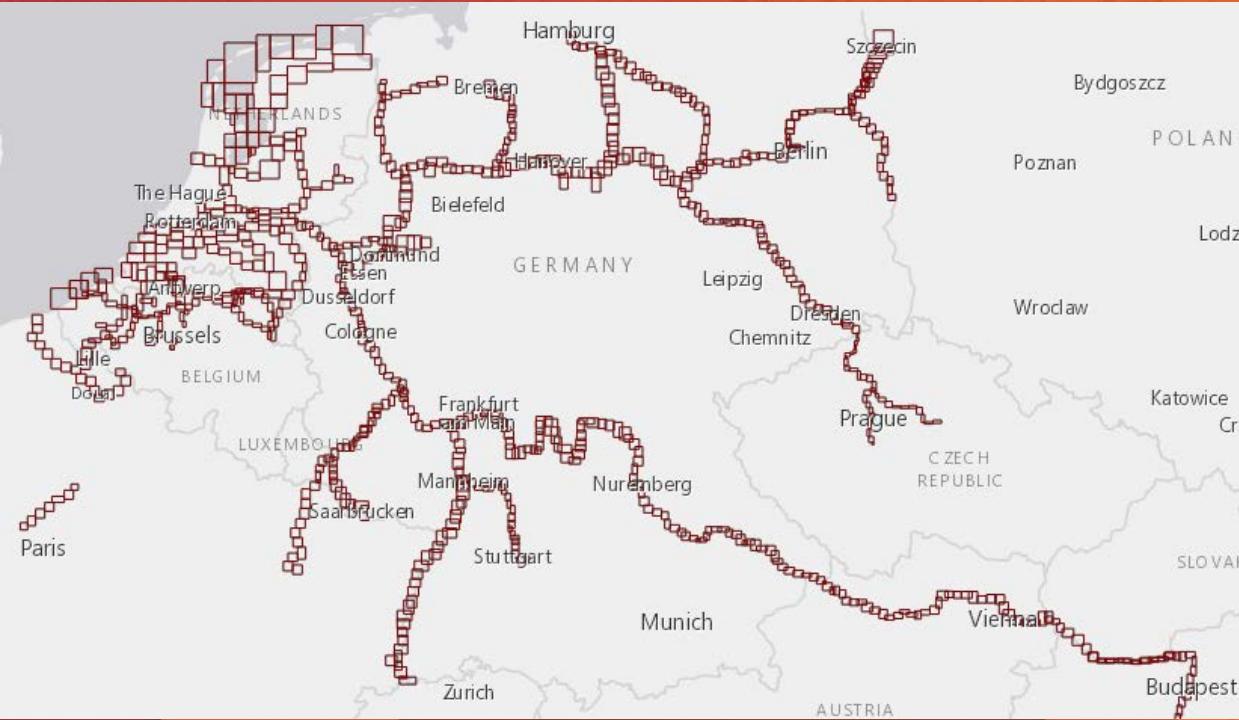
- ArcGIS Server Object Extension
- S-52 Display
- Search
- Identify
- S-63 Decryption
- Up to Date Information



*Providing new services...  
... Increased quality*

# ArcGIS for Maritime: Server System of Engagement





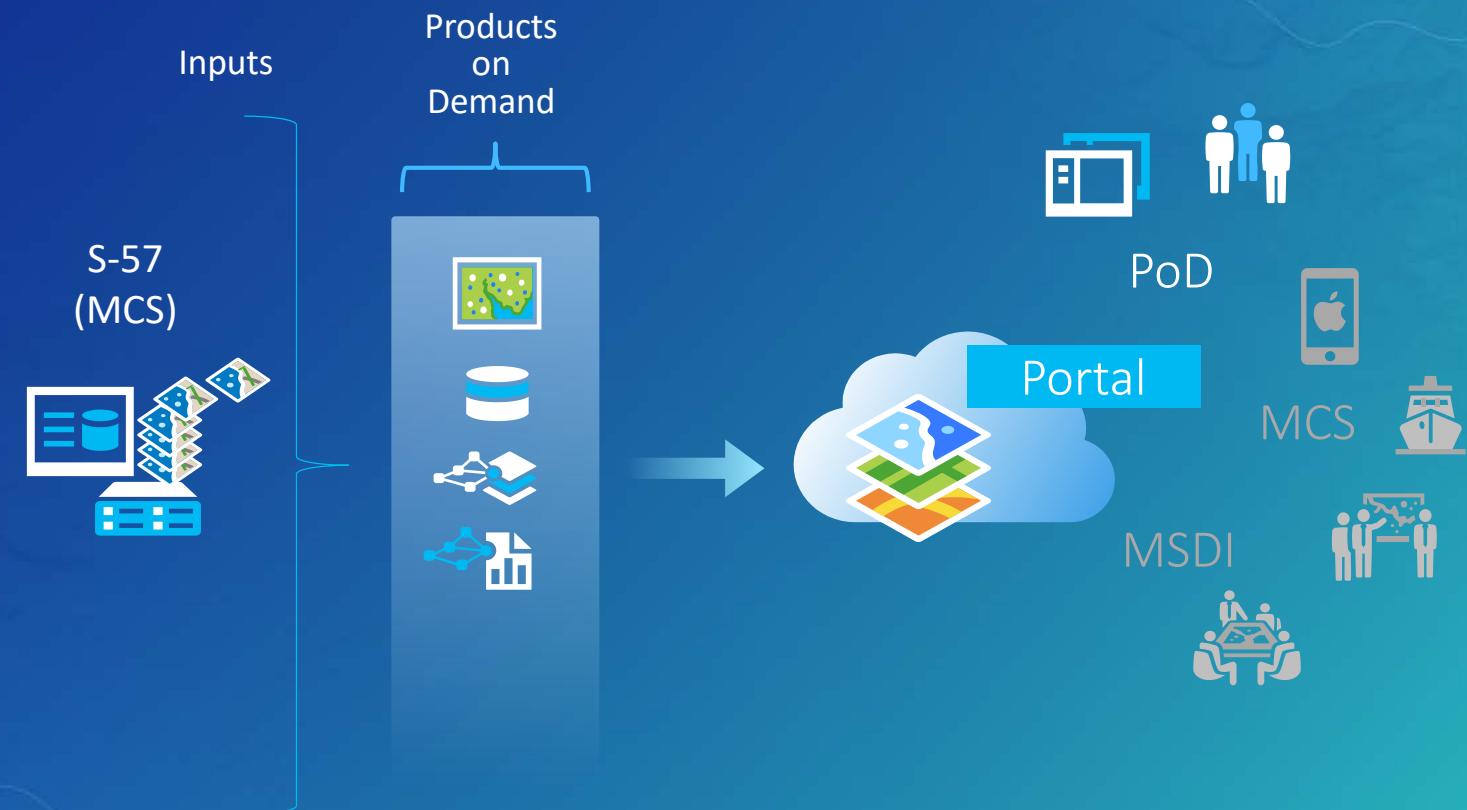
# Demo

<http://esriho.maps.arcgis.com/home/index.html>

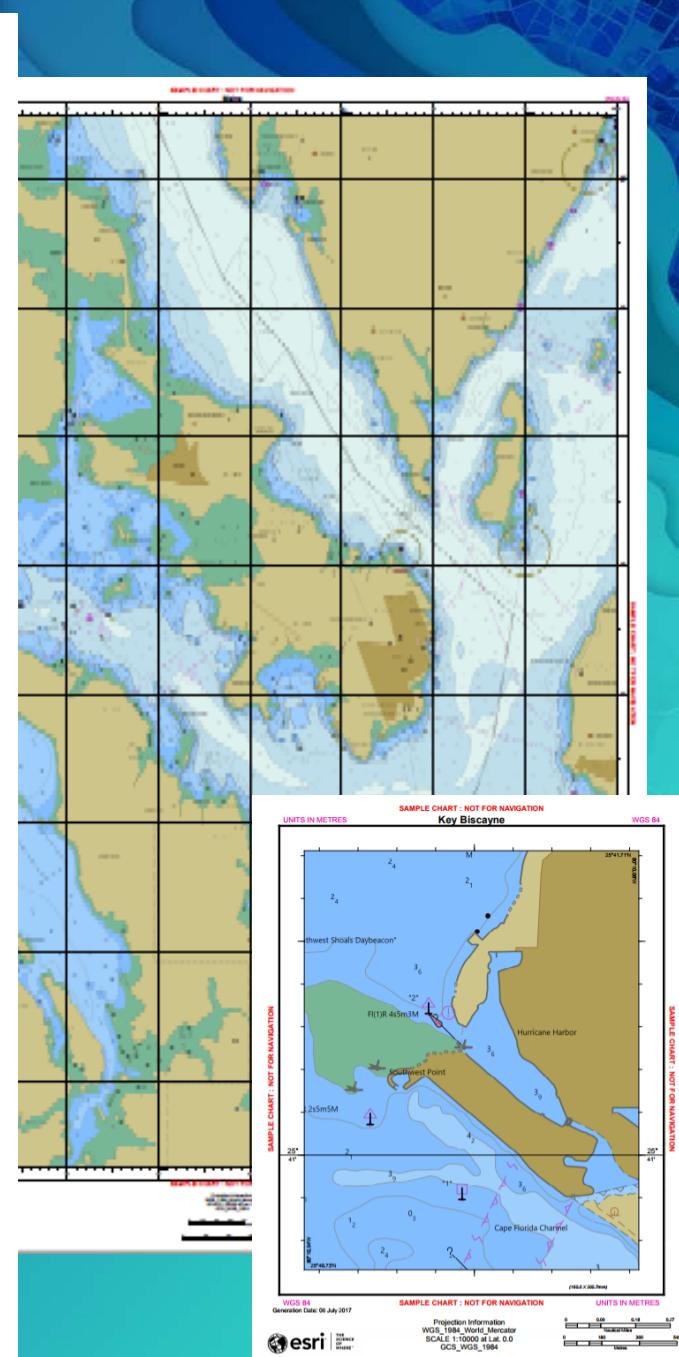
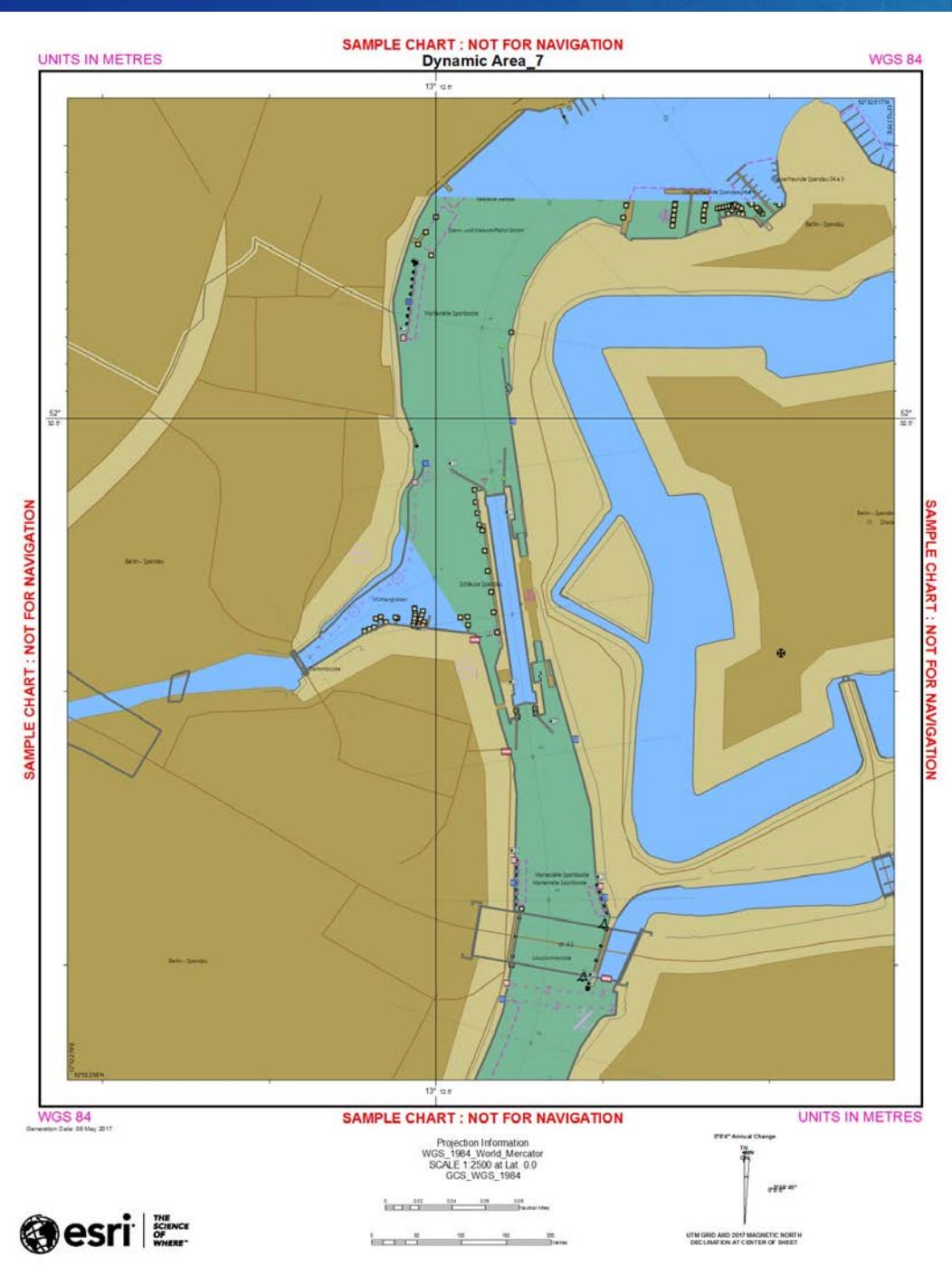
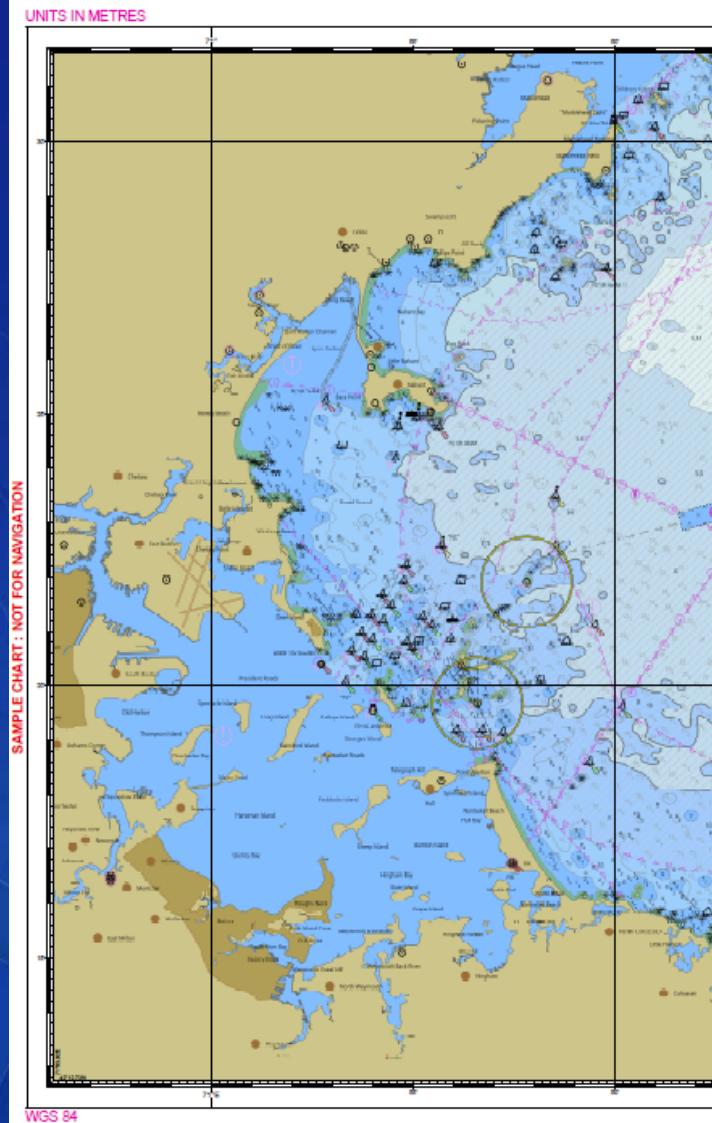
# Products on Demand

10.5.1 ArcGIS for Maritime: Server

# Products on Demand Architecture



# Products on Demand Overview



# Commitment to Paper Charts

- NOAA will continue making both raster (paper, RNC and PDF) and vector (ENC) nautical chart formats
- Coast Survey is always exploring options that will put resources to the best use updating products that have the greatest impact on safety of navigation for mariners and recreational boaters
- If use of paper nautical charts continue to fall, NOAA may re-evaluate the paper chart suite to make it better suited for:
  - Paper chart back up,
  - Recreational navigation, and
  - Small scale overview charts for voyage planning.
- Paper nautical charts may eventually look a little different to better support these purposes



**Office of Coast Survey**  
National Oceanic and Atmospheric Administration

16

Credit: John Nyberg NOAA, MCD Director: NOAA: Industry Day

# Demo

<http://esriho.maps.arcgis.com/home/index.html>





# Additional S-57/S-100 support

Supporting the platform

- ArcGIS Runtime SDKs

- S-57 Hydrographic Layer
  - S-57 ENC on .NET

- Quartz ArcGIS Runtime 100.2 (early 2018)
  - S-57/S-63 support for ENC, iENC and AML

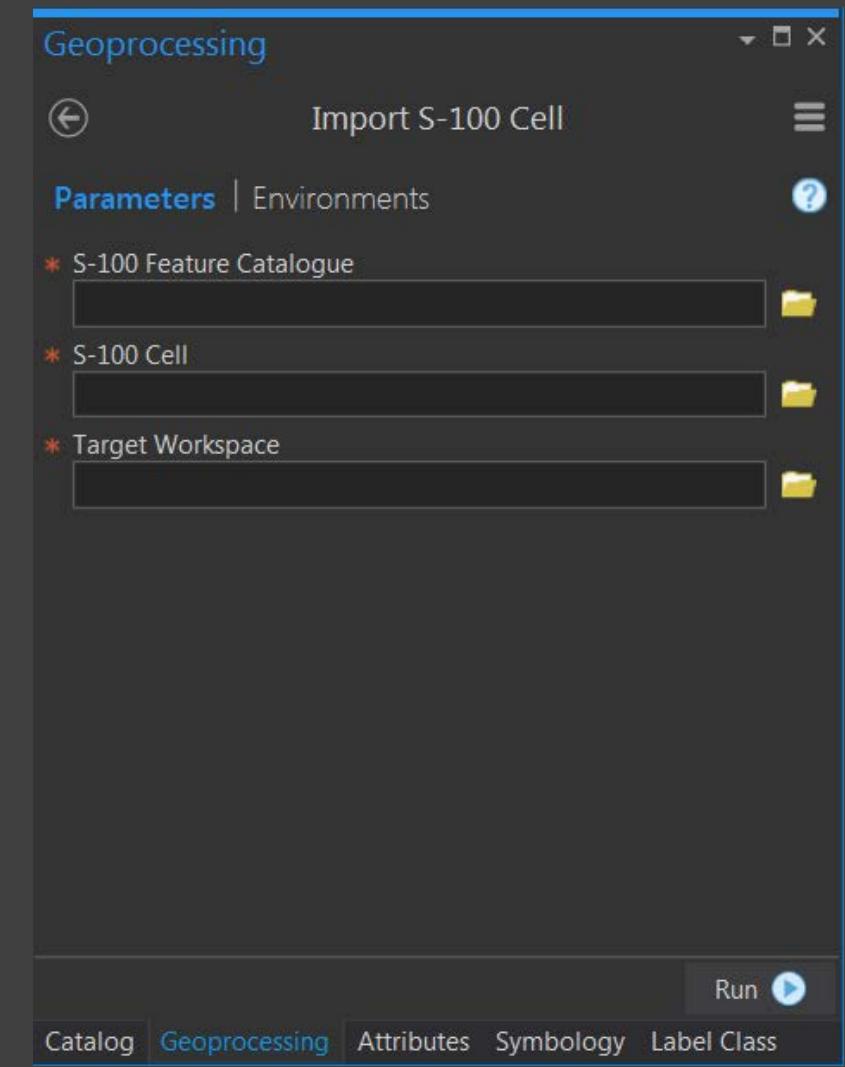
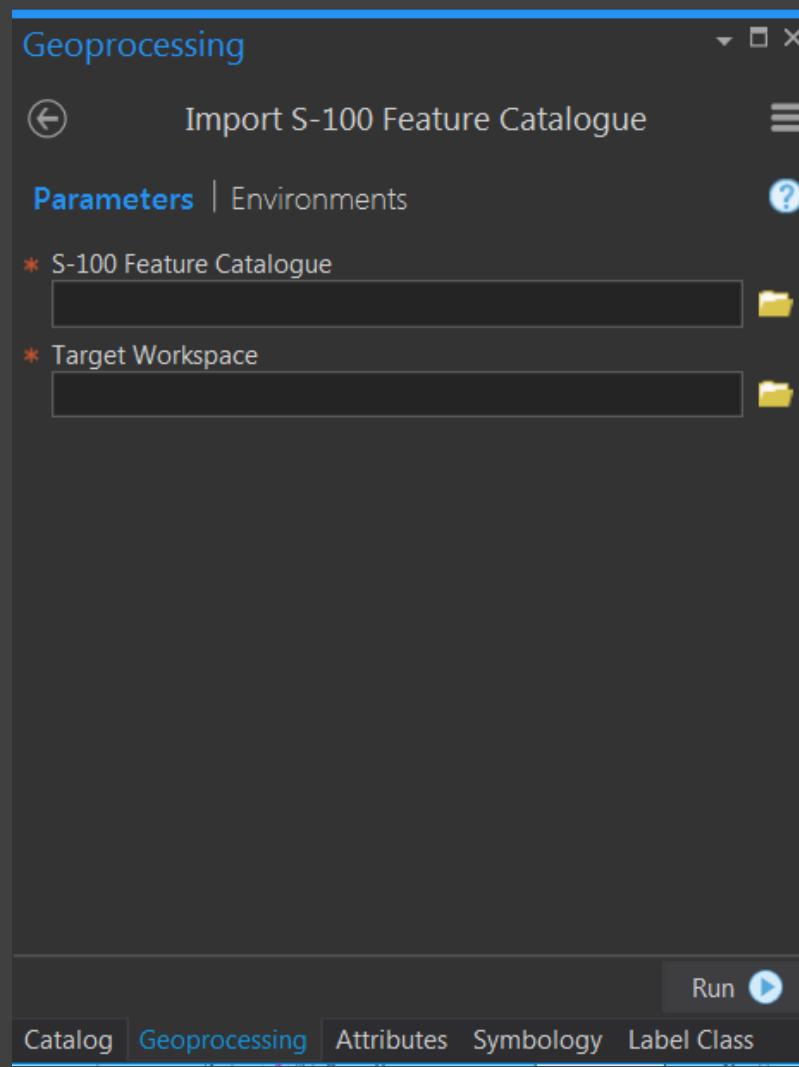


- ArcGIS Pro

- Will replace ArcMap S-57 Viewer

- S-100 based support will follow S-57 support throughout the ArcGIS platform as specifications are approved.

# New: S-100 in ArcGIS Pro



# Additional Information

## Maritime resources

- Maritime on Geonet: <https://geonet.esri.com/groups/arcgis-for-maritime>
- Demonstrations: <http://esriho.maps.arcgis.com/home/index.html>
- Sample WAB Widgets: <https://github.com/Esri/maritimechartservice-sample-viewer>
- Additional Presentations: <https://esri.box.com/v/IEHG14>

# Industry Success Stories

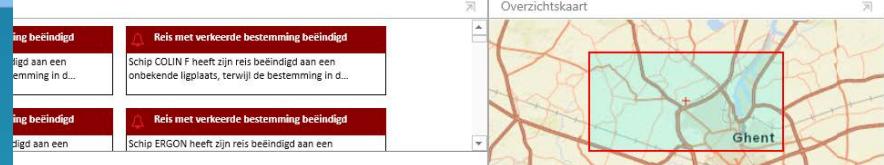
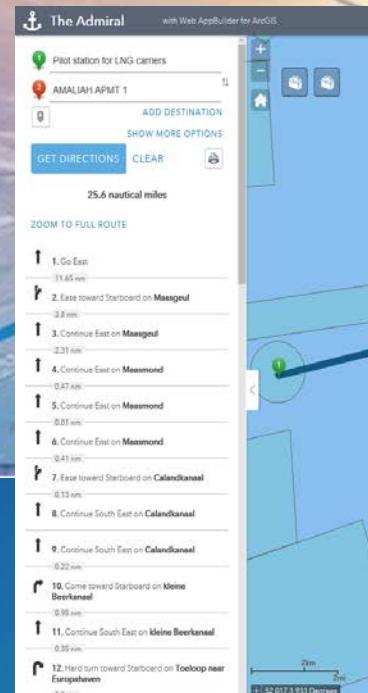


Download presentation at  
<https://esri.box.com/v/IEHG14>

# Navigate

Find. Compare. Connect.

**OPEN NAVIGATE** ➤





esri

THE  
SCIENCE  
OF  
WHERE