Charts on Demand: A New Revenue Stream for Hydrographic Agencies

Kevin Ingram, Senior Technical Manager, Maritime

Rafael Ponce, Global Maritime Business Development Manager

Challenges for Hydrographic Organizations

Shrinking Budgets

Shrinking Staff

New Missions

New Product Types

New Stakeholders

maritime@esri.com

Charts on Demand

ArcGIS Desktop:
Data Ingest & Preparation

ArcGIS Server:
Cartographic
Data Storage

Web GIS:
Product Request &
Delivery

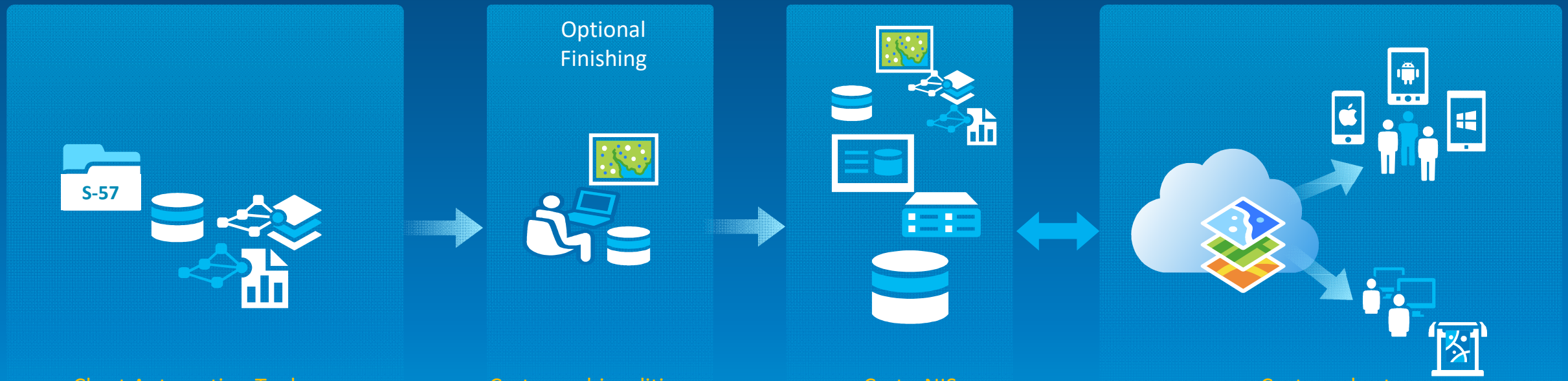


Chart Automation Tool

Cartographic editing

Carto-NIS

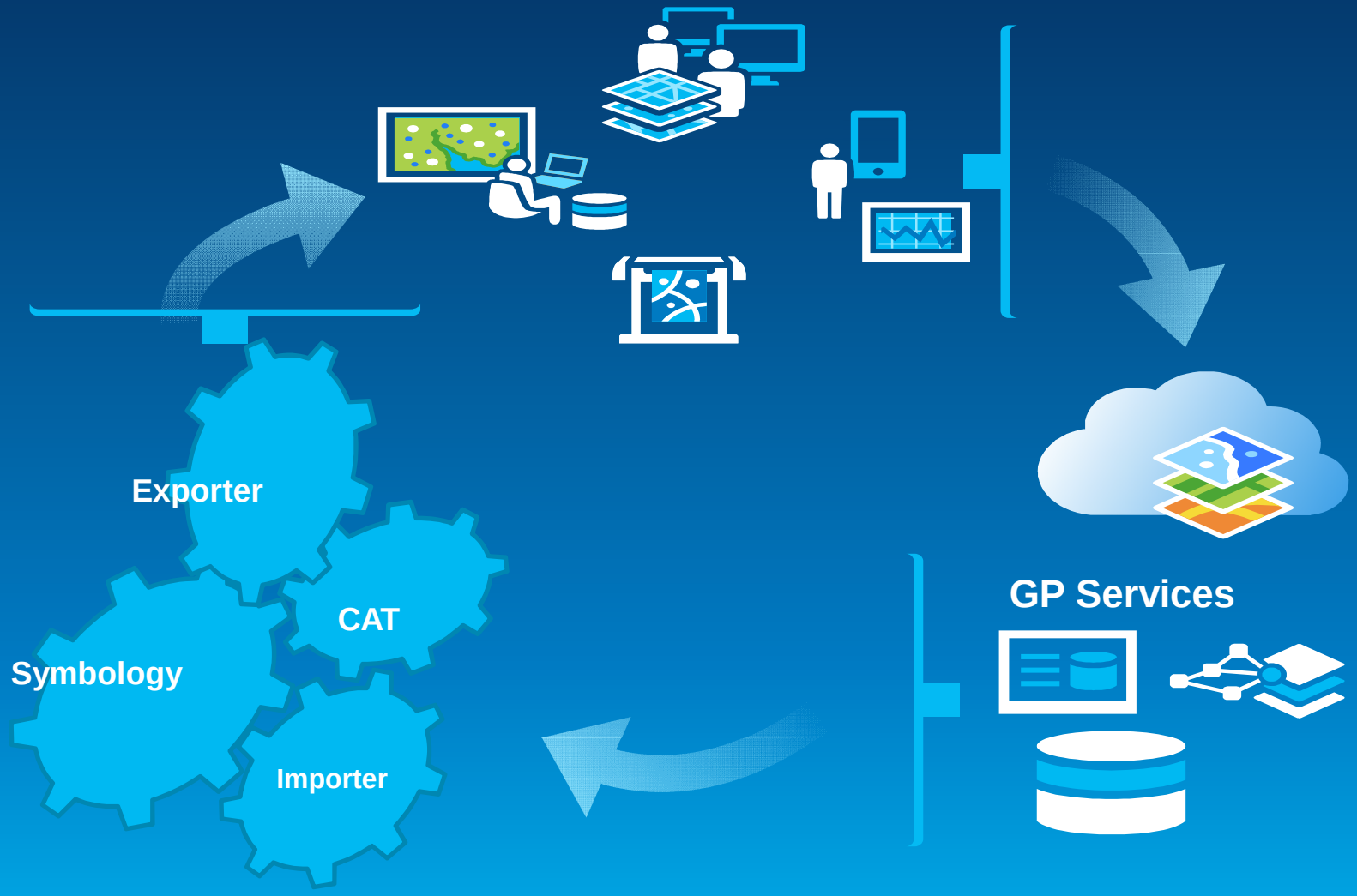
Custom charts

ESRI CONFIDENTIAL

ESRI PROPRIETARY

Product on Demand (PoD)

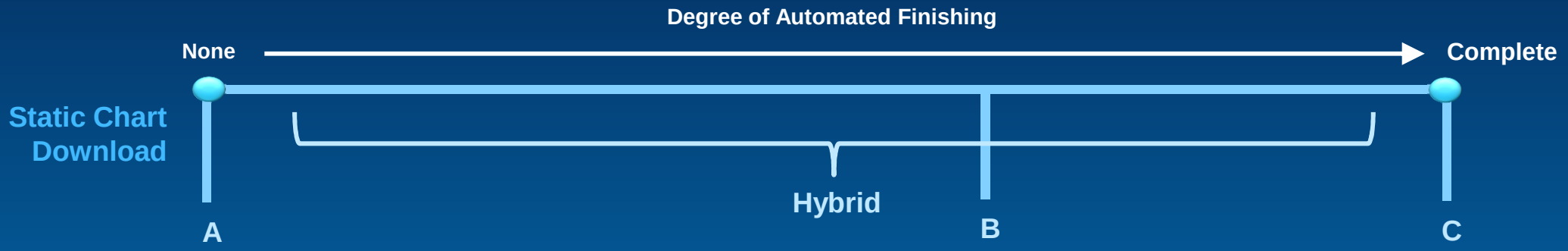
Charting in the Cloud: Defined

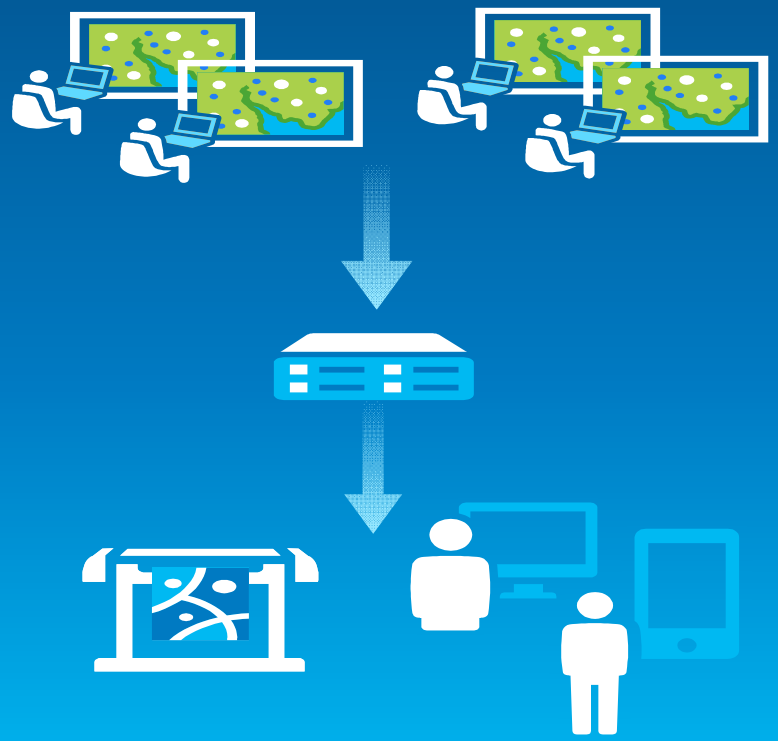


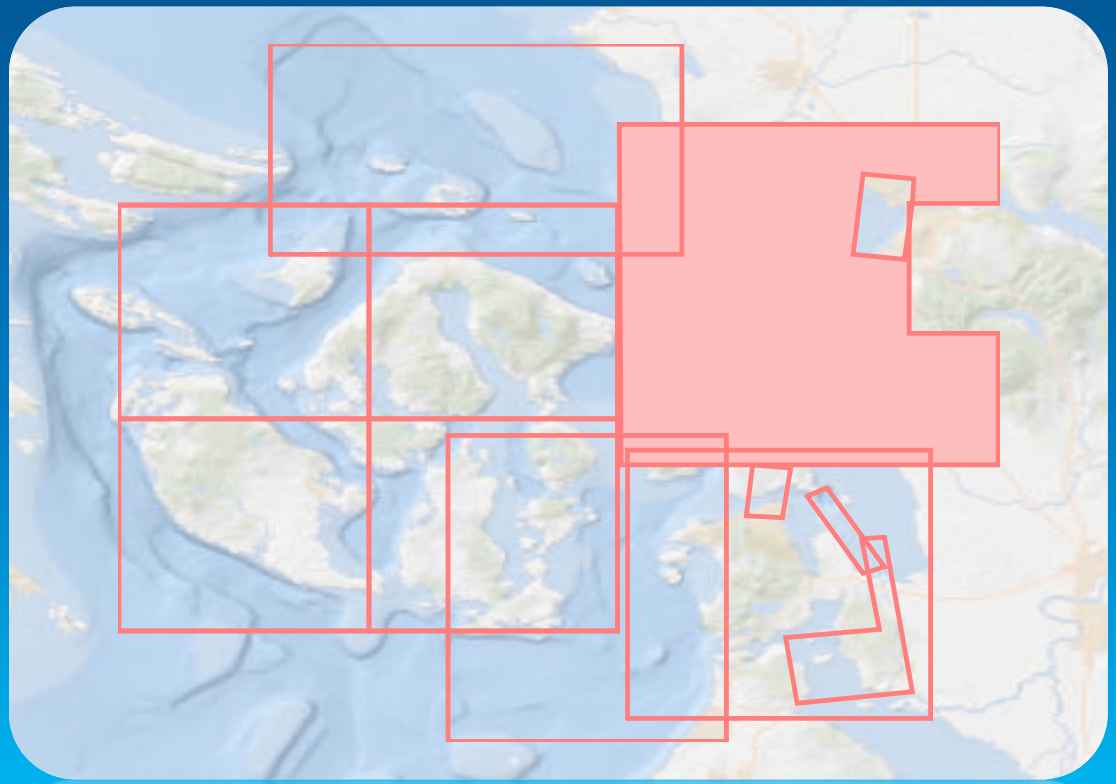
maritime@esri.com

Product on Demand (PoD)

Static Download

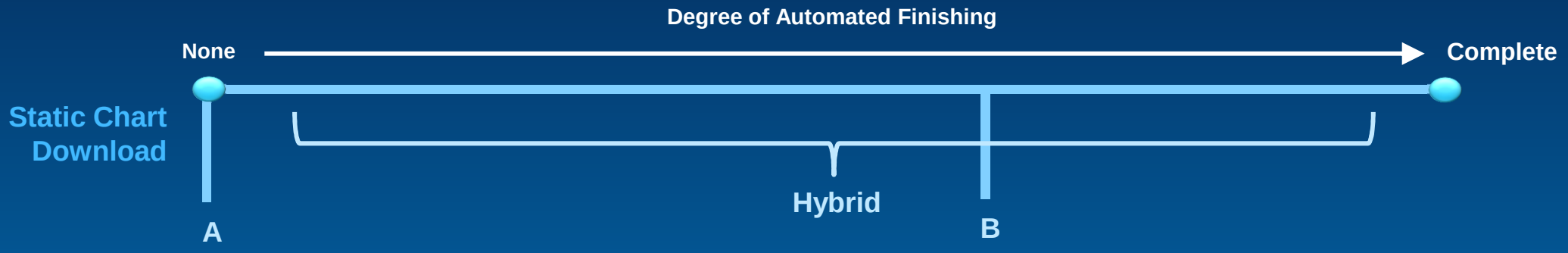


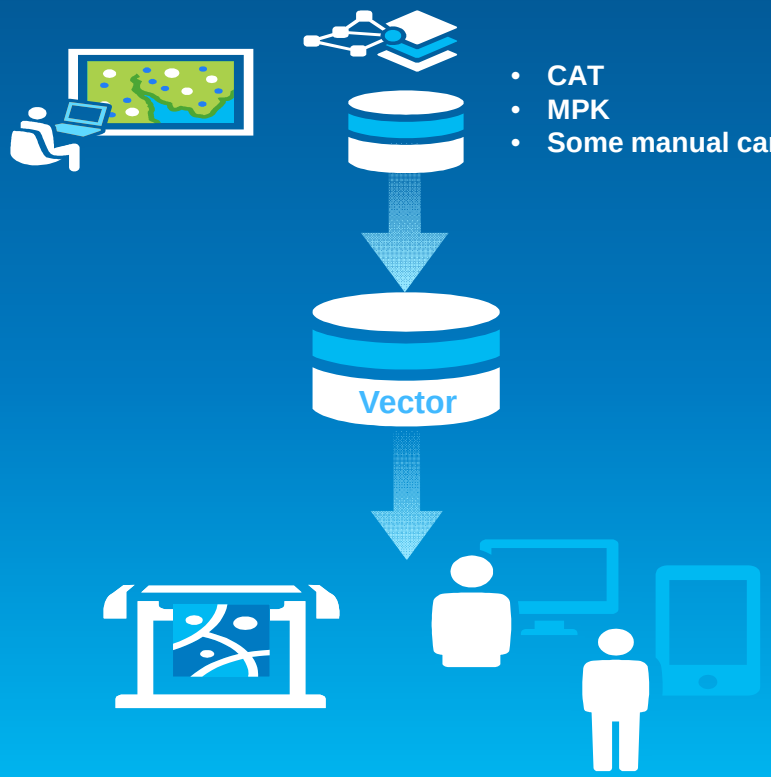




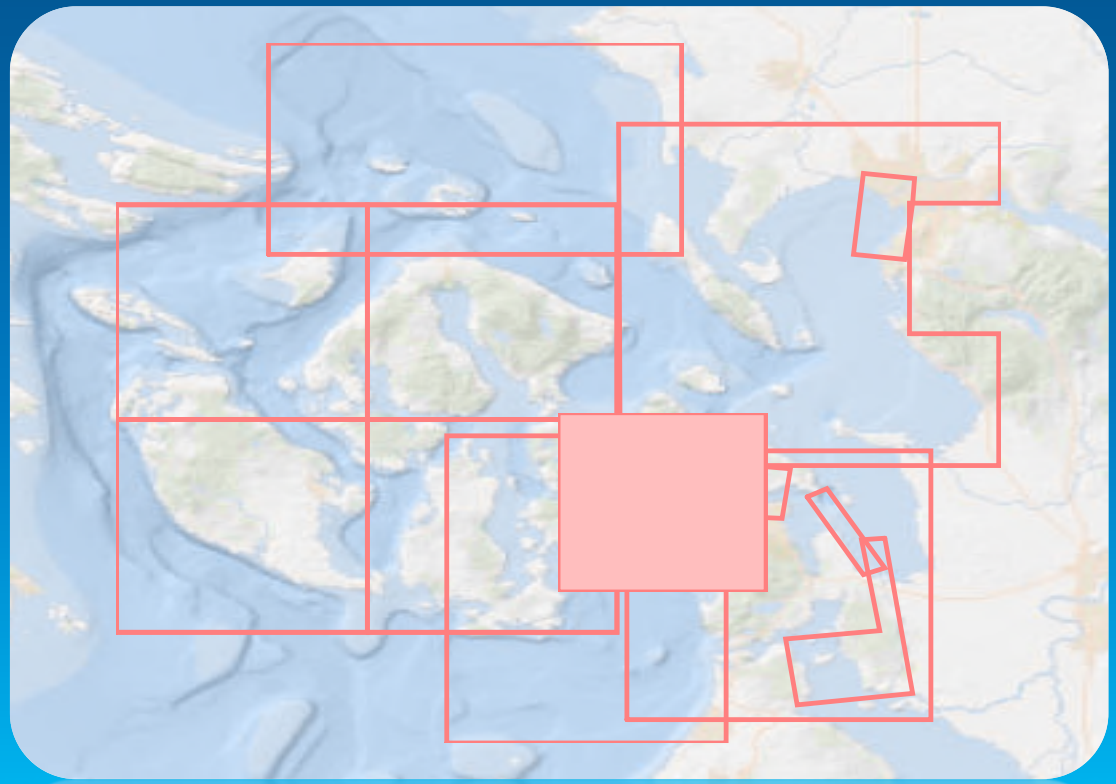
Product on Demand (PoD)

Hybrid



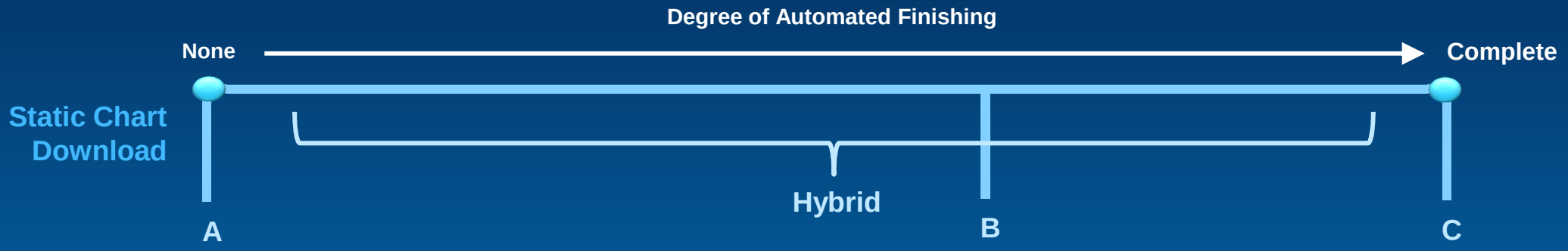


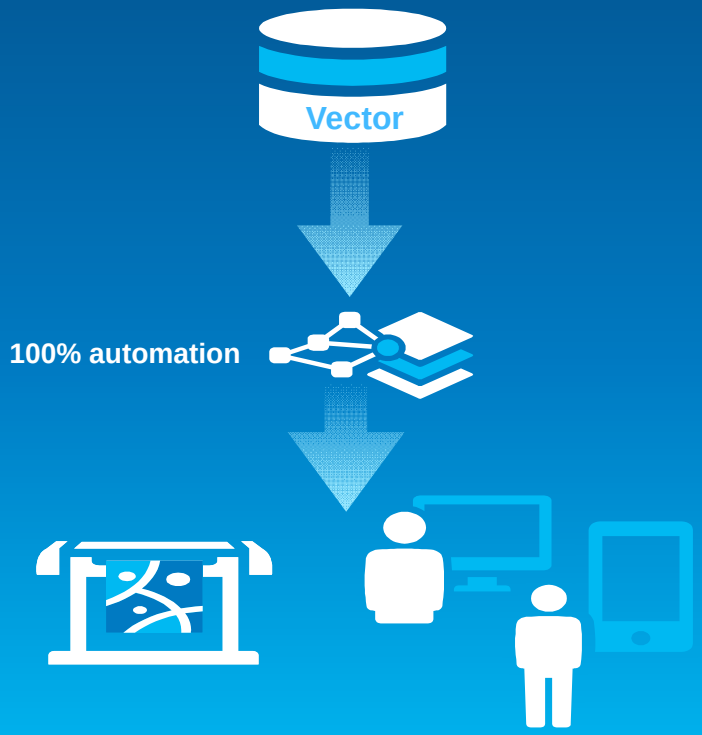
- CAT
- MPK
- Some manual carto

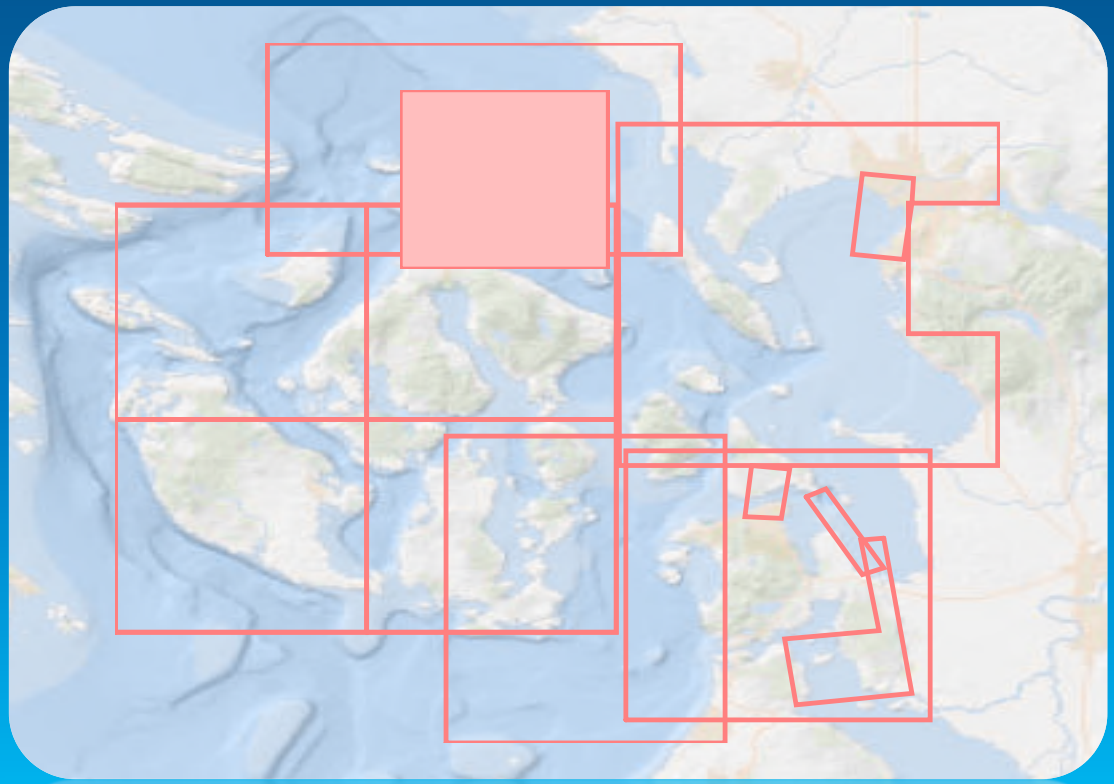


Product on Demand (PoD)

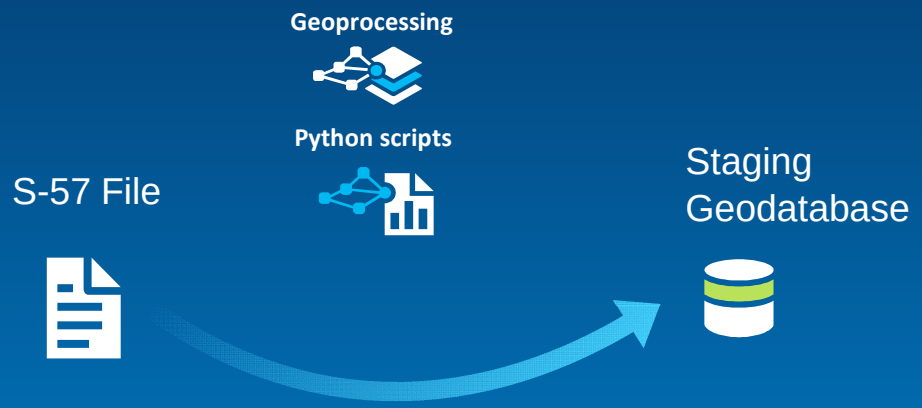
Complete Automation







Automated Chart Data Preparation



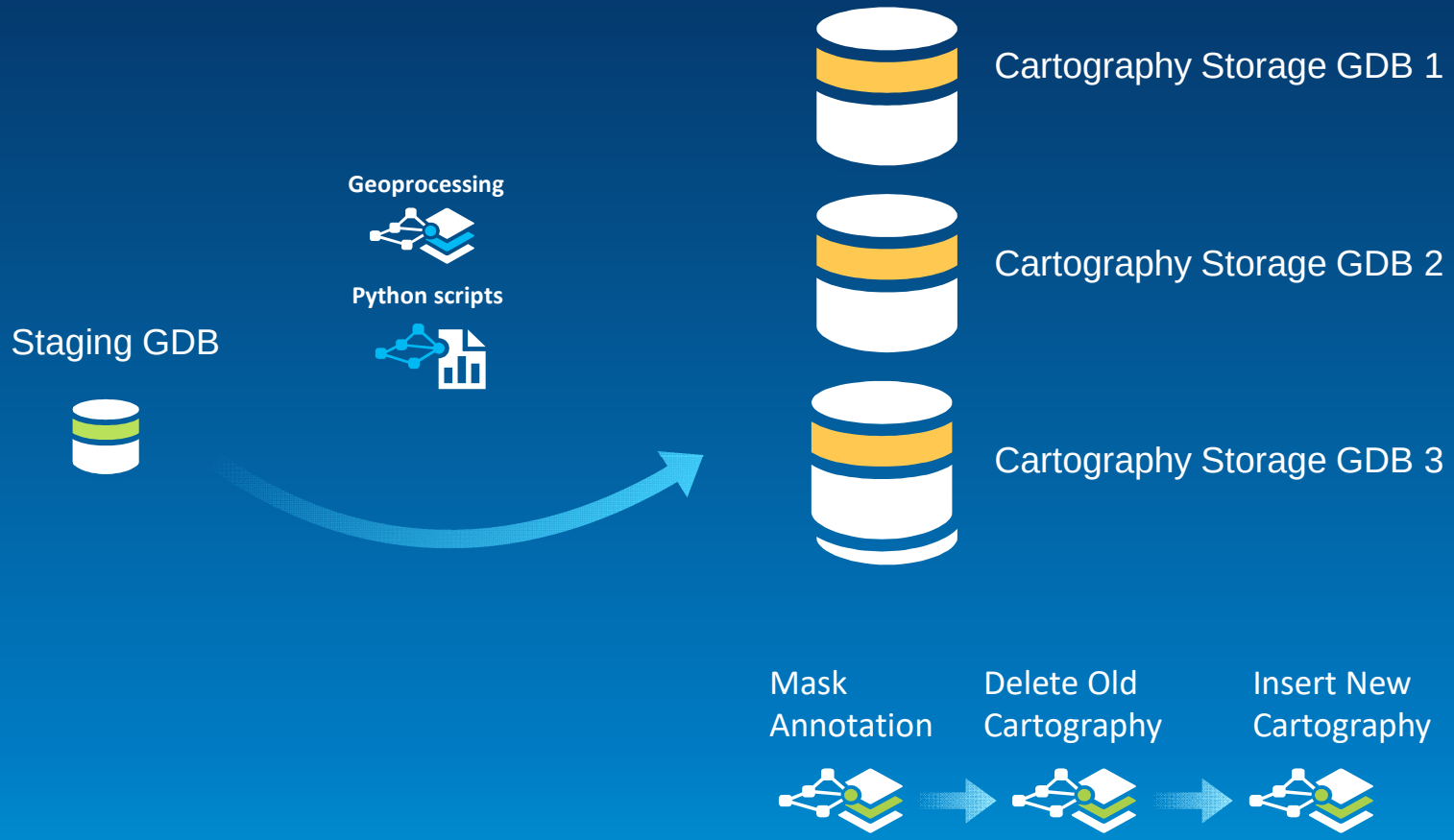
Ingest S-57 → Carto limits → Light Sectors → Symbology → Annotation → Masking

….hundreds of manual steps replaced by automation….

ESRI CONFIDENTIAL

ESRI PROPRIETARY

Automated Cartographic Storage Update

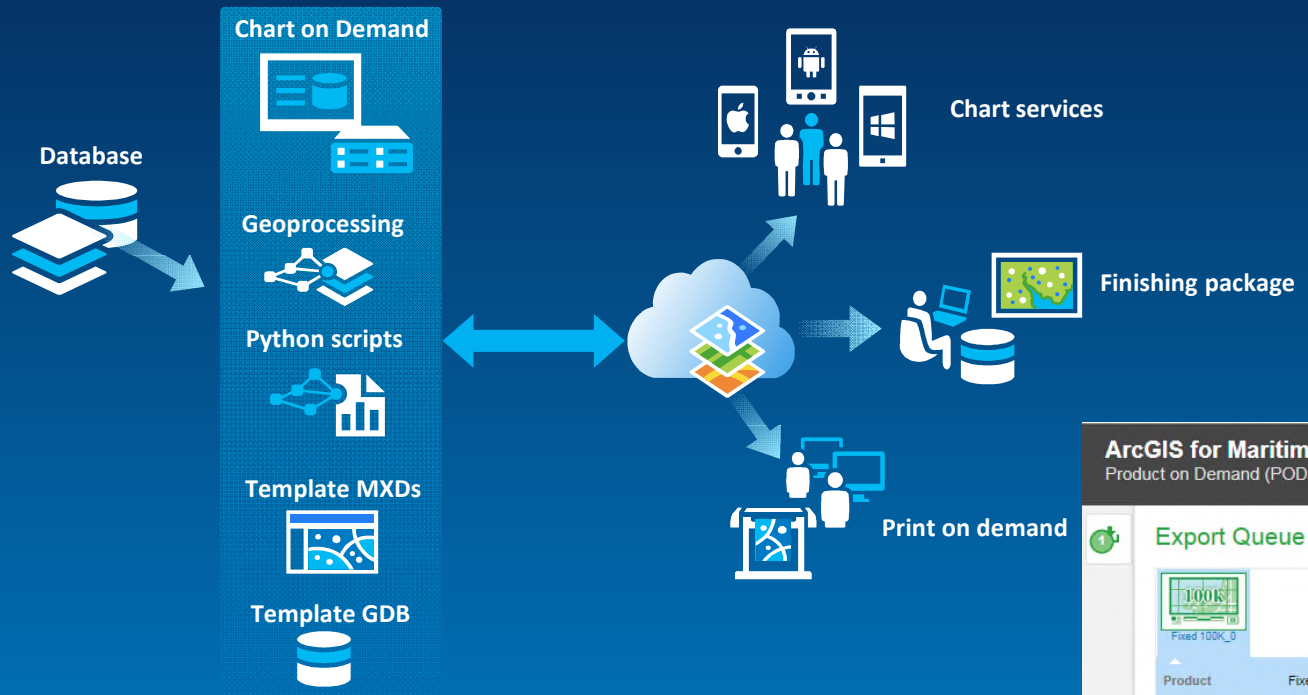


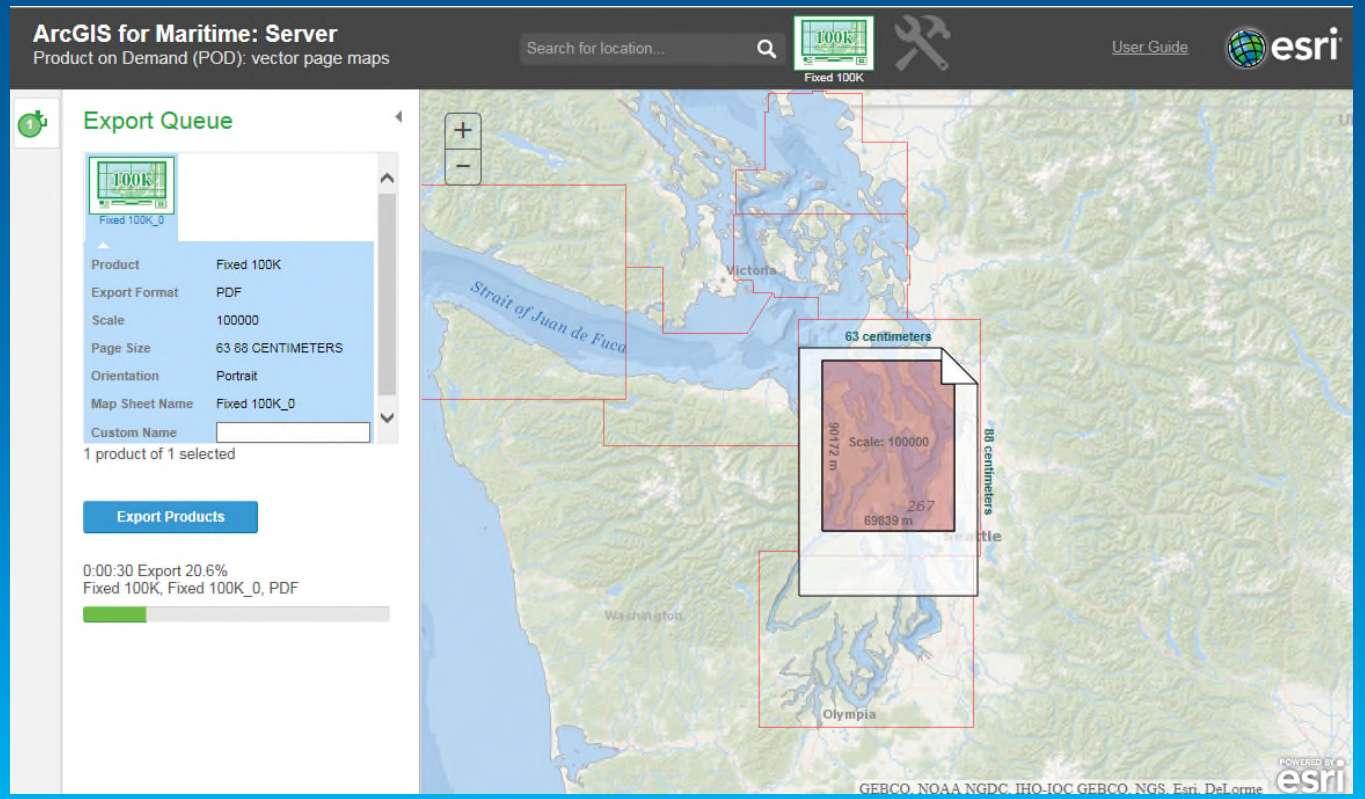
….hundreds of manual steps replaced by automation….

ESRI CONFIDENTIAL

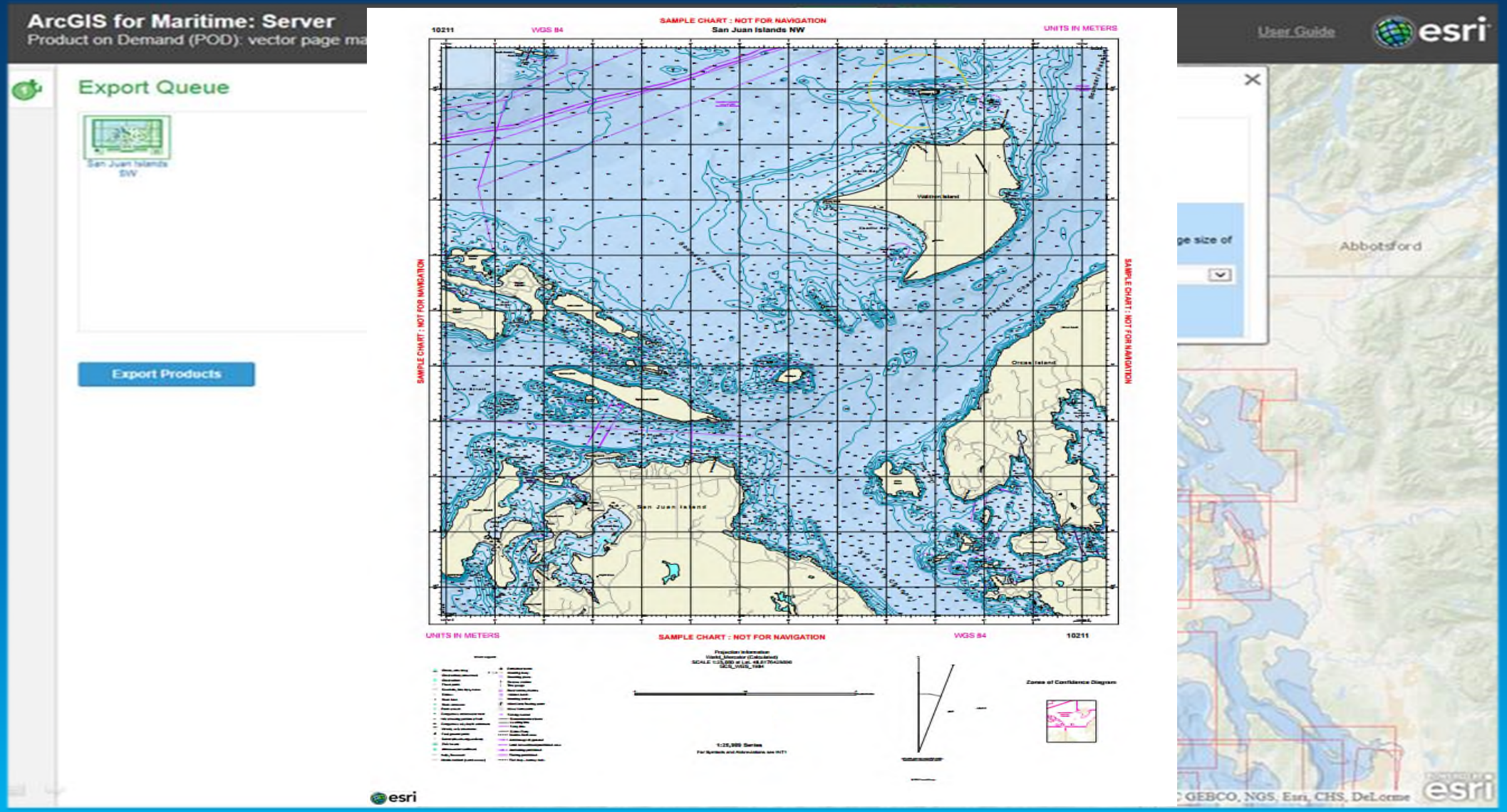
ESRI PROPRIETARY

Web-based chart production





Product on Demand (PoD)



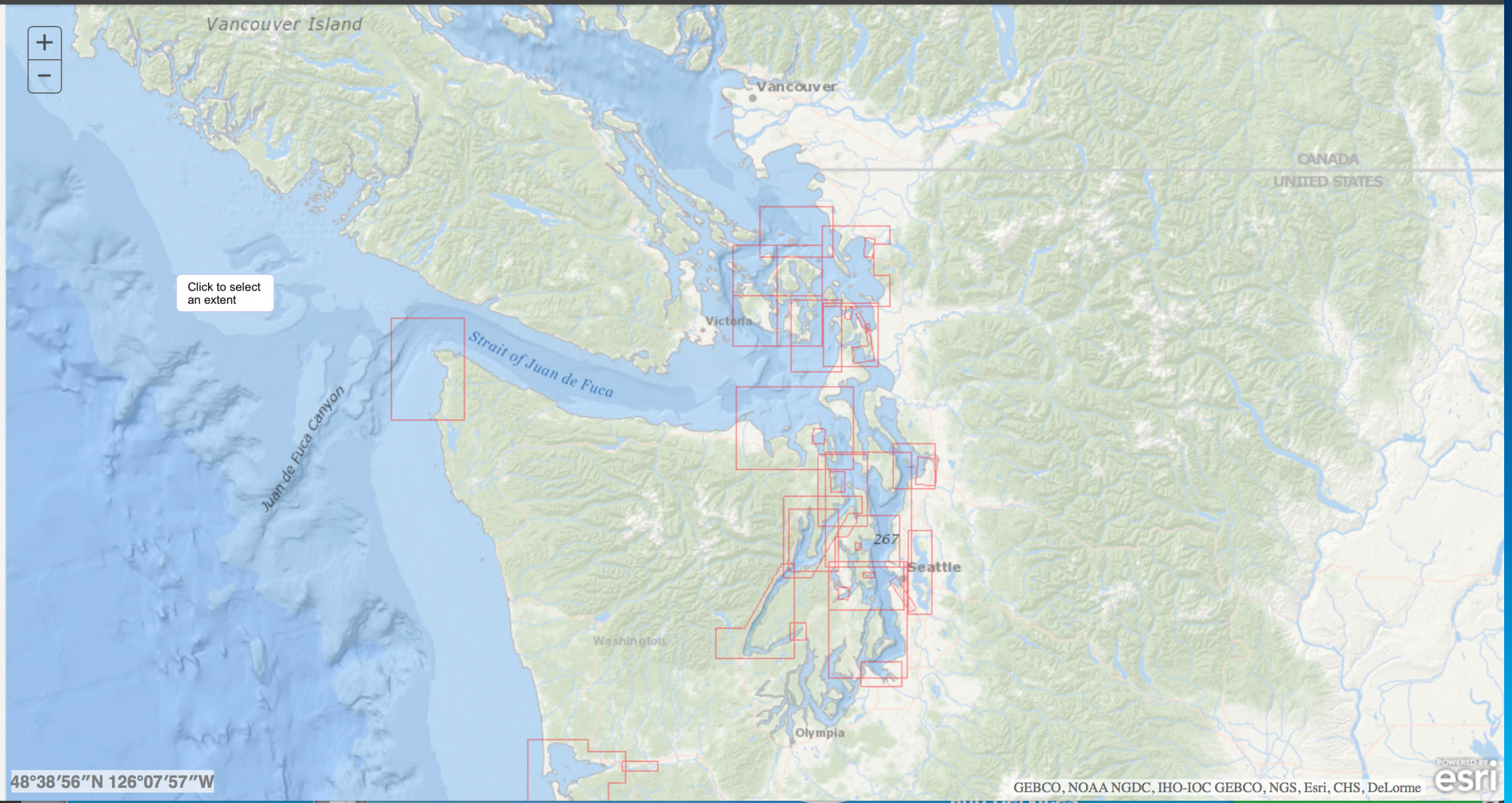
ArcGIS for Maritime: Server

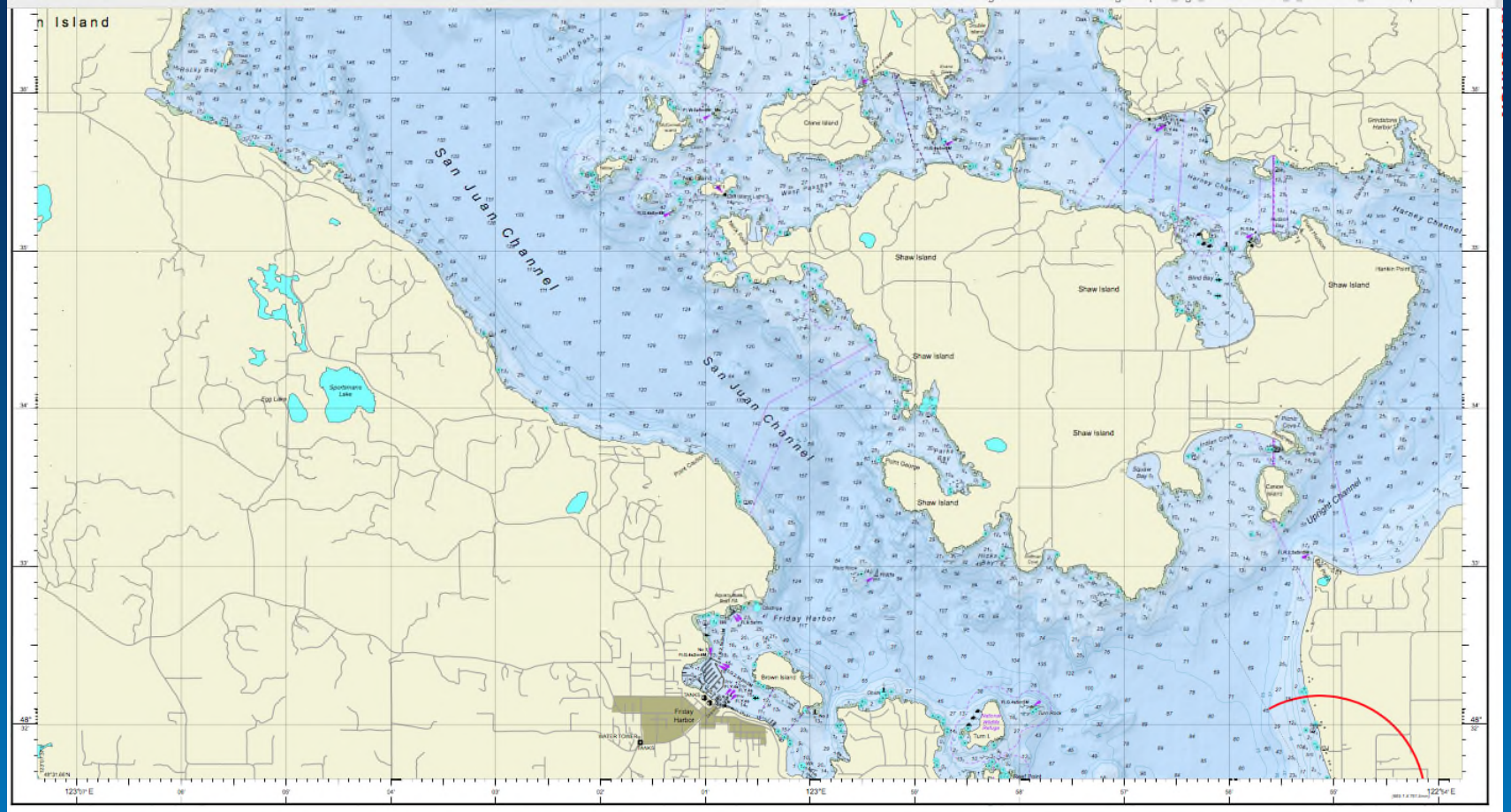
Product on Demand (POD): vector page maps

Search for location...

Fixed 25K

User Guide





UNITS IN METERS

SAMPLE CHART : NOT FOR NAVIGATION

WGS 84

CUSTOM

Chart Legend

- Obstn, wire drag
- Obstruction, non-shoal
- Obstruction
- Fixed point
- Overfalls, tide rips, races
- Eddies
- Rock islet
- Rock uncovers
- Rock awash
- Dangerous underwater rock
- Wk showing portion of hull
- Dangerous wk, depth unknown
- Wreck, safe clearance
- Foul ground point
- Subm pile-stk-sng-well-stp
- Fish haven
- Above-water wellhead
- Kelp, Seaweed
- Mobile bottom (sand waves)
- Container crane
- Mooring buoy
- Boarding place
- Rescue station
- Tide gauge
- Boat harbor, Marina
- Visitors berth
- Mooring tanker
- Wind farm floating point
- Wave farm point
- Fishing harbor
- Recommended track
- Leading line
- Ferry line
- Cable Ferry
- Marine farm area
- Anchorage in general
- Limit of restricted/prohibited area
- Anchoring prohibited
- Fishing prohibited
- Fish trap - tunney nets

Projection Information
World_Mercator (Calculated)
SCALE 1:25,000 at Lat. 48.6176429696
GCS_WGS_1984

0 1.5 3 Nautical Miles

1:25,000 Series

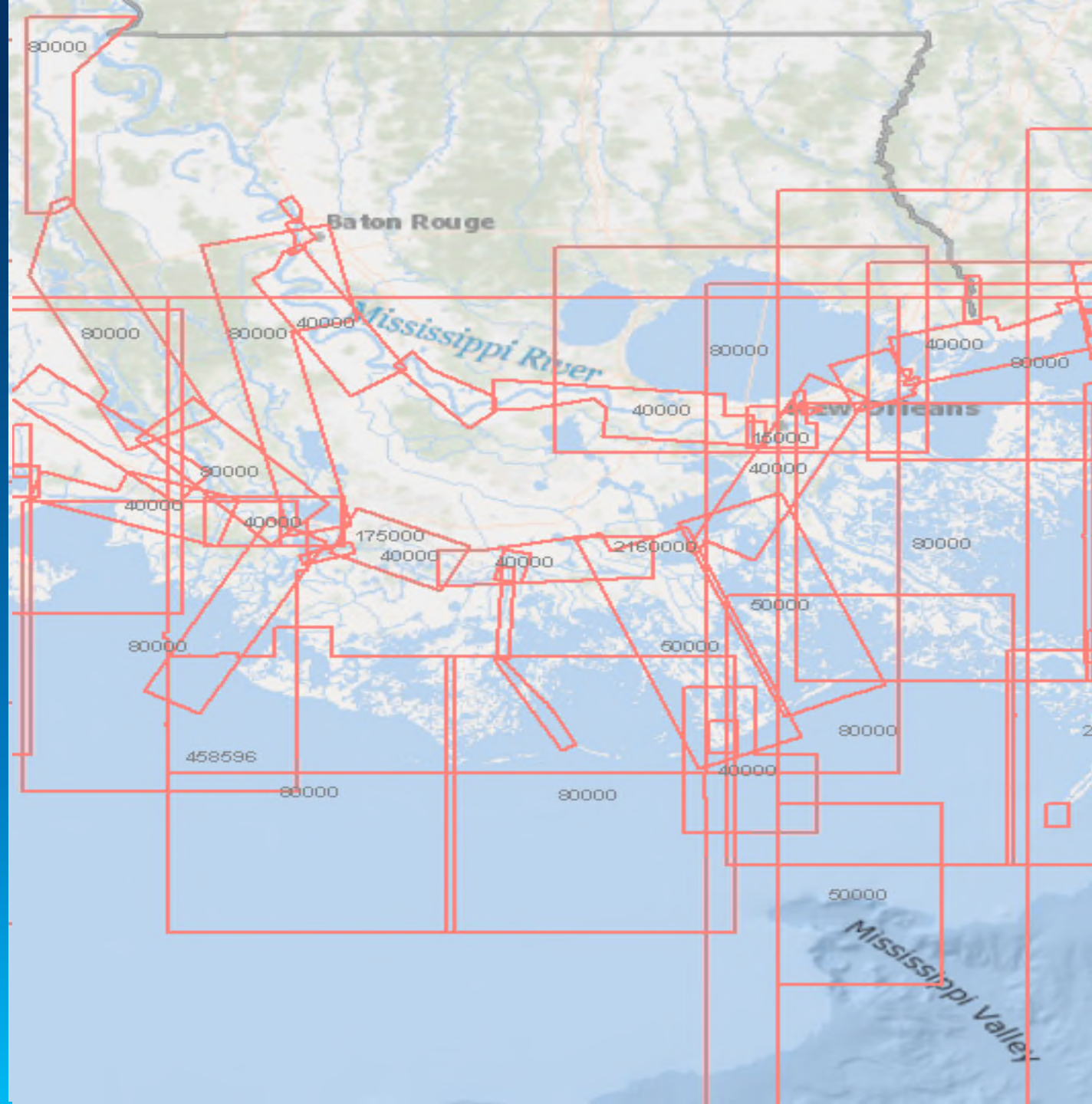
For Symbols and Abbreviations see INT1

Zones of Confidence Diagram

Product on Demand (PoD)

Deployment considerations

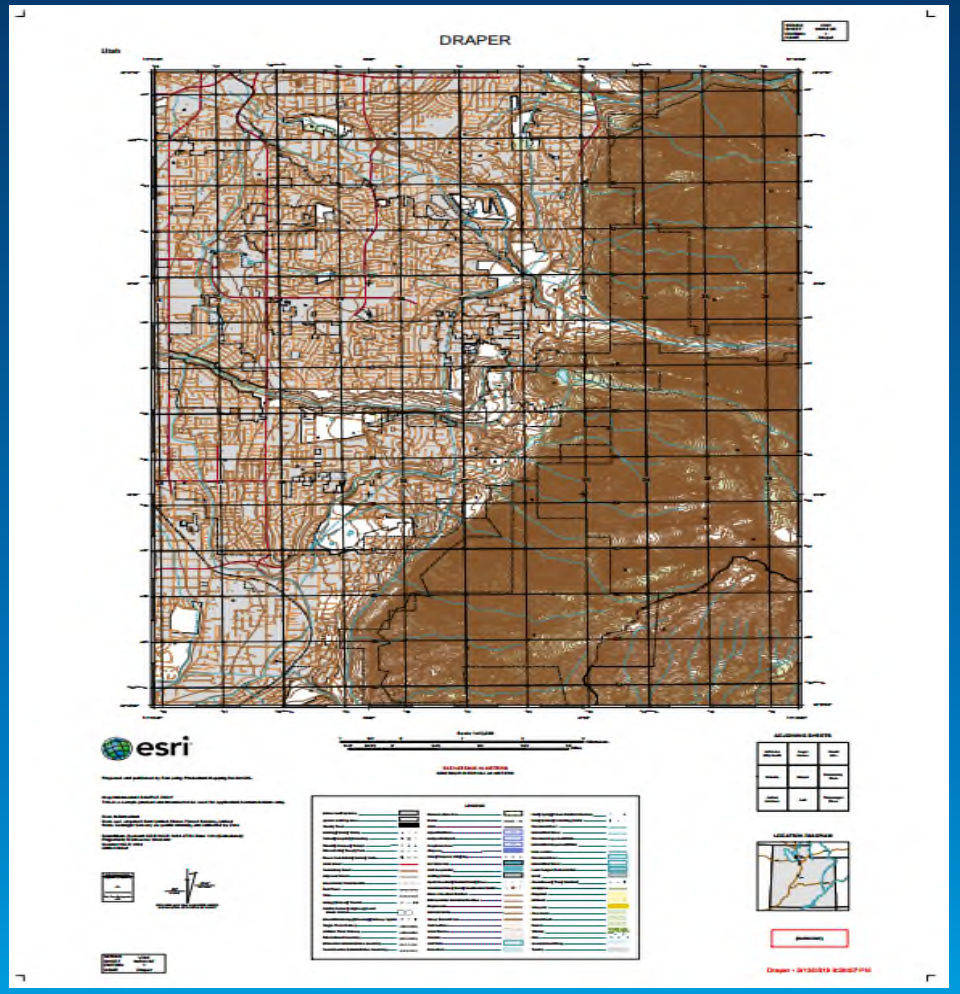
- **Layouts**
  - **Complex portfolio**
  - **Marginalia**
- **Scales**
- **History and tradition**



Product on Demand (PoD)

Examples

- NGA Enterprise Product on Demand Service
- USDA Forest Service topographic maps
  - Manages 17,000 maps
  - Produce 750 maps per month
- Government of Hong Kong lands department
  - 500 users
  - Variety of map content



maritime@esri.com

Product on Demand (PoD)

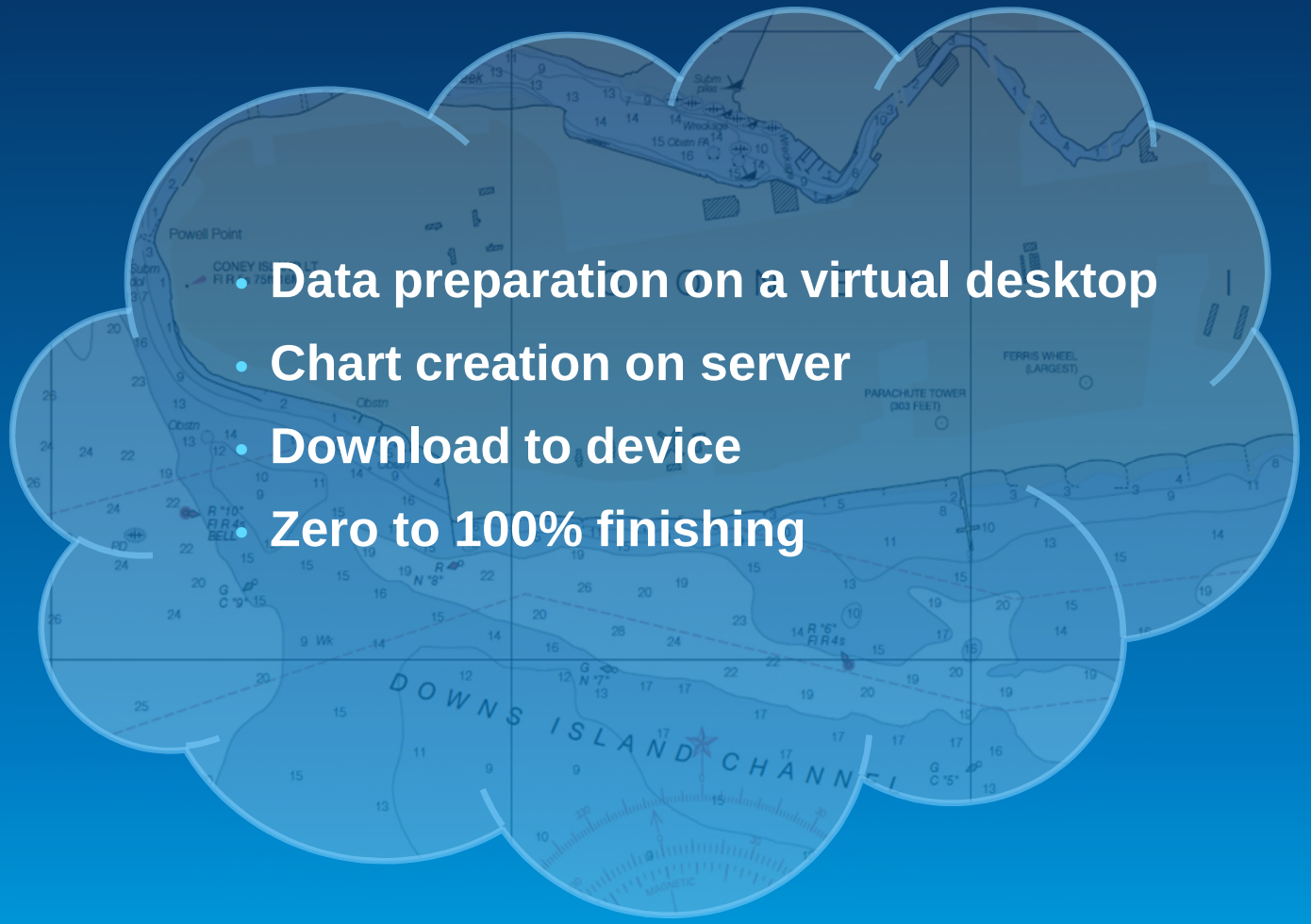
Benefits

- Notices/Patches/Updates
- Added value
- Complete automation
- Accelerate map creation
- Variety of deployment options

maritime@esri.com

Product on Demand (PoD)

Entire Chart Production System hosted in the Cloud



- **Data preparation on a virtual desktop**
- **Chart creation on server**
- **Download to device**
- **Zero to 100% finishing**

maritime@esri.com

Thank you!

Understanding our world.

Please sign in for our seminar on Thursday at 13:30 hrs. room WS-3

The Use of the ArcGIS Platform in Hydrographic Surveys (an entire workflow performed in Mexico)

rponce@esri.com