



The Hydrographic Approach

Oceanography
geography
Hydrography



our global network

CHRIS 20
ENC/ECDIS Seminar

DHN
Niteroi, RJ – Brazil
5 – 6 November 2008

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ArcGIS Nautical Solution Enterprise the Nautical Information System (NIS)



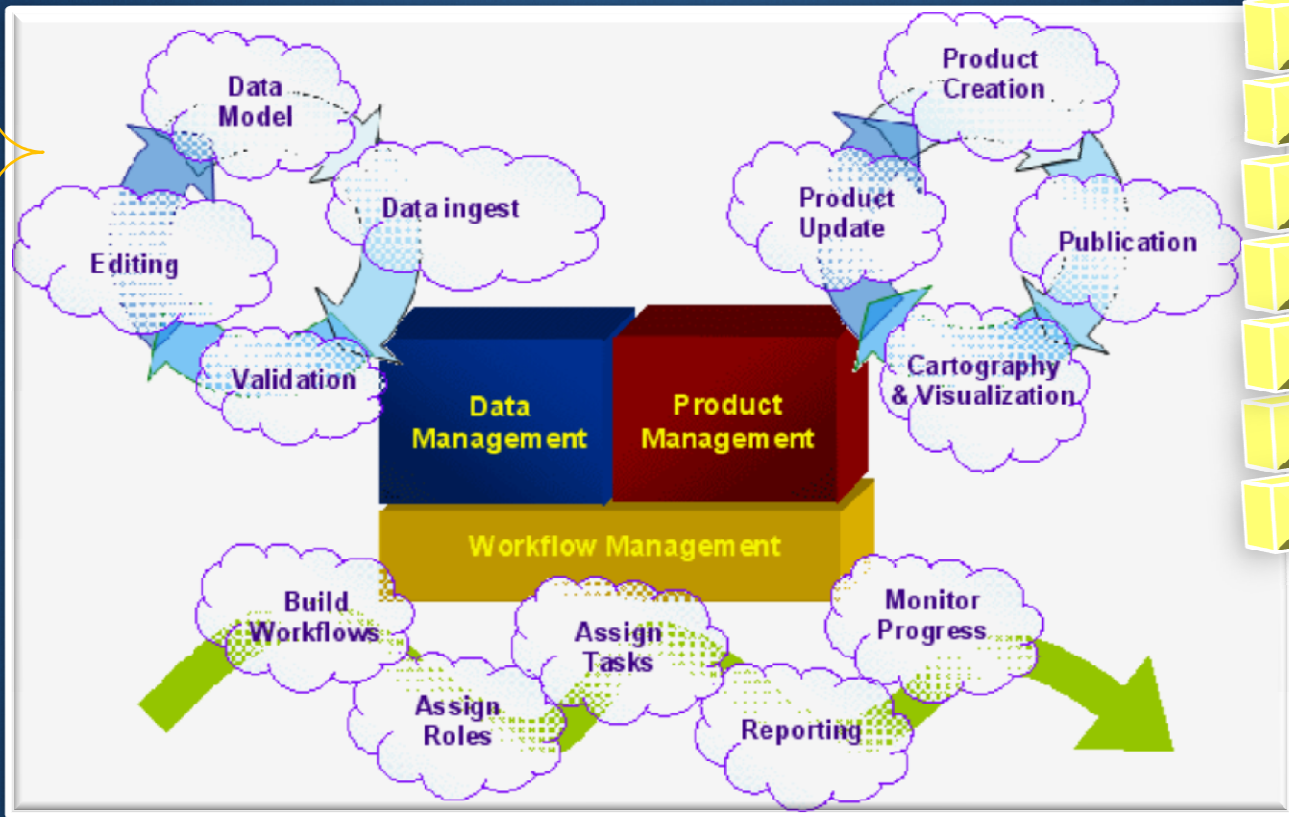
A Product Neutral Central Database approach

What is the NIS?



- SHAPE files
- Paper Charts
- ENCs
- DNCs
- Bathymetry
- Imagery
- Raster formats

- ENCs
- DNCs
- Paper Charts
- AMLs
- MIOs
- iENC
- PDF
- Geotiff



- A Database
- A Production System
- A Workflow

Data Management

- Versioning
- History/Archiving
- Replication
- Synchronization



Versioned editing



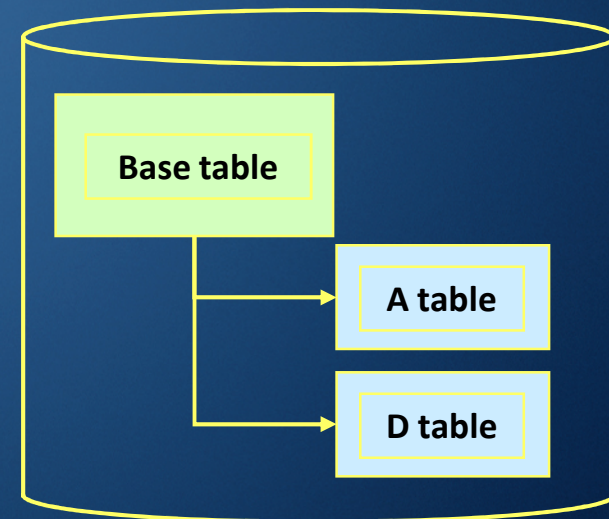
- **Advantages include:**

- Isolate editor's work over an extended period
- Reconcile and resolve conflicts between edits
- Implement workflow for business procedures
- Provides a mechanism to detect differences between collections of work orders completed by users (versions)

- **Architecture:**

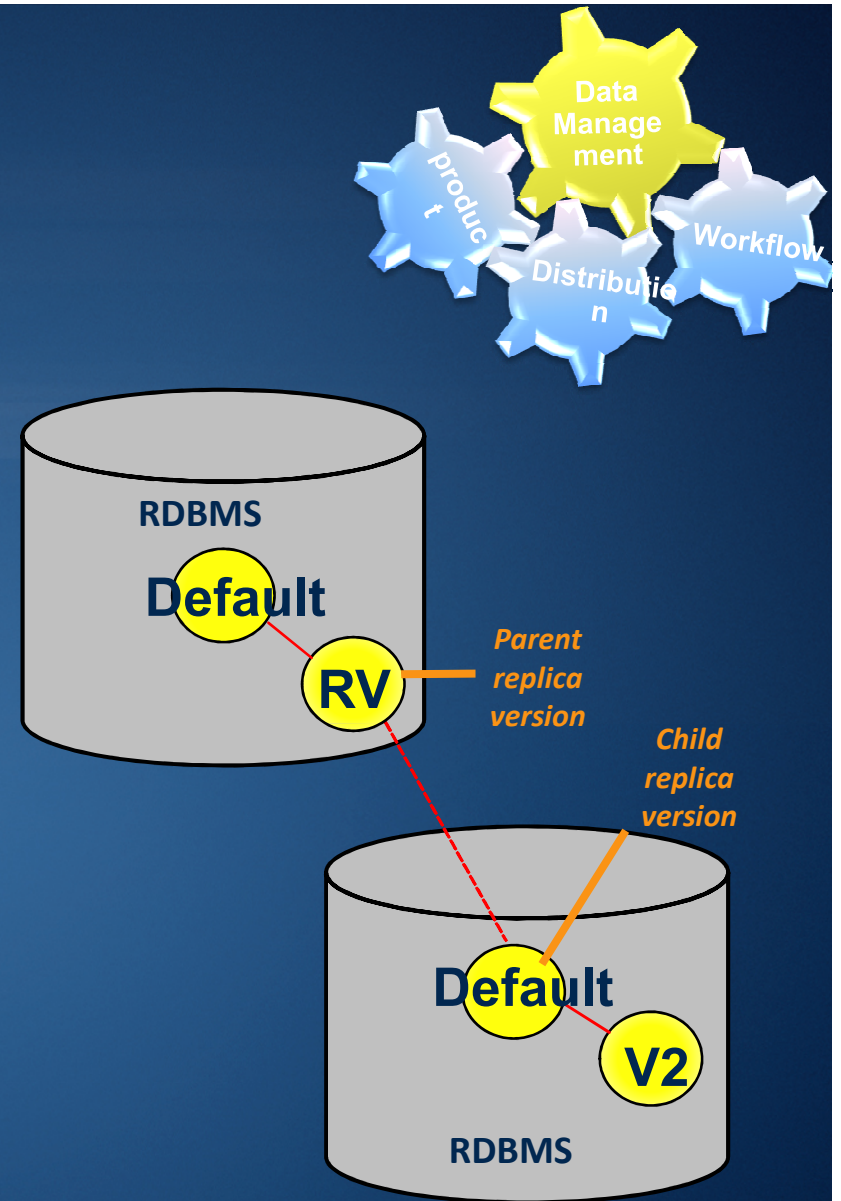
- Change to each feature class is preserved in A and D tables
- Change accessed through a version

Versioned editing:
Changes stored in A
and D tables



Replication and Versioning

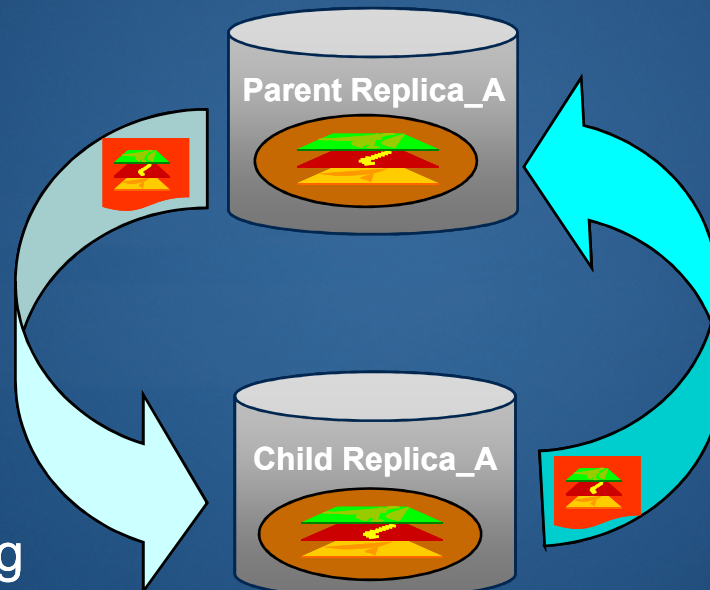
- Edits made to the replica versions are synchronized
- Like extending the version tree to span multiple databases



ESRI Replication - Concepts



- Basic replication relationship is between two replicas :
 - A Child Replica is created from a Parent Replica

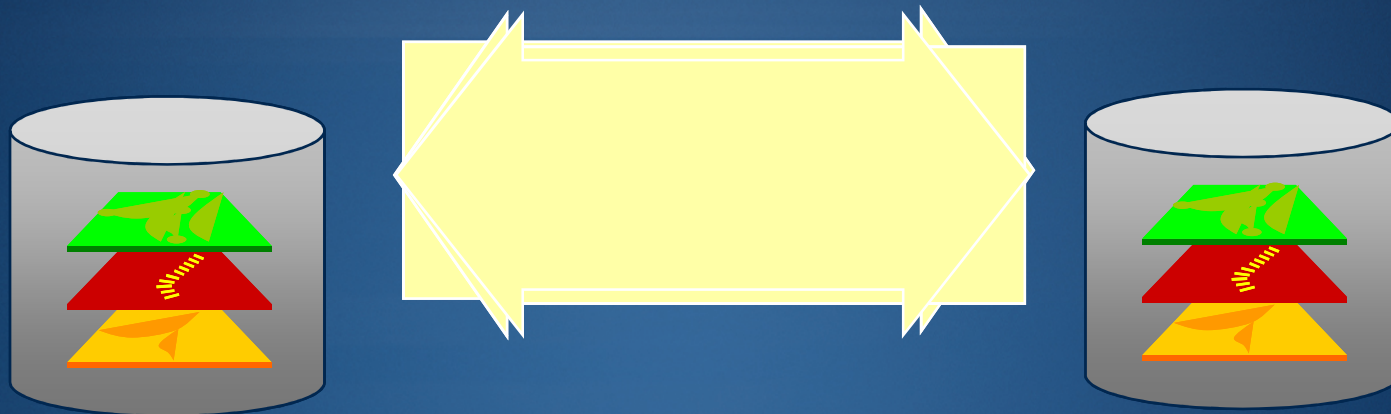


- Leverages Versioning
- You can replicate :
 - A specific version
 - Specific datasets
 - A subset of features in the chosen datasets

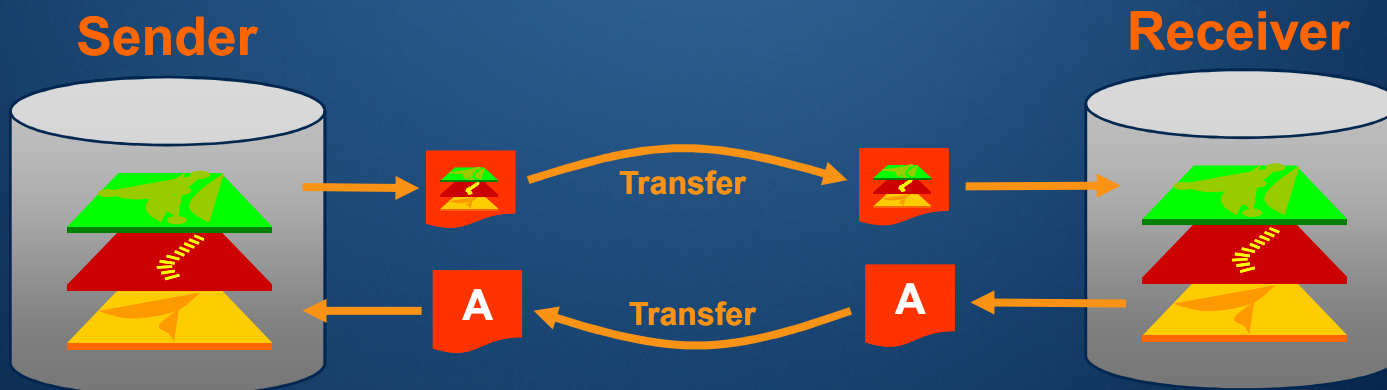
Replica Synchronization – Compare and Contrast



- Example 1 – Connected Synchronization with a 2 way replica



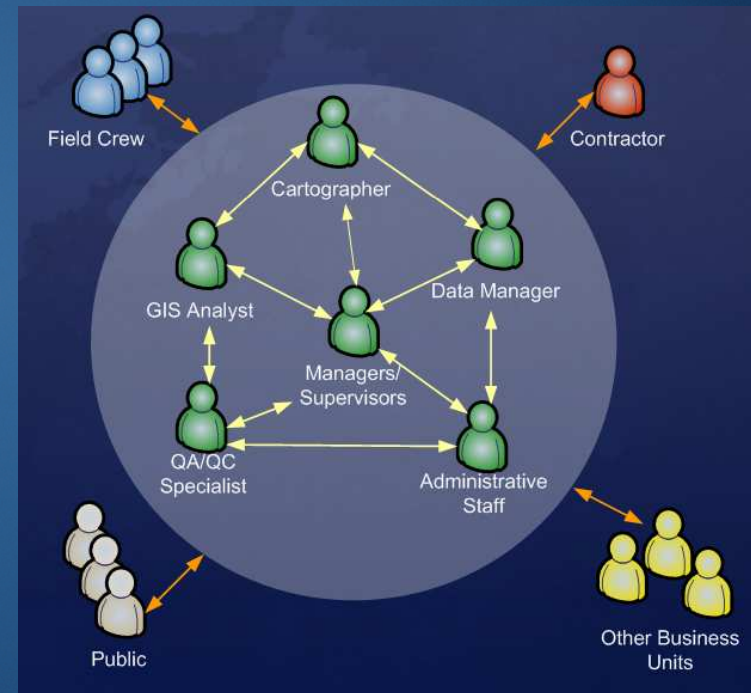
- Example 2 – Disconnected Synchronization with a 2 way replica



Managing Workflow



- Real-world GIS Implementations involve many specialists and concurrent operations
 - Many Tasks/People/Skills
 - Different Datasets
 - Complex Processes
- Perform work most efficiently
 - Better
 - Faster
 - Cheaper



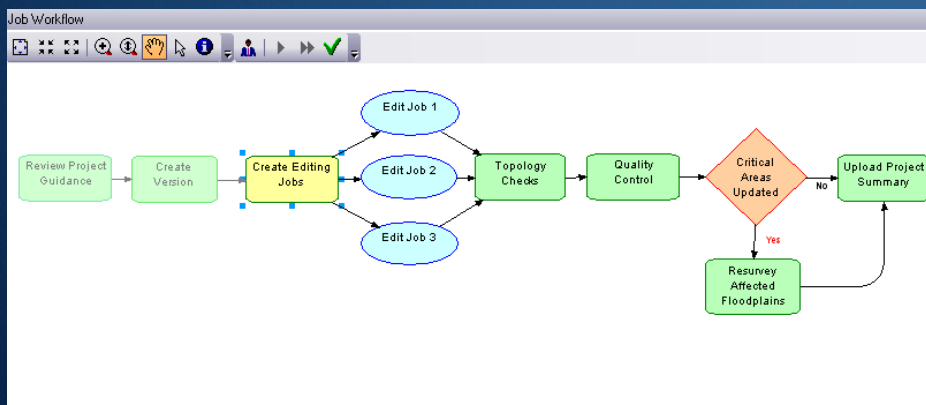
Enterprise geospatial workflow solution - JTX

- Workflow Management
- Job/Task Tracking
- User/Role Management
- Version and Data Access Controls
- ArcGIS Integration
- User-friendly Configuration

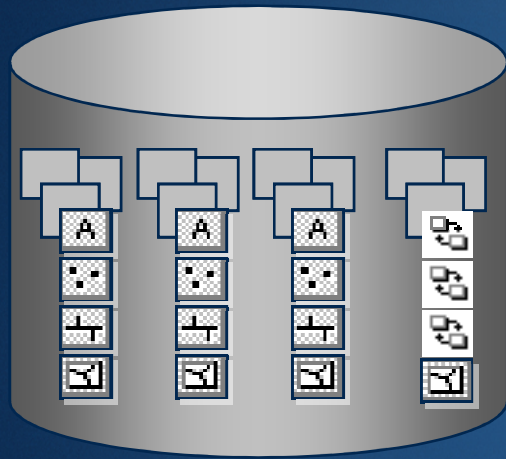


The screenshot shows the JTX Job Tracking for ArcGIS interface. The top part is a 'Job Query Results - List View' table with columns for ID, Name, Assigned To, Job Type, Status, and Due. Below the table is a map of the Los Angeles area with a red box highlighting a specific area of interest. The map is titled 'Area of Interest' and has a 'Selectable Layer' set to 'jx080JTX_JOBS_A01'. The interface includes a menu bar, a toolbar, and a sidebar with options like Jobs, Reports, Transactions, and Scheduling.

ID	Name	Assigned To	Job Type	Status	Due
4809	JOB_STREET_4809	Terry Rucker	Street Updates	ReadyToWork	05/26/2005
4808	JOB_STREET_4808	Lynn Okawa	Street Updates	ReadyToWork	05/18/2005
4807	JOB_STREET_4807	Evan George	Street Updates	ReadyToWork	06/12/2006
5206	JOB_LAND_5206	Evan George	Landbase Updates	ReadyToWork	05/06/2007
5205	JOB_LAND_5205	Evan George	Landbase Updates	ReadyToWork	05/06/2007
5204	JOB_LAND_5204	Evan George	Landbase Updates	ReadyToWork	05/06/2007
5203	JOB_LAND_5203	Evan George	Landbase Updates	ReadyToWork	05/06/2007
5202	JOB_LAND_5202	Evan George	Landbase Updates	ReadyToWork	05/22/2007
6402	JOB_6402	Evan George	Network Update	ReadyToWork	05/06/2007
4816	JOB_4816	Evan George	Floodplain Management	ReadyToWork	05/06/2007
4814	JOB_4814	Lynn Okawa	Network Update	ReadyToWork	05/06/2007
4812	JOB_4812	Lynn Okawa	Load Data from SDI	ReadyToWork	06/14/2007



ESRI Technology to Nautical Chart

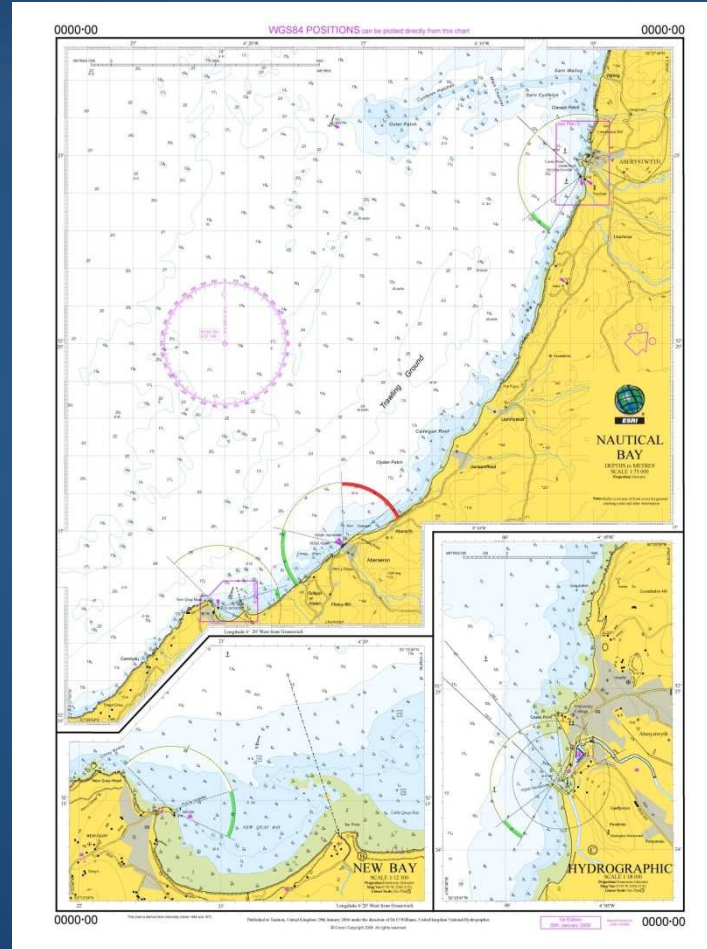


Nautical

Grids

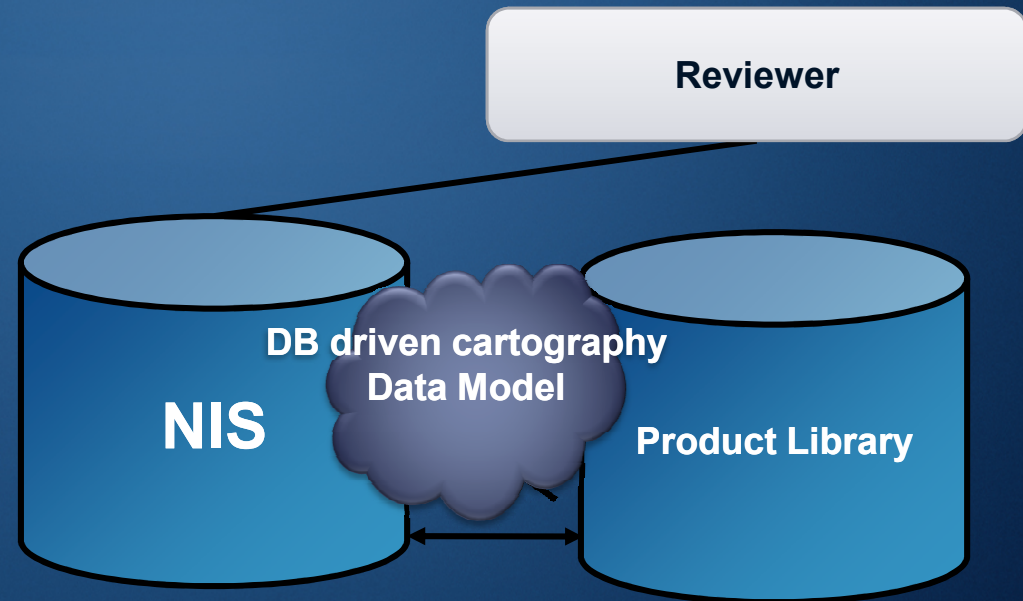
Cartographic Features

Masks

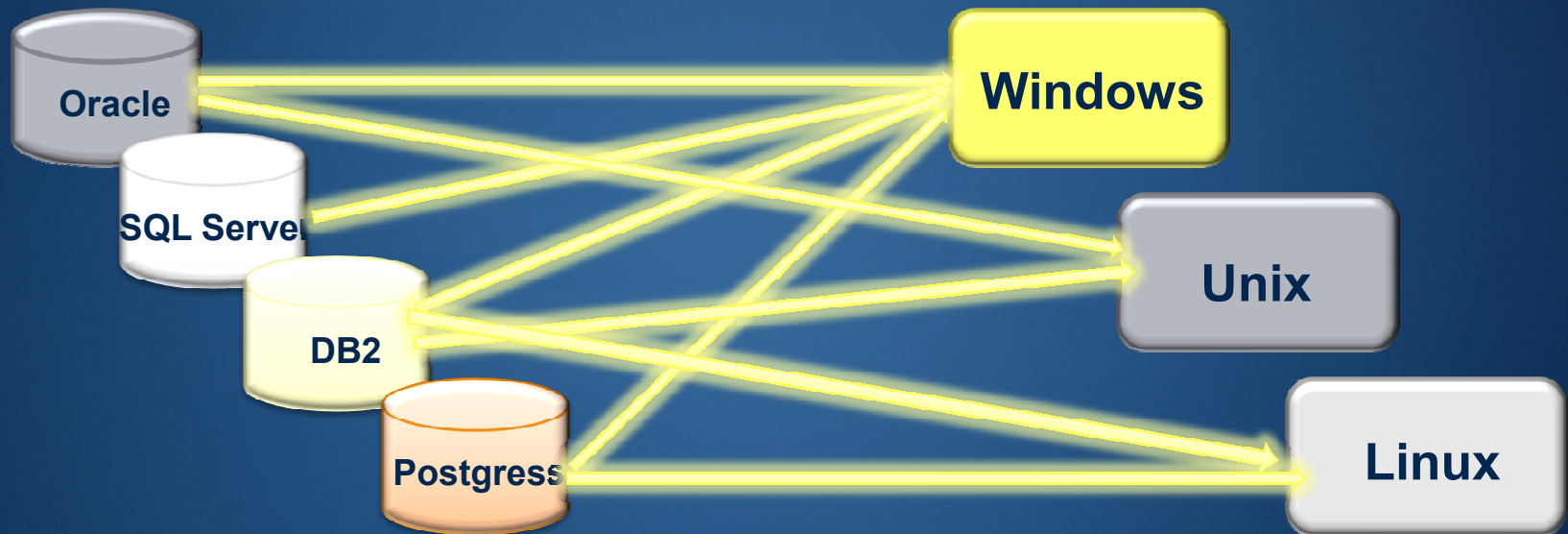


Database intensive Product Management

- Product Library
- NIS
- Data Model
- Database driven cartography
- Data Reviewer



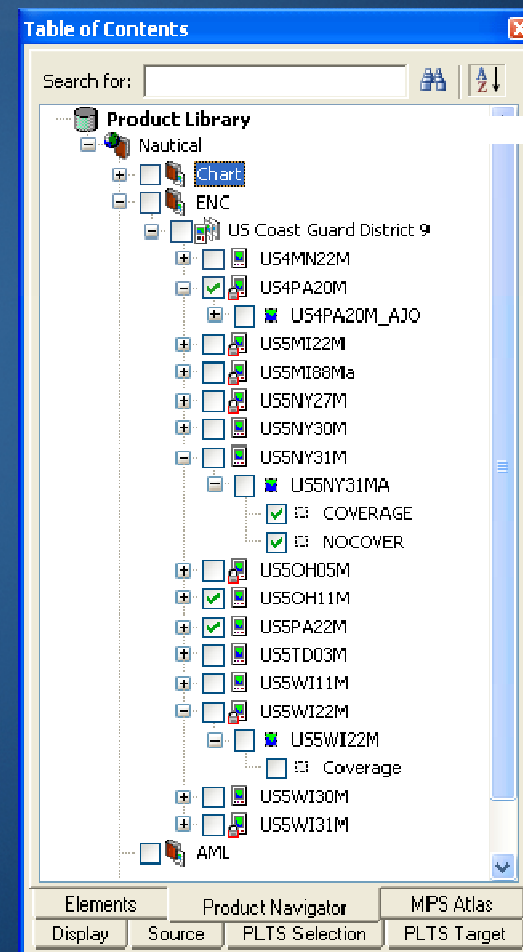
Supported multiple Databases/Platforms



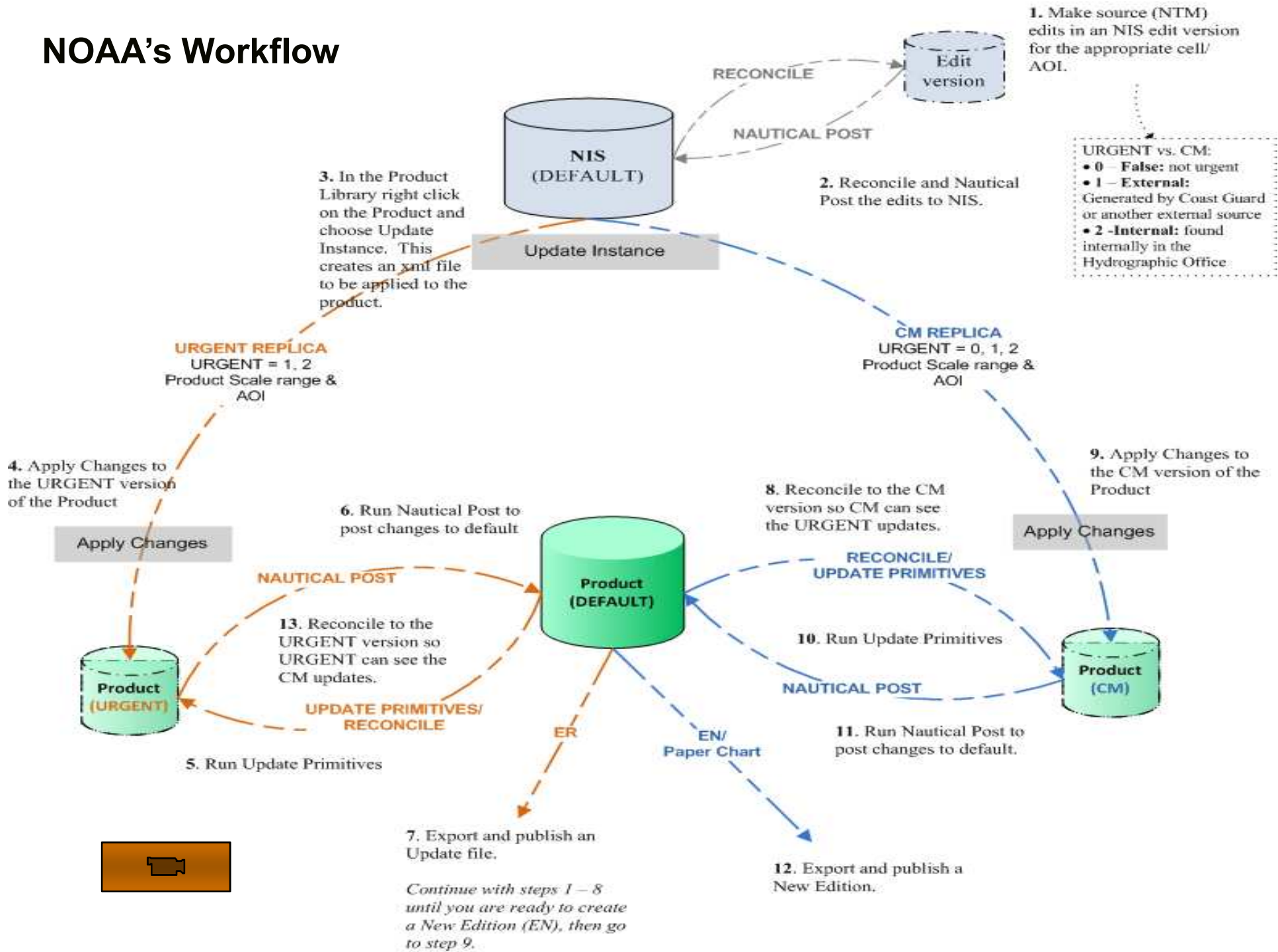
Product Library



- Stores Product Information
- Cartographic Information
 - Map templates
 - Visual Specifications
 - AOI/Boundary shapes
 - Masking Rules
- Data Information
 - Validation rules
 - Field Configuration Information
 - Schema



NOAA's Workflow



Continue with steps 1 – 8 until you are ready to create a New Edition (EN), then go to step 9.

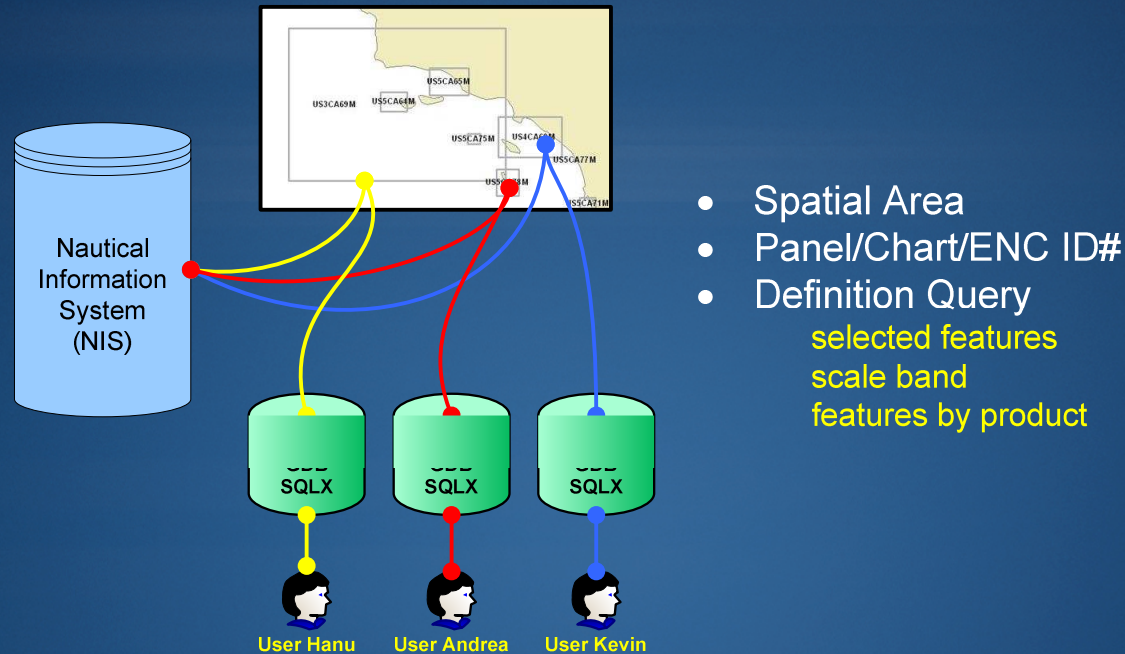
Common characteristics for Central Databases

- ▶ 1F1T (point features)
- ▶ Multiple products
- ▶ Multiple representations
- ▶ S-57 ENC and paper chart production
- ▶ New editions (EN) and updates (ER)
- ▶ Editing the source and the product



Specific of the NIS

ESRI NIS



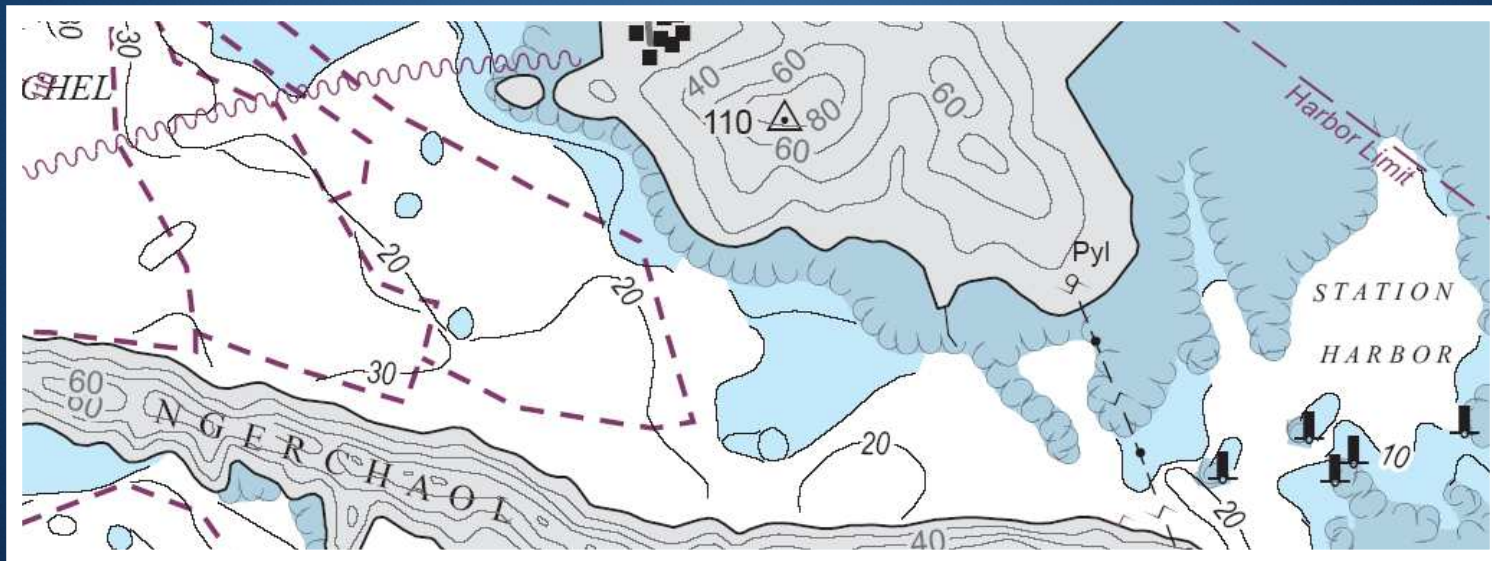
- ▶ Format neutral database
- ▶ Product independent
- ▶ Database platform independent
- ▶ Multiple replicas
- ▶ Multiple versions
- ▶ Multiple editors at the same time at feature level

- ▶ Multiple input formats
- ▶ Export to multiple products /formats
- ▶ Job Tracking System (workflow configuration)
- ▶ Task assistant (production procedures)

Distribution: An example



ePODS-M Enterprise Product on Demand Service Maritime

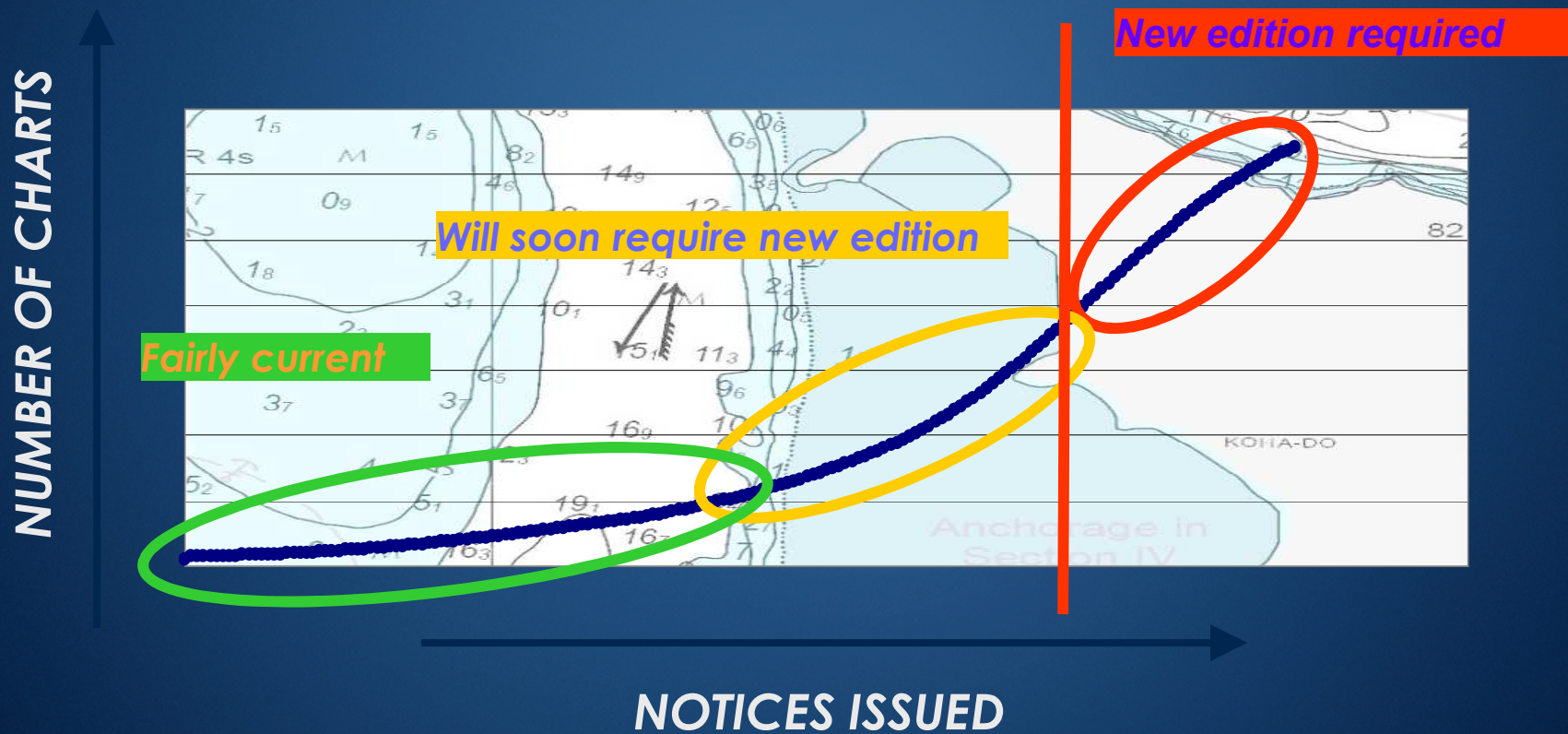


Why ePODS-M ?

- Aging chart inventories
- Traditional cartographic products are slow and expensive to produce
- Traditional product outlines and scales do not always answer the needs of the customer

Aging Inventories

- Many charts have exceeded the “Criticality Factor System” threshold

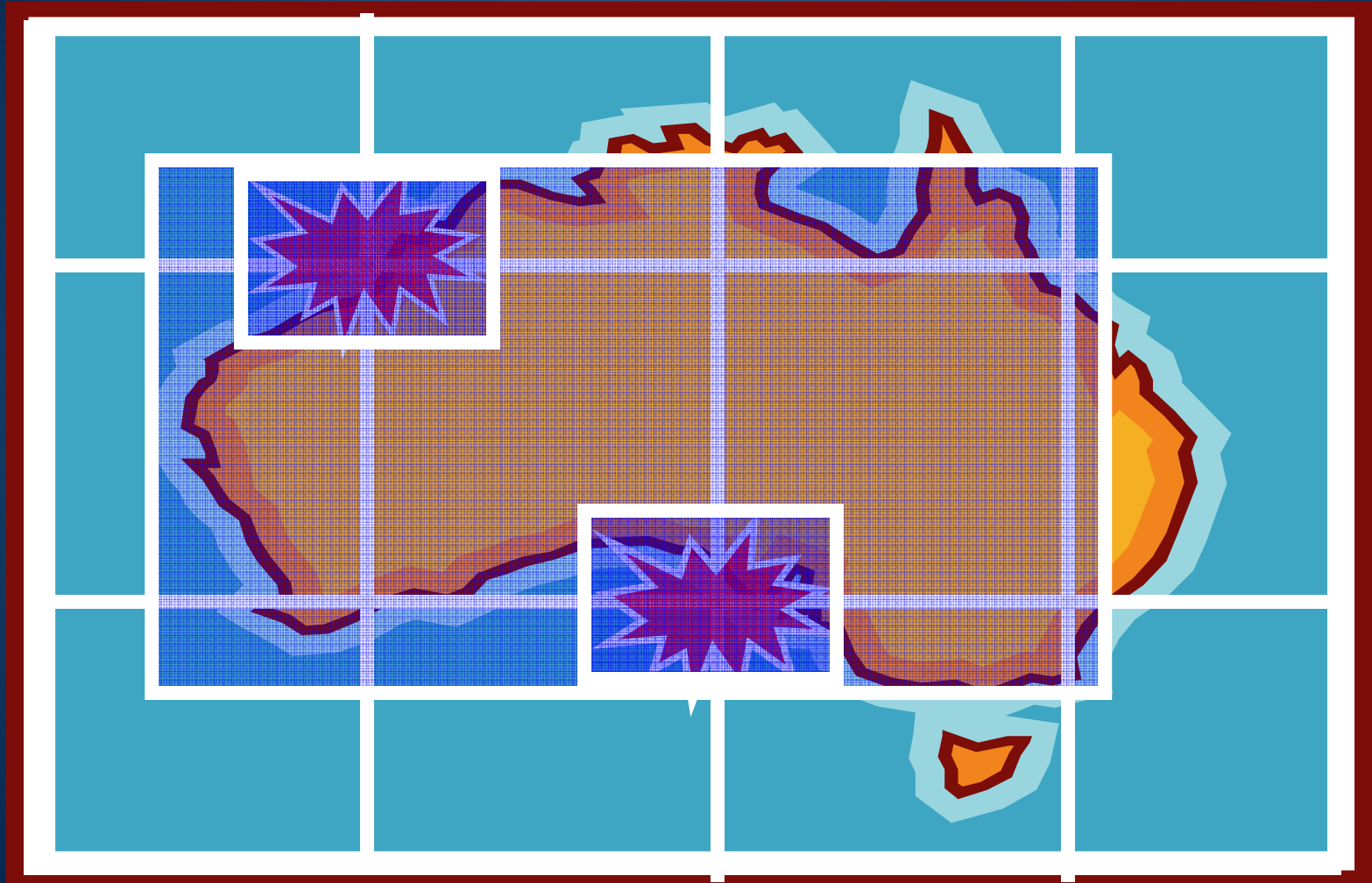


“Print Ready” Defined

“A product that meets the spirit of the traditional specification but may deviate where a change enables technology to complete the chart generation quickly and efficiently without impacting the usability of the product.”

ePODS Concept

“Product on Demand”



Why is ePODS – M Different?

- *Nautical data are not a seamless database*

- *Not centralized (VPF)*
- *4 scales*
- *Embedded higher resolution data*
- *Gaps and overlaps in data coverage*

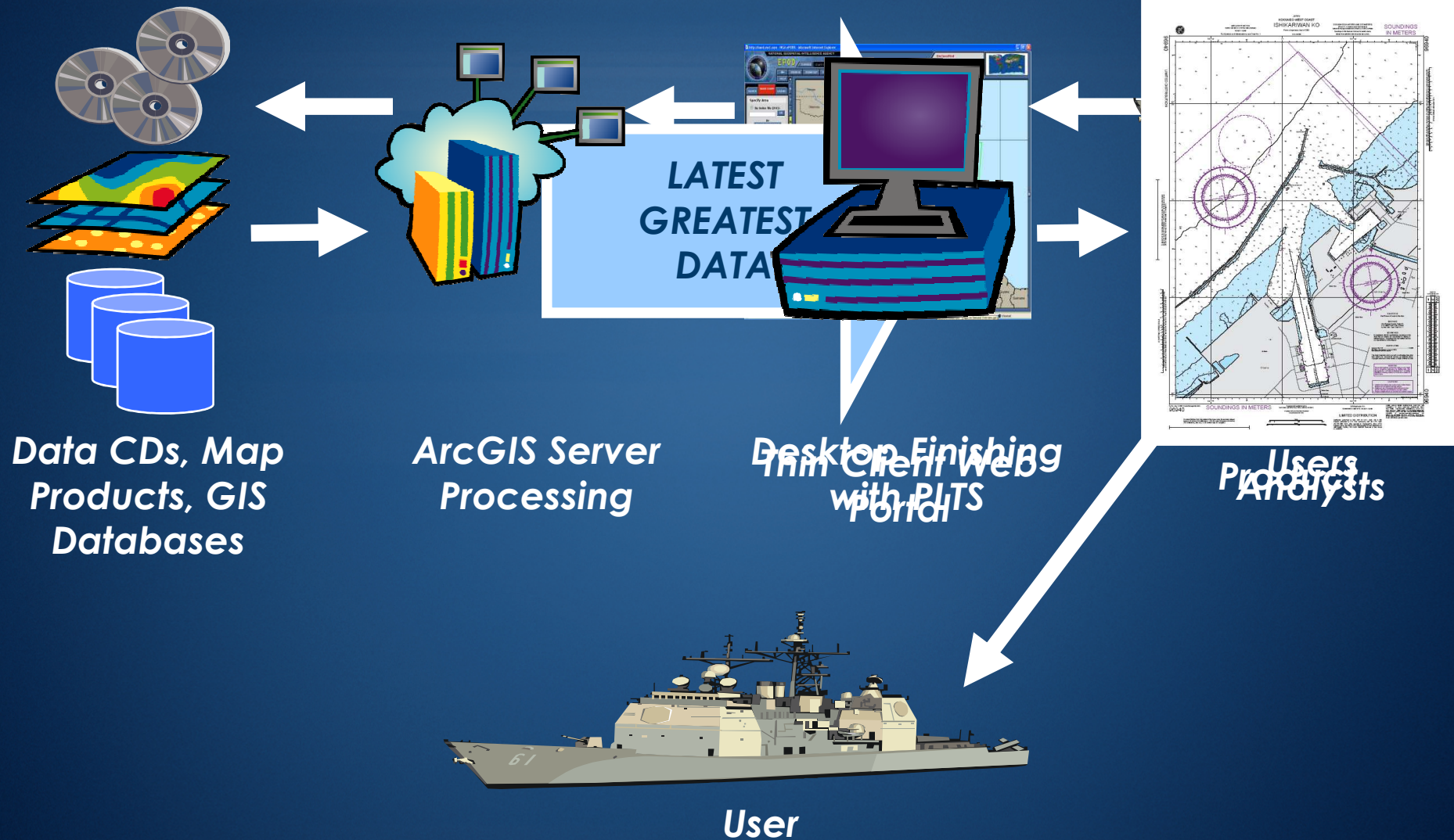


- *Traditional charts are not standardized*

- *Chart footprints are irregular*
- *Different page layout for each chart*
- *Insets vary*
- *Data based on traditional chart coverage (not seamless)*



ePODS-M Overview



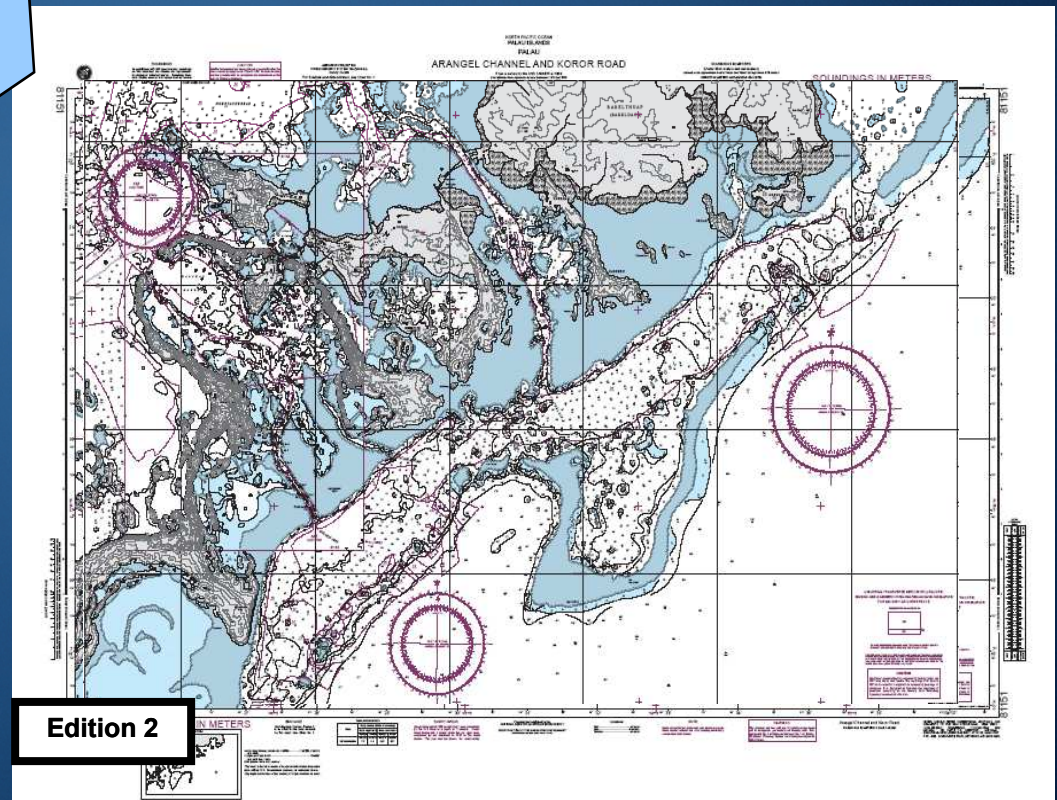
Smart Frames

- Leveraging time investment on surround for future editions

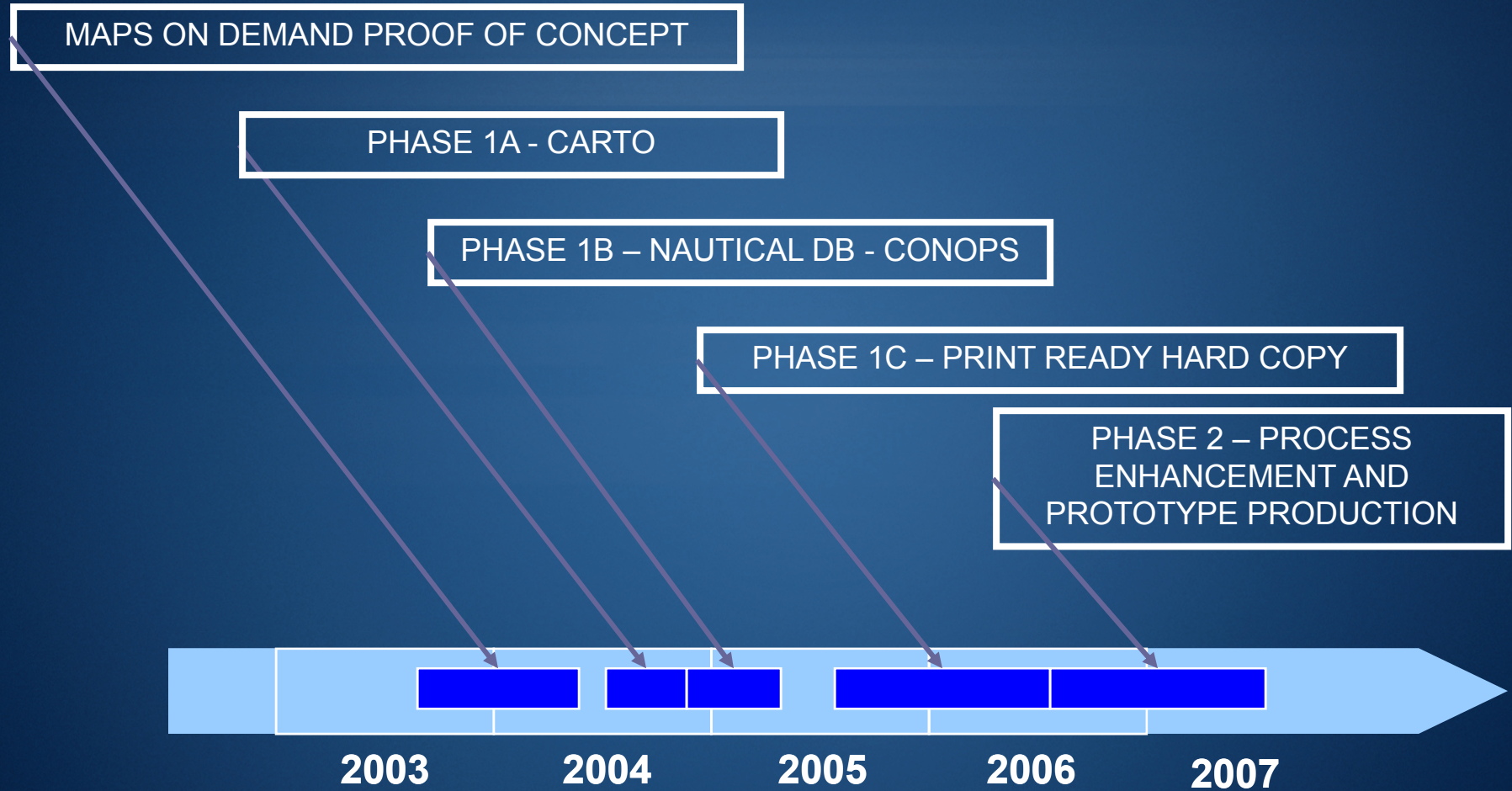
**SAVES 5 HOURS
EACH NEW EDITION**

1. AOI established.
2. Grid and surround built.
3. Chart finished and published.

4. Smart Frame saved.
5. New edition chart needed.
6. Smart frame retrieved.
7. New data frame embedded.
8. New edition chart finished and published.



ePODS-M History



Challenges

- Charting tradition and legacy processes
- Keeping “Print Ready” in the forefront
- Understanding customer requirements
- Metrics and managing chart review
- Source data limitations

Example of ePODS chart production

ePODS - Windows Internet Explorer

http://mod.esri.com/demo/

File Edit View Favorites Tools Help


Google Search

msn Powered by Live Search Search


News Elections Entertainment Video Sports Football Money Autos Shopping Lifestyle Health Stocks 60°F

ESRI Secure Access SSL VPN ... ePODS

Home Feeds (1) Print Page Tools



Enterprise Product on Demand Service



DIRECTIONS FOR USE

[\(Right-click here to download ePODS User Guide\)](#)

- System Requirements: Internet Explorer and Minimum Resolution of 1024 x 768.

CURRENTLY AVAILABLE PRODUCTS

GNC, JNC, MGCP, ONC, eEnroute_250k_Both, eEnroute_250k_High, eEnroute_250k_Low, eEnroute_500k_Both, eEnroute_500k_High, eEnroute_500k_Low

ePODS Login

Username :

Password :

To obtain login info or for questions or comments contact epods@esri.com

[Click Here to Login](#)

Done Internet 100%

PRODUCT ON DEMAND



EPOD

CHANGE chart type: eEnroute_250k_Both (Aeronautical)



← ZOOM IN ZOOM OUT FULL VIEW PAN CENTER AT DRAW EXTENT HELP

SEARCH MAKE CHART LEGEND

Specify Area

By Centerpoint:

Coord. type: DMS

Latitude:

0 ° 0 ' 0 "

N S

Longitude:

0 ° 0 ' 0 "

E W

OK

Preview Chart

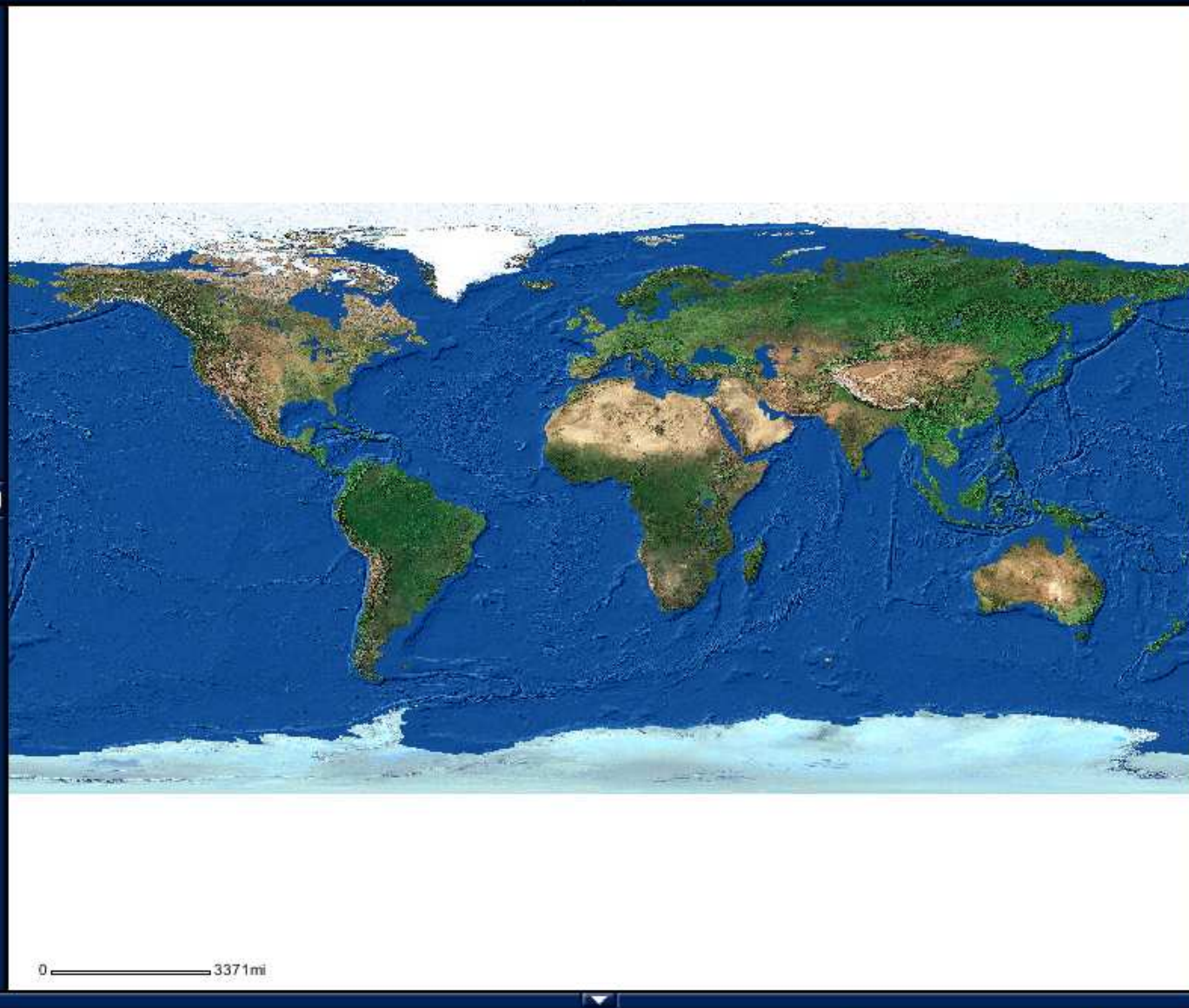
PREVIEW

CLEAR

Download Chart

ADVANCED SETTINGS

DOWNLOAD



PRODUCT ON DEMAND



EPOD

CHANGE chart type: eEnroute_250k_Both (Aeronautical)

Zoom To: locate a feature selected from geographical criteria or a tile on the map.



Navigation buttons: ZOOM IN, ZOOM OUT, FULL VIEW, PAN, CENTER AT, DRAW EXTENT

HELP

SEARCH MAKE CHART LEGEND

Search

Select a Country:

Brazil

Select a State/Region:

Rio de Janeiro

Choose a City:

Rio de Janeiro

ZOOM TO

QUERY BUILDER

Aeronautical Search

Airport Search:

Input field for Airport Search

OK

SUAS Search:

Input field for SUAS Search

OK

MOA Search:

Input field for MOA Search

OK

NAVAID Search:

Input field for NAVAID Search

OK

LOCATE



PRODUCT ON DEMAND

EPOD

CHANGE chart type: eEnroute_250k_Both (Aeronautical)

Make a Chart:
Map on Demand



← ZOOM IN ZOOM OUT FULL VIEW PAN CENTER AT DRAW EXTENT HELP

SEARCH MAKE CHART LEGEND

- update map
- eEnroute Layers
 - Base Layers
 - Special Use A
 - SUAS
 - MOA
 - Airports
 - Civil
 - Joint Civil Mil
 - Military
 - Heliport
 - Cities
 - National capit
 - National and
 - National capit
 - Other
 - Provincial cap
 - Provincial cap
 - Major Roads
 - Major Rivers
 - Major Lakes
 - Regions
 - US States
 - Countries
 - Nav aids
 - World Shaded



PRODUCT ON DEMAND

EPOD

CHANGE chart type: eEnroute_250k_Both (Aeronautical)

Preview: displays chart extent on map in the chart's spatial reference.



ZOOM IN ZOOM OUT FULL VIEW PAN CENTER AT DRAW EXTENT

HELP

SEARCH MAKE CHART LEGEND

Specify Area

By Centerpoint:

Coord. type: DMS

Latitude:

22 ° 43 ' 19 "

N S

Longitude:

43 ° 27 ' 18 "

E W

OK

Preview Chart

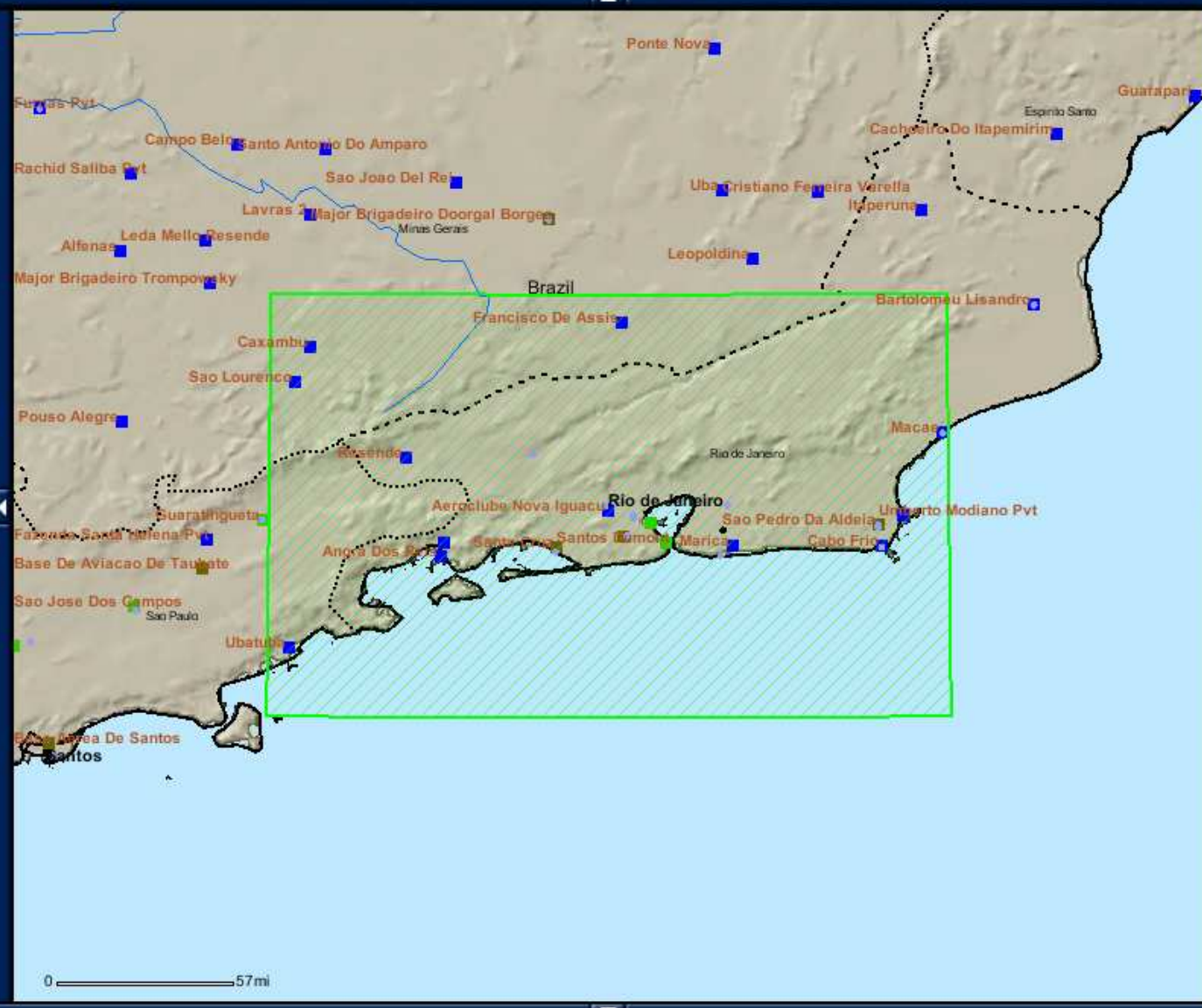
PREVIEW

CLEAR

Download Chart

ADVANCED SETTINGS

DOWNLOAD





Export Summary

Export

You have requested to export Page Layout Image in PDF using the following settings:

The center point used is:

Longitude = -43.455

Latitude = -22.722

The map service used is: Public_eEnroute_250k_Both

Please verify your inputs and confirm by clicking OK, otherwise press Cancel.

CANCEL

OK



Generate Product

Generate Product

The Page Layout Image has been generating for 0 seconds.
It will take 10 - 20 minutes to generate and download Page Layout Image on average, depending on Page Layout Image complexity and current server load, and assuming a broadband internet connection.



http://mod.esri.com/?SelectedTileID= - ePODS: Generate Product - Windows Int...

PRODUCT ON DEMAND

EPOD *Generate Product*

It took 1 minutes and 2 seconds to generate the chart

Right-click and save the output file to your computer.

If your output file is SpotEPS, make sure to rename file extension from .ps to .eps.

The image displays the EPOD (Electric Power On Demand) web application interface, titled "Generate Product". The interface is presented in a browser window (Internet Explorer) and features a map with a network diagram overlaid on a geographic background. The map shows a central hub with multiple lines radiating outwards, representing a power distribution network. The map is labeled "PROTOTYPE - NOT FOR NAVIGATIONAL USE".

The interface includes a top navigation bar with the EPOD logo and the text "Generate Product". Below the navigation bar is a toolbar with various icons for navigation and zooming. The map area is divided into several sections:

- Legend:** Located on the left side, it provides a detailed key for the symbols and colors used on the map. It includes sections for "Legend", "Legend", "Legend", and "Legend".
- Map:** The main area displays a network diagram with various nodes and connections. The map is zoomed in, showing details of the network structure.
- Scale:** A scale bar at the bottom of the map indicates a distance of 50.00 x 20.00 m.

The interface also shows a sidebar with various icons and a search bar. The overall layout is designed for technical analysis and product generation.

Thank you!

