



International Hydrographic Organization

**Electronic Navigational Chart (ENC)
- ENC Coverage Analysis -**

Captain Robert Ward, Director IHB



“adequate coverage”

“ those ENCs required to enable safe port to port navigation for international shipping that correspond to the paper chart coverage for these ports and the routes between ”



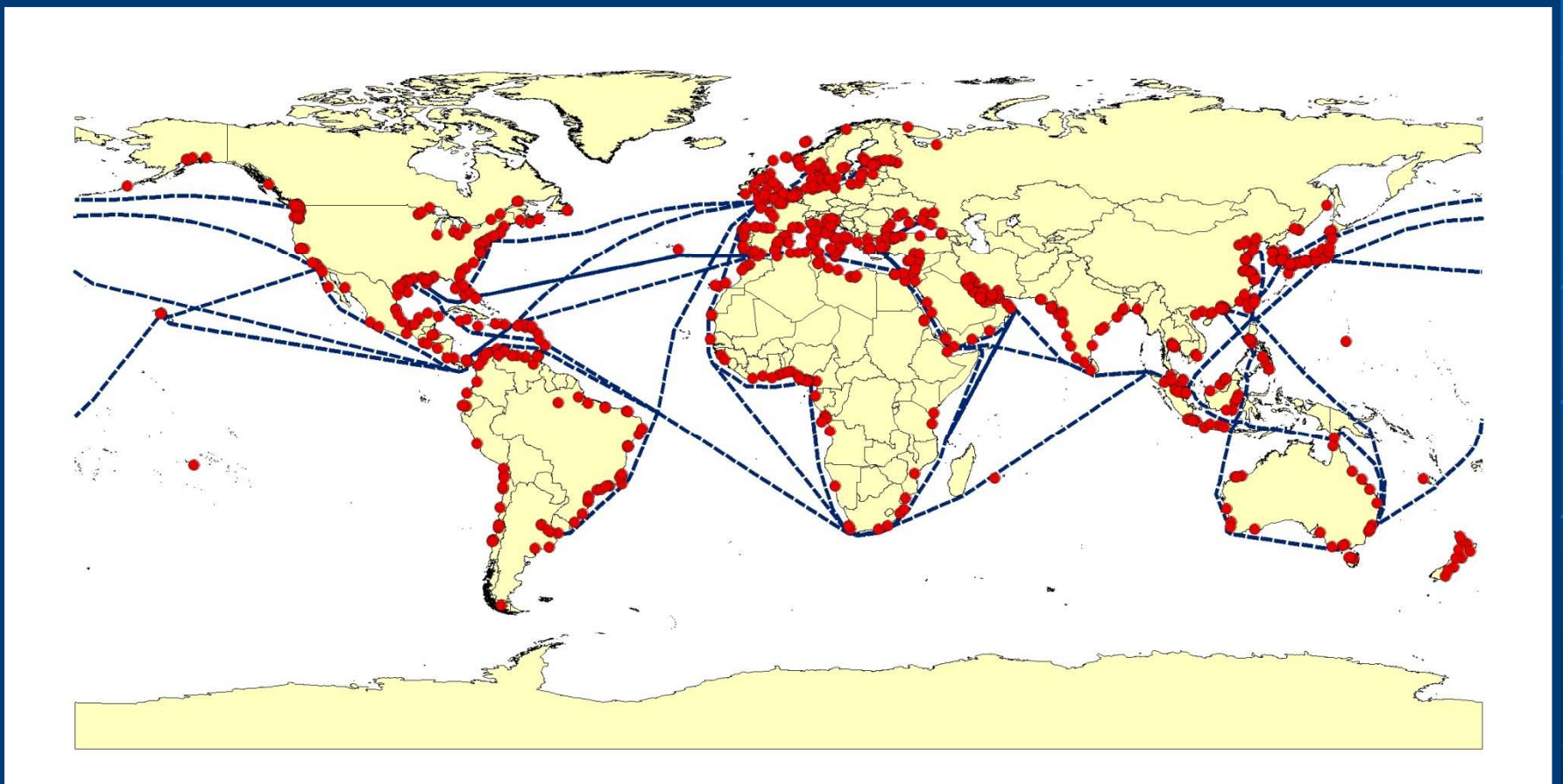
"adequate coverage"

Focus on international trade routes

- Major ports
- Major trade routes



Top 800 Ports and Major Trade Routes



Source: Lloyds statistics



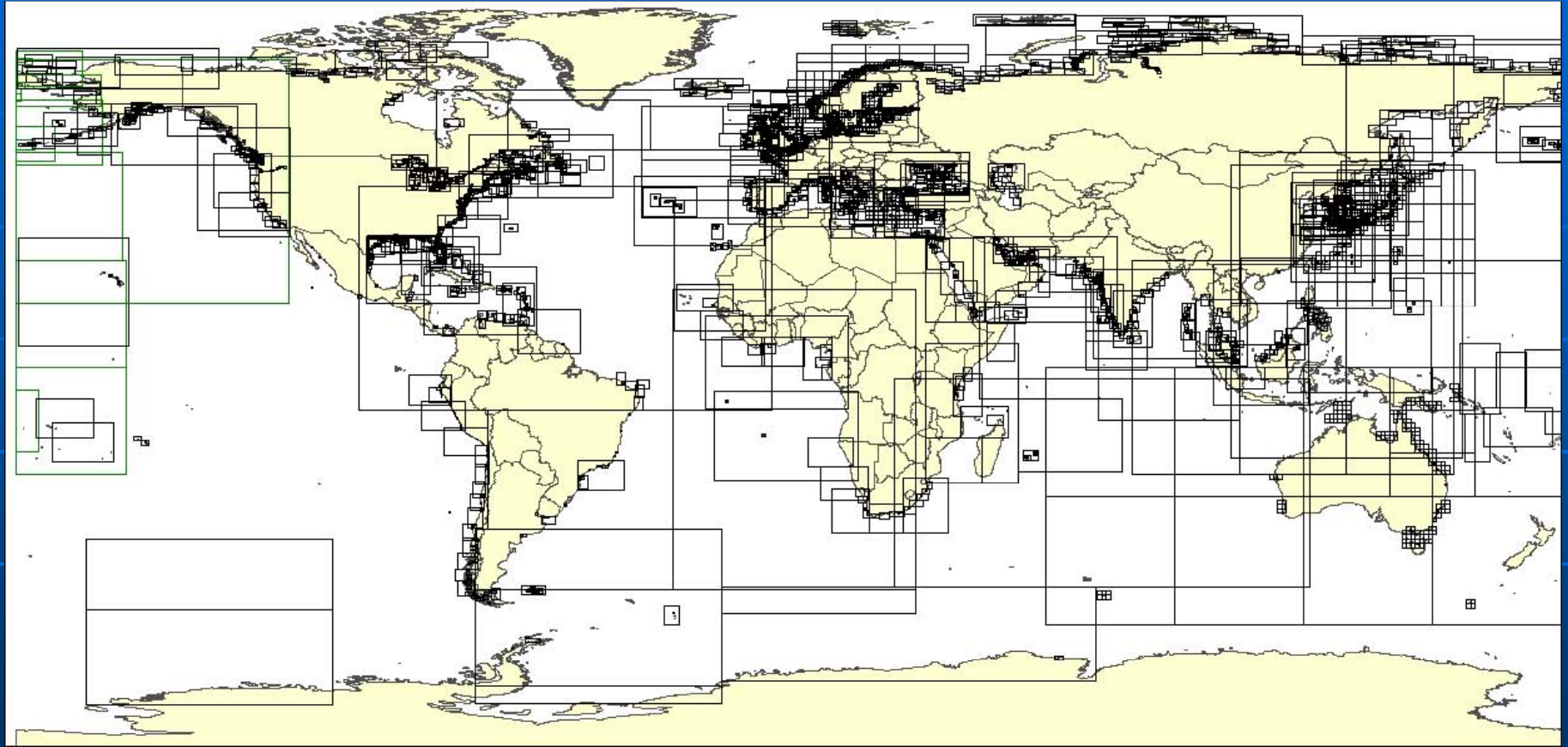
Coverage Comparison - June 2008

Paper Charts ↔ ENCs

Chart Scale	% ENC Coverage
Small Scale (planning)	94 %
Medium Scale (coastal approach)	68 %
Large Scale (ports)	65 %



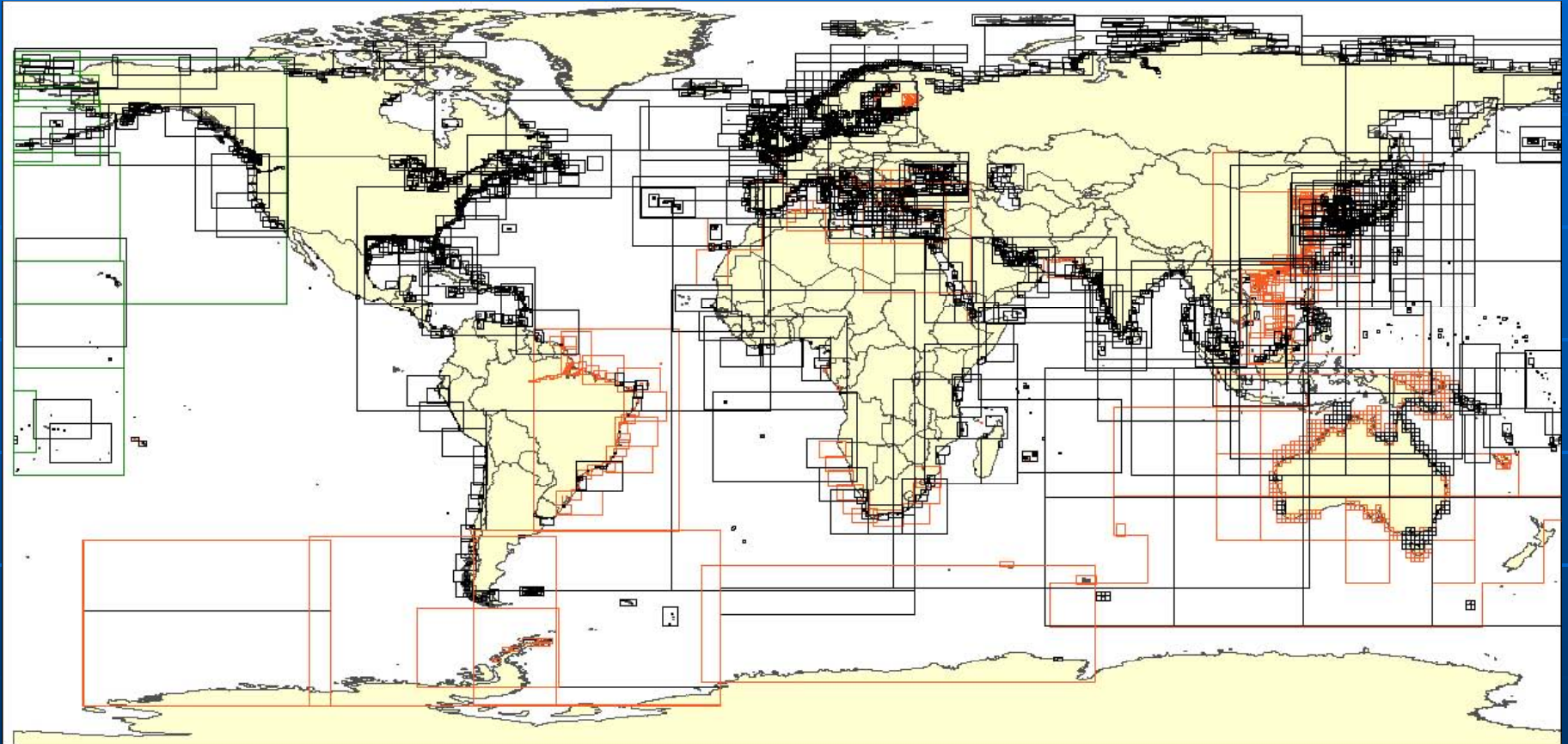
ENC Coverage : June 2008



Published ENCs



ENC Coverage : 2008-2009



Published ENCs

Confirmed in Production



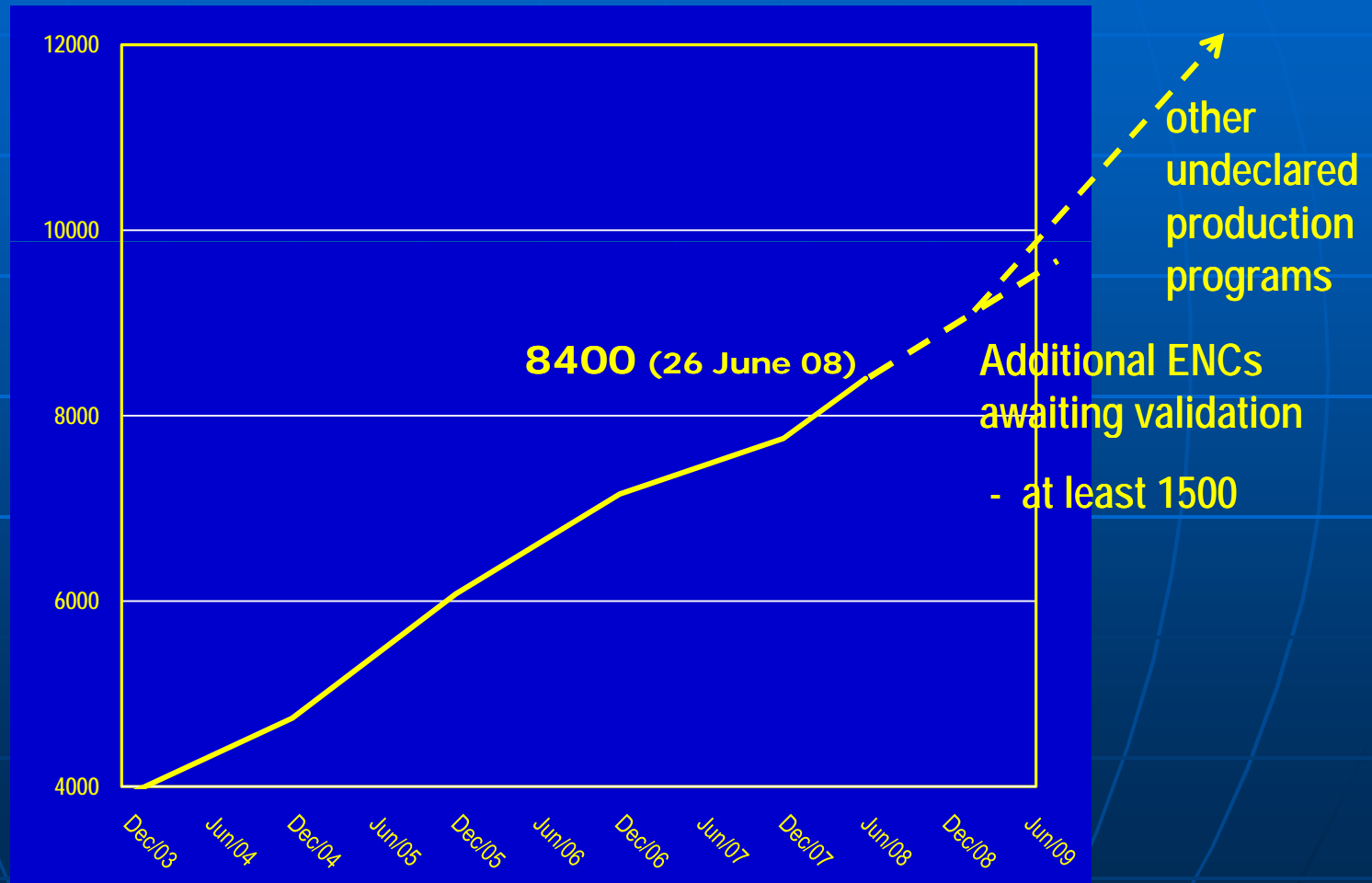
Looking Ahead





Growth in Availability

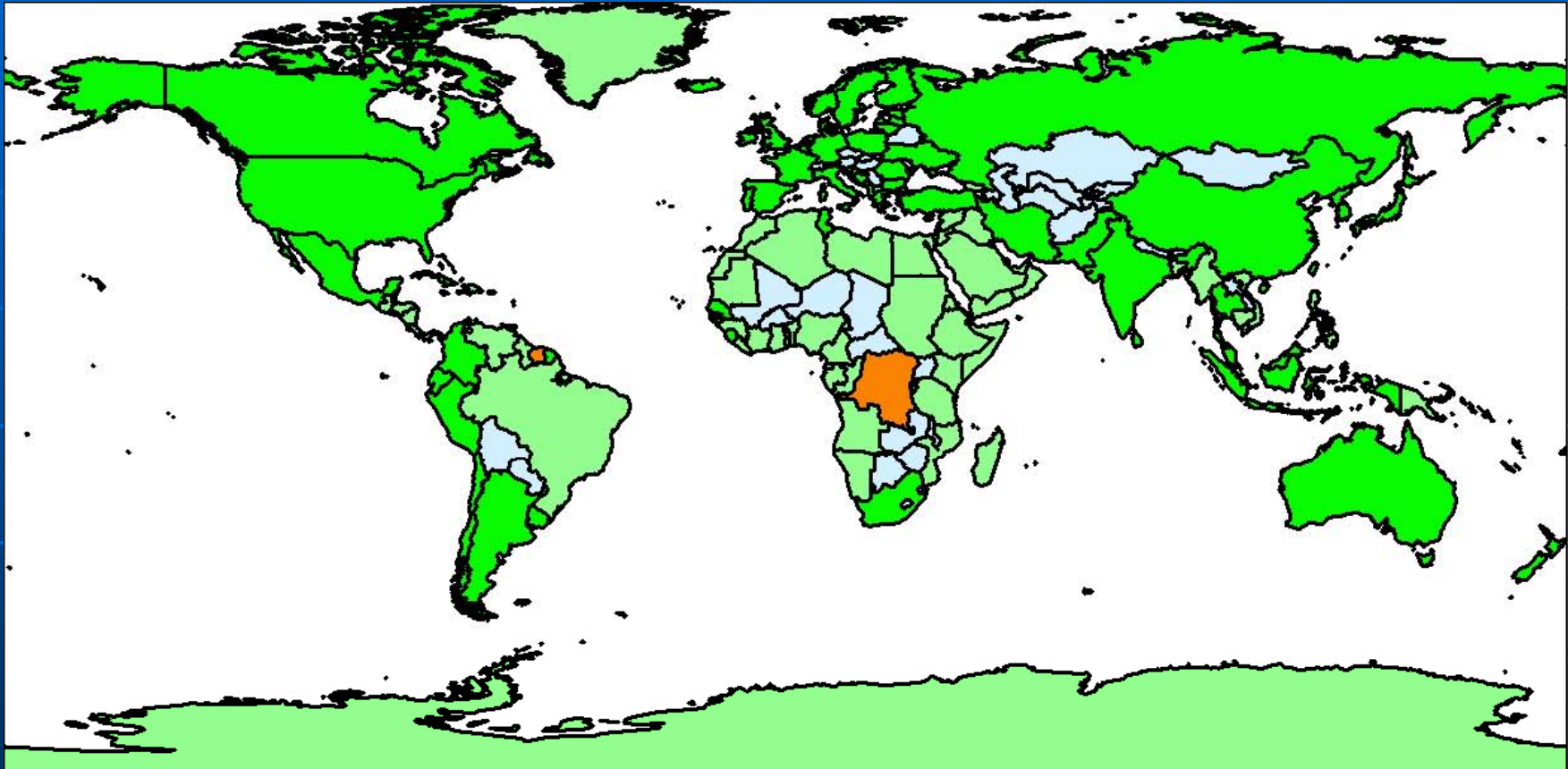
- ENC's Available to Purchase





Coastal States:

.....Will your international ports and routes be covered by ENCs in 2010?



State will complete ports and routes by 2010



State will complete ports and routes by 2010 with assistance



No information provided (as yet)



Global ENC Production Initiatives

- Regional cooperation (RHCs)
- Bi-lateral assistance and production programs
 - Australia, France, Netherlands, New Zealand, Norway, Portugal, UK, others



Global ENC Production Initiatives

- Capacity Building
 - IHO technical assistance programmes
 - Asia Development Bank
 - Papua New Guinea
 - IMO/IHO/Global Environment Foundation
 - Marine Electronic Highway - Singapore and Malacca Strait
 - Marine Highway - SW Indian Ocean
- UKHO ENC Program



"adequate ENC coverage"

Prediction - end 2010

Paper Charts ↔ ENCs

Chart Scale	% ENC Coverage
Small Scale (planning)	100 %
Medium Scale (coastal approach)	100 %
Large Scale (ports)	100 %



IHO Statement to IMO:

*Adequate ENC coverage
will be achieved by 2010*



IHO ENC Coverage Catalogue

- Requested by IMO
 - ENC's commercially available
 - RNC's commercially available
 - State by State requirements (if any) for paper charts used in conjunction with ECDIS
 - links to State on-line catalogues (where they exist)
- Database sources:
 1. RENCs
 2. Individual States
 3. VARs



SUBMENU

- ▶ About the International Hydrographic Organization
- ▶ International Hydrographic Bureau (Secretariat)
- ▶ Contact on Visit IHB
- ▶ Glossary
- ▶ Sitemap

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About ENC's



Welcome to the revised IHO Web Site.

This makes use of a revised Content Management System for easier maintenance and includes a separate French section. Although the site contains mostly the same content as the superceded site, some pages have been updated or revised.

Welcome to the International Hydrographic Organisation



The mission of the IHO is to ensure the provision of adequate and timely hydrographic information for world-wide marine navigation and other purposes, through the endeavors of national hydrographic offices.

A subsidiary mission is the application of hydrographic data to support science, and to promote its use in geographic information systems, principally for the sustainable development of national maritime zones.

www.iho.int

NEWS

- 48th Multibeam Course
- E-Navigation Documents
- World Hydrography Day 2008
- ABLOS 5th Conference Announcement

MEETINGS



SUBMENU

- ▶ ENC Production
- ▶ ENC Portrayal
- ▶ ENC Data Protection
- ▶ ENC Coverage

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ENC Information

Click here for a list of the current IHO Standards that relate to ECDIS, ENC production and distribution.

This section contains the following information pertaining to Electronic Nautical Charts (ENCs).

ENC Production

- Introduction
- S-57 Encoding Bulletins
- S-57 Frequently Asked Questions
- Other References

ENC Portrayal

- Introduction
- S-52 Portrayal Bulletins
- S-52 Frequently Asked Questions
- ENC Presentation (Colours and Symbols & Presentation Library)

ENC Data Protection

- Introduction
- S-63 Documents Content
- How to Implement the IHO Security Scheme
- Maintenance and Assistance with the Implementation of S-63
- ENC Signature Service

ENC Coverage

- Introduction
- World ENC Catalogue
- Paper Chart Requirements with ECDIS
- Online Chart Catalogues
- Catalogue Resources

ENC Coverage

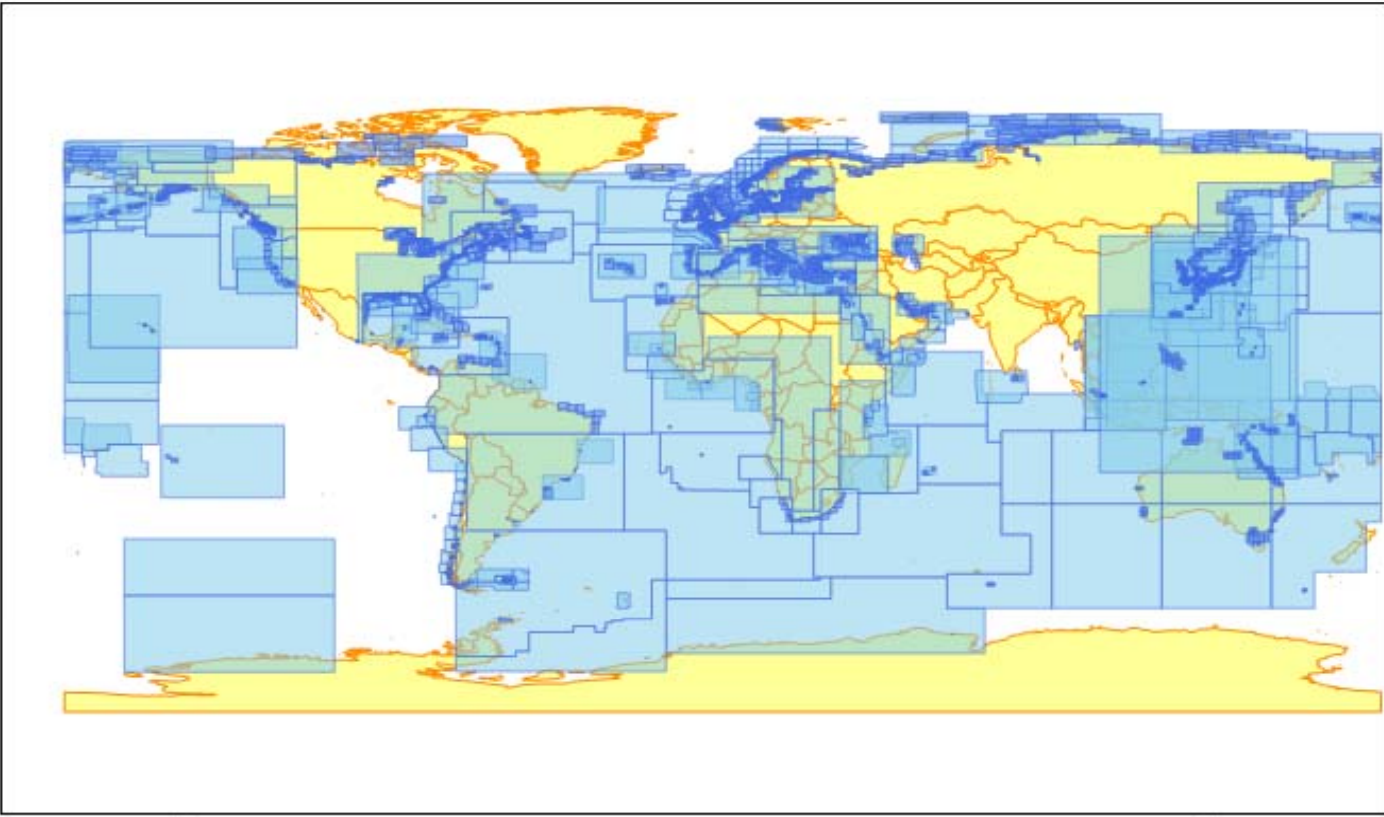
IHO ENC/RNC Catalogue - Windows Internet Explorer

http://www.iho-wms.net/wms/encat4/default.asp

File Edit View Favorites Tools Help

IHO ENC/RNC Catalogue

IHO ENC/RNC Catalogue



ENC

- Large Scale ENC
- Medium Scale ENC
- Small Scale ENC

RNC - Australia

- AusLargeScale
- AusMediumScale
- AusSmallScale

RNC - USA NOS

- NOS LargeScale
- NOS MediumScale
- NOS SmallScale

RNC - UKHO

- UKHO LargeScale
- UKHO MediumScale
- UKHO SmallScale

BASEMAP Drawing

Center 7°10.000' W:3°11.293' S

IHB June 2008

Apply

Done Internet 100%

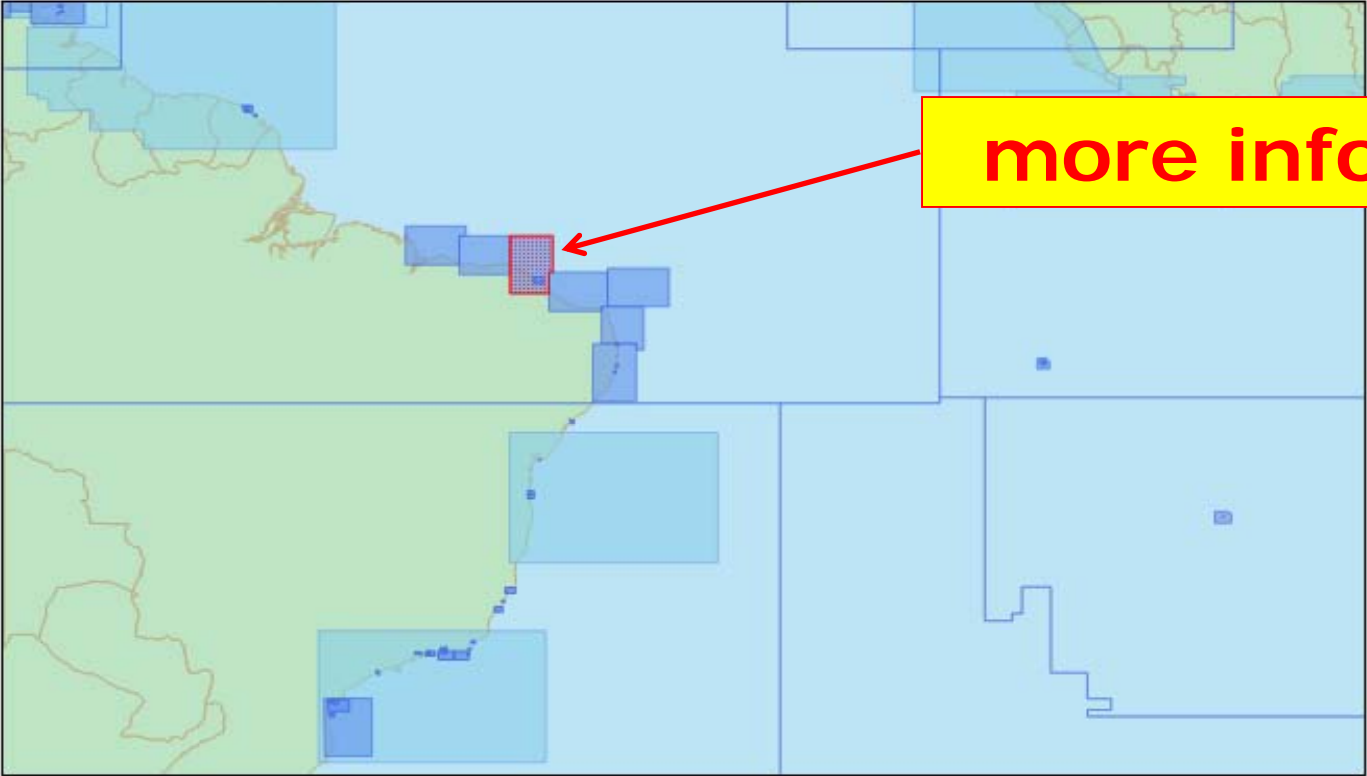
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IHO ENC/RNC Catalogue

IHO ENC/RNC Catalogue

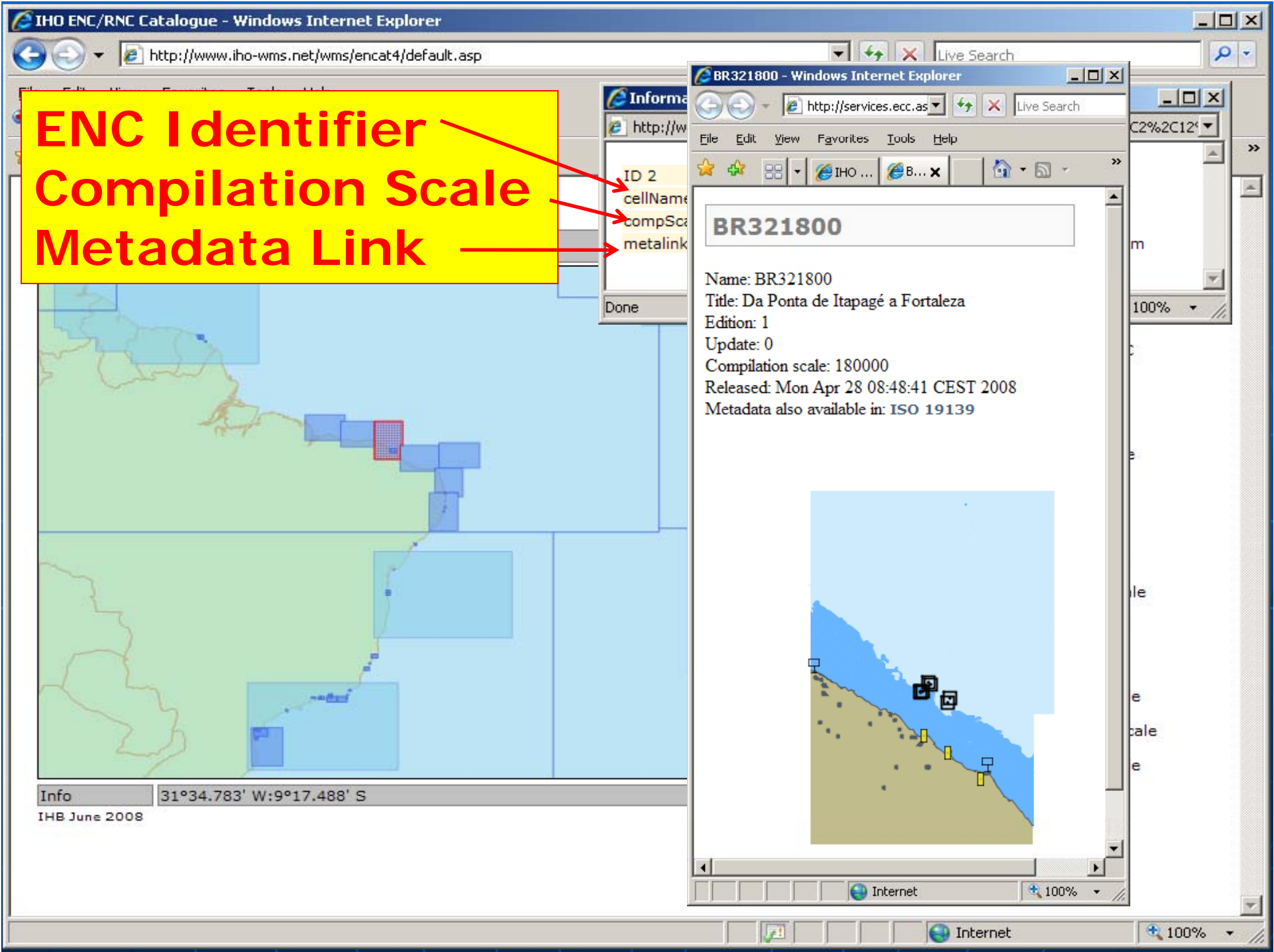


- ENC
 - Large Scale ENC
 - Medium Scale ENC
 - AusLargeScale
 - AusMediumScale
 - AusSmallScale
- RNC - USA NOS
 - NOS LargeScale
 - NOS MediumScale
 - NOS SmallScale
- RNC - UKHO
 - UKHO LargeScale
 - UKHO MediumScale
 - UKHO SmallScale
- BASEMAP Drawing

Apply

Info 31°34.783' W:9°17.488' S
IHB June 2008

Internet 100%





SUBMENU

- ▶ Introduction
- ▶ View Catalogue
- ▶ Backup Paper Charts
- ▶ Online Chart Catalogues
- ▶ Catalogue Resources

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Background

References:

IMO CL No. 2773 dated 25 January 2007
IMO CL No. 2850 dated 19 February 2008

IHB CL 4/2007 dated 11 January 2007
IHB CL 47/2007 dated 23 May 2007
IHB CL 10/2008 dated 24 January 2008

At the references the Maritime Safety Agencies of coastal States were requested, in coordination with their Hydrographic Offices, to provide information to the IHO regarding their recommendations for the paper charts to be carried:

- a. As a backup to a single ECDIS using ENC's; and
- b. For use when ECDIS is used in the Raster Chart Display Mode (RCDS).

The information provided by coastal States is available as pdf files by clicking on the State's name below. Only States which have provided information are included.

Argentina	View List
Australia	View List
Bangladesh	View List
Belgium	View List
Brazil	View List
Colombia	View List
Cyprus	View List
Denmark	View List
Ecuador	View List
Finland	View List
France	View List
Germany	View List
Greece	View List
India	View List
Indonesia	View List
Japan	View List
Korea Rep	View List
Lithuania	View List

Backup Paper Charts



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IHO Member States Online Chart Catalogues

The following table provides links to IHO Member States online Chart Catalogues. Please contact the IHO for more information concerning their online chart catalogues to the IHB (using the [Contact Form](#)) so that this information can be included below.

Online chart catalogues

Argentina (catalogue available under "Productos")	Link
Australia	Link
Belgium	Link
Brazil	Link
Canada	Link
Denmark	Link
France	Link
Greece	Link
Hong Kong China	Link
Iceland	Link
Italy	Link
Japan	Link
Korea(Rep)	Link
Mexico	Link
Morocco	Link
Netherlands (catalogue available under "Productos")	Link
New Zealand	Link
Papua New Guinea	Link
Peru	Link
Poland	Link
Singapore	Link
South Africa	Link
Spain	Link
Sweden	Link
UK (Downloadable graphical catalogue)	Link
UK (Online textual catalogue)	Link
USA (NOAA)	Link
USA (NGA)	Link



Conclusion

- Adequate coverage of ENC's will be available by 2010
- IHO ENC Catalogue of coverage now on internet
- IHO is monitoring ENC coverage and reporting annually to IMO



International Hydrographic Bureau