NGA DNC-to-ENC Conversion

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Coordinating efforts in the U.S

• The Ocean and Coastal Mapping Integration Act 2009 (P.L. 111-11, Title XII, Subtitle B):
  • Congress mandated mapping coordination between federal agencies
  • NOAA coordinates with federal, state, and local partners
U.S. Charting Responsibilities

U.S. Department of Commerce

- NOAA – Hydrography, National Shoreline, Tides and Currents, Nautical Charts and Coast Pilot for U.S. Waters including the US EEZ

U.S. Department of Defense

- Army Corps of Engineers – Dredging and maintenance of federal navigational channels and inland navigable waterways
- NAVOCEANO – Hydrographic surveying outside of the US EEZ
- National Geospatial-Intelligence Agency (NGA) – nautical charting outside the US EEZ and publication of Notice to Mariners

And other federal agencies...
ENC / DNC Difference

ENC

- S-57 Format (Structure, Features and Attributes)
- Object oriented data model
- S-52 symbology specification
- Basic unit is Cell
- 2 layers: Skin of the Earth and everything else
- Must be transformed into System ENC for use in ECDIS
- Greater breadth
- Purely navigational chart

DNC

- Vector Product Format (VPF) based on Feature and Attribute Coding Catalog (FACC)
- Table based georelational data model
- Uses Geosym for symbology
- Basic unit is Library
- 12 thematic layers
- Can be directly read by ECDIS-N
- Greater depth
- Provide a suite of other military information
Implementation advantages

- In agreement with the international specification and allow NGA to be a true player in the international hydrographic arena
- To make it easier for NGA to share data with other international partners
- To make co-production with our international partners more a reality
- To allow the Maritime Safety Office to meet the IMO’s regulations for the parts of the world where NGA is the prime charting authority
- Improved quality and currency of Maritime Safety Information
- Improved interoperability for users and data providers
DNC ® conversion to ENC

- Production Plan:
  - Fulfill international obligations in accordance with WEND Principles (IHO TR K 2.19)
  - Create ENCs in areas where NGA is the Prime Charting Authority
  - Partner with NOAA
  - Leverage NOAA’s expertise in ENC production and its production system
  - NIS Platform: ArcGIS 10.6.1 with Maritime: Charting extension
  - Sources: DNC® libraries & others
  - Method: manual, i.e. copy and paste
  - ENC cells fully compliant with IHO S-57
NGA as the charting authority for these areas

- Costa Rica
- Dominican Republic
- El Salvador
- Federated States of Micronesia
- Guatemala
- Honduras

- Haiti
- Marshall Islands
- Nicaragua
- Panama
- Palau

Semi-authoritative
- Bahamas
- Antarctica
Charted countries (in blue) in Central America
Charted countries (dashed line) in Pacific

- Federated States of Micronesia
- Marshall Islands
- Palau

Pacific Ocean
Antarctica ENC Coverage

Published:
Band 3 – 1 Cell
Band 5 – 1 Cell
Total: 2 Cells
Panama ENC Coverage

Published:
Band 4 – 2 Cells
Band 5 – 2 Cells

Total: 4 Cells

Note: 2 Cells cancelled and 1 Cell coverage reduced due to the release of PCA-produced ENCs
Haiti ENC Coverage

Published:
Band 3 – 1 cell
Band 4 – 5 Cells
Band 5 – 15 Cells
Total : 21 Cells
Palau ENC Coverage

Published:

Band 3 – 1 Cells
Band 4 – 4 Cells
Band 5 – 1 Cell

Total: 6 Cells
Distribution – NOAA interactive catalog