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Digital Nautical Chart (DNC®) Report for CHRIS 2004
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1.   Digital Nautical Chart Status

NGA (National Geospatial-Intelligence Agency) is on schedule to bring the worldwide DNC into operational status with worldwide digital updating effective with the end of September 2004. This means that NGA will have completed the initial requirements of the U.S. Navy for global navigation. NGA will continue to add to the DNC folio to fulfill added requirements as they arise. About 5,000 charts currently are in the operational DNC folio.

2.   DNC Updating

NGA has fully implemented updating of DNC and digital publications with the "patch" method. NGA has announced that it will terminate distribution of hard copy Notices to Mariners effective January 2005. Currently, NGA distributes 12,000 hard copy Notices to Mariners per week, gratis.

3.   DNC and Digital Publications Distribution

DNC for United States waters continue to be available through download (gratis) from the NGA public web site, limited to marine GIS use only. All NGA digital publications, publicly available are similarly available for gratis download. NGA soon will issue conditions for commercial reproduction of NGA publications based on the NGA website, i.e., only the digital version with updates issued by NGA is the official version, commercial reproductions are not to imply that they are official versions, the commercial reproduction is not to use the NGA name, logo or initials except when used in the body of the publication. Sample statements are provided for attribution of NGA as source. DNC in foreign waters continues to be restricted from public distribution.

4.   ENC/DNC

 NGA continues to support extension of attribution for military use, which is being handled through the DGIWG. Hopefully, this will then get coordinated with TASMAD such that standardization occurs.

5.   DNC Deployment

DNC is currently carried aboard all but about 30 of major U.S. Navy. ECDIS-Navy certification with full implementation of Integrated Bridge Systems has been progressing

slowly and the first certification for paperless navigation is just now being issued. Recently, it has been decided that small craft will be outfitted with a DNC capability. As deployment of ECDIS-N is progressing slowly, Navy is currently using DNC in a situational awareness mode and there is a continuing need for paper charts to support U.S. Naval units. This places a strain on NGA production resources due to the need for both hard copy and digital production. NGA continues to progress with the hard copy transition strategy whereby NGA uses the digital print files of foreign nations to produce hard copy charts for U.S. Government use and then withdraws from the civil market and lithographic chart production for those regions. NGA has recently announced withdrawal of NGA chart coverage equivalent to several hundred Canadian and United Kingdom charts. NGA is also progressing with DNC to hard copy through Print on Demand, but this likely will only support removal of charts from lithographic production where there is a low volume of distribution. Public distribution would continue with Print on Demand by NGA.

6. DNC2

NGA has begun prototyping possible future versions of DNC. Recently, DNC 17 of the East Coast of the U.S. has been collapsed into a single variable density layer. That is, features only exist one time in the data base and only the largest scale chart coverage remains, which results in the variable density of data. Currently NGA is investigating a transition from the current "libraries" to a cell structure with 1-degree cells in coastal and harbor areas and 3-degree cells for offshore areas. SPAWAR-Norfolk has been engaged to modify the Integrated Charting Engine software for display of the DNC2 prototypes. This will allow performance metrics to be obtained as well as provide a means for NGA to demonstrate new capabilities to Navy. NGA is in the process of adopting the IHO SCAMIN attribute for use in display generalization. NGA is also investigating scale bands and the acceptable ranges of zoom in and out. Experiments are in progress with 3-D data display.