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DIGITAL NAUTICAL CHART (DNC®) REPORT FOR CHRIS 2001
U.S. NIMA – Lead Chris Andreasen

1.   Digital Nautical Chart Status

NIMA (National Imagery and Mapping Agency) completed its folio of approximately 5,000 nautical charts in DIGEST C – Vector Product Format in mid-2000. This folio satisfies initial U.S. Navy operational requirements for worldwide navigation. These data also constitute the marine segment of NIMA Foundation Feature Data. Work is in progress to bring the DNC database up-to-date for corrections and new editions issued since the time of digitization. Work to bring the worldwide DNC database up-to-date is on a schedule to be completed about the end of 2004 so as to meet the planned U.S. Navy transition to digital navigation. NIMA has ended all traditional hard copy compilation of nautical charts, i.e., DNC is the source for NIMA paper charts.

2.   DNC Updating

SAIC (Science Applications International Corporation) is under contract with NIMA for the development of a DNC Updating system based on the "patch" method, i.e., a method whereby changes to the DNC database are identified and only the changes are transmitted to update the base DNC. Updates are identified to the user by highlighting changes such that the navigator may call up the Notice-to-Mariners text associated with any change. The Notice-to-Mariners text associated with each set of updates is disseminated with the "patch" updates to DNC. It is planned to make the updates available on CD-ROM, through a secure web site for military users and also though the public NIMA web site. The public web site allows U.S. Coast Guard units access to updates without need for secure communications capability. This is possible because unless one has access to the base DNC libraries (which are restricted from general distribution), patch updates are of no use. Shore-side testing at NIMA and between NIMA and various shore facilities of U.S. Navy and Coast Guard has been successful. Systems deployed by Navy are being modified to implement the NIMA DNC updating system. At-sea testing has been successful using landline connections, satellite transmission and cell phone. Some at-sea testing continues and an additional method of dissemination that could evolve to a hands-off system is being evaluated. Implementation of digital updating for DNC is now projected to begin in early 2002.

3.   DNC Distribution

Currently, the DNC is restricted from public distribution, principally due to foreign intellectual property rights. U.S. waters data have been restricted not because of copyright but due to the database being incomplete and the lack of a digital updating service. DNC 17 (about 175 charts covering the U.S. East Coast from South Carolina to Massachusetts) is on a one-month cycle of updating as are other U.S. waters. NIMA plans to remove the Limited Distribution restriction from DNC 17 and initiate the release of U.S. waters data to the public during the latter half of 2001. It is planned that this will be done through the NIMA public web site with the data and updates available gratis, i.e., free to U.S. citizens and U.S. companies but available to foreign nations through a free license. The release of DNC 17 would be followed by data from the U.S. West Coast and eventually the U.S. Gulf Coast. A realignment of the DNC CDs will separate foreign data from the U.S. data. For DNC data subject to foreign copyright, release will be at the discretion of the organization with the intellectual property rights. Work is in progress to develop a NIMA web site index of DNC libraries to be available which identifies the office with the copyright and makes referral to that office for any release request. The initial release of DNC 17 will be restricted to G.I.S. use only since the U.S. has not yet adopted regulations for civil use of electronic charts. It will be authorized for Federal vessel navigation now that U.S. regulations have been issued to allow U.S. Federal vessels to navigate using electronic charts.

4.   DNC Deployment

Work is in progress to bring sufficient DNC coverage up-to-date for support of the Navy deployment of two all digital battle groups, one Atlantic and one Pacific, in late 2002. The first all digital attack submarine is to deploy in 2004. NIMA expects to meet the digital chart needs for this deployment. Resources also have been realigned within NIMA such that the charting needs for Navy to transition to digital navigation by the end of 2004 are to be met. That is, by the end of 2004, the entire DNC database is expected to be under routine maintenance with digital updating.

5.   ENC/DNC

NIMA has begun looking into use of ENC as a source of data and the issues associated with translation. NIMA continues to be interested in steps towards harmonization of formats over the long-term.