15th CHRIS MEETING
IHB, Monaco, 10-13 June 2003

Digital Nautical Chart (DNCÒ) Report for CHRIS 2003
U.S. NIMA – Lead Chris Andreasen

1.   Digital Nautical Chart Status

NIMA (National Imagery and Mapping Agency) has recently competed contracts for maintenance of its folio of Digital Nautical Chart (DNC) and 11 companies are currently involved with this effort. Work continues to bring the entire NIMA chart folio into routine maintenance. NIMA met the requirement for 1/3 of the DNC database to be in routine maintenance by the end of 2002 for support of the deployment of two all digital battle groups. NIMA is on schedule to have the entire worldwide database of about 5,000 charts in routine maintenance by the end of 2004. The U.S. Navy, which had projected to transition all major combatants from hard copy to digital navigation by the end 2004 will not meet this schedule. As a result, the requirement for NIMA to produce hard copy charts continues. About 60% of the fleet will transition by the end of 2004. The delay is due to a combination of factors including resource constraints, system certification delays and personnel training delays. The U.S. Navy also is looking to limit the number of types of systems deployed such that maintenance and training difficulties are lessened.

2.   DNC Updating

NIMA continues to update DNC using the "patch" method and patch updates are currently available through CD ROM distribution on a monthly basis and web site download on a weekly basis. NIMA is now adapting the technique for publications update, which is referred to as PDU (Publications Digital Update).

3.   DNC Distribution

DNC for United States waters are now available to the public through download (gratis) from the NIMA public web site. DNC for U.S. waters is being restructured such that it will be available on a single CD ROM such that foreign data and U.S. data will not be mixed within the DNC folio of 29 CDs. DNC coverage in foreign waters continues to be restricted due to foreign copyright.

4.   ENC/DNC

The UK Hydrographic Office and NIMA contracted for a study to identify the differences between DNC and ENC and this is now complete. Unfortunately, there are some basic problems with the study in that it used an incorrect DNC Product Specification. It also cites NIMA as using the DIGEST Vector Product Format (VPF) 92 whereas all DNC has been produced using VPF 96. In the view of NIMA this is probably the most balanced study ever conducted of the two formats despite some fundamental problems. As the study was conducted to serve as a basis for selecting a "way ahead", it is not necessary to revise the study. NIMA will reopen work on the design of DNC2 in mid-2003. In doing so, NIMA will look towards increased harmonization with IHO. The study does not recommend that the two standards be transitioned to a common standard but rather recommends that harmonization be effected at the "data" level. Transition to DNC2 and harmonization activities will depend on resource availability, however, several of the needed changes for ENC/DNC harmonization are also needed by NIMA to expand functionality.

5. **Digital Publications**

NIMA publications continue to be available for gratis download from the public NIMA web site and through purchase from GPO (Government Printing Office) as the "official" version subject to updates. Private firms download and reproduce the NIMA publications, but NIMA requires that they not use the NIMA name, initials or logo and reproductions not be exact copies. Some commercial firms have not honored this. NIMA is currently developing a plan to have its digital publications geo-referenced to the Digital Nautical Chart. Initial plans are to do so by the end of 2005, however, this may require a change to the VPF standard and could result in delay.

6. **Validation that Systems Correctly Read DNC**

NIMA has been conducting the validation as to whether or not a system correctly displays NIMA data. However, certification of systems is a U.S. Navy function and this work is about to transition to Navy. NIMA will continue to assist by including a few NIMA personnel on the Navy review team.

7. **Exit Strategy from Hard Copy Charts**

NIMA is in the process of developing a "hard copy exit strategy". This has been made difficult by the delayed transition of the U.S. Navy to digital navigation. However, for areas where English language charts are available NIMA has begun use of digital print files as they are made available through bilateral agreements for digital data exchange. In this case, where coverage is adequate to support Navy operations, NIMA shifts to use of the foreign coverage for hard copy and withdraws from public sale for that nation. This is a slow process, but eventually NIMA will transition to digital data supported by the option of Print on Demand, which NIMA refers to as Remote Replication, and lithographic printing will be eliminated for nautical chart products. Laser Scan has recently demonstrated a DNC Print on Demand capability.