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Digital Nautical Chart® Report
U.S. NGA Office of Global Navigation
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1.   Digital Nautical Chart (DNC) Status

The NGA (National Geospatial-Intelligence Agency), Office of Global Navigation-Maritime continues to maintain its worldwide folio of approximately 5,000 nautical charts in DIGEST C-Vector Product Format. NGA is now transitioning out of traditional methods of hard copy chart production and will now print hard copy charts using the vector DNC data as primary source. It is projected that NGA will produce about 400 New Editions using e-PODs (enterprise-Products on Demand) over the next year. Most charts will be printed centrally and distributed to users by traditional methods; government facilities with digital plotters will be able to print as soon as the digital file becomes available, i.e., posted to a non-public website advancing the availability of these charts by six or seven weeks. The NGA Notice to Mariners process shifts to the New Edition near the time the digital file is made available.

The adoption of this print on demand process using DNC will begin to resolve problems that have arisen due to loss of funding for traditional production of paper chart New Editions, i.e. lack of sufficient New Editions for maintenance of the hard copy folio and the backlog of Notices to Mariners. As hard copy charts are shifted from the traditional process to e-PODs based on DNC, the New Edition hard copy charts are mostly withdrawn from public availability in parallel with NGA practice for non-U.S. DNC coverage. Foreign DNC coverage is already restricted from public sale. Termination of hard copy chart coverage is carefully planned and announced well in advance to prevent any negative impact to commercial mariners in need of NGA English language coverage.

Some nations cooperate with NGA through a Bilateral Charts program wherein the nation provides its digital file for printing and NGA only prints sufficient hard copy charts for its non-SOLAS government customers, i.e. all NGA public sales are terminated for the waters of the cooperating nation. Over time the new e-PODs process will replace the need for the Bilateral Charts program and transfer of these print files will be curtailed.

Maritime continues to work towards ISO 9001 certification and continues to revise charted shorelines to WGS84 using imagery to improve the quality of DNC.

2.   Systems and Software Development

Maritime continues to expand its capabilities for handling bathymetric data. Maritime is expanding its use of CARIS to be able to store "navigation surface" data produced by NOAA and the Naval Oceanographic Office. Work continues in relation to development of a global elevation model and systems to support such a large area database.

Maritime continues to work with Sperry Corporation under the Cooperative Research and Development Agreement to improve the functionality of ECDIS-N. The ECDIS-N alarm software has been revised and NGA Maritime is restructuring some DNC data to reduce the number of less significant alarms. Sperry has re-written software related to application of the digital patches to improve the digital update application process. NGA has provided Sperry with one-feature one-time data sets and Sperry is enabling the SCAMIN capability to begin demonstrating this functionality. This work is now somewhat ahead of schedule and is of great interest in that it reduces the compilation

work at NGA, reduces the size of patch update files for easier communications/application by the user and improves ECDIS-N performance due to reduced volume of data.

Maritime is working on automated ingestion of Notice to Mariners for a few countries that follow a relatively standard format, i.e., U.S. (Coast Guard) and countries involved in the Bilateral Charts program.

NGA is increasingly moving to use ENC as source and is working on processes related to ENC/DNC harmonization, extraction of ENC into DNC and the possibilities for shifting the VPF format closer to the ENC S-100 standards.

3. DNC Deployment

Four surface ships and the first submarine have deployed with ECDIS-N as primary navigation. During the next 12-months all attack submarines and the Virginia class submarines will all have certified systems. Thus, these systems will become operational as the personnel are trained. All U.S. Naval vessels are projected to deploy with ECDIS-N by 2012/2013.

4. HarborView (3-D display)

NGA Maritime continues to use imagery for change detection in port areas in support of U.S. Navy navigation planning, port protection and underway situational awareness. Over 350 port models have been produced and another 100 are in work from the total of 1,700 ports in the DNC folio. This product is not available to the public but can be shared through bilateral arrangements.