

Hydrographic Information Databases

The availability of various sensors and sophisticated technology providing digital data means that today's hydrographers must attune to the idea that the final products should be available in a hydrographic database. This will facilitate accessing marine data in hydrographic information systems. Almost all institutions of higher learning that specialise in geomatics-engineering now tend to provide education in marine geographic information systems (GIS) and this is already reflected in the syllabus in M8 of the IHO Standards of Competence for Nautical Cartographers.

A database is a collection of interrelated data that can be accessed in various logical orders but is stored just once. The data is therefore integrated, structured in a standardised format and shared by multiple applications. It is a well-organised collection of data that can provide a foundation for future application development.

A hydrographic information system must therefore be database driven. This assists users to manage the data and presentation specifications that will generate various products. The database must represent the data model required for mapping and charting geodata, metadata, cartographic, and digital data products. In an Electronic Chart System lies a database of digital charts. This can either be in raster or vector format. It is this dataset that produces the chart seen on the display screen.

Perhaps for some authorities the most important advantage in implementing a hydrographic data management and information system is the sharing of data information. This requires the co-operation of relevant authorities agree to share and disseminate the information among them. For the relevant authorities to embark on such a system they must first understand and know about GIS. In order to prepare them for future trends in hydrographic surveying, all hydrographic personnel from the planning, data-acquisition, processing, editing and presentation stages must be exposed to the various needs of hydrographic applications in order for them to appreciate the contents of the so-called hydrographic database. In the past, hydrographic information relied on the existing hydrographic products in hardcopy version. This results today in difficulties in gathering and accessing the information due to unavailability of scattered copies. We can currently see the steps taken by a few authorities to employ geoinformatic graduates to improve the GIS aspects of data management in their respective departments. Compared to geomatics-engineering graduates, the geoinformatic graduates specialise in GIS aspects but lack hydrographic and land-survey knowledge. Furthermore, these geoinformatics graduates concentrate on land aspects of GIS, less attention being given to marine applications. Maybe it is time for institutes of higher learning offering geomatics-engineering courses to offer GIS subjects and concentrate more on marine matters. One way of implementing this idea is to offer elective subjects to those students interested in pursuing their career in the marine environment. Subjects such as Data Management and Hydrographic Information will prove very valuable in marine applications. I am sure that potential post-graduates mastering in geomatics-engineering and GIS applications will be greatly sought after in the future.