

Web-based GIS for Nautical Charts

The existence of Web-based Geographic Information System (Web-based GIS) will enable the Hydrographic Information System to integrate all the activities of a Hydrographic Office on a single integrated digital platform. This could in addition be further integrated with oceanographic and topographical databases.

Web-based GIS is an application that is distributed across a computer network to integrate, disseminate and visualise geographic information on the World Wide Web. A Web-based user interface in the form of a map will provide an advanced view of the information, including the capability to zoom in/out, turn on/off specific map features and perform queries based on measurement units or colloquial geographic names. It is further possible to print maps at different scales and display additional information. By using a compilation of Web technologies such as JavaScript, XML and ASP, a customised interface has been created for many mapping websites. All users, regardless of skill level, thus acquire the ability to retrieve and analyse a wide variety of information via their Web browser.

Web-based GIS for nautical charting is particularly designed to provide a proper method of data management. It will ensure the safety of data by implementing a sound security system. The aim is to achieve a future interactive way of managing nautical charts. As an example, a Hydrographic Office will be able to update data at any location using the provided appropriate network; once data in the Hydrographic Office has been updated, data at other locations will be automatically updated in line.

The importance of integration in Web-based GIS for nautical charting lies in its capability to provide an efficient way of data distribution through enhanced data management. The improved data management offers an opportunity for an efficient working environment, particularly for the navigator. In other words, it can benefit organisations such as the marine department, port authorities, shipping companies, and so on; related parties can easily access the application using an internet server. Indirectly, it will minimise the cost of any project as a result of the implementation of a proper data-sharing system.

Integrated Web-based GIS will benefit hydrographic communities in (a) creating an organised database capable of providing thematic maps, nautical charts and other types of documentation for navigation use, (b) updating the database where needed, gathering supplementary information from other maritime authorities, (c) ensuring the timely dissemination of maritime nautical charting through the Web.

However, in order to avoid any inconvenience to hydrographic authorities, close attention should be given to the possible consequences of misusing nautical charts. Efficient rules, proper monitoring and security systems should be studied to ensure the plausibility of the wide release of nautical charts through Web-based GIS technology.