MARITIME SAFETY INFORMATION RELAY THROUGH NAVIGATIONAL DATABASES
A step towards e-Navigation

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Traditional Notice to Mariners

The Instituto Hidrográfico (IH) has been using the web to distribute periodic Notices to Mariners for a long time. This was done in a rather simple way by providing digital (pdf) versions of the traditional journals. This has evolved so that a mariner may verify the complete record of changes of a nautical chart or publication; consult product by product, or create a custom portfolio and be automatically warned whenever there is an alteration.
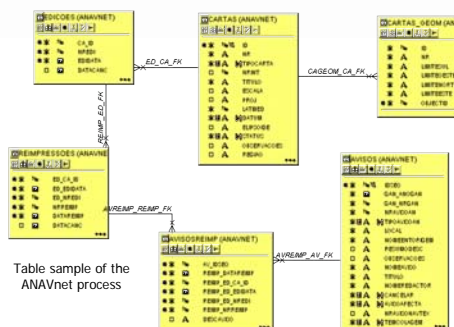

Table sample of the ANAVnet process

ANAVnet home page - http://websig.hidrografico.pt/Idamar/ANAVNet/ANAVNet.aspx

THE NEW STEP – ANAVnet

The IH's Navigation Division has steered towards the reduction of the navigator's workload while strengthening safety of navigation, offering automatic processes when/wherever possible.

Thus, considering the frequent need of consulting the history of a particular nautical document in order to update it, along with the different types of information that could affect it, it was clear that a new "clever" solution was required.

Simultaneously, a perturbing reality grew stronger in everybody's mind: the fact that too many vessels, specially fishing and recreational, were not fitted with a NAVTEX receiver, many of which did actually miss a VHF radio, and the consequent total incapacity to receive coastal Navigational Warnings (NW).

In an effort to improve this situation the IH's defined the requirements and built a on-line application the **ANAVnet**.

ONE MORE GAP TO COVER

In Portugal, Maritime Authorities and Port Administration are legally commissioned and empowered to issue Local Navigational Warnings. However, the ability to disseminate information was limited, relying on wall display near official building's and faxes to marinas and sailing associations along with VHF broadcast.

To answer this need a number of profiles for all parties involved were created, matching their area of responsibility. Through a user/password authentication process interested partners may introduce directly in ANAVnet their Nautical Warnings.

ANAVnet chart updates consultation

ANAVnet DATABASE STRUCTURE

It was necessary to correlated Notices to Mariners, coastal and local Nautical Warnings with the existing Chart-folio and Nautical Publications. Furthermore there was a need to associate geographical areas to local authorities.

Entity relationship models were used in order to depict relationships between different authorities and their unique description attributes.

A relational-object logical logging was used, where the graphic components were stored as polygons or points in Spatial Data Option (SDO) format in a table's column which describing attributes correlate with other tables through primary keys.
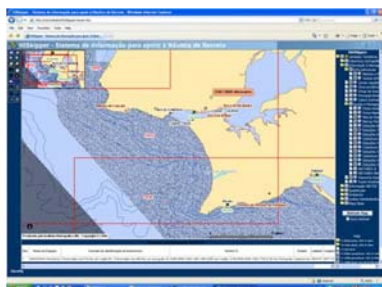
AN e-NAVIGATION COMPONENT?

Since ANAVnet deals with critical safety navigational information, making it readily available to mariners in a manner that could be easily accessed anywhere, and at reduced cost, it was part of the e-NAV applications that need to be put in place. Consideration should be given to the possibility of having the WEB as a possible component of e-Navigation. Some development will be required in terms of availability and standardization agreements; however, it could provide a number of advantages against the use of a radio link, such as lower pricing and resistance to spoofing or mystification.

The IH has been using the WEB, to provide ANAVnet quick updates, namely through RSS.

IH Skipper – On-line Voyage planning tool

FUTURE DEVELOPMENTS

Navigational databases and development of new services continues and IH expects to be able to provide a planning tool incorporating all the necessary information for a safe voyage: nautical charts, sailing directions, list of lights, MSI.

A geo-referenced objects List of Lights database is currently being developed. Once completed, this database will be integrated with ANAVnet in order to be automatically updated.

ANAVnet Navigational Warning view

Conhecimento do Oceano