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The HNODC Data & Information Management Services: Description & Recent Upgrades

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The HNODC Background

- Established in 1986, in the frame of the cooperation of Greece with the Intergovernmental Oceanographic Commission (IOC)
- It is a national agency, part of the international network of NODCs operating within the framework of the IOC/IODE
- Participates in different elements of the IODE system, including acquiring, formatting, quality controlling, cataloguing, archiving, disseminating and exchanging of marine data and information
- Operates within the framework of the Hellenic Centre for Marine Research (HCMR), in Athens and it is recognized as a national facility for international oceanographic data and information exchange

Major Data Holdings

HNODC holds a great diversity of different data types that come from:

- several Research Institutes and mainly by HCMR,
- the participation of HNODC in National, European and International Programmes.

Data are subjected to quality control procedures according to the international standards as these agreed during several EU Projects and international organizations.

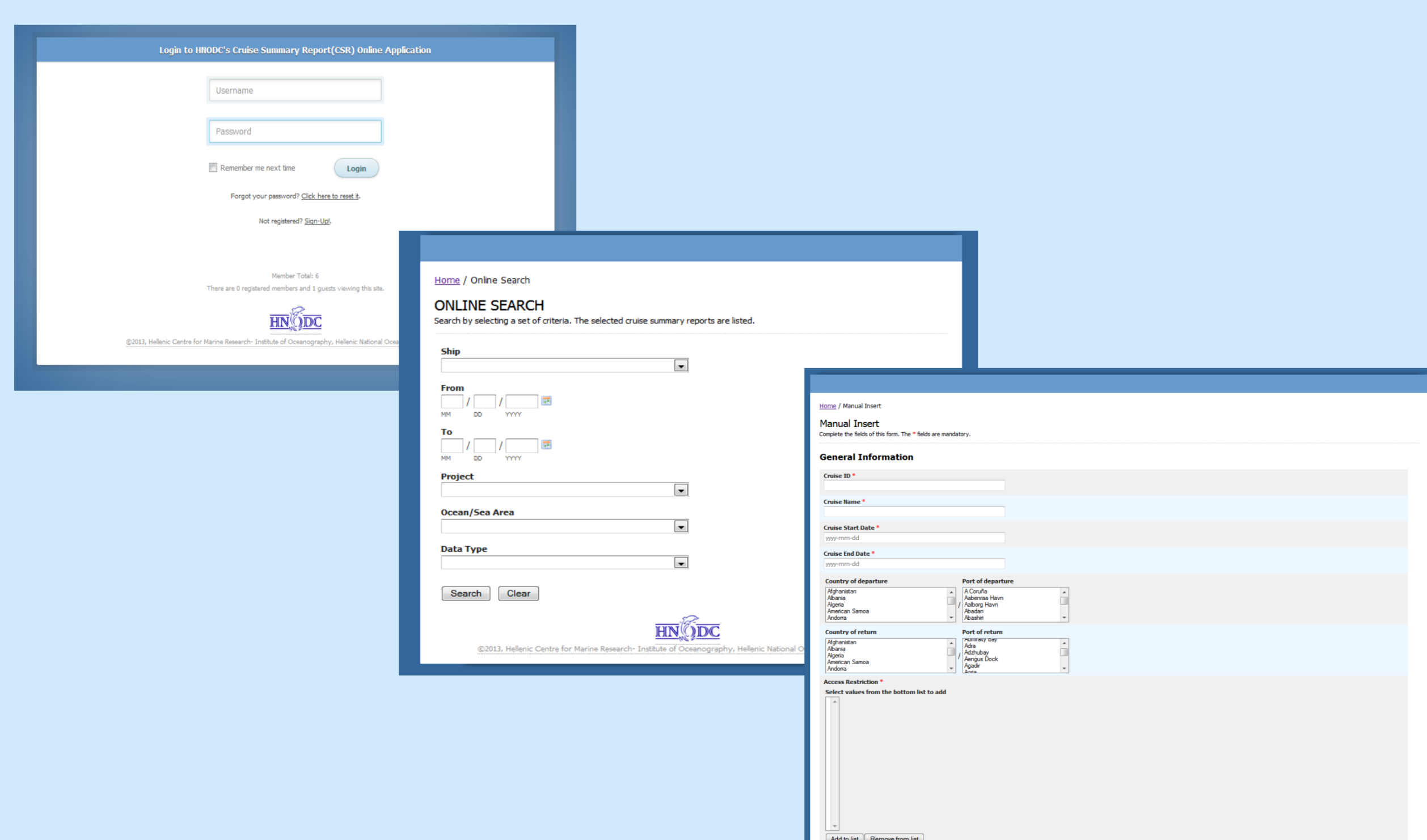
A mass volume of over 320.000 station data concerning, physical, chemical and biological oceanographic information, have been stored.

HNODC data base is currently hosting data from the POSEIDON system (<http://poseidon.hcmr.gr>) which is a monitoring, forecasting and information system for the greek seas (currently two Poseidon stations are in operation and a third one is expected to be put in service very soon). In addition, within the SeaDataNet Project, the Poseidon CDIs and EDIOS descriptions have been updated and linked with EMODnet - Physical Parameters web portal (<http://www.emodnet-physics.eu/>).

New CSR Data Base Interface

A new version of the CSR data base based on the Pan-European SeaDataNet standards is under development and will be launched soon. This new interface will use Common Vocabularies Web Services and will have the following capabilities:

- User Authentication,
- Online Search in the CSR data base,
- Manual & Automatic (by uploading xml files) Insertion of new CSRs,
- Online Editing & Deletion of existing CSRs.



Data Access Service - Web GIS Application

(<http://mapserver.ath.hcmr.gr/pagin/v27>)

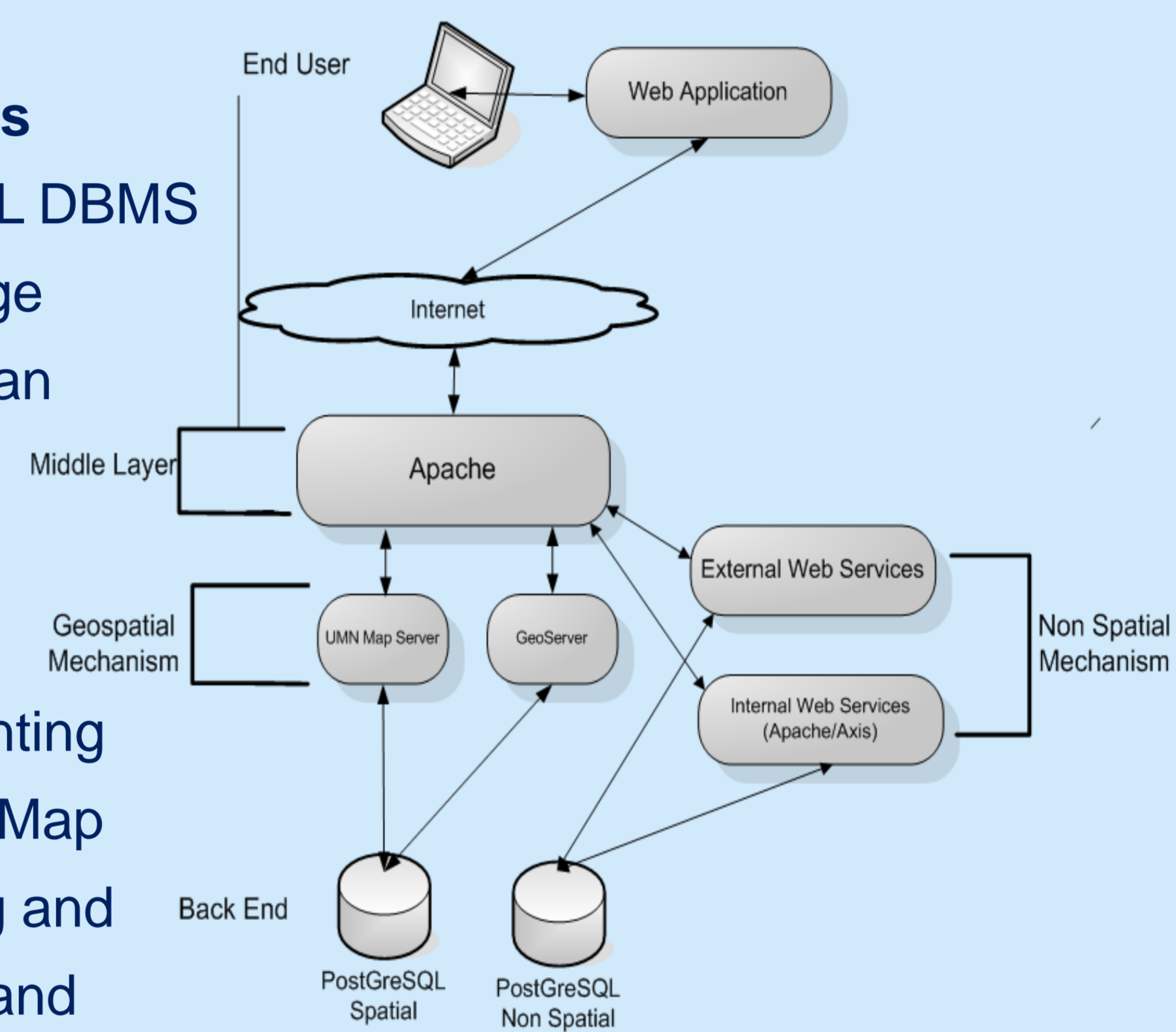
To represent, exploit and download the holding data sets, a Web GIS application constructed with capabilities to represent either the geospatial aspects of this information together with the non spatial information. For the development, state of the art software components were employed:

- Geospatial and no Spatial Web Services mechanisms took the place in the Middle-Layer,
- Geospatial open source tools and custom development was employed in presentation layer.

The Architecture

The Back End components

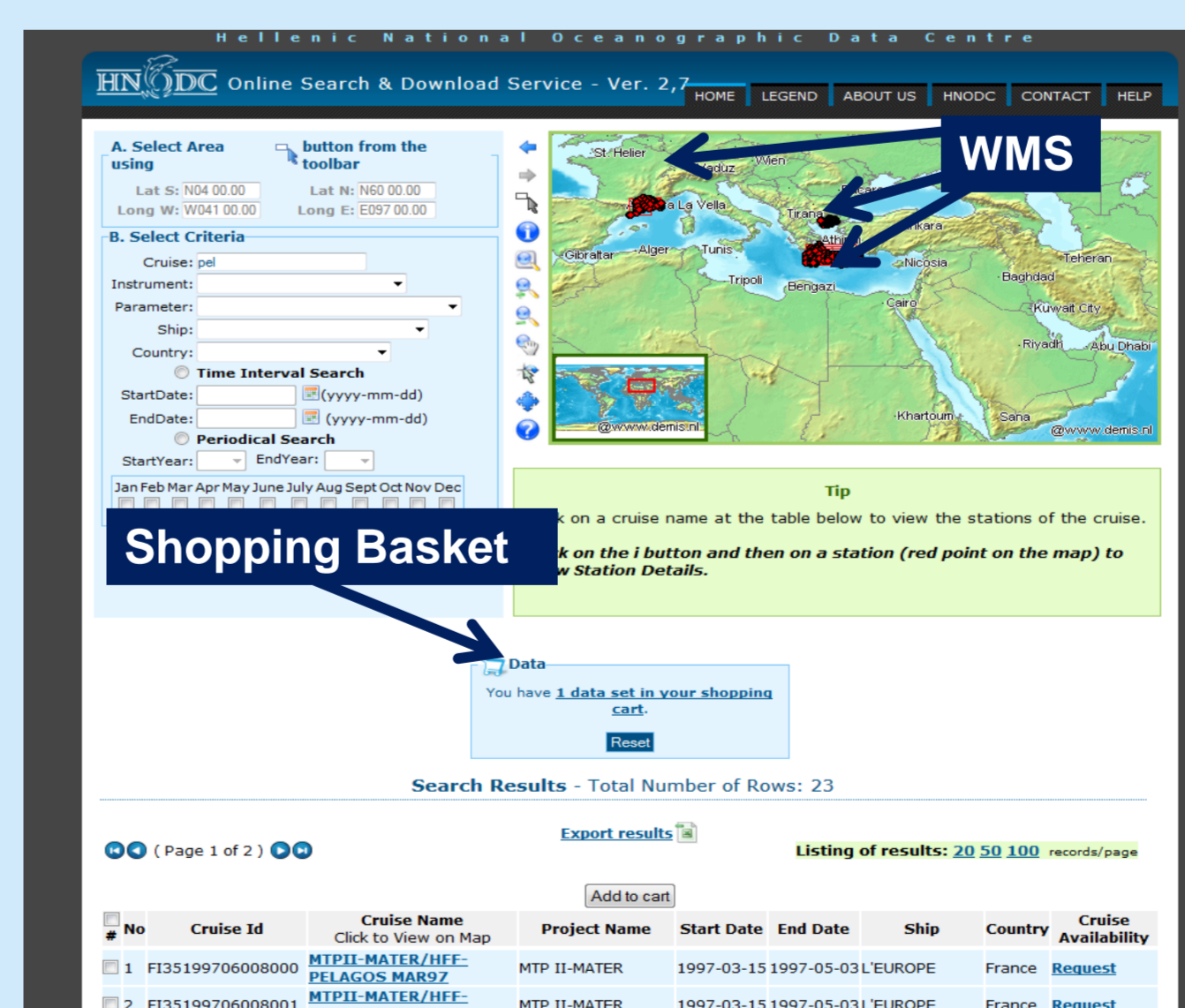
- Open source PostgreSQL DBMS stands as the data storage mechanism with more than one data base schemas,
- UMN Map Server and Geoserver are the mechanisms for representing geospatial data via Web Map Service (WMS), querying and navigating in geospatial and meta data information via Web Feature Service (WFS), and in the near future transacting and processing new or existing geospatial data via Web Processing Service (WPS),
- MapBender-WhereGroup*, a geospatial portal site management software for OGC and OWS architectures, acts as the integration module between the geospatial mechanisms.



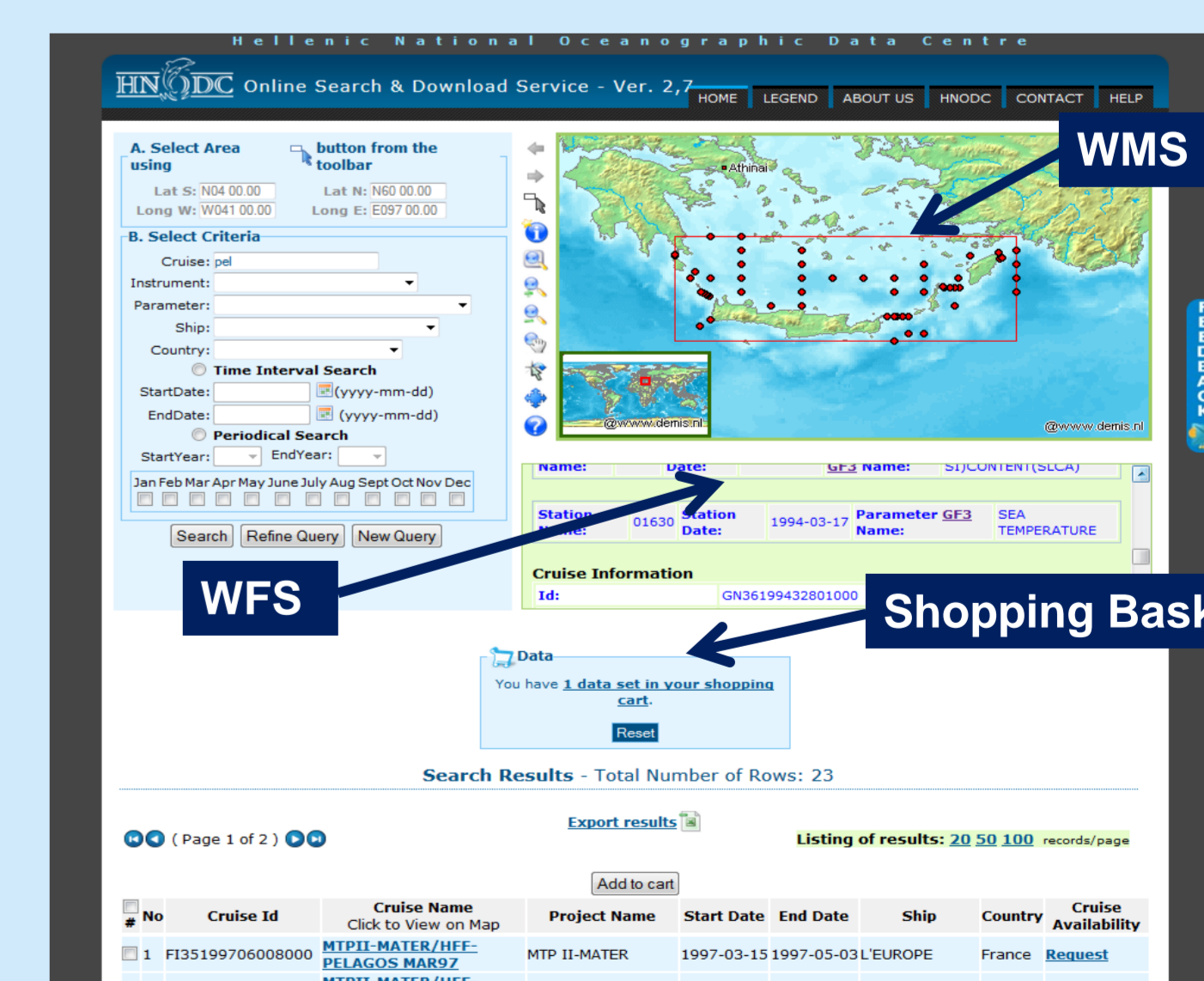
The Middle Layer components

- Apache and Tomcat stand as the Web Service middle layers.,
- Apache Axis2 with its embedded implementation of the SOAP protocol acts as the non-spatial data mechanism of Web Services (*these modules of the platform are still under development but their implementation will be fulfilled in the near future*),
- Finally a Web User Interface for the end user has been developed based on the enhanced and customized version of the *MapBender* GUI. This application is an online Search, Map and Download service which allows searching, visualizing and downloading data from the hellenic oceanographic data base. (*A data shopping basket is now under development*).

New Web GIS Interface



View cruises on map (WMS) & Request for cruises (Shopping Basket)



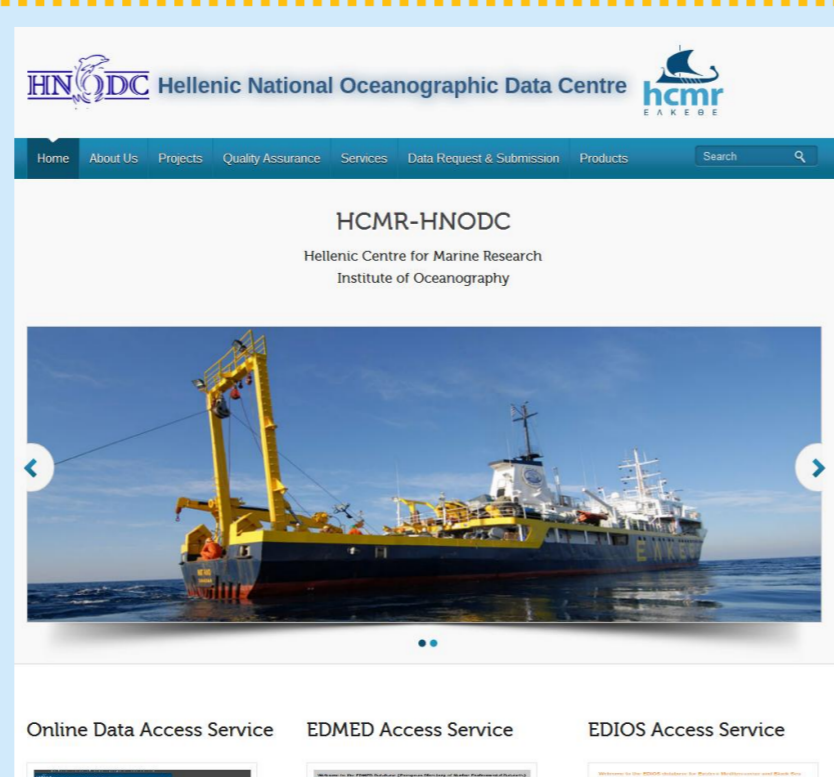
Cruise's meta data information (WFS)



Hellenic National Oceanographic Data Centre

Visit the new HNODC website in:

<http://hnodc.hcmr.gr>



Conclusions

- Inherit interoperability between diverse data centers and data providers.
- Interchange and combine data sets with minimum programming efforts.
- Produce comprehensive and self explained new data products combining various and diverse data sources.
- Navigate through a wide range of information.