IMERS, A GENERAL DATA SYSTEM FOR STORAGE OF MARINE SURVEY DATA ANNO 2007

Deneudt Klaas, Robin Brackez and Edward Vanden Berghe

Flanders Marine Institute (VLIZ)
Wandelaarkaai 7, B-8400 Oostende, Belgium
E-mail: klaas.deneudt@vliz.be

The IMERS database or Integrated Marine Environmental Samples and Readings database was set up at the Flanders Marine Institute (VLIZ) in response to the growing need for a general repository that could store the data resulting from sampling campaigns in a uniform way. The database has been designed for storing measurement data based on sampling of water, sediment, suspended matter and biota.

The measurement data, the so-called readings, are stored together with a maximum of information on the actual sampling event that lay at the basis of the measurement. This way, for example biotic readings can be queried together with the environmental readings that were registered during the same visit of a station.

The design of the database can be split up into three major parts. The first part is based on the general concept of sample-taking and the main tables here are 'Trips', 'Visits', 'Events', 'Samples', 'GranRecords', 'BioRecords', 'Specimens' and 'Readings'. The second part of the database structure is built around the table 'ReadingTypes'. This part documents the reading and stores information on what parameter, unit, matrix is measured and what method is used. Each record in the 'Readings' table is linked to a readingtype. The third part of the database structure is built around the table 'ReadingAdministration'. This part of the database stores information on the origin of a reading (file and data set), who is the author of the reading and what restrictions apply to it. All data can be traced back to their origin through a link with this table. In order to be able to group data coming from various sources and to be able to make data selectively visible, a system of context labeling was built into the database. The one-to-many relationship between the ReadingAdministration and these context labels make it possible for each reading to be part of one or more contexts.

There is a maximum of integration of the database with the other databases managed at the Flanders Marine Data and Information Centre. All species records in the IMERS database are directly linked to the APHIA database (VLIZ's marine species register for the North Sea (http://www.vliz.be/Vmdcdata/aphia/index.htm). The persons and institutes in the IMERS database are linked to IMIS (Integrated Marine Information System; http://www.vliz.be/Vmdcdata/imis2/index.php). Where relevant the trips in the IMERS database are linked to the trips in MIDAS (Marine Information and Data Acquisition System; http://www.vliz.be/Vmdcdata/midas/index.php).

For own use and to allow external users of the database to manually input data into the IMERS system, an input tool has been developed. This input programme can be used for both online and offline input. In the case of offline input (for example on board of a research vessel) the data is temporarily stored in a local database before it is uploaded to the server database.

Currently the IMERS database contains over 230,000 biotic records and more than 31,000 records for environmental parameters. A web interface allowing online consultation of the public part of these data can be found on http://www.vliz.be/vmdcdata/imers/