XML in Russian NODC and perspectives – MEDBLACKDODS and other

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XML (eXtensible Markup Language) as a component of modern information technologies becomes more and more widely used. XML has a number of advantages before other languages/formats of the information resource description for exchange and distribution under Web-technologies. We consider XML first of all as the important element of technology of the distributed marine databases. It is possible to distribute the basic fields of XML use on some groups: metadata description on a website; metadata and data description for software applications under Web; the creation of «uniform information space» for distributed data management.
Within the framework of the national programme «Creation of uniform system of the information about World ocean conditions» the design decisions were formulated Interagency Metadata System (IMS) about information resources on World ocean. The access to IMS is organised through ESIMO Web-portal (http://www.oceaninfo.ru, only in Russian).
Some Java applications were developed in the Russian NODC using XML data and metadata files. As an example the structure of XML-files used in software developed for access and visualisation of metadata from MEDAR/MEDATLAS II dataset is described below.

For data exchange and data processing special language Meteorological Data description (MetDD) Application Program Interfaces (XmlMeteoDocument) based on XML DOM model was developed. MetDD includes DataTransmit XML document for hydro meteorological data presentation and request XML document as query language. XmlMeteoDocument allow parsing, controlling and processing hydrometeorological data. At present time MetDD can be applied only for data structure, characterised by temporary and spatial coordinates.
The Russian NODC plans to use XML in two applications: setting up the IMS, and creation of a distributed marine database system. This way, two main tasks – unification of metadata description and construction of dynamic websites – would be solved in the near future, using the same framework.
Under the mentioned Russian programme the development of distributed ocean data system - DODS (sometimes the terms «virtual datahouse or virtual data centre» are used) are actively carried out. For DODS development J2EE middleware of Sun Microsystems was chosen. XML plays the extremely important role in the integration module of providing an environment for the description of various information resources. It is obvious that for this purpose an XML extension (such as marine XML) is needed. As a basis we are going to use MetDD, which was considered above as a basis for marine XML development. To the present time software applications for data access from separate local information sources (GTS database, ocean R/V cruises inventory of Russian NODC) are developed. In 2002 it is planned to carry out a test interface of several local data sources placed at the centres Obninsk, Saint-Petersburg, Vladivostok, and to start developing a prototype of distributed marine database system.