The experience of using XML for a wide class of metadata objects

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The diversity of metadata (information on data sets, observant platforms, cruises of RV, organizations, information production etc.) generates problems consisting of increasing of processing time, information size so in increasing of the complexity of the structure of representation of the data; as a consequence, the efficiency of their processing falls. In the beginning, metadata were represented in an HTML-format. Drawbackx of this method are the large sizes of files, absence of an opportunity of processing of the information and effective search.

These problems are solved via new technology of metadata representation – the XML language and its subsets like XSL, XSLT, XLink etc. The use of this technology has allowed to organize sorting and transformation of the XML-file given in an HTML-format. This technology can display results on web too. The described metadata representation is submitted to the address http://www.oceaninfo.ru in section "Metadata".

In the Russian NODC the part of metadata (information on cruises of RV, experts, coastal stations, etc.) is stored in a database DBMS Oracle and most part of objects – as XML files. One of the tasks is the loading of all metadata objects and creating an access method through a database. The reduction of all metadata objects has required using of the converting various methods.

A uniform description of all objects' metadata, containing a set of tags for each object without duplication of the information is created. The problem of interaction between separate metadata objects, submitted in various XML files, sometimes from different organizations has to be dealt with. Language XLink supports links not only inside one XML document, but also between several documents located on the Internet. This language is applied to the current problem. These active links facilitate synchronization of files between the different organizations, excludes duplication of the information in various objects metadata, allows to organize sample of the necessary information of the distributed base metadata, and to apply the dictionaries and codes.

The experience with the variety of metadata objects has revealed the need to create an XML files control system, which would contain such functions as creation, editing, viewing XML documents in a treelike form, control of the logic content using DTD and XML-Schema, representation of the information in Russian and English, sample and sorting metadata on several attributes with the further displaying on the screen using XSL and CSS, performance of export and import metadata between a database and XML documents and vice versa.