

Marine XML – Using XML technology for marine data interoperability

K. Millard

HR Wallingford Ltd. Howbery Park, Wallingford, UK OX10 8BA
On behalf of the partners of the EU MarineXML project

E-mail: k.millard@hrwallingford.co.uk

OVERVIEW OF THE PROJECT

MarineXML is a project part-funded by the European Commission Fifth Framework Programme to demonstrate that eXtensible Mark-Up Language (XML) technology can be used to develop a framework that improves the interoperability of data in support of marine observing systems. With the advent of XML, the global oceanographic community has available an opportunity to create a truly universal marine data standard. Unlike earlier standardisation initiatives, XML can support existing data formats and information systems while providing maximum benefits when included in the development of new systems.

By linking with related projects and initiatives, this project will develop a prototype of an XML-based Marine Mark-Up Language (MML) to show the integration between MML and data supported by other established standards. These include the International Hydrographic Organisation (IHO) S-57 standard, the OpenGIS Consortiums (OGC) Geographic Mark-Up Language (GML) standard and proprietary data formats such as those from marine instruments such as ADCP, expendable bathythermographs and ARGO floats, etc. It will specifically demonstrate how this MML approach supports data interoperability, widens data re-use and improves end-to-end data management in marine observing systems.

XML AND DATA INTEROPERABILITY

XML was developed by the World Wide Web Consortium (W3C) to improve data transfer over the Internet. The potential of XML to support multi-formatted data, provide automated processing, increasing accessibility and improve data exchange has been widely recognised by a number of industries, scientific disciplines, government agencies and the IT industry. For example the Geographic Mark-Up language (GML) developed by the Open GIS Consortium (OGC) for the use and exchange of geographic data or the Bioinformatic Sequence Mark-Up Language (BSML) developed for the exchange of data related to the human genome project.

Similar to the way that GML enables the same geographic to be re-used in a GIS, mobile phone or in-car navigation system; MML could enable marine data (e.g. temperature, wave height) from any source to be used in a mathematical model, navigation system or webpage. This also opens the possibility for data to be used more readily in mobile devices such as cell phones or PDAs (Personal Digital Assistant e.g. PalmPilot).

MARINE XML AND THE OCEANOGRAPHIC COMMUNITY

The success and acceptance of XML across other disciplines has prompted the International Oceanographic Data Exchange (IODE) Committee of the International Oceanographic Commission (IOC) and the International Council for the Exploration of the Seas (ICES) to form a joint Steering Group on XML (SGXML). MarineXML will work closely with this committee and look to this panel for the long-term post-project development of a MML standard based on the MarineXML demonstration. More information can be found on the project website; www.marinexml.net.