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(of UNESCO)
Twentieth Session of the IOC Committee on International Oceanographic Data
and Information Exchange (IODE-XX)
Beijing, China, 4-8 May 2009

Report of the MarineXML Steering Group
Roy Lowry, British Oceanographic Data Centre

Summary of the document

Documents the activities of the IODE MarineXML Steering Group since IODE XIX
and proposes future work to IODE XX for consideration.

DRAFT TEXT FOR INCLUSION IN THE SUMMARY REPORT

MarineXML Steering Group activity has primarily been in two areas of
vocabulary work:

• Content governance: the development of new and the improvement of
  existing vocabulary content
• Technical governance: the storage and serving of vocabularies

Content Governance Activities

MarineXML SG vocabulary content governance is undertaken by the SeaVoX e-
mail discussion forum, which has been involved in two areas of work.

First, the IODE/JCOMM Forum on Oceanographic Data Management and
Exchange Standards in Oostende, Belgium in January 2008 made two
recommendations that were of relevance to SeaVoX. First, that the country
codes developed in the 1980s by IODE GETADE and subsequently maintained by
RNODC (formats) should be replaced for international oceanographic data
exchange by the country codes maintained by the International Standards
Organization:

• ISO3166-1 for country names that are currently in use
• ISO3166-3 for deprecated country names

SeaVoX participants from BODC, ICES and USNODC collaborated to produce a
mapping from IOC to ISO codes to support conversion work required to conform
to this recommendation. This mapping has been published through the NERC DataGrid Vocabulary Server at:


The second recommendation was that the platform type vocabulary developed from the GF3 Code Table 3 by the EU SeaSearch project should be further improved, including clarification of the internal hierarchical relationship between terms. This work is published at:


The second area of work has been the development of a Sea Area gazetteer. Many local gazetteers under construction and there are clear benefits if these are linked to a common high level discovery hierarchy of regional terms. The most obvious candidate for this is the International Hydrographic Bureau “Limits of Oceans and Seas (Special Publication No. 23)” list of sea areas. However, this has well-known shortcomings that cannot be improved due to issues in the governance process. SeaVoX has developed an ontology of regional and global sea area terms to fill the resulting void. This will be published on the Vocabulary Server and should be available by the time of the IODE XX meeting.

**Technical Governance Activities**

Technical governance for vocabularies developed by SeaVoX is provided by the NERC DataGrid Vocabulary Server, which was developed by BODC for NERC DataGrid and has been adopted by the EU SeaDataNet project. The system comprises an Oracle relational database back end handling maintenance issues such as versioning and audit trails front ended by a Java API delivering vocabulary content as XML documents.

During the reporting period the system has continued to evolve, developing from V1.0 to V1.1. The primary differences between versions are that V1.1 has improved functionality in the SOAP API, plus a pseudo-RESTful API (termed HTTP-POX because it delivers plain old XML in response to an HTTP GET request) and URL access to both terms and complete vocabularies.

**Notes on Work Items**

**Extension of SeaVoX membership**

SeaVoX is an active IODE activity that is inexpensive as it is based on electronic communication rather than physical meetings but nevertheless is effective. IODE representation on SeaVoX is extensive, but not comprehensive, currently including Italy, Spain, Greece, UK, Russia, the Netherlands, Canada, Australia, Sweden and Belgium,

Further IODE participation would be most welcome and may be obtained by a simple e-mail request to rkl@bodc.ac.uk.
Development of Vocabulary Technical Governance Standards

Several Semantic Web resources based on the ISO19135 repository model relevant to the oceanographic domain are either operational or under development. Of particular note in addition to the NDG Vocabulary Server are the ICES RECO server, the MMI Ontology Registry and an ontology registry under development in CSIRO in Australia.

All of these are based around the concept of an API, typically a structured URL invoking an HTTP GET request representing a vocabulary, ontology or term that return an XML document describing the requested resource.

The benefit of standardized API calls and payload document XML schemas across these resources to the development of semantic interoperability would be enormous. In particular, the emergence of such standards would encourage the development of semantically aware clients. Currently, this is an area of research in progress supported by collaboration, but once maturity is reached there is clearly a role for SG MarineXML in the formalization of these standards.

The proposal is that SG MarineXML should encourage the development of these standards using the SeaVoX discussion list as the vehicle. Any results could then be formalized through the standards process proposed by the IODE/JCOMM Forum on Oceanographic Data Management and Exchange Standards in Oostende, Belgium in January 2008.

DRAFT ITEMS FOR THE 2009-2011 WORK PLAN AND BUDGET

<table>
<thead>
<tr>
<th>Action item description</th>
<th>To be implemented by</th>
<th>Deadline date</th>
<th>Requested from UNESCO RP</th>
<th>Requested from other sources</th>
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</thead>
<tbody>
<tr>
<td>Extension of SeaVoX membership</td>
<td>Roy Lowry</td>
<td>Ongoing activity</td>
<td>Zero cost activity</td>
<td></td>
</tr>
<tr>
<td>Strategy meeting with ICES WG-DIM</td>
<td>Roy Lowry</td>
<td>Mid 2010</td>
<td>8,500 USD (support for 4 IOC-delegates)</td>
<td>ICES and other interested parties to be self-supporting</td>
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<tr>
<td>Development of Vocabulary Technical Governance Standards</td>
<td>Roy Lowry</td>
<td>Draft by end of 2009</td>
<td>Zero cost activity</td>
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