IODE Ocean Data Portal - platform to build national distributed data systems

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Introduction

The birth of the Internet has resulted in great change in how science works and the expectations of the scientific community. Although science has always been global, the digital age has improved the visibility of research activities and has made collaboration easier. It is now much easier to access the data and analytical products used by peers in the development of their research publications for other activities. However, in addition to improving the visibility and accessibility of publications via the Web, the data and other analytical products supporting the publication are now expected to be accessible to the global community. Relying on static tables and images is no longer sufficient. In some cases, the accessibility of data and analytical products is a condition placed upon the researcher by the publisher. Although there are increased demands placed upon the researcher, there is the benefit of increased visibility for the researcher and their accomplishments.

Researchers face many challenges when looking to work in this global digital community. Although data and other value added products exist which may advance one's own work, finding and leveraging these resources on the Web presents many challenges. Knowing where to look, how to search, how to access, and how to integrate data and products from many disparate sources can be difficult. Furthermore, contributing one's own data and analytical products for use by others, especially when resources are limited, can present many significant barriers.

The solution to these challenges is a mix of standards, technology, people, and education. Benefits are worth the investment, both to the data provider and the data user. IODE has created the data integration platform though its Ocean Data Portal project that includes a number of components for data connection,creation of metadata, backend components such as service bus, database, portaland web GIS solution and a number of portal services. This platform is aiming to assist its regional activities and also deloping countries to create distributed data systems.

IODE Ocean Data Portal

The International Oceanographic Data and Information Exchange (IODE) was established by in 1961. It strives to enhance marine research, exploitation, and development through exchange of data and information between member states. IODE supports a variety of programs including standards development, technology, data access, capacity building (education). IODE adheres to the IOC Oceanographic Data Exchange Policy – free and unrestricted access to data and information. Development of a distributed information infrastructure is highly important for the marine science and maritime activities because of the trend towards integration of both local and geographically distributed applications that provide access to heterogeneous data and information resources of the marine environment. Data integration platform, developed within the framework of the IODE Ocean Data Portal (ODP) project is called to organize and manage distributed access and processing of information about the world oceans. ODP is developed as a component of the IODE system to provide sustainable data exchange and dissemination infrastructure to achieve the IODE objectives: to facilitate and promote the exchange of data and information including metadata, products and information in real-time, near real time and delayed mode; to ensure the long term archival, management and services of all marine data and information; to promote the use of international

standards, and develop or help in the development of standards and methods for the global exchange of marine data and information, using the most appropriate information management and information technology; to assist Member States to acquire the necessary capacity to manage marine data and information and become partners in the IODE network.

Figure 1: IODE ODP global and regional portals

At present moment IODE ODP has established a global node (NODC of Russia), two regional nodes (China for IODE ODINWESTPAC and Kenya for IODE ODINAFRICA) and one specialized node (SNDM of Argentina) which provides access to more than 200 national, regional and global datasets and products.

In terms of information contents IODE ODP fully depends on the data contributions from IODE Member states and related projects, programmes and initiatives.