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

Partnership Centre for the IODE Ocean Data Portal
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International Oceanographic Data and Information Exchange (IODE) of the Intergovernmental Oceanographic Commission (IOC) of UNESCO

Introduction

o Science is becoming increasingly collaborative

o Increasing demands for data

o Increasing ability to collect and generate data

o Increasing expectations of researchers (e.g. must think globally, providing access to data an emerging requirement for publication)

o Citing research accomplishments is an increasingly on-line activity

The challenges

o Where to look for data (portals)

o How to find data (metadata)

o How to access data (infrastructure)

o How to integrate data (interoperability)

o How to contribute when resources are limited

Objectives

International Oceanographic Data and Information Exchange (IODE)

IODE facilitates the exchange of oceanographic data and information between participating Member States, and serves the needs of users for data and information products.

IODE Ocean Data Portal (ODP)

Facilitate and promote the exchange and dissemination of marine data and services;

Provide the seamless access to marine data to NODCs across the IODE network through the discovery, evaluation and access to data via web based services;

Identify and recommend standards to provide interoperability with IODE data centres to allow shared use of metadata, data and products.
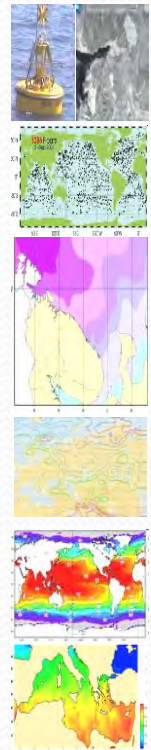
Benefits of the IODE ODP

The ODP provides benefits to both data providers and data users:

Benefits for data providers

- Scalable environment to support the capacity of the data provider's environment
- Supported technology for data discovery, evaluation, and access
- Standards (discovery metadata, vocabularies, code lists)
- Improved interoperability with other major marine data systems
- Access to advice and support from a team engaged with relevant technical and data management expertise within the global community

Benefits for data users

- One-stop shop for data and web services (*discover, access, download*)
- Increased visibility for one's research data
- Increased visibility of the researcher within the marine domain (Ocean Experts)

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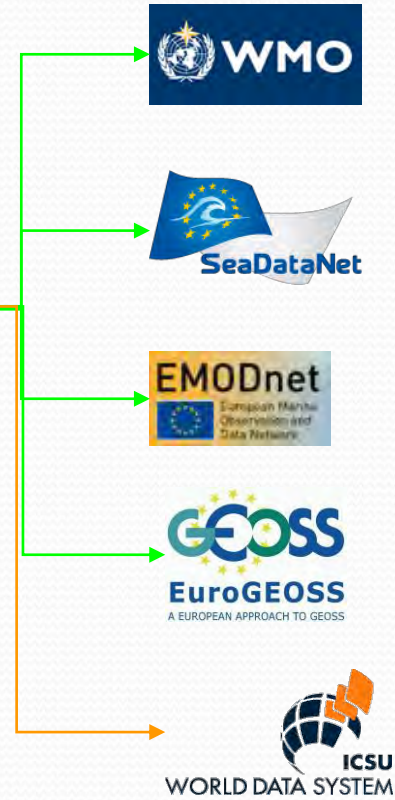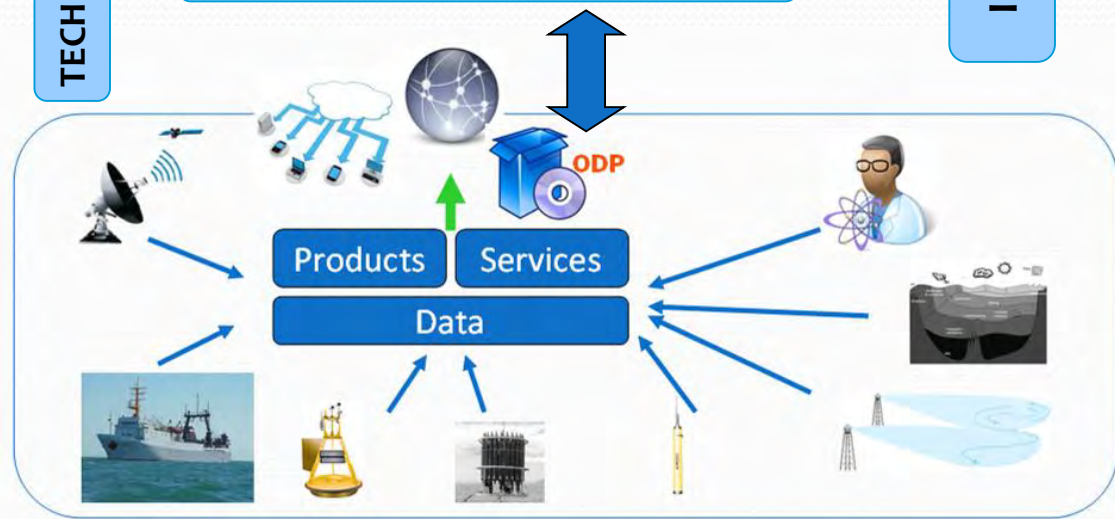**Standards**

ODP components

TECHNICAL AND TRAINING SUPPORT

INTEROPERABILITY PACKAGE

ODP PORTAL

ODP TOOLKIT

DATA AND INFORMATION

Products Services

Data

ODP

WMO

SeaDataNet

EMODnet
European Marine
Observation and
Data Network

GEOSS
EuroGEOSS
A EUROPEAN APPROACH TO GEOSS

ICSU
WORLD DATA SYSTEM

ODP components

The ODP is comprised of 3 major classes:

ODP Toolkit	Interoperability package	Technical and Educational Support
Integration Discovery Access Download Dissemination Control Standardization Scalability	Metadata "crosswalk" rules Discovery metadata services Machine-to-machine Interfaces	Partnership Centre for ODP – support and maintenance IODE Ocean Teacher courses (online materials, video courses, etc.)

ODP Toolkit

Management
Security
Monitoring
Service Bus

Presentation
Portal
Portlets
GIS server

Integration, delivery, exchange
Data Cache
Integration Server
Data Provider
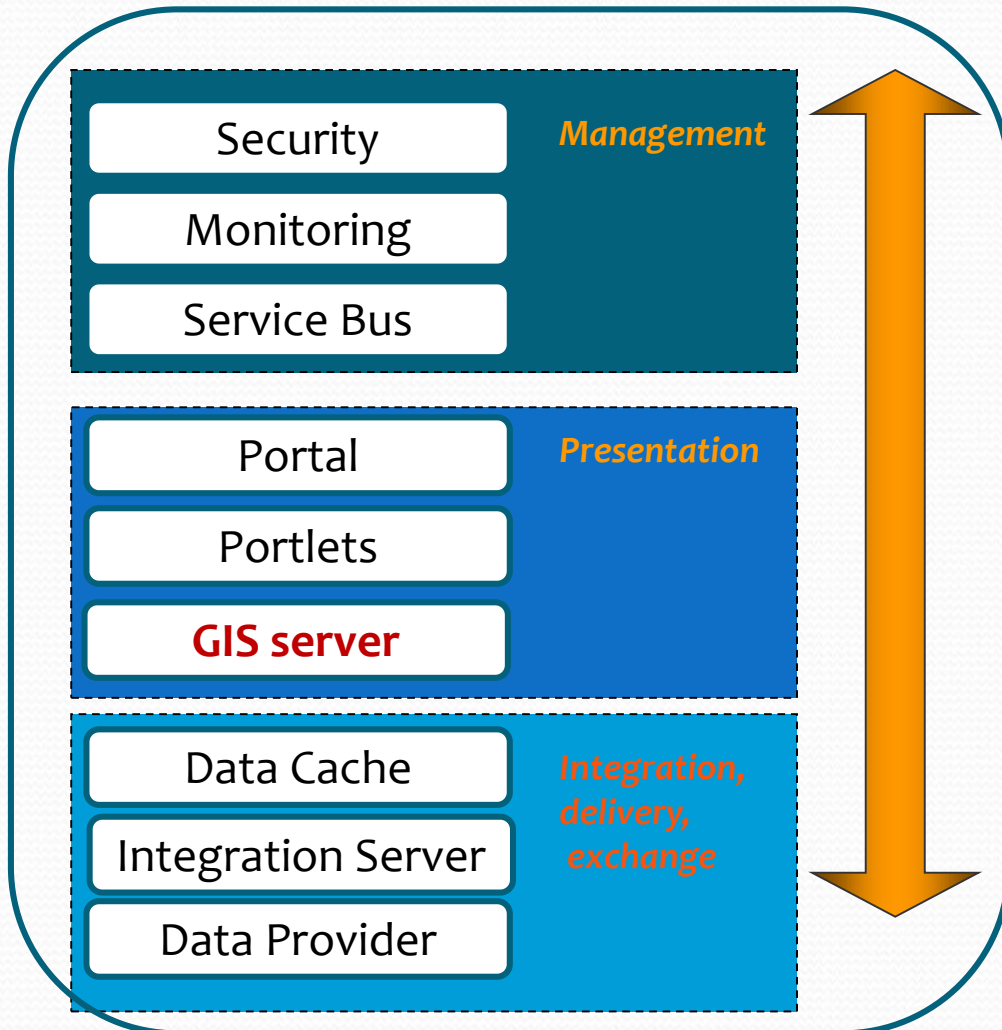
Open-source based components:
- Java
- JBoss
- PostgreSQL + PostGIS
- Geoserver, Grass GIS, Python, Perl
- OpenLayers, Leaflet
- Geonetwork
- JBoss Portal Platform
- JOSSO
- Zabbix

ODP Toolkit

Management	Presentation	Integration, delivery, exchange
Security	Portal	Data Cache
Monitoring	Portlets	Integration Server
Service Bus	**GIS server**	Data Provider
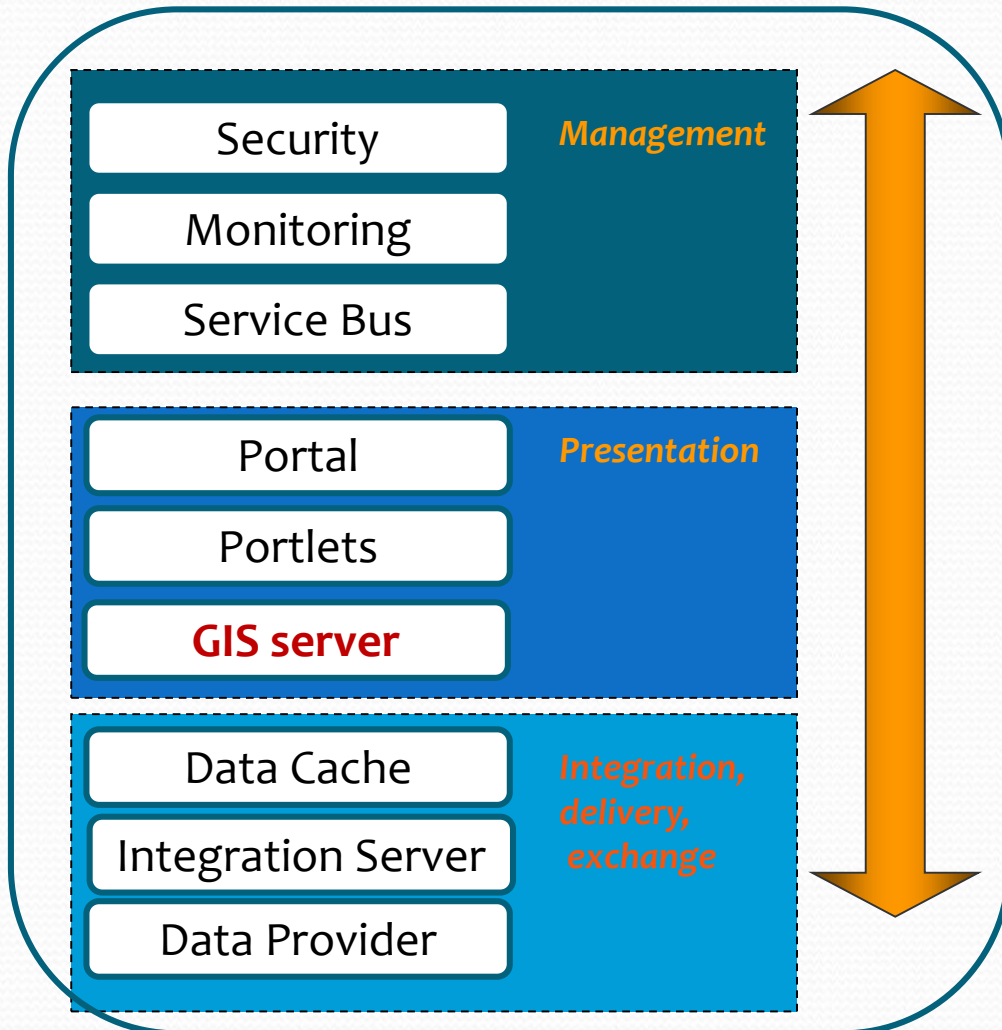
Standards used:

- ISO 19115/19139
- NetCDF
- OGC WMS, WFS
- OGC CSW
- RESTful services
- SOAP web-services

ODP Toolkit – Service model
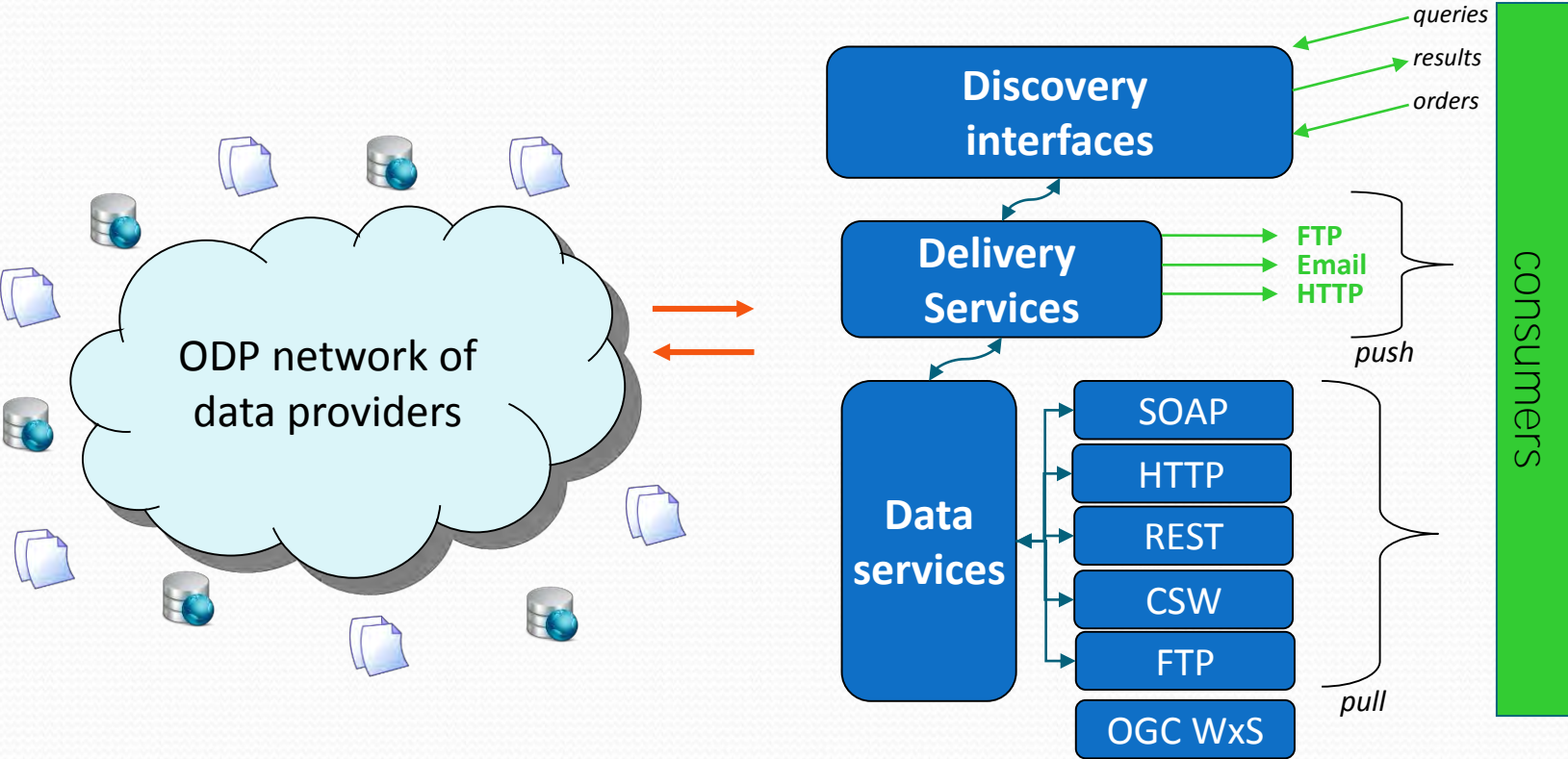
Use Case: SNDM Argentina

- Sistema Nacional de Datos del Mar (SNDM) www.datosdelmar.mincyt.gob.ar

- SNDM is an initiative of the Ministry of Science, Technology and Innovation in conjunction with the Interagency Council on Science and Technology (CICyT) framed within the Program Large Instruments and Databases

- SNDM is responsible for ensuring accessibility to data and marine information and Southwestern Atlantic Ocean Antarctica.

Use Case: SNDM Argentina

ODP technology is used to build national marine data system for Argentina - Sistema Nactional de Datos del Mar (SNDM) http://portal.mincyt.gob.ar

The system was officially launched in 2013 and the ODP team continues to work with the client team in order to improve SNDM metadata model and other facilities.
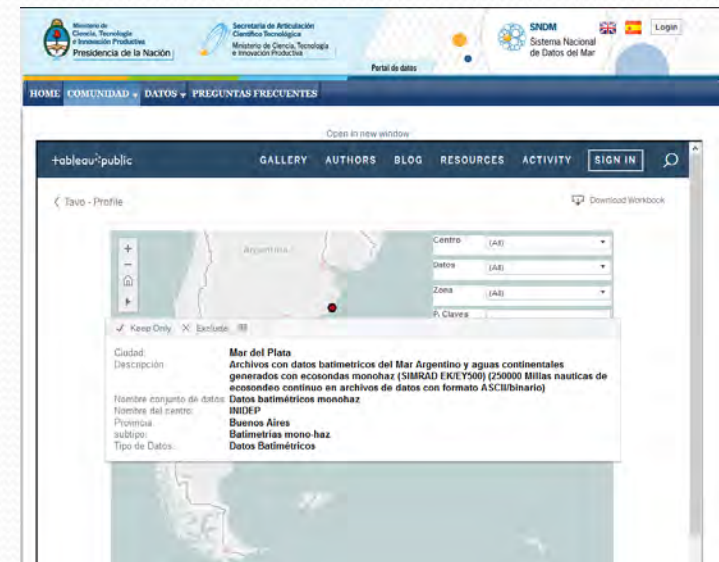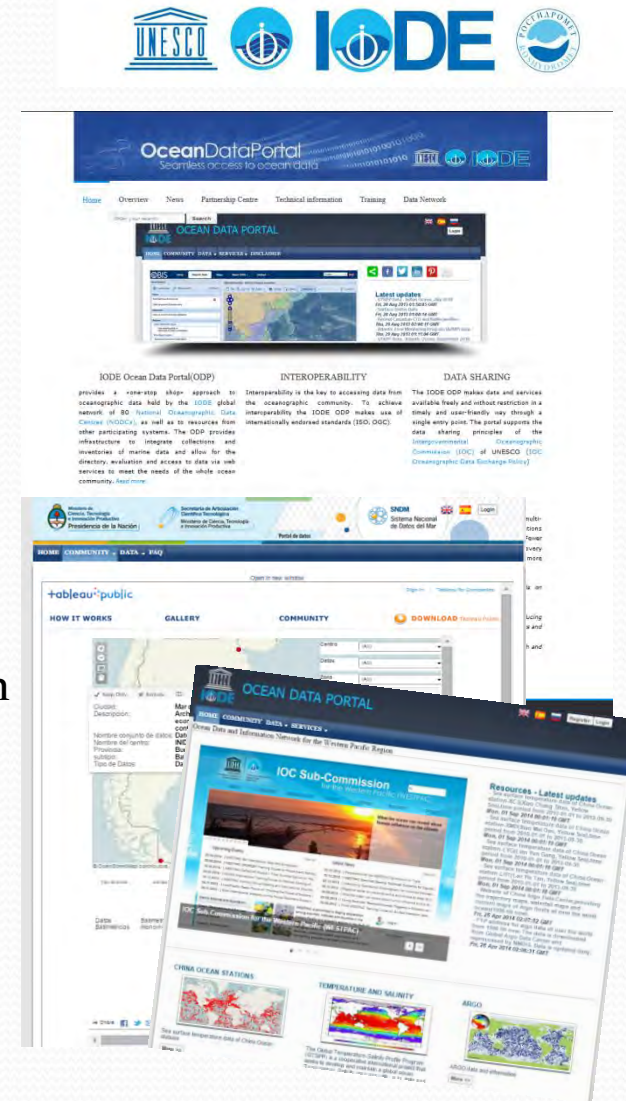
Importance of this use case:

- *Example of full implementation of national node and virtual data providers.*

- *Contributed to the advancement of ODP packaging to simplify implementation and support.*

- *Demonstrates flexibility of ODP technology to support other themes.*

- *Contributed to the development of the ODP training offerings.*

IODE ODP Progress

During 2013 – 2016:

- Implementation of a national ODP nodes for the **Sistema Nacional de Datos del Mar (SNDM)** - **http://portal.mincyt.gob.ar/**

- Implementation of a regional node for ODINWESTPAC (NMDIS/SOA, China) - http://portal-odp.nmdis.gov.cn/

- Implementation of interoperability with SeaDataNet as a deliverable of the Ocean Data Interoperability Platform (ODIP)

- Ongoing collaboration and access to data and services from WMO WIS, EMODNet

- Delivery of training sessions to groups including ODINWESTPAC, ODINAFRICA (*5 training courses*)

- Enhancement of the ODP technical environment in order to improve reliability and support (ODP V2 toolkit)

- Ongoing publication of new data sets (*over 2 million of new operational observations added, overall > 10 million of profiles/observations in 185 data sets*)

IODE ODP Progress

www.oceandataportal.net

THANK YOU FOR YOUR ATTENTION!

Dziękuję za uwagę!