Ocean Data Interoperability Platform:
fostering a common approach to marine data management on a global scale

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Drivers for sharing marine data: policy

European

- Marine Strategy Framework Directive (2008)
  - European Marine Obs
- Marine Knowledge 2020
- Blue Growth Strategy
- Galway Statement on Atla
  - Transatlantic Ocean R

Australia

- Marine Nation 2025
- National Marine Science Plan 2015-2025

"Australia's ongoing marine research success depends on improved management of national and global marine research data and information"

Drivers for sharing marine data: scientific and economic

- Improved understanding of marine ecosystems
- Assessment of health of marine environments
- Modelling and forecasting of potential future changes
- Sustainable development and exploitation of the oceans (UN SDG 14)
- Addressing global environmental challenges e.g. climate change

THE GREAT BARRIER REEF GENERATES

US$5.7 billion/year

AND

69,000 JOBS

Barriers to sharing marine data

- **Technical**
  - Data heterogeneity e.g. formats, spatial referencing
- **Policy**
  - Data access policies (organisational, national and regional level) – lack of consistency
  - Changing political agendas
- **Cultural**
  - Working practices

Marine data infrastructures

- **Regional data infrastructures**
  - Address specific 'local' requirements for data discovery and access
  - Developed in response to needs of the user community and funding agency policy and guidelines
  - Created in isolation to those in other regions
- **Global e-infrastructures**
  - Domain specific e.g. IODE – Ocean Data Portal (ODP)
  - Multidisciplinary e.g. GEOSS

Common global framework for marine data management

- Support sharing of marine data across regional and global systems
- Delivering interoperable data
- Single point of access for users
- Implementation requires:
  - Significant resources
  - Cultural change
  - Approach based on existing marine data systems

Ocean Data Interoperability Platform (ODIP/ODIP II)

Regions

- Europe (19 partners)
- USA (9 partners)
- Australia (5 partners)
- Canada (1 partner)
- International (4 partners)

Funders

Australian Government

ODIP: Oct 2012 - Sept 2015

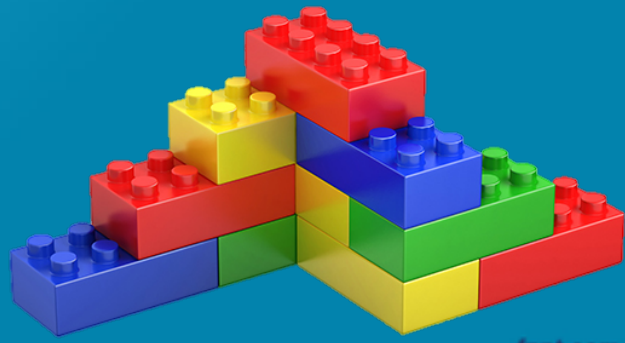
ODIP II: Apr 2015 — Mar 2018

ODIP Objectives

- Address barriers that inhibit sharing of marine data across disciplines, domains and international boundaries
- Promote development of a common global framework for marine data management
- Create a European - USA - Australia-Canada co-ordination platform promoting dialogue between stakeholders
- Develop prototype interoperability solutions demonstrating a coordinated international approach to marine data management

ODIP prototypes

- Regional data systems form ‘building blocks’ for a global framework
- Prototype interoperability solutions
  - ODIP 1: Discovery and access of marine data



ODIP 1: Discovery and access of marine data

Establishing (semantic) interoperability between regional marine data discovery and access services :

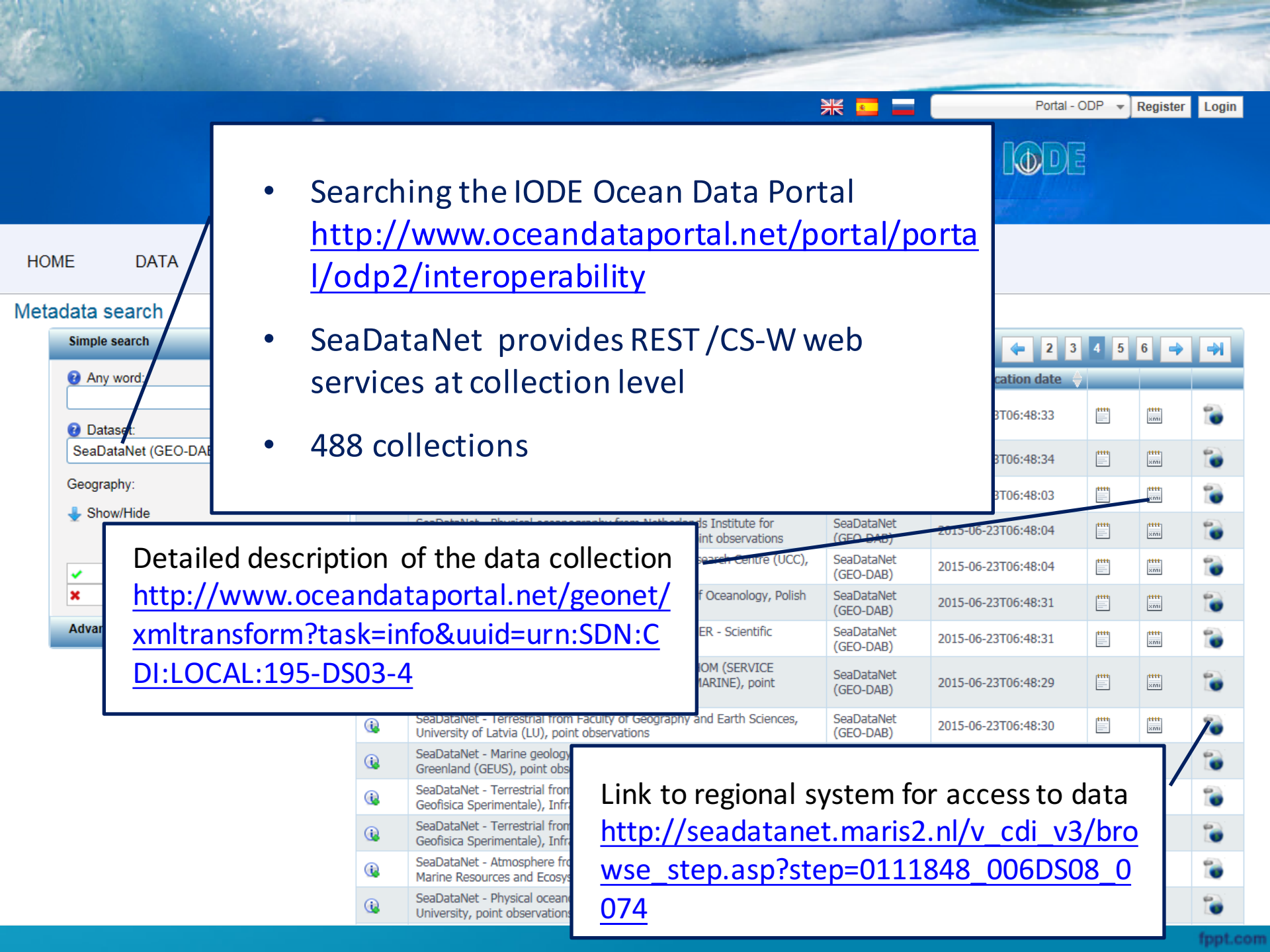
- SeaDataNet, (Europe)
- AODN (Australia)
- US NODC/NCEI (USA)

Facilitate sharing of metadata

- across regional data infrastructures
- with global GEOSS portal and IODE ODP

ODIP 1: outcomes

- Regional data discovery and access service delivering ‘collections’ of XML metadata records as web services
- Implementation of broker technologies
- Standardised ‘collections’ metadata exposed as web services
- Metadata from regional data discovery systems exposed in global portals e.g. IODE - ODP



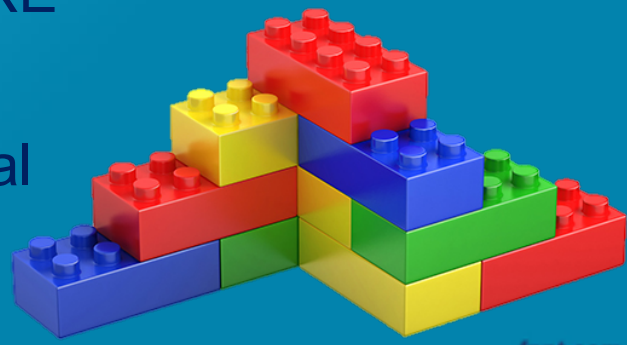
- Searching the IODE Ocean Data Portal http://www.oceandataportal.net/portal/portal/odp2/interoperability
- SeaDataNet provides REST /CS-W web services at collection level
- 488 collections

Detailed description of the data collection http://www.oceandataportal.net/geonet/xmltransform?task=info&uuid=urn:SDN:CDI:LOCAL:195-DS03-4

Link to regional system for access to data http://seadatanet.maris2.nl/v_cdi_v3/browse_step.asp?step=0111848_006DS08_0074

ODIP prototypes

- Regional data systems form ‘building blocks’ for a global framework
- Prototype interoperability solutions
  - ODIP 1: Discovery and access of marine data
  - ODIP 2: Cruise summary reports (CSR)
  - ODIP 3: Sensor web enablement (SWE)
  - ODIP 4: Digital ‘playground’ for testing VRE components
  - ODIP 5: Integrating biological and physical oceanography data



ODIP: what we learned

- Ecosystem level marine research has made an integrated global network of data services a necessity

- Leveraging the activities of existing data infrastructures to establish a common global framework for marine data management can overcome many of the recognised barriers to sharing of marine data.

ODIP: what we learned

- An approach based on existing marine data systems is potentially highly scalable and robust, as well as being transferable to other domains
- Establishing interoperability across regional data infrastructures and with the larger global data systems makes marine data more widely available for a diverse range of multidisciplinary applications

http://www.odip.eu

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