

# How to tick the boxes: Data Management in Practice

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# Best Practice Steps to Effective Data Management

- **Process**
- **Storage**
- **Quality**
- **Descriptive metadata**
- **Standards**
- **Sharing**
- **Security**
- **Ownership**
- **Integration**
- **Business Intelligence**
- **Promotion and dissemination**

# Data Lifecycle Process

- Definition
- Planning
- Capture
- Validation
- Analysis
- Publication
- Archival



# Data Planning Tools

**Dataset - Ocean CTD Stations**

Overview Availability Capture

### Dataset Overview

Project	Oceanographic Services
Dataset Title	Ocean CTD Stations
Dataset Alternative Title	Conductivity Temperature Depth St
Service Group	Ocean Science and Information Se
Service Team	Oceanographic Services
Dataset Point of Contact	Glenn Nolan Kieran Lyons
Scientific Discipline	<input type="checkbox"/> Biology <input checked="" type="checkbox"/> Chemical Oceanography <input type="checkbox"/> Chemistry <input type="checkbox"/> Climate <input type="checkbox"/> Coastal Management
Topic Category	<input type="checkbox"/> Biota <input type="checkbox"/> Boundaries <input type="checkbox"/> Climatology/Meteorology/Atm <input type="checkbox"/> Economy <input type="checkbox"/> Elevation
Annex Inspire Theme	<input type="checkbox"/> Addresses <input type="checkbox"/> Administrative units <input type="checkbox"/> Agricultural and aquaculture f <input type="checkbox"/> Area management/restriction/ <input type="checkbox"/> Atmospheric conditions
Dataset Abstract	CTD (Conductivity, Temperature, ar turbidity and fluorescence in the w

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Project:  Capture Theme Keyword:

Scientific Discipline:  Inspire Theme:

Dataset Status:  Dataset Contact:

Service Area:  Service Team:

Capture Data Format:  Dataset Distributor:

Topic Category:

### IDR Dataset Search

GUID	Project Title	Project Start Date	Project End Date	Dataset Title	Dataset Abstract	Dataset Contact	Dataset Created	
{2ED469FD-A599-470D-8744-E788F84F798F}	Advanced Mapping Services	01 Jan 1999	31 Dec 2020	INFOMAR Seabed Survey Seabed Classification Data	The Integrated Mapping FOR the Sustainable Development of Ireland's Marine Resource (INFOMAR) programme is a joint venture between the Geological Survey of Ireland (GSI) and the Marine Institute (MI). The programme is the successor to the Irish National Seabed Survey (INSS) and concentrates on creating integrated mapping products related to the seabed. Seabed classification data processed from the surveys includes the following breakdown of seabed habitat. Class 1 Fine Sand to Mud Class 2 Coarse to Medium Sand Class 3 Gravel to Coarse Sand Class 4 Rock (Less Texture) Class 5 Rock Habitat classification mapping has been completed in Donegal Bay, Galway Bay, Roaringwater Bay, south east coastline, east and north-east coastline.	Deirdre O'Driscoll Nicola O'Brien	01 Mar 2012	Details



# Storage

- **Relational Database Management System**
  - [SQL Server/Oracle/MySQL/PostGIS](#)
- **Scientific Data Model**
  - [Esri](#)
  - [INSPIRE](#)
- **Vocabularies**
  - [British Oceanographic Data Centre Vocabulary Server](#)

# Data Quality

- Garbage In Garbage Out
- Scientific Quality Flags
  - [SeaDataNet](#)
- Never delete data from your system
- Flag it correctly

# Descriptive metadata

- **metadata**
  - Identification information
  - Access information
  - Distribution information
  - Data quality information
  - Metadata information
- **Catalogues**
- **Discovery services**

# Standards

- **Metadata**
  - ISO 19115/19119/19139
  - INSPIRE
  - Controlled Vocabularies
- **Data**
  - Common data models (INSPIRE, Esri)
  - Interoperable
  - Open





# Sharing

- **Data Services**
  - Discovery
  - View
  - Download
  - Transform

# Security

- **Data protection**
  - IT
- **Acceptable Practices**
  - Roles and responsibilities

# Data Integration



- Standard codes
- Standard vocabularies
- Taxonomy
- Attributes
- Formats
- Coordinate Reference Systems
- Services
- Delivery protocols

# Business Intelligence

- Data summaries
- Charting and reporting
- Data visualisation
- Data mining
- Geospatial analysis
- Predictive modelling

## Promotion and dissemination

- Promote to the outside world that your data from the project is available for dissemination
- How can the data be accessed
- Is there a charge for services and applications?
  - Preferably not!

# Discussion - Next Step Ideas

- **Contribute metadata**
  - Central 3<sup>rd</sup> Level Metadata Catalogue (GeoNetwork)
- **Contribute data**
  - Central 3<sup>rd</sup> Level Data Server (ERDDAP)
- **Exchange**
  - Metadata harvest management into newly branded 'Marine Data Exchange'
- **Contact**
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    - Data Analyst and Information Management Specialist