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# IRISH SPATIAL DATA EXCHANGE UPGRADE

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## Executive Summary

The Irish Spatial Data Exchange (<http://www.isde.ie>) started life as the Marine Data Exchange project in 2004, when the Marine Institute made an initial submission for funding to the Information Society Fund.

The project concept came about following experiences gained in data management programmes in the Marine Institute, the Geological Survey of Ireland and the Environmental Protection Agency. In 2004, the Marine Institute launched Marine Data Online. This provided an online inventory of data holdings in the Marine Institute. It became apparent however that while this is a useful service that there is an assumption that users seeking marine related data would know where to look. While the Marine Institute holds significant amounts of marine data, so do the GSI, the EPA and 3rd level Education bodies. Similar issues exist when the EPA receives requests for 'environmental' data - it holds much of this data, but so do the other agencies mentioned.

A refined Marine Data Exchange Proposal was submitted in March 2005 and funding for the project was approved in April 2005.

Software development for ISDE version 1.0 was completed in December 2005. The ISDE version 1.0 system was intended as a proof of concept. ISDE version 2.0 was developed in 2010 and the driver for the project has been to provide input to the Irish Spatial Data Initiative and to comply to the INSPIRE Directive.

ISDE version 2.0 software development commenced in 2010 with a redesign and update of the architecture to coincide with changes in OGC, ISO standards and the INSPIRE Directive.

During 2015, the infrastructure has been further refined to provide compatibility with both the latest INSPIRE specifications and in order to feed into Ireland's Open Data Portal at <http://data.gov.ie>, and the user interface has been upgraded to allow better user searches for data. This has led to ISDE currently hosting over 390 datasets from 25 organisations.

## Objectives

There were a number of measurable and actionable objectives of this project which include; the ability to manage Irish Spatial Data Initiative Metadata template v1.2 metadata standard implementation across partners, support partner metadata catalogue infrastructure upgrade (GeoNetwork v2.10.3) and upgrade federated ISDE metadata 'harvest' catalogue (GeoNetwork v2.10.4). The project also aims to integrate ISDE metadata to Ireland's Open Data Catalogue as well as encouraging collaboration on open and spatial data cataloguing. The project also helps to support the curation of standard metadata following guidelines to a number of organisations such as; GSI, EPA, AIRO, NPWS, Galway CoCo and Roscommon CoCo.

## Solution

The technical solution to integrating the various data sources is to use the Open Geospatial Consortium's Catalogue Service for the Web (CSW) standard for the federation of metadata records amongst the partner organisations in ISDE. This enables the addition or removal of datasets and the editing of metadata to take place at each partner organisation, and the changes can then migrate through to the central node through harvesting from the partners' nodes.

The metadata provided from partner organisations to ISDE is created to international standards, using an application profile of the ISO-19115 standard for geographic metadata. This ensures that the supplied data fields are consistent, and that the ISDE central project team can undertake quality control of the metadata by ensuring the standard fields are present, and through ensuring the values in those fields look sensible. Where possible, the ISDE metadata is moving away from plain text content within the entries in each field, and is moving to the use of web addresses as values from controlled, approved lists of keywords.

The central node also provides a gateway to Ireland's Open Data Portal at <http://data.gov.ie>. This is important as it gives an added layer of visibility to the spatial data created and curated by public organisations. This gateway is implemented through harvesting of the central CSW server by the catalogue software at [data.gov.ie](http://data.gov.ie). A number of post facto rules are in place which enhance the result of the harvesting, such as preventing duplicate entries in [data.gov.ie](http://data.gov.ie) for organisations who provide their spatial data alongside non-spatial data to [data.gov.ie](http://data.gov.ie) directly.

Finally, the recent upgrade to the ISDE catalogue interface uses modern web design patterns (notably the Twitter Bootstrap framework, and the Open Source Leaflet JavaScript mapping framework) to provide a navigable interface to the ISDE metadata records.

## Benefits

The main benefit of this project was the outcome that it is now the largest single source contributor to data.gov.ie's Open Data catalogue. There are now 390+ datasets within the ISDE catalogue, with more than 25 organisations providing data. In the first 6 months of 2015 alone, there were 5,661 active sessions from 4,365 users on the ISDE website.