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# Web Services & Open Geospatial Consortium Standards

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# Web Services – What are they ?

- Service

‘Distinct functionality that is provided by an entity through interfaces [ISO 19119]’

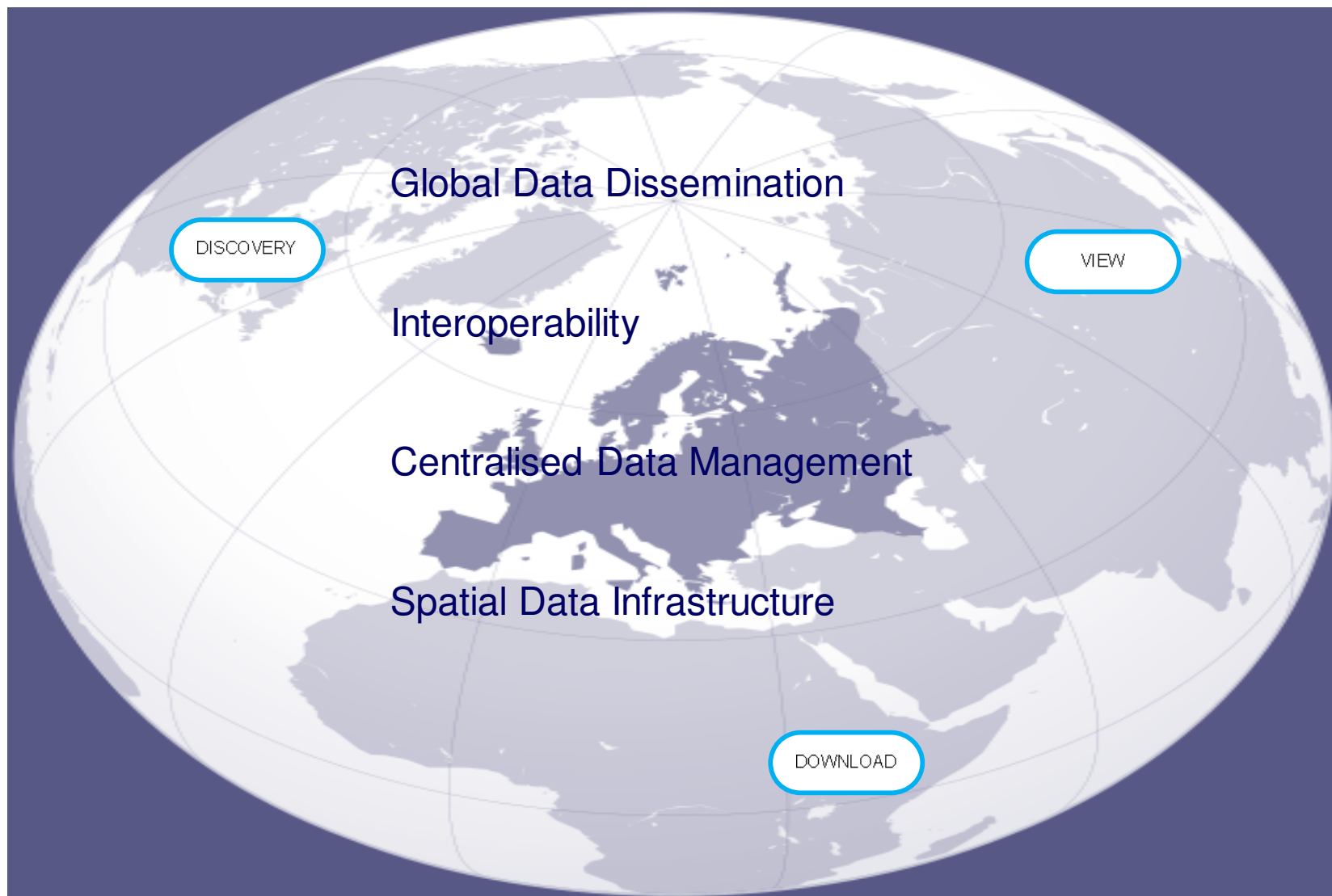
- Web Service

‘Web-based entity that transport protocols, via open standards, to exchange data with clients (Ferris and Farrell 2003)’.

## Web Services – What types are there ?

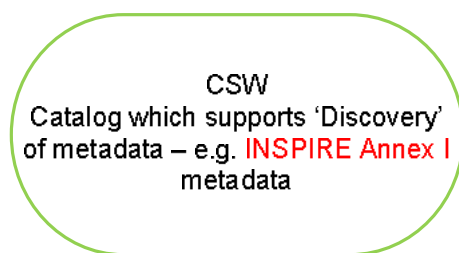
- Web Catalog Service – CSW                      Discovery
- Web Map Service – WMS                        View
- Web Feature Service – WFS                    Download
- Web Coverage Service – WCS                Download

# Web Services – What do they support ?



# Web Catalog Service – CSW (Discovery)

Web Catalogue Services are organised and implemented for the discovery and retrieval of spatial data metadata and services metadata using a 'Get Records' or 'Get Records by UUID' operation.



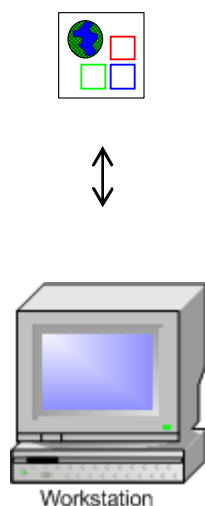
Workstation

Annex I : e.g. boundaries, roads,  
railways, hydrography

# Web Map Service - WMS (Viewing)

A Web Map Service provides a simple HTTP interface for requesting map images from one or more geospatial databases using Web Map 'GetCapabilities' and 'GetMap' operations.

- A WMS request defines the geographic layer(s) and area of interest to be processed (Parameters). The response will be a map image returned as a JPEG, PNG, etc..

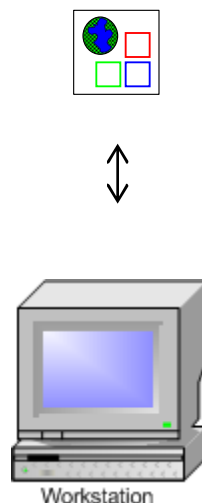


WMS  
supports 'Viewing' of Spatial Data  
e.g. **GSI LiDAR Survey Areas**  
[http://spatial.dcenr.gov.ie/imf/imf.jsp?site=GSI\\_Simple](http://spatial.dcenr.gov.ie/imf/imf.jsp?site=GSI_Simple)

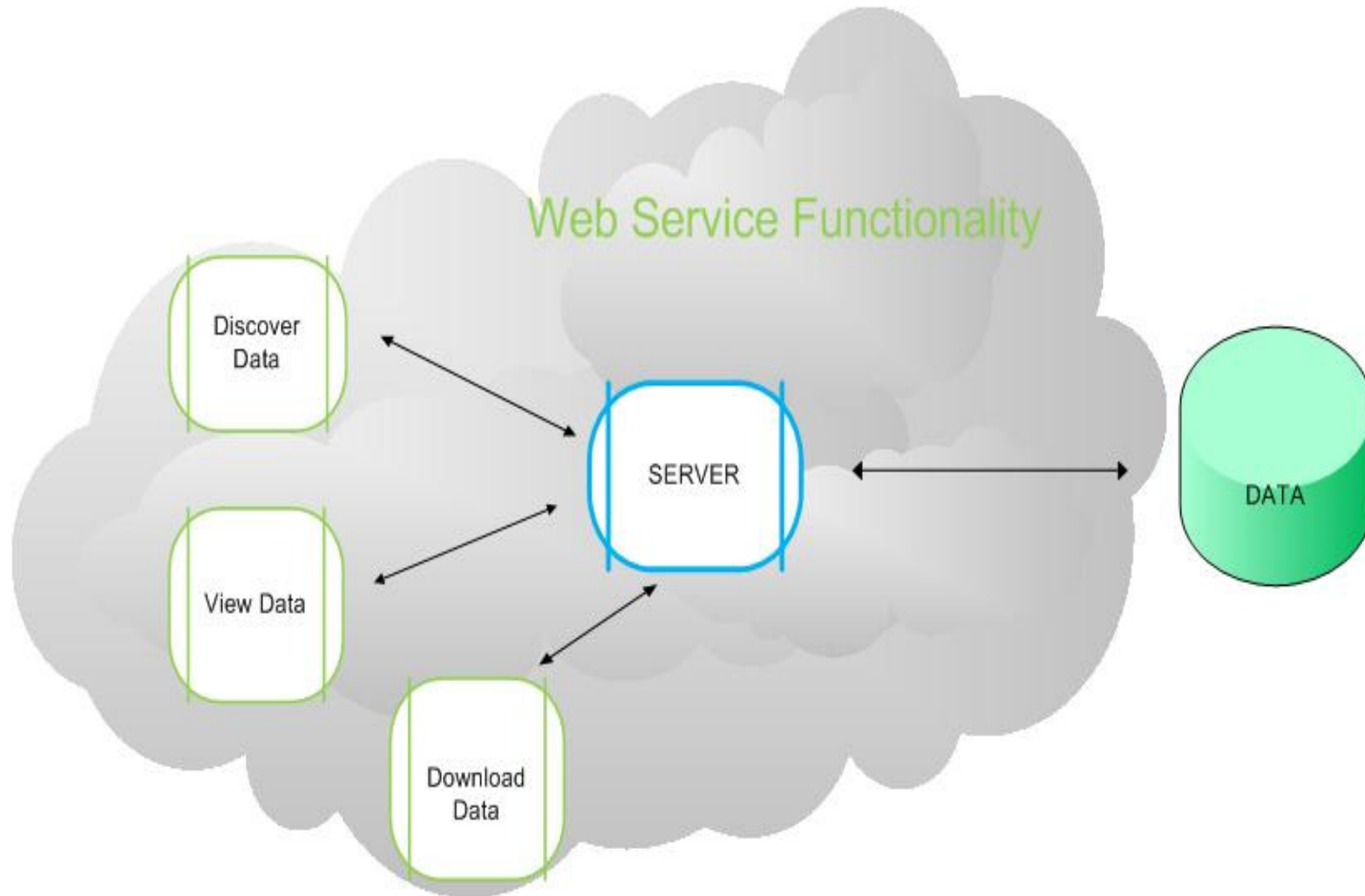
## Web Feature Service – WFS (Download) Web Coverage Service – WCS (Download)

Web Features Services and Web Coverage Services have operations which can request and retrieve data attributes.

- The 'GetFeature' (vector) and 'GetCoverage' (Raster) operations give users a way to obtain attribute information about geographic features/coverages displayed in a map.



WFS/WCS supports 'Download' of Spatial Data e.g. **LiDAR Grids**  
<https://jetstream.gsi.ie/iwdds/index.html>



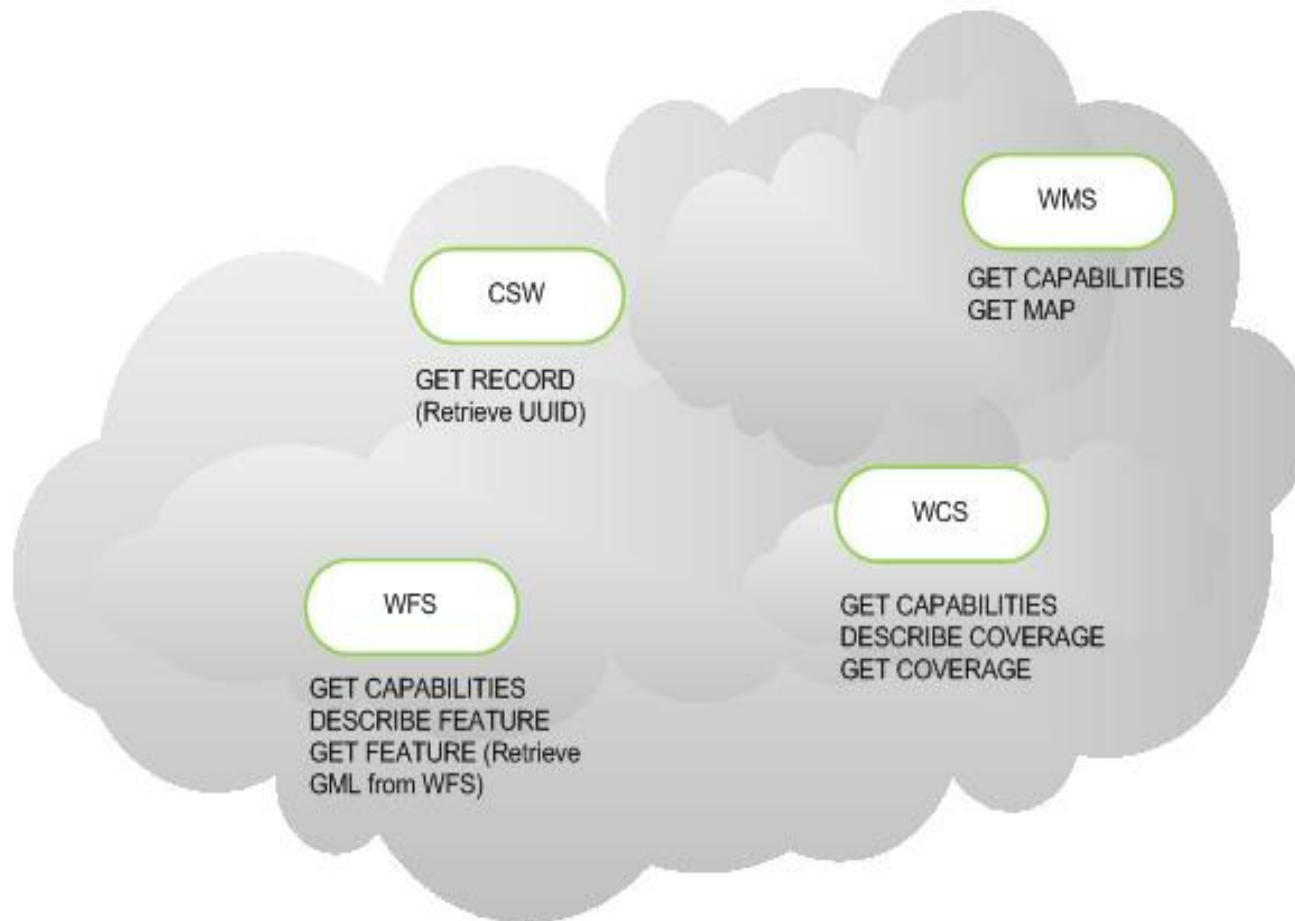
# Web Services & Open Geospatial Consortium Standards

‘Interoperability is one of the most important challenges related to GIS’

OGC Web Service specifications seek to standardise common aspects of CSW, WMS, WFS and WCS thus promoting interoperability

- **Methods** of Operation request and response - Execute query e.g. GetRecord
- **Parameters** and data structures included in operation requests and responses – Variables e.g. layers, bounding box
- **Transfer Protocol** - Encoding of operation requests and responses – e.g. XML

## OGC STANDARDISATION – SERVICE METHODS



# Web Services – Benefits of Standards

**‘The population of end users who benefit from the use of OGC standards today is global’**

The Proven Benefits of OGC Standards ,  
GeoConnexion (2010)

Increased interoperability of interfaces

Accessibility of Global Information & Data

Global population of end users

OGC supporting Geospatial data and processing services