

Glossary of Terms

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OSi

Ordnance Survey Ireland, the national Mapping agency for Ireland

County Series/Cassini Maps

County Series maps are often referred to as 'Cassini Projection' Maps. Cassini used a system of triangulation to produce the first accurate topographic map of an entire country. As a result of using this method Cassini was able to publish a complete map of France in 1793. The Cassini method of triangulation was then used by the Ordnance Survey (1824 – 1846) to map Ireland at 1/10560 scale whereby each county was mapped on an individual basis using a North-South central meridian for each county. One of the affects of the Cassini Projection is that points furthest away from the central meridian in each county experience a greater degree of distortion. The Cassini Projection worked better for counties with a lesser East-West extent (e.g. Dublin and Louth) than for counties with a greater East-West extent (e.g. Galway and Waterford).

NPS Maps

The National Photogrammetric Survey (NPS) maps were introduced by Ordnance Survey Ireland circa 1990. These maps were derived from aerial photography and are referenced to the Irish Grid/National Grid. The resultant collection of aerial photographs are referred to as orthophotos after they have been rectified and referenced to ground control points.

Irish Grid Maps/National Grid Maps

The Irish Grid/National Grid Maps were produced by OSi using a single projection for the island of Ireland. A 'false origin' was selected at a point located off the South West coast of Ireland. The reason for selecting this position as the origin arose from the requirement to attribute a positive Easting and Northing (Coordinate) value to all points in the country.

ITM Maps

The Irish Transverse Mercator (ITM) coordinate reference system was jointly designed by Ordnance Survey Ireland (OSi) and Ordnance Survey Northern Ireland (OSNI) in 2000 as part of a Global Positioning System (GPS) compatible coordinate reference system for the island of Ireland. A different 'false origin' from the Irish Grid was selected. Improvements from the previous Irish Grid/National Grid coordinate system include:

- Adoption of GRS80 ellipsoid (i.e. shape of the Earth instead of the Airy modified ellipsoid) to ensure the system is GPS compatible.
- Adoption of a sub-unit scale factor for the central meridian of the projection ensures that projection distortions are symmetrical across Ireland.

Orthophotos

An orthophoto is part of a series of overlapping aerial photographs that are rectified and referenced to a set of ground control points. OSi use orthophotos to produce its Irish Grid and ITM digital maps.

Map Scales

The new Irish Transverse Mercator (ITM) maps are published by OSi at the following scales: 1:5000 (Rural Areas), 1:2500 (Rural, Periurban & Suburban Areas) and 1:1000 (Urban Areas).

Digital Maps

The term digital map is used to describe a map held in electronic format. There are two models for storing maps in a computer environment. The **Raster** model (Grid based) and **Vector** model

(coordinate based geometry).

The Land Registry has completed a major programme of converting its entire paper map base into a vector digital format. This result is 32,000 or so map sheets containing about 2.4 million registered land parcels have been digitised (vectorised).

Raster Map

Raster data provides an image formed by a matrix of pixels arranged in rows columns, which can be displayed on a computer screen. The raster image, in the case of the Land Registry, is derived by scanning its paper maps to a resolution of 200 and 300 dots per inch (dpi). As the raster image is taken directly from the source map all inherent flaws or visual imperfections on the source map will be contained on the raster image. While raster images can be manipulated and used for some applications they are not considered to be suitable for land registration purposes where boundaries and features are dynamic in the sense that they are always changing (changing because of new registrations and as a result of OSi updates). Digital cameras and scanners are the most common ways that raster images are captured and stored in a raster model.

Vector Map

Vector maps consists of a series of nodes stored as x y coordinates that define points and line segments. The line segments when joined together form map features such as land parcels, roads, buildings and rivers etc. Point features are used to depict wells, lamp standards, post boxes, telephone boxes etc. The Land Registry's Digital Mapping System is based on OSi vector spatial data in the ITM coordinate reference system. Vector data are considered to be 'intelligent' because a high volume of attributes can be attached to the points and lines contained therein. Both the Land Registry's seed point and GeoDirectory address point use a point features to attach and link attribute data to the vector map. In the case of the Land Registry seedpoints the Folio and or application details are linked to the vector map using seedpoints. GeoDirectory points represent postal addresses and are generally positioned within buildings

CAD files

Computer Aided Design drawings. Computer software used for the design, drafting, and display of graphically oriented information. CAD packages allow users to precisely specify sizes, shapes, and positions of vector elements, and to assign elements to separate layers.

Layers

Map features or objects are usually organized onto different layers for organisational purposes and for ease of drawing, viewing and editing. Layers often can be named and have default colours and line types associated with them. CAD and GIS packages use layers to separate different map features or objects in order to control the display of those features or objects. This enables different features or objects to be displayed in different colours and to be viewed, edited and manipulated separately.

LR_PLAN_NEW

LR_PLAN_NEW layer is the name that the Land Registry want practitioners to use for the layer on which new boundary polylines are to be digitised.

DWG

DWG is a binary file format used by AutoCAD for storing two and three dimensional design data and metadata.

Polyline

A term for a line used by some GIS packages to describe a line created by a series of shorter

straight line segments. Line features in themes such as boundaries, roads, streams and streets are usually created using polylines. For example, a rectangle is a polyline with four segments.

OSi Topographic Detail (in the ITM vector dataset)

OSi or Ordnance Survey Topographic Detail uses point and line data to represent topographical features in their vector dataset. Line segments when joined form map features such as roads, buildings and rivers. Topographic maps usually portray both manmade and natural features such as roads, boundaries, transmission lines, buildings lakes, rivers, and vegetation. The OSi vector datasets have all features coded or multi-coded to represent topographical features. This vector (point and line) data can be displayed at any scale with individual layers capable of being omitted or individually shown. The current OSi datasets consists of 179 levels, and a standard 35 levels as required.

In the paper based product topographical features are printed a solid black lines on the OSi map. It should be noted that some pecked or broken lines appearing on an OSi maps may not depict a physical feature that exists on the ground and are therefore not always considered to be OSi detail.

Digitisation

Digitisation is the process whereby features displayed on the Land Registry's paper maps are converted into vector points and lines and areas for the digital mapping environment. As a result of digitisation process Registry Map information and Folios are now stored, managed and maintained as attributed vector Spatial Data in a database.

Spatial Data

A geographic dataset which is a collection of data that are individually or collectively attached to geographic locations, such as points, lines, or polygons. Also known as *geospatial data* or *geographic information* it is the data or information that identifies the geographic location of features and boundaries on Earth. Spatial data is usually stored as coordinates and topology, and is data that can be mapped. Spatial data is often accessed, manipulated or analyzed through Geographic Information Systems (GIS).

GIS Geographical Information System (GIS)

Term used to describe a computer-based system for storing, analyzing, and displaying map and database information.

Geo-Rectification

The current Land Registry map record is comprised of a range of maps, which have been derived using different map projections (i.e. County Series Maps, Irish Grid Maps, and NPS Maps). As part of the Digital Mapping project, it is necessary to position the images of the Registry's map record to fit into with the newly-published OSi ITM projection. This transformation is known as geo-rectification. The geo-positioned raster image can then be overlaid by the new OSi ITM map allowing the digitising process to proceed. The georectification process uses coordinates supplied by OSi to fit the county series and Irish Grid projection maps to the ITM projection using mathematical transformation algorithms. The second element of geo-rectification is the positioning of imagerettes using local control points (topographic features common to both source and target maps) in order to get a 'best fit' that will support the accurate digitisation of registered boundary data that are not shown as OSi topographical detail.

www.landdirect.ie (tm)

www.landdirect.ie is the new portal for delivery of the Land Registry's on-line services. It includes

all services previously available through the Electronic Access Service (EAS) together with additional services made possible by the implementation of its digital mapping programme.

ITRIS

The Land Registry's *Integrated Title Registration Information System*. ITRIS is the background electronic system which Land Registry staff use internally to process applications and to store Folios, Maps and related casework information. It now incorporates the new Land Registry *Digital Mapping System* which is the final phase of the Land Registry's programme to implement a world-class suite of information and communications systems which will enable the organisation to deliver its statutory mandate and provide a continuously improving level of service to its customers. The new digital mapping services will be delivered to customers through the www.landdirect.ie (tm) portal.

EULIS

European Land Information Service. EULIS is an international initiative with the overall objective of providing stakeholders with cross-border access to land and title information via the Internet. The Irish Land Registry, in conjunction with several peer organisations throughout Europe, intends participating in the EULIS project from 2006. For further information on EULIS, www.eulis.org

INSPIRE

Infrastructure for spatial information in Europe. <http://inspire.jrc.ec.europa.eu>

ISDI

Irish Spatial Data Infrastructure

Geo-centre

The geo-centre of a plot, parcel or polygon is the mathematical centre of that plot, parcel or polygon.

GeoDirectory

The GeoDirectory, jointly produced by An Post and OSi provides a complete database of every building in the Republic of Ireland. There are approximately 1.5 million building records contained in the GeoDirectory, which includes information such as postal address, building usage (commercial or residential), a unique eight digit identity number and coordinate values. The Land Registry is deploying the GeoDirectory database as a gazetteer to its new digital map record.

Gazetteer

Geographical reference book a dictionary or index of places, usually with descriptive or statistical information.

Plan

The term "Plan" is used in the Land Registry to denote an individual registered Land Parcel or polygon.

Seedpoint

As a result of the Land Registry Digital Mapping project, a Seedpoint is digitised in each registered land parcel creating a link between the 1.7 million or so Folios managed by the organisation and the OSi ITM digital map. Each land parcel is assigned a unique identifier to

create the link with the relevant Folio. This process enables the extension of the Land Registry's on-line services to include a graphical location search facility and support extensive electronic searching at the Registry's public offices.

MSB (Multi-storey building) Seedpoint

MSB seedpoint provides a link to registration details in multi-occupancy properties. The MSB seedpoint returns information to the user in the form of a tree structure with the Development name, the Building/Block name or number, the floor levels within the building/block, and each of the units folio numbers where registered.

MUD (Multi-Unit Development)

Multi-Unit Development Act 2011 defines a MUD as a development being land on which there stands erected a building or buildings comprising a unit or units and that as respects such units it is intended that amenities, facilities, and services are to be shared.