Glossary#

2.5D

Most GIS do not actually achieve full 3 dimensional representations of landscapes, but instead render representations in 2.5 dimensions. This means that an attribute value is used instead of a full spatial location in the z axis. DTMs are an example of 2.5 dimensional representations.

ADS

The **A**rchaeology **D**ata **S**ervice.

AGI

The Association for Geographic Information.

Arc/Info

A commercial GIS package widely used within academia. The UNIX and NT releases provide comprehensive raster and vector processing capabilities. The PC release is vector only.

ArcView

A commercial desktop mapping/GIS package widely used within academia.

BIL

Band Interleaved by Line. An image file format linked with satellite derived imagery.

BMP

BitMaP. A file extension indicating a graphics file, common in Windows applications.

CAA

Computer Applications in Archaeology. An annual international conference that has been instrumental in developing GIS applications within archaeology.

CAD

Computer Aided Design. The design activities, including drafting and illustrating, in which information processing systems are used to carry out functions such as designing or improving a part or a product. (Walker 1993).

CBA

The Council for British Archaeology.

CIDOC

The International Documentation Committee of the International Council of Museums.

CGM

Computer Graphics Metafile. A standard (ISO 8632) file format specification for the storage and transfer of picture description information (Walker 1993).

DBASE

A commercial relational database system. Widely used within archaeology.

DBF

DataBase File. A proprietary database file format used by DBASE. Often used as a de facto standard to exchange database files.

DEM

Digital Elevation Model. The term DEM can refer to one of the following:

1. A digital representation of a continuous variable over a two- dimensional surface by a regular array of z values referenced to a common datum. Digital elevation models are typically used to represent terrain relief and frequently comprise a foundational layer in any archaeological GIS database.
2. An elevation database for elevation data by map sheet from the National Mapping Division of the U.S. Geological Survey (USGS).
3. The format of the USGS digital elevation data sets (ESRI 1996)

DLG

Digital Line Graph. The digital format standards published by US Geological Survey for exchanging cartographic data files and in which the USGS delivers topographical maps in vector format (Walker 1993).
1. Digital Line Graph files from the U.S. Geological Survey (USGS), including data from the base map categories such as transportation, hydrography, contours, and public land survey boundaries.
2. The digital format standards published by USGS for exchanging cartographic data files and in which the USGS delivers Digital Line Graph data sets (ESRI 1996).

DSM

Digital Surface Model. Largely synonymous with a DEM but with the added possibility of being a component in a stack of surface models.

DTM

Digital Terrain Model. A term which is commonly used interchangeably with DEM. Strictly speaking a DTM refers to a model of reality which includes information relating to factors such as surface texture as well as elevation.

Dublin Core

A 15 field standard for metadata -- or "information about information". More information is available on the Web at http://purl.oclc.org/metadata/dublin_core.

DXF

Digital eXchange Format. A format for transferring drawings between Computer Aided Design systems, widely used as a de facto standard in the engineering and construction industries (Walker 1993).

ECEF

Earth-Centred, Earth-Fixed. A Cartesian co-ordinate system used by satellite positioning systems, aligned with the WGS 84 reference ellipsoid.

EDM

Electronic Distance Measure. Digital measuring device used within terrestrial survey. It is based upon the transit time measurement of an electromagnetic beam emitted from a transmitter/ receiver to a reflecting target prism and back again (Clancy 1991: 285). Often incorrectly used by archaeologists to identify Total Station Integrated survey instruments, one component of which is an integral EDM.

ESRC

Environmental and Social Research Council in the United Kingdom.

FGDC

The United States Federal Geographic Data Committee. Composed of representatives of several federal agencies and GIS vendors, the FGDC has the lead role in defining spatial metadata standards, which it describes in the Content Standards for Spatial Metadata (ESRI 1996).

FTP

File Transfer Protocol.

GCP

Ground Control Point. A point on the surface of the earth of known location (i.e. fixed within an established co-ordinate system) which is used to geo-reference Image data sources, such as remotely sensed images or scanned maps, and divorced survey grids, such as those generated during geophysical survey.

GDOP

Geometric Dilution Of Precision. Used within satellite-based survey as a measure of the quality of the fix indicating the suitability of satellite positions for triangulation.

Geotiff

An extension to the TIF graphics standard to incorporate georeferencing information. Although currently supported by a limited number of proprietary GIS, many manufacturers have committed to supporting the standard. It aims to provide a platform-independent method for archiving and tranbsferring spatially referenced raster products.

GIF

Graphics Interchange Format. A bitmap graphics format from CompuServe which stores screen images economically and aims to maintain their correct colours even when transferred between different computers (Mobbs 1997).

GIS

Geographic Information System. An organised collection of computer hardware, software, geographic data, and personnel designed to efficiently capture, store, update, manipulate, analyse, and display all forms of geographically referenced information (ESRI 1996).
A computer system for capturing, storing, checking, integrating, manipulating, analysing and displaying data related to positions on the Earth's surface. Typically, a Geographical Information System (or Spatial Information System) is used for handling maps of one kind or another. These might be represented as several different layers where each layer holds data about a particular kind of feature. Each feature is linked to a position on the graphical image of a map (Walker 1993)

GLONASS

GLObal'naya NAvigatsionnaya Sputnikovaya Sistema. The Russian Global Navigation Satellite System is currently a constellation of 53 spacecraft deployed in nearly semi-synchronous orbits. The Phase I constellation was established in 1990; a 21-spacecraft constellation is the operational goal.

GNU

Gnu's Not Unix. A project providing free versions of unix and a large number of freeware tools, one of which is GNU Zip (.gz format files).

GPS

Global Positioning System. A satellite based navigational system allowing the determination of any point on the earth's surface with a high degree of accuracy given a suitable GPS receiver (Walker 1993).

GRASS

Geographic Resources Analysis Support System. This is a public-domain raster GIS modelling product of the US Army Corp. of Engineers Construction Engineering Research Laboratory (Walker 1993). It is in common use within archaeology.

GRID

The raster module of the Arc/Info GIS package.

HRV

High Resolution Visible. This is a specific sensor carried aboard the SPOT satellite capable of achieving a spatial resolution of 10 metres (Walker 1993).

HTML

HyperText Markup Language. The general framework for defining document structure used with the World Wide Web facility of the Internet.

IDRISI

A raster-based commercial GIS package in common use amongst archaeologists.

JPEG

Joint Photographic Expert Group. The original name of the committee that designed the standard image compression algorithm. JPEG is designed for compressing either full colour or grey-scale digital images of 'natural', real-world scenes. It does not work so well on non-realistic images, such as cartoons or line drawings. JPEG does not handle compression of black-and-white (1-bit-per-pixel) images or moving pictures (Walker 1993).

Landsat

A series of satellites that produce images of the earth. The Landsat remote sensing satellite program was developed by NASA (National Aeronautics and Space Administration). Landsat data are provided in .BIL (band interleaved by line) or .BIP (band interleaved by pixel) formats (ESRI 1996).

LaTeX

A widely used document exchange format.

MDA

Museum Documentation Association.

MIDAS

Monument Inventory Data Standard.

MIF/MID

Mapinfo export formats.

MOSS

This is a public domain GIS developed by the U.S. Department of Interior.

NERC

The Natural Environment Research Council.

NGDF

National Geospatial Data Framework. An Important co-operative initiative which aims to provide effective means of accessing geospatial data collected and held by government and the public/private sectors.

NMEA

National Maritime Electronics Association. An organisation involved in the development of output protocols for satellite receivers.

NMR

National Monument Record.

NTF

National Transfer Format. An implementation of British Standard BS7567, used for the transfer of geographic data. It is administered by the Association for Geographic Information in the United Kingdom.

ODA

A documentation exchange format.

OS

The Ordnance Survey. Great Britain's national mapping agency.

OSGB

The Ordnance Survey of Great Britain.

PDF

Portable Document Format. A document standard promoted by Adobe.

PhotoCD

An image exchange format promoted by Kodak.

PKZip

A file compression utility usually found on PC systems.

PNG

Portable Network Graphics. Pronounced 'ping' The PNG format is intended to provide a portable, legally unencumbered, well-compressed, well-specified standard for lossless bitmapped image files. Although the initial motivation for developing PNG was to replace GIF, the design provides some useful new features not available in GIF, with minimal cost to developers.

RCHME

The Royal Commission on the Historical Monuments of England.

RINEX

Receiver INdependent EXchange Format. A widely used satellite receiver output protocol, not tied into any particular device or class of device.

RMS

Root Mean Square. This is an error measurement that most GIS report during geometric transformation of data sets. It is mathematically the spatial equivalent to the standard deviation. The RMS error is often used as a measure of the accuracy of tic points when registering a map to a digitiser, indicating the discrepancy between known point locations and their digitised locations. The lower the RMS error, the more accurate the digitising or transformation (Walker 1993). The fact that the RMS error is expressed as one simple figure (e.g. 5.67 m) unfortunately does not mean that any point in the transformed image will be within this distance from its 'real' coordinates. In fact, the actual error can vary across the image depending on the number, placement, and accuracy of the tiepoints used.

RTF

Rich Text Format. A widely used document exchange format.

SAR

Synthetic Aperture Radar. A satellite based technique for generating a regular matrix of elevation values (i.e. a DEM) directly.

SDTS

Spatial Data Transfer Standard. A United States Federal standard designed to support the transfer of different types of geographic and cartographic spatial data. This standard specifies

a structure and content for spatially referenced data in order to facilitate data transfer between dissimilar spatial database systems. Also known as Federal Information Processing Standard (FIPS) 173 (ESRI 1996)

SGML

Standard Generalised Mark-up Language. An ISO Standard defining the general framework for describing a document structure. This method of coding text is used for the storage of information on CD-ROM (Mobbs 1997).

Smallworld

A commercial object-oriented GIS package. Not widely used within archaeology.

SMR

Sites and Monuments Record.

SPANS

SPatial ANalysis System. A commercial GIS package capable of handling raster and vector data.

SPOT

Satellite Pour l'Observation de la Terre. A remote sensing satellite which has been developed by the French National Space Centre (CNES). The first SPOT (SPOT 1) was launched in February 1986, SPOT 2 was launched in 1988 (Walker 1993).

Stuffit

A file compression utility commonly used on Macintosh platforms.

TAR

A file compression utility commonly used on UNIX workstations.

TeX

A widely used document exchange format.

TIFF

Tagged Interchange File Format. An industry-standard raster data format. TIFF supports black-and-white, gray-scale, pseudocolor, and true-color images, all of which can be stored in a compressed or uncompressed format. TIFF is commonly used in desktop publishing and serves as an interface to numerous scanners and graphic arts packages (ESRI 1996).

TIN

Triangulated Irregular Network. A form of the tesseral model based on triangles. The vertices of the triangles form irregularly spaced nodes and unlike the DEM, the TIN allows dense information in complex areas, and sparse information in simpler or more homogeneous areas. The TIN data set includes topological relationships between points and their neighbouring triangles. Each sample point has an X,Y co-ordinate and a surface, or Z-Value. These points are connected by edges to form a set of non-overlapping triangles used to represent the surface. Tins are also called irregular triangular mesh or irregular triangular surface model (Walker 1993).

Topology

The study of relative relationships of geographic phenomena. When discussing digital data, topology generally refers to the relative relationships of points, lines, and polygons (after Walker 1993).

TSIP

Trimble Standard Interface Protocol. A proprietary satellite receiver output protocol.

UUENCODED

A format used to facilitate the transfer of binary files via email.

UTM

Universal Transverse Mercator. This is a projection system based upon the Transverse Mercator projection. It is frequently used for the production of topographic maps and for georeferencing satellite images (Walker 1993).

VPF

Vector Product Format. This is a digital geographic vector-based format used by the US Defence Mapping Agency for the distribution of its vector data sets (ESRI 1996).

WGS 84

World Geodetic System 1984. This is a reference ellipsoid commonly used by satellite locational devices.

Word

A commonly used word-processing package.

WordPerfect

A commonly used word-processing package.

WWW

The World Wide Web facility of the Internet.