

GLOSSARY OF TERMS BY OGC¹

<http://www.opengeospatial.org/ogc/glossary> (May, 2017)

OVERVIEW

The OGC works in the complex and specialized area of software engineering that concerns itself with the attributes and geometries of features and phenomena on or near the Earth's surface, and with the many kinds of digital processing employed to make this data useful. To enable efficient and precise communication, every specialty, including this one, has its own special terms and special definitions of ordinary words. Facilitating agreement on definitions of geospatial technology terms - for the sake of "semantic interoperability" - is appropriately part of OGC's mission.

As geospatial technology comes into wider use through OpenGIS Specifications that enable its integration into the rest of the information technology world, there is a growing need for a definitive ("normative") geospatial technology industry glossary. To create this glossary, we have drawn from a number of sources and from our familiarity with the language and agreed terms of the OGC Technical Committee. This is a living document, an open source document whose content will change as the technology and technology agreements evolve. We invite you to send your comments and suggestions to Glossary at editor@opengeospatial.org.

Abbreviations and Acronyms Used in the OGC

3DIM DWG – 3d Information Management Domain Working Group
AECOO – Architecture, Engineering, Construction, Owner and Operator
AGILE – Association of Geographic Information Laboratories in Europe
ANSI – American National Standards Institute
Arch DWG – Architecture Domain Working Group
ARML – Augmented Reality Markup Language
AS – Abstract Specification
ASCII – American Standard Code for Information Interchange
AUTH ie – Authentication Interoperability Experiment
BMP – Bitmap. A Microsoft Windows image format
BP – Best Practice
CADD or CAD – Computer-aided design and drafting
Cat DWG – OGC Catalog Domain Working Group

¹ Authorized publication by the Open Geospatial Consortium (editor@opengeospatial.org)

Cat SWG – OGC Catalog Revision Standards Working Group
CEN – Comité Européen de Normalisation (European Committee for Standardization)
CGDI – Canadian Geospatial Data Infrastructure
CIPI – A 2002 OGC Interoperability Initiative focused on critical infrastructure protection
CITE – OGC Compliance and Interoperability Testing Initiative, the OGC's Compliance Testing Program.
CityGML – OGC City Geography Markup Language (CityGML) Encoding Standard
COM – Common Object Model, a Microsoft paradigm to connect components
CORBA – Common Object Request Broker Architecture
CRS – Coordinate Reference System. Also CRS Domain Working Group.
CS – OGC Catalogue Service Interface Standard
CSW – OGC Catalog Service Interface Standard for the Web
CT – OGC Coordinate Transformation Encoding Standard
CT SWG – OGC Coordinate Transformation Standards Working Group
CTL – Compliance Test Language
CUAHSI – Consortium of Universities for the Advancement of Hydrologic Science
D&I DWG – Defense and Intelligence Domain Working Group
DBF – Data Base File, the Dbase file format
DBMS – Data Base Management System
DCE – Distributed Computing Environment
DCP – Distributed Computing Platform
DEM – Digital Elevation Model
DEMTS – Digital and Electronic Maps Transfer Standard (Russia)
DGIWG – Digital Geospatial Information Working Group
DGN – DesiGN file, the Microstation drawing format
DIGEST – Digital Geographic Exchange Standard
DLG – Digital Line Graph
DLM – Digital Landscape Model
DP – Discussion Paper
DQ DWG – Data Quality Domain Working Group
DS DWG – Decision Support Domain Working Group
DTM – Digital Terrain Model
DWG – Domain Working Group
DXF – Drawing eXchange Format (AutoCAD exchange format)
EA – Enterprise Architecture
EASIG – Enterprise Architecture Special Interest Group
ebRIM – OASIS ebXML (OASIS Electronic Business using eXtensible Markup Language) Registry Information Model. See OGC Catalog ebRIM Application Profile: Earth Observation Products.
ebXML RegRep SWG – OGC Standards Working Group developing an extension to the OASIS ebXML RegRep standard
EC08 Pilot – Empire Challenge 08 Pilot Project



EDM DWG – Emergency & Disaster Management Domain Working Group
EEA – European Environment Agency
EO – Earth Observation
EO2heaven – Earth Observation and Environmental Modelling for the Mitigation of Health Risks
EOSDIS – Earth Observing System Data and Information System
EPSG – European Petroleum Survey GroupEuroSDR European Spatial Data Research Network
ESDI – European Spatial Data Information Infrastructure
ESS DWG - Earth System Science Domain Working Group
EUROGI – European Umbrella Organisation for Geographic Information
FE or FES – OGC Filter Encoding Standard
GeoAPI – OGC GeoAPI Interface Standard (a Java application programming interface)
GeoRM DWG – Geospatial Rights Management Domain Working Group
GeoSPARQL SWG – GeoSPARQL Standards Working Group (SPARQL is a recursive acronym for the W3C's "SPARQL Protocol And RDF Query Language")
GEOSS Pilot – Global Earth Observation System of Systems Pilot Project
Geosync SWG – GeoSynchronization 1.0 Standards Working Group
GeoXACML – OGC Geospatial eXtensible Access Control Markup Language Standard
GETIS – Geoprocessing networks in a European Territorial Interoperability Study
GITA – Geospatial Information & Technology Association
GLS SWG – Geographic Linkage Service 1.0 Standards Working Group
GML – OGC Geography Markup Language Encoding Standard
GML in JPEG 2000 – OGC standard that defines how GML is used in JPEG 2000 images
GMLJP2 1.1 SWG – GML in JPEG 2000 Standards Working Group
GO – Geospatial Objects (a retired OGC standard)
GPC/GIS – GPC Global Information Solutions
GPS – Global Positioning System
GRSS – IEEE Geoscience and Remote Sensing Society
GSDI – Global Spatial Data Infrastructure
GSDI Association – Global Spatial Data infrastructure (GSDI) Association
GServRestSWG – GeoServices REST (REpresentational State Transfer) Standards Working Group
HDF – Hierarchical Data Format
HTI – Human Technology Interface
ICS – Information Communities and Semantics
ICT – Information and Communications Technology
IE – Interoperability Experiment
IE3D Portrayal – 3D Portrayal Interoperability Experiment
IEC – ISO IEC JTC 1/SC 24/WG 8 - Computer graphics, image processing and environmental presentation
IEEE GRSS – IEEE Geoscience and Remote Sensing Society

IEEE Technical Committee 9 (Sensor Web)
iEMs – International Modeling & Software Society Secretariat
IES – Imagery Exploitation Working Group IETF – Internet Engineering Task Force
IETF – Internet Engineering Task Force
IIS Institute – Integrated Justice Information Systems (IJIS) Institute
ILAF – OGC Iberian and Latin-American Forum
IndoorGML – common schema framework for interoperability between indoor and outdoor navigation applications, being drafted by the OGC IndoorGML Standards Working Group
IP – Depending on context, either Intellectual Property or Interoperability Program
IPR - Intellectual Property Rights
IPTeam – Interoperability Program Team
IS – Implementation Standard
ISO – International Organization for Standardization
ISO IEC JTC 1/SC 24/WG 8 – Computer graphics, image processing and environmental presentation
ISO Technical Committee 204 – Intelligent transport systems
ISO Technical Committee 211 (ISO TC/211) – Geographic information/Geomatics
ISOC – Internet Society
ISPRS – International Society for Photogrammetry and Remote Sensing
ITU – International Telecommunication Union
JAG – Joint Advisory Committee between OGC and ISO TC 211
JPEG – Joint Photographics Group
KML – OGC KML Encoding Standard (formerly Keyhole Markup Language)
LBS – Location Based Services
LEAPS DWG - Law Enforcement and Public Safety Domain Working Group
LOS – Location Organizer Folder
LS DWG – Location Services Domain Working Group
MCP – OGC Marketing & Communications Program
Met Ocean DWG – Meteorology & Oceanography Domain Working Group
MISMO – Mortgage Information Standards Maintenance Organization
MLS DWG - Mobile Location Services Domian Working Group - merger of Mass Market and Location Services DWGs
MMI – OGC's Multi-Hazard Mapping Initiative (MMI) Phase I (2001)
MPP – OGC's Military Pilot Project (MPP) (2001)
NCOIC – Net Centric Operations Infrastructure Committee
NetCDF – OGC Network Common Data Form (NetCDF) Core Encoding Standard version 1.0 comprises earlier NetCDF Classic and 64-bit Offset Format standards from UCAR/Unidata.
NGO – Non-Governmental Organization
NIBS – National Institute for Building Standards
NIST – National Institute of Standards and Technology
NMA – National Mapping Agency
NRE – Natural Resources and Environment



NSDI – National Spatial Data Infrastructure
NTF – Neutral Transfer Format (in UK)
O&M – OGC Observations and Measurements Encoding Standard
OAB – OGC Architecture Board
OASIS – Organization for the Advancement of Structured Information Standards
OCAP – OGC Outreach and Community Adoption (now OGC Marketing and Communications)
OGC – Open Geospatial Consortium
OGC Reference Model – a complete set of the OGC's reference models
OGC–A – OGC Austral–Asia
OGC–E – OGC Europe
OGF – Open Grid Forum
OI Demo
OLE/COM – Object Linking and Embedding/Common Object Model (Microsoft)
OLS – OGC Location Services
OMA – Open Mobile Alliance
OMG – Object Management Group
OO – Object Oriented
Open GeoSMS – OGC standard providing an extended Short Messaging Service (SMS) encoding and interface for communicating location content
OpenLS – OGC Open Location Services Interface Standard
OSF – Ordering Services Framework for Earth Observation Products
ORM – OGC Reference Model
OSCRE – Open Standards Consortium for Real Estate
OSDM – Office of Spatial Data Management (Australia)
OSGEO – Open Source Geospatial Foundation
OWS – OGC Web Services
OWSCommon1.2SWG – OWS Common 1.2 SWG
OWScontextSWG – OWS Context SWG
OWSC – OGC Web Services Common
P&P – Policies and Procedures
PC – Planning Committee
PNG – Portable Network Graphic
PubSub SWG – OGC Standards Working Group defining a standard that clearly defines a standard way to enable publish/subscribe functionality for OGC Web Services
PUCK – OGC standard defining a protocol for RS232 and Ethernet connected instruments
RCM – Risk and Crisis Management
RESTful – REpresentational State Transfer programming style
RFC – Request for Comment
RFI – Request for Information
RFP – Request for Proposals (or Participation)
RFT – Request for Technology

RM-ODP – Reference Model for Open Distributed Processing
RPC – Remote Procedure Call
RTD – Research and Technology Development (Europe)
SAA Pilot – Special Activity Airspace Pilot
SANY – Sensors Anywhere Consortium
SCOTS – Standards based Commercial Off-The-Shelf software
SDI – Spatial Data Infrastructure
SDTS – Spatial Data Transfer Standard
SE – Symbology Encoding
SensorML – OGC Sensor Model Language Encoding Standard
SF – Simple Features
SF CORBA – Simple Features CORBA
SF OLE/COM – Simple Features OLE/COM
SFS – OGC Simple Features – SQL Encoding Standard
SIF – Standard Interchange Format
SIG – Special Interest Group
SLD – OGC SLDSE SWG – Styled Layer Descriptor and Symbology Encoding 1.2
Standards Working Group
SLD – Styled Layer Descriptor
SMAC – OGC Strategic Member Advisory Committee
SME – Small or Medium Sized Enterprise
SOA – Services Oriented Architecture
SOAP – Simple Object Access Protocol
SOS – OGC Sensor Observation Service Interface Standard
SP – Standards Program
SPS – OGC Sensor Planning Service Interface Standard
SQL – Structured Query Language
SLD – Styled Layer Descriptor Encoding Standard
TIFF – Tagged Image File Format
SVG – Styled Vector Graphics
SWE – OGC Sensor Web Enablement activity
SWE Common – Sensor Web Enablement Common Data Model
SWG – Standards Working Group
TC – Technical Committee
TC P&P – Technical Committee Policies and Procedures
TDWG – Taxonomic Data Working Group
TEAM Engine – Test, Evaluation, And Measurement Engine
TIGER – Topologically Integrated Geographic Encoding and Reference file (US)
TJS – OGC Georeferenced Table Joining Service Encoding Standard
TML – OGC Transducer Markup Language Encoding Standard (retired)
UCAR – University Corporation for Atmospheric Research / National Center for
Atmospheric Research (NCAR)
UDDI – Universal Description, Discovery, and Integration
UML – Unified Modeling Language



Univ DWG – University Domain Working GroupVPF – Vector Product Format (US)
USGIF – US Geospatial Intelligence Foundation
VR – Virtual Reality
W3C – World Wide Web Consortium
WaterML 2.0 – OGC Water Markup Language Encoding Standard
WCPS – OGC Web Coverage Processing Service Interface Standard
WCS – OGC Web Coverage Service Interface Standard
WCTS – OGC Web Coordinate Transformation Service Interface Standard
Web3D ConsortiumWfMC – Workflow Management Coalition
WFS – OGC Web Feature Service Interface Standard
WG – Working Group
WMC – OGC Web Map Context Encoding Standard
WMO – World Meteorological Organization
WMS – OGC Web Map Service Interface Standard
WMT – Web Mapping Testbed
WMTS – OGC Web Map Tile Service Interface Standard
WPS – OGC Web Processing Service Interface Standard
WS – Web Services
WSC – OGC Web Service Common Interface Standard
WSDL – Web Services Definition Language
XIMA – XML for Imagery and Map Annotations
XML – eXtensible Markup Language
XSLT – eXtensible Style Sheet Transformation

Glossary of Terms - A

Abstract Data Type

The basic information construct used by the GeoMobility Server and associated Core Services. Consists of well-known data types and structures for location information. Defined as application schemas that are encoded in XML for Location Services (XLS).

accuracy

Source: OpenGIS Guide

The degree to which information on a map or in a digital database matches true or accepted values. Accuracy pertains to the quality of data and the number of errors contained in a dataset or map. In discussing a GIS database, it is possible to consider horizontal and vertical accuracy with respect to geographic position, as well as attribute, conceptual, and logical accuracy. The effect of inaccuracy and error on a GIS solution is the subject of sensitivity analysis. Accuracy, or error, is distinguished from precision, which concerns the level of measurement or detail of data in a database.

agent

Source: OpenGIS Guide

A kind of intermediary service which acts on behalf of another service (service provider or requester) according to rules established upon its invocation. Also known as an `intelligent agent.`

Annual Technical Baseline Target

The Annual Technical Baseline Target is the subset of the elements of the Technical Plan that are scheduled to be completed within any given calendar year.

ANSI

An abbreviation for American National Standards Institute. ANSI standards have been established for many elements of computer systems to aid research and development. The existence of standards allows designers to develop general solutions to common problems.

applet

A small application, with limited functionality, designed to operate in a componentware and/or middleware environment. Large, multifunctional, `monolithic` applications can be, and in the future often will be, broken into single-function applets that interoperate with other applets, and that can be assembled, perhaps only temporarily, into a user`s work environment. Java applets, for example, are typically downloaded via the Internet into your computer`s program memory, where they accomplish their task (such as `let the user zoom on this geodata`) and then `evaporate`.

application

Source: OpenGIS Guide

The use of capabilities, including hardware, software and data, provided by an information system specific to the satisfaction of a set of user requirements. See Geographic Application and Geoprocessing Application.

application assembly

Assemble single application from components

application developer

Source: OpenGIS Guide

A software programmer who creates applications, usually by integrating a variety of pre-existing elements such as application programming interfaces and software and hardware platforms.

application domain models

Application-oriented models that characterize information and service resources within a domain. They are often based upon a General Model and must always be consistent with the Abstract Model. The two subclasses are: Data Domain Models and Process Domain Models.

application integration

Integrate multiple applications to support a cross function business process

application platform

Source: OpenGIS Guide

The collection of hardware and software components that provide the infrastructure services used by application programs. APIs make the specific characteristics of the platform transparent and accessible to the application.

application profile

Source: ISO 19101, ISO 19106

A set of one or more base standards and - where applicable - the identification of chosen clauses, classes, subsets, options and parameters of those base standards that are necessary for accomplishing a particular function.

Application Programming Interface (API)

An interface definition that permits invoking services from application programs without knowing details of their internal implementation.

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application schema

A set of conceptual schema for data required by one or more applications. An application schema contains selected parts of the base schemas presented in the ORM Information Viewpoint. Designers of application schemas may extend or restrict the types defined in the base schemas to define appropriate types for an application domain. Application schemas are information models for a specific information community.

application services

OWS Services operating on user devices or servers that have network connectivity. Users use Application Services to access Registry, Portrayal, Processing and Data Services. Application Services commonly, but not necessarily, provide user-oriented displays of geospatial content and support user interaction at the user terminal.

application software

Source: OpenGIS Guide

The computing elements supporting users` particular needs. Frequently includes data, documentation, and training, as well as programs.

architectural framework

Source: OpenGIS Guide

Identifies key interfaces and services, and provides a context for identifying and resolving policy, management and strategic technical issues. Constrains implementation by focusing on interfaces, but does not dictate design or specific technical solutions.

architecture

An abstract technical description of a system or collection of systems. Modern software architectures employ interoperability interfaces to enable enterprises and whole industries to establish coherent, flexible, integrated information flows that can be implemented with heterogeneous but intercommunicating software systems. The OpenGIS Specification defines the interoperability interfaces that make it possible to include geographic information in these information flows.

Conceptually based, architecture does not contain the level of detail needed for construction.

area of interest

A user defined area (represented by a bounding box, circle or polygon). Often used as a filter in a query.

ASCII

Source: OpenGIS Guide

An abbreviation for American Standard Code for Information Interchange. The ASCII format provides computer systems with a common language for exchanging information. Although most GIS software system make use of proprietary binary codes, almost all systems have import-export capabilities for translating between ASCII and binary formats.

asynchronous

Calling application does not require immediate response to request before proceeding

attribute data

Source: OpenGIS Guide

Descriptive information about features or elements of a database. For a database feature like census tract, attributes might include many demographic facts including total population, average income, and age. In statistical parlance, an attribute is a `variable,` whereas the database feature represents an `observation` of the variable.

Glossary of Terms - B

backward and forward compatibility

Interoperability with earlier and la

base document

The working draft of the OpenGIS Specification, maintained by the Chairman of the OGC Technical Committee, which is the repository for working papers that have been submitted by Committee members.

base maps, data, or layers

Spatial data sets that provide the background upon which more specific thematic data is overlaid and analyzed. As inputs into a GIS, the term base map is usually applied to those sources of information about relatively permanent features including topography, soil data, geology, cadastral divisions, and political divisions. Within a GIS database, such information may become part of a land base to which other information is indexed and referenced.

base standard

An approved International Standard, Technical Report, CCITT Recommendation or National Standard.

bind

In the context of OGC Web Services, Bind refers to Web service components connecting and executing through interfaces

BMP

Bitmap. A Microsoft Windows image format.

bounding box

a set of 2, 4, 6 or 8 numbers indicating the upper and lower bounds of an interval (1D), rectangle (2D), parallelepiped (3D), or hypercube along each axis of a given CRS

broker

A kind of intermediary service whose responsibility is only to bring other services together (typically a service requester and a service provider) and has no responsibility for satisfactory completion of the `contract` established between the requester and provider.

business object

An identifiable business concept such as customer or order.

business process

See process domain model.

Glossary of Terms - C

CAD or CADD

Computer-aided design and drafting. CAD systems are used to create maps and plans and are closely related to GIS systems. Although most CAD systems lack certain features essential to GIS analysis, such as the power to manage different spatial coordinate systems and database capabilities, many CAD systems have been developed into full GIS with the addition of necessary functions.

cadastral survey

The means by which private and public land is defined, divided, traced, and recorded. The term derives from the French cadastre, a register of the survey of lands and is, in effect, the public record of the extent, value, and ownership of land for purposes of taxation. Cartesian Coordinates are a system of positional reference in which location is measured along two or three orthogonal (perpendicular) axes. Every location can be defined uniquely by its X, Y, and Z coordinates. Locations in the coordinate system can be established using any unit of measurement such as meters, feet, or miles.

Call for Communities

An OGC invitation to local, state, or national government agencies; transnational organizations; academic groups; or private sector companies involved in geospatial technologies to participate in a series of hands-on, collaborative engineering efforts (Pilot Projects) to test the effectiveness of new standards which support Web-based sharing and use of geospatial information.

capabilities document service profile

The result of invoking the "Get Capabilities" operation on a service is a message containing a "capabilities document" describing the service. Provides a high-level description of a service instance and its provider. Includes: a human readable description of the service, a specification of the functionalities that are provided by

the service and a set of functional attributes that provide additional information and requirements about the service.

Capabilities XML

Service-level metadata describing the operations and content available at a service

Cartesian coordinates

Coordinates that differ from latitude-longitude coordinates in that the latter comprise a spherical (rather than planar) reference system.

catalog

A collection of entries, each of which describes and points to a feature collection. Catalogs include indexed listings of feature collections, their contents, their coverages, and other metadata. Registers the existence, location, and description of feature collections held by an Information Community. Catalogs provide the capability to add and delete entries. At a minimum Catalog will include the name for the feature collection and the locational handle that specifies where this data may be found. The means by which an Information Community advertises its holdings to members of the Information Community and to the rest of the world. Each catalog is unique to its Information Community.

catalog services

One thing that the OpenGIS Abstract Specification defines is a standard set of services to support on-line catalogs of geodata and geoprocessing capabilities accessible to users in networked environments. Currently, your Web browser can ask a Web indexing service such as Lycos or Alta Vista to report Web sites that contain certain text strings or combinations of text strings. OpenGIS conformant catalog services will enable our Web browser (or other software) to report Web sites (or perhaps non-Web network resources) that contain certain data themes for certain geographic areas for certain time frames. These services will also be able to report geoprocessing resources available on remote servers. Of course, you may not be the one doing the asking. Car computers, for example, will automatically use catalog services to obtain current information about road and traffic conditions.

CEN

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

European Committee for Normalization: makes standards for Europe, cooperates with ISO to avoid competition. <http://www.cenorm.be/>

centroid

The term given to the center of an area, region, or polygon. In the case of irregularly shaped polygons, the centroid is derived mathematically and is weighted to approximate a sort of `center of gravity.` Centroids are important in GIS because these discrete X-Y locations are often used to index or reference the polygon within which they are located. Sometimes attribute information is `attached,` `hung,` or `hooked` to the centroid location.

CIPI

CIPI is an OGC Interoperability Initiative to help organizations publish, discover, access, exchange, and maintain vital geo-spatial information and online geoprocessing services required to support critical infrastructure protection.

CITE

The OGC Conformance & Interoperability Testing & Evaluation Initiative (CITE) is an OGC Interoperability Initiative designed to test and evaluate OGC Interfaces and products that implement them. The CITE Initiative has three focus areas related to the establishment of a successful and robust OGC Conformance and Interoperability Test and Evaluation Program: * Planning and Feasibility Study, * Conformance Engine, Scripts and Guidelines, and * CITE Portal and Reference Implementations.

classification scheme

An arrangement or division of objects into groups based on characteristics that the objects have in common, e.g., origin, composition, structure, application, function, etc. It is a set of concepts, organized in some specified structure, limited in content by a scope, and designed for assigning objects to classes (concepts) defined within it ISO 11179. It helps to organize the contents of a registry and supports more meaningful queries.

clearinghouse

Source: GETIS glossary

"In general a clearinghouse provides a central access point for value-added topical guides which identify, describe, and evaluate Internet-based information resources. In our case a clearinghouse is a decentralized system of servers located on the Internet which contain field-level descriptions of available digital spatial data. This descriptive information, known as metadata, are collected in a standard format to facilitate query and consistent presentation across multiple participating sites. A clearinghouse uses readily available Web technology for the client side and uses standards for the query, search, and presentation of search results to the Web client. A clearinghouse provides information about who is providing which authorized geoinformation for which application."

client

A software component that can invoke an operation performed by a server.

client/server

The network computing revolution (which includes the distributed geoprocessing revolution) is based on software entities (clients) that tell other software entities (servers) to do things for them. Software clients say, 'Send me this specific data from your database!' or 'Tell me what Internet address contains this information!' or 'Take this data and do a correlation operation on it!' In a simple sense, your word processor is a client when you click on 'Save' and the word processor instructs the operating system (acting as a server) to save your file to disk. Interoperability interfaces make it possible for diverse computers to request things of each other over networks and get predictable responses.

COM

"Component Object Model, the Microsoft (MS) paradigm to connect components. MS has implemented the base technology for COM on the NT platform. Software AG has ported these on MVS and UNIX. A COM-object defines its interfaces. Components from different machines can be combined using DCOM ."

Common Object Request Broker Architecture (CORBA)

The basic distributed object scheme developed by the Object Management Group (OMG), a consortium similar to OGC but focused on object technology instead of distributed geoprocessing. Object Request Brokers (ORBs) help clients find servers.

Communications Service Interface (CSI)

The interface by which an application platform accesses external entities which provide data transport services. The service provided is data transport among application platforms.

component

In the context of distributed computing, a component is a software program unit that performs one or more functions and that communicates and interoperates with other components through common interfaces.

componentware

Software that exists in relatively small modules with standard interfaces.

Components can be combined easily to create tailored applications that are easier to maintain and upgrade than `monolithic` applications that provide the same functionality. Another benefit is that components from different vendors can be used together to provide flexible, economic solutions. componentware can be defined as software products constructed using object technology.

composite curve

Sequence of Curves such that each curve (except the first) starts at the end point of the previous curve in the sequence. (see OGC Abstract Specification (Topic 1) clause 7.3.10.4)

composite map

Two or more maps with the same geographic extent and coordinate reference system can be accurately layered to produce a composite map.

computational viewpoint

Viewpoint in RM-ODP concerned with the functional decomposition of the system into a set of services that interact at interfaces. This viewpoint captures the details of these components and interfaces without regard to distribution. (See the ORM for further definition.)

computer architecture

The functional composition of a system and its components, the interfaces between components, and interfaces with the external environment, including users and other systems.

computer environment

The general term describing the people, hardware, software, and databases comprising a single computer system or several network-connected computer systems, and the associated standards.

conceptual architecture

A diagram and accompanying text that provides a model of how a system works

conceptual schema

Base schema. Formal description of the model of any geospatial information. Application schemas are built from conceptual schemas.

Conformance Test Suite and Guidelines

The set of materials, defined under the OGC Conformance Testing Program document (available at <http://www.opengeospatial.org/compliance>), required to test an implementation for conformance to a specification. (Conformance Test Suite and Guidelines refer to OpenGIS Implementation Specifications.) A software vendor whose software implements interfaces based on OGC's standards can claim that a product "implements" particular OpenGIS Specifications. If the product has passed a conformance test for a particular OpenGIS Specification, the vendor can claim that their product conforms to that version of a specification and they can use OGC's trademarks to assure buyers of the veracity of those claims.

connectivity

A topological property relating to how geographical features are attached to one another functionally, spatially, or logically. In a water distribution system, connectivity would refer to the way pipes, valves, and reservoirs are attached, implying that water could be `traced` from its source in the network, from connection to connection, to any given final point. Functional, spatial, and logical connectivity are examples of relationships that can be represented and analyzed in a GIS database.

container

Association role between topology primitives and those of co-dimension -2 or greater. (see OGC Abstract Specification (Topic 1) clause 7.3.10.4)

content standard

A standard data model

conversion

The process of transferring data derived from existing records and maps to a digital database. Conversion is a major input problem and can consume the greatest share of time in a GIS project.

coordinate conversion

A mathematical operation on coordinates that does not include a change of datum. The best-known example of a coordinate conversion is a map projection. The parameters describing coordinate conversions are defined rather than empirically derived.

coordinate reference system (CRS)

A coordinate system that has a reference to the Earth. Consists of a coordinate system and a datum.

coordinate system

Composed of a set of coordinate axes with a known metric. The concept 'metric of a coordinate space' consists of the set of mathematical rules that defines the relationships between the coordinate values and the invariant spatial quantities between points; for example, the mathematical rules (formulae) required for calculating angles and distances between points from coordinate values and vice versa.

coordinate transformation

Source: GETIS glossary

A mathematical operation on coordinates that includes a change of datum. The parameters of a coordinate transformation are empirically derived from a dataset containing the coordinates of a series of points in both coordinate reference systems. This computational process is usually "over determined", allowing derivation of error (or accuracy) estimates for the transformation. Also, the stochastic nature of the parameters may result in multiple (different) instantiations of the same coordinate transformation.

coordinates

A tuple of ordered scalar values that define the position of a single point feature in a coordinate reference system. The tuple is composed of one, two or three 'ordinates'. The ordinates must be mutually independent and their number must be equal to the dimension of the coordinate space; for example, a tuple of coordinates may not contain two heights.

CORBA

"Common Object Request Broker Architecture: CORBA is an architecture and specification for creating, distributing, and managing distributed program objects in a network. It allows programs at different locations and developed by different vendors to communicate in a network through an 'interface broker.' CORBA was developed under the auspices of the OMG (Object Management Group) and has been sanctioned by both ISO and X/Open as the standard architecture for distributed objects (also known as components)."

core technology

The set of Implementation Specifications resulting from the Technology Development process that are based on the Abstract Specification.

coverage

Source: The [OpenGIS® Abstract Specification Topic 6: Schema for coverage geometry and functions, Version 7](#).

A feature that associates positions within a bounded space (its spatiotemporal domain) to feature attribute values (its range). GIS coverages (including the special case of Earth images) are two- (and sometimes higher-) dimensional metaphors for phenomena found on or near a portion of the Earth's surface. A coverage can consist of a set of features or Feature Collections. Earth images are seen as Grid Coverages that contain features whose geometries are of type "set of cells" or "set of pixels" (surfaces).

coverage domain model

The definition of a domain-specific application schema for a well-known geospatial coverage. For example: DTED.

Coverage Model

Source: The OpenGIS® Abstract Specification Topic 6: The Coverage Type and its Subtypes Version 6. <http://www.opengis.org/techno/abstract/00-106.pdf>

The basic model for how earth information may be represented as raster or grid coverages (e.g., an image or digital terrain model).



critical infrastructure

Critical infrastructure encompasses large-scale systems in a range of sectors - energy, tele-communications, transportation, public health services, banking, government, public safety etc. These systems are essential to maintaining society.

curve

1-deminsional geometric primitive, representing the continuous image of a line (see OGC Abstract Specification (Topic 1) clause 6.3.16)

curve segment

1-deminsional geometric object used to represent a continuous component of a curve using homogeneous interpolation and definition methods. (see OGC Abstract Specification (Topic 1) clause 6.3.17)

Glossary of Terms - D

Data Catalog Model

Source: The OpenGIS® Abstract Specification Topic 6: The Coverage Type and its Subtypes Version 6. <http://www.opengis.org/techno/abstract/00-106.pdf>

The general model for representing online data catalogs that pertain to enterprise data stores.

data clearinghouse

Source: ISO 19115

Collection of institutions providing digital data, which can be searched through a single interface using a common metadata standard.

data coordination

Organizations that seek to share GI working to reach consensus on common data models.

data domain

Source: GETIS glossary

Set of feature collections that is commonly used in a specific discipline or application. An example of a data domain is {roads, houses, rivers} or on another abstraction level {transport, buildings}

data infrastructure

Source: GETIS glossary

See SDI

data level

Source: ISO 19101

Stratum within a set of layered levels in which data is recorded that conforms to definitions of types found at the application model level

data model

Source: AGI glossary. <http://www.geo.ed.ac.uk/agidict/welcome.html>

"An abstraction of the real world which incorporates only those properties thought to be relevant to the application at hand. The data model would normally define specific groups of entities, and their attributes and the relationships between these

entities. A data model is independent of a computer system and its associated data structures. A map is one example of an analogue data model."

data quality

Source: AGI glossary. <http://www.geo.ed.ac.uk/agidict/welcome.html>

"Indications of the degree to which data satisfies stated or implied needs. This includes information about lineage, completeness, currency, logical consistency and accuracy of the data"

data schema

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

Formal description of a data model

data semantics

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

The meaning of data: in the GI sector this includes the identification of related object classes embedded in different abstractions

data services

OSF services that provide access to collections of data in repositories and databases. Resources accessible by Data Services can generally be referenced by a name (identity, address, etc). Given a name, Data Services can then find the resource. Examples include: Feature Access Services (FAS), Coverage Access Services (CAS) and Sensor Collection Service (SCS).

data transfer

Source: OpenGIS Guide

"In the geoprocessing world, this refers to converting geodata from one (usually proprietary) data format to another. The OpenGIS Specification is not a data transfer standard. Instead, it (in most cases) specifies interfaces by which software systems can exchange information about features, geometry, spatial referencing, and geoprocessing operations. It enables remote GIS systems, for example, to behave like extensions of your local computing environment. "

data transfer standard

A (usually vector) data format designed to be a "lowest common denominator" for multiple data formats, to enable data to be used by different GIS systems.

data update cycle

Source: GETIS glossary

Data update interval

dataset series

Source: ISO 19115; ISO 19113; ISO 19114

Collection of datasets sharing the same product specification

datum

Defines the origin, orientation and scale of the coordinate system and ties it to the earth, ensuring that the abstract mathematical concept 'coordinate system' can be applied to the practical problem of describing positions of features on or near the earth's surface by means of coordinates.

DBF

Data Base File - the dBase file format

DBMS

Database management system. DBMS sometimes refers to the software that contains and organizes the data, and sometimes refers to an organizational plan for the use of information within a single project, or within one unit or the whole of an organization.

DCP

Distributed Computing Platform

de facto standard

Source: OpenGIS Guide

"A standard that has been informally adopted, often because a particular vendor was first to market with a product that became widely adopted. MS-DOS and Microsoft Windows are examples. "

de jure standard

Source: OpenGIS Guide

"An official standard created in a formal `juried` process, such as the International Organization for Standards Technical Committee 211 (ISO TC/211), which is working on problems similar to those addressed by the OpenGIS Specification, but at a higher, more abstract level."

DEM

Digital elevation model, a data exchange format developed by the United States Geological Survey for geographical and topographical data.

DEMTS

Digital and Electronic Maps Transfer Standard. Interchange of digital maps. Russian state standard GOST R*50828-95

DGN

DesiGN file, the Microstation drawing format

Dictionary Model

Source: The OpenGIS® Abstract Specification Topic 6: The Coverage Type and its Subtypes Version 6. <http://www.opengis.org/techno/abstract/00-106.pdf>

The general model for representing online dictionaries that pertain to well-known types of classification schemes and dictionaries.

DIGEST

(Digital Geographic Exchange Standard) Standard that supports images and gridded data in alignment with the ISO/IEC 1/SC 24 BIIF standard. DIGEST Annex D, known as the Image Interchange Format, is an encapsulation of the NATO Secondary Imagery Format (NSIF), which allows for the standard exchange of image, graphic and text data.

Digital Cartographic Model

Source: <http://www.eurogeographics.org/Projects/GDDD/GDDD/lists/products.htm#52>

"Simple digital maps having a 'flat' data structure, e.g. digitized maps. Digital Cartographic Models (DCMs) are suitable for display and plots purposes. In the context of GIS the DCM may be used as background information. The geometric form of the DCM is vector"

Digital Elevation Model

Source: <http://www.eurogeographics.org/Projects/GDDD/GDDD/lists/products.htm#52>

"The Digital Elevation Model (DEM) only contains elevation data. Normally, the height data are arranged in a matrix. Also, vector based contour lines and spot elevations are considered as DEM. "

Digital Landscape Model

Source: <http://www.eurogeographics.org/Projects/GDDD/GDDD/lists/products.htm#52>

"A Digital Landscape Model (DLM) is an object orientated topographic database. The data structure facilitates spatial analysis and linkage of geographic objects to external data. The geometric form of the DLM is vector. The DLM often contains explicit or implicit topological information. The objects, their attributes and the relations between the objects are referred to in terms of real world entities. "

digital orthoimages

Orthorectified images produced using photogrammetric techniques to orthorectify scans of aerial photos and paper maps.

digitize

The process of converting information into the digital codes stored and processed by computers. In geographic applications, digitizing usually means tracing map features into a computer using a digitizing tablet, graphics tablet, mouse, or keyboard cursor.

DIPR

See Draft Interoperability Program Report.

Directory Model

The general model for representing online, well-known types of directories (e.g. Yellow Pages).

directory service

A network-accessible service that provides access to an online directory (e.g. Yellow Pages) to find the location of a specific or nearest place, product or service.

discipline

A particular area of study, such as forestry, hydrology, disaster management, etc. Disciplines often show overlaps in their study topics, data domains and application domains

Discussion Paper

A document containing discussion of some technology or specification area prepared by a SIG or WG for release for the public. Discussion Papers are not the official position of the OGC and contain a statement to that effect.

Distributed Computing Environment (DCE)

DCP being developed by the Open Software Foundation (OSF).

Distributed Computing Platform (DCP)

The foundation technology that enables access to and exploitation of physically distributed information and services. Examples include CORBA, COM/OLE, SQL,

Java, and Internet services from the World Wide Web Consortium (W3C) such as HTTP, SOAP and XML.

diversity

The ability of a system or components of a system to support multiple behaviors, functions, and data types.

DLG

Digital line graph, a form of digital map developed by the United States Geological Survey. DLGs supply users with the digital version of information printed on USGS topographical quadrangle maps.

domain

System context: A class of systems that have similar requirements and capabilities.

Application context: The body of knowledge defining the range and scope of an application in terms of elements, rules and behaviors.

Draft Interoperability Program Report (DIPR)

A DIPR is an informational report written by participants from an Interoperability Program Initiative. DIPR documents may be submitted to the OGC TC for review and comment. Depending on the desired outcome, the document type should be either "Information-Only" or "Draft Discussion Paper". The former, obviously, is intended for information only and is not to be considered for public release. The latter, is intended for consideration for public release as a Discussion Paper. A DIPR does not represent the official position of the OGC nor is it an adopted OGC specification.

DTM

Digital terrain model, a method of transforming elevation data into a contoured surface of a three-dimensional display.

DXF

"Drawing eXchange Format", an AutoCad export file. Drawing interchange format, a file exchange format developed by Autodesk Inc. for its AutoCAD drafting software. DXF files are ASCII records of all objects in a drawing file. DXF is used by GIS systems for exchanging map files.

dynamic segmentation

Points along a line that vary in value, e.g. pavement thickness along a road centerline.

Glossary of Terms - E

Earth model

An approach to abstracting the Earth. The data model for the Earth.

edge

1-dimensional topology primitive (see OGC Abstract Specification (Topic 1) clause 7.3.14)

EEA

European Environment Agency

encapsulation

In object-oriented programming, data can be encapsulated in an object, which means all access to the data and manipulation of the data occurs through the object's methods. Legacy software or data can be encapsulated by giving it an interface that is compatible with object software.

engineering viewpoint

RM-ODP viewpoint that relates a system's purposes, content, and functions to specific components linked by a communications network. This viewpoint is concerned primarily with the interaction between distinct computational objects: its chief concerns are communication, computing systems, software processes and the clustering of computational functions at physical nodes of a communications network. The engineering viewpoint also provides terms for assessing the "transparency" of a system of networked components - that is, how well each piece works without detailed knowledge of the computational infrastructure. The engineering viewpoint can be described in terms of UML collaboration diagrams and deployment diagrams.

enterprise

In the context of computing, an enterprise is a large organization whose many offices, agencies, workers and partners must be able to communicate and share information effectively and efficiently.

enterprise application

Software that automates a business process that spans many business units

enterprise viewpoint

Describes the business or organizational perspective, context, purpose, scope and policies governing a distributed information system. The ORM enterprise viewpoint highlights geospatial location as a fundamental information ingredient and provides a representative value chain of geospatial information within an enterprise or an information community. The ORM enterprise viewpoint includes the major requirements on OGC technology as derived from the described value chain.

EO

Earth observation, i.e., remote sensing.

EOSDIS/HDF

HDF-EOS is an extension of NCSA (National Center for Supercomputing Applications) Hierarchical Data Format. HDF-EOS adds mechanisms for storing geo-referencing and temporal information, data organization, and metadata storage. HDF-EOS contains Grid, Point and Swath structures.

ESDI

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>
European Spatial Data Information Infrastructure <http://www.ec-gis.org/inspire/>

ESPRIT

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>
The Research programme of the European Union until 1998 <http://www.cordis.lu/esprit/home.html>

ETeMII

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>
European Territorial Management Information Infrastructure: a Fifth Framework project supporting consensus-building on Data issues. <http://www.ec-gis.org/etemii>

Ethernet

A type of local-area network used for high-speed communication among computers.

EUROGI

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>
European Umbrella Organisation for Geographic Information: members are national associations (e.g. The Association for Geographic Information in the UK) and related pan-European sector bodies. <http://www.eurogi.org/>

exemplar implementation

An operational, conformant implementation of an implementation specification that is made available for public use for testing purposes (Exemplar Implementations refer to OpenGIS Implementation Specifications.)

extensibility

The ability for a system or components of a system to expand by assimilating new data, software or hardware components.

extrinsic resource

A registered resource associated with a repository item for which the content model is not defined by the RIM. It may be located in a repository not managed by a Registration Authority, and its content may be represented by any Internet Media Type (e.g. application/pdf, image/svg+xml).

Glossary of Terms - F

face

2-dimensional topology primitive (see OGC Abstract Specification (Topic 1) clause 7.3.16)

feasibility study

In OGC, a research effort directed at understanding emerging technology areas for the purposes of planning OGC Interoperability Initiatives.

feature

Source: The OpenGIS® Abstract Specification Topic 6: The Coverage Type and its Subtypes Version 6. <http://www.opengis.org/techno/abstract/00-106.pdf>

The starting point for modeling of geographic information. Abstraction of a real world phenomenon. "A digital representation of a real world entity or an abstraction of the real world. It has a spatial domain, a temporal domain, or a spatial/temporal domain as one of its attributes. Examples of features include almost anything that can be placed in time and space, including desks, buildings, cities, trees, forest stands, ecosystems, delivery vehicles, snow removal routes, oil wells, oil pipelines, oil spill, and so on. Features are usually managed in groups as

feature collections. The terms feature and object are often used synonymously. The terms feature, feature collection and coverage are defined in line with OpenGIS."

feature catalog

Source: ISO 19101; ISO 19110

Catalog containing definitions and descriptions of the feature types, feature attributes, and feature relationships occurring in one or more sets of geographic data, together with any feature operations that may be applied

feature collection

Source: OpenGIS Guide

A special category of feature that represents a collection of features that have common metadata and formal relationships. "A set of related features managed as a group. Feature collections can be identified at different abstraction levels, i.e. high abstraction level, e.g. "topography" and low abstraction level, e.g. "roads"; The terms feature, feature collection and coverage are defined in line with OpenGIS 5."

feature domain model

The definition (typing framework and properties) of a domain-specific application schema for a well-known class of geospatial features, in vector form (i.e., points, lines and polygons). For example: Transportation, Hydrographic, Electric Utility, etc.

federated database

Separate databases that are structured, perhaps with middleware or special database access software, in such a way that they can be queried as a single database.

find

In the context of OGC Web Services, clients, which might be applications or thin clients on users' computers or which might be other services, find data and services based on what is published in online registries and catalogs. (See Publish.)

framework

An information architecture. In terms of software design, a reusable software template, or skeleton, from which key enabling and supporting services can be selected, configured and integrated with application code.

framework data

In the US, "framework data" or "the Framework" refers to a national collaborative effort to create a widely available source of basic geographic data. It provides the most common data themes geographic data users need, as well as an environment to support the development and use of these data. The framework's key aspects are * seven themes of digital geographic data that are commonly used; (Orthoimagery, Elevation, Transportation, Hydrography, Cadastral, Geodetic Control and Government Units) * procedures, technology, and guidelines that provide for integration, sharing, and use of these data; and * institutional relationships and business practices that encourage the maintenance and use of data. (<http://geo-one-stop.gov/participate/status.html>)

Glossary of Terms - G

gateway service

The Open Location Services (OLS) initiative introduced gateway services, which link location application services (accessed via the Internet or the Web) with mobile wireless-IP platforms, in support of small form factor mobile terminals.

gazetteer

Source: <http://www.eurogeographics.org/Projects/GDDD/GDDD/lists/products.htm#52>

A catalogue of toponyms (place names) assigned with geographic references. A gazetteer service retrieves the geometries for one or more features, given their associated well-known feature identifiers (text strings).

gazetteer model

The general model for representing online, well-known types of gazetteers.

general feature model

Metamodel of feature types. A feature may have properties that may be operations, attributes or associations. Any feature may have a number of attributes, some of which may be geometric and spatial. A feature is not defined in terms of a single geometry, but rather as a conceptually meaningful object within a particular domain of discourse, one or more of whose properties may be geometric.

general models

Source: The OpenGIS® Abstract Specification Topic 6: The Coverage Type and its Subtypes Version 6. <http://www.opengis.org/techno/abstract/00-106.pdf>

General Models Define the basic models for how geospatial information is to be characterized and encoded. To date, OGC has defined several types of General Models: (Simple) Feature Model, Coverage Model, Observation Model, Registry Model, Service Model, Data Catalog Model, Dictionary Model, Directory Model, and Gazetteer Model.

geocoder

Transforms a description of a feature location, such as a place name, street address or postal code, into a normalized description of the location, which includes a coordinate geometry.

geocoder Service

Geocoding is the process of linking words, terms and codes found in a text string to their applicable geospatial features, with known positions (i.e., usually a point with x, y coordinates but more generally any geometry), e.g. converting a street address to a geographic location. The Geocoder Service Interface allows for a request providing an address or set of addresses and returns them along with the corresponding geometry (usually a point relative to a requested spatial reference system.) The request is "sent" to a Geocoder Service, which processes the request and returns the resulting geographic feature representing position.

geocoding

Geocoding refers to the assignment of alphanumeric codes or coordinates to geographically reference data provided in a textual format. Examples are the two letter country codes and coordinates computed from addresses.

geodata

Digital data that represent the geographical location and characteristics of natural or man-made features, phenomena and boundaries of the Earth. Geodata represent abstractions of real-world entities, such as roads, buildings, vehicles, lakes, forests and countries. Geodata refers to such data in any format, including raster, vector, point, text, video, database records, etc.

geographic application

Applications which pertain to the Earth and Earth phenomena, with known spatial and temporal reference systems. Expressed in a human context versus computer context.

geographic data

See geospatial data.

geographic feature

Feature associated with a location relative to the Earth. The starting point for modeling of geographic information. A feature is an abstraction of a real world phenomenon. A geographic feature is a feature associated with a location relative to the Earth. A digital representation of the real world can be thought of as a set of features. Geographic features occur at two levels: feature instances and feature types. At the instance level, a geographic feature is represented as a discrete phenomenon that is associated with its geographic and temporal coordinates. These individual feature instances are grouped into classes with common characteristics - feature types.

geographic model

A model of the real world that recognizes an integrated family of spatial features

Geographic Objects

The vision for the Geographic Objects Initiative is to define platform-independent and implementation-neutral interface models of specific geographic services or component objects.

geographic reference system

A 3D reference coordinate system with well-defined origin and orientation of the coordinate axes. A mathematical system.

Geography Markup Language (GML)

OGC's XML-based language for describing and encoding geospatial information. An application of XML, a specification developed by members of the Open GIS Consortium. <http://www.opengis.org/techno/specs/00-029/GML.html> ". GML is an XML encoding for spatial data. In a sense, it is a schema-writing language for spatial information.

geometric object

A combination of a coordinate geometry and a coordinate reference system. In general, a geometric object is a set of geometric points.

GeoMobility Server

The open service platform comprising the Core Services developed under the OGC OpenLS initiatives.

geoparser service

Geoparsing refers to the capability to process a textual document and identify key words and phrases that have a spatial context. A Geoparsing Interface implementing this specification works in the context of two bodies of information: a reserved vocabulary (usually of place names, such as a gazetteer) and a text source (e.g., a newspaper, or voice track.) The Geoparser Service returns all occurrences of the use (in the text source) of any word in the reserved vocabulary. Each occasion establishes a geolink between the source and the location associated with the reserved word.

geoprocessing

Use of computers to acquire, analyze, store, display, and distribute information about geographic features. This includes GIS and systems for remote sensing (Earth imaging), facilities management, automated mapping, cartography, navigation, and location services.

geoprocessing applications

Computer applications which model, interpret and use Earth information. The implementation of a Geographic Application on a computer. The terms `geoprocessing`, `geomatics`, and `geotechnology` mean approximately the same thing, though some groups make minor distinctions among them.

georectified gridded data

A cell in a georectified gridded data can be uniquely geolocated, given the cell spacing, grid origin and orientation. Ungeorectified gridded data are irregularly spaced in any geographic/map projection coordinate system. Therefore, the location of one cell in an ungeorectified gridded data cannot be determined based on another cell's location. One approach to rectifying imagery utilizes a sensor description.

georeference

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>
Description of a location relative to the Earth

geospatial

Referring to location relative to the Earth's surface. "Geospatial" is more precise in many GI contexts than "geographic," because geospatial information is often used in ways that do not involve a graphic representation, or map, of the information.

geospatial data

Location properties related to any terrestrial feature or phenomena. Location properties may include any information about the location or area of, and relationships among, and descriptive information about geographic features and phenomena. This includes remotely sensed data, vector map data, addresses, coordinates, etc. Note that "geospatial data" is more precise in many contexts than "geographic data," because geospatial data is often used in ways that do not involve a graphic representation, or map, created from the data.

Geospatial Fusion Services

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

Non-map information - text, video, audio, digital photographs, mpeg movies, sensor data, word processing documents, etc. - often refers to place. Geospatial Fusion Services enable the "fusing" of information such as addresses, place names, coordinates, pinpoints on photographs, and descriptive directions into one information management framework that supports search, discovery, and sharing of spatial information stored in non-map formats.

geospatial information

Information about entities and phenomena that includes their location with respect to the Earth's surface. Frequently used as a synonym to geodata, but technically, geodata are "dry" digitally represented facts or recorded observations which on their own have no meaning. They become information when interpreted and put in context by humans.

geospatial portal

A Web site that provides a view into a universe of spatial content and activity through a variety of links to other sites, communication and collaboration tools, and special features geared toward the community served by the portal. As an open Web resource, a geospatial portal should connect through open interfaces to data and services with similar interfaces. Catalogs and registries that conform to OpenGIS Specifications play an important role in geospatial portals.

GeoTIFF

Data interchange standard for raster geographic images. An extension of the TIFF format to support a geodetically sound raster data georeferencing capability. The aim of GeoTIFF is to allow a means for tying a raster image to a known model space or map projection, and for describing those projections. The geographic content supported in GeoTIFF tag structure includes its cartographic projection, datum, ground pixel dimension, and other geographic variables.

GFS Testbed

OGC's GFS Testbed yielded a set of candidate standard specifications for open interfaces and protocols that begin to support "geospatial fusion."

GIF

Graphic Interchange Format An image format commonly used on the Web

GII

National Information Infrastructure. The world's entire collection of public and private digital information, physical networks and network software, computers, and knowledge about how to use them.

GIS

Source: AGI glossary. <http://www.geo.ed.ac.uk/agidict/welcome.html>

"Geographic Information System. A computer system for capturing, storing, checking, integrating, manipulating, analyzing and displaying data related to positions on the Earth's surface. " Both vector and raster GISs are available.

GIS application

Source: OpenGIS Guide

<http://mmm-gi.geo-see.org>



"The use of capabilities, including hardware, software and data, provided by a Geographic Information System specific to the satisfaction of a set of user requirements. Example of a GIS application: Spatial decision support system application for district planning purposes."

GISD-ICP

The Geospatial Information for Sustainable Development Initial Capability Pilot (GISD-ICP) is the first of a series of projects to help make geographic information more accessible and useful to decision makers working on sustainable development problems.

Global Spatial Data Infrastructure (GSDI)

A set of policies, standards, practices, technologies, and relationships to facilitate the flow of geographic data and information at all levels across government, academic, and private sectors globally. A linking of National Spatial Data Infrastructures. See www.gsdi.org.

Globe

Source: Wikipedia

A globe is a three-dimensional scale model of Earth (terrestrial globe or geographical globe) or other celestial body such as a planet or moon. While models can be made of objects with arbitrary or irregular shapes, the term globe is used only for models of objects that are approximately spherical.

GML

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

"Geographic Mark-up Language: an application of XML, a specification developed by members of the Open GIS Consortium.

<http://www.opengis.org/techno/specs/00-029/GML.html>". GML is an XML encoding for spatial data. In a sense, it is a schema-writing language for spatial information.

GML Application Schema

An XML Schema written according to the GML 3 rules for Application Schemas, which defines a vocabulary of geographic objects for a particular domain of discourse

GPS

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

Global Positioning System: (1) a network of satellites that interact with special receivers to position the receiver relative to the Earth. (2) describing the generic approach to using a network of satellites to deliver a positioning service. Although GPS can be used to determine location very precisely (within centimeters given the correct controls and proper use, it does not solve all the problems of location determination in GIS databases.

Glossary of Terms - H

handle

An index entry or unique name in software that identifies a catalog entry or other resource so that it can be found and utilized by another software facility.

harmonization

With respect to standards: activities undertaken by communities of experts to align standards. For example, to define common metadata and application schema from legacy sources, harmonization will consider: -- Architecture - multiple viewpoints that capture high level requirements, use cases, scenarios, information flows and computational flows. -- Data modelling - definition and UML encoding of feature type, attribute type, data type, coding, dependency mapping -- Schema modelling - UML mapping and encoding to GML, mapping of profiles to one another, and delineation to service types -- Iteration and development - build a little, see if it works, build more- -- Delivery to standards organizations for approval.

hierarchical database

A database that stores related information in terms of pre-defined categorical relationships in a `tree-like` fashion. Information is traced from a major group, to a subgroup, and to further subgroups. Much like tracing a family tree, data can be traced through parents along paths through the hierarchy. Users must keep track of the hierarchical structure in order to make use of the data. The relational database provides an alternative means of organizing datasets.

http

Hypertext Transfer Protocol, the World Wide Web protocol for moving hypertext (HTML) files across the Internet. OGC has defined a suite of Web Service interfaces that have explicit bindings for HTTP. Specifically, there are two HTTP bindings for invoking operations of a service (i.e., Sending a message): GET and POST.

human technology environment

The environment within which people interact with information technology, typically a mouse and windowing system.

human technology interface (HTI)

The interface across which people interact with information technology. The service provided through this interface is access to the information infrastructure and to other people.

hydrography

The charting and description of bodies of water.

Glossary of Terms - I

image metadata

XML encoding used to describe all types of images handled by OpenGIS Framework services. Image Metadata is used for publishing and discovery of types of original



and derived images, image identifications, dates, spatial extents and other information that could be used to find and retrieve images from an archive.

imagery

A common way of collecting information associated with a coverage, by which the value of a continuous phenomenon is usually sampled at regular but discrete locations, i.e. pixels.

implementation

A software package that conforms to a standard or specification. A specific instance of a more generally defined system.

implementation profile

An Implementation Profile contains an interoperable set of implementation technologies. The languages and associated technologies that a functioning enterprise depends upon are part of the Implementation Profiles for an environment. In addition to modeling languages, Implementation Profiles contain inter-process communication protocols and other dependent infrastructure technologies that the framework employs.

implementation specification

Guidance for software engineers that is so specific that any two independent software implementations of the specification can "plug and play" for each other.

implementation view

Part of Information Viewpoint that captures how information must be represented within a working enterprise (i.e., how it is encoded for runtime use).

information appliance

End-user equipment having input and display (or auditory) capabilities for communication with other users or service providers in the NII.

Information Community

Source: The [OpenGIS® Abstract Specification Topic 6: The Coverage Type and its Subtypes Version 6](#). A collection of people (a government agency or group of agencies, a profession, a group of researchers in the same discipline, corporate partners cooperating on a project, etc.) who, at least part of the time, share a common digital geographic information language and common spatial feature definitions. See [Topic 14, Semantics and Information Communities](#).

Information Storage Interface (ISI)

The interface across which information technology interacts with external storage media. The service provided through this interface is persistent storage of data, where the physical storage media is often removable.

integrated client

A software application that provides a unified environment for visualizing, analyzing, and editing geospatial data from a wide variety of sources.

interface

A named set of operations that characterize the behavior of an entity. An implementation of operations including the syntax of the interaction for a given distributed computing technology. A shared boundary between two functional entities. An established ordering of parameters (with specific names and data

types) and instructions (with specific names and functions) that enables one software component to exchange data and instructions with another software component.

intermediary

A service that provides functions by which to interconnect, adapt and facilitate services offered by other parties, components or environments. Common forms of intermediaries include agent, broker, mediator and trader services.

interoperability

Source: OpenGIS Guide

Capability to communicate, execute programs, or transfer data among various functional units in a manner that requires the user to have little or no knowledge of the unique characteristics of those units ISO 2382-1. "The ability for a system or components of a system to provide information portability and interapplication, cooperative process control. Interoperability, in the context of the OpenGIS Specification, is software components operating reciprocally (working with each other) to overcome tedious batch conversion tasks, import/export obstacles, and distributed resource access barriers imposed by heterogeneous processing environments and heterogeneous data. "

Interoperability Program

The OGC Interoperability Program is a global, collaborative, hands-on engineering and testing program designed to deliver proven candidate specifications into the OGC Specification Development Program and to exercise and test existing OGC Implementation Specifications in domain specific situations.

Interoperability Program Report (IPR)

An IPR is provided by an Interoperability Program Initiative to the TC. IPR documents may be submitted to the OGC TC for review and comment. Depending on the desired outcome, the document type should be either "Information-Only", "Draft Discussion Paper", "Draft Recommendation Paper", or "RFC Proposal". The first, obviously, is intended for information only and is not to be considered for public release. The second approach is intended for consideration for public release as a Discussion Paper. The third is intended for consideration for public release as a Recommendation Paper. The last is intended for consideration as an RFC proposal (and must be submitted under the TC Policies and Procedures for RFCs). An IPR is not a publicly available document. An IPR will be provided to the TC in the correct IPR template format. An IPR does not represent the official position of the OGC nor of the OGC Technical Committee.

intrinsic resource

A registered resource for which the content model and normative representation are defined by the Registry Information Model (RIM).

IPR

See Interoperability Program Report.

ISO

International Organization for Standardization

ISO 19108, GI - Temporal Schema

See <http://www.statkart.no/isotc211/scope.htm#19108> for a brief description.

ISO 19118, GI - Encoding,

See <http://www.statart.no/isotc211/scope.htm#19118> for a brief description.

ISO/CD 19107.3, GI - Spatial Schema

See <http://www.statkrt.no/isotc211/scope.htm#19107> for a brief description.

ISO/CD 19115 (ISO TC 211 N 1024, 201-01-30) GI - Metadata

See <http://www.statkart.no/isotc211/scope.htm#19115> for a brief description.

ISO/CD 19119 (ISO TC 211 N 1044, 2001-01-29) GI - Services

See <http://www.statkart.no/isotc211/scope.htm#19119> for a brief description.

isolated

Association role between topography primitives and those of co-dimension 2 or greater. (see OGC Abstract Specification (Topic 1) clause 7.3.10.4)

Glossary of Terms - J

JAVA

A platform independent programming language developed by SunSoft. Any computer with the Java server software installed can run Java client applets that arrive over a network.

JPG (JPEG)

JPEG (Joint Photographic Experts Group) Image format for continuous tone pictures: JPEG makes use of continuous-tone digital images much more economical by drastically reducing the volume required for storage and the bandwidth required for transmission.

Glossary of Terms - K

key data sets

Source: GETIS glossary

Data sources essential for a specific application.

Glossary of Terms - L

LAN

Local Area Network. A system for connecting computers so they can communicate with one another.

Landsat

A particular system of US satellites that scan the earth at a variety of wavelengths. The satellites return information that can be used to inventory and analyze a variety of natural and human resources.

language independent

Describes a standard or specification which is not specified in terms of a specific programming language, but is implementable in a variety of languages.

layered map visualization

Pictorial representation of geographic data

LBS

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

See Location Based Services

legacy system

In computing terms, a legacy System includes software or database components inherited from a previous computing model which do not fit into an open system environment without some modification. In the case of the OpenGIS Specification, legacy systems are modified to include OpenGIS-conformant interfaces.

line string

A set of coordinate points and the lines that join them.

Location Based Services (LBS)

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

Location Based Services (or "Location Services") deliver information about location to people who are using wireless, position-aware devices such as cell phones and PDAs. A wireless-IP service that uses geographic information to serve a mobile user. Any application service that exploits the position of a mobile terminal.

Location Dependent Services

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

"Services in which the location of the client, server or both form an integral part of the service "

Location Organizer Folder (LOF)

The general, multi-source information container model for handling sets of inter-related spatiotemporal information, including images, maps, features, cables, and any other information elements (e.g., audio, video, etc).

location service

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

A service that provides the location of a moving or fixed device

Long-Term Technical Baseline Target

The Long-Term Technical Baseline Target is the subset of the elements of the Technical Plan that are scheduled to be completed greater than two calendar years into the future.

loosely-coupled service

A service that can be used to operate on multiple, unspecified datasets. Calling application has no structural dependency on the interface of called application. Call is not made in same technology as the interface of the called application.

LZW

Lempel-Zif-Welch: a popular data compression technique developed in 1977 by J. Ziv and A Lempel. Unisys researcher Terry Welch later created an enhanced version of these methods, and Unisys holds a patent on the algorithm. It is widely used in

many hardware and software products, including V.42bis modems, GIF and TIFF files and PostScript Level 2.

Glossary of Terms - M

map

A two-dimensional visual portrayal of geospatial data. A map is not the data itself.

map projection

A coordinate conversion from a geodetic coordinate system to a planar surface, converting geodetic latitude and longitude to plane (map) coordinates. The result is a two-dimensional coordinate system called a projected coordinate reference system.

map scale

The relationship between distance on a map and the corresponding distance on the earth's surface. Map scale is often recorded as a representative fraction such as 1:1,000,000 (1 unit on the map represents a million units on the earth's surface) or 1:24,000 (1 unit on the map represents 24,000 units on the earth's surface). The terms 'large' and 'small' refer to the relative magnitude of the representative fraction. Since 1/1,000,000 is a smaller fraction than 1/24,000, the former is said to be a smaller scale. Small scales are often used to map large areas because each map unit covers a larger earth distance. Large-scale maps are employed for detailed maps of smaller areas.

measurement

An observation event whose value property is a value of some natural phenomenon. A measurement usually refers to the measuring device and procedure used to determine the value, such as a sensor or observer, analytical procedure, simulation or other numerical process. A measurement feature binds the result to the (spatiotemporal) location where the measurement was made.

message broker

Hubs designed to route and manage message traffic between various applications. May include transformation for incompatible messages.

metadata

Source: ISO 19115; KOGIS Switzerland; Co-ordination for GIS in the federal administration of Switzerland

"Data about data or a service. Metadata is the documentation of data. In human-readable form, it has primarily been used as information to enable the manager or user to understand, compare and interchange the content of the described data set. In the Web Services context, XML-encoded (machine-readable and human-readable) metadata stored in catalogs and registries enables services to use those catalogs and registries to find data and services.

metadata dataset

Source: ISO 19101

Metadata describing a specific dataset

metadata entity

Source: ISO 19115

Group of metadata elements and other metadata entities describing the same aspect of data. Note 1: A metadata entity may contain one or more metadata entities. Note 2: A metadata entity is equivalent to a class in UML terminology

metadata schema

Source: ISO 19101

Conceptual schema describing metadata Note: ISO 19115 describes a standard for metadata schema.

metadata section

Source: ISO 19115

Subset of metadata that defines a collection of related metadata entities and elements.

metadata translator

Software based on the OpenGIS Specification that will be configured by two diverse Information Communities to enable automated data integration or sharing to the degree that their metadata schema overlap.

Mid-Term Technical Baseline Target

The Mid-Term Technical Baseline Target is the subset of the elements of the Technical Plan that are scheduled to be completed between one and two calendar years into the future.

middleware

Software in a distributed computing environment that mediates between clients and servers.

MMI

OGC's Multi-Hazard Mapping Initiative (MMI) Phase I (2001) was a pilot project sponsored by the US Federal Emergency Management Agency (FEMA) that established a limited operational framework of interoperable services to illustrate the advantages of using products with OGC interfaces to access, fuse and visualize critical spatial information in support of FEMA multi-hazard mitigation, response and recovery functions.

modeling languages

Well-known "languages" to encode the semantics, syntax and schema of geospatial and geoprocessing-related information resources. They apply to all Application Domain Models and Runtime (Model) Components.

MPP

OGC's Military Pilot Project (MPP) (2001) was a collaborative effort that tested the interoperability of commercial geoprocessing products in the defense and intelligence (DI) domain.

Glossary of Terms - N

National Mapping Agencies

National government agencies, such as the UK's Ordnance Survey, France's Institut Geographique National (IGN) and the US's US Geological Survey and Federal Geographic Data Committee, that are chartered to provide national mapping products and services.

National Spatial Data Infrastructure (NSDI)

Information Infrastructure elements that make digital geographic information a part of everyone's digital information environment: data content and metadata standards; national Framework (base) data; metadata to help inventory, advertise, and intelligently search geographic data sets; a clearinghouse that allows for catalog searches across multiple geodata servers on the Internet; commercial geoprocessing products that interoperate through interfaces that conform to interoperability interface specifications; and partnerships to advance data sharing and NSDI development.

navigation service

An enhanced version of the Route Service, which is a network-accessible service that determines travel routes and navigation information between two or more points.

NGO

Non-governmental organization

NII

National Information Infrastructure. A nation's entire collection of public and private digital information, physical networks and network software, computers, and knowledge about how to use them.

NMA

National Mapping Agency

node

0-dimensional topology primitive (see OGC Abstract Specification (Topic 1) clause 7.3.12)

NTF

Neutral Transfer Format. Interchange of geographic information within UK

Glossary of Terms - O

object

Data and processing functions packaged into a small, discrete, interoperable module. Also, in a specific OGC context, an XML document element of a type derived from AbstractGMLType

Object Oriented (OO)

Software in which data and processing functions are packaged into small, discrete, interoperable modules, offering advantages such as portability and easy maintainability.

object technology

Software scheme in which data and processing functions are packaged into small, discrete, interoperable modules, offering advantages such as portability and easy maintainability.

observation domain model

The definition of a specific observation type in accordance with the general observation model.

Observation Model

The general model for representing observations of earth phenomena; general observation model for describing well-known observations.

OGC

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>
Open GIS Consortium, Inc. <http://www.opengis.org>

OGC Interoperability Program

The OGC Interoperability Program provides an industry consensus process to develop, test, demonstrate, and promote the use of standard interfaces and protocols that enable interoperable geoprocessing. The Interoperability Program organizes and manages Interoperability Initiatives, including Testbeds, Pilot Projects, Planning Studies, Insertion Projects, and Feasibility Studies. Technical documents, training materials, test suites, reference implementations and other resources developed in these initiatives become available for use by members and the public on the OGCNetwork.

OGC Network

An OGC web site (<http://www.ogcnetwork.org/>) that provides a Directory of OGC services, fora, mail lists, specifications, discussion papers, Collaborative Test Environment services, and other OGC-related resources.

OGC Specification Program

In the OGC Specification Program, the OGC Technical Committee reviews specifications for interfaces and encodings developed either in the Interoperability Program by groups of members, or through an internal proposals process. The Technical Committee and Planning Committee then approve these as OpenGIS® Specifications for release to the public.

OGC Technical Baseline

See Technical Baseline.

OGC Technical Committee

The OGC Technical Committee is the primary operational unit of the OpenGIS specification development and adoption process. It is comprised of the technical representatives of all OGC member organizations and is charged with creating OpenGIS Specifications and maintaining the OGC Abstract Specification. The Technical Committee does the bulk of its work through its Working Groups (WGs).

OGCE

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>
Open GIS Consortium (Europe) Limited: a business supporting OGC in Europe. <http://www.opengis.co.uk>

OLE/COM

Object Linking and Embedding/Common Object Model. A DCP developed by Microsoft.

online

A state (referring to equipment such as computers, plotters, printers, and digitizers) of being turned on and actively communicating with a computer or computer network.

open interface

An interface that implements a standard specification developed in an open consensus process. (See interface.)

Open Location Services

Open Location Services (OpenLS) is a multi-phase project which is focused on defining and building the "core" Location Based Services (LBS) standards and information framework for LBS application services in close coordination with other related industry standards groups.

open platform

In the past, the term platform denoted any specific hardware and operating system combination, such as the Windows/Intel platform. It now used more generally describes an application programming interface (API) or set of APIs that provide access to computing power, database, GIS or other services hidden "underneath" those APIs. The acronym "API" is generally giving way to "interface" in programmer-speak. No single vendor provides an open platform unless all the exposed interfaces are open interfaces as defined above. An open platform needs to be like the IT industry's Web Services platform, which is still, as of August, 2003, largely unencumbered by proprietary restrictions and is the product of a non-exclusive consensus process.

open source

It is important not to confuse "open source" with "open standards." They are entirely different. The special licenses that govern use and sale of such software exist not to ensure profits to the software's owner, but to ensure that the software's source code remains in the public domain (free to all), though companies are allowed to sell products that include some or all of the source code. Open source software is usually developed not by single company but by a distributed team of developers, typically an informal ad hoc group of volunteers.

open specification

A specification that promotes interoperability through its public availability to developers, who use it to develop software or hardware compatible with the common resource described in the specification. Open specifications are generally consistent with related standards and are updated to conform with new standards

and new technologies. They may be developed and maintained, as in the case of OpenGIS Specifications, by a public open consensus process.

open standards

An "open standard" is one that: 1. Is created in an open, international, participatory industry process 2. Is freely distributed and openly accessible 3. Does not discriminate against persons or groups 5. Ensures that the specification and the license must be technology neutral: Its use must not be predicated on any proprietary technology or style of interface.

open system

Open systems are systems that interoperate through open interfaces, protocols etc. developed and maintained in an inclusive, open consensus process. Open systems promote application portability, scalability, interoperability, diversity, manageability, extensibility, compatibility with legacy components, and user portability.

open system environment

A computer environment specified by a set of standards and profiles for interfaces, services, and formats for an open system.

OpenGIS Abstract Specification

A document that captures the OGC member consensus on a computing technology independent specification for interfaces, protocols or schemas for interoperable geoprocessing. The Abstract Specification is that part of the OpenGIS Specification created by the OGC Technical Committee to provide a high level description of the functionality to be provided in OpenGIS Implementation Specifications.

OpenGIS Implementation Specification

A document containing a computing platform dependent specification for application program interfaces, protocols etc. OpenGIS Implementation Specifications contain detailed software specifications for implementing standard interfaces, protocols etc. on particular distributed computing platforms such as the Web, SQL, OLE/COM and CORBA.

OpenGIS Reference Model (ORM)

The ORM is a document, part of the OGC Technical Baseline, that provides an overall conceptual framework for building geospatial processing into distributed systems in an incremental and interoperable manner.

OpenGIS Specification

An open software standard developed and adopted in OGC's open consensus process that enables interoperable geoprocessing, which includes: real-time data sharing and process execution between GIS systems from different vendors; interoperation between dissimilar types of geoprocessing systems (GIS, Earth imaging, surveying and mapping, navigation, etc.); and efficient discovery of and access to remote geodata and geoprocessing resources in distributed computing environments.

OpenGIS, Open GIS and open GIS

OGC registered the trademark "Open GIS" and OpenGIS" in countries around the world to assert the importance of open standards in geoprocessing and to protect



these standards with a legal brand. The phrase "open GIS" (with a small "o") is also a trademark of OGC, with the same meaning as "Open GIS," though "open GIS" is not a registered trademark.

OpenLS

See Open Location Services.

OpenLS Core Services

The basic services that comprise the open service platform (GeoMobility Server) defined under OpenLS.

operation

A single step performed by a computer in the execution of a program, or, in the context of object-oriented programming: Specification of an interaction that can be requested from an object to effect behavior. ISO 19119

ORM

OpenGIS Reference Model

orthophoto map

Source: <http://www.eurogeographics.org/Projects/GDDD/GDDD/lists/products.htm#52>

Digital or digitized aerial photographs in which the pixels are geometrically rectified and given geographical references. The data structure is raster. An orthophoto map may include details of topography and names.

orthorectification

Use of photogrammetric techniques to adjust and correct distortions in mages.

OWS

OGC Web Services.

OWS Service Framework

(OSF) Identifies services, interfaces and exchange protocols that can be utilized by any application. OpenGIS Services are implementations of services that conform to OpenGIS Implementation Specifications. Compliant applications, called OpenGIS Applications, can then "plug into" the framework to join the operational environment.

Glossary of Terms - P

PDF

Portable Document Format. An Adobe file format readable with free software (Acrobat Reader)

photogrammetry

Use of aerial photographs to produce planimetric and topographic maps of the earth's surface and of features of the built environment. Effective photogrammetry makes use of ground control by which aerial photographs are carefully compared and registered to the locations and characteristics of features identified in ground-level surveys.

pilot project

In the context of the OGC Interoperability Program, a project to introduce new technology products into an operational environment to discover the effectiveness of these products and the new approaches they enable, and to provide feedback into the Specification Program.

Planning Committee

The OGC Planning Committee identifies market opportunities for interoperability and uses this information to document and maintain a "Technology Roadmap" that sets forth the plan, schedule and rationale for OGC activities.

planning study

In OGC: Strategic study that assesses opportunities to expand and sustain an organization's interoperability capacity.

platform

Another term for computer hardware, including microcomputers, workstations, and mainframe computers, or for underlying software, like an operating system, that provides services to layered software.

platform independent

Depends on context, but in general, when discussing software, platform independence means the software can be run on any computer or operating system or distributed computing platform.

PNG

Portable Network Graphic. A format for Web graphics

point of interest

A location (with a fixed position) where one can find a place, product or service, typically identified by name rather than by address and characterized by type, which may be used as a reference point or a target in a location based service request, e.g., as the destination of a route.

point to grid interpolation

Source: GETIS glossary

The conversion from a geospatial data set that represents a surface with points and their attributes (e.g. terrain heights) to a grid (raster) data structure that represents the same surface. The estimation of attribute values of the surface at an unsampled point in the grid is based on the known attribute values of surrounding points in the point dataset.

polygon

Source: AGI glossary. <http://www.geo.ed.ac.uk/agidict/welcome.html>

A feature used to represent areas. A polygon is defined by the lines that make up its boundary and a point inside its boundary for identification. Polygons have attributes that describe the geographic feature they represent.

polygon overlay

Source: AGI glossary. <http://www.geo.ed.ac.uk/agidict/welcome.html>

"The process of superimposing two or more polygons, through registration to a common co-ordinate system. Such an overlay procedure determines the spatial

coincidence of two sets of polygon features and creates a new set of polygons based upon overlay operating."

portal

A Web site that provides a view into a universe of content and activity through a variety of links to other sites, communication and collaboration tools, and special features geared toward the community served by the portal.

portrayal

The presentation of information to humans, e.g., a map. In the context of the Web, portrayal refers to how data is presented for the user. Map portrayal, for example, is concerned with shape and color of symbols representing features, rules for displaying text labels, rules for showing/not showing symbols based on zoom extent, etc.

Portrayal Service

Defines a standard interface for producing visual pictures from coverage data. CPS extends the WMS interface and uses the Styled Layer Descriptor (SLD) language to support rendering of WCS coverages. provide visualization of geospatial information. Portrayal Services are components that, given one or more inputs, produce rendered outputs (e.g., cartographically portrayed maps, perspective views of terrain, annotated images, views of dynamically changing features in space and time, etc.). Examples include: Map Portrayal Services (MPS), Coverage Portrayal Services (CPS) and Mobile Presentation Services.

precision

Refers to the level of measurement and exactness of description in a GIS database. Precise locational data may measure position to a fraction of a unit. Precise attribute information may specify the characteristics of features in great detail. It is important to realize, however, that precise data - no matter how carefully measured - may be inaccurate. Surveyors may make mistakes or data may be entered into the database incorrectly. Therefore, a distinction is made between precision and accuracy.

presentation (map portrayal) service

A network-accessible service that portrays a map made up of a base map derived from any geospatial data and a set of ADT's as overlays.

process domain model

Data model that characterizes well-known, domain-specific business processes. These models capture business rules, policies, tasks, and procedures in the form of processing chains. Microsoft, IBM and others are collaborating on a standard methodology for online workflow and service chaining. When this standard stabilizes and emerges, organizations will start testing this technology and adapt it in a wide range of workflows. When that happens, many Process Domain Models will result.

processing services

OWS Services that operate on geospatial data and provide 'value-add' services for applications. They can transform, combine, or create data. Processing Services can be tightly or loosely coupled with other services, such as Data and Portrayal

Services. Processing Services can be sequenced into a 'chain' of services to perform specialized processing in support of information production workflows and decision support. Examples include: Coordinate Transformation Services (CTS), Geocoder Services, Route Determination Services etc.

profile

A collection of standards, with parameters, options, classes, or subsets, necessary for building a complete computer system, application, or function. An implementation case of a more general standard or set of standards.

property

A facet or attribute of an object referenced by a name.

protocol

A set of semantic and syntactic rules that determine the behavior of entities that interact.

prototyping

In the context of the OGC Interoperability Program, prototyping refers to developing a new candidate standard interface, protocol, schema etc. for the purpose of learning about it and guiding future OpenGIS Specification development.

publish

In the context of OGC Web Services, just as non-spatial Web pages "publish" their contents - make them discoverable - through HTML, metadata, geodata and geoprocessing services servers publish their contents and capabilities through XML metadata contained in feature type registries, feature instance catalogs, and service registries.

publish, find, bind

In the context of Web Services, publish means to advertise data and services to a broker (such as registry, catalog or clearinghouse). A service provider contacts the service broker to publish (or unpublish) a service. A service provider typically publishes to the broker metadata describing its capabilities and network address. Find is used by service requestors to locate specific service types or instances. Service requestors describe the kinds of services they're looking for to the broker and the broker responds by delivering results that match the request. Service requestors typically use metadata published to the broker to find service providers of interest. Bind results after a service requestor and a service provider successfully negotiate so the requestor can access and invoke services of the provider. A service requestor typically uses service metadata provided by the broker to bind to a service provider. The service requestor can either use a proxy generator to generate the code that can bind to the service, or can use the service description to manually implement the binding before accessing that service.

Glossary of Terms - Q

qualified name

Source: ISO 19118

<http://mmm-gi.geo-see.org>

Name that is prefixed with its naming context. Example: The qualified name for the road no attribute in class Road defined in the roadmap schema is Roadmap Road road_no.

Glossary of Terms - R

raster

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

The representation of spatial data as a matrix of valued cells. Originally, a raster was a scan line in an electronic display such as a television or computer monitor. In geoprocessing, raster refers to a digital representation of the extent of geographic data sets using "grid cells" in a matrix. A raster display builds an image from pixels, small square picture elements of coarse or fine resolution. A raster database maintains a "picture" of reality in which each cell records some sort of information averaged over the cell's area. The size of the grid cell may range from centimeters to kilometers. Many satellites transmit raster images of the earth's surface. Reflectance of sunlight at a certain wavelength is measured for each cell in an image.

real-time

Refers generally to systems that respond (almost) immediately or synchronously to external events.

Recommendation Paper

An OGC document containing discussion of some technology or specification area, prepared by a Working Group for release to the public. Recommendation Papers are the official position of the OGC and thus represent an endorsement of the content of the paper.

reference data

European term for a collaborative effort to create a widely available source of basic geographic data, providing national or European coverage of a set of common digital geographic data such as Elevation, Transportation, Hydrography, Cadastral, Geodetic Control, Governmental Units, etc. (Similar to "framework data" in the U.S.)

Reference Implementation

An operational, conformant implementation of an implementation specification, together with available source code, that is made available for public use for testing and development purposes. (a Reference Implementation refers to one or more OpenGIS Implementation Specifications.)

reference model

Provides the complete scientific and engineering contextual framework for a technology area. Includes the underlying elements, rules and behaviors.

register of geodetic points

Source: <http://www.eurogeographics.org/Projects/GDDD/GDDD/lists/products.htm#52>

"A catalogue of geodetic control points, e.g. trigonometric points and leveling benchmarks."

register of land

Source: <http://www.eurogeographics.org/Projects/GDDD/GDDD/lists/products.htm#52>

"A general term used for the designation of registers for ownership of land, e.g. cadastre and registers of territorial rights."

Registry Model

The general model for online registries. Sensor Model - The general model for sensor phenomena; the general sensor model for describing well-known sensors.

registry object

Every registered resource is a registry object. Dataset metadata and service metadata are examples of registry objects. All metadata and data types are regarded as registry objects.

registry services

OWS Services that provide a common mechanism to classify, register, describe, search, maintain and access information about resources available on a network. Resources are network addressable instances of typed data or services.

Relational Data Base

Stores data in such a way that it can be added to, and used independently of, all other data stored in the database. Users can query a relational database without knowing how the information has been organized. Although relational databases have the advantages of ease-of-use and analytical flexibility, their weakness can be slower retrieval speed. SQL (structured query language) is an interface to a relational database.

Remote Procedure Call (RPC)

An API for remote (across the network) execution of detailed functions.

remote sensing

Acquisition of raster images of the Earth, often involving spectral frequencies other than the visible band, by devices typically carried on airborne or satellite platforms. Sometimes refers also to image analysis of these images.

reporting group

Source: ISO 19113; ISO 19109

Data with common characteristics forming a subset of a dataset. Note 1: Common characteristics can include belonging to an identified feature type, feature attribute or feature relationship; sharing of data collection criteria; sharing original source; or being within a specified geographic or temporal extent. Note 2: A reporting group can be as small as a feature instance, an attribute value, or a single feature relationship.

request

Invocation of an operation by a client

Request for Comment (RFC)

In the context of OpenGIS Specification Development, an explicit request to the industry for comments concerning a particular technology that an OGC Technical

Committee Working Group or Interoperability Initiative is considering for development or adoption as an OpenGIS Specification.

Request for Information (RFI)

In the context of OpenGIS Specification Development, a general request to the industry to submit information to one of the OGC Technical Committee Working Groups.

Request for Proposals (RFP)

In the context of OpenGIS Interoperability Program, an explicit request to the industry to submit proposals for work to be performed as part of an Interoperability Initiative.

response

Result of an operation returned from a server to a client

reverse geocoder service

A network-accessible service that transforms a given position into a normalized description of a feature location (Address with Point), where the address may be defined as a street address, intersection address, place name or postal code

RM-ODP

Reference Model for Open Distributed Processing (ISO/IEC 10746). In RM-ODP, Architecture is defined as a set of components, connections, and topologies defined through a series of views: enterprise, information, computation, engineering and technology.

route service

A network-accessible service that determines travel routes and navigation information between two or more points.

RTD

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

Research and Technology Development: a term used in the European IST program.

Glossary of Terms - S

SAIF

Spatial Archive and Interchange Format

scalability

The ability to change the component configuration of a system to fit desired application contexts.

scanned map

Source: <http://www.eurogeographics.org/Projects/GDDD/GDDD/lists/products.htm#52>

Analogue maps digitized by scanning. The data structure of scanned maps is raster.

schema

A structured framework. A metadata schema specifies the order and types and labels of information elements describing a geodata set.

SCOTS

Standards based commercial off-the-shelf software. ("Off the shelf" means that the product is commercially available, without any need for customization.)

SDI (GDI)

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

"(Geo)Spatial Data Infrastructure: a comprehensive package of consensus and initiatives required to enable complete provision of data, access and privacy within the territory of the designated infrastructure."

SDO

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

Standards Development Organization: any international organization that develops standards for the whole community. Includes de jure SDOs and standards consortia.

SDTS

Spatial Data Transfer Standard. A standard vector format developed by the US Federal Geographic Data Committee.

semantic translator

A collection of mappings between a target Information Community's data model and a source Information Community's data model, generally held and maintained by the target Information Community, though both Information Communities may participate in configuring it. Usually expressed in terms of metadata, features, attributes and rules that permit information integration to occur when a feature collection is imported to the target Information Community from a source Information Community.

Sensor Collection Service (SCS)

Provides a web-enabled interface to a sensor, collection of sensors or sensor proxy. The Sensor Collection Service provides a standard interface for clients to collect and access sensor observations and manipulate them in different ways. SCS instances are collection points on the web for disparate types and instances of sensors. SCS instances deliver sensor observation values (e.g., temperature, ppm, chemical type) in response to queries from HTTP clients.

sensor domain model

The definition of a specific sensor type in accordance with the general sensor model.

Sensor Model Language

(SML) OGC's XML-based language for describing and encoding sensors (in situ, satellite and airborne).

sensor web

A networked collection of sensors that can be remotely read and perhaps also controlled.

Sensor Web Enablement

OGC's initiative to develop standards that support linking of environmental sensors to the World Wide Web. A Sensor Collection Service (SCS) server gathers readings from in-situ environmental sensors via a private network (cellular, microwave,

etc.), and provides summaries or interpretations of those readings to SCS clients over the Web.

service

A computation performed by a software entity on one side of an interface in response to a request made by a software entity on the other side of the interface. A collection of operations, accessible through an interface, that allows a user to evoke a behavior of value to the user. ISO - 19119

service chain

A sequence of services where, for each adjacent pair of services, occurrence of the first action is necessary for the occurrence of the second action ISO 19119.

service interface

Source: ISO 19101

Shared boundary between an automated system or human being and another automated system or human being

service metadata

The most basic operation all OGC services must provide is the ability to describe themselves. This "Get Capabilities" operation, yielding a capabilities document, is common to all OWS1 services. An XML vocabulary comprised of several parts for describing different aspects of a service. The first unit describes the service interface in sufficient detail so that an automated process can read the description and invoke an operation that the service advertises. A second unit describes the data content of the service (or the data it operates on) in a way that enables service requestors to dynamically compose requests for service.

Service Model

The general model for online services.

service request

A request by a client of an operation from a service.

SHAPE

An ESRI published spatial data format.

SIF

Standard interchange format. SIF is a format which allows data to be transferred among dissimilar computer systems. SQL stands for Structured Query Language, a relational database.

Simple Feature Model

The general, descriptive model for how earth features may be represented as vector objects (i.e., points, lines and polygons).

SME

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

Small or Medium Sized Enterprise (1-500 employed persons)

SOAP

Source: <http://www.softwareag.com/xml/about/glossary.htm>

"Simple Object Access Protocol, a method invented by Microsoft to use RPC over the internet via HTTP calls. SOAP is now published as an W3C Note and implemented, among others, as part of the Apache XML Project." SOAP is a

protocol specification that defines a uniform way of passing XML-encoded data. It also defines a way to perform remote procedure calls (RPCs) using HTTP as the underlying communication protocol. Development of SOAP is in the care of the W3C's XML Protocols Working Group.

spatial reference system

Source: The OpenGIS® Abstract Specification Topic 2: "Spatial Referencing by Coordinates" <http://www.opengis.org/techno/abstract/02-102.pdf>

As defined in the OpenGIS Abstract Specification Topic 2 and ISO 19111. Position on or near the Earth's surface can be described by spatial reference systems. These are of two basic types: those using coordinates; and those based on geographic identifiers (for example postal addresses, administrative areas). Spatial referencing by geographic identifiers is defined in ISO 19112, Geographic information - "Spatial referencing by geographic identifiers." The subject matter of The OpenGIS® Abstract Specification Topic 2: "Spatial Referencing by Coordinates" is spatial referencing by coordinates.

Spatial Web

The Spatial Web is the spatially enabled World Wide Web. It is also the set of Web-resident open geospatial resources -- data, schemas and services - that enable people to publish, find and use Web-resident geospatial information off all kinds.

specification

A document written by a consortium, vendor, or user that specifies a technological area with a well-defined scope, primarily for use by developers as a guide to implementation. A specification is not necessarily a formal standard.

Specification Program

The OGC Specification Program provides an industry consensus process to plan, review and officially adopt OpenGIS Specifications for interfaces and protocols that enable interoperable geoprocessing services, data, and applications. The OGC bodies involved in the Specification Program are the Technical Committee, Planning Committee, and Strategic Member Advisory Committee.

SQL

Source: <http://www.softwareag.com/xml/about/glossary.htm>

Structured Query Language. "SQL is a standard interactive and programming language for getting information from and updating a database. Although SQL is both an ANSI and an ISO standard, many database products support SQL with proprietary extensions to the standard language"

standard

A document that specifies a technological area with a well-defined scope, usually by a formal standardization body and process.

State Plane Coordinate System (SPC)

A locational reference system developed in the U.S. in the 1930s which provides positional descriptions accurate to 1 foot in 10,000. The SPC system divides the United States into 125 zones (5 cover Texas) and employs both Lambert conformal and Transverse Mercator projections (depending upon a state's size and shape). Within any given SPC zone, X-Y coordinates are given in eastings and northings. A

central meridian passes each zone and is given a false easting of 2 million feet. A false northing of 0 feet is established below the southern limit of each zone.

stove pipe or stove piped

Colloquial term describing systems that are 'islands of automation,' that do not interoperate with other systems. Data in at the bottom, data out at the top, no sharing of data or services laterally.

Strategic Member Advisory Committee (SMAC)

The SMAC is granted authority to operate by the OGC by-laws. The SMAC has as a primary responsibility to recommend areas of strategic opportunity for Consortium operations and to recommend resource strategies in support of Consortium programs to the Board of Directors, Consortium staff and the Membership.

structured code

Refers to software designed such that a small central program makes calls to subroutines organized in external libraries: as opposed to the `spaghetti` code of large monolithic programs with integral functions and subroutines. This approach enables libraries called application programming interfaces (APIs) to provide a standard set of `hooks` by which a program can cooperate with other programs.

Style

Styles provide the mapping from feature types and feature properties and constraints to parameterized symbols used in drawing maps

Styled Layer Descriptors (SLD)

A map-styling language for producing georeferenced maps with user-defined styling

stylesheet

Source: <http://www.softwareag.com/xml/about/glossary.htm>

"A program written in a stylesheet language for converting and/or presenting HTML, SGML, or XML documents. Stylesheet languages are e.g. CSS for HTML (and CSS2 for XML too), XSL for XML and FOSI and DSSSL for both SGML and XML."

sub-assembly

Collection of components. E.g. Customer Management contains many software components including Party, Location, Post Code look-up, and assign new ID number.

surface

2-deminsional geometric primitive, locally representing a continuous image of a region of a plane. (see OGC Abstract Specification (Topic 1) clause 6.3.17)

Surface Configuration Model

Defines the geometric characteristics of the Earth`s surface, exclusive of features which fall upon the surface; defined in terms of elevation, shape, roughness, slope, and aspect, with the later properties possibly derived from elevation.

SVG

"Scalable Vector Graphics, a language for describing two-dimensional vector and mixed vector/raster graphics in XML. SVG graphic types include text and XSLT can transform XML documents into SVG output. Thus SVG is a possible replacement for XSL FO. SVG tools are provided by IBM, CSIRO and Adobe." SVG is a standard

application programming interface (API) for displaying graphics encoded in XML. SVG is used for presentation of GML data.

symbol

Symbols are bundles of predefined graphical parameters and predefined fixed graphic "images".

symbology

Methodology for describing symbols and mapping of the schema to an application schema. Portrayal requires symbology.

synchronous

Calling application requires response to request before proceeding.

System Internal Interface (SII)

An interface between components within an application platform.

Glossary of Terms - T

TC/211

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>

Technical Committee within ISO for Geographic Information/ Geomatics standards

Technical Baseline

The OGC Technical Baseline, at any point in time, is the set of all Adopted Specifications plus all other technical documents that have been approved by the OGC Technical and Planning Committees, including the OpenGIS Reference Model, OpenGIS Abstract Specifications, Recommendation Papers, and Discussion Papers.

Technical Committee

In the OGC Specification Program, the OGC Technical Committee reviews specifications for interfaces and encodings developed either in the Interoperability Program by groups of members, or through an internal proposals process. The Technical Committee and Planning Committee then approve these as "adopted" OpenGIS[®] Specifications for release to the public. The OGC Technical Committee is comprised of the technical representatives of all OGC member organizations. The Technical Committee does the bulk of its work through its Working Groups.

Technical Plan

The OGC Technical Plan, at any point in time, is the set of planned modifications and additions to the Technical Baseline that could occur over a given time horizon. This includes both the specification documents as well as the Supporting Material.

Technology Insertion Project

In OGC: Collaborative project focusing on expanding an organization's interoperability capacity by laying the infrastructure (groundwork) for open implementations.

technology viewpoint

RM-ODP viewpoint concerned with the underlying infrastructure in a distributed system. It describes the hardware and software components used in a distributed system. The infrastructure, which may be provided by a Distributed Computing

Platform (DCP), allows objects to interoperate across computer networks, hardware platforms, operating systems and programming languages.

temporal reference system

The temporal reference system package in the ORM provides elements for describing temporal reference systems, e.g., calendars and clocks.

testbed

In the context of OGC's Interoperability Program, a testbed is a collaborative activity in which sponsors provide interoperability requirements and financial support and technology providers team to develop prototype interoperability interfaces, protocols etc. that meet those requirements. The testbed concludes with a public demonstration, and the prototype-derived specifications are submitted to the OGC Technical Committee for review and approval.

thematic map

A map showing, by color or pattern, the distribution of a single phenomenon

thick clients

Clients that handle much of the necessary computation and data/metadata management themselves; and rather than invoking the processing services of other components, they obtain their inputs through low-level data-access requests.

thin clients

Clients that rely on invoking the services of other components (servers, middleware) for most of the computation they need to function in the system; they also rely on other components to manage most of the data and metadata they use.

TIFF

Tagged Image File Format. A graphic file format developed by Aldus and Microsoft.

TIGER

Topologically integrated geographic encoding and referencing file. This is a type of digital map developed by the U.S. Bureau of the Census to support the 1990 population census. Census maps in TIGER format succeed the previous DIME format. TIGER files are available for every county in the United States and for the millions of census blocks in urban areas. Although the accuracy of TIGER files varies from county to county, partly for reasons beyond the control of the Bureau, they are likely to improve in coming decades. The TIGER files are a particularly important resource for many urban GIS. The Census Bureau is moving to provide TIGER data in GML.

tightly coupled data and service

An instance of a service associated with a specific instance of a dataset.

tightly-coupled

Calling application must have detailed knowledge of interfaces of called application. Call is likely made in same technology, and using same call structure.

tool

A software component, sometimes called an application object, which can act as either a service provider or service requester within an application platform.

topographic map

Source: AGI glossary. <http://www.geo.ed.ac.uk/agidict/welcome.html>

"A map whose principal purpose is to portray the features of the earth's surface. These features might include the cultural landscape, but normally refer to the terrain and its relief."

topology

Properties of geometric forms that remain invariant when the forms are deformed or transformed by bending, stretching, and shrinking. Among the topological properties of concern in GIS are connectivity, order, and neighborhood. One productive use of topology is to accelerate computational geometry. Geometric calculations such as containment (point-in-polygon), adjacency, boundary, and network tracking are computationally intensive. For this reason, combinatorial structures known as topological complexes are constructed to convert computational geometry algorithms into combinatorial algorithms. Another purpose is, within the geographic information domain, to relate feature instances independently of their geometry.

trader

A kind of intermediary service which acquires services from one or more providers for `resale` to a service requester. The trader service insulates requester and provider services from having to interact directly with one another. The trader is responsible to the requester for all aspects of the requested service.

transfer protocol

Source: ISO 19118

Common set of rules for defining interactions between distributed systems.

translation

The process of converting data or commands from one computer format to another, or from one computer language to another.

transparency

The ability of systems or components of systems to hide the details of their implementations from other client or server systems or components of systems.

tuple

An ordered set. Such a set of coordinates that define a point.

Glossary of Terms - U

UDDI

Source: <http://www.softwareag.com/xml/about/glossary.htm>

"Universal Description, Discovery, and Integration, a standard for a platform-independent, open framework for describing services on the Internet, suggested by, among others, IBM, Ariba and Microsoft, September 6, 2000. UDDI is intended mainly for B2B enhancement and is based on the W3C's XML standard and, especially on SOAP". UDDI provides a mechanism for clients to dynamically find other Web services. A UDDI registry is similar to a CORBA trader, or it can be thought of as a DNS service for business applications. A UDDI registry has two kinds of clients: businesses that want to publish a service (and its usage interfaces), and

clients who want to obtain services of a certain kind and bind programmatically to them.

use case scenario

Source: GETIS glossary

A possible sequence of real world events used as a test case for specifying or testing information systems designed to help manage such events.

user domain

Source: GETIS glossary

"User group with common interests in activities in a specific discipline, parts of a discipline or a type of GIS application, e.g. local government, fire brigades, etc."

user portability

The ability of a user to move from one system to another without having to relearn everything necessary to use such as system.

UTM Coordinate System (Universal Tranverse Mercator)

A planar locational reference system which provides positional descriptions accurate to 1 meter in 2,500 across the entire earth's surface except the poles. Based on the Universal Transverse Mercator map projection. At the poles, the Universal Polar Stereographic projection is used. The UTM system divides the earth's surface into a grid in which each cell, excluding overlap with its neighbors, is 6 degrees east to west, and 8 degrees north to south (with the exception of the row from 72-84 degrees north latitude). For any position in the UTM grid, X-Y coordinates can be determined in eastings and northings. Eastings are in meters with respect to a central meridian drawn through the center of each grid zone (and given an arbitrary easting of 500,000 meters). In the northern hemisphere, northings are read in meters from the equator (0 meters). In the southern hemisphere, the equator is given the false northing of 10 million meters.

Glossary of Terms - V

validation

The process of testing an application or system to ensure that it conforms to a specification.

vector

A representation of the spatial extent of geographic features using geometric elements (such as point, curve, and surface) in a coordinate space.

vector displays and databases

Databases that build all geographic features from point, that is, from discrete X-Y locations. Lines are constructed from strings of points, and polygons (regions) are built from lines which close.

vector methods

In geoprocessing, methods of representing geographic features from points, lines, and polygons, as opposed to raster techniques which record geographic features within a matrix of grid cells. The choice between vector and raster GIS has much to do with the application being considered since both methods have strengths and

weaknesses. Many current GIS permit transformation between vector and raster input and output.

view

SQL `Select`, Statement, used to provide temporary information about a given table(s) of a Database Management System without actually creating a subset or new table.

viewpoint

Form of abstraction achieved using a selected set of architectural concepts and structuring rules, in order to focus on particular concerns within a system. ISO-10746-2 In an RM-ODP based description of a multi-tier, multi-network architecture, the Enterprise, Information, and Computation viewpoints describe a system in terms of its purposes, its content, and its functions.

virtual reality (VR)

Refers generally to interactive multimedia environments that present users with a sensory experience similar in some ways to our experience of the real world.

VPF

Vector Product Format. A published vector format used by the US Department of Defense.

Glossary of Terms - W

W3C

World Wide Web Consortium. The organization that manages standards for the Worldwide Web.

Web Coverage Service (WCS)

Supports the networked interchange of geospatial data as "coverages" containing values or properties of geographic locations. Unlike the Web Map Service, which returns static maps (server-rendered as pictures), the Web Coverage Service provides access to intact (unrendered) geospatial information.

Web Feature Service (WFS)

OpenGIS Specification that supports INSERT, UPDATE, DELETE, QUERY and DISCOVERY of geographic features. WFS delivers GML representations of simple geospatial features in response to queries from HTTP clients. Clients access geographic feature data through WFS by submitting a request for just those features that are needed for an application.

Web mapping

Dynamic query, access, processing, combination and portrayal of different types of spatial information over the Web.

Web Mapping Service (WMS)

OpenGIS Specification that standardizes the way in which Web clients request maps. Clients request maps from a WMS instance in terms of named layers and provide parameters such as the size of the returned map as well as the spatial reference system to be used in drawing the map.

Web Mapping Testbeds (WMT) Phases 1 and 2

The groundbreaking Web Mapping Testbed Phase 1 (WMT 1), which ran from June, 1999 to October, 1999, yielded candidate interface specifications for Web mapping that were subsequently approved by OGC's Technical Committee and Planning Committee. The Web Mapping Testbed Phase 2 (WMT 2), which ran from June, 2000 to March, 2001 expanded on this foundation with extensions to those specifications and a set of new draft specifications

Web Registry Service

The Web Registry Service is a software component that supports the run-time discovery and evaluation of resources such as services, datasets, and application schemes.

Web Service Flow Language (WSFL)

Available at: www.oasis-open.org/cover/wsfl.html

Web Services

"Web services are self-contained, self-describing, modular applications that can be published, located, and invoked across the Web. Web services perform functions that can be anything from simple requests to complicated business processes. Once a Web service is deployed, other applications (and other Web services) can discover and invoke the deployed service."

Web Services Definition Language (WSDL)

Available at: <http://www.w3.org/TR/wsd/>

Web Services Description Language (WSDL)

The language for describing and encoding services. The Web Services Description Language (WSDL) is a draft specification from W3C to describe networked services in terms of what they can do, where they reside on the network and how to invoke them.

Well-Known Binary Representation for Geometry (WKBBGeometry)

Data format that provides a portable representation of a Geometry value as a contiguous stream of bytes. Obtained by serializing a geometric object as a sequence of numeric types drawn from the set {Unsigned Integer, Double} and then serializing each numeric type as a sequence of bytes using one of two well defined, standard, binary representations for numeric types (NDR, XDR).

Well-Known Text Representation of Spatial Reference Systems

Format that provides a standard textual representation for spatial reference system information. The definitions of the well-known text representations are modeled after the POSC/EPSC coordinate data.

WFS

See Web Feature Service.

WMS

See Web Map Service

WMS Context

XML document that unambiguously describes the state or "context" of a WMS client states that accounts for a specific grouping of one or more maps from one or

more map servers can be described in a portable, platform-independent format for storage in a repository of for transmission between WMS clients

Working Group (WG)

In OGC, a group of individuals composed of members of the Technical Committee and invited guests, working to solve some particular problem or problems in a particular arena of interoperable geoprocessing. A particular use of the Working Group structure is to generate Requests for Information or Requests for Proposal, and to evaluate responses.

WRS

See Web Registry Service.

WSDL

Web Services Description Language

WWW

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>
"World Wide Web: a collection of protocols, based on IP, and infrastructure that enable efficient, user-friendly publishing, discovery and access to digital information."

Glossary of Terms - X

XIMA

XML for Imagery and Map Annotations, OGC Discussion Paper 01-018: 29.XML Linking Language (XLink), Version 1.0, DeRose, S., Maler, E., Orchard, D., available at: <http://www.w3.org/TR/xlink/>

XML

Source: PreANVIL Glossary <http://www.anvil.eu.com/find/Glossary-english.htm>
XML (eXtensible Markup Language) is the predominant form for interoperable, self-describing data/content, in combination with XML schema definition language. See <http://www.w3.org/XML/>. XML has its roots in SGML, the Standard Generalized Markup Language (an ISO standard). The development of XML came about because of perceived limitations in HTML when used as a tool for publishing complex documents on the Web. <http://www.w3.org>.

XML for Imagery and Map Annotations (XIMA)

The means to encode annotations on imagery, maps, and other geospatial data.

XML for Location Services (XLS)

The encoding method for OpenLS-based Abstract Data Types.

XSLT

"(eXtensible Stylesheet Language Transformation) A language used to convert an XML document into another XML document or into HTML, PDF or some other format."