



Glossary of Geospatial Information in Statistics

Title: Glossary of Geospatial Information in Statistics

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Project: GSGF Collaboration and Awareness in Europe (GSGF-CARE)

Grant agreement number: 101195679 — 2024-FI-GEOS-GSGF-CARE

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ISBN 978-952-244-765-4

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Table of contents

Foreword.....	4
Structure and layout of the glossary.....	5
1 Location and geospatial information concepts.....	9
2 Area-related concepts.....	19
3 Statistical concepts.....	23
4 Geospatial visualisation concepts.....	26
5 Data concepts.....	28
English index.....	31

List of concept diagrams

Concept diagram 1. Location and geospatial information.....	18
Concept diagram 2. Area.....	22
Concept diagram 3. Statistical concepts.....	25
Concept diagram 4. Geospatial visualisation.....	27
Concept diagram 5. Data.....	30

List of figures

Figure 1. GSGF framework.....	13
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Foreword

The Glossary of Geospatial Information in Statistics defines key concepts related to the integration of statistical and geospatial information, providing a terminology ground to incorporate and streamline geospatial production components into statistical business processes. The aim of the terminology work is to provide a common language facilitating the communication and understanding between statistical and geospatial stakeholders across statistical production, clarify concepts by means of definitions and to give consistent recommendations on term usage.

The glossary comprises 50 concepts related to geospatial data, statistics, and the integration of statistical and geospatial information. Relations between concepts are visualised by concept diagrams. The content of each concept is described by means of a definition and supplementary notes.

The glossary has been compiled in a systematic way, following the terminological principles and methods laid down in the international standards drawn up by the ISO/TC 37 (International Organization for Standardization / Technical Committee 37 Language and terminology).¹

The terminology work was carried out as part of the EU-funded GSGF-CARE project (GSGF Collaboration and Awareness in Europe), which promotes the integration of statistical and geospatial data across Europe.

The glossary was prepared by a terminology group of experts from four European countries, with Statistics Finland coordinating the terminology work. The following experts have participated in compiling the glossary:

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The terminology group also consulted several other experts during the project. The opinions received during the comments rounds in spring and autumn 2026 were also taken into account.

¹ See Structure and layout of the glossary.

Structure and layout of the glossary

Concepts, definitions and terms

The aim of the glossary is to produce reliable definitions, concept systems, and term recommendations in English. Therefore, the glossary has been compiled in a systematic way, following the terminological principles and methods laid down in the international standards drawn up by the ISO/TC 37 (International Organization for Standardization / Technical Committee 37 Language and terminology).

The most essential element in terminology work is the concept. While general-language dictionaries focus on words and their meanings, glossaries compiled using terminological methods are based on concepts and the relations between them.

Concepts are mental constructs formed by the human mind that correspond to objects in the real world. **Objects**, for their part, have properties. The abstractions that the human mind derives from properties are called characteristics. The intension of a concept is formed by a group of characteristics, the essential and delimiting ones of which are included in a **definition**. Terminological definitions are elaborated in such a way that they can be used to identify the place of each concept in a concept system. **Terms** are denominations of concepts, and they can be used to briefly refer to the whole content of a concept.

Structure of the glossary

The concepts in this glossary are **thematically** grouped into chapters, and within the chapters, related concepts are placed close to each other.

An **alphabetical index** can be found at the end of the glossary. The numbers in the index refer to the entry numbers used in the glossary. The index consists of preferred, admitted and deprecated terms in the glossary, and it also contains such search words that are closely related to certain concepts in the glossary. Each search word is marked with a reference to the related concept and its entry number.

Structure of terminological entries

The concepts in the glossary are presented in terminological entries and also in diagrams illustrating concept systems. Concept systems and terminological entries are intended to complete each other.

A terminological entry starts by listing the **terms** related to the concept in question. The terms are followed by a **definition**, which begins with a lower-case letter and has no full stop at the end. The definition can be complemented by **notes** providing e.g. supplementary information about the concept, examples or information on term usage.

The following symbols and notations are used in the glossary:

Notation in terminological entry	Explanation of notation
1	concept number; the concepts in the glossary are given consecutive numbers
bold	terms in English; the preferred one first, followed by admitted synonyms
<i>link in italics</i>	(in a definition or note) term in italics is a reference to a concept defined in the glossary; in an electronic version of the glossary, the term works as a link
non-italicised link	(in a definition or note) link that leads to a location outside the glossary, such as a statute or a concept that appears in another glossary
not:	deprecated term; the term does not have the same meaning as the preferred term and should therefore not be used in the defined meaning; or the term is linguistically erroneous or obsolete
>	the term refers to a concept that is narrower than the defined concept
Concept diagram:	reference to one or more concept diagrams containing the concept; in an electronic version of the glossary, the name of the diagram works as a link

Interpreting the concept diagrams

Concept diagrams aim to visualise relations between concepts and help to show each concept as a part of a larger whole. The terminological relations are represented in UML (Unified Modeling Language) notation (see ISO 24156-1 Graphic notations for concept modelling in terminology work and its relationship with UML – Part 1: Guidelines for using UML notation in terminology work). The diagram on the next page gives examples of how concept relations are illustrated.

Representing concepts in diagrams

- concept diagrams display the preferred term and the definition of the concept in question
- concept diagrams may also include terms not in bold-type; they are there to make it easier to interpret the diagram but are not defined in the glossary

Generic relation (line that ends in a triangle —▷)

- between a broader superordinate concept (*geographic location*) and a narrower subordinate concept (*direct position* and *indirect position*)
- the subordinate concept has all the characteristics of the superordinate concept and at least one additional characteristic, and it covers a smaller set of objects than the superordinate concept
- a subordinate concept can be regarded as a special case of the superordinate concept
- the triangle points towards the superordinate concept

Partitive relation (line that ends in a diamond —◇)

- subordinate concepts are parts of the whole formed by the superordinate concept
- the characteristics of the superordinate concept are not included in the subordinate concept the same way as in the generic concept system
- for example, *coordinate reference system* consists of *coordinate systems*
- the diamond points towards the superordinate concept

Associative relation (line without any symbol at the end)

- a concept relation that cannot be classified as generic or partitive (for example, relations based on time, location, function, tool, or origin)
- the type of the relation is usually manifested in the linguistic form of the definition
- for example, the relation between *geospatial data* and *point-based foundation for statistics* is associative

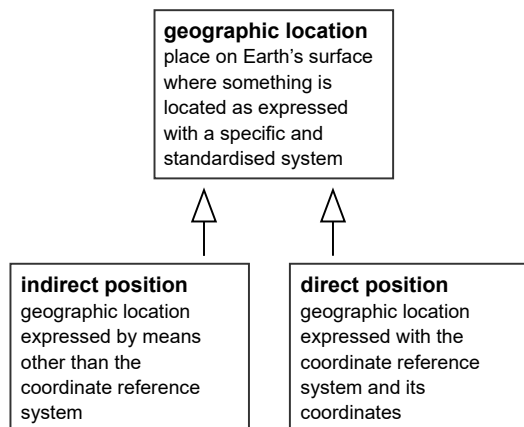
Multidimensional concept system (line connected to a text element showing a criterion of subdivision)

- both generic and partitive concept systems may be multidimensional
- a superordinate concept may be divided into different ranges of subordinate concepts (different dimensions) by applying different criteria of subdivision
- in a generic concept system subordinate concepts that belong to a certain dimension (those concepts shown under the same criterion of subdivision in a diagram) are always mutually exclusive (for example, *vector data* cannot be *raster data*) whereas subordinate concepts that belong to different dimensions can be combined to form new concepts (for example, *vector data* can be *auxiliary data*)
- in a partitive concept system partitive concepts in different dimensions can be used to illustrate different ways of discerning the structure of a comprehensive concept
- the criterion of subdivision is often marked in the middle of the line (for example, data has been divided into subordinate concepts on one hand based on data format and on the other hand based on data type)

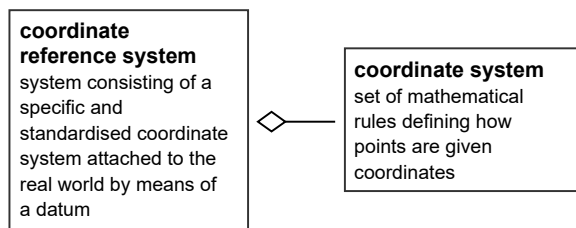
Supplementary information to the definition (dashed line - - -)

- dashed lines illustrate concept relations that are not reflected in the wording of the definition (for example, the associative relation between *geospatial classification* and *correspondence table* is marked with a dashed line because their definitions have no direct reference to each other)
- concept relations marked with dashed lines provide information supplementary to the definition, and help the user to understand concepts
- dashed lines can be used to illustrate any concept relation: generic relation, partitive relation, or associative relation

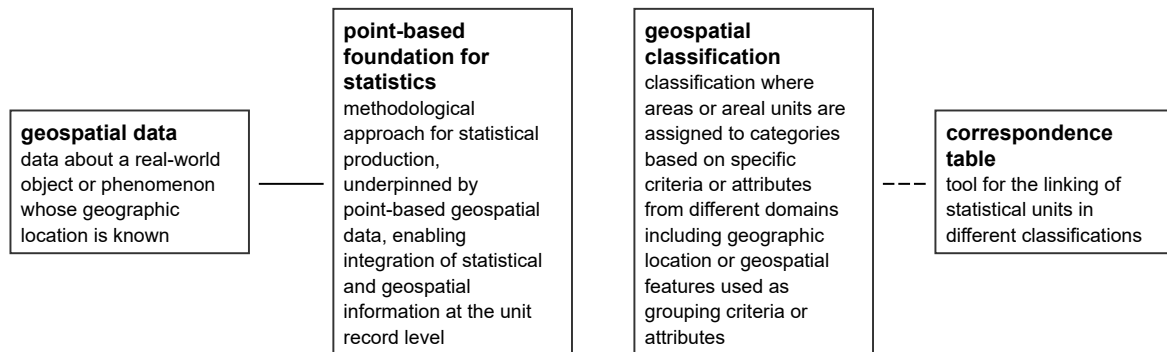
GENERIC RELATION



PARTITIVE RELATION

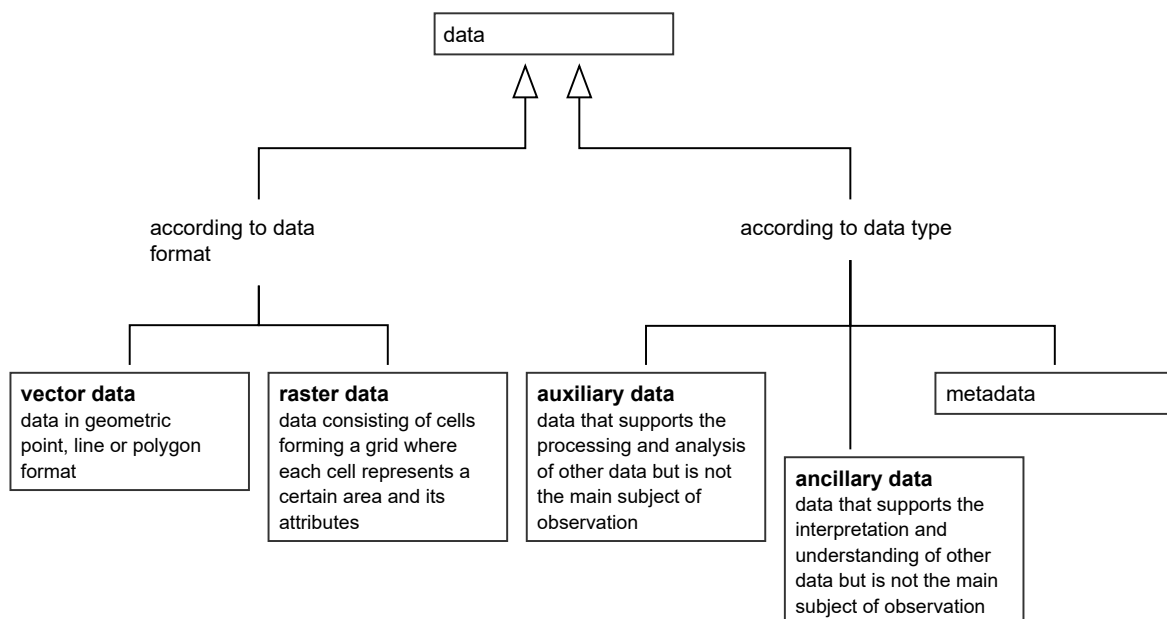


ASSOCIATIVE RELATION



SUPPLEMENTARY INFORMATION TO THE DEFINITION

MULTIDIMENSIONAL CONCEPT SYSTEM



1 Location and geospatial information concepts

1

geographic location; geographical location; geographic position; geographical position

definition

place on Earth's surface where something is located as expressed with a specific and standardised system

note

A unique system can be a [coordinate reference system](#) (see [direct position](#)) or an address or other locating system (see [indirect position](#)).

The geographic location of an object or a phenomenon may change over time due to natural or human-induced processes. In addition, a geographic location may be associated with a specific reference epoch, as its [coordinates](#) are defined relative to a geodetic datum or coordinate reference system that can be time-dependent.

In the ISO 19100 series of standards, the term position refers to the type of data indicating a location and the term location refers to a geographic place.

Concept diagrams: [Location and geospatial information](#), [Statistical concepts](#) and [Geospatial visualisation](#)

2

direct position

definition

[geographic location](#) expressed with the [coordinate reference system](#) and its [coordinates](#)

note

The term coordinate information is often used in communication.

Concept diagram: [Location and geospatial information](#)

3

indirect position

definition

[geographic location](#) expressed by means other than the [coordinate reference system](#)

note

For example, an indirect position can be described with an address, a location ID or other spatial reference system, such a non-quantitative reference or qualitative description of a place or event. More generic and abstract descriptions of location, such as "the house by the lake at the end of the road" are not included.

Concept diagram: [Location and geospatial information](#)

4

geocoding; address geocoding

definition

conversion of an [indirect position](#) into a [direct position](#)

note

In geocoding a text description of a [geographic location](#), such as an address or a place name, is converted into geographic [coordinates](#), assigning a geocode, that spatially references the object or record, and a geometry, e.g. point or area.

Geocoding is a process under the umbrella of the broad processes of [georeferencing](#).

See also [reverse geocoding](#) and [geocode](#).

This concept is defined in the [Global Statistical Geospatial Framework – Second Edition](#) (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64. It is also related to the concept geocode defined there.

Concept diagram: [Location and geospatial information](#)

5

reverse geocoding

definition

conversion of a *direct position* into an *indirect position*

note

In reverse geocoding geographic *coordinates* are converted, for example, into an address. Using reverse geocoding, the objects located near the given coordinates can be identified.

See also *geocoding*.

Concept diagram: *Location and geospatial information*

6

georeferencing

definition

process of assigning non-spatial data to a specific *geographic location*

note

In official statistics, georeferencing associates *statistical unit records* to a specific geographic location for use in *geospatial analysis*.

Georeferencing underlines matching data against known points of reference in the *coordinate system*, e.g. image rectification to survey points or addresses linked to parcel centroids, so that the data can be viewed, processed, queried, and analysed with other *geospatial data*.

Georeferencing encompasses *geocoding*. Georeferencing positions data on a map and geocoding converts places to *coordinates*.

This concept is defined in the *Global Statistical Geospatial Framework – Second Edition* (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64. It is also related to the concept geodesy/geodetic defined there.

Concept diagram: *Location and geospatial information*

7

geocode; geographic identifier; geographic ID; geo ID

definition

code storing references of a *geographic location*

note

The geocodes encompass codes related to *direct* or *indirect position* that can be linked to *statistical unit records* through agreed and standardised coding systems, unique identifiers (primary keys), GIS-based tools (e.g. spatial join) or linked data technologies (e.g. Resource Description Framework). When *coordinates* are not available, codes of *administrative geography* and *statistical geography* can be used in the linkage process as alternative to detailed *geospatial feature*.

Geocodes constitute code items for *geospatial classifications*.

This concept is defined in the *Global Statistical Geospatial Framework – Second Edition* (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64. It is also related to the concept geodesy/geodetic defined there.

Concept diagram: *Location and geospatial information*

8

location data; location information

definition

data about the *geographic location* of an object

note

Geospatial data contains location data, such as *coordinates*, addresses and area codes that are important to *geospatially enabled statistics*.

This concept is defined in the *Global Statistical Geospatial Framework – Second Edition* (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64.

Concept diagrams: *Location and geospatial information*, *Statistical concepts* and *Geospatial visualisation*

9

geospatial data; geospatial information; geographic data; geographic information; geographical data; geographical information; geodata; geoinformation; spatial data; spatial information

definition

data about a real-world object or phenomenon whose *geographic location* is known

note

Geospatial data refers to data that describes the location and attributes of objects, events or phenomenon on Earth's surface, including thematic and temporal attributes. In this regard, geospatial data can be descriptive data involving geographical names (of places), classifications and other characteristics related to *indirect position*.

Geospatial data can be obtained by *georeferencing*.

In its glossary, the Technical Committee 211 of the International Organization for Standardization (ISO) has separately defined the concepts 'geographic data' and 'geographic information'.

This concept is related to the concept authoritative data defined in the [Global Statistical Geospatial Framework – Second Edition](#) (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64.

In addition to geoinformatics, the terms spatial data and spatial information are also used in such fields as neuroscience and space research. In these fields, the terms refer to concepts other than the concept of geospatial data or geospatial information defined in this glossary.

Concept diagrams: [Location and geospatial information](#), [Statistical concepts](#), [Geospatial visualisation](#) and [Data](#)

10

geospatial feature; geographic feature; geospatial object

not: spatial object

definition

geometric representation of *location data*

note

A geospatial feature combines a geometric representation (point, line, or polygon) with associated attribute data, uniquely identifying a real-world entity within a defined *coordinate reference system*.

A geospatial feature has temporal references identifying the time at which the feature was measured and recorded or is valid (timestamp). With this temporal information it is possible to depict the lifespan of the feature in reality or in a dataset.

Geospatial features enable to digitally view and manage location data in a GIS environment.

This concept is defined in the [Global Statistical Geospatial Framework – Second Edition](#) (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64.

Concept diagrams: [Location and geospatial information](#) and [Geospatial visualisation](#)

11

geographic information system; GIS

definition

information technology framework for storing, managing, analysing or displaying [geospatial data](#) and information

note

A geographic information system covers hardware and software. Providers and users of data use practices, standards and services to handle geospatial data. It gathers, organises, processes, and displays various types of geospatial data (e.g. [vector data](#), satellite imagery, maps), as well as non-geospatial data (e.g. alphanumeric or tabular data) to understand spatial patterns, relationships, and geographic context of natural and built events. It enables capturing geospatial data (e.g. [coordinates](#), elevation), storing and managing geospatial data, performing [geospatial analysis](#) (e.g. proximity, clustering), modelling spatial processes and visualising geospatial data.

Geographic information systems provide tools and services for [geospatial data infrastructures](#).

The Global Statistical Geospatial Framework (GSGF) suggests that the geographic information system should be a part of the enterprise architecture of statistical organisations.

This concept is defined in the [Global Statistical Geospatial Framework – Second Edition](#) (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64.

Concept diagram: [Location and geospatial information](#)

12

geospatial data infrastructure; spatial data infrastructure; SDI; infrastructure for geospatial information

definition

infrastructure consisting of [geospatial data](#) and [services](#) supported by technology, human resources, guidelines, standards, and policies that enable the acquisition, storage, maintenance, management, access, and use of such data and services

note

[Geographic information systems](#) provide tools and services for geospatial data infrastructures.

When geospatial data infrastructures (SDI) are at the national level involving national data ecosystems, they are usually referred to as national spatial data infrastructures (NSDI). They are usually built on authoritative geospatial data, officially maintained and provided by a recognised organisation or authority that certifies its reliability and quality.

This concept is related to the concept fundamental geospatial infrastructure defined in the [Global Statistical Geospatial Framework – Second Edition](#) (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64.

Concept diagram: [Location and geospatial information](#)

13

integration of statistical and geospatial information; integration of geospatial and statistical information; integration of statistical and geospatial data; integration of geospatial and statistical data

definition

systematic approach for embedding [geospatial information](#) throughout the statistical production process

note

The UN Global Statistical Geospatial Framework (GSGF) provides a structured approach to linking statistical and geospatial data. It is a reference framework covering data inputs, five key elements, five principles, and outputs. See [Figure 1. GSGF framework](#) and the document [Global Statistical Geospatial Framework](#).

In the practical production of statistics, the Geospatial View of the [GSBPM](#) (GeoGSBPM) describes geospatial-related activities, in particular, those that are needed to produce [geospatially enabled statistics](#), using the framework of the GSBPM.

[Location interoperability](#) is a key requirement for an effective integration of statistical and geospatial information.

Concept diagram: [Location and geospatial information](#)

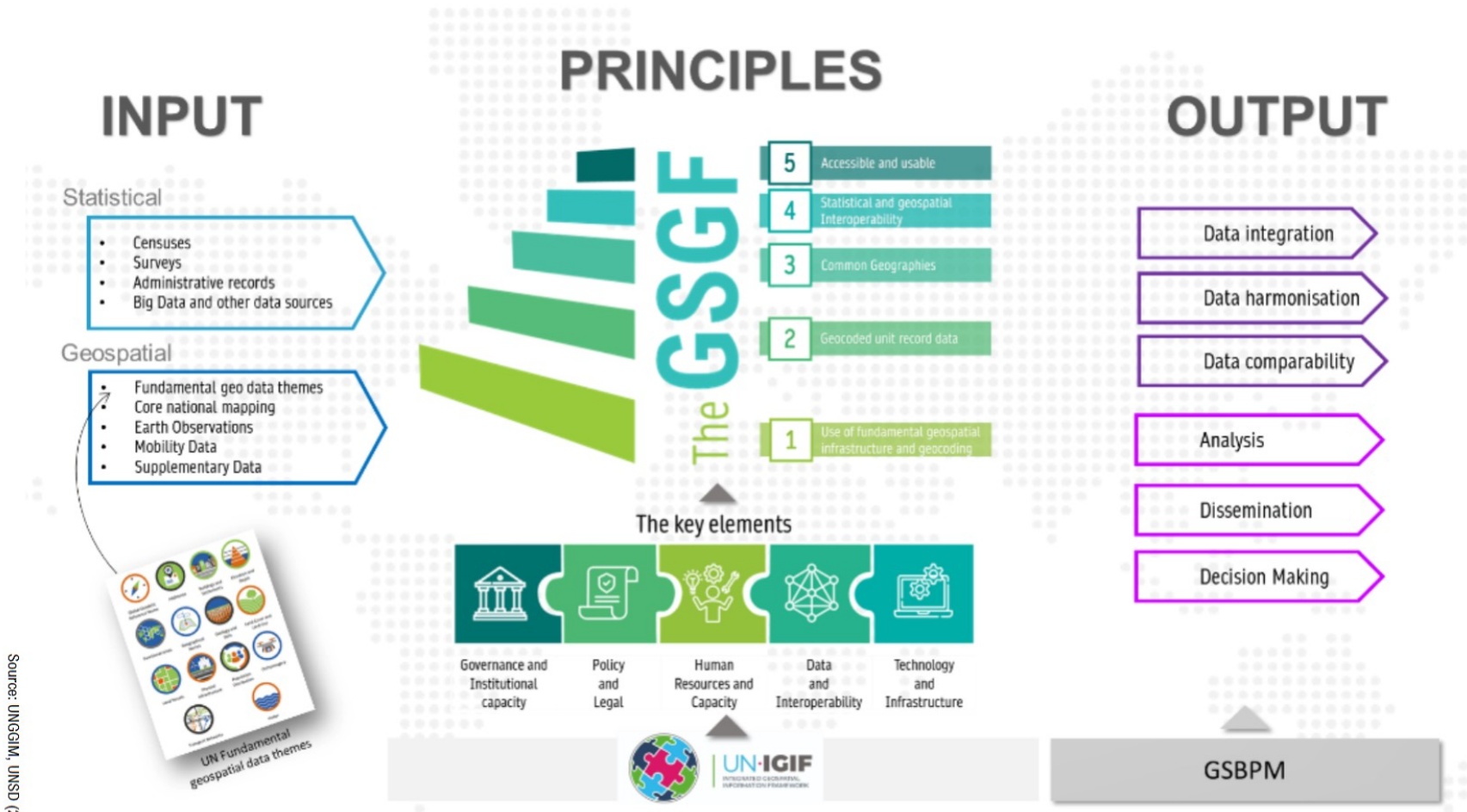


Figure 1. GSGF framework.

Source: UNGGIM, UNSD (2025) / The Global Statistical Geospatial Framework. Second edition. 2025.

14

statistical-geospatial framework; statistical spatial framework; location framework

definition

framework that defines an information infrastructure composed of conceptually integrated and technically connected statistical and *geospatial data* establishing functional relationships between both types of data

note

A statistical-geospatial framework in a basic form may be understood as two separate frameworks, a geospatial framework and a statistical framework that are joined together technically, semantically, and structurally.

A statistical-geospatial framework can be understood as a set of guidelines and models on how to integrate statistical and geospatial data sources to generate new information through processing steps, and to improve the production process of information. From a user perspective, the framework should allow the user to discover, access, integrate, analyse, and visualise statistical information for any area of interest.

A statistical-geospatial framework can address organisational issues, such as a data policy on scale, data maintenance, and data quality and to regulate access conditions to data, dissemination rights of information, data protection, and confidentiality.

A statistical-geospatial framework can be used as a bridge to connect both statistical and geospatial communities through common guidelines, standards, and approaches.

The Global Statistical Geospatial Framework (GSGF) and the Geospatial View of Generic Statistical Business Process Model (GeoGSBPM) are examples of reference statistical-geospatial frameworks.

Concept diagram: [Location and geospatial information](#)

15

geospatial service; geographic information service; GI Service; spatial data service

definition

digital service that is meant for the accessing, processing or displaying *geospatial data*

note

Geospatial services can be human-readable or machine-readable, such as *web mapping services*, *web feature services*, and web processing services, including API-based implementations.

To ensure *location interoperability* it is important to design and build geospatial services on standards. OGC (Open Geospatial Consortium) standards are internationally recognised specifications for geospatial web services. Non-OGC web service standards are also widely supported by modern GIS software and can be grouped into commercial de facto standards, cloud-native formats, and specialised community APIs.

Concept diagram: [Location and geospatial information](#)

16

location interoperability; > geospatial interoperability

definition

ability of organisations, processes, systems, and applications to exchange, use, and understand [location data](#) by adopting coherent and consistent approaches at technical, semantic, organisational, and legal levels

note

Location interoperability makes it possible to exchange and make use of information with direct or indirect reference to a [geographic location](#) for government policy and digital public services. It involves coherent interactions between processes, people, organisations, data of all types, and technology, and supports relationships between public administrations and between them and businesses and citizens. Common statistical and geospatial standards, preferably open, are fundamental to ensure location interoperability.

Full location interoperability enables an effective [integration of statistical and geospatial information](#).

Geospatial interoperability is a more technical subset of location interoperability, focusing on [geospatial data](#), [services](#) and applications can work together across different systems and platforms, and therefore, involving standards on geospatial data and services.

This concept is related to the concept interoperability defined in the [Global Statistical Geospatial Framework – Second Edition](#) (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64.

Concept diagram: [Location and geospatial information](#)

17

geospatial analysis; spatial analysis; geographic data analysis; geographic information analysis

definition

analysis that uses and processes [geospatial data](#) in tools to understand spatial relationships

note

Geospatial analyses involve more-or-less advanced geospatial analysis methods and geoprocessing tools, usually in a GIS environment.

Geospatial analyses compute [location data](#) to discover and depict spatial relationships and patterns.

Concept diagram: [Location and geospatial information](#)

18

geographical differencing

definition

process containing [geospatial analysis](#) that involves comparing two or more spatial datasets covering the same geographic area but using different, potentially overlapping geographic subdivisions, in order to identify and quantify differences between them

note

In geographical differencing, for example, statistical data for overlapping geographic areas are compared or subtracted from each other to derive information about the areas where their spatial coverage differs.

Geographical differencing issues may lead to disclosure risks in statistical data releases when data for two or more overlapping or related geographical areas are published. By comparing the differences between the areas, it may be possible to infer confidential information about small populations or individual respondents in specific locations. See, for example, [Privacy risks for regionalised data](#), Diagram A and Diagram B (Australian Bureau of Statistics).

Concept diagram: [Location and geospatial information](#)

19

Earth observation; EO

definition

process of gathering, processing, and analysing information about the Earth's surface, waters and atmosphere via ground-based, airborne or satellite remote sensing platforms

note

Remote sensing, such as satellite imagery as well as in-situ observations (e.g. with ground-based devices), are included in the Earth observation domain.

Earth observation can be used to monitor and assess the state of natural and built environments and to detect changes over time, supporting statistics in several domains, such as Sustainable Development Goals (SDGs) monitoring, agriculture, environment, land use, land cover, and maritime activities.

Earth observation can provide consistent, scalable, and repeatable [geospatial data](#) that strengthens statistical production by improving sampling, enabling new indicators, and enhancing the quality and timeliness of statistics.

Concept diagram: [Location and geospatial information](#)

20

coordinate

definition

each of the numerical values, within a selected n-dimensional space, that defines the [geographic location](#)

note

The coordinate can be represented in a tridimensional or bidimensional space.

The number of numerical values is the same as the number of axes in a [coordinate system](#).

Coordinates are usually shown on x, y, and z axes. The order of the axes depends on the definition of the [coordinate reference system](#); for example, x can denote north and y can denote east or x can denote east and y can denote north.

Geographic coordinates are composed by a pair of values on latitude (y-coordinates) and longitude (x-coordinates) that represent the distance from an origin along two axes, on a vertical axis and a horizontal axis, respectively.

See also [geocode](#).

Concept diagram: [Location and geospatial information](#)

21

coordinate system

definition

set of mathematical rules defining how points are given [coordinates](#)

note

A coordinate system can be understood as a set of measurement axes consisting of the coordinate axes.

A geographic coordinate system, a rectangular coordinate system (also known as Cartesian), a planar coordinate system, a projected coordinate system, and a vertical coordinate system are examples of coordinate systems.

See also [geocode](#).

Concept diagram: [Location and geospatial information](#)

22

coordinate reference system

definition

system consisting of a specific and standardised [coordinate system](#) attached to the real world by means of a datum

note

The coordinate reference system can be used to uniquely indicate the [geographic location](#) of an object.

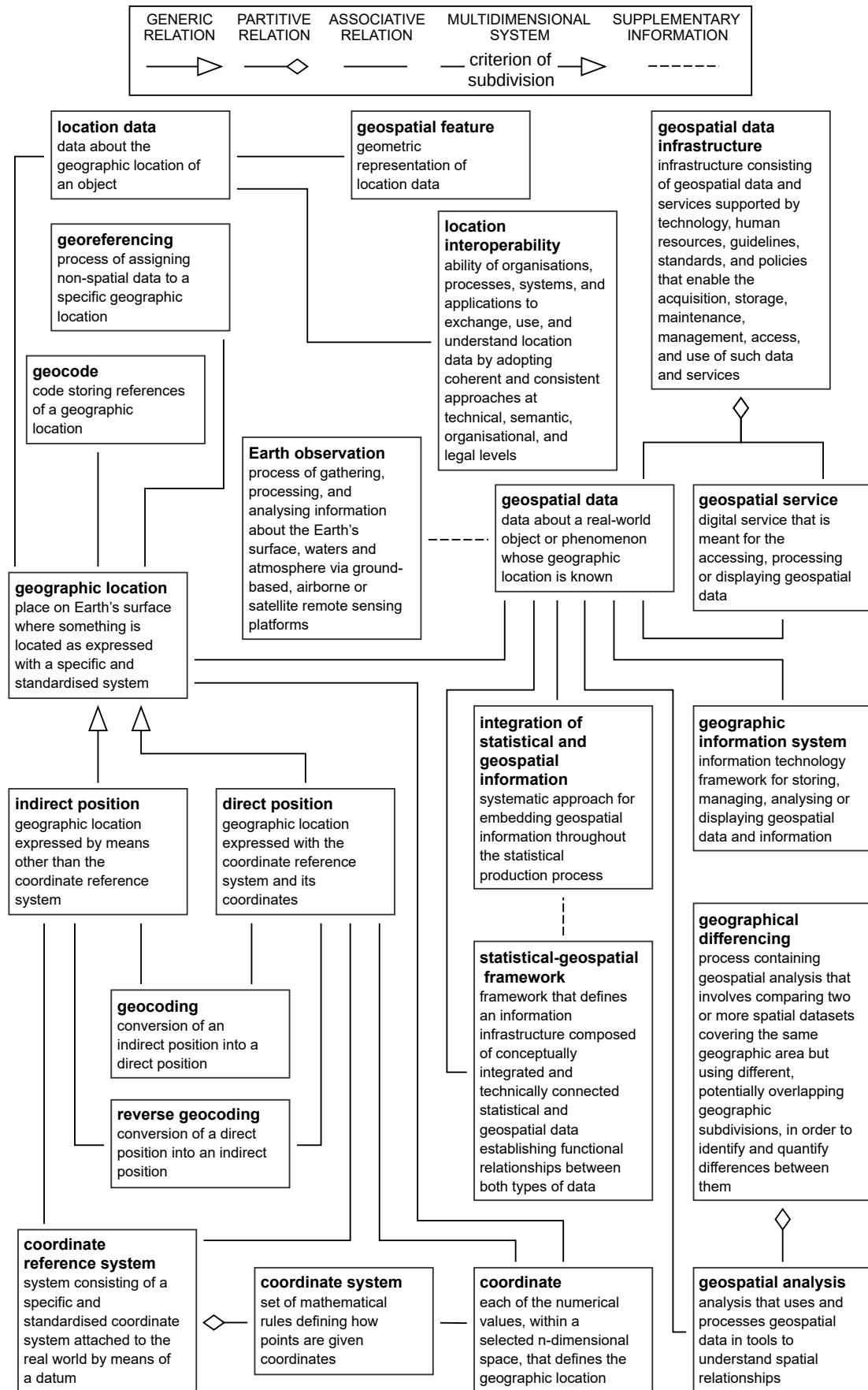
A datum is a parameter or set of parameters that defines the origin, scale, and orientation of a coordinate system. It defines the position of a coordinate system in relation to Earth's surface.

The coordinate reference system can be global, regional (used, for example in a single continent) or local (used, for example, in a single country or region).

The ETRS-LAEA coordinate reference system (EPSG:3035) should be used for statistical cooperation at the European level. Navigation systems often use global coordinate reference systems, such as WGS84.

See also [geocode](#).

Concept diagram: [Location and geospatial information](#)



Concept diagram 1. Location and geospatial information.

2 Area-related concepts

23

geographical division; areal division; geospatial division; spatial division; > regional division; > territorial division

definition

result of the division of a geographical area into different geographic units

note

Geographic units are usually nested partitions or hierarchical units with a defined life cycle (e.g. start and end date). An area can be divided into units based on administrative criteria (for example, administrative division based on municipal, provincial, or regional division), statistical criteria (for example, enumeration areas or blocks for the population and housing censuses, statistical cities or other types of statistical areas used for statistical purposes) or functional criteria (for example, based on statistical grid cells or derived from *geospatial analysis*, such as basic services or workplace catchment areas, economic areas, protected sites, regulation zones, etc.).

In official statistics geographical divisions are units to support data collection, analysis, and dissemination.

Concept diagram: [Area](#)

24

geospatial classification; geographical classification; geographic classification; territorial classification; areal classification

definition

classification where areas or areal units are assigned to categories based on specific criteria or attributes from different domains including *geographic location* or *geospatial features* used as grouping criteria or attributes

note

Geospatial classifications are usually hierarchically composed by nested areas.

Geospatial classifications are usually supported and maintained by *correspondence tables* in order to serve statistical production.

With the aid of such codes as municipality codes, the geospatial classification can be combined with the *geographical division* in effect at the same time.

Geospatial classifications can be based on geographies underlying normative classifications (such as *administrative geographies*) or divisions based on *geospatial analyses* (such as accessibility analyses).

Geospatial classifications can also include regional or local typologies (based on the geographical detail of the output geographies), or functional typologies (based on geographical divisions using functional criteria, such as statistical grid cells).

Geospatial classifications are, for example, classifications based on population density, functional aspects, such as labour market areas, or geographical criteria, such as mountain or coastal areas. Often geospatial classifications are used to collect harmonised data and compare statistics between different areas, and allow for reporting more detailed statistics.

In statistical production, geospatial classifications usually embody geospatial-based categories, variables, and unit types, in which geographical criteria are used to register input data (e.g. statistical surveys or administrative registers) and to define the characteristic that is to be measured. In this context, geospatial classifications aim to represent the geographic concept of statistics. Geospatial classifications support data collection, analysis, and dissemination.

On the European level the Regulation (EC) No [1059/2003](#) of the European Parliament and of the Council of 26 May 2003 on the establishment of a common classification of territorial units for statistics (NUTS) establishes a common statistical classification of territorial units which are based on local administrative units (LAUs). The Regulation (EU) [2017/2391](#) of the European Parliament and of the Council of 12 December 2017 amending Regulation (EC) No 1059/2003 as regards the territorial typologies (Tercet) specifies territorial typologies such as degree of urbanisation (DEGURBA), functional urban areas (FUA) or urban-rural typology.

Concept diagram: [Area](#)

25

correspondence table; conversion table; > geographic lookup table

definition

tool for the linking of *statistical units* in different classifications

note

A correspondence table systematically explains where, and to what extent, the categories in one classification may be found in other classifications, or in earlier versions of the same classification, e.g. administrative units or the Nomenclature of territorial units for statistics (NUTS).

Correspondence tables are important tools to compare and standardise data, either between different versions of the same classification or between two different classifications.

A one-to-one link between different versions of classifications might not always be possible, or only for a limited number of codes of the classification or at a more aggregated level. A correspondence table is a conceptual mapping between classifications.

Correspondence tables are also used to link data from statistical and *geospatial classifications*.

This concept is defined in the *Global Statistical Geospatial Framework – Second Edition* (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64.

Concept diagram: [Area](#)

26

administrative geography

definition

geographical areas used for administrative, governmental, political or legal purposes

note

For example, administrative geographies are countries, provinces, regions, counties, and municipalities.

The boundaries of administrative geographies may change over time due to political decisions or administrative reforms. Administrative geographies are therefore maintained with a defined life cycle (e.g. start and end date).

This concept is defined in the *Global Statistical Geospatial Framework – Second Edition* (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64.

Concept diagram: [Area](#)

27

statistical geography

definition

geographical areas used for statistical purposes

note

Statistical geographies are defined for the purpose of collecting, analysing, and reporting statistical data. For example, they are census blocks or statistical grid cells.

Statistical geographies have a defined life cycle, including a start date and, where applicable, an end date.

In the European Statistical System, statistical geographies are built on a system of local administrative units (LAUs), compatible with the Nomenclature of territorial units for statistics (NUTS) as the building blocks (subdivisions) of this regional classification.

This concept is defined in the *Global Statistical Geospatial Framework – Second Edition* (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64. It is also related to the concept enumeration geography defined there.

Concept diagram: [Area](#)

28

functional geography; hybrid geography; integrative geography

definition

geographical areas established based on functional and non-traditional criteria used for several purposes

note

Functional geographies can be both the input and result of [geospatial analyses](#). They can also be used to combine statistical and [geospatial data](#) or to explore the spatial attributes of statistical data to produce geographical areas that do not fit to the boundaries defined in [administrative](#) or [statistical geographies](#), such as spatial accessibility or demand areas.

Functional geographies can use grid-based approach, for example functional urban areas and degree of urbanisation.

For example, functional geographies are economic and labour market areas, transport areas, environmental and ecological areas.

This concept is related to the concept Discrete Global Grid System (DGGS) defined in the [Global Statistical Geospatial Framework – Second Edition](#) (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64.

Concept diagram: [Area](#)

29

grid; grid net

definition

partition of a geographic area into cells that together provide complete spatial coverage without overlaps or gaps

note

While the concept of a grid can be generalised to multiple dimensions, this definition focuses on the two-dimensional grids commonly used in statistical and geospatial applications.

Grid cells may be square, rectangular, triangular, hexagonal, or other geometric shapes, depending on the grid system used.

Grids are usually referred to by the map projection or [coordinate system](#) (Cartesian coordinates) they represent, such as ETRS-LAEA grid (European Terrestrial Reference System 1989 ensemble – Lambert azimuthal equal-area projection – EPSG:3035) and Universal Transverse Mercator grid.

Grids provide a stable geospatial framework over time, helping to reduce the spatial, temporal and methodological limitations associated with traditional geographies, such as [administrative geographies](#). Grids are commonly used for [georeferencing](#), [geospatial analysis](#), and the production and dissemination of [geospatially enabled statistics](#).

In a map or geographic dataset, each grid cell represents a portion of Earth, such as a square meter or square mile, and usually has an attribute value associated with it, such as soil type or vegetation class. It can be designated as a pixel.

For example, a grid cell can have a size of 1 km x 1 km or 250 m x 250 m.

This concept is defined in the [ISO 19123-1:2023 Geographic information — Schema for coverage geometry and functions. Part 1: Fundamentals](#).

Concept diagrams: [Area](#) and [Statistical concepts](#)

30

population grid

definition

[grid](#) relating to population data and statistics

note

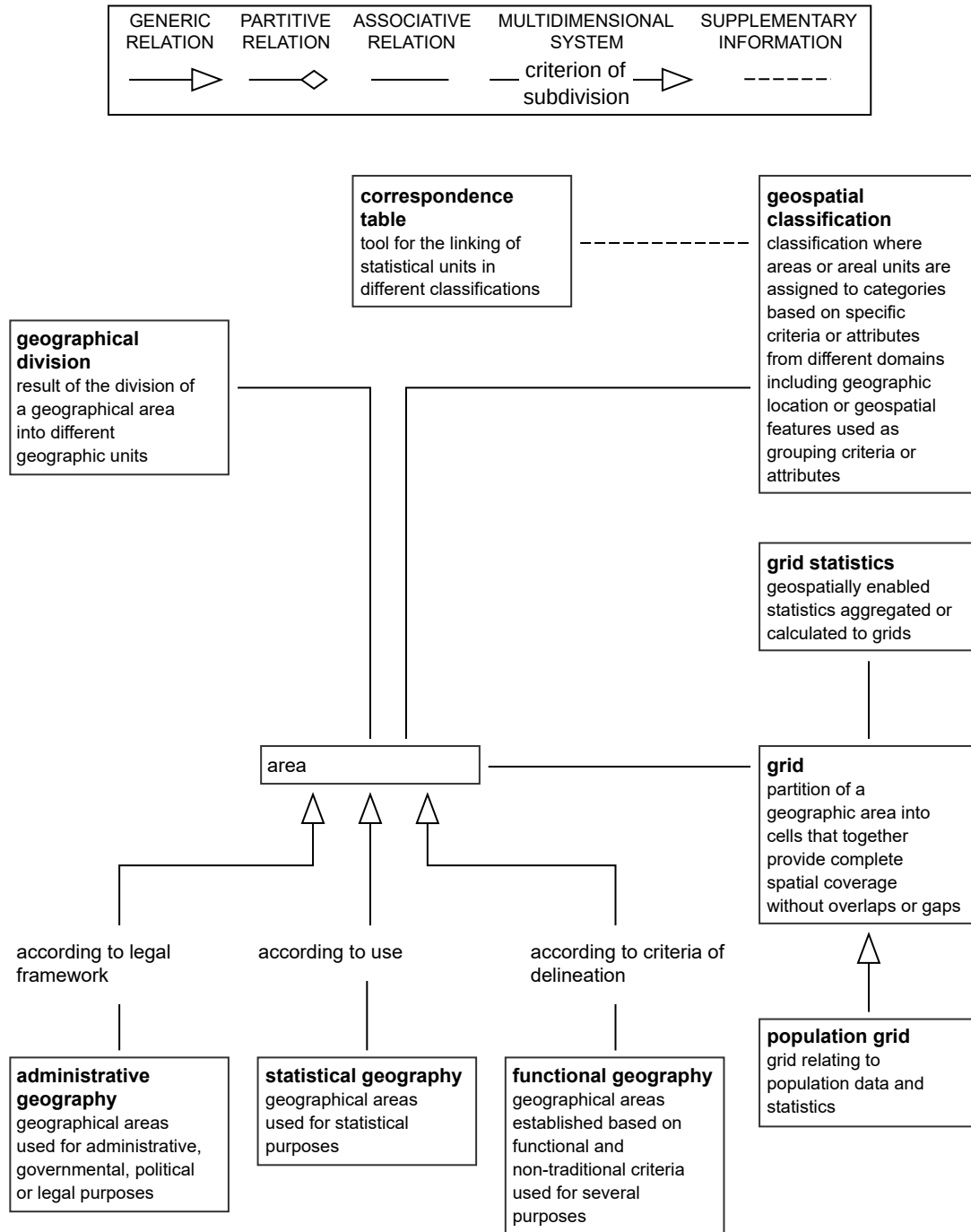
For example, population grids are used to store the number of inhabitants as well as other demographic variables in order to map the spatial distribution of population in a particular territory. Population grids enable to analyse population dynamics over space and time, by overcoming administrative boundaries and statistical areas changes.

Each population grid cell has a unique code (an identifier) for data integration.

The 2021 EU Census Programme introduced harmonised population data on a 1 km² grid.

Building on this approach, the European Population Statistics (ESOP) framework supports the continued production and dissemination of population statistics on standardised grids.

Concept diagram: [Area](#)



Concept diagram 2. Area.

3 Statistical concepts

31

statistical unit

definition

basic unit used in the compilation and production of statistics

note

Statistical units include, for example, a natural person, a household, a business, and a municipality. A statistical unit may also be an event happening in the natural or built environment, such as a natural disaster, a criminal offence, or a traffic accident.

A statistical unit and a unit of statistical analysis are two different concepts. A unit of statistical analysis is an object to which statistical data are attached or which statistical data describe. For example, [statistical geographies](#) and other geographical areas can serve as units of statistical analysis.

See also [statistical unit record](#) and [geospatial implementation of statistical units](#).

This concept is related to the concept statistical unit record defined in the [Global Statistical Geospatial Framework – Second Edition](#) (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64.

Concept diagram: [Statistical concepts](#)

32

statistical unit record; statistical record

definition

record containing data of a [statistical unit](#)

note

For the [integration of statistical and geospatial information](#) it is recommended to geocode or geospatially enable statistical data at the unit record level to allow statistics to be applied to any geographical context. Therefore, after [geocoding](#) is performed on statistical unit records, they or the associated data can be aggregated into larger geographical units (e.g. states, provinces, or municipalities) for the purpose of [geospatial analysis](#) and dissemination.

Statistical unit records are also referred to as micro data in statistics.

This concept is defined in the [Global Statistical Geospatial Framework – Second Edition](#) (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64.

Concept diagram: [Statistical concepts](#)

33

geospatially enabled statistics; geospatial statistics; location-based statistics; location-enabled statistics

definition

statistics containing [location data](#) or statistics that can be linked to location data

note

[Geographic location](#) is used as a key matching variable to retrieve geospatially enabled statistics and to turn statistical data into [geospatial data](#) for integration, analysis, and dissemination purposes.

For example, demographic, building and housing statistics based on population, building or address registers contain location data or location data can be incorporated in them.

This concept is defined in the [Global Statistical Geospatial Framework – Second Edition](#) (UN EG-ISGI, 2025), Appendix 6. Definitions of Terms, pp. 60–64.

Concept diagram: [Statistical concepts](#)

34

grid statistics; gridded statistics

definition

[geospatially enabled statistics](#) aggregated or calculated to [grids](#)

note

Examples of grid statistics are [population grids](#) which describe population structure and dynamics in a certain region or country.

Concept diagrams: [Area](#) and [Statistical concepts](#)

35

zonal statistics

definition

statistics calculated from the cell values of a raster within the zones defined by another dataset that usually is [vector data](#)

note

Zonal statistics are useful to calculate summary statistics, such as minimum, maximum, sum or mean, of the selected zone. They are also suitable for comparing metrics across different geographic areas.

Zonal statistics have several applications in [Earth observation](#), such as in agriculture, environment, urban planning, and disaster management.

Concept diagram: [Statistical concepts](#)

36

point-based foundation for statistics

definition

methodological approach for statistical production, underpinned by point-based [geospatial data](#), enabling [integration of statistical and geospatial information](#) at the unit record level

note

A point-based foundation for statistics uses point-based [location data](#) of [statistical units](#), such as buildings, dwellings, and addresses. There are also statistical production methods based on areal geometry, such as cadastral parcels, administrative units, and [grids](#).

Point-based foundation for statistics provides a robust territorial flexibility for tailored data aggregation, enhances fit-for-purpose [geospatial analysis](#), and allows more adaptability to changes in geographies over time.

Concept diagram: [Statistical concepts](#)

37

geospatial sampling; geosampling; spatial sampling

definition

sampling design process in statistical production to build a geocoded sampling frame by using [geospatial data](#) and the [geographic location](#) of [statistical units](#)

note

Geospatial sampling takes into account spatial autocorrelation, principles of spatial variation, and the spatial structure and properties of the data. It is based on a geospatial-driven sampling design and framework.

For more information and examples, see [Handbook of Spatial Analysis](#), chapter 10 Spatial sampling (Eurostat).

Concept diagram: [Statistical concepts](#)

38

geospatial implementation of statistical units

definition

concrete geospatial representation of a [statistical unit](#) at a given time, linking a stable statistical identity to a specific geometry or boundary dataset

note

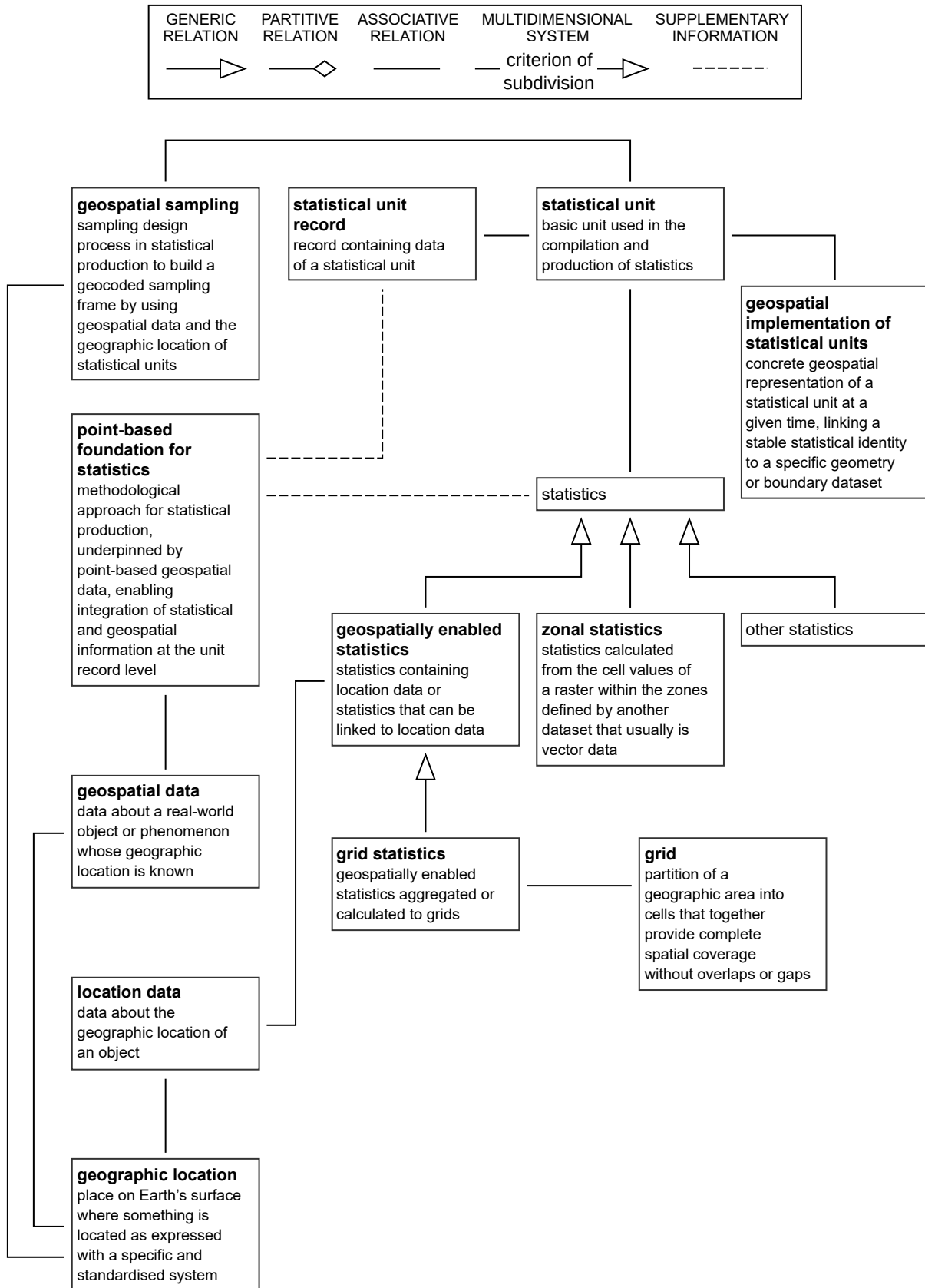
The statistical identity can be e.g. a classification or a unit identifier.

Statistical units, such as small areas, provide a stable conceptual and analytical reference over time, while their geospatial representations may change due to improved mapping or natural processes.

Different geospatial implementations may exist for the same statistical unit, each reflecting its geographic reality at a specific point or period in time.

The geospatial implementation of statistical units ([geospatial features](#)) distinguishes the stable statistical identity (basic identification attributes such as [geocodes](#)) from their evolving spatial geometry. It supports consistent and comparable longitudinal spatio-temporal analysis despite changes in mapped boundaries, overcoming traditional methodological and technical shortcomings.

Concept diagram: [Statistical concepts](#)



Concept diagram 3. Statistical concepts.

4 Geospatial visualisation concepts

39

basemap; base map

definition

map which contains basic [location data](#) and which serves as a background for the visualisation of thematic content

note

A basemap provides geographic context for additional data layers that are overlaid on top of the basemap. Information can be superimposed onto a basemap to create a more complex map, for example, population data or geological information.

A basemap underlines the basic content of a map, including the topographic elements as complement to the thematic content. The background elements of the basemap place the thematic content in [geographic location](#), facilitating its interpretation. See [thematic map](#).

Basemaps usually provide location references for features that do not change often, such as boundaries, rivers, lakes, roads, and highways.

Concept diagram: [Geospatial visualisation](#)

40

thematic map

definition

map that geographically represents a chosen phenomenon or theme through different cartographic presentation methods that use both qualitative and quantitative data

note

A thematic map may represent several phenomena at the same time. A thematic map may also be called a statistical thematic map or statistical map when the information represented in it is based on statistical information.

A choropleth map is the most typical thematic map used to support visual analysis and dissemination of statistical information. In choropleth maps areas are styled to represent the variation of values for some variable, for example the population density of various regions in a country.

Concept diagram: [Geospatial visualisation](#)

41

web mapping service; image map service; map image service

definition

web-based service that produces map images from [geospatial data](#) and delivers them to users typically as pre-rendered raster map layers

note

The web mapping service transforms underlying geospatial data into visual cartographic representations that can be viewed but not directly edited as data, see [web feature service](#).

[Basemaps](#) and [thematic maps](#) can be distributed via web mapping services.

Concept diagram: [Geospatial visualisation](#)

42

web feature service

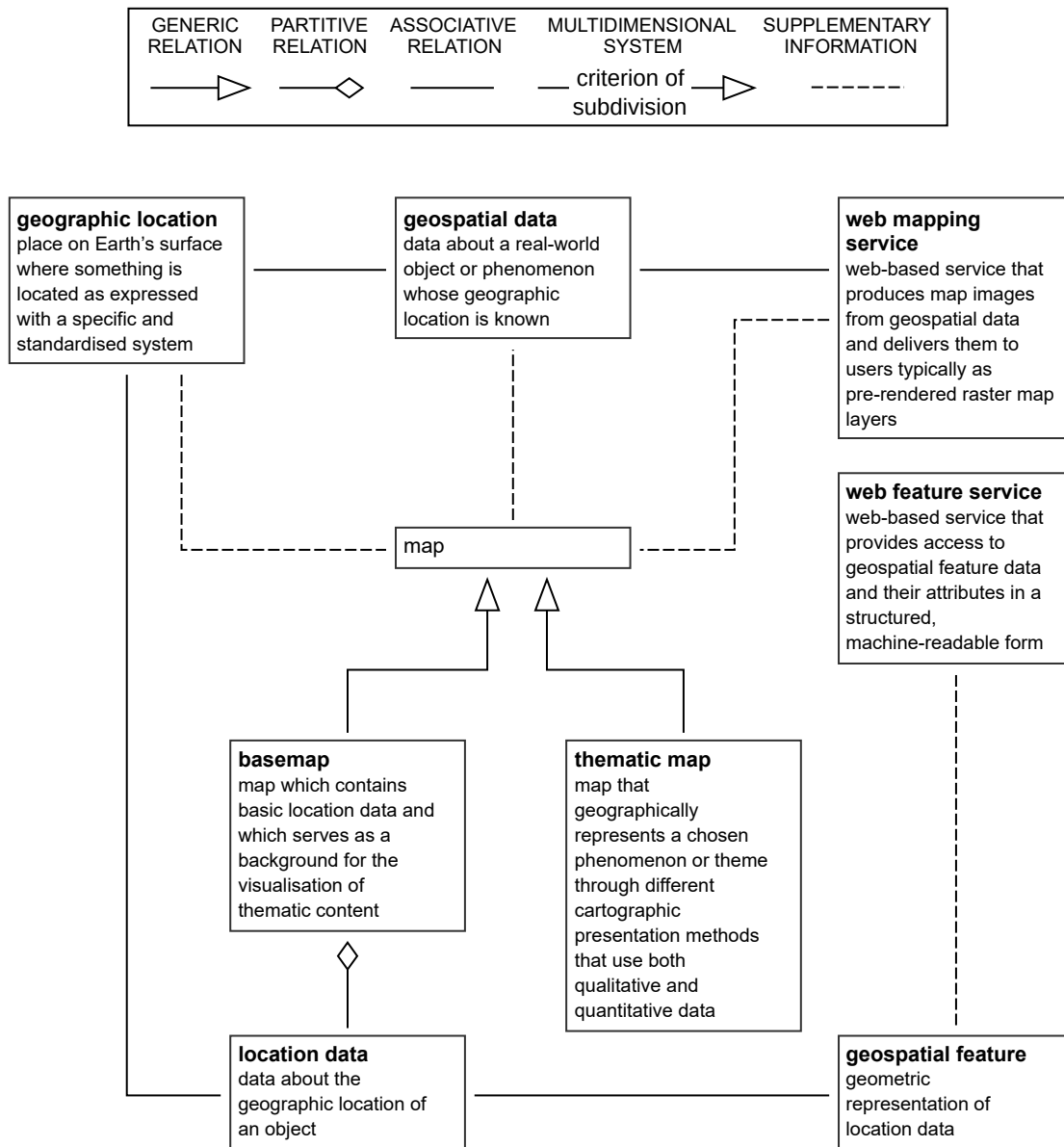
definition

web-based service that provides access to [geospatial feature](#) data and their attributes in a structured, machine-readable form

note

Unlike [web mapping services](#), web feature services deliver vector features that can be queried, downloaded, and further analysed or processed by the user in the GIS environment (see [geographic information system](#)).

Concept diagram: [Geospatial visualisation](#)



Concept diagram 4. Geospatial visualisation.

5 Data concepts

43

vector data

definition

data in geometric point, line or polygon format

note

Geospatial data can be represented in two main formats: vector data or *raster data*. The *coordinates* of points, lines, and polygons enable to place them on maps.

Vector data can be used to represent *geospatial features*.

Concept diagram: [Data](#)

44

raster data

definition

data consisting of cells forming a *grid* where each cell represents a certain area and its attributes

note

Geospatial data can be represented in two main formats: raster data or *vector data*.

Each raster cell represents a *geographic location* and contains information about the attribute or phenomenon in question.

Concept diagram: [Data](#)

45

auxiliary data

definition

data that supports the processing and analysis of other data but is not the main subject of observation

note

In statistical production, *geospatial data* can be used as auxiliary data when they contribute to calibration, imputation, small-area estimation, or the enhancement of other data sources.

Changes in auxiliary data may lead to changes in the output of the statistical process, as these data are used directly as inputs or supporting variables within the production workflow, cf. *ancillary data*.

In the population disaggregation process, auxiliary data such as built areas, satellite night-time lights intensity, and land-use maps are used to allocate population counts to more detailed spatial units.

Concept diagram: [Data](#)

46

ancillary data

definition

data that supports the interpretation and understanding of other data but is not the main subject of observation

note

Ancillary data can be used to validate input data.

Changes in ancillary data do not alter the statistical output itself, since they are not used to generate or modify the results. However, they may affect the interpretation, contextualisation or assessment of those outputs, as ancillary data provide additional background information that helps users understand the results. Cf. *auxiliary data*.

Ancillary data often describe conditions, environment, or metadata around the main dataset. For example, demographic information on respondents of a survey and the sensor calibration information for satellite imagery are ancillary data.

Concept diagram: [Data](#)

47

geographical coverage; geographic coverage; spatial coverage; spatial extent

definition

metadata element that describes the geographic extent of a resource

note

Resource can be a dataset, a data product or a [geospatial service](#) related to these.

Geographical coverage is commonly described by using named geographic areas, bounding boxes, or polygon representations. It is used to facilitate data discovery.

With a known geographical coverage the user can find data on their area of interest.

Concept diagram: [Data](#)

48

spatial resolution

definition

metadata element that describes in what level of detail the [geographic location](#) is expressed in a geographic dataset

note

Spatial resolution can be expressed, for example, with a scale or a cell size.

Spatial resolution affects the level of detail or granularity represented in an image.

Spatial resolution can be defined based on the smallest feature or element represented on a map (minimum mapping unit).

Concept diagram: [Data](#)

49

temporal resolution

definition

metadata element that describes how frequently data is collected or updated over time

note

A high temporal resolution requires frequent data collection and is crucial when you want to monitor changes that happen quickly.

Concept diagram: [Data](#)

50

EO-derived variable

definition

variable calculated by using Earth observation data obtained from satellite, airborne or other remote sensing platforms

note

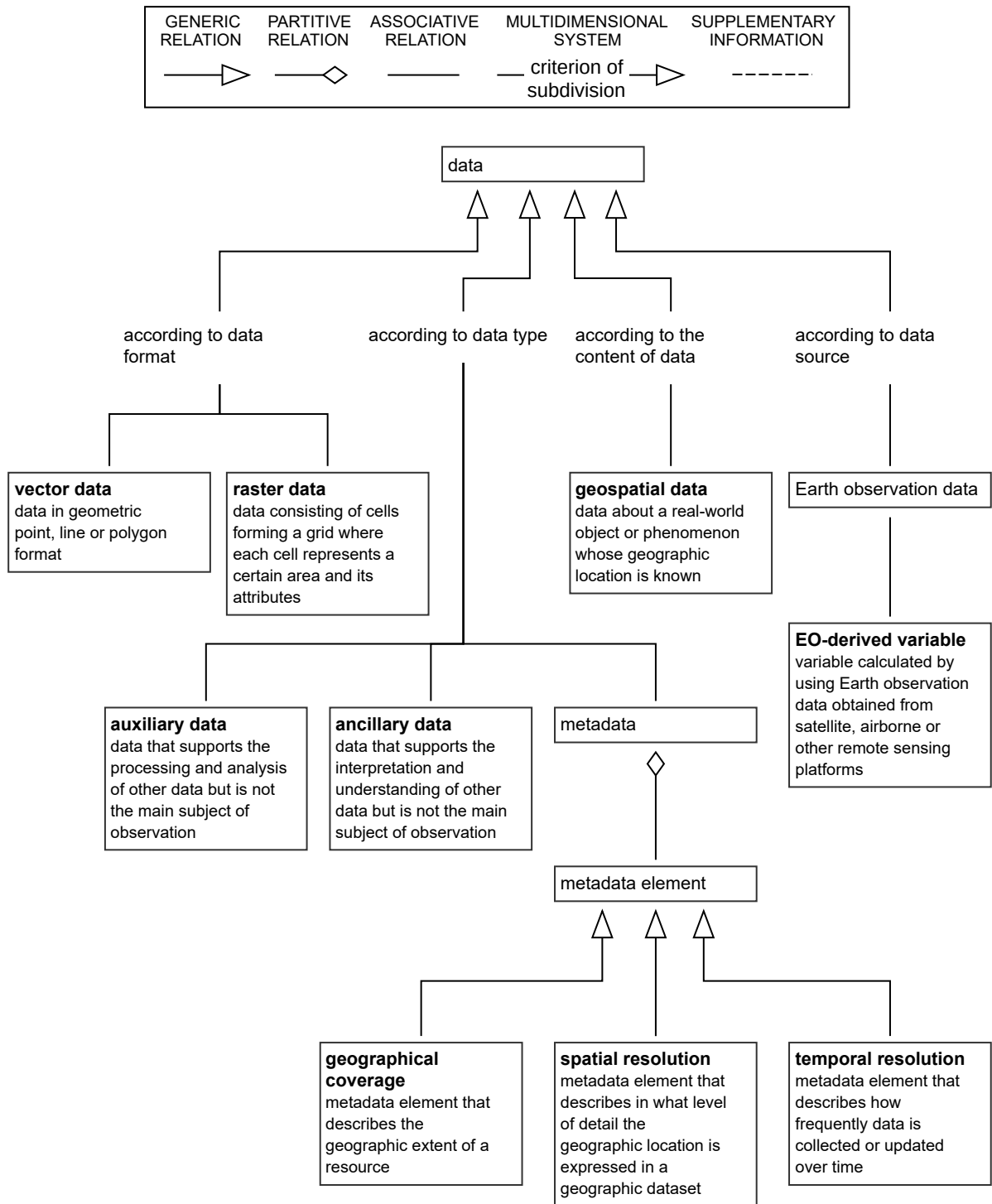
EO-derived variables are derived from Earth observation measurements through processing and analysis, often involving [ancillary](#) and [auxiliary data](#). They can be used for environmental monitoring or tracking sustainability-related phenomena (e.g. land cover change, soil moisture).

Earth observation measurements are transformed into EO-derived variables (such as land cover class, vegetation condition, surface water extent, or land surface temperature), which may subsequently be delivered through products such as maps, layers or datasets supporting estimation, monitoring, disaggregation, or reporting.

EO-derived variables and EO-derived indicators are linked with each other. For example, if an EO-derived variable is temperature, then an EO-derived indicator could be the number of heat days per year.

See [Earth observation](#).

Concept diagram: [Data](#)



Concept diagram 5. Data.

English index

Numbers in the index refer to the term record numbers.

address coding; see geocoding.....	4	geospatial classification	24
address geocoding	4	geospatial data	9
administrative area; see administrative geography.....	26	geospatial data infrastructure	12
administrative geography	26	geospatial division	23
ancillary data	46	geospatial feature	10
areal classification	24	geospatial implementation of statistical units	38
areal division	23	geospatial information	9
auxiliary data	45	geospatial interoperability	16
base map	39	geospatial object	10
basemap	39	geospatial sampling	37
choropleth map; see thematic map.....	40	geospatial service	15
conversion table	25	geospatial statistics	33
coordinate	20	Geospatial View of Generic Statistical Business	
coordinate information; see direct position.....	2	Process Model;	
coordinate reference system	22	see statistical-geospatial framework.....	14
coordinate system	21	geospatial-based sampling;	
correspondence table	25	see geospatial sampling.....	37
datum; see coordinate reference system.....	22	geospatially enabled statistics	33
direct location; see direct position.....	2	GI Service	15
direct position	2	GIS	11
Earth observation	19	Global Statistical Geospatial Framework;	
EO	19	see statistical-geospatial framework.....	14
EO-derived indicator; see EO-derived variable.....	50	grid	29
EO-derived variable	50	grid cell; see grid.....	29
functional area; see functional geography.....	28	grid net	29
functional geography	28	grid statistics	34
geo ID	7	gridded statistics	34
geocode	7	GSGF; see statistical-geospatial framework.....	14
geocoding	4	hybrid geography	28
geodata	9	image map service	41
geodetic datum; see coordinate reference system.....	22	indirect location; see indirect position.....	3
geographic classification	24	indirect position	3
geographic coordinate; see coordinate.....	20	infrastructure for geospatial information	12
geographic coverage	47	integration of geospatial and statistical data	13
geographic data	9	integration of geospatial and statistical	
geographic data analysis	17	information	13
geographic feature	10	integration of statistical and geospatial data	13
geographic ID	7	integration of statistical and geospatial	
geographic identifier	7	information	13
geographic information	9	integrative geography	28
geographic information analysis	17	latitude; see coordinate.....	20
geographic information service	15	location data	8
geographic information system	11	location framework	14
geographic location	1	location information	8
geographic lookup table	25	location interoperability	16
geographic place; see geographic location.....	1	location-based statistics	33
geographic position	1	location-enabled statistics	33
geographical classification	24	longitude; see coordinate.....	20
geographical coverage	47	map image service	41
geographical data	9	micro data in statistics; see statistical unit record.....	32
geographical differencing	18	national spatial data infrastructure;	
geographical division	23	see geospatial data infrastructure.....	12
geographical information	9	NSDI; see geospatial data infrastructure.....	12
geographical location	1	OGC standards; see geospatial service.....	15
geographical position	1	point-based foundation for statistics	36
GeoGSBPM; see statistical-geospatial framework.....	14	population grid	30
geoinformation	9	raster data	44
georeferencing	6	regional division	23
geosampling	37	reverse geocoding	5
geospatial analysis	17	SDI	12

Numbers in the index refer to the term record numbers.

English index

spatial analysis	17	statistical record	32
spatial coverage	47	statistical spatial framework	14
spatial data	9	statistical thematic map; <i>see</i> thematic map.....	40
spatial data infrastructure	12	statistical unit	31
spatial data service	15	statistical unit record	32
spatial division	23	statistical-geospatial framework	14
spatial extent	47	temporal resolution	49
spatial feature; <i>see</i> geospatial feature.....	10	territorial classification	24
spatial granularity; <i>see</i> spatial resolution.....	48	territorial division	23
spatial information	9	thematic map	40
spatial object; <i>see</i> geospatial feature.....	10	unit of statistical analysis; <i>see</i> statistical unit.....	31
spatial resolution	48	vector data	43
spatial sampling	37	web feature service	42
spatial statistics;		web mapping service	41
<i>see</i> geospatially enabled statistics.....	33	x-coordinate; <i>see</i> coordinate.....	20
statistical area; <i>see</i> statistical geography.....	27	y-coordinate; <i>see</i> coordinate.....	20
statistical geography	27	z-coordinate; <i>see</i> coordinate.....	20
statistical map; <i>see</i> thematic map.....	40	zonal statistics	35