
Guidelines for BS 7666:2006

ANNEXES TO GUIDELINES

Version 1

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Annex A. Glossary of terms

The Standard contains many technical terms, and uses some in a very specific way. This annex provides an explanation of the terms used, rather than formal definitions, which can be found in the Standard. Other terms used are also defined in the Standard.

Acceptable quality levels (AQLs)

threshold values applied to the results of testing data quality to determine whether the data meets criteria determined from a data specification or user requirements

Address

type of spatial reference in the form of the names or numbers of a sequence of spatial units used to identify and locate a geographic object, applicable to a wide range of geographic objects and not just properties that receive mail

Addressable object

geographic object that is capable of being referenced by an address

Conditional (when applied to an attribute)

value is mandatory where a stated condition is satisfied

Currency

indication of how up-to-date a gazetteer is

Current date

date at which the information in a gazetteer is considered to be current

Current state date

actual date when a geographic object came into its current state in the real world rather than when it was recorded in the gazetteer

Data specification

complete description of the data required to fully implement a system, including details of the items to be included, data structure, types, formats and definitions, classification systems, and quality levels to be achieved

End date

actual date when a geographic object ceased to exist in the real world rather than when this was recorded in the gazetteer

Entry date

date when a record was entered into the gazetteer

Gazetteer

lists of geographic objects with information identifying and describing where they are in the real world

Gazetteer custodian

person responsible for the creation, maintenance and quality of a gazetteer

Gazetteer owner

person, persons or organisation with ultimate responsibility for the gazetteer

Geographic extent

detailed description of the “footprint” of the geographic object, recorded either as a collection of one or more geographic objects or as one or more boundary polygons

Geographic object

any type of object that is fixed in position and can be consistently identified, recognised and described as occupying a specific place in the real world. This can range in size from a lamp post to an administrative area or even a complete country depending on the implementation

Lineage

history of the dataset, the sources used, the maintenance applied and the methods used in the derivation of the data and changes made since its inception

Location

identifiable geographic place

Logical consistency

degree of consistency to rules for the recording and encoding of data items within the gazetteer

Mandatory (when applied to an attribute)

value must always be provided

Metadata

data describing other data. In the case of a gazetteer, this is data about the name, scope, territory of use, owner, currency and other essential information needed to be able to use the gazetteer

Metadata date

date when the metadata was last updated

Optional (when applied to an attribute)

value may not be provided where it is not applicable

Parent-child

relationship between a geographic object (the child) which forms part of, or is dependent in some way on, another geographic object (the parent) for example a flat within a larger building, a shop unit within a shopping mall

Primary addressable object

geographic object that can be addressed without reference to any other addressable object included in the gazetteer

Primary classification

classification of geographic objects for high-level, external purposes to provide a coarse division of the objects

Quality

totality of characteristics of a product that bear on its ability to satisfy stated and implied needs. Can be more simply expressed as fitness for purpose

Quality assurance

overall planning of production processes to ensure that the product meets the required quality levels

Quality control

the way in which quality checks are carried out during the production process and those items failing quality checks are managed

Secondary addressable object

geographic object that can only be addressed by reference to a primary addressable object included in the gazetteer i.e. it is the child of the parent addressable object

Secondary classification

more detailed classification of geographic objects than the primary classification, used mainly for internal or application-specific purposes. It is not necessarily a refinement of the primary classification scheme, and may be completely independent of it

Spatial reference

description of a real-world place which can then be used to reference other information, for example an address

Spatial referencing system

specification of the way that spatial references are applied to locations and details the types of spatial units and their relationships

Spatial unit

other locations used in referencing the geographic object in a gazetteer e.g. locality, town, county, country

Start date

actual date when a location came into existence in the real world, as defined in the implementation

Unique identifier

descriptor or number applied to one and only one instance of a geographic object which is retained by the object throughout its life from creation in the gazetteer to its deletion from the gazetteer

Update date

date when a location record was last updated

Annex B. Abbreviations

AGI – Association for Geographic Information
AQL – Acceptable Quality Level
BLPU – Basic Land and Property Unit
BS – British Standard
BSI – British Standards Institution
DfT – Department for Transport
DNA-S – Definitive National Addressing - Scotland
DPC – Draft for Public Comment
ESU – elementary street unit
ETRF 89 – European Terrestrial Reference Frame 1989
IST/36 – British Standards committee for geographic information
LPI – Land and Property Identifier
NLPG – National Land and Property Gazetteer
NSG – National Street Gazetteer
OS – Ordnance Survey
ONS – Office for National Statistics
PAF – Postcode Address File
PROW – Public Right(s) of Way
RMSE – Root Mean Square Error
SE – Standard Error (of the Mean)
TOID – Topographic Identifier
UML – Unified Modelling Language
UPRN – Unique Property Reference Number
USRN – Unique Street Reference Number

Annex C. ISO 19112 Spatial referencing by geographic identifiers

ISO 19112 *Geographic Information – Spatial referencing by geographic identifiers* was published in 2003 and follows the approach of BS 7666. ISO 19112 uses the term ‘geographic identifier’ for a spatial reference in the form of a label or code that identifies a location. It is more generic than BS 7666. It defines a conceptual schema for spatial references based on geographic identifiers. It establishes a general model for spatial referencing using geographic identifiers, defines the components of a spatial reference system and defines the essential components of a gazetteer.

ISO 19112 has been adopted as a European Standard (EN ISO 19112) and as a British Standard (BS EN ISO 19112).

ISO 19112 provides a specification for a spatial referencing system using geographic identifiers. BS 7666-0 does not attempt to record the details of a spatial referencing system per se, only defining the individual spatial units, and the spatial referencing system used in the gazetteer is identified by name.

ISO 19112 specifies the following properties for a gazetteer, equivalent to the gazetteer metadata specified in BS 7666-0:

- Identifier – equivalent to ‘name’ in BS 7666-0;
- Scope – as in BS 7666-0;
- Territory of use – as in BS 7666-0;
- Custodian – as in BS 7666-0;
- Coordinate reference system – termed ‘coordinate system’ in BS 7666-0;
- Location type – not explicitly held in metadata in BS 7666-0, but implicit on the model through the relationship with **location**.

ISO 19112 distinguishes between the location type (the class of object) and the location instance (the individual occurrence). It specifies the following attributes for a location instance:

- Geographic identifier – termed ‘identifier’ in BS 7666-0;
- Temporal extent – equivalent to ‘start date’ in BS 7666-0, it is used in ISO 19112 to identify the version of the location;
- Alternative geographic identifier – termed ‘alternative identifier’ in BS 7666-0;
- Geographic extent – termed ‘extent’ in BS 7666-0;
- Position – as in BS 7666-0;
- Administrator as in BS 7666-0;
- Parent location instance – termed ‘parent’ in BS 7666-0;
- Child location instance – termed ‘child’ in BS 7666-0.

ISO 19112 additionally specifies a set of attributes of a location type (equivalent to metadata elements for a location in BS7666-0) as follows:

- Name – as in BS 7666-0;
- Theme – the property used as the defining characteristic of the location type, which would be included in the scope in BS 7666-0;
- Identification – the method of uniquely identifying location instance, which is not included explicitly in BS 7666-0, but is implicit from the form of the identifiers;
- Definition – in BS 7666-0, this is held as an attribute of ‘spatial unit’, as it is only required when the location is used as a spatial unit;
- Territory of use – this is held in the gazetteer metadata in BS 7666-0;
- Owner – equivalent to ‘administrator’ in BS 7666-0;
- Parent location type - called ‘parent’ in BS 7666-0;
- Child location type – called ‘child’ in BS 7666-0.

ISO 19112 cites as an example of a spatial referencing system, a geographic address as defined in BS 7666.

Annex D. Explanation of Unified Modelling Language (UML) notation

D.1 UML diagrams

The model diagrams in the Standard use UML (Unified Modelling Language). These diagrams show the object classes, their attributes and the associations between the classes.

D.2 Object Classes

Classes are shown as boxes. These boxes are often in two parts, with the name of the class shown in the upper part, and the attribute in the lower part. Where no attributes are given, only the upper part is shown.

D.3 Attributes

Attributes are listed with their name, the minimum and maximum number of occurrences, and their data type. The name of the attribute is unique for the object class. The minimum and maximum number of attributes are given as a range in brackets. [0..] indicates that the attribute is optional. [..n] indicates that multiple values are allowed. Where no number range is given, a single attribute value is mandatory.

Attribute multiplicity and conditionality

0..1 means that a single (optional) value may be given

0..n means that multiple (optional) values may be given

1..n means that multiple values may be given, but one value must be given (mandatory)

No numbers means that a single value must be given

The data type of the attribute is shown. This is the form of the value of the attribute. In some cases, the attribute takes the form of another object class defined in BS 7666 (i.e. has a specific defined structure). These other classes may take a value from a code list or be a set of attributes. Examples of this are GeogExtent and Point.

Standard data types used in BS 7666

CharacterString: a sequence of alphanumeric characters

Integer: a whole number

Date: a date according to BS ISO 8601, in the form YYYYMMDD or YYYY-MM-DD

D.4 Associations

Associations are relationships between classes. They are indicated by lines (links) between the boxes. They may be identified by name (e.g. “aggregation”) or by a role (e.g. “has”). The role is that played by the class (the source) in the association from the perspective of the other class (the target). Thus an LPI “identifies” a BLPU, whilst a BLPU is “identBy” an LPI. Also shown is the multiplicity of the association from the perspective of the other class (the target) to that class (the source).

Multiplicity and optionality of associations

0.. 1 means that the association is optional

1 means that there must be one occurrence of the association only

1..n means that there must be one occurrence of the association, but may be more

0.. n means that there may be zero, one or more occurrences of the association

Associations are usually implemented as an attribute (the role) with the target class as the data type. There are some standard types of associations that are used.

Standard types of association

◇ represents an aggregation, i.e. one class is made up of instances of another, e.g. a gazetteer is an aggregation of locations.

△ represents a generalisation, i.e. one class is a sub-type of another, e.g. Bounding Polygon and Geographic Object are types of Geographic Extent.

These concepts are illustrated in Figure 1.

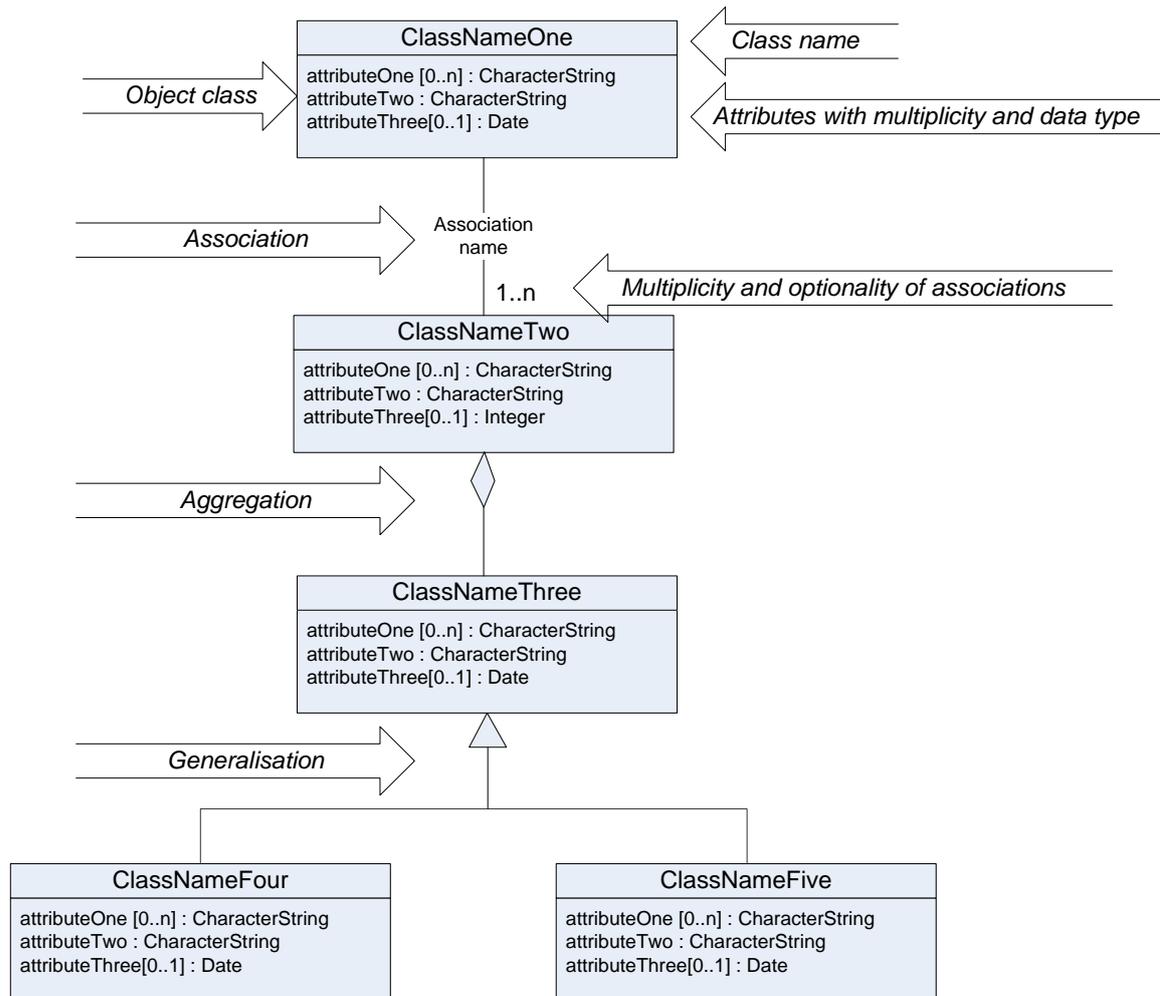


Figure 1. UML diagramming

References

BS 7666-0 Spatial datasets for geographical referencing – Part 0: General Model

BS 7666-1 Spatial datasets for geographical referencing – Part 1: Specification for a street gazetteer

BS 7666-2 Spatial datasets for geographical referencing – Part 2: Specification for a land and property gazetteer

BS 7666-5 Spatial datasets for geographical referencing – Part 5: Specification for a gazetteer of delivery points

ISO 639-2 Codes for the representation of languages – Part 2: Alpha-3 Code

ISO 8601 Data elements and interchange formats 0 Information interchange – Representation of dates and times

ISO 19112 Geographic information – Spatial referencing by geographic identifiers

ISO 19113 Geographic information – Quality principles

ISO 19114 Geographic information – Quality evaluation procedures

[Note. Copies of Standards may be purchased from AGI.]