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ABSTRACT

<Insert Abstract Text here>



KEYWORDS

The following are keywords to be used by search engines and document catalogues.

keyword_1, keyword_2, keyword_3, etc.



PREFACE

This document establishes the OGC CRS ontology and its submodules. The definition of elements of coordinate reference systems is an essential part of geospatial data provision. However, until now, coordinate reference systems and their components could not be represented in an OGC-standardized semantic web vocabulary. This document introduces the ontology model, its classes and properties, application examples and can serve as the foundation of a semantic web based coordinate system registry at OGC. Special attention is given to the compatibility of the CRS Ontology vocabulary to other OGC-endorsed Semantic Web standards such as GeoSPARQL and alignments to other data standards are provided as part of this specification.

NOTE: Insert Preface Text here. Give OGC specific commentary: describe the technical content, reason for document, history of the document and precursors, and plans for future work.

There are two ways to specify the Preface: “simple clause” or “full clause”

If the Preface does not contain subclauses, it is considered a simple preface clause. This one is entered as text after the `.Preface` label and must be placed between the AsciiDoc document attributes and the first AsciiDoc section title. It should not be give a section title of its own.

If the Preface contains subclauses, it needs to be encoded as a full preface clause. This one is recognized as a full Metanorma AsciiDoc section with the title “Preface”, i.e. `== Preface`. (Simple preface content can also be encoded like full preface.)

IV

SECURITY CONSIDERATIONS

No security considerations have been made for this Standard.

V

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VI

SOURCE OF THE CONTENT FOR THIS OGC DOCUMENT

VII

VALIDITY OF CONTENT

VIII

FUTURE WORK

NOTE: If you need to place any further sections in the preface area use the [.preface] attribute.



CONTRIBUTORS

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1

SCOPE



SCOPE

<Insert Scope text here>

NOTE: Give the subject of the document and the aspects of that scope covered by the document.



2

CONFORMANCE



CONFORMANCE

<Insert conformance content here>

NOTE: Provide a short description of the content approached in subsequent sections and the main subject of the document



3

NORMATIVE REFERENCES

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Identification of Common Molecular Subsequences. Smith, T.F., Waterman, M.S., J. Mol. Biol. 147, 195–197 (1981)

ZIB Structure Prediction Pipeline: Composing a Complex Biological Workflow through Web Services. May, P., Ehrlich, H.C., Steinke, T. In: Nagel, W.E., Walter, W.V., Lehner, W. (eds.) Euro-Par 2006. LNCS, vol. 4128, pp. 1148–1158. Springer, Heidelberg (2006)

The Grid: Blueprint for a New Computing Infrastructure., Foster, I., Kesselman, C.. Morgan Kaufmann, San Francisco (1999).

Grid Information Services for Distributed Resource Sharing. Czajkowski, K., Fitzgerald, S., Foster, I., Kesselman, C. In: 10th IEEE International Symposium on High Performance Distributed Computing, pp. 181–184. IEEE Press, New York (2001)



4

TERMS AND DEFINITIONS

This document uses the terms defined in OGC Policy Directive 49, which is based on the ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards. In particular, the word “shall” (not “must”) is the verb form used to indicate a requirement to be strictly followed to conform to this document and OGC documents do not use the equivalent phrases in the ISO/IEC Directives, Part 2.

This document also uses terms defined in the OGC Standard for Modular specifications (OGC 08-131r3), also known as the ‘ModSpec’. The definitions of terms such as standard, specification, requirement, and conformance test are provided in the ModSpec.

For the purposes of this document, the following additional terms and definitions apply.

4.1. example term

term used for exemplary purposes

Note 1 to entry: An example note.

Example Here’s an example of an example term.

[SOURCE:]



5

CONVENTIONS

NOTE: This section provides details and examples for any conventions used in the document. Examples of conventions are symbols, abbreviations, use of XML schema, or special notes regarding how to read the document.

5.1. Identifiers

The normative provisions in this standard are denoted by the URI

<http://www.opengis.net/spec/{standard}/{m.n}>

All requirements and conformance tests that appear in this document are denoted by partial URIs which are relative to this base.

5.2. Other conventions

<Place any other convention needed with its corresponding title>



6

CORE

This clause establishes the **Core** Requirements class, with IRI /req/core, which has a corresponding Conformance Class, **Core**, with IRI /conf/core.

The Core module establishes a set of classes and properties which define the building blocks of a spatial reference system definition. Some of the definitions are extended in specialized modules related to the Core module.

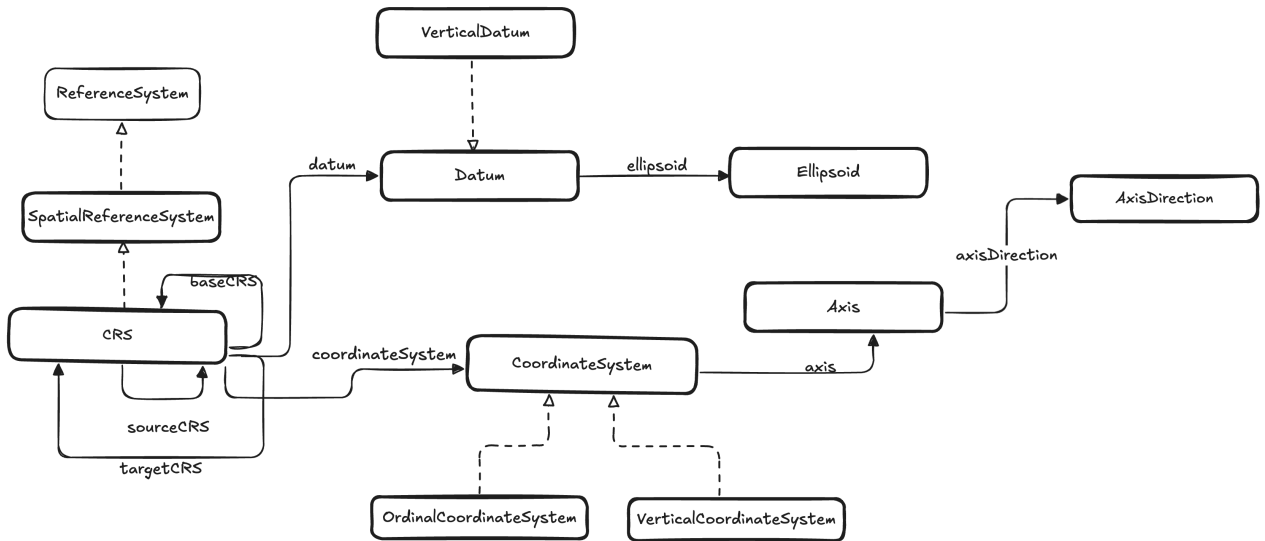


Figure 1

From a base class SpatialReferenceSystem, we define a class for a coordinate system, as the superclass of all spatial reference systems describing locations using coordinates. These SpatialReferenceSystems are described using a Datum and a coordinate system definitions with at least one coordinate axis. Together with several subtypes of coordinate reference system, these definitions complete the Core module.

REQUIREMENTS CLASS 1: 06-CORE.ADOC EXTENSION

| | |
|-------------|---|
| IDENTIFIER | /req/06-core.adoc |
| TARGET TYPE | Implementation Specification |
| REQUIREMENT | /req/Coordinate_Reference_System_Parameters |
| | /req/Coordinate_Reference_System_Types |
| | /req/Coordinate_Reference_System_Properties |

6.1. Coordinate Reference System Parameters

| Requirement 1: Coordinate Reference System Parameters | |
|---|--|
| IDENTIFIER | /req/Coordinate_Reference_System_Parameters |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:AreaOfUse, geosrs:Extent, geosrs:GeographicBoundingBox, geosrs:AxesList, geosrs:SingleCRSList to be used in SPARQL graph patterns. |

6.1.1. Class: geosrs:AreaOfUse

Table 1 — geosrs:AreaOfUse

| | |
|------------|---|
| URI | https://w3id.org/geosrs/srs/AreaOfUse |
| Definition | Area within which a coordinate operation may be used. |
| Example | <code>geosrs:AreaOfUse</code> |

6.1.2. Class: geosrs:Extent

Table 2 — geosrs:Extent

| | |
|------------|--|
| URI | https://w3id.org/geosrs/srs/Extent |
| Definition | Geographic area or time interval in which the referring object is valid. Cf. ISO 19115-1:2014:2014-04, part 6.6.1 and table B.15 line 335. |

6.1.3. Class: geosrs:GeographicBoundingBox

Table 3 — geosrs:GeographicBoundingBox

| | |
|------------|---|
| URI | https://w3id.org/geosrs/srs/GeographicBoundingBox |
| Definition | Frame delimiting an area of interest. See ISO 19115-1:2014:2014-04, part 6.6.1 and table B.15.1 line 344. |

6.1.4. Class: geosrs:AxesList

Table 4 — geosrs:AxesList

| | |
|------------|---|
| URI | https://w3id.org/geosrs/srs/AxesList |
| Definition | Ordered list of coordinate system axes. |

6.1.5. Class: geosrs:SingleCRSList

Table 5 — geosrs:SingleCRSList

| | |
|------------|---|
| URI | https://w3id.org/geosrs/srs/SingleCRSList |
| Definition | Ordered list of simple reference coordinate systems. |

6.2. Coordinate Reference System Properties

REQUIREMENT 2: COORDINATE REFERENCE SYSTEM PROPERTIES

| | |
|------------|---|
| IDENTIFIER | /req/Coordinate_Reference_System_Properties |
| STATEMENT | Implementations shall allow the RDFS properties geosrs:baseCRS, geosrs:conversion, geosrs:coordinateSystem, geosrs:datum, geosrs:datumEnsemble, geosrs:domainOfValidity, geosrs:method, geocrs:asProj4, geocrs:asProjJSON, geocrs:asWKT, geosrs:EPSGcode to be used in SPARQL graph patterns. |

6.2.1. Property: geosrs:baseCRS

Table 6 — geosrs:baseCRS

| | |
|------|---|
| URI | https://w3id.org/geosrs/srs/baseCRS |
| Type | owl:ObjectProperty |

| | |
|------------|--|
| Definition | The geodetic coordinate reference system on which a projected coordinate reference system is based. Cf. ISO 19111:2007:2007-07, table 11, association role base CRS. |
| Range | <u>GeodeticCRS</u> |
| Domain | <u>ProjectedCRS</u> |

6.2.2. Property: geosrs:conversion

Table 7 — geosrs:conversion

| | |
|------------|---|
| URI | <u>https://w3id.org/geosrs/srs/conversion</u> |
| Type | <u>owl:ObjectProperty</u> |
| Definition | The conversion used to define a projected coordinate reference system. Cf. ISO 19111:2007:2007-07, table 7, named association Definition. |
| Range | <u>Conversion</u> |
| Domain | <u>CRS</u> |

6.2.3. Property: geosrs:coordinateSystem

Table 8 — geosrs:coordinateSystem

| | |
|------------|--|
| URI | <u>https://w3id.org/geosrs/srs/coordinateSystem</u> |
| Type | <u>owl:ObjectProperty</u> |
| Definition | The property relates a coordinate reference system to its coordinate system |
| Range | <u>CoordinateSystem</u> |
| Domain | <u>CRS</u> |
| Example | <u>geosrs:coordinateSystem</u> |

6.2.4. Property: geosrs:datum

Table 9 — geosrs:datum

| | |
|------------|---|
| URI | https://w3id.org/geosrs/srs/datum |
| Type | owl:ObjectProperty |
| Definition | The property relates a coordinate reference system to a datum |
| Range | Datum |
| Domain | CRS |

6.2.5. Property: geosrs:datumEnsemble

Table 10 — geosrs:datumEnsemble

| | |
|------------|---|
| URI | https://w3id.org/geosrs/srs/datumEnsemble |
| Type | owl:ObjectProperty |
| Definition | Indicates a single CRS referring to a collection of one or more datums (Datum Ensemble) |
| Range | DatumEnsemble |
| Domain | SingleCRS |

6.2.6. Property: geosrs:domainOfValidity

Table 11 — geosrs:domainOfValidity

| | |
|------------|---|
| URI | https://w3id.org/geosrs/srs/domainOfValidity |
| Type | owl:ObjectProperty |
| Definition | Geographic area or time interval in which the referring object is valid. Cf. ISO 19111:2007:2007-07, tables 4, 33 and 42, attribute domainOfValidity. |

| | |
|--------|----------------------------------|
| Range | <u>AreaOfUse</u> |
| Domain | <u>CRS</u> |

6.2.7. Property: geosrs:method

Table 12 — geosrs:method

| | |
|--------|--|
| URI | <u>https://w3id.org/geosrs/srs/method</u> |
| Type | <u>owl:ObjectProperty</u> |
| Range | <u>CoordinateOperation</u> |
| Domain | <u>CRS</u> |

6.2.8. Property: geocrs:asProj4

Table 13 — geocrs:asProj4

| | |
|------------|--|
| URI | geocrs:asProj4 |
| Type | <u>owl:DatatypeProperty</u> |
| Definition | PROJ4 string defining a CRS. Note: this paradigm is ambiguous and presently considered outdated. |
| Range | <u>proj4Literal</u> |
| Domain | <u>CRS</u> |

6.2.9. Property: geocrs:asProjJSON

Table 14 — geocrs:asProjJSON

| | |
|------|---|
| URI | geocrs:asProjJSON |
| Type | <u>owl:DatatypeProperty</u> |

| | |
|------------|---|
| Definition | CRS definition encoded as a JSON object interpretable by PROJ4. |
| Range | <u>projJSONLiteral</u> |
| Domain | <u>CRS</u> |

6.2.10. Property: geocrs:asWKT

Table 15 — geocrs:asWKT

| | |
|------------|--|
| URI | geocrs:asWKT |
| Type | <u>owl:DatatypeProperty</u> |
| Definition | CRS definition encoded according to the Well Known Text structure. Cf. ISO 19162:2019. |
| Range | <u>wktLiteral</u> |
| Domain | <u>CRS</u> |

6.2.11. Property: geosrs:EPSGcode

Table 16 — geosrs:EPSGcode

| | |
|------------|--|
| URI | <u>https://w3id.org/geosrs/srs/EPSGcode</u> |
| Type | <u>owl:DatatypeProperty</u> |
| Definition | Identifier of this resource in the EPSG Geodetic Parameter Dataset. |
| Range | xsd:string[xsd:string] |

6.3. Coordinate Reference System Types

REQUIREMENT 3: COORDINATE REFERENCE SYSTEM TYPES

IDENTIFIER /req/Coordinate_Reference_System_Types

STATEMENT Implementations shall allow the RDFS classes geosrs:BoundCRS, geosrs:CompoundCRS, geosrs:CRS, geosrs:EngineeringCRS, geosrs:GeocentricCRS, geosrs:GeodeticCRS, geosrs:GeographicCRS, geosrs:ParametricCRS, geosrs:ProjectedCRS, geosrs:SelenographicCRS, geosrs:ReferenceSystem, geosrs:SingleCRS, geosrs:SpatialReferenceSystem, geosrs:SpatioParametricCompoundCRS, geosrs:SpatioParametricTemporalCompoundCRS, geosrs:SpatioTemporalCompoundCRS, geosrs:StaticCRS, geosrs:TemporalCRS, geosrs:VerticalCRS to be used in SPARQL graph patterns.

6.3.1. Class: geosrs:BoundCRS

Table 17 — geosrs:BoundCRS

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/srs/BoundCRS |
| Super-classes | BoundCRS |

6.3.2. Class: geosrs:CompoundCRS

Table 18 — geosrs:CompoundCRS

| | |
|---------------|--|
| URI | https://w3id.org/geosrs/srs/CompoundCRS |
| Definition | Coordinate reference system using at least two independent single coordinate reference systems. Cf. ISO 19111:2007:2007-07, parts 8.2.3.c, 8.2.4, table 6 and annex B.1.2.4. |
| Super-classes | CompoundCRS |
| Example | geosrs:CompoundCRS |

6.3.3. Class: geosrs:CRS

Table 19 — geosrs:CRS

| | |
|-----|---|
| URI | https://w3id.org/geosrs/srs/CRS |
|-----|---|

| | |
|---------------|--|
| Definition | Depending on the spatial dimension of coordinates (1D, 2D, 3D), this piece of metadata is used for specifying the elements of definition associated to a given set of coordinates: its datum, its ellipsoid, its prime meridian, the type of coordinates (geocentric, geographic, projected,...), the coordinates units of measure, when appropriate the cartographic projection used, the vertical coordinate reference system. |
| Super-classes | <u>CRS</u> |

6.3.4. Class: geosrs:EngineeringCRS

Table 20 — geosrs:EngineeringCRS

| | |
|---------------|--|
| URI | <u>https://w3id.org/geosrs/srs/EngineeringCRS</u> |
| Definition | A contextually local coordinate reference system which can be divided into two broad categories: — earth-fixed systems applied to engineering activities on or near the surface of the earth; — CRSs on moving platforms such as road vehicles, vessels, aircraft or spacecraft. |
| Super-classes | <u>EngineeringCRS</u> |

6.3.5. Class: geosrs:GeocentricCRS

Table 21 — geosrs:GeocentricCRS

| | |
|---------------|---|
| URI | <u>https://w3id.org/geosrs/srs/GeocentricCRS</u> |
| Definition | A cartesian coordinate reference system that represents locations in the vicinity of the Earth (including its surface, interior, atmosphere, and surrounding outer space) as X, Y, and Z measurements from its center of mass. Commonly used to track the orbits of satellites. |
| Super-classes | <u>GeocentricCRS</u> |
| Example | <u>geosrs:GeocentricCRS</u> |

6.3.6. Class: geosrs:GeodeticCRS

Table 22 — geosrs:GeodeticCRS

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/srs/GeodeticCRS |
| Definition | Coordinate Reference System associated with a geodetic datum. Cf. ISO 19111:2007:2007-07, part 8.2.2.a, table 10 and annex B.1.2.1.a. |
| Super-classes | GeodeticCRS |

6.3.7. Class: geosrs:GeographicCRS

Table 23 — geosrs:GeographicCRS

| | |
|---------------|--|
| URI | https://w3id.org/geosrs/srs/GeographicCRS |
| Definition | Coordinate Reference System that has a geodetic reference frame and an ellipsoidal coordinate system |
| Super-classes | GeographicCRS |
| Example | geosrs:GeographicCRS |

6.3.8. Class: geosrs:ParametricCRS

Table 24 — geosrs:ParametricCRS

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/srs/ParametricCRS |
| Definition | Coordinate Reference System based on a parametric datum |
| Super-classes | ParametricCRS |

6.3.9. Class: geosrs:ProjectedCRS

Table 25 — geosrs:ProjectedCRS

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/srs/ProjectedCRS |
| Definition | Coordinate Reference System derived from a two-dimensional geodetic coordinate reference system by applying a map projection. Cf. ISO 19111:2007:2007-07, part 8.2.3.b, table 11 and annex B.1.2.3. |
| Super-classes | ProjectedCRS |
| Example | geosrs:ProjectedCRS |

6.3.10. Class: geosrs:SelenographicCRS

Table 26 — geosrs:SelenographicCRS

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/srs/SelenographicCRS |
| Definition | Coordinate Reference System to refer locations on the surface of the Earth's Moon. |
| Super-classes | SelenographicCRS |

6.3.11. Class: geosrs:ReferenceSystem

Table 27 — geosrs:ReferenceSystem

| | |
|------------|---|
| URI | https://w3id.org/geosrs/srs/ReferenceSystem |
| Definition | An abstract coordinate system, whose origin, orientation and scale are specified in physical space. It is based on a set of reference points, defined as geometric points whose position is identified physically and mathematically. |

6.3.12. Class: geosrs:SingleCRS

Table 28 — geosrs:SingleCRS

| | |
|-----|---|
| URI | https://w3id.org/geosrs/srs/SingleCRS |
|-----|---|

| | |
|---------------|---|
| Definition | Coordinate reference system consisting of one coordinate system and one datum. Cf. ISO 19111:2007:2007-07, table 5. |
| Super-classes | SingleCRS |

6.3.13. Class: geosrs:SpatialReferenceSystem

Table 29 — geosrs:SpatialReferenceSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/srs/SpatialReferenceSystem |
| Definition | A spatial reference system (SRS) is a system for establishing spatial position. A spatial reference system can use geographic identifiers (place names, for example), coordinates (in which case it is a coordinate reference system), or identifiers with structured geometry (in which case it is a discrete global grid system). |
| Super-classes | SpatialReferenceSystem |

6.3.14. Class: geosrs:SpatioParametricCompoundCRS

Table 30 — geosrs:SpatioParametricCompoundCRS

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/srs/SpatioParametricCompoundCRS |
| Definition | A spatio-parametric coordinate reference system is a compound CRS in which one component is a geographic 2D, projected 2D or engineering 2D CRS, supplemented by a parametric CRS to create a three-dimensional CRS |
| Super-classes | SpatioParametricCompoundCRS |

6.3.15. Class: geosrs:SpatioParametricTemporalCompoundCRS

Table 31 — geosrs:SpatioParametricTemporalCompoundCRS

| | |
|-----|---|
| URI | https://w3id.org/geosrs/srs/SpatioParametricTemporalCompoundCRS |
|-----|---|

| | |
|---------------|--|
| Definition | Coordinate reference system combining a spatio-parametric reference system with at least one temporal reference system |
| Super-classes | SpatioParametricTemporalCompoundCRS |

6.3.16. Class: geosrs:SpatioTemporalCompoundCRS

Table 32 — geosrs:SpatioTemporalCompoundCRS

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/srs/SpatioTemporalCompoundCRS |
| Definition | Coordinate reference system combining a spatial reference system with at least one temporal reference system |
| Super-classes | SpatioTemporalCompoundCRS |

6.3.17. Class: geosrs:StaticCRS

Table 33 — geosrs:StaticCRS

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/srs/StaticCRS |
| Definition | Coordinate Reference System that has a static reference frame |
| Super-classes | StaticCRS |

6.3.18. Class: geosrs:TemporalCRS

Table 34 — geosrs:TemporalCRS

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/srs/TemporalCRS |
| Definition | Coordinate Reference System based on a temporal datum |
| Super-classes | TemporalCRS |

6.3.19. Class: geosrs:VerticalCRS

Table 35 — geosrs:VerticalCRS

| | |
|---------------|--|
| URI | https://w3id.org/geosrs/srs/VerticalCRS |
| Definition | One-dimensional coordinate reference system associated with a vertical datum and used for recording heights or depths. Ellipsoidal heights are not captured in a vertical coordinate reference system but as part of a 3D coordinates tuple defined in a geodetic 3D coordinate reference system. Cf. ISO 19111:2007:2007-07, parts 8.2.2.b, table 14 and annex B.1.2.1.b. |
| Super-classes | VerticalCRS |
| Example | geosrs:VerticalCRS |

7

COORDINATE OPERATION MODULE

COORDINATE OPERATION MODULE

This clause establishes the **Co** Requirements class, with IRI `/req/co`, which has a corresponding Conformance Class, **Co**, with IRI `/conf/co`.

REQUIREMENTS CLASS 2: 07-CO_MODULE.ADOC EXTENSION

| | |
|-------------|---|
| IDENTIFIER | <code>/req/07-co_module.adoc</code> |
| TARGET TYPE | Implementation Specification |
| REQUIREMENT | <code>/req/Coordinate_Operation_Methods</code> |
| | <code>/req/Coordinate_Operation_Parameters</code> |
| | <code>/req/Coordinate_Operation_Categories</code> |
| | <code>/req/Coordinate_Operation_Properties</code> |

7.1. Coordinate Operation Categories

REQUIREMENT 4: COORDINATE OPERATION CATEGORIES

| | |
|------------|--|
| IDENTIFIER | <code>/req/Coordinate_Operation_Categories</code> |
| STATEMENT | Implementations shall allow the RDFS classes <code>geosrs:GeographicObject</code> , <code>geosrs:RegisterOperations</code> , <code>geosrs:ScaleOperation</code> , <code>geosrs:RotationOperation</code> , <code>geosrs:IdentityOperation</code> , <code>geosrs:ShearOperation</code> , <code>geosrs:TranslationOperation</code> , <code>geosrs:AffineTransformationOperation</code> , <code>geocrs:CoordinateTransformationOperation</code> to be used in SPARQL graph patterns. |

7.1.1. Class: `geosrs:GeographicObject`

Table 36 — `geosrs:GeographicObject`

| | |
|------------|---|
| URI | https://w3id.org/geosrs/co/GeographicObject |
| Definition | Identifier of a geographic feature of which the coordinates are used as operation parameters. |

| | |
|---------------|----------------------------------|
| Super-classes | GeographicObject |
|---------------|----------------------------------|

7.1.2. Class: geosrs:RegisterOperations

Table 37 — geosrs:RegisterOperations

| | |
|------------|---|
| URI | https://w3id.org/geosrs/co/RegisterOperations |
| Definition | Operations supported in the Coordinate Operations package. |

7.1.3. Class: geosrs:ScaleOperation

Table 38 — geosrs:ScaleOperation

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/co/ScaleOperation |
| Definition | Scale transformation operation |
| Super-classes | ScaleOperation |

7.1.4. Class: geosrs:RotationOperation

Table 39 — geosrs:RotationOperation

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/co/RotationOperation |
| Definition | Rotation transformation operation |
| Super-classes | RotationOperation |

7.1.5. Class: geosrs:IdentityOperation

Table 40 — geosrs:IdentityOperation

| | |
|-----|---|
| URI | https://w3id.org/geosrs/co/IdentityOperation |
|-----|---|

| | |
|---------------|--|
| Definition | Identity transformation operation |
| Super-classes | <u>IdentityOperation</u> |

7.1.6. Class: geosrs:ShearOperation

Table 41 — geosrs:ShearOperation

| | |
|---------------|--|
| URI | <u>https://w3id.org/geosrs/co/ShearOperation</u> |
| Definition | Shear transformation operation |
| Super-classes | <u>ShearOperation</u> |

7.1.7. Class: geosrs:TranslationOperation

Table 42 — geosrs:TranslationOperation

| | |
|---------------|--|
| URI | <u>https://w3id.org/geosrs/co/TranslationOperation</u> |
| Definition | Translation transformation operation |
| Super-classes | <u>TranslationOperation</u> |

7.1.8. Class: geosrs:AffineTransformationOperation

Table 43 — geosrs:AffineTransformationOperation

| | |
|---------------|--|
| URI | <u>https://w3id.org/geosrs/co/AffineTransformationOperation</u> |
| Definition | Affine coordinate transformation operation |
| Super-classes | <u>CoordinateTransformationOperation</u> [] |

7.1.9. Class: geocrs:CoordinateTransformationOperation

Table 44 — geocrs:CoordinateTransformationOperation

| | |
|---------------|---|
| URI | geocrs:CoordinateTransformationOperation[] |
| Definition | Coordinate operation in which the two coordinate reference systems are based on different datums. |
| Super-classes | geocrs:CoordinateTransformationOperation[geocrs:CoordinateTransformationOperation] |

7.2. Coordinate Operation Methods

REQUIREMENT 5: COORDINATE OPERATION METHODS

| | |
|------------|--|
| IDENTIFIER | /req/Coordinate_Operation_Methods |
| STATEMENT | Implementations shall allow the RDFS classes geocrs:CoordinateOperation, geocrs:PassThroughOperation, geocrs:ConcatenatedOperation, geocrs:SingleOperation, geocrs:Transformation, geocrs:Conversion, geocrs:PointMotionOperation, geocrs:OperationMethod to be used in SPARQL graph patterns. |

7.2.1. Class: geocrs:PassThroughOperation

Table 45 — geocrs:PassThroughOperation

| | |
|---------------|---|
| URI | https://w3id.org/geocrs/co/PassThroughOperation |
| Definition | Specification of a subset of coordinate tuples that is subject to a coordinate operation |
| Super-classes | PassThroughOperation |

7.2.2. Class: geocrs:ConcatenatedOperation

Table 46 — geocrs:ConcatenatedOperation

| | |
|------------|---|
| URI | https://w3id.org/geocrs/co/ConcatenatedOperation |
| Definition | Ordered sequence of two or more single coordinate operations. Note: The sequence of coordinate operations is constrained by the requirement that the source |

coordinate reference system of step (n + 1) shall be the same as the target coordinate reference system of step (n). The source coordinate reference system of the first step and the target coordinate reference system of the last step are the source and target coordinate reference system associated with the concatenated coordinate operation. For a concatenated coordinate operation sequence of n coordinate operations: source CRS (concatenated coordinate operation) .eq. source CRS (coordinate operation step 1) target CRS (coordinate operation step i) .eq. source CRS (coordinate operation step i + 1); i .eq. 1 ... (n – 1) target CRS (concatenated coordinate operation) .eq. target CRS (coordinate operation step n) Instead of a forward coordinate operation, an inverse coordinate operation may be used for one or more of the coordinate operation steps mentioned above, if the inverse coordinate operation is uniquely defined by the forward coordinate operation method.

| | |
|---------------|---------------------------------------|
| Super-classes | ConcatenatedOperation |
|---------------|---------------------------------------|

7.2.3. Class: geosrs:PointMotionOperation

Table 47 — geosrs:PointMotionOperation

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/co/PointMotionOperation |
| Definition | Mathematical operation that describes the change of coordinate values within one coordinate reference system due to the motion of the point between one coordinate epoch and another coordinate epoch Note: In this document the motion is due to tectonic plate movement or deformation. |
| Super-classes | PointMotionOperation |

7.3. Coordinate Operation Parameters

REQUIREMENT 6: COORDINATE OPERATION PARAMETERS

IDENTIFIER `/req/Coordinate_Operation_Parameters`

STATEMENT Implementations shall allow the RDFS classes `geosrs:GeneralOperationParameter`, `geosrs:OperationParameterGroup`, `geosrs:OperationParameter`, `geosrs:GeneralParameterValue`, `geosrs:ParameterValueGroup`, `geosrs:OperationParameterValue` to be used in SPARQL graph patterns.

7.3.1. Class: `geosrs:OperationParameterGroup`

Table 48 — `geosrs:OperationParameterGroup`

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/co/OperationParameterGroup |
| Definition | Definition of a group of related parameters used by a coordinate operation method. |
| Super-classes | OperationParameterGroup |

7.3.2. Class: `geosrs:ParameterValueGroup`

Table 49 — `geosrs:ParameterValueGroup`

| | |
|---------------|--|
| URI | https://w3id.org/geosrs/co/ParameterValueGroup |
| Definition | Group of related parameter values. Note: The same group can be repeated more than once in a coordinate operation or higher level <code>ParameterValueGroup</code> , if those instances contain different values of one or more <code>ParameterValues</code> which suitably distinguish among those groups. |
| Super-classes | ParameterValueGroup |

7.4. Coordinate Operation Properties

REQUIREMENT 7: COORDINATE OPERATION PROPERTIES

IDENTIFIER /req/Coordinate_Operation_Properties

STATEMENT Implementations shall allow the RDFS properties `geosrs:derivingConversion`, `geosrs:parameter`, `geosrs:sourceCRS`, `geosrs:targetCRS` to be used in SPARQL graph patterns.

7.4.1. Property: `geosrs:derivingConversion`

Table 50 — `geosrs:derivingConversion`

| | |
|------------|---|
| URI | https://w3id.org/geosrs/co/derivingConversion |
| Type | owl:ObjectProperty |
| Definition | Relates a derived CRS to a conversion |
| Range | Conversion |
| Domain | DerivedCRS |

7.4.2. Property: `geosrs:parameter`

Table 51 — `geosrs:parameter`

| | |
|------------|---|
| URI | https://w3id.org/geosrs/co/parameter |
| Type | owl:ObjectProperty |
| Definition | Value of the datum-defining parameter |
| Range | OperationParameter |
| Domain | Conversion |

7.4.3. Property: `geosrs:sourceCRS`

Table 52 — geosrs:sourceCRS

| | |
|------------|--|
| URI | https://w3id.org/geosrs/co/sourceCRS |
| Type | owl:ObjectProperty |
| Definition | The coordinate reference system associated to the data used as input of a given operation. Cf. ISO 19111:2007:2007-07, table 42, named association Source. |
| Range | CRS |
| Domain | CoordinateOperation |
| Example | geosrs:sourceCRS |

7.4.4. Property: geosrs:targetCRS

Table 53 — geosrs:targetCRS

| | |
|------------|---|
| URI | https://w3id.org/geosrs/co/targetCRS |
| Type | owl:ObjectProperty |
| Definition | The coordinate reference system associated to the data obtained as output of a given operation. Cf. ISO 19111:2007:2007-07, table 42, named association Target. |
| Range | CRS |
| Domain | CoordinateOperation |



8

COORDINATE SYSTEM MODULE

This clause establishes the **CS** Requirements class, with IRI `/req/cs`, which has a corresponding Conformance Class, **CS**, with IRI `/conf/cs`.

The coordinate system module introduces different types of coordinate systems which are distinguished in geospatial science and applications. Coordinate systems are distinguished by their area of use, i.e planetary or interstellar and by their multidimensionality.

REQUIREMENTS CLASS 3: 08-CS_MODULE.ADOC EXTENSION

| | |
|-------------|---|
| IDENTIFIER | <code>/req/08-cs_module.adoc</code> |
| TARGET TYPE | Implementation Specification |
| REQUIREMENT | <code>/req/Coordinate_System_Types</code> |
| | <code>/req/Celestial_Coordinate_Systems</code> |
| | <code>/req/Orthogonal_Coordinate_Systems</code> |
| | <code>/req/3D_Coordinate_Systems</code> |
| | <code>/req/Temporal_Coordinate_Systems</code> |
| | <code>/req/Coordinate_System_Components</code> |
| | <code>/req/Coordinate_System_Properties</code> |

8.1. 3D Coordinate Systems

REQUIREMENT 8: 3D COORDINATE SYSTEMS

| | |
|------------|---|
| IDENTIFIER | <code>/req/3D_Coordinate_Systems</code> |
| STATEMENT | Implementations shall allow the RDFS classes <code>geosrs:CylindricalCoordinateSystem</code> , <code>geosrs:SphericalCoordinateSystem</code> to be used in SPARQL graph patterns. |

8.1.1. Class: geosrs:CylindricalCoordinateSystem

Table 54 — geosrs:CylindricalCoordinateSystem

| | |
|---------------|--|
| URI | https://w3id.org/geosrs/cs/CylindricalCoordinateSystem |
| Definition | Three-dimensional coordinate system in Euclidean space in which position is specified by two linear coordinates and one angular coordinate |
| Super-classes | CylindricalCoordinateSystem |

8.2. Celestial Coordinate Systems

REQUIREMENT 9: CELESTIAL COORDINATE SYSTEMS

| | |
|------------|--|
| IDENTIFIER | /req/Celestial_Coordinate_Systems |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:CelestialCoordinateSystem, geosrs:EclipticCoordinateSystem, geosrs:EquatorialCoordinateSystem, geosrs:GalacticCoordinateSystem, geosrs:HorizontalCoordinateSystem, geosrs:PerifocalCoordinateSystem, geosrs:SuperGalacticCS to be used in SPARQL graph patterns. |

8.2.1. Class: geosrs:CelestialCoordinateSystem

Table 55 — geosrs:CelestialCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/CelestialCoordinateSystem |
| Definition | A coordinate system for specifying positions of celestial objects relative to physical reference points |
| Super-classes | CelestialCoordinateSystem |

8.2.2. Class: geosrs:EclipticCoordinateSystem

Table 56 — geosrs:EclipticCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/EclipticCoordinateSystem |
| Definition | An ecliptic coordinate system is used for representing the apparent positions and orbits of solar system objects. |
| Super-classes | EclipticCoordinateSystem |

8.2.3. Class: geosrs:EquatorialCoordinateSystem

Table 57 — geosrs:EquatorialCoordinateSystem

| | |
|---------------|--|
| URI | https://w3id.org/geosrs/cs/EquatorialCoordinateSystem |
| Definition | A celestial coordinate system in which an object's position on the celestial sphere is described in terms of its north-south declination and east-west right ascension, measured relative to the celestial equator and vernal equinox, respectively. |
| Super-classes | EquatorialCoordinateSystem |

8.2.4. Class: geosrs:GalacticCoordinateSystem

Table 58 — geosrs:GalacticCoordinateSystem

| | |
|---------------|--|
| URI | https://w3id.org/geosrs/cs/GalacticCoordinateSystem |
| Definition | A coordinate system with the Sun as its center, the primary direction aligned with the approximate center of the Milky Way Galaxy, and the fundamental plane parallel to an approximation of the galactic plane but offset to its north. |
| Super-classes | CelestialCoordinateSystem 3DCoordinateSystem |

8.2.5. Class: geosrs:HorizontalCoordinateSystem

Table 59 — geosrs:HorizontalCoordinateSystem

| | |
|-----|---|
| URI | https://w3id.org/geosrs/cs/HorizontalCoordinateSystem |
|-----|---|

| | |
|---------------|--|
| Definition | A horizontal coordinate system is a celestial coordinate system that uses the observer's local horizon as the fundamental plane. |
| Super-classes | HorizontalCoordinateSystem |

8.2.6. Class: geosrs:PerifocalCoordinateSystem

Table 60 — geosrs:PerifocalCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/PerifocalCoordinateSystem |
| Definition | A frame of reference centered at the focus of the orbit, i. e. the celestial body about which the orbit is centered. |
| Super-classes | PerifocalCoordinateSystem |

8.2.7. Class: geosrs:SuperGalacticCS

Table 61 — geosrs:SuperGalacticCS

| | |
|---------------|--|
| URI | https://w3id.org/geosrs/cs/SuperGalacticCS |
| Definition | A reference frame for the supercluster of galaxies that contains the Milky Way galaxy, referenced to a local relatively flat collection of galaxy clusters used to define the supergalactic plane. |
| Super-classes | CelestialCoordinateSystem 3DCoordinateSystem |

8.3. Coordinate System Components

REQUIREMENT 10: COORDINATE SYSTEM COMPONENTS

| | |
|------------|---|
| IDENTIFIER | /req/Coordinate_System_Components |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:CoordinateSystemAxis to be used in SPARQL graph patterns. |

8.4. Coordinate System Properties

| Requirement 11: Coordinate System Properties | |
|--|--|
| IDENTIFIER | /req/Coordinate_System_Properties |
| STATEMENT | Implementations shall allow the RDFS properties geosrs:axis, geosrs:axisDirection to be used in SPARQL graph patterns. |

8.4.1. Property: geosrs:axis

Table 62 — geosrs:axis

| | |
|------------|---|
| URI | https://w3id.org/geosrs/cs/axis |
| Type | owl:ObjectProperty |
| Definition | The property relates a coordinate system to one of its axis |
| Range | Axis |
| Domain | CoordinateSystem |

8.4.2. Property: geosrs:axisDirection

Table 63 — geosrs:axisDirection

| | |
|------------|---|
| URI | https://w3id.org/geosrs/cs/axisDirection |
| Type | owl:ObjectProperty |
| Definition | The direction of an axis. Cf. ISO 19111:2007:2007-07, table 27, attribute coordinate system axis direction. |
| Range | AxisDirection |
| Domain | Axis |
| Example | geosrs:axisDirection |

8.5. Coordinate System Types

| Requirement 12: Coordinate System Types | |
|---|---|
| IDENTIFIER | /req/Coordinate_System_Types |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:1DCoordinateSystem, geosrs:3DCoordinateSystem, geosrs:CoordinateSystem, geosrs:AffineCoordinateSystem, geosrs:BarycentricCoordinateSystem, geosrs:CartesianCoordinateSystem, geosrs:CurvilinearCoordinateSystem, geosrs:EngineeringCoordinateSystem, geosrs:GeodeticCoordinateSystem, geosrs:GeographicalCoordinateSystem, geosrs:GridCoordinateSystem, geosrs:HexagonalCoordinateSystem, geosrs:LocalCoordinateSystem, geosrs:ObliqueCoordinateSystem, geosrs:OrdinalCoordinateSystem, geosrs:OrthogonalCoordinateSystem, geosrs:ParametricCoordinateSystem, geosrs:PlanarCoordinateSystem, geosrs:PolarCoordinateSystem, geosrs:VerticalCoordinateSystem to be used in SPARQL graph patterns. |

8.5.1. Class: geosrs:1DCoordinateSystem

Table 64 – geosrs:1DCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/1DCoordinateSystem |
| Definition | Non-repeating sequence of coordinate system axes that spans a given coordinate space in one dimension |
| Super-classes | 1DCoordinateSystem |

8.5.2. Class: geosrs:3DCoordinateSystem

Table 65 – geosrs:3DCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/3DCoordinateSystem |
| Definition | Non-repeating sequence of coordinate system axes that spans a given coordinate space in three dimensions |
| Super-classes | 3DCoordinateSystem |
| Example | geosrs:3DCoordinateSystem |

8.5.3. Class: geosrs:AffineCoordinateSystem

Table 66 — geosrs:AffineCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/AffineCoordinateSystem |
| Definition | Coordinate system in Euclidean space with straight axes that are not necessarily mutually perpendicular |
| Super-classes | AffineCoordinateSystem |

8.5.4. Class: geosrs:BarycentricCoordinateSystem

Table 67 — geosrs:BarycentricCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/BarycentricCoordinateSystem |
| Definition | A coordinate system in which the location of a point is specified by reference to a simplex (a triangle for points in a plane, a tetrahedron for points in three-dimensional space, etc.) |
| Super-classes | BarycentricCoordinateSystem |

8.5.5. Class: geosrs:CurvilinearCoordinateSystem

Table 68 — geosrs:CurvilinearCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/CurvilinearCoordinateSystem |
| Definition | A coordinate system for the Euclidean space in which the coordinate lines may be curved |
| Super-classes | CurvilinearCoordinateSystem |

8.5.6. Class: geosrs:EngineeringCoordinateSystem

Table 69 — geosrs:EngineeringCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/EngineeringCoordinateSystem |
| Definition | Coordinate system used by an engineering coordinate reference system, one of an affine coordinate system, a Cartesian coordinate system, a cylindrical coordinate system, a linear coordinate sytem, an ordinal coordinate system, a polar coordinate system or a spherical coordinate system |
| Super-classes | EngineeringCoordinateSystem |

8.5.7. Class: geosrs:GeodeticCoordinateSystem

Table 70 — geosrs:GeodeticCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/GeodeticCoordinateSystem |
| Definition | Coordinate system used by a Geodetic CRS, one of a Cartesian coordinate system or a spherical coordinate system. |
| Super-classes | GeodeticCoordinateSystem |

8.5.8. Class: geosrs:GeographicalCoordinateSystem

Table 71 — geosrs:GeographicalCoordinateSystem

| | |
|---------------|--|
| URI | https://w3id.org/geosrs/cs/GeographicalCoordinateSystem |
| Definition | Spherical or geodetic coordinate system for measuring and communicating positions directly on Earth as latitude and longitude. |
| Super-classes | SphericalCoordinateSystem GeodeticCoordinateSystem |

8.5.9. Class: geosrs:GridCoordinateSystem

Table 72 — geosrs:GridCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/GridCoordinateSystem |
| Definition | A grid coordinate system identifies areas within a grid. |
| Super-classes | GridCoordinateSystem |

8.5.10. Class: geosrs:HexagonalCoordinateSystem

Table 73 — geosrs:HexagonalCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/HexagonalCoordinateSystem |
| Definition | A hexagonal coordinate system identifies areas within a hexagonal lattice. |
| Super-classes | HexagonalCoordinateSystem |

8.5.11. Class: geosrs:LocalCoordinateSystem

Table 74 — geosrs:LocalCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/LocalCoordinateSystem |
| Definition | Coordinate system with a point of local reference. |
| Super-classes | LocalCoordinateSystem |

8.5.12. Class: geosrs:ObliqueCoordinateSystem

Table 75 — geosrs:ObliqueCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/ObliqueCoordinateSystem |
| Definition | A plane coordinate system whose axes are not perpendicular. |
| Super-classes | ObliqueCoordinateSystem |

8.5.13. Class: geosrs:OrthogonalCoordinateSystem

Table 76 — geosrs:OrthogonalCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/OrthogonalCoordinateSystem |
| Definition | A orthogonal coordinate system is a system of curvilinear coordinates in which each family of surfaces intersects the others at right angles. |
| Super-classes | OrthogonalCoordinateSystem |

8.5.14. Class: geosrs:PlanarCoordinateSystem

Table 77 — geosrs:PlanarCoordinateSystem

| | |
|---------------|--|
| URI | https://w3id.org/geosrs/cs/PlanarCoordinateSystem |
| Definition | A two-dimensional measurement system that locates features on a plane based on their distance from an origin (0,0) along two perpendicular axes. |
| Super-classes | PlanarCoordinateSystem |
| Example | geosrs:PlanarCoordinateSystem |

8.6. Orthogonal Coordinate Systems

| REQUIREMENT 13: ORTHOGONAL COORDINATE SYSTEMS | |
|---|--|
| IDENTIFIER | /req/Orthogonal_Coordinate_Systems |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:ConicalCoordinateSystem, geosrs:EllipsoidalCoordinateSystem to be used in SPARQL graph patterns. |

8.6.1. Class: geosrs:ConicalCoordinateSystem

Table 78 — geosrs:ConicalCoordinateSystem

| | |
|---------------|--|
| URI | https://w3id.org/geosrs/cs/ConicalCoordinateSystem |
| Definition | A conical coordinate system is a three-dimensional orthogonal coordinate system consisting of concentric spheres (described by their radius <i>r</i>) and by two families of perpendicular cones, aligned along the <i>z</i> - and <i>x</i> -axes, respectively |
| Super-classes | ConicalCoordinateSystem |

8.7. Temporal Coordinate Systems

REQUIREMENT 14: TEMPORAL COORDINATE SYSTEMS

| | |
|------------|--|
| IDENTIFIER | /req/Temporal_Coordinate_Systems |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:DateTimeTemporalCoordinateSystem, geosrs:TemporalCountCoordinateSystem, geosrs:TemporalCoordinateSystem, geosrs:TemporalMeasureCoordinateSystem to be used in SPARQL graph patterns. |

8.7.1. Class: geosrs:DateTimeTemporalCoordinateSystem

Table 79 — geosrs:DateTimeTemporalCoordinateSystem

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/cs/DateTimeTemporalCoordinateSystem |
| Definition | One-dimensional coordinate system used to record time in dateTime representation as defined in ISO 8601. |
| Super-classes | DateTimeTemporalCoordinateSystem |

8.7.2. Class: geosrs:TemporalCountCoordinateSystem

Table 80 — geosrs:TemporalCountCoordinateSystem

| | |
|-----|---|
| URI | https://w3id.org/geosrs/cs/TemporalCountCoordinateSystem |
|-----|---|

| | |
|---------------|--|
| Definition | One-dimensional coordinate system used to record time as an integer count. |
| Super-classes | <u>TemporalCountCoordinateSystem</u> |

8.7.3. Class: geosrs:TemporalCoordinateSystem

Table 81 — geosrs:TemporalCoordinateSystem

| | |
|---------------|--|
| URI | <u>https://w3id.org/geosrs/cs/TemporalCoordinateSystem</u> |
| Definition | One-dimensional coordinate system where the axis is time. |
| Super-classes | <u>TemporalCoordinateSystem</u> |

8.7.4. Class: geosrs:TemporalMeasureCoordinateSystem

Table 82 — geosrs:TemporalMeasureCoordinateSystem

| | |
|---------------|--|
| URI | <u>https://w3id.org/geosrs/cs/TemporalMeasureCoordinateSystem</u> |
| Definition | One-dimensional coordinate system used to record a time as a real number. |
| Super-classes | <u>TemporalMeasureCoordinateSystem</u> |

9

DATUM MODULE

This clause establishes the **Datum** Requirements class, with IRI `/req/datum`, which has a corresponding Conformance Class, **Datum**, with IRI `/conf/datum`.

REQUIREMENTS CLASS 4: 09-DATUM_MODULE.ADOC EXTENSION

| | |
|-------------|--|
| IDENTIFIER | <code>/req/09-datum_module.adoc</code> |
| TARGET TYPE | Implementation Specification |
| REQUIREMENT | <code>/req/Datum_Types</code> |
| | <code>/req/Datum_Parameters</code> |
| | <code>/req/Spheroid_Types</code> |
| | <code>/req/Datum_Properties</code> |
| | <code>/req/Spheroid_Properties</code> |

9.1. Datum Parameters

REQUIREMENT 15: DATUM PARAMETERS

| | |
|------------|---|
| IDENTIFIER | <code>/req/Datum_Parameters</code> |
| STATEMENT | Implementations shall allow the RDFS classes <code>geosrs:PrimeMeridian</code> , <code>geosrs:DefiningParameter</code> to be used in SPARQL graph patterns. |

9.1.1. Class: `geosrs:DefiningParameter`

Table 83 — `geosrs:DefiningParameter`

| | |
|------------|---|
| URI | https://w3id.org/geosrs/datum/DefiningParameter |
| Definition | Parameter value, an ordered sequence of values, or a reference to a file of parameter values that define |

a paramtric datum. Cf. ISO 19111:2019 Geographic information — Referencing by coordinates.

9.2. Datum Properties

REQUIREMENT 16: DATUM PROPERTIES

| | |
|------------|--|
| IDENTIFIER | /req/Datum_Properties |
| STATEMENT | Implementations shall allow the RDFS properties geosrs:datumDefiningParameter, geosrs:ellipsoid, geosrs:primeMeridian to be used in SPARQL graph patterns. |

9.2.1. Property: geosrs:datumDefiningParameter

Table 84 — geosrs:datumDefiningParameter

| | |
|------------|---|
| URI | https://w3id.org/geosrs/datum/datumDefiningParameter |
| Type | owl:ObjectProperty |
| Definition | Parameter used to define the parametric datum |
| Range | DefiningParameter |
| Domain | ParametricDatum |

9.2.2. Property: geosrs:ellipsoid

Table 85 — geosrs:ellipsoid

| | |
|------------|---|
| URI | https://w3id.org/geosrs/datum/ellipsoid |
| Type | owl:ObjectProperty |
| Definition | The properties relates a datum to its ellipsoid definition |
| Range | Ellipsoid |

| | |
|--------|--------------|
| Domain | <u>Datum</u> |
|--------|--------------|

9.2.3. Property: geosrs:primeMeridian

Table 86 — geosrs:primeMeridian

| | |
|------------|---|
| URI | https://w3id.org/geosrs/datum/primeMeridian |
| Type | <u>owl:ObjectProperty</u> |
| Definition | The prime meridian used by a geodetic datum. Cf. ISO 19111:2007:2007-07, table 34, association role prime Meridian. |
| Range | <u>PrimeMeridian</u> |
| Domain | <u>Datum</u> |

9.3. Datum Types

REQUIREMENT 17: DATUM TYPES

IDENTIFIER /req/Datum_Types

STATEMENT Implementations shall allow the RDFS classes geosrs:Datum, geosrs:GeodeticDatum, geosrs:DynamicGeodeticReferenceFrame, geosrs:VerticalDatum, geosrs:DynamicVerticalDatum, geosrs:ParametricDatum, geosrs:EngineeringDatum, geosrs:TemporalDatum, geosrs:DatumEnsemble to be used in SPARQL graph patterns.

9.3.1. Class: geosrs:DynamicGeodeticReferenceFrame

Table 87 — geosrs:DynamicGeodeticReferenceFrame

| | |
|------------|---|
| URI | https://w3id.org/geosrs/datum/DynamicGeodeticReferenceFrame |
| Definition | Geodetic reference frame in which some of the parameters describe time evolution of defining station |

| | |
|---------------|--|
| | coordinatesExample: defining station coordinates having linear velocities to account for crustal motion. |
| Super-classes | DynamicGeodeticReferenceFrame |

9.3.2. Class: geosrs:DynamicVerticalDatum

Table 88 — geosrs:DynamicVerticalDatum

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/datum/DynamicVerticalDatum |
| Definition | Vertical reference frame in which some of the defining parameters have time dependencyExample: Defining station heights have velocity to account for post-glacial isostatic rebound motion. Cf. ISO 19111:2019 Geographic information — Referencing by coordinates. |
| Super-classes | DynamicVerticalDatum |
| Example | geosrs:DynamicVerticalDatum |

9.3.3. Class: geosrs:ParametricDatum

Table 89 — geosrs:ParametricDatum

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/datum/ParametricDatum |
| Definition | Textual description and/or a set of parameters identifying a particular reference surface used as the origin of a parametric coordinate system, including its position with respect to the Earth. Cf. ISO 19111:2019 Geographic information — Referencing by coordinates. |
| Super-classes | ParametricDatum |

9.3.4. Class: geosrs:EngineeringDatum

Table 90 — geosrs:EngineeringDatum

| | |
|-----|---|
| URI | https://w3id.org/geosrs/datum/EngineeringDatum |
|-----|---|

| | |
|---------------|---|
| Definition | Definition of the origin and orientation of an engineering coordinate reference system Note: The origin can be fixed with respect to the Earth (such as a defined point at a construction site), or be a defined point on a moving vehicle (such as on a ship or satellite), or a defined point of an image. Cf. ISO 19111:2019 Geographic information — Referencing by coordinates. |
| Super-classes | EngineeringDatum |

9.3.5. Class: geosrs:TemporalDatum

Table 91 — geosrs:TemporalDatum

| | |
|---------------|--|
| URI | https://w3id.org/geosrs/datum/TemporalDatum |
| Definition | Definition of the relationship of a temporal coordinate system to an object Note: The object is normally time on the Earth. Cf. ISO 19111:2019 Geographic information — Referencing by coordinates. |
| Super-classes | TemporalDatum |

9.3.6. Class: geosrs:DatumEnsemble

Table 92 — geosrs:DatumEnsemble

| | |
|------------|---|
| URI | https://w3id.org/geosrs/datum/DatumEnsemble |
| Definition | A collection of two or more datums (or if geodetic or vertical, a collection of two or more reference frames) that are realizations of one Conventional Reference System and which for all but the highest accuracy requirements may be considered to be insignificantly different from each other. Note: Within the datum ensemble every frame or datum is constrained to be a realization of the same reference system. Cf. ISO 19111:2019 Geographic information — Referencing by coordinates. |

9.4. Spheroid Properties

| Requirement 18: Spheroid Properties | |
|-------------------------------------|---|
| IDENTIFIER | /req/Spheroid_Properties |
| STATEMENT | Implementations shall allow the RDFS properties geosrs:eccentricity, geosrs:inverseFlattening, geosrs:isSphere, geosrs:semiMajorAxis, geosrs:semiMinorAxis to be used in SPARQL graph patterns. |

9.4.1. Property: geosrs:eccentricity

Table 93 — geosrs:eccentricity

| | |
|------------|---|
| URI | https://w3id.org/geosrs/datum/eccentricity |
| Type | owl:DatatypeProperty |
| Definition | A measure of how much an ellipse deviates from a perfect circle. |
| Range | xsd:double[xsd:double] |
| Domain | Ellipsoid |
| Example | geosrs:eccentricity |

9.4.2. Property: geosrs:inverseFlattening

Table 94 — geosrs:inverseFlattening

| | |
|------------|---|
| URI | https://w3id.org/geosrs/datum/inverseFlattening |
| Type | owl:DatatypeProperty |
| Definition | Indicates the inverse flattening value of an ellipsoid, expressed as a number or a ratio (percentage rate, parts per million, etc.). Cf. ISO 19111:2007:2007-07, table 37, attribute inverse flattening |

| | |
|--------|------------------------|
| Range | xsd:double[xsd:double] |
| Domain | <u>Ellipsoid</u> |

9.4.3. Property: geosrs:isSphere

Table 95 — geosrs:isSphere

| | |
|------------|--|
| URI | https://w3id.org/geosrs/datum/isSphere |
| Type | <u>owl:DatatypeProperty</u> |
| Definition | Indicates whether the ellipsoid is a sphere. Cf. ISO 19111:2007:2007-07, table 37, attribute ellipsoid=sphere indicator. |
| Range | xsd:boolean[xsd:boolean] |
| Domain | <u>Ellipsoid</u> |

9.4.4. Property: geosrs:semiMajorAxis

Table 96 — geosrs:semiMajorAxis

| | |
|------------|---|
| URI | https://w3id.org/geosrs/datum/semiMajorAxis |
| Type | <u>owl:DatatypeProperty</u> |
| Definition | Indicates the length of the semi major axis of an ellipsoid. Cf. ISO 19111:2007:2007-07, table 36, attribute length of semi-major axis. |
| Range | xsd:double[xsd:double] |
| Domain | <u>Ellipsoid</u> |
| Example | geosrs:semiMajorAxis |

9.4.5. Property: geosrs:semiMinorAxis

Table 97 — geosrs:semiMinorAxis

| | |
|------------|--|
| URI | https://w3id.org/geosrs/datum/semiMinorAxis |
| Type | owl:DatatypeProperty |
| Definition | Indicates the length of the semi minor axis of an ellipsoid. Cf. ISO 19111:2007:2007-07, table 37, attribute length of semi-minor axis. |
| Range | xsd:double[xsd:double] |
| Domain | Ellipsoid |
| Example | geosrs:semiMinorAxis |

9.5. Spheroid Types

| REQUIREMENT 19: SPHEROID TYPES | |
|--------------------------------|--|
| IDENTIFIER | /req/Spheroid_Types |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:Ellipsoid, geosrs:TriaxialEllipsoid to be used in SPARQL graph patterns. |

9.5.1. Class: geosrs:TriaxialEllipsoid

Table 98 — geosrs:TriaxialEllipsoid

| | |
|------------|---|
| URI | https://w3id.org/geosrs/datum/TriaxialEllipsoid |
| Definition | Surface of an analytic ellipsoid defined by three axes of different length. Also referred as scalene ellipsoid. |

10

SRS APPLICATION MODULE

This clause establishes the **SRSAPP** Requirements class, with IRI `/req/srsapp`, which has a corresponding Conformance Class, **SRSAPP**, with IRI `/conf/srsapp`.

REQUIREMENTS CLASS 5: 10-SRSAPPLICATION_MODULE.ADOC EXTENSION

| | |
|-------------|--|
| IDENTIFIER | <code>/req/10-srsapplication_module.adoc</code> |
| TARGET TYPE | Implementation Specification |
| REQUIREMENT | <code>/req/SRS_Application_Types</code> <code>/req/Map_Types</code> |

10.1. Map Types

REQUIREMENT 20: MAP TYPES

| | |
|------------|---|
| IDENTIFIER | <code>/req/Map_Types</code> |
| STATEMENT | Implementations shall allow the RDFS classes <code>geosrs:CadastreMap</code> , <code>geosrs:NauticalChart</code> , <code>geosrs:ThematicMap</code> , <code>geosrs:TopographicMap</code> , <code>geosrs:WeatherMap</code> to be used in SPARQL graph patterns. |

10.1.1. Class: `geosrs:CadastreMap`

Table 99 — `geosrs:CadastreMap`

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/application/CadastreMap |
| Definition | A map displaying a cadastre. |
| Super-classes | <code>CadastreMap</code> |

10.1.2. Class: geosrs:NauticalChart

Table 100 — geosrs:NauticalChart

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/application/NauticalChart |
| Definition | A graphic representation of a sea area and adjacent coastal regions. |
| Super-classes | NauticalChart |

10.1.3. Class: geosrs:ThematicMap

Table 101 — geosrs:ThematicMap

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/application/ThematicMap |
| Definition | A map used to highlight a specific phenomenon. |
| Super-classes | ThematicMap |

10.1.4. Class: geosrs:TopographicMap

Table 102 — geosrs:TopographicMap

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/application/TopographicMap |
| Definition | A type of map characterized by large-scale detail and quantitative representation of relief. |
| Super-classes | TopographicMap |

10.1.5. Class: geosrs:WeatherMap

Table 103 — geosrs:WeatherMap

| | |
|-----|---|
| URI | https://w3id.org/geosrs/application/WeatherMap |
|-----|---|

| | |
|---------------|--|
| Definition | A map for showing the local direction in which weather systems are moving. |
| Super-classes | <u>WeatherMap</u> |

10.2. SRS Application Types

REQUIREMENT 21: SRS APPLICATION TYPES

IDENTIFIER /req/SRS_Application_Types

STATEMENT

Implementations shall allow the RDFS classes geosrs:SRSApplication, geosrs:SpatialReferencing, geosrs:EngineeringSurvey, geosrs:SatelliteSurvey, geosrs:SatelliteNavigation, geosrs:Coastal Hydrography, geosrs:OffshoreEngineering, geosrs:Hydrography, geosrs:Drilling, geosrs:OilAndGas Exploration to be used in SPARQL graph patterns.

10.2.1. Class: geosrs:SRSApplication

Table 104 — geosrs:SRSApplication

| | |
|------------|---|
| URI | https://w3id.org/geosrs/application/SRSApplication |
| Definition | An application for which a spatial reference system is used. |

10.2.2. Class: geosrs:SpatialReferencing

Table 105 — geosrs:SpatialReferencing

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/application/SpatialReferencing |
| Super-classes | <u>SpatialReferencing</u> |

10.2.3. Class: geosrs:EngineeringSurvey

Table 106 — geosrs:EngineeringSurvey

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/application/EngineeringSurvey |
| Super-classes | EngineeringSurvey |

10.2.4. Class: geosrs:SatelliteSurvey

Table 107 — geosrs:SatelliteSurvey

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/application/SatelliteSurvey |
| Super-classes | SatelliteSurvey |

10.2.5. Class: geosrs:SatelliteNavigation

Table 108 — geosrs:SatelliteNavigation

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/application/SatelliteNavigation |
| Super-classes | SatelliteNavigation |

10.2.6. Class: geosrs:CoastalHydrography

Table 109 — geosrs:CoastalHydrography

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/application/CoastalHydrography |
| Super-classes | CoastalHydrography |

10.2.7. Class: geosrs:OffshoreEngineering

Table 110 — geosrs:OffshoreEngineering

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/application/OffshoreEngineering |
| Super-classes | OffshoreEngineering |

10.2.8. Class: geosrs:Hydrography

Table 111 — geosrs:Hydrography

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/application/Hydrography |
| Super-classes | Hydrography |

10.2.9. Class: geosrs:Drilling

Table 112 — geosrs:Drilling

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/application/Drilling |
| Super-classes | Drilling |

10.2.10. Class: geosrs:OilAndGasExploration

Table 113 — geosrs:OilAndGasExploration

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/application/OilAndGasExploration |
| Super-classes | OilAndGasExploration |



11

PROJECTIONS MODULE

PROJECTIONS MODULE

This clause establishes the **PROJ** Requirements class, with IRI /req/proj, which has a corresponding Conformance Class, **PROJ**, with IRI /conf/proj.

REQUIREMENTS CLASS 6: 11-PROJECTIONS_MODULE.ADOC EXTENSION

| | |
|-------------|-------------------------------------|
| IDENTIFIER | /req/11-projections_module.adoc |
| TARGET TYPE | Implementation Specification |
| REQUIREMENT | /req/Lenticular_Projections |
| | /req/Conformal_Projections |
| | /req/Minimum_Error_Projections |
| | /req/Pseudo_Azimuthal_Projections |
| | /req/Equal_Area_Projections |
| | /req/Pseudo_Conical_Projections |
| | /req/Globular_Projections |
| | /req/Pseudo_Cylindrical_Projections |
| | /req/Cylindrical_Projections |
| | /req/Compromise_Projections |
| | /req/Polyhedral_Projections |
| | /req/Equidistant_Projections |
| | /req/Conical_Projections |
| | /req/Azimuthal_Projections |
| | /req/Perspective_Projections |
| | /req/Polyconic_Projections |
| | /req/Stereographic_Projections |

11.1. Azimuthal Projections

| Requirement 22: Azimuthal Projections | |
|---------------------------------------|--|
| IDENTIFIER | /req/Azimuthal_Projections |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:BreusingGeometricProjection, geosrs:BreusingHarmonicProjection, geosrs:GinzburgIIProjection, geosrs:GinzburgIProjection, geosrs:GnomonicProjection, geosrs:JamesAzimuthalProjection to be used in SPARQL graph patterns. |

11.1.1. Class: geosrs:BreusingGeometricProjection

Table 114 — geosrs:BreusingGeometricProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BreusingGeometricProjection |
| Super-classes | BreusingGeometricProjection |

11.1.2. Class: geosrs:BreusingHarmonicProjection

Table 115 — geosrs:BreusingHarmonicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BreusingHarmonicProjection |
| Super-classes | BreusingHarmonicProjection |

11.1.3. Class: geosrs:GinzburgIIProjection

Table 116 — geosrs:GinzburgIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GinzburgIIProjection |
| Super-classes | GinzburgIIProjection |

11.1.4. Class: geosrs:GinzburgIProjection

Table 117 — geosrs:GinzburgIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GinzburgIProjection |
| Super-classes | GinzburgIProjection |

11.1.5. Class: geosrs:GnomonicProjection

Table 118 — geosrs:GnomonicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GnomonicProjection |
| Super-classes | GnomonicProjection |

11.1.6. Class: geosrs:JamesAzimuthalProjection

Table 119 — geosrs:JamesAzimuthalProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/JamesAzimuthalProjection |
| Super-classes | JamesAzimuthalProjection |

11.2. Compromise Projections

REQUIREMENT 23: COMPROMISE PROJECTIONS

IDENTIFIER /req/Compromise_Projections

STATEMENT

Implementations shall allow the RDFS classes geosrs:ArmadilloProjection, geosrs:BakerDinomic Projection, geosrs:BertinProjection, geosrs:ChamberlinTrimetricProjection, geosrs:DenoyerSemi EllipticalProjection, geosrs:FairgrieveProjection, geosrs:LarriveeProjection, geosrs:PetermannStar Projection, geosrs:SpilhausOceanicProjection, geosrs:VanDerGrintenIIIProjection, geosrs:Winkel

REQUIREMENT 23: COMPROMISE PROJECTIONS

IIProjection, geosrs:WinkelIIProjection, geosrs:WinkelSnyderProjection to be used in SPARQL graph patterns.

11.2.1. Class: geosrs:ArmadilloProjection

Table 120 — geosrs:ArmadilloProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/ArmadilloProjection |
| Super-classes | ArmadilloProjection |

11.2.2. Class: geosrs:BakerDinomicProjection

Table 121 — geosrs:BakerDinomicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BakerDinomicProjection |
| Super-classes | BakerDinomicProjection |

11.2.3. Class: geosrs:BertinProjection

Table 122 — geosrs:BertinProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BertinProjection |
| Super-classes | BertinProjection |

11.2.4. Class: geosrs:ChamberlinTrimetricProjection

Table 123 — geosrs:ChamberlinTrimetricProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/ChamberlinTrimetricProjection |
| Super-classes | ChamberlinTrimetricProjection |

11.2.5. Class: geosrs:DenoyerSemiEllipticalProjection

Table 124 — geosrs:DenoyerSemiEllipticalProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/DenoyerSemiEllipticalProjection |
| Super-classes | DenoyerSemiEllipticalProjection |

11.2.6. Class: geosrs:FairgrieveProjection

Table 125 — geosrs:FairgrieveProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/FairgrieveProjection |
| Super-classes | FairgrieveProjection |

11.2.7. Class: geosrs:LarriveeProjection

Table 126 — geosrs:LarriveeProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/LarriveeProjection |
| Super-classes | LarriveeProjection |

11.2.8. Class: geosrs:PetermannStarProjection

Table 127 — geosrs:PetermannStarProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PetermannStarProjection |
| Super-classes | PetermannStarProjection |

11.2.9. Class: geosrs:SpilhausOceanicProjection

Table 128 — geosrs:SpilhausOceanicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/SpilhausOceanicProjection |
| Super-classes | SpilhausOceanicProjection |

11.2.10. Class: geosrs:VanDerGrintenIIIProjection

Table 129 — geosrs:VanDerGrintenIIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/VanDerGrintenIIIProjection |
| Super-classes | VanDerGrintenIIIProjection |

11.2.11. Class: geosrs:WinkelIIIProjection

Table 130 — geosrs:WinkelIIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/WinkelIIIProjection |
| Super-classes | WinkelIIIProjection |

11.2.12. Class: geosrs:WinkelIIProjection

Table 131 — geosrs:WinkelIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/WinkelIIProjection |
| Super-classes | WinkelIIProjection |

11.2.13. Class: geosrs:WinkelSnyderProjection

Table 132 — geosrs:WinkelSnyderProjection

| | |
|-----|---|
| URI | https://w3id.org/geosrs/projection/WinkelSnyderProjection |
|-----|---|

| | |
|---------------|--|
| Super-classes | WinkelSnyderProjection |
|---------------|--|

11.3. Conformal Projections

REQUIREMENT 24: CONFORMAL PROJECTIONS

| | |
|------------|--|
| IDENTIFIER | /req/Conformal_Projections |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:AdamsProjection, geosrs:AdamsWorldInASquarellProjection, geosrs:AdamsWorldInASquarelProjection, geosrs:AugustEpicycloidalProjection, geosrs:CoxConformalProjection, geosrs:EisenlohrProjection, geosrs:GS50Projection, geosrs:PeirceQuincuncialProjection, geosrs:StereographicProjection to be used in SPARQL graph patterns. |

11.3.1. Class: geosrs:AdamsProjection

Table 133 — geosrs:AdamsProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/AdamsProjection |
| Super-classes | AdamsProjection |

11.3.2. Class: geosrs:AdamsWorldInASquarellProjection

Table 134 — geosrs:AdamsWorldInASquarellProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/AdamsWorldInASquarellProjection |
| Super-classes | AdamsWorldInASquarellProjection |

11.3.3. Class: geosrs:AdamsWorldInASquarelProjection

Table 135 — geosrs:AdamsWorldInASquareProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/AdamsWorldInASquareProjection |
| Super-classes | AdamsWorldInASquareProjection |

11.3.4. Class: geosrs:AugustEpicycloidalProjection

Table 136 — geosrs:AugustEpicycloidalProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/AugustEpicycloidalProjection |
| Definition | A projection in which every angle between two curves that cross each other on a celestial body is preserved in the image of the projection |
| Super-classes | AugustEpicycloidalProjection |

11.3.5. Class: geosrs:CoxConformalProjection

Table 137 — geosrs:CoxConformalProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/CoxConformalProjection |
| Super-classes | CoxConformalProjection |

11.3.6. Class: geosrs:EisenlohrProjection

Table 138 — geosrs:EisenlohrProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/EisenlohrProjection |
| Super-classes | EisenlohrProjection |

11.3.7. Class: geosrs:GS50Projection

Table 139 — geosrs:GS50Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GS50Projection |
| Super-classes | GS50Projection |

11.3.8. Class: geosrs:PeirceQuincuncialProjection

Table 140 — geosrs:PeirceQuincuncialProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PeirceQuincuncialProjection |
| Super-classes | PeirceQuincuncialProjection |

11.3.9. Class: geosrs:StereographicProjection

Table 141 — geosrs:StereographicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/StereographicProjection |
| Super-classes | StereographicProjection |
| Example | geosrs:StereographicProjection |

11.4. Conical Projections

REQUIREMENT 25: CONICAL PROJECTIONS

IDENTIFIER /req/Conical_Projections

STATEMENT

Implementations shall allow the RDFS classes geosrs:BipolarObliqueConicConformalProjection, geosrs:CentralConicProjection, geosrs:HerschelConformalConicProjection, geosrs:Krovak, geosrs:LambertConformalConicProjection, geosrs:MurdochIIIProjection, geosrs:MurdochIIProjection, geosrs:MurdochIProjection, geosrs:SchjernerIProjection, geosrs:VitkovskyIProjection to be used in SPARQL graph patterns.

11.4.1. Class: geosrs:BipolarObliqueConicConformalProjection

Table 142 — geosrs:BipolarObliqueConicConformalProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BipolarObliqueConicConformalProjection |
| Super-classes | BipolarObliqueConicConformalProjection |

11.4.2. Class: geosrs:CentralConicProjection

Table 143 — geosrs:CentralConicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/CentralConicProjection |
| Super-classes | CentralConicProjection |

11.4.3. Class: geosrs:HerschelConformalConicProjection

Table 144 — geosrs:HerschelConformalConicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/HerschelConformalConicProjection |
| Super-classes | HerschelConformalConicProjection |

11.4.4. Class: geosrs:Krovak

Table 145 — geosrs:Krovak

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/Krovak |
| Super-classes | Krovak |
| Example | geosrs:Krovak |

11.4.5. Class: geosrs:LambertConformalConicProjection

Table 146 — geosrs:LambertConformalConicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/LambertConformalConicProjection |
| Super-classes | LambertConformalConicProjection |
| Example | geosrs:LambertConformalConicProjection |

11.4.6. Class: geosrs:MurdochIIIProjection

Table 147 — geosrs:MurdochIIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/MurdochIIIProjection |
| Super-classes | MurdochIIIProjection |

11.4.7. Class: geosrs:MurdochIIProjection

Table 148 — geosrs:MurdochIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/MurdochIIProjection |
| Super-classes | MurdochIIProjection |

11.4.8. Class: geosrs:MurdochIProjection

Table 149 — geosrs:MurdochIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/MurdochIProjection |
| Super-classes | MurdochIProjection |

11.4.9. Class: geosrs:SchjerningIProjection

Table 150 — geosrs:SchjerningIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/SchjerningIProjection |
| Super-classes | SchjerningIProjection |

11.4.10. Class: geosrs:VitkovskyIProjection

Table 151 — geosrs:VitkovskyIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/VitkovskyIProjection |
| Super-classes | VitkovskyIProjection |

11.5. Cylindrical Projections

REQUIREMENT 26: CYLINDRICAL PROJECTIONS

IDENTIFIER /req/Cylindrical_Projections

STATEMENT Implementations shall allow the RDFS classes geosrs:ArdenCloseProjection, geosrs:BraunPerspectiveProjection, geosrs:CompactMillerProjection, geosrs:CylindricalStereographicProjection, geosrs:KarchenkoShabanovaProjection, geosrs:LabordeProjection, geosrs:MercatorProjection, geosrs:MillerProjection, geosrs:PattersonCylindricalProjection, geosrs:PavlovProjection, geosrs:ToblerCylindricalIIProjection, geosrs:ToblerCylindricalIProjection, geosrs:UrmayevIIIProjection, geosrs:WebMercatorProjection to be used in SPARQL graph patterns.

11.5.1. Class: geosrs:ArdenCloseProjection

Table 152 — geosrs:ArdenCloseProjection

| | |
|-----|---|
| URI | https://w3id.org/geosrs/projection/ArdenCloseProjection |
|-----|---|

| | |
|---------------|--------------------------------------|
| Super-classes | ArdenCloseProjection |
|---------------|--------------------------------------|

11.5.2. Class: geosrs:BraunPerspectiveProjection

Table 153 — geosrs:BraunPerspectiveProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BraunPerspectiveProjection |
| Super-classes | BraunPerspectiveProjection |

11.5.3. Class: geosrs:CompactMillerProjection

Table 154 — geosrs:CompactMillerProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/CompactMillerProjection |
| Super-classes | CompactMillerProjection |

11.5.4. Class: geosrs:CylindricalStereographicProjection

Table 155 — geosrs:CylindricalStereographicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/CylindricalStereographicProjection |
| Super-classes | CylindricalStereographicProjection |

11.5.5. Class: geosrs:KarchenkoShabanovaProjection

Table 156 — geosrs:KarchenkoShabanovaProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/KarchenkoShabanovaProjection |
| Super-classes | KarchenkoShabanovaProjection |

11.5.6. Class: geosrs:LabordeProjection

Table 157 — geosrs:LabordeProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/LabordeProjection |
| Super-classes | LabordeProjection |
| Example | geosrs:LabordeProjection |

11.5.7. Class: geosrs:MercatorProjection

Table 158 — geosrs:MercatorProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/MercatorProjection |
| Super-classes | MercatorProjection |
| Example | geosrs:MercatorProjection |

11.5.8. Class: geosrs:MillerProjection

Table 159 — geosrs:MillerProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/MillerProjection |
| Super-classes | MillerProjection |

11.5.9. Class: geosrs:PattersonCylindricalProjection

Table 160 — geosrs:PattersonCylindricalProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PattersonCylindricalProjection |
| Super-classes | PattersonCylindricalProjection |

11.5.10. Class: geosrs:PavlovProjection

Table 161 — geosrs:PavlovProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PavlovProjection |
| Super-classes | PavlovProjection |

11.5.11. Class: geosrs:ToblerCylindricalIIIProjection

Table 162 — geosrs:ToblerCylindricalIIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/ToblerCylindricalIIIProjection |
| Super-classes | ToblerCylindricalIIIProjection |

11.5.12. Class: geosrs:ToblerCylindricalIIProjection

Table 163 — geosrs:ToblerCylindricalIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/ToblerCylindricalIIProjection |
| Super-classes | ToblerCylindricalIIProjection |

11.5.13. Class: geosrs:UrmayevIIIProjection

Table 164 — geosrs:UrmayevIIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/UrmayevIIIProjection |
| Super-classes | UrmayevIIIProjection |

11.5.14. Class: geosrs:WebMercatorProjection

Table 165 — geosrs:WebMercatorProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/WebMercatorProjection |
| Super-classes | WebMercatorProjection |

11.6. Equal Area Projections

REQUIREMENT 27: EQUAL AREA PROJECTIONS

| | |
|------------|---|
| IDENTIFIER | /req/Equal_Area_Projections |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:AlbersEqualAreaProjection, geosrs:AzimuthalEqualAreaProjection, geosrs:CylindricalEqualArea, geosrs:GallPetersProjection, geosrs:HoboDyerProjection, geosrs:LambertAzimuthalEqualArea, geosrs:TrystanEdwardsProjection, geosrs:WiechelProjection to be used in SPARQL graph patterns. |

11.6.1. Class: geosrs:AlbersEqualAreaProjection

Table 166 — geosrs:AlbersEqualAreaProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/AlbersEqualAreaProjection |
| Super-classes | AlbersEqualAreaProjection |
| Example | <code>geosrs:AlbersEqualAreaProjection</code> |

11.6.2. Class: geosrs:AzimuthalEqualAreaProjection

Table 167 — geosrs:AzimuthalEqualAreaProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/AzimuthalEqualAreaProjection |
| Super-classes | AzimuthalEqualAreaProjection |

11.6.3. Class: geosrs:CylindricalEqualArea

Table 168 — geosrs:CylindricalEqualArea

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/CylindricalEqualArea |
| Super-classes | CylindricalEqualArea |
| Example | geosrs:CylindricalEqualArea |

11.6.4. Class: geosrs:GallPetersProjection

Table 169 — geosrs:GallPetersProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GallPetersProjection |
| Super-classes | GallPetersProjection |

11.6.5. Class: geosrs:HoboDyerProjection

Table 170 — geosrs:HoboDyerProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/HoboDyerProjection |
| Super-classes | HoboDyerProjection |

11.6.6. Class: geosrs:LambertAzimuthalEqualArea

Table 171 — geosrs:LambertAzimuthalEqualArea

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/LambertAzimuthalEqualArea |
| Super-classes | LambertAzimuthalEqualArea |

11.6.7. Class: geosrs:TrystanEdwardsProjection

Table 172 — geosrs:TrystanEdwardsProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/TrystanEdwardsProjection |
| Super-classes | TrystanEdwardsProjection |

11.6.8. Class: geosrs:WiechelProjection

Table 173 — geosrs:WiechelProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/WiechelProjection |
| Super-classes | WiechelProjection |

11.7. Equidistant Projections

REQUIREMENT 28: EQUIDISTANT PROJECTIONS

IDENTIFIER /req/Equidistant_Projections

STATEMENT Implementations shall allow the RDFS classes geosrs:AzimuthalEquidistantProjection, geosrs:BerghausStarProjection, geosrs:CassiniProjection, geosrs:EquidistantConicProjection, geosrs:EquidistantCylindricalProjection, geosrs:EquirectangularProjection, geosrs:ObliquePlateCarreeProjection, geosrs:PlateCarreeProjection, geosrs:TwoPointEquidistantProjection to be used in SPARQL graph patterns.

11.7.1. Class: geosrs:AzimuthalEquidistantProjection

Table 174 — geosrs:AzimuthalEquidistantProjection

| | |
|-----|---|
| URI | https://w3id.org/geosrs/projection/AzimuthalEquidistantProjection |
|-----|---|

| | |
|---------------|--|
| Super-classes | AzimuthalEquidistantProjection |
|---------------|--|

11.7.2. Class: geosrs:BerghausStarProjection

Table 175 — geosrs:BerghausStarProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BerghausStarProjection |
| Super-classes | BerghausStarProjection |

11.7.3. Class: geosrs:CassiniProjection

Table 176 — geosrs:CassiniProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/CassiniProjection |
| Definition | A map projection first described in an approximate form by César-François Cassini de Thury in 1745 |
| Super-classes | CassiniProjection |
| Example | geosrs:CassiniProjection |

11.7.4. Class: geosrs:EquidistantConicProjection

Table 177 — geosrs:EquidistantConicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/EquidistantConicProjection |
| Super-classes | EquidistantConicProjection |

11.7.5. Class: geosrs:EquidistantCylindricalProjection

Table 178 — geosrs:EquidistantCylindricalProjection

| | |
|-----|---|
| URI | https://w3id.org/geosrs/projection/EquidistantCylindricalProjection |
|-----|---|

| | |
|---------------|---|
| Super-classes | EquidistantCylindricalProjection |
| Example | geosrs:EquidistantCylindricalProjection |

11.7.6. Class: geosrs:EquirectangularProjection

Table 179 — geosrs:EquirectangularProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/EquirectangularProjection |
| Super-classes | EquirectangularProjection |

11.7.7. Class: geosrs:ObliquePlateCarreeProjection

Table 180 — geosrs:ObliquePlateCarreeProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/ObliquePlateCarreeProjection |
| Super-classes | ObliquePlateCarreeProjection |

11.7.8. Class: geosrs:PlateCarreeProjection

Table 181 — geosrs:PlateCarreeProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PlateCarreeProjection |
| Super-classes | PlateCarreeProjection |

11.7.9. Class: geosrs:TwoPointEquidistantProjection

Table 182 — geosrs:TwoPointEquidistantProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/TwoPointEquidistantProjection |
| Super-classes | TwoPointEquidistantProjection |

11.8. Globular Projections

REQUIREMENT 29: GLOBULAR PROJECTIONS

| | |
|------------|---|
| IDENTIFIER | /req/Globular_Projections |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:ApianGlobularIProjection, geosrs:BaconGlobularProjection, geosrs:FournierGlobularIProjection to be used in SPARQL graph patterns. |

11.8.1. Class: geosrs:ApianGlobularIProjection

Table 183 — geosrs:ApianGlobularIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/ApianGlobularIProjection |
| Super-classes | ApianGlobularIProjection |

11.8.2. Class: geosrs:BaconGlobularProjection

Table 184 — geosrs:BaconGlobularProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BaconGlobularProjection |
| Super-classes | BaconGlobularProjection |

11.8.3. Class: geosrs:FournierGlobularIProjection

Table 185 — geosrs:FournierGlobularIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/FournierGlobularIProjection |
| Super-classes | FournierGlobularIProjection |

11.9. Lenticular Projections

| Requirement 30: Lenticular Projections | |
|--|--|
| IDENTIFIER | /req/Lenticular_Projections |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:A4Projection, geosrs:BriesemeisterProjection, geosrs:CiricIProjection, geosrs:CupolaProjection, geosrs:DedistortProjection, geosrs:DietrichKitadaProjection, geosrs:FranculaIIIProjection, geosrs:FranculaIVProjection, geosrs:FranculaIXProjection, geosrs:FranculaVIIIProjection, geosrs:FranculaVProjection, geosrs:FranculaXIIIProjection, geosrs:FranculaXIIProjection, geosrs:FranculaXIVProjection, geosrs:HamusoidalProjection, geosrs:KissProjection to be used in SPARQL graph patterns. |

11.9.1. Class: geosrs:A4Projection

Table 186 — geosrs:A4Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/A4Projection |
| Super-classes | A4Projection |

11.9.2. Class: geosrs:BriesemeisterProjection

Table 187 — geosrs:BriesemeisterProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BriesemeisterProjection |
| Super-classes | BriesemeisterProjection |

11.9.3. Class: geosrs:CiricIProjection

Table 188 — geosrs:CiricIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/CiricIProjection |
| Super-classes | CiricIProjection |

11.9.4. Class: geosrs:CupolaProjection

Table 189 — geosrs:CupolaProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/CupolaProjection |
| Super-classes | CupolaProjection |

11.9.5. Class: geosrs:DedistortProjection

Table 190 — geosrs:DedistortProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/DedistortProjection |
| Super-classes | DedistortProjection |

11.9.6. Class: geosrs:DietrichKitadaProjection

Table 191 — geosrs:DietrichKitadaProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/DietrichKitadaProjection |
| Super-classes | DietrichKitadaProjection |

11.9.7. Class: geosrs:FranculaIIIProjection

Table 192 — geosrs:FranculaIIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/FranculaIIIProjection |
| Super-classes | FranculaIIIProjection |

11.9.8. Class: geosrs:FranculaIVProjection

Table 193 — geosrs:FraculaIVProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/FraculaIVProjection |
| Super-classes | FraculaIVProjection |

11.9.9. Class: geosrs:FraculaXProjection

Table 194 — geosrs:FraculaXProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/FraculaXProjection |
| Super-classes | FraculaXProjection |

11.9.10. Class: geosrs:FraculaVIIIProjection

Table 195 — geosrs:FraculaVIIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/FraculaVIIIProjection |
| Super-classes | FraculaVIIIProjection |

11.9.11. Class: geosrs:FraculaVProjection

Table 196 — geosrs:FraculaVProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/FraculaVProjection |
| Super-classes | FraculaVProjection |

11.9.12. Class: geosrs:FraculaXIIIProjection

Table 197 — geosrs:FraculaXIIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/FraculaXIIIProjection |
| Super-classes | FraculaXIIIProjection |

11.9.13. Class: geosrs:FranculaXIIProjection

Table 198 — geosrs:FranculaXIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/FranculaXIIProjection |
| Super-classes | FranculaXIIProjection |

11.9.14. Class: geosrs:FranculaXIVProjection

Table 199 — geosrs:FranculaXIVProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/FranculaXIVProjection |
| Super-classes | FranculaXIVProjection |

11.9.15. Class: geosrs:HamusoidalProjection

Table 200 — geosrs:HamusoidalProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/HamusoidalProjection |
| Super-classes | HamusoidalProjection |

11.9.16. Class: geosrs:KissProjection

Table 201 — geosrs:KissProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/KissProjection |
| Super-classes | KissProjection |

11.10. Minimum Error Projections

| Requirement 31: Minimum Error Projections | |
|---|---|
| IDENTIFIER | /req/Minimum_Error_Projections |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:AiryProjection to be used in SPARQL graph patterns. |

11.10.1. Class: geosrs:AiryProjection

Table 202 — geosrs:AiryProjection

| | |
|---------------|--|
| URI | https://w3id.org/geosrs/projection/AiryProjection |
| Definition | An azimuthal minimum error projection for the region within the small or great circle defined by an angular distance, from the tangency point of the plane |
| Super-classes | AiryProjection |

11.11. Perspective Projections

| Requirement 32: Perspective Projections | |
|---|---|
| IDENTIFIER | /req/Perspective_Projections |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:CentralCylindricalProjection, geosrs:GeneralVerticalPerspectiveProjection, geosrs:GilbertTwoWorldPerspectiveProjection, geosrs:LaHireProjection, geosrs:LorgnaProjection, geosrs:LowryProjection, geosrs:OrthographicProjection, geosrs:PerspectiveConicProjection, geosrs:TiltedPerspectiveProjection, geosrs:VerticalPerspectiveProjection to be used in SPARQL graph patterns. |

11.11.1. Class: geosrs:CentralCylindricalProjection

Table 203 — geosrs:CentralCylindricalProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/CentralCylindricalProjection |
| Super-classes | CentralCylindricalProjection |

11.11.2. Class: geosrs:GeneralVerticalPerspectiveProjection

Table 204 — geosrs:GeneralVerticalPerspectiveProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GeneralVerticalPerspectiveProjection |
| Super-classes | GeneralVerticalPerspectiveProjection |

11.11.3. Class: geosrs:GilbertTwoWorldPerspectiveProjection

Table 205 — geosrs:GilbertTwoWorldPerspectiveProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GilbertTwoWorldPerspectiveProjection |
| Super-classes | GilbertTwoWorldPerspectiveProjection |

11.11.4. Class: geosrs:LaHireProjection

Table 206 — geosrs:LaHireProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/LaHireProjection |
| Super-classes | LaHireProjection |

11.11.5. Class: geosrs:LorgnaProjection

Table 207 — geosrs:LorgnaProjection

| | |
|-----|---|
| URI | https://w3id.org/geosrs/projection/LorgnaProjection |
|-----|---|

| | |
|---------------|---|
| Super-classes | <u>LorgnaProjection</u> |
|---------------|---|

11.11.6. Class: geosrs:LowryProjection

Table 208 — geosrs:LowryProjection

| | |
|---------------|--|
| URI | <u>https://w3id.org/geosrs/projection/LowryProjection</u> |
| Super-classes | <u>LowryProjection</u> |

11.11.7. Class: geosrs:OrthographicProjection

Table 209 — geosrs:OrthographicProjection

| | |
|---------------|--|
| URI | <u>https://w3id.org/geosrs/projection/OrthographicProjection</u> |
| Super-classes | <u>OrthographicProjection</u> |

11.11.8. Class: geosrs:PerspectiveConicProjection

Table 210 — geosrs:PerspectiveConicProjection

| | |
|---------------|--|
| URI | <u>https://w3id.org/geosrs/projection/PerspectiveConicProjection</u> |
| Super-classes | <u>PerspectiveConicProjection</u> |

11.11.9. Class: geosrs:TiltedPerspectiveProjection

Table 211 — geosrs:TiltedPerspectiveProjection

| | |
|---------------|--|
| URI | <u>https://w3id.org/geosrs/projection/TiltedPerspectiveProjection</u> |
| Super-classes | <u>TiltedPerspectiveProjection</u> |

11.11.10. Class: geosrs:VerticalPerspectiveProjection

Table 212 — geosrs:VerticalPerspectiveProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/VerticalPerspectiveProjection |
| Super-classes | VerticalPerspectiveProjection |

11.12. Polyconic Projections

REQUIREMENT 33: POLYCONIC PROJECTIONS

IDENTIFIER /req/Polyconic_Projections

STATEMENT Implementations shall allow the RDFS classes geosrs:GinzburgIVProjection, geosrs:GinzburgIXProjection, geosrs:GinzburgVIPProjection, geosrs:GinzburgVProjection, geosrs:GottWagnerProjection, geosrs:HillEucyclicProjection, geosrs:LagrangeProjection, geosrs:LaskowskiProjection, geosrs:RectangularPolyconicProjection, geosrs:StabiusWernerIIIProjection, geosrs:StabiusWernerIProjection, geosrs:VanDerGrintenIIProjection, geosrs:VanDerGrintenIProjection, geosrs:VanDerGrintenIVProjection, geosrs:WagnerIXProjection, geosrs:WagnerVIIIProjection, geosrs:WagnerVIIProjection to be used in SPARQL graph patterns.

11.12.1. Class: geosrs:GinzburgIVProjection

Table 213 — geosrs:GinzburgIVProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GinzburgIVProjection |
| Super-classes | GinzburgIVProjection |

11.12.2. Class: geosrs:GinzburgIXProjection

Table 214 — geosrs:GinzburgIXProjection

| | |
|-----|---|
| URI | https://w3id.org/geosrs/projection/GinzburgIXProjection |
|-----|---|

| | |
|---------------|--------------------------------------|
| Super-classes | GinzburgIXProjection |
|---------------|--------------------------------------|

11.12.3. Class: geosrs:GinzburgVIProjection

Table 215 — geosrs:GinzburgVIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GinzburgVIProjection |
| Super-classes | GinzburgVIProjection |

11.12.4. Class: geosrs:GinzburgVProjection

Table 216 — geosrs:GinzburgVProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GinzburgVProjection |
| Super-classes | GinzburgVProjection |

11.12.5. Class: geosrs:GottWagnerProjection

Table 217 — geosrs:GottWagnerProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GottWagnerProjection |
| Super-classes | GottWagnerProjection |

11.12.6. Class: geosrs:HillEucyclicProjection

Table 218 — geosrs:HillEucyclicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/HillEucyclicProjection |
| Super-classes | HillEucyclicProjection |

11.12.7. Class: geosrs:LagrangeProjection

Table 219 — geosrs:LagrangeProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/LagrangeProjection |
| Super-classes | LagrangeProjection |

11.12.8. Class: geosrs:LaskowskiProjection

Table 220 — geosrs:LaskowskiProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/LaskowskiProjection |
| Super-classes | LaskowskiProjection |

11.12.9. Class: geosrs:RectangularPolyconicProjection

Table 221 — geosrs:RectangularPolyconicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/RectangularPolyconicProjection |
| Super-classes | RectangularPolyconicProjection |

11.12.10. Class: geosrs:StabiusWernerIIIProjection

Table 222 — geosrs:StabiusWernerIIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/StabiusWernerIIIProjection |
| Super-classes | StabiusWernerIIIProjection |

11.12.11. Class: geosrs:StabiusWernerIProjection

Table 223 — geosrs:StabiusWernerIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/StabiusWernerIProjection |
| Super-classes | StabiusWernerIProjection |

11.12.12. Class: geosrs:VanDerGrintenIIProjection

Table 224 — geosrs:VanDerGrintenIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/VanDerGrintenIIProjection |
| Super-classes | VanDerGrintenIIProjection |

11.12.13. Class: geosrs:VanDerGrintenIProjection

Table 225 — geosrs:VanDerGrintenIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/VanDerGrintenIProjection |
| Super-classes | VanDerGrintenIProjection |

11.12.14. Class: geosrs:VanDerGrintenIVProjection

Table 226 — geosrs:VanDerGrintenIVProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/VanDerGrintenIVProjection |
| Super-classes | VanDerGrintenIVProjection |

11.12.15. Class: geosrs:WagnerIXProjection

Table 227 — geosrs:WagnerIXProjection

| | |
|-----|---|
| URI | https://w3id.org/geosrs/projection/WagnerIXProjection |
|-----|---|

Super-classes

[WagnerIXProjection](#)

11.12.16. Class: geosrs:WagnerVIIIProjection

Table 228 — geosrs:WagnerVIIIProjection

URI

<https://w3id.org/geosrs/projection/WagnerVIIIProjection>

Super-classes

[WagnerVIIIProjection](#)

11.12.17. Class: geosrs:WagnerVIIProjection

Table 229 — geosrs:WagnerVIIProjection

URI

<https://w3id.org/geosrs/projection/WagnerVIIProjection>

Super-classes

[WagnerVIIProjection](#)

11.13. Polyhedral Projections

REQUIREMENT 34: POLYHEDRAL PROJECTIONS

IDENTIFIER /req/Polyhedral_Projections

STATEMENT

Implementations shall allow the RDFS classes geosrs:AuthaGraphProjection, geosrs:CahillKeyesProjection, geosrs:CollignonButterflyProjection, geosrs:DodecahedralProjection, geosrs:DymaxionProjection, geosrs:GnomonicButterflyProjection, geosrs:GnomonicCubedSphereProjection, geosrs:GnomonicIcosahedronProjection, geosrs:GuyouProjection, geosrs:IcosahedralProjection, geosrs:LeeProjection, geosrs:MyrahedalProjection, geosrs:OctantProjection, geosrs:QuadrilateralizedSphericalCubeProjection, geosrs:WatermanButterflyProjection to be used in SPARQL graph patterns.

11.13.1. Class: geosrs:AuthaGraphProjection

Table 230 — geosrs:AuthaGraphProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/AuthaGraphProjection |
| Super-classes | AuthaGraphProjection |

11.13.2. Class: geosrs:CahillKeyesProjection

Table 231 — geosrs:CahillKeyesProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/CahillKeyesProjection |
| Super-classes | CahillKeyesProjection |

11.13.3. Class: geosrs:CollignonButterflyProjection

Table 232 — geosrs:CollignonButterflyProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/CollignonButterflyProjection |
| Super-classes | CollignonButterflyProjection |

11.13.4. Class: geosrs:DodecahedralProjection

Table 233 — geosrs:DodecahedralProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/DodecahedralProjection |
| Super-classes | DodecahedralProjection |

11.13.5. Class: geosrs:DymaxionProjection

Table 234 — geosrs:DymaxionProjection

| | |
|-----|---|
| URI | https://w3id.org/geosrs/projection/DymaxionProjection |
|-----|---|

| | |
|---------------|------------------------------------|
| Super-classes | DymaxionProjection |
|---------------|------------------------------------|

11.13.6. Class: geosrs:GnomonicButterflyProjection

Table 235 — geosrs:GnomonicButterflyProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GnomonicButterflyProjection |
| Super-classes | GnomonicButterflyProjection |

11.13.7. Class: geosrs:GnomonicCubedSphereProjection

Table 236 — geosrs:GnomonicCubedSphereProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GnomonicCubedSphereProjection |
| Super-classes | GnomonicCubedSphereProjection |

11.13.8. Class: geosrs:GnomonicIcosahedronProjection

Table 237 — geosrs:GnomonicIcosahedronProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GnomonicIcosahedronProjection |
| Super-classes | GnomonicIcosahedronProjection |

11.13.9. Class: geosrs:GuyouProjection

Table 238 — geosrs:GuyouProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GuyouProjection |
| Super-classes | GuyouProjection |

11.13.10. Class: geosrs:IcosahedralProjection

Table 239 — geosrs:IcosahedralProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/IcosahedralProjection |
| Super-classes | IcosahedralProjection |

11.13.11. Class: geosrs:LeeProjection

Table 240 — geosrs:LeeProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/LeeProjection |
| Super-classes | LeeProjection |

11.13.12. Class: geosrs:MyrahedralProjection

Table 241 — geosrs:MyrahedralProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/MyrahedralProjection |
| Super-classes | MyrahedralProjection |

11.13.13. Class: geosrs:OctantProjection

Table 242 — geosrs:OctantProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/OctantProjection |
| Super-classes | OctantProjection |

11.13.14. Class: geosrs:QuadrilateralizedSphericalCubeProjection

Table 243 — geosrs:QuadrilateralizedSphericalCubeProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/QuadrilateralizedSphericalCubeProjection |
| Super-classes | QuadrilateralizedSphericalCubeProjection |

11.13.15. Class: geosrs:WatermanButterflyProjection

Table 244 — geosrs:WatermanButterflyProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/WatermanButterflyProjection |
| Super-classes | WatermanButterflyProjection |

11.14. Pseudo Azimuthal Projections

REQUIREMENT 35: PSEUDO AZIMUTHAL PROJECTIONS

| | |
|------------|--|
| IDENTIFIER | /req/Pseudo_Azimuthal_Projections |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:AitoffObliqueProjection, geosrs:AitoffProjection, geosrs:HammerProjection, geosrs:Strebe1995Projection, geosrs:WinkelTripelProjection to be used in SPARQL graph patterns. |

11.14.1. Class: geosrs:AitoffObliqueProjection

Table 245 — geosrs:AitoffObliqueProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/AitoffObliqueProjection |
| Super-classes | AitoffObliqueProjection |

11.14.2. Class: geosrs:AitoffProjection

Table 246 — geosrs:AitoffProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/AitoffProjection |
| Definition | A modified azimuthal projection whose graticule takes the form of an ellipse |
| Super-classes | AitoffProjection |

11.14.3. Class: geosrs:HammerProjection

Table 247 — geosrs:HammerProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/HammerProjection |
| Super-classes | HammerProjection |

11.14.4. Class: geosrs:Strebe1995Projection

Table 248 — geosrs:Strebe1995Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/Strebe1995Projection |
| Super-classes | Strebe1995Projection |

11.14.5. Class: geosrs:WinkelTripelProjection

Table 249 — geosrs:WinkelTripelProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/WinkelTripelProjection |
| Super-classes | WinkelTripelProjection |

11.15. Pseudo Conical Projections

REQUIREMENT 36: PSEUDO CONICAL PROJECTIONS

| | |
|------------|---|
| IDENTIFIER | /req/Pseudo_Conical_Projections |
| STATEMENT | Implementations shall allow the RDFS classes <code>geosrs:AmericanPolyconicProjection</code> , <code>geosrs:BonneProjection</code> , <code>geosrs:BottomleyProjection</code> , <code>geosrs:NicolosiGlobularProjection</code> , <code>geosrs:PtolemyIIProjection</code> , <code>geosrs:WernerProjection</code> to be used in SPARQL graph patterns. |

11.15.1. Class: `geosrs:AmericanPolyconicProjection`

Table 250 — `geosrs:AmericanPolyconicProjection`

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/AmericanPolyconicProjection |
| Super-classes | AmericanPolyconicProjection |
| Example | <code>geosrs:AmericanPolyconicProjection</code> |

11.15.2. Class: `geosrs:BonneProjection`

Table 251 — `geosrs:BonneProjection`

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BonneProjection |
| Super-classes | BonneProjection |

11.15.3. Class: `geosrs:BottomleyProjection`

Table 252 — `geosrs:BottomleyProjection`

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BottomleyProjection |
| Super-classes | BottomleyProjection |

11.15.4. Class: `geosrs:NicolosiGlobularProjection`

Table 253 — geosrs:NicolosiGlobularProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/NicolosiGlobularProjection |
| Super-classes | NicolosiGlobularProjection |

11.15.5. Class: geosrs:PtolemyIIProjection

Table 254 — geosrs:PtolemyIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PtolemyIIProjection |
| Super-classes | PtolemyIIProjection |

11.15.6. Class: geosrs:WernerProjection

Table 255 — geosrs:WernerProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/WernerProjection |
| Super-classes | WernerProjection |

11.16. Pseudo Cylindrical Projections

| REQUIREMENT 37: PSEUDO CYLINDRICAL PROJECTIONS | |
|--|--|
| IDENTIFIER | /req/Pseudo_Cylindrical_Projections |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:ApianIIProjection, geosrs:AtlantisProjection, geosrs:BaranyIIIIProjection, geosrs:BaranyIIProjection, geosrs:BaranyIProjection, geosrs:BaranyIIVProjection, geosrs:BoggsEumorphicProjection, geosrs:BromleyProjection, geosrs:CabotProjection, geosrs:CollignonProjection, geosrs:CrasterParabolicProjection, geosrs:DeakinMinimumErrorProjection, geosrs:Eckert1Projection, geosrs:Eckert2Projection, geosrs:Eckert3Projection, geosrs:Eckert4Projection, geosrs:Eckert5Projection, geosrs:Eckert6Projection, geosrs:EqualEarthProjection, geosrs:FaheyProjection, geosrs:FoucautProjection, geosrs:FoucautSinusoidalProjection, geosrs:FournierIIProjection, geosrs:GinzburgVIIIProjection, geosrs:GoodeHomolosineProjection, geosrs:HEALPixProjection, geosrs:HufnagelProjection, geosrs:Kavrayskiy7Projection, geosrs:LoximuthalProjection, geosrs:MayrProjection, geosrs:McBrydeThomasFlatPolarParabolicProjection, |

REQUIREMENT 37: PSEUDO CYLINDRICAL PROJECTIONS

geosrs:McBrydeThomasFlatPolarQuarticProjection, geosrs:McBrydeThomasFlatPolarSinusoidalProjection, geosrs:McBrydeThomasIIProjection, geosrs:McBrydeThomasIProjection, geosrs:NaturalEarth2Projection, geosrs:NaturalEarthProjection, geosrs:NellHammerProjection, geosrs:NellProjection, geosrs:OrteliusOvalProjection, geosrs:PutninsP1Projection, geosrs:PutninsP2Projection, geosrs:PutninsP3Projection, geosrs:PutninsP5Projection, geosrs:PutninsP6Projection, geosrs:QuarticAuthalicProjection, geosrs:RobinsonProjection, geosrs:SinusoidalProjection, geosrs:TheTimesProjection, geosrs:ToblerG1Projection, geosrs:ToblerHyperellipticalProjection, geosrs:WagnerIIIProjection, geosrs:WagnerIIProjection, geosrs:WagnerIProjection, geosrs:WagnerIVProjection, geosrs:WagnerVProjection, geosrs:WagnerVProjection, geosrs:WerenskioldIProjection, geosrs:PutninsP3'Projection, geosrs:PutninsP4'Projection, geosrs:PutninsP5'Projection, geosrs:PutninsP6'Projection to be used in SPARQL graph patterns.

11.16.1. Class: geosrs:ApianIIProjection

Table 256 — geosrs:ApianIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/ApianIIProjection |
| Super-classes | ApianIIProjection |

11.16.2. Class: geosrs:AtlantisProjection

Table 257 — geosrs:AtlantisProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/AtlantisProjection |
| Super-classes | AtlantisProjection |

11.16.3. Class: geosrs:BaranyIIIProjection

Table 258 — geosrs:BaranyIIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BaranyIIIProjection |
| Super-classes | BaranyIIIProjection |

11.16.4. Class: geosrs:BaranyillProjection

Table 259 — geosrs:BaranyillProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BaranyillProjection |
| Super-classes | BaranyillProjection |

11.16.5. Class: geosrs:BaranyilProjection

Table 260 — geosrs:BaranyilProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BaranyilProjection |
| Super-classes | BaranyilProjection |

11.16.6. Class: geosrs:BaranyilVProjection

Table 261 — geosrs:BaranyilVProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BaranyilVProjection |
| Super-classes | BaranyilVProjection |

11.16.7. Class: geosrs:BoggsEumorphicProjection

Table 262 — geosrs:BoggsEumorphicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BoggsEumorphicProjection |
| Super-classes | BoggsEumorphicProjection |

11.16.8. Class: geosrs:BromleyProjection

Table 263 — geosrs:BromleyProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/BromleyProjection |
| Super-classes | BromleyProjection |

11.16.9. Class: geosrs:CabotProjection

Table 264 — geosrs:CabotProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/CabotProjection |
| Super-classes | CabotProjection |

11.16.10. Class: geosrs:CollignonProjection

Table 265 — geosrs:CollignonProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/CollignonProjection |
| Definition | An equal-area pseudocylindrical projection that maps the sphere onto a triangle or diamond |
| Super-classes | CollignonProjection |

11.16.11. Class: geosrs:CrasterParabolicProjection

Table 266 — geosrs:CrasterParabolicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/CrasterParabolicProjection |
| Super-classes | CrasterParabolicProjection |

11.16.12. Class: geosrs:DeakinMinimumErrorProjection

Table 267 — geosrs:DeakinMinimumErrorProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/DeakinMinimumErrorProjection |
| Super-classes | DeakinMinimumErrorProjection |

11.16.13. Class: geosrs:Eckert1Projection

Table 268 — geosrs:Eckert1Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/Eckert1Projection |
| Super-classes | Eckert1Projection |

11.16.14. Class: geosrs:Eckert2Projection

Table 269 — geosrs:Eckert2Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/Eckert2Projection |
| Super-classes | Eckert2Projection |

11.16.15. Class: geosrs:Eckert3Projection

Table 270 — geosrs:Eckert3Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/Eckert3Projection |
| Super-classes | Eckert3Projection |

11.16.16. Class: geosrs:Eckert4Projection

Table 271 — geosrs:Eckert4Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/Eckert4Projection |
| Super-classes | Eckert4Projection |

11.16.17. Class: geosrs:Eckert5Projection

Table 272 — geosrs:Eckert5Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/Eckert5Projection |
| Super-classes | Eckert5Projection |

11.16.18. Class: geosrs:Eckert6Projection

Table 273 — geosrs:Eckert6Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/Eckert6Projection |
| Super-classes | Eckert6Projection |

11.16.19. Class: geosrs:EqualEarthProjection

Table 274 — geosrs:EqualEarthProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/EqualEarthProjection |
| Super-classes | EqualEarthProjection |
| Example | geosrs:EqualEarthProjection |

11.16.20. Class: geosrs:FaheyProjection

Table 275 — geosrs:FaheyProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/FaheyProjection |
| Super-classes | FaheyProjection |

11.16.21. Class: geosrs:FoucautProjection

Table 276 — geosrs:FoucautProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/FoucautProjection |
| Super-classes | FoucautProjection |

11.16.22. Class: geosrs:FoucautSinusoidalProjection

Table 277 — geosrs:FoucautSinusoidalProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/FoucautSinusoidalProjection |
| Super-classes | FoucautSinusoidalProjection |

11.16.23. Class: geosrs:FournierIIProjection

Table 278 — geosrs:FournierIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/FournierIIProjection |
| Super-classes | FournierIIProjection |

11.16.24. Class: geosrs:GinzburgVIIIProjection

Table 279 — geosrs:GinzburgVIIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GinzburgVIIIProjection |
| Super-classes | GinzburgVIIIProjection |

11.16.25. Class: geosrs:GoodeHomolosineProjection

Table 280 — geosrs:GoodeHomolosineProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/GoodeHomolosineProjection |
| Super-classes | GoodeHomolosineProjection |

11.16.26. Class: geosrs:HEALPixProjection

Table 281 — geosrs:HEALPixProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/HEALPixProjection |
| Super-classes | HEALPixProjection |

11.16.27. Class: geosrs:HufnagelProjection

Table 282 — geosrs:HufnagelProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/HufnagelProjection |
| Super-classes | HufnagelProjection |

11.16.28. Class: geosrs:Kavrayskiy7Projection

Table 283 — geosrs:Kavrayskiy7Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/Kavrayskiy7Projection |
| Super-classes | Kavrayskiy7Projection |

11.16.29. Class: geosrs:LoximuthalProjection

Table 284 — geosrs:LoximuthalProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/LoximuthalProjection |
| Super-classes | LoximuthalProjection |

11.16.30. Class: geosrs:MayrProjection

Table 285 — geosrs:MayrProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/MayrProjection |
| Super-classes | MayrProjection |

11.16.31. Class: geosrs:McBrydeThomasFlatPolarParabolicProjection

Table 286 — geosrs:McBrydeThomasFlatPolarParabolicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/McBrydeThomasFlatPolarParabolicProjection |
| Super-classes | McBrydeThomasFlatPolarParabolicProjection |

11.16.32. Class: geosrs:McBrydeThomasFlatPolarQuarticProjection

Table 287 — geosrs:McBrydeThomasFlatPolarQuarticProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/McBrydeThomasFlatPolarQuarticProjection |
| Super-classes | McBrydeThomasFlatPolarQuarticProjection |

11.16.33. Class: geosrs:McBrydeThomasFlatPolarSinusoidalProjection

Table 288 — geosrs:McBrydeThomasFlatPolarSinusoidalProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/McBrydeThomasFlatPolarSinusoidalProjection |
| Super-classes | McBrydeThomasFlatPolarSinusoidalProjection |

11.16.34. Class: geosrs:McBrydeThomasIIProjection

Table 289 — geosrs:McBrydeThomasIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/McBrydeThomasIIProjection |
| Super-classes | McBrydeThomasIIProjection |

11.16.35. Class: geosrs:McBrydeThomasIProjection

Table 290 — geosrs:McBrydeThomasIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/McBrydeThomasIProjection |
| Super-classes | McBrydeThomasIProjection |

11.16.36. Class: geosrs:NaturalEarth2Projection

Table 291 — geosrs:NaturalEarth2Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/NaturalEarth2Projection |
| Super-classes | NaturalEarth2Projection |

11.16.37. Class: geosrs:NaturalEarthProjection

Table 292 — geosrs:NaturalEarthProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/NaturalEarthProjection |
| Definition | A pseudocylindrical map projection designed by Tom Patterson and introduced in 2008 |
| Super-classes | NaturalEarthProjection |

11.16.38. Class: geosrs:NellHammerProjection

Table 293 — geosrs:NellHammerProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/NellHammerProjection |
| Super-classes | NellHammerProjection |

11.16.39. Class: geosrs:NellProjection

Table 294 — geosrs:NellProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/NellProjection |
| Super-classes | NellProjection |

11.16.40. Class: geosrs:OrteliusOvalProjection

Table 295 — geosrs:OrteliusOvalProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/OrteliusOvalProjection |
| Super-classes | OrteliusOvalProjection |

11.16.41. Class: geosrs:PutninsP1Projection

Table 296 — geosrs:PutninsP1Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PutninsP1Projection |
| Super-classes | PutninsP1Projection |

11.16.42. Class: geosrs:PutninsP2Projection

Table 297 — geosrs:PutninsP2Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PutninsP2Projection |
| Super-classes | PutninsP2Projection |

11.16.43. Class: geosrs:PutninsP3Projection

Table 298 — geosrs:PutninsP3Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PutninsP3Projection |
| Super-classes | PutninsP3Projection |

11.16.44. Class: geosrs:PutninsP5Projection

Table 299 — geosrs:PutninsP5Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PutninsP5Projection |
| Super-classes | PutninsP5Projection |

11.16.45. Class: geosrs:PutninsP6Projection

Table 300 — geosrs:PutninsP6Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PutninsP6Projection |
| Super-classes | PutninsP6Projection |

11.16.46. Class: geosrs:QuarticAuthalicProjection

Table 301 — geosrs:QuarticAuthalicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/QuarticAuthalicProjection |
| Super-classes | QuarticAuthalicProjection |

11.16.47. Class: geosrs:RobinsonProjection

Table 302 — geosrs:RobinsonProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/RobinsonProjection |
| Super-classes | RobinsonProjection |

11.16.48. Class: geosrs:SinusoidalProjection

Table 303 — geosrs:SinusoidalProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/SinusoidalProjection |
| Super-classes | SinusoidalProjection |

11.16.49. Class: geosrs:TheTimesProjection

Table 304 — geosrs:TheTimesProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/TheTimesProjection |
| Super-classes | TheTimesProjection |

11.16.50. Class: geosrs:ToblerG1Projection

Table 305 — geosrs:ToblerG1Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/ToblerG1Projection |
| Super-classes | ToblerG1Projection |

11.16.51. Class: geosrs:ToblerHyperellipticalProjection

Table 306 — geosrs:ToblerHyperellipticalProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/ToblerHyperellipticalProjection |
| Super-classes | ToblerHyperellipticalProjection |

11.16.52. Class: geosrs:WagnerIIIProjection

Table 307 — geosrs:WagnerIIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/WagnerIIIProjection |
| Super-classes | WagnerIIIProjection |

11.16.53. Class: geosrs:WagnerIIProjection

Table 308 — geosrs:WagnerIIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/WagnerIIProjection |
| Super-classes | WagnerIIProjection |

11.16.54. Class: geosrs:WagnerIProjection

Table 309 — geosrs:WagnerIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/WagnerIProjection |
| Super-classes | WagnerIProjection |

11.16.55. Class: geosrs:WagnerIVProjection

Table 310 — geosrs:WagnerIVProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/WagnerIVProjection |
| Super-classes | WagnerIVProjection |

11.16.56. Class: geosrs:WagnerVProjection

Table 311 — geosrs:WagnerVIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/WagnerVIProjection |
| Super-classes | WagnerVIProjection |

11.16.57. Class: geosrs:WagnerVProjection

Table 312 — geosrs:WagnerVProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/WagnerVProjection |
| Super-classes | WagnerVProjection |

11.16.58. Class: geosrs:WerenskioldIProjection

Table 313 — geosrs:WerenskioldIProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/WerenskioldIProjection |
| Super-classes | WerenskioldIProjection |

11.16.59. Class: geosrs:PutninsP3'Projection

Table 314 — geosrs:PutninsP3'Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PutninsP3'Projection |
| Super-classes | PutninsP3'Projection |

11.16.60. Class: geosrs:PutninsP4'Projection

Table 315 — geosrs:PutninsP4'Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PutninsP4'Projection |
| Super-classes | PutninsP4'Projection |

11.16.61. Class: geosrs:PutninsP5'Projection

Table 316 — geosrs:PutninsP5'Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PutninsP5'Projection |
| Super-classes | PutninsP5'Projection |

11.16.62. Class: geosrs:PutninsP6'Projection

Table 317 — geosrs:PutninsP6'Projection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/PutninsP6'Projection |
| Super-classes | PutninsP6'Projection |

11.17. Stereographic Projections

REQUIREMENT 38: STEREOGRAPHIC PROJECTIONS

| | |
|------------|---|
| IDENTIFIER | /req/Stereographic_Projections |
| STATEMENT | Implementations shall allow the RDFS classes geosrs:MillerOblatedStereographicProjection, geosrs:RoussilheProjection to be used in SPARQL graph patterns. |

11.17.1. Class: geosrs:MillerOblatedStereographicProjection

Table 318 — geosrs:MillerOblatedStereographicProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/MillerOblatedStereographicProjection |
| Super-classes | MillerOblatedStereographicProjection |

11.17.2. Class: geosrs:RoussilheProjection

Table 319 — geosrs:RoussilheProjection

| | |
|---------------|---|
| URI | https://w3id.org/geosrs/projection/RoussilheProjection |
| Super-classes | RoussilheProjection |



12

PLANET MODULE

This clause establishes the **PLANET** Requirements class, with IRI `/req/planet`, which has a corresponding Conformance Class, **PLANET**, with IRI `/conf/planet`.

REQUIREMENTS CLASS 7: 12-PLANET_MODULE.ADOC EXTENSION

| | |
|-------------|---|
| IDENTIFIER | <code>/req/12-planet_module.adoc</code> |
| TARGET TYPE | Implementation Specification |
| REQUIREMENT | <code>/req/Interstellar_Body</code> |

12.1. Interstellar Body

REQUIREMENT 39: INTERSTELLAR BODY

| | |
|------------|--|
| IDENTIFIER | <code>/req/Interstellar_Body</code> |
| STATEMENT | Implementations shall allow the RDFS classes <code>geosrs:ArtificialSatellite</code> , <code>geosrs:Asteroid</code> , <code>geosrs:Comet</code> , <code>geosrs:DwarfPlanet</code> , <code>geosrs:InterstellarBody</code> , <code>geosrs:Moon</code> , <code>geosrs:NaturalSatellite</code> , <code>geosrs:Planet</code> , <code>geosrs:PlanetStatus</code> , <code>geosrs:Plutoid</code> , <code>geosrs:Star</code> to be used in SPARQL graph patterns. |

12.1.1. Class: `geosrs:ArtificialSatellite`

Table 320 — `geosrs:ArtificialSatellite`

| | |
|-----|---|
| URI | https://w3id.org/geosrs/planet/ArtificialSatellite |
|-----|---|

12.1.2. Class: `geosrs:Asteroid`

Table 321 — `geosrs:Asteroid`

| | |
|-----|---|
| URI | https://w3id.org/geosrs/planet/Asteroid |
|-----|---|

12.1.3. Class: geosrs:Comet

Table 322 — geosrs:Comet

| | |
|-----|---|
| URI | https://w3id.org/geosrs/planet/Comet |
|-----|---|

12.1.4. Class: geosrs:DwarfPlanet

Table 323 — geosrs:DwarfPlanet

| | |
|-----|---|
| URI | https://w3id.org/geosrs/planet/DwarfPlanet |
|-----|---|

12.1.5. Class: geosrs:InterstellarBody

Table 324 — geosrs:InterstellarBody

| | |
|-----|---|
| URI | https://w3id.org/geosrs/planet/InterstellarBody |
|-----|---|

12.1.6. Class: geosrs:Moon

Table 325 — geosrs:Moon

| | |
|-----|---|
| URI | https://w3id.org/geosrs/planet/Moon |
|-----|---|

12.1.7. Class: geosrs:NaturalSatellite

Table 326 — geosrs:NaturalSatellite

| | |
|-----|---|
| URI | https://w3id.org/geosrs/planet/NaturalSatellite |
|-----|---|

12.1.8. Class: geosrs:Planet

Table 327 — geosrs:Planet

| | |
|-----|---|
| URI | https://w3id.org/geosrs/planet/Planet |
|-----|---|

12.1.9. Class: geosrs:PlanetStatus

Table 328 — geosrs:PlanetStatus

| | |
|-----|---|
| URI | https://w3id.org/geosrs/planet/PlanetStatus |
|-----|---|

12.1.10. Class: geosrs:Plutoid

Table 329 — geosrs:Plutoid

| | |
|-----|---|
| URI | https://w3id.org/geosrs/planet/Plutoid |
|-----|---|

12.1.11. Class: geosrs:Star

Table 330 — geosrs:Star

| | |
|-----|---|
| URI | https://w3id.org/geosrs/planet/Star |
|-----|---|



13

COMMON INSTANCES

This clause establishes common instances which are needed in CRS specifications as Requirement class **INSTANCES**, with IRI `/req/instances`, which has a corresponding Conformance Class, **INSTANCES**, with IRI `/conf/instances`.

REQUIREMENTS CLASS 8: 13-INSTANCES.ADOC EXTENSION

| | |
|-------------|---|
| IDENTIFIER | <code>/req/13-instances.adoc</code> |
| TARGET TYPE | Implementation Specification |
| REQUIREMENT | <code>/req/Coordinate_System_Axis</code> <code>/req/Spheroids</code> |

13.1. Coordinate System Axis

REQUIREMENT 40: COORDINATE SYSTEM AXIS

| | |
|------------|---|
| IDENTIFIER | <code>/req/Coordinate_System_Axis</code> |
| STATEMENT | Implementations shall allow the RDFS classes <code>geosrs:down</code> , <code>geosrs:east</code> , <code>geosrs:north</code> , <code>geosrs:south</code> , <code>geosrs:up</code> , <code>geosrs:west</code> to be used in SPARQL graph patterns. |

13.1.1. Instance: `geosrs:down`

Table 331 — `geosrs:down`

| | |
|-----|---|
| URI | https://w3id.org/geosrs/down |
|-----|---|

13.1.2. Instance: `geosrs:east`

Table 332 — geosrs: east

| | |
|-----|---|
| URI | https://w3id.org/geosrs/east |
|-----|---|

13.1.3. Instance: geosrs:north

Table 333 — geosrs:north

| | |
|-----|---|
| URI | https://w3id.org/geosrs/north |
|-----|---|

13.1.4. Instance: geosrs:south

Table 334 — geosrs:south

| | |
|-----|---|
| URI | https://w3id.org/geosrs/south |
|-----|---|

13.1.5. Instance: geosrs:up

Table 335 — geosrs:up

| | |
|-----|---|
| URI | https://w3id.org/geosrs/up |
|-----|---|

13.1.6. Instance: geosrs:west

Table 336 — geosrs:west

| | |
|-----|---|
| URI | https://w3id.org/geosrs/west |
|-----|---|

13.2. Spheroids

REQUIREMENT 41: SPHEROIDS

IDENTIFIER /req/Spheroids

STATEMENT

Implementations shall allow the RDFS classes geosrs:GRS1980, geosrs:GRS67, geosrs:PZ90, geosrs:Airy1830, geosrs:AiryModified1849, geosrs:International1924, geosrs:AustralianNationalSpheroid, geosrs:Everest1930, geosrs:Clarke1866, geosrs:Plessis1817, geosrs:Danish1876, geosrs:Struve1860, geosrs:LAG1975, geosrs:Clarke1858, geosrs:Clarke1880, geosrs:Helmert1906, geosrs:CGCS2000, geosrs:GSK-2011, geosrs:Zach1812, geosrs:Clarke1880ARC, geosrs:Clarke1880IGN, geosrs:WGS66, geosrs:WGS72, geosrs:WGS84, geosrs:Krassowsky1940 to be used in SPARQL graph patterns.

13.2.1. Instance: geosrs:GRS1980

Table 337 — geosrs:GRS1980

URI

<https://w3id.org/geosrs/GRS1980>

13.2.2. Instance: geosrs:GRS67

Table 338 — geosrs:GRS67

URI

<https://w3id.org/geosrs/GRS67>

13.2.3. Instance: geosrs:PZ90

Table 339 — geosrs:PZ90

URI

<https://w3id.org/geosrs/PZ90>

13.2.4. Instance: geosrs:Airy1830

Table 340 — geosrs:Airy1830

URI

<https://w3id.org/geosrs/Airy1830>

13.2.5. Instance: geosrs:AiryModified1849

Table 341 — geosrs:AiryModified1849

| | |
|-----|---|
| URI | https://w3id.org/geosrs/AiryModified1849 |
|-----|---|

13.2.6. Instance: geosrs:International1924

Table 342 — geosrs:International1924

| | |
|-----|---|
| URI | https://w3id.org/geosrs/International1924 |
|-----|---|

13.2.7. Instance: geosrs:AustralianNationalSpheroid

Table 343 — geosrs:AustralianNationalSpheroid

| | |
|-----|---|
| URI | https://w3id.org/geosrs/AustralianNationalSpheroid |
|-----|---|

13.2.8. Instance: geosrs:Everest1930

Table 344 — geosrs:Everest1930

| | |
|-----|---|
| URI | https://w3id.org/geosrs/Everest1930 |
|-----|---|

13.2.9. Instance: geosrs:Clarke1866

Table 345 — geosrs:Clarke1866

| | |
|-----|---|
| URI | https://w3id.org/geosrs/Clarke1866 |
|-----|---|

13.2.10. Instance: geosrs:Plessis1817

Table 346 — geosrs:Plessis1817

| | |
|-----|---|
| URI | https://w3id.org/geosrs/Plessis1817 |
|-----|---|

13.2.11. Instance: geosrs:Danish1876

Table 347 — geosrs:Danish1876

| | |
|-----|---|
| URI | https://w3id.org/geosrs/Danish1876 |
|-----|---|

13.2.12. Instance: geosrs:Struve1860

Table 348 — geosrs:Struve1860

| | |
|-----|---|
| URI | https://w3id.org/geosrs/Struve1860 |
|-----|---|

13.2.13. Instance: geosrs:IAG1975

Table 349 — geosrs:IAG1975

| | |
|-----|---|
| URI | https://w3id.org/geosrs/IAG1975 |
|-----|---|

13.2.14. Instance: geosrs:Clarke1858

Table 350 — geosrs:Clarke1858

| | |
|-----|---|
| URI | https://w3id.org/geosrs/Clarke1858 |
|-----|---|

13.2.15. Instance: geosrs:Clarke1880

Table 351 — geosrs:Clarke1880

| | |
|-----|---|
| URI | https://w3id.org/geosrs/Clarke1880 |
|-----|---|

13.2.16. Instance: geosrs:Helmert1906

Table 352 — geosrs:Helmert1906

| | |
|-----|---|
| URI | https://w3id.org/geosrs/Helmert1906 |
|-----|---|

13.2.17. Instance: geosrs:CGCS2000

Table 353 — geosrs:CGCS2000

| | |
|-----|---|
| URI | https://w3id.org/geosrs/CGCS2000 |
|-----|---|

13.2.18. Instance: geosrs:GSK-2011

Table 354 — geosrs:GSK-2011

| | |
|-----|---|
| URI | https://w3id.org/geosrs/GSK-2011 |
|-----|---|

13.2.19. Instance: geosrs:Zach1812

Table 355 — geosrs:Zach1812

| | |
|-----|---|
| URI | https://w3id.org/geosrs/Zach1812 |
|-----|---|

13.2.20. Instance: geosrs:Clarke1880ARC

Table 356 — geosrs:Clarke1880ARC

| | |
|-----|---|
| URI | https://w3id.org/geosrs/Clarke1880ARC |
|-----|---|

13.2.21. Instance: geosrs:Clarke1880IGN

Table 357 — geosrs:Clarke1880IGN

| | |
|-----|---|
| URI | https://w3id.org/geosrs/Clarke1880IGN |
|-----|---|

13.2.22. Instance: geosrs:WGS66

Table 358 — geosrs:WGS66

| | |
|-----|---|
| URI | https://w3id.org/geosrs/WGS66 |
|-----|---|

13.2.23. Instance: geosrs:WGS72

Table 359 — geosrs:WGS72

| | |
|-----|---|
| URI | https://w3id.org/geosrs/WGS72 |
|-----|---|

13.2.24. Instance: geosrs:WGS84

Table 360 — geosrs:WGS84

| | |
|-----|---|
| URI | https://w3id.org/geosrs/WGS84 |
|-----|---|

13.2.25. Instance: geosrs:Krassowsky1940

Table 361 — geosrs:Krassowsky1940

| | |
|-----|---|
| URI | https://w3id.org/geosrs/Krassowsky1940 |
|-----|---|







ANNEX A (INFORMATIVE) ALIGNMENTS



ANNEX A (INFORMATIVE) ALIGNMENTS

Overview

Overview

The prefixes used for the ontologies mapped to in all following sections are given in the following table.

Table A.1 — Alignment: Namespaces

| | |
|-----------|---|
| ign: | http://data.ign.fr/def/ignf# |
| iso19111: | http://def.isotc211.org/iso19112/2019/SpatialReferencingByGeographicIdentifier# |
| geosrs: | http://www.opengis.net/ont/geosparql# |
| ifc: | https://standards.buildingsmart.org/IFC/DEV/IFC4/ADD2_TC1/OWL/ |
| owl: | http://www.w3.org/2002/07/owl# |
| prov: | http://www.w3.org/ns/prov# |
| rdf: | http://www.w3.org/1999/02/22-rdf-syntax-ns# |
| rdfs: | http://www.w3.org/2000/01/rdf-schema# |

A.1. IGN Ontology

Table A.2 – Alignment: IGN Ontology

| FROM ELEMENT | MAPPING RELATION | TO ELEMENT | NOTES |
|--|-------------------------------------|---|-------|
| geosrs:CoordinateSystem | owl:equivalentClass | ign:CoordinateSystem | - |
| geosrs:Datum | owl:equivalentClass | ign:Datum | - |
| geosrs:Ellipsoid | owl:equivalentClass | ign:Ellipsoid | - |
| geosrs:Conversion | owl:equivalentClass | ign:Conversion | - |
| geosrs:CoordinateOperation | owl:equivalentClass | ign:CoordinateOperation | - |
| geosrs:OperationMethod | owl:equivalentClass | ign:OperationMethod | - |
| geosrs:OperationParameter | owl:equivalentClass | ign:OperationParameter | - |
| geosrs:OperationParameterValue | owl:equivalentClass | ign:OperationParameterValue | - |
| geosrs:SingleOperation | owl:equivalentClass | ign:SingleOperation | - |
| geosrs:Transformation | owl:equivalentClass | ign:Transformation | - |
| geosrs:CartesianCoordinateSystem | owl:equivalentClass | ign:CartesianCS | - |
| geosrs:CoordinateSystem | owl:equivalentClass | ign:CoordinateSystem | - |
| geosrs:CoordinateSystemAxis | owl:equivalentClass | ign:CoordinateSystemAxis | - |
| geosrs:EllipsoidalCoordinateSystem | owl:equivalentClass | ign:EllipsoidalCS | - |
| geosrs:VerticalCoordinateSystem | owl:equivalentClass | ign:VerticalCS | - |
| geosrs:Datum | owl:equivalentClass | ign:Datum | - |
| geosrs:Ellipsoid | owl:equivalentClass | ign:Ellipsoid | - |
| geosrs:GeodeticDatum | owl:equivalentClass | ign:GeodeticDatum | - |
| geosrs:PrimeMeridian | owl:equivalentClass | ign:PrimeMeridian | - |
| geosrs:VerticalDatum | owl:equivalentClass | ign:VerticalDatum | - |
| geosrs:AxesList | owl:equivalentClass | ign:AxesList | - |

| FROM ELEMENT | MAPPING RELATION | TO ELEMENT | NOTES |
|--|-------------------------------------|---|-------|
| geosrs:CRS | owl:equivalentClass | ign:CRS | - |
| geosrs:CompoundCRS | owl:equivalentClass | ign:CompoundCRS | - |
| geosrs:Extent | owl:equivalentClass | ign:Extent | - |
| geosrs:GeodeticCRS | owl:equivalentClass | ign:GeodeticCRS | - |
| geosrs:GeographicBoundingBox | owl:equivalentClass | ign:GeographicBoundingBox | - |
| geosrs:ProjectedCRS | owl:equivalentClass | ign:ProjectedCRS | - |
| geosrs:SingleCRS | owl:equivalentClass | ign:SingleCRS | - |
| geosrs:SingleCRSList | owl:equivalentClass | ign:SingleCRSList | - |
| geosrs:VerticalCRS | owl:equivalentClass | ign:VerticalCRS | - |

A.2. ISO19111 Ontology

Table A.3 – Alignment: ISO19111 Ontology

| FROM ELEMENT | MAPPING RELATION | TO ELEMENT | NOTES |
|---|-------------------------------------|---|-------|
| geosrs:CoordinateSystem | owl:equivalentClass | iso19111:CoordinateSystem | - |
| geosrs:Datum | owl:equivalentClass | iso19111:Datum | - |
| geosrs:Ellipsoid | owl:equivalentClass | iso19111:Ellipsoid | - |
| geosrs:CRS | owl:equivalentClass | iso19111:CRS | - |
| geosrs:CompoundCRS | owl:equivalentClass | iso19111:CompoundCRS | - |
| geosrs:EngineeringCRS | owl:equivalentClass | iso19111:EngineeringCRS | - |
| geosrs:GeodeticCRS | owl:equivalentClass | iso19111:GeodeticCRS | - |

| FROM ELEMENT | MAPPING RELATION | TO ELEMENT | NOTES |
|--------------------------------------|-------------------------------------|--|-------|
| geosrs:GeographicCRS | owl:equivalentClass | iso19111:GeographicCRS | - |
| geosrs:ParametricCRS | owl:equivalentClass | iso19111:ParametricCRS | - |
| geosrs:ProjectedCRS | owl:equivalentClass | iso19111:ProjectedCRS | - |
| geosrs:SingleCRS | owl:equivalentClass | iso19111:SingleCRS | - |
| geosrs:TemporalCRS | owl:equivalentClass | iso19111:TemporalCRS | - |
| geosrs:VerticalCRS | owl:equivalentClass | iso19111:VerticalCRS | - |

A.3. IFC Ontology

Table A.4 – Alignment: IFC Ontology

| FROM ELEMENT | MAPPING RELATION | TO ELEMENT | NOTES |
|--|--|--|-------|
| geosrs:AxisDirection | owl:equivalentClass | ifc:IfcDirection | - |
| geosrs:CRS | owl:equivalentClass | ifc:IfcCoordinateReferenceSystem | - |
| geosrs:CoordinateOperation | owl:equivalentClass | ifc:IfcCoordinateOperation | - |
| geosrs:ProjectedCRS | owl:equivalentClass | ifc:IfcProjectedCRS | - |
| geosrs:axis | owl:equivalentProperty | ifc:axis_IfcAxis1Placement | - |
| geosrs:sourceCRS | owl:equivalentProperty | ifc:sourceCRS | - |
| geosrs:targetCRS | owl:equivalentProperty | ifc:targetCRS | - |



ANNEX B (INFORMATIVE) SHACL SHAPES



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Overview

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ANNEX C (INFORMATIVE) REVISION HISTORY



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| DATE | RELEASE | AUTHOR | PRIMARY CLAUSES MODIFIED | DESCRIPTION |
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BIBLIOGRAPHY





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