

# OGC® DOCUMENT: 18-053R2

External identifier of this OGC® document: <http://www.opengis.net/docs/CS/3DTiles/1.0>



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# OGC DOCUMENT TITLE

COMMUNITY STANDARD

APPROVED

**Version:** 1.0

**Submission Date:** 2018-06-04

**Approval Date:** 2018-12-14

**Publication Date:** 2019-01-31

**Editor:** Patrick Cozzi, Sean Lilley

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## ABSTRACT

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<Insert Abstract Text here>



## KEYWORDS

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

keyword\_1, keyword\_2, keyword\_3, etc.



## PREFACE

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**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.

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## SECURITY CONSIDERATIONS

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No security considerations have been made for this Standard.



## SUBMITTERS

---

All questions regarding this submission should be directed to the editor or the submitters:

NAME	AFFILIATION	OGC MEMBER
Steve Liang	University of Calgary, Canada / SensorUp Inc.	Yes



## SOURCE OF THE CONTENT FOR THIS OGC DOCUMENT

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## VALIDITY OF CONTENT

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## FUTURE WORK

---

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



## CONTRIBUTORS

---

Additional contributors to this Standard include the following:

Individual name(s), Organization





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)

The background is a solid dark blue. It features several thin, light yellow lines that intersect to form a network of triangles and polygons. At each of these intersection points, there is a small, solid yellow circle. The overall effect is a subtle, abstract geometric pattern.

4

# TERMS AND DEFINITIONS

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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`.

#### Requirements class 1: 06-core.adoc Extension

IDENTIFIER	<code>/req/06-core.adoc</code>
TARGET TYPE	Implementation Specification
REQUIREMENT	<code>/req/Coordinate_Reference_System_Types</code>

## 6.1. Coordinate Reference System Types

#### Requirement 1: Coordinate Reference System Types

IDENTIFIER	<code>/req/Coordinate_Reference_System_Types</code>
STATEMENT	Implementations shall allow the RDFS classes <code>geosrs:BoundCRS</code> , <code>geosrs:CompoundCRS</code> , <code>geosrs:EngineeringCRS</code> , <code>geosrs:GeocentricCRS</code> , <code>geosrs:GeodeticCRS</code> , <code>geosrs:GeographicCRS</code> , <code>geosrs:ParametricCRS</code> , <code>geosrs:ProjectedCRS</code> , <code>geosrs:SelenographicCRS</code> , <code>geosrs:SpatioParametricCompoundCRS</code> , <code>geosrs:SpatioParametricTemporalCompoundCRS</code> , <code>geosrs:SpatioTemporalCompoundCRS</code> , <code>geosrs:StaticCRS</code> , <code>geosrs:TemporalCRS</code> , <code>geosrs:VerticalCRS</code> to be used in SPARQL graph patterns.

### 6.1.1. Class: `geosrs:BoundCRS`

Table 1 — `geosrs:BoundCRS`

URI	<a href="https://w3id.org/geosrs/srs/BoundCRS">https://w3id.org/geosrs/srs/BoundCRS</a>
Super-classes	<a href="#">BoundCRS</a>

## 6.1.2. Class: geosrs:CompoundCRS

**Table 2** — geosrs:CompoundCRS

URI	<a href="https://w3id.org/geosrs/srs/CompoundCRS">https://w3id.org/geosrs/srs/CompoundCRS</a>
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	<a href="#">CompoundCRS</a>

## 6.1.3. Class: geosrs:GeocentricCRS

**Table 3** — geosrs:GeocentricCRS

URI	<a href="https://w3id.org/geosrs/srs/GeocentricCRS">https://w3id.org/geosrs/srs/GeocentricCRS</a>
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	<a href="#">GeocentricCRS</a>

## 6.1.4. Class: geosrs:ParametricCRS

**Table 4** — geosrs:ParametricCRS

URI	<a href="https://w3id.org/geosrs/srs/ParametricCRS">https://w3id.org/geosrs/srs/ParametricCRS</a>
Definition	Coordinate Reference System based on a parametric datum
Super-classes	<a href="#">ParametricCRS</a>

### 6.1.5. Class: geosrs:SelenographicCRS

**Table 5** — geosrs:SelenographicCRS

URI	<a href="https://w3id.org/geosrs/srs/SelenographicCRS">https://w3id.org/geosrs/srs/SelenographicCRS</a>
Definition	Coordinate Reference System to refer locations on the surface of the Earth's Moon.
Super-classes	<a href="#">SelenographicCRS</a>

### 6.1.6. Class: geosrs:SpatioParametricCompoundCRS

**Table 6** — geosrs:SpatioParametricCompoundCRS

URI	<a href="https://w3id.org/geosrs/srs/SpatioParametricCompoundCRS">https://w3id.org/geosrs/srs/SpatioParametricCompoundCRS</a>
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	<a href="#">SpatioParametricCompoundCRS</a>

### 6.1.7. Class: geosrs:SpatioParametricTemporalCompoundCRS

**Table 7** — geosrs:SpatioParametricTemporalCompoundCRS

URI	<a href="https://w3id.org/geosrs/srs/SpatioParametricTemporalCompoundCRS">https://w3id.org/geosrs/srs/SpatioParametricTemporalCompoundCRS</a>
Definition	Coordinate reference system combining a spatio-parametric reference system with at least one temporal reference system
Super-classes	<a href="#">SpatioParametricTemporalCompoundCRS</a>

### 6.1.8. Class: geosrs:SpatioTemporalCompoundCRS



**Table 8** — geosrs:SpatioTemporalCompoundCRS

URI	<a href="https://w3id.org/geosrs/srs/SpatioTemporalCompoundCRS">https://w3id.org/geosrs/srs/SpatioTemporalCompoundCRS</a>
Definition	Coordinate reference system combining a spatial reference system with at least one temporal reference system
Super-classes	<a href="#">SpatioTemporalCompoundCRS</a>

### 6.1.9. Class: geosrs:StaticCRS

**Table 9** — geosrs:StaticCRS

URI	<a href="https://w3id.org/geosrs/srs/StaticCRS">https://w3id.org/geosrs/srs/StaticCRS</a>
Definition	Coordinate Reference System that has a static reference frame
Super-classes	<a href="#">StaticCRS</a>

### 6.1.10. Class: geosrs:TemporalCRS

**Table 10** — geosrs:TemporalCRS

URI	<a href="https://w3id.org/geosrs/srs/TemporalCRS">https://w3id.org/geosrs/srs/TemporalCRS</a>
Definition	Coordinate Reference System based on a temporal datum
Super-classes	<a href="#">TemporalCRS</a>

### 6.1.11. Class: geosrs:VerticalCRS

**Table 11** — geosrs:VerticalCRS

URI	<a href="https://w3id.org/geosrs/srs/VerticalCRS">https://w3id.org/geosrs/srs/VerticalCRS</a>
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	<u>VerticalCRS</u>

7

# COORDINATE OPERATION MODULE

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## COORDINATE OPERATION MODULE

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



8

# COORDINATE SYSTEM MODULE

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

#### Requirements class 2: 08-cs\_extension.adoc Extension

IDENTIFIER	<code>/req/08-cs_extension.adoc</code>
TARGET TYPE	Implementation Specification
	<code>/req/Coordinate_System_Types</code>
REQUIREMENT	<code>/req/Orthogonal_Coordinate_Systems</code>
	<code>/req/Celestial_Coordinate_Systems</code>

## 8.1. Celestial Coordinate Systems

### Requirement 2: Celestial Coordinate Systems

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

### 8.1.1. Class: `geosrs:EclipticCoordinateSystem`

Table 12 — `geosrs:EclipticCoordinateSystem`

URI	<a href="https://w3id.org/geosrs/cs/EclipticCoordinateSystem">https://w3id.org/geosrs/cs/EclipticCoordinateSystem</a>
Definition	An ecliptic coordinate system is used for representing the apparent positions and orbits of solar system objects.
Super-classes	<a href="#"><code>EclipticCoordinateSystem</code></a>

## 8.1.2. Class: geosrs:EquatorialCoordinateSystem

**Table 13** — geosrs:EquatorialCoordinateSystem

URI	<a href="https://w3id.org/geosrs/cs/EquatorialCoordinateSystem">https://w3id.org/geosrs/cs/EquatorialCoordinateSystem</a>
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	<a href="#">EquatorialCoordinateSystem</a>

## 8.1.3. Class: geosrs:GalacticCoordinateSystem

**Table 14** — geosrs:GalacticCoordinateSystem

URI	<a href="https://w3id.org/geosrs/cs/GalacticCoordinateSystem">https://w3id.org/geosrs/cs/GalacticCoordinateSystem</a>
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	<a href="#">CelestialCoordinateSystem</a> <a href="#">3DCoordinateSystem</a>

## 8.1.4. Class: geosrs:HorizontalCoordinateSystem

**Table 15** — geosrs:HorizontalCoordinateSystem

URI	<a href="https://w3id.org/geosrs/cs/HorizontalCoordinateSystem">https://w3id.org/geosrs/cs/HorizontalCoordinateSystem</a>
Definition	A horizontal coordinate system is a celestial coordinate system that uses the observer's local horizon as the fundamental plane.
Super-classes	<a href="#">HorizontalCoordinateSystem</a>



### 8.1.5. Class: geosrs:PerifocalCoordinateSystem

Table 16 — geosrs:PerifocalCoordinateSystem

URI	<a href="https://w3id.org/geosrs/cs/PerifocalCoordinateSystem">https://w3id.org/geosrs/cs/PerifocalCoordinateSystem</a>
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	<a href="#">PerifocalCoordinateSystem</a>

### 8.1.6. Class: geosrs:SuperGalacticCS

Table 17 — geosrs:SuperGalacticCS

URI	<a href="https://w3id.org/geosrs/cs/SuperGalacticCS">https://w3id.org/geosrs/cs/SuperGalacticCS</a>
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	<a href="#">CelestialCoordinateSystem</a> <a href="#">3DCoordinateSystem</a>

## 8.2. Coordinate System Types

### Requirement 3: Coordinate System Types

**IDENTIFIER** /req/Coordinate\_System\_Types

**STATEMENT** Implementations shall allow the RDFS classes geosrs:1DCoordinateSystem, geosrs:3DCoordinateSystem, geosrs:AffineCoordinateSystem, geosrs:BarycentricCoordinateSystem, geosrs:CartesianCoordinateSystem, geosrs:CelestialCoordinateSystem, geosrs:CurvilinearCoordinateSystem, geosrs:GeodeticCoordinateSystem, geosrs:GridCoordinateSystem, geosrs:LocalCoordinateSystem, geosrs:ObliqueCoordinateSystem, geosrs:OrdinalCoordinateSystem, geosrs:PlanarCoordinateSystem to be used in SPARQL graph patterns.

### 8.2.1. Class: geosrs:1DCoordinateSystem

**Table 18** — geosrs:1DCoordinateSystem

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

### 8.2.2. Class: geosrs:3DCoordinateSystem

**Table 19** — geosrs:3DCoordinateSystem

URI	<a href="https://w3id.org/geosrs/cs/3DCoordinateSystem">https://w3id.org/geosrs/cs/3DCoordinateSystem</a>
Definition	Non-repeating sequence of coordinate system axes that spans a given coordinate space in three dimensions
Super-classes	<a href="#">3DCoordinateSystem</a>

### 8.2.3. Class: geosrs:AffineCoordinateSystem

**Table 20** — geosrs:AffineCoordinateSystem

URI	<a href="https://w3id.org/geosrs/cs/AffineCoordinateSystem">https://w3id.org/geosrs/cs/AffineCoordinateSystem</a>
Definition	Coordinate system in Euclidean space with straight axes that are not necessarily mutually perpendicular
Super-classes	<a href="#">AffineCoordinateSystem</a>

### 8.2.4. Class: geosrs:BarycentricCoordinateSystem

**Table 21** — geosrs:BarycentricCoordinateSystem

URI	<a href="https://w3id.org/geosrs/cs/BarycentricCoordinateSystem">https://w3id.org/geosrs/cs/BarycentricCoordinateSystem</a>
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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	<a href="#"><u>BarycentricCoordinateSystem</u></a>

## 8.2.5. Class: geosrs:CelestialCoordinateSystem

**Table 22** — geosrs:CelestialCoordinateSystem

URI	<a href="https://w3id.org/geosrs/cs/CelestialCoordinateSystem"><u>https://w3id.org/geosrs/cs/CelestialCoordinateSystem</u></a>
Definition	A coordinate system for specifying positions of celestial objects relative to physical reference points
Super-classes	<a href="#"><u>CelestialCoordinateSystem</u></a>

## 8.2.6. Class: geosrs:CurvilinearCoordinateSystem

**Table 23** — geosrs:CurvilinearCoordinateSystem

URI	<a href="https://w3id.org/geosrs/cs/CurvilinearCoordinateSystem"><u>https://w3id.org/geosrs/cs/CurvilinearCoordinateSystem</u></a>
Definition	A coordinate system for the Euclidean space in which the coordinate lines may be curved
Super-classes	<a href="#"><u>CurvilinearCoordinateSystem</u></a>

## 8.2.7. Class: geosrs:GeodeticCoordinateSystem

**Table 24** — geosrs:GeodeticCoordinateSystem

URI	<a href="https://w3id.org/geosrs/cs/GeodeticCoordinateSystem"><u>https://w3id.org/geosrs/cs/GeodeticCoordinateSystem</u></a>
Definition	Coordinate system used by a Geodetic CRS, one of a Cartesian coordinate system or a spherical coordinate system.
Super-classes	<a href="#"><u>GeodeticCoordinateSystem</u></a>

## 8.2.8. Class: geosrs:GridCoordinateSystem

**Table 25** — geosrs:GridCoordinateSystem

URI	<a href="https://w3id.org/geosrs/cs/GridCoordinateSystem">https://w3id.org/geosrs/cs/GridCoordinateSystem</a>
Definition	A grid coordinate system identifies areas within a grid.
Super-classes	<a href="#">GridCoordinateSystem</a>

## 8.2.9. Class: geosrs:LocalCoordinateSystem

**Table 26** — geosrs:LocalCoordinateSystem

URI	<a href="https://w3id.org/geosrs/cs/LocalCoordinateSystem">https://w3id.org/geosrs/cs/LocalCoordinateSystem</a>
Definition	Coordinate system with a point of local reference.
Super-classes	<a href="#">LocalCoordinateSystem</a>

## 8.2.10. Class: geosrs:ObliqueCoordinateSystem

**Table 27** — geosrs:ObliqueCoordinateSystem

URI	<a href="https://w3id.org/geosrs/cs/ObliqueCoordinateSystem">https://w3id.org/geosrs/cs/ObliqueCoordinateSystem</a>
Definition	A plane coordinate system whose axes are not perpendicular.
Super-classes	<a href="#">ObliqueCoordinateSystem</a>

## 8.2.11. Class: geosrs:PlanarCoordinateSystem

**Table 28** — geosrs:PlanarCoordinateSystem

URI	<a href="https://w3id.org/geosrs/cs/PlanarCoordinateSystem">https://w3id.org/geosrs/cs/PlanarCoordinateSystem</a>
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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	<a href="#">PlanarCoordinateSystem</a>

## 8.3. Orthogonal Coordinate Systems

### Requirement 4: 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.

### 8.3.1. Class: `geosrs:ConicalCoordinateSystem`

**Table 29** — `geosrs:ConicalCoordinateSystem`

URI	<a href="https://w3id.org/geosrs/cs/ConicalCoordinateSystem">https://w3id.org/geosrs/cs/ConicalCoordinateSystem</a>
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 z- and x-axes, respectively
Super-classes	<a href="#">ConicalCoordinateSystem</a>

9

# DATUM MODULE

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

#### Requirements class 3: 09-datum\_extension.adoc Extension

IDENTIFIER	<code>/req/09-datum_extension.adoc</code>
TARGET TYPE	Implementation Specification
REQUIREMENT	<code>/req/DatumTypes</code>

## 9.1. DatumTypes

#### Requirement 5: DatumTypes

IDENTIFIER	<code>/req/DatumTypes</code>
STATEMENT	Implementations shall allow the RDFS classes <code>geosrs:GeodeticDatum</code> , <code>geosrs:DynamicGeodeticReferenceFrame</code> , <code>geosrs:VerticalDatum</code> , <code>geosrs:DynamicVerticalDatum</code> , <code>geosrs:ParametricDatum</code> , <code>geosrs:EngineeringDatum</code> , <code>geosrs:TemporalDatum</code> , <code>geosrs:DatumEnsemble</code> to be used in SPARQL graph patterns.

### 9.1.1. Class: `geosrs:DynamicGeodeticReferenceFrame`

Table 30 — `geosrs:DynamicGeodeticReferenceFrame`

URI	<a href="https://w3id.org/geosrs/datum/DynamicGeodeticReferenceFrame">https://w3id.org/geosrs/datum/DynamicGeodeticReferenceFrame</a>
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	<a href="#">DynamicGeodeticReferenceFrame</a>

### 9.1.2. Class: geosrs:DynamicVerticalDatum

**Table 31** — geosrs:DynamicVerticalDatum

URI	<a href="https://w3id.org/geosrs/datum/DynamicVerticalDatum">https://w3id.org/geosrs/datum/DynamicVerticalDatum</a>
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	<a href="#">DynamicVerticalDatum</a>

### 9.1.3. Class: geosrs:ParametricDatum

**Table 32** — geosrs:ParametricDatum

URI	<a href="https://w3id.org/geosrs/datum/ParametricDatum">https://w3id.org/geosrs/datum/ParametricDatum</a>
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	<a href="#">ParametricDatum</a>

### 9.1.4. Class: geosrs:EngineeringDatum

**Table 33** — geosrs:EngineeringDatum

URI	<a href="https://w3id.org/geosrs/datum/EngineeringDatum">https://w3id.org/geosrs/datum/EngineeringDatum</a>
Definition	Definition of the origin and orientation of an engineering coordinate reference systemNote: 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	<a href="#">EngineeringDatum</a>
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### 9.1.5. Class: geosrs:TemporalDatum

**Table 34** — geosrs:TemporalDatum

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

### 9.1.6. Class: geosrs:DatumEnsemble

**Table 35** — geosrs:DatumEnsemble

URI	<a href="https://w3id.org/geosrs/datum/DatumEnsemble">https://w3id.org/geosrs/datum/DatumEnsemble</a>
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.

10

# SRS APPLICATION MODULE

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



11

# PROJECTIONS MODULE

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

## Requirements class 4: 11-projections\_extension.adoc Extension

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

# 11.1. Azimuthal Projections

## Requirement 6: 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 36 — `geosrs:BreusingGeometricProjection`

URI	<a href="https://w3id.org/geosrs/projection/BreusingGeometricProjection">https://w3id.org/geosrs/projection/BreusingGeometricProjection</a>
Super-classes	<a href="#">BreusingGeometricProjection</a>

### 11.1.2. Class: `geosrs:BreusingHarmonicProjection`

Table 37 — `geosrs:BreusingHarmonicProjection`

URI	<a href="https://w3id.org/geosrs/projection/BreusingHarmonicProjection">https://w3id.org/geosrs/projection/BreusingHarmonicProjection</a>
Super-classes	<a href="#">BreusingHarmonicProjection</a>

### 11.1.3. Class: `geosrs:GinzburgIIProjection`

Table 38 — `geosrs:GinzburgIIProjection`

URI	<a href="https://w3id.org/geosrs/projection/GinzburgIIProjection">https://w3id.org/geosrs/projection/GinzburgIIProjection</a>
Super-classes	<a href="#">GinzburgIIProjection</a>

### 11.1.4. Class: geosrs:GinzburgIProjection

Table 39 — geosrs:GinzburgIProjection

URI	<a href="https://w3id.org/geosrs/projection/GinzburgIProjection">https://w3id.org/geosrs/projection/GinzburgIProjection</a>
Super-classes	<a href="#">GinzburgIProjection</a>

### 11.1.5. Class: geosrs:GnomonicProjection

Table 40 — geosrs:GnomonicProjection

URI	<a href="https://w3id.org/geosrs/projection/GnomonicProjection">https://w3id.org/geosrs/projection/GnomonicProjection</a>
Super-classes	<a href="#">GnomonicProjection</a>

### 11.1.6. Class: geosrs:JamesAzimuthalProjection

Table 41 — geosrs:JamesAzimuthalProjection

URI	<a href="https://w3id.org/geosrs/projection/JamesAzimuthalProjection">https://w3id.org/geosrs/projection/JamesAzimuthalProjection</a>
Super-classes	<a href="#">JamesAzimuthalProjection</a>

## 11.2. Compromise Projections

### Requirement 7: Compromise Projections

**IDENTIFIER** /req/Compromise\_Projections

**STATEMENT** Implementations shall allow the RDFS classes geosrs:ArmadilloProjection, geosrs:BakerDinomicProjection, geosrs:BertinProjection, geosrs:ChamberlinTrimetricProjection, geosrs:DenoyerSemiEllipticalProjection, geosrs:FairgrieveProjection, geosrs:LarriveeProjection, geosrs:PetermannStarProjection, geosrs:SpilhausOceanicProjection, geosrs:VanDerGrintenIIIProjection, geosrs:

## Requirement 7: Compromise Projections

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

### 11.2.1. Class: `geosrs:ArmadilloProjection`

Table 42 — `geosrs:ArmadilloProjection`

URI	<a href="https://w3id.org/geosrs/projection/ArmadilloProjection">https://w3id.org/geosrs/projection/ArmadilloProjection</a>
Super-classes	<a href="#"><code>ArmadilloProjection</code></a>

### 11.2.2. Class: `geosrs:BakerDinomicProjection`

Table 43 — `geosrs:BakerDinomicProjection`

URI	<a href="https://w3id.org/geosrs/projection/BakerDinomicProjection">https://w3id.org/geosrs/projection/BakerDinomicProjection</a>
Super-classes	<a href="#"><code>BakerDinomicProjection</code></a>

### 11.2.3. Class: `geosrs:BertinProjection`

Table 44 — `geosrs:BertinProjection`

URI	<a href="https://w3id.org/geosrs/projection/BertinProjection">https://w3id.org/geosrs/projection/BertinProjection</a>
Super-classes	<a href="#"><code>BertinProjection</code></a>

### 11.2.4. Class: `geosrs:ChamberlinTrimetricProjection`

Table 45 — `geosrs:ChamberlinTrimetricProjection`

URI	<a href="https://w3id.org/geosrs/projection/ChamberlinTrimetricProjection">https://w3id.org/geosrs/projection/ChamberlinTrimetricProjection</a>
Super-classes	<a href="#"><code>ChamberlinTrimetricProjection</code></a>



### 11.2.5. Class: geosrs:DenoyerSemiEllipticalProjection

Table 46 — geosrs:DenoyerSemiEllipticalProjection

URI	<a href="https://w3id.org/geosrs/projection/DenoyerSemiEllipticalProjection">https://w3id.org/geosrs/projection/DenoyerSemiEllipticalProjection</a>
Super-classes	<a href="#">DenoyerSemiEllipticalProjection</a>

### 11.2.6. Class: geosrs:FairgrieveProjection

Table 47 — geosrs:FairgrieveProjection

URI	<a href="https://w3id.org/geosrs/projection/FairgrieveProjection">https://w3id.org/geosrs/projection/FairgrieveProjection</a>
Super-classes	<a href="#">FairgrieveProjection</a>

### 11.2.7. Class: geosrs:LarriveeProjection

Table 48 — geosrs:LarriveeProjection

URI	<a href="https://w3id.org/geosrs/projection/LarriveeProjection">https://w3id.org/geosrs/projection/LarriveeProjection</a>
Super-classes	<a href="#">LarriveeProjection</a>

### 11.2.8. Class: geosrs:PetermannStarProjection

Table 49 — geosrs:PetermannStarProjection

URI	<a href="https://w3id.org/geosrs/projection/PetermannStarProjection">https://w3id.org/geosrs/projection/PetermannStarProjection</a>
Super-classes	<a href="#">PetermannStarProjection</a>

### 11.2.9. Class: geosrs:SpilhausOceanicProjection

**Table 50** — geosrs:SpilhausOceanicProjection

URI	<a href="https://w3id.org/geosrs/projection/SpilhausOceanicProjection">https://w3id.org/geosrs/projection/SpilhausOceanicProjection</a>
Super-classes	<a href="#">SpilhausOceanicProjection</a>

### 11.2.10. Class: geosrs:VanDerGrintenIIIProjection

**Table 51** — geosrs:VanDerGrintenIIIProjection

URI	<a href="https://w3id.org/geosrs/projection/VanDerGrintenIIIProjection">https://w3id.org/geosrs/projection/VanDerGrintenIIIProjection</a>
Super-classes	<a href="#">VanDerGrintenIIIProjection</a>

### 11.2.11. Class: geosrs:WinkelIIIProjection

**Table 52** — geosrs:WinkelIIIProjection

URI	<a href="https://w3id.org/geosrs/projection/WinkelIIIProjection">https://w3id.org/geosrs/projection/WinkelIIIProjection</a>
Super-classes	<a href="#">WinkelIIIProjection</a>

### 11.2.12. Class: geosrs:WinkelIIProjection

**Table 53** — geosrs:WinkelIIProjection

URI	<a href="https://w3id.org/geosrs/projection/WinkelIIProjection">https://w3id.org/geosrs/projection/WinkelIIProjection</a>
Super-classes	<a href="#">WinkelIIProjection</a>

### 11.2.13. Class: geosrs:WinkelSnyderProjection

**Table 54** — geosrs:WinkelSnyderProjection

URI	<a href="https://w3id.org/geosrs/projection/WinkelSnyderProjection">https://w3id.org/geosrs/projection/WinkelSnyderProjection</a>
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# 11.3. Conformal Projections

## Requirement 8: Conformal Projections

**IDENTIFIER** /req/Conformal\_Projections

**STATEMENT** Implementations shall allow the RDFS classes `geosrs:AdamsProjection`, `geosrs:AdamsWorldInASquareIIProjection`, `geosrs:AdamsWorldInASquareIProjection`, `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 55** — `geosrs:AdamsProjection`

URI	<a href="https://w3id.org/geosrs/projection/AdamsProjection">https://w3id.org/geosrs/projection/AdamsProjection</a>
Super-classes	<a href="#">AdamsProjection</a>

## 11.3.2. Class: geosrs:AdamsWorldInASquareIIProjection

**Table 56** — `geosrs:AdamsWorldInASquareIIProjection`

URI	<a href="https://w3id.org/geosrs/projection/AdamsWorldInASquareIIProjection">https://w3id.org/geosrs/projection/AdamsWorldInASquareIIProjection</a>
Super-classes	<a href="#">AdamsWorldInASquareIIProjection</a>

## 11.3.3. Class: geosrs:AdamsWorldInASquareIProjection

**Table 57** — geosrs:AdamsWorldInASquareIProjection

URI	<a href="https://w3id.org/geosrs/projection/AdamsWorldInASquareIProjection">https://w3id.org/geosrs/projection/AdamsWorldInASquareIProjection</a>
Super-classes	<a href="#">AdamsWorldInASquareIProjection</a>

### 11.3.4. Class: geosrs:AugustEpicycloidalProjection

**Table 58** — geosrs:AugustEpicycloidalProjection

URI	<a href="https://w3id.org/geosrs/projection/AugustEpicycloidalProjection">https://w3id.org/geosrs/projection/AugustEpicycloidalProjection</a>
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	<a href="#">AugustEpicycloidalProjection</a>

### 11.3.5. Class: geosrs:CoxConformalProjection

**Table 59** — geosrs:CoxConformalProjection

URI	<a href="https://w3id.org/geosrs/projection/CoxConformalProjection">https://w3id.org/geosrs/projection/CoxConformalProjection</a>
Super-classes	<a href="#">CoxConformalProjection</a>

### 11.3.6. Class: geosrs:EisenlohrProjection

**Table 60** — geosrs:EisenlohrProjection

URI	<a href="https://w3id.org/geosrs/projection/EisenlohrProjection">https://w3id.org/geosrs/projection/EisenlohrProjection</a>
Super-classes	<a href="#">EisenlohrProjection</a>

### 11.3.7. Class: geosrs:GS50Projection

**Table 61** — geosrs:GS50Projection

URI	<a href="https://w3id.org/geosrs/projection/GS50Projection">https://w3id.org/geosrs/projection/GS50Projection</a>
Super-classes	<a href="#">GS50Projection</a>

### 11.3.8. Class: geosrs:PeirceQuincuncialProjection

**Table 62** — geosrs:PeirceQuincuncialProjection

URI	<a href="https://w3id.org/geosrs/projection/PeirceQuincuncialProjection">https://w3id.org/geosrs/projection/PeirceQuincuncialProjection</a>
Super-classes	<a href="#">PeirceQuincuncialProjection</a>

### 11.3.9. Class: geosrs:StereographicProjection

**Table 63** — geosrs:StereographicProjection

URI	<a href="https://w3id.org/geosrs/projection/StereographicProjection">https://w3id.org/geosrs/projection/StereographicProjection</a>
Super-classes	<a href="#">StereographicProjection</a>

## 11.4. Conical Projections

Requirement 9: 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 64 — geosrs:BipolarObliqueConicConformalProjection

URI	<a href="https://w3id.org/geosrs/projection/BipolarObliqueConicConformalProjection">https://w3id.org/geosrs/projection/BipolarObliqueConicConformalProjection</a>
Super-classes	<a href="#">BipolarObliqueConicConformalProjection</a>

### 11.4.2. Class: geosrs:CentralConicProjection

Table 65 — geosrs:CentralConicProjection

URI	<a href="https://w3id.org/geosrs/projection/CentralConicProjection">https://w3id.org/geosrs/projection/CentralConicProjection</a>
Super-classes	<a href="#">CentralConicProjection</a>

### 11.4.3. Class: geosrs:HerschelConformalConicProjection

Table 66 — geosrs:HerschelConformalConicProjection

URI	<a href="https://w3id.org/geosrs/projection/HerschelConformalConicProjection">https://w3id.org/geosrs/projection/HerschelConformalConicProjection</a>
Super-classes	<a href="#">HerschelConformalConicProjection</a>

### 11.4.4. Class: geosrs:Krovak

Table 67 — geosrs:Krovak

URI	<a href="https://w3id.org/geosrs/projection/Krovak">https://w3id.org/geosrs/projection/Krovak</a>
Super-classes	<a href="#">Krovak</a>

### 11.4.5. Class: geosrs:LambertConformalConicProjection

**Table 68** — geosrs:LambertConformalConicProjection

URI	<a href="https://w3id.org/geosrs/projection/LambertConformalConicProjection">https://w3id.org/geosrs/projection/LambertConformalConicProjection</a>
Super-classes	<a href="#">LambertConformalConicProjection</a>

#### 11.4.6. Class: geosrs:MurdochIIIProjection

**Table 69** — geosrs:MurdochIIIProjection

URI	<a href="https://w3id.org/geosrs/projection/MurdochIIIProjection">https://w3id.org/geosrs/projection/MurdochIIIProjection</a>
Super-classes	<a href="#">MurdochIIIProjection</a>

#### 11.4.7. Class: geosrs:MurdochIIProjection

**Table 70** — geosrs:MurdochIIProjection

URI	<a href="https://w3id.org/geosrs/projection/MurdochIIProjection">https://w3id.org/geosrs/projection/MurdochIIProjection</a>
Super-classes	<a href="#">MurdochIIProjection</a>

#### 11.4.8. Class: geosrs:MurdochIProjection

**Table 71** — geosrs:MurdochIProjection

URI	<a href="https://w3id.org/geosrs/projection/MurdochIProjection">https://w3id.org/geosrs/projection/MurdochIProjection</a>
Super-classes	<a href="#">MurdochIProjection</a>

#### 11.4.9. Class: geosrs:SchjernerIProjection

**Table 72** — geosrs:SchjernerIProjection

URI	<a href="https://w3id.org/geosrs/projection/SchjernerIProjection">https://w3id.org/geosrs/projection/SchjernerIProjection</a>
Super-classes	<a href="#">SchjernerIProjection</a>

### 11.4.10. Class: geosrs:VitkovskyIProjection

Table 73 — geosrs:VitkovskyIProjection

URI	<a href="https://w3id.org/geosrs/projection/VitkovskyIProjection">https://w3id.org/geosrs/projection/VitkovskyIProjection</a>
Super-classes	<a href="#">VitkovskyIProjection</a>

## 11.5. Cylindrical Projections

### Requirement 10: 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 74 — geosrs:ArdenCloseProjection

URI	<a href="https://w3id.org/geosrs/projection/ArdenCloseProjection">https://w3id.org/geosrs/projection/ArdenCloseProjection</a>
Super-classes	<a href="#">ArdenCloseProjection</a>

### 11.5.2. Class: geosrs:BraunPerspectiveProjection



**Table 75** — geosrs:BraunPerspectiveProjection

URI	<a href="https://w3id.org/geosrs/projection/BraunPerspectiveProjection">https://w3id.org/geosrs/projection/BraunPerspectiveProjection</a>
Super-classes	<a href="#">BraunPerspectiveProjection</a>

### 11.5.3. Class: geosrs:CompactMillerProjection

**Table 76** — geosrs:CompactMillerProjection

URI	<a href="https://w3id.org/geosrs/projection/CompactMillerProjection">https://w3id.org/geosrs/projection/CompactMillerProjection</a>
Super-classes	<a href="#">CompactMillerProjection</a>

### 11.5.4. Class: geosrs:CylindricalStereographicProjection

**Table 77** — geosrs:CylindricalStereographicProjection

URI	<a href="https://w3id.org/geosrs/projection/CylindricalStereographicProjection">https://w3id.org/geosrs/projection/CylindricalStereographicProjection</a>
Super-classes	<a href="#">CylindricalStereographicProjection</a>

### 11.5.5. Class: geosrs:KarchenkoShabanovaProjection

**Table 78** — geosrs:KarchenkoShabanovaProjection

URI	<a href="https://w3id.org/geosrs/projection/KarchenkoShabanovaProjection">https://w3id.org/geosrs/projection/KarchenkoShabanovaProjection</a>
Super-classes	<a href="#">KarchenkoShabanovaProjection</a>

### 11.5.6. Class: geosrs:LabordeProjection

**Table 79** — geosrs:LabordeProjection

URI	<a href="https://w3id.org/geosrs/projection/LabordeProjection">https://w3id.org/geosrs/projection/LabordeProjection</a>
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Super-classes	<a href="#">LabordeProjection</a>
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### 11.5.7. Class: geosrs:MercatorProjection

**Table 80** — geosrs:MercatorProjection

URI	<a href="https://w3id.org/geosrs/projection/MercatorProjection">https://w3id.org/geosrs/projection/MercatorProjection</a>
Super-classes	<a href="#">MercatorProjection</a>

### 11.5.8. Class: geosrs:MillerProjection

**Table 81** — geosrs:MillerProjection

URI	<a href="https://w3id.org/geosrs/projection/MillerProjection">https://w3id.org/geosrs/projection/MillerProjection</a>
Super-classes	<a href="#">MillerProjection</a>

### 11.5.9. Class: geosrs:PattersonCylindricalProjection

**Table 82** — geosrs:PattersonCylindricalProjection

URI	<a href="https://w3id.org/geosrs/projection/PattersonCylindricalProjection">https://w3id.org/geosrs/projection/PattersonCylindricalProjection</a>
Super-classes	<a href="#">PattersonCylindricalProjection</a>

### 11.5.10. Class: geosrs:PavlovProjection

**Table 83** — geosrs:PavlovProjection

URI	<a href="https://w3id.org/geosrs/projection/PavlovProjection">https://w3id.org/geosrs/projection/PavlovProjection</a>
Super-classes	<a href="#">PavlovProjection</a>

### 11.5.11. Class: geosrs:ToblerCylindricalIIIProjection

**Table 84** — geosrs:ToblerCylindricalIIIProjection

URI	<a href="https://w3id.org/geosrs/projection/ToblerCylindricalIIIProjection">https://w3id.org/geosrs/projection/ToblerCylindricalIIIProjection</a>
Super-classes	<a href="#">ToblerCylindricalIIIProjection</a>

### 11.5.12. Class: geosrs:ToblerCylindricalIIProjection

**Table 85** — geosrs:ToblerCylindricalIIProjection

URI	<a href="https://w3id.org/geosrs/projection/ToblerCylindricalIIProjection">https://w3id.org/geosrs/projection/ToblerCylindricalIIProjection</a>
Super-classes	<a href="#">ToblerCylindricalIIProjection</a>

### 11.5.13. Class: geosrs:UrmayevIIIProjection

**Table 86** — geosrs:UrmayevIIIProjection

URI	<a href="https://w3id.org/geosrs/projection/UrmayevIIIProjection">https://w3id.org/geosrs/projection/UrmayevIIIProjection</a>
Super-classes	<a href="#">UrmayevIIIProjection</a>

### 11.5.14. Class: geosrs:WebMercatorProjection

**Table 87** — geosrs:WebMercatorProjection

URI	<a href="https://w3id.org/geosrs/projection/WebMercatorProjection">https://w3id.org/geosrs/projection/WebMercatorProjection</a>
Super-classes	<a href="#">WebMercatorProjection</a>

# 11.6. Equal Area Projections

## Requirement 11: 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 88 — `geosrs:AlbersEqualAreaProjection`

URI	<a href="https://w3id.org/geosrs/projection/AlbersEqualAreaProjection">https://w3id.org/geosrs/projection/AlbersEqualAreaProjection</a>
Super-classes	<a href="#">AlbersEqualAreaProjection</a>

### 11.6.2. Class: `geosrs:AzimuthalEqualAreaProjection`

Table 89 — `geosrs:AzimuthalEqualAreaProjection`

URI	<a href="https://w3id.org/geosrs/projection/AzimuthalEqualAreaProjection">https://w3id.org/geosrs/projection/AzimuthalEqualAreaProjection</a>
Super-classes	<a href="#">AzimuthalEqualAreaProjection</a>

### 11.6.3. Class: `geosrs:CylindricalEqualArea`

Table 90 — `geosrs:CylindricalEqualArea`

URI	<a href="https://w3id.org/geosrs/projection/CylindricalEqualArea">https://w3id.org/geosrs/projection/CylindricalEqualArea</a>
Super-classes	<a href="#">CylindricalEqualArea</a>

### 11.6.4. Class: geosrs:GallPetersProjection

Table 91 — geosrs:GallPetersProjection

URI	<a href="https://w3id.org/geosrs/projection/GallPetersProjection">https://w3id.org/geosrs/projection/GallPetersProjection</a>
Super-classes	<a href="#">GallPetersProjection</a>

### 11.6.5. Class: geosrs:HoboDyerProjection

Table 92 — geosrs:HoboDyerProjection

URI	<a href="https://w3id.org/geosrs/projection/HoboDyerProjection">https://w3id.org/geosrs/projection/HoboDyerProjection</a>
Super-classes	<a href="#">HoboDyerProjection</a>

### 11.6.6. Class: geosrs:LambertAzimuthalEqualArea

Table 93 — geosrs:LambertAzimuthalEqualArea

URI	<a href="https://w3id.org/geosrs/projection/LambertAzimuthalEqualArea">https://w3id.org/geosrs/projection/LambertAzimuthalEqualArea</a>
Super-classes	<a href="#">LambertAzimuthalEqualArea</a>

### 11.6.7. Class: geosrs:TrystanEdwardsProjection

Table 94 — geosrs:TrystanEdwardsProjection

URI	<a href="https://w3id.org/geosrs/projection/TrystanEdwardsProjection">https://w3id.org/geosrs/projection/TrystanEdwardsProjection</a>
Super-classes	<a href="#">TrystanEdwardsProjection</a>

### 11.6.8. Class: geosrs:WiechelProjection

**Table 95** — geosrs:WiechelProjection

URI	<a href="https://w3id.org/geosrs/projection/WichelProjection">https://w3id.org/geosrs/projection/WichelProjection</a>
Super-classes	<a href="#">WiechelProjection</a>

## 11.7. Equidistant Projections

### Requirement 12: 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 96** — geosrs:AzimuthalEquidistantProjection

URI	<a href="https://w3id.org/geosrs/projection/AzimuthalEquidistantProjection">https://w3id.org/geosrs/projection/AzimuthalEquidistantProjection</a>
Super-classes	<a href="#">AzimuthalEquidistantProjection</a>

### 11.7.2. Class: geosrs:BerghausStarProjection

**Table 97** — geosrs:BerghausStarProjection

URI	<a href="https://w3id.org/geosrs/projection/BerghausStarProjection">https://w3id.org/geosrs/projection/BerghausStarProjection</a>
Super-classes	<a href="#">BerghausStarProjection</a>

### 11.7.3. Class: geosrs:CassiniProjection

**Table 98** — geosrs:CassiniProjection

URI	<a href="https://w3id.org/geosrs/projection/CassiniProjection">https://w3id.org/geosrs/projection/CassiniProjection</a>
Definition	A map projection first described in an approximate form by César-François Cassini de Thury in 1745
Super-classes	<a href="#">CassiniProjection</a>

### 11.7.4. Class: geosrs:EquidistantConicProjection

**Table 99** — geosrs:EquidistantConicProjection

URI	<a href="https://w3id.org/geosrs/projection/EquidistantConicProjection">https://w3id.org/geosrs/projection/EquidistantConicProjection</a>
Super-classes	<a href="#">EquidistantConicProjection</a>

### 11.7.5. Class: geosrs:EquidistantCylindricalProjection

**Table 100** — geosrs:EquidistantCylindricalProjection

URI	<a href="https://w3id.org/geosrs/projection/EquidistantCylindricalProjection">https://w3id.org/geosrs/projection/EquidistantCylindricalProjection</a>
Super-classes	<a href="#">EquidistantCylindricalProjection</a>

### 11.7.6. Class: geosrs:EquirectangularProjection

**Table 101** — geosrs:EquirectangularProjection

URI	<a href="https://w3id.org/geosrs/projection/EquirectangularProjection">https://w3id.org/geosrs/projection/EquirectangularProjection</a>
Super-classes	<a href="#">EquirectangularProjection</a>

### 11.7.7. Class: geosrs:ObliquePlateCarreeProjection

Table 102 — geosrs:ObliquePlateCarreeProjection

URI	<a href="https://w3id.org/geosrs/projection/ObliquePlateCarreeProjection">https://w3id.org/geosrs/projection/ObliquePlateCarreeProjection</a>
Super-classes	<a href="#">ObliquePlateCarreeProjection</a>

### 11.7.8. Class: geosrs:PlateCarreeProjection

Table 103 — geosrs:PlateCarreeProjection

URI	<a href="https://w3id.org/geosrs/projection/PlateCarreeProjection">https://w3id.org/geosrs/projection/PlateCarreeProjection</a>
Super-classes	<a href="#">PlateCarreeProjection</a>

### 11.7.9. Class: geosrs:TwoPointEquidistantProjection

Table 104 — geosrs:TwoPointEquidistantProjection

URI	<a href="https://w3id.org/geosrs/projection/TwoPointEquidistantProjection">https://w3id.org/geosrs/projection/TwoPointEquidistantProjection</a>
Super-classes	<a href="#">TwoPointEquidistantProjection</a>

## 11.8. Globular Projections

### Requirement 13: 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 105 — geosrs:ApianGlobularIProjection

URI	<a href="https://w3id.org/geosrs/projection/ApianGlobularIProjection">https://w3id.org/geosrs/projection/ApianGlobularIProjection</a>
Super-classes	<a href="#">ApianGlobularIProjection</a>

### 11.8.2. Class: geosrs:BaconGlobularProjection

Table 106 — geosrs:BaconGlobularProjection

URI	<a href="https://w3id.org/geosrs/projection/BaconGlobularProjection">https://w3id.org/geosrs/projection/BaconGlobularProjection</a>
Super-classes	<a href="#">BaconGlobularProjection</a>

### 11.8.3. Class: geosrs:FournierGlobularIProjection

Table 107 — geosrs:FournierGlobularIProjection

URI	<a href="https://w3id.org/geosrs/projection/FournierGlobularIProjection">https://w3id.org/geosrs/projection/FournierGlobularIProjection</a>
Super-classes	<a href="#">FournierGlobularIProjection</a>

## 11.9. Lenticular Projections

#### Requirement 14: 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,

## Requirement 14: Lenticular Projections

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 108 — geosrs:A4Projection

URI	<a href="https://w3id.org/geosrs/projection/A4Projection">https://w3id.org/geosrs/projection/A4Projection</a>
Super-classes	<a href="#">A4Projection</a>

### 11.9.2. Class: geosrs:BriesemeisterProjection

Table 109 — geosrs:BriesemeisterProjection

URI	<a href="https://w3id.org/geosrs/projection/BriesemeisterProjection">https://w3id.org/geosrs/projection/BriesemeisterProjection</a>
Super-classes	<a href="#">BriesemeisterProjection</a>

### 11.9.3. Class: geosrs:CiriclProjection

Table 110 — geosrs:CiriclProjection

URI	<a href="https://w3id.org/geosrs/projection/CiriclProjection">https://w3id.org/geosrs/projection/CiriclProjection</a>
Super-classes	<a href="#">CiriclProjection</a>

### 11.9.4. Class: geosrs:CupolaProjection

Table 111 — geosrs:CupolaProjection

URI	<a href="https://w3id.org/geosrs/projection/CupolaProjection">https://w3id.org/geosrs/projection/CupolaProjection</a>
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Super-classes	<a href="#"><u>CupolaProjection</u></a>
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### 11.9.5. Class: geosrs:DedistortProjection

**Table 112** — geosrs:DedistortProjection

URI	<a href="https://w3id.org/geosrs/projection/DedistortProjection"><u>https://w3id.org/geosrs/projection/DedistortProjection</u></a>
Super-classes	<a href="#"><u>DedistortProjection</u></a>

### 11.9.6. Class: geosrs:DietrichKitadaProjection

**Table 113** — geosrs:DietrichKitadaProjection

URI	<a href="https://w3id.org/geosrs/projection/DietrichKitadaProjection"><u>https://w3id.org/geosrs/projection/DietrichKitadaProjection</u></a>
Super-classes	<a href="#"><u>DietrichKitadaProjection</u></a>

### 11.9.7. Class: geosrs:FranculaIIIProjection

**Table 114** — geosrs:FranculaIIIProjection

URI	<a href="https://w3id.org/geosrs/projection/FranculaIIIProjection"><u>https://w3id.org/geosrs/projection/FranculaIIIProjection</u></a>
Super-classes	<a href="#"><u>FranculaIIIProjection</u></a>

### 11.9.8. Class: geosrs:FranculaIVProjection

**Table 115** — geosrs:FranculaIVProjection

URI	<a href="https://w3id.org/geosrs/projection/FranculaIVProjection"><u>https://w3id.org/geosrs/projection/FranculaIVProjection</u></a>
Super-classes	<a href="#"><u>FranculaIVProjection</u></a>

### 11.9.9. Class: geosrs:FranculaIXProjection

**Table 116** — geosrs:FranculaIXProjection

URI	<a href="https://w3id.org/geosrs/projection/FranculaIXProjection">https://w3id.org/geosrs/projection/FranculaIXProjection</a>
Super-classes	<a href="#">FranculaIXProjection</a>

### 11.9.10. Class: geosrs:FranculaVIIIProjection

**Table 117** — geosrs:FranculaVIIIProjection

URI	<a href="https://w3id.org/geosrs/projection/FranculaVIIIProjection">https://w3id.org/geosrs/projection/FranculaVIIIProjection</a>
Super-classes	<a href="#">FranculaVIIIProjection</a>

### 11.9.11. Class: geosrs:FranculaVProjection

**Table 118** — geosrs:FranculaVProjection

URI	<a href="https://w3id.org/geosrs/projection/FranculaVProjection">https://w3id.org/geosrs/projection/FranculaVProjection</a>
Super-classes	<a href="#">FranculaVProjection</a>

### 11.9.12. Class: geosrs:FranculaXIIIProjection

**Table 119** — geosrs:FranculaXIIIProjection

URI	<a href="https://w3id.org/geosrs/projection/FranculaXIIIProjection">https://w3id.org/geosrs/projection/FranculaXIIIProjection</a>
Super-classes	<a href="#">FranculaXIIIProjection</a>

### 11.9.13. Class: geosrs:FranculaXIIProjection

**Table 120** — geosrs:FranculaXIIProjection

URI	<a href="https://w3id.org/geosrs/projection/FranculaXIIProjection">https://w3id.org/geosrs/projection/FranculaXIIProjection</a>
Super-classes	<a href="#">FranculaXIIProjection</a>

### 11.9.14. Class: geosrs:FranculaXIVProjection

**Table 121** — geosrs:FranculaXIVProjection

URI	<a href="https://w3id.org/geosrs/projection/FranculaXIVProjection">https://w3id.org/geosrs/projection/FranculaXIVProjection</a>
Super-classes	<a href="#">FranculaXIVProjection</a>

### 11.9.15. Class: geosrs:HamusoidalProjection

**Table 122** — geosrs:HamusoidalProjection

URI	<a href="https://w3id.org/geosrs/projection/HamusoidalProjection">https://w3id.org/geosrs/projection/HamusoidalProjection</a>
Super-classes	<a href="#">HamusoidalProjection</a>

### 11.9.16. Class: geosrs:KissProjection

**Table 123** — geosrs:KissProjection

URI	<a href="https://w3id.org/geosrs/projection/KissProjection">https://w3id.org/geosrs/projection/KissProjection</a>
Super-classes	<a href="#">KissProjection</a>

## 11.10. Minimum Error Projections

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## Requirement 15: 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 124 — `geosrs:AiryProjection`

URI	<a href="https://w3id.org/geosrs/projection/AiryProjection">https://w3id.org/geosrs/projection/AiryProjection</a>
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	<a href="#">AiryProjection</a>

## 11.11. Perspective Projections

## Requirement 16: 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 125 — `geosrs:CentralCylindricalProjection`

URI	<a href="https://w3id.org/geosrs/projection/CentralCylindricalProjection">https://w3id.org/geosrs/projection/CentralCylindricalProjection</a>
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Super-classes	<a href="#">CentralCylindricalProjection</a>
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### 11.11.2. Class: geosrs:GeneralVerticalPerspectiveProjection

**Table 126** — geosrs:GeneralVerticalPerspectiveProjection

URI	<a href="https://w3id.org/geosrs/projection/GeneralVerticalPerspectiveProjection">https://w3id.org/geosrs/projection/GeneralVerticalPerspectiveProjection</a>
Super-classes	<a href="#">GeneralVerticalPerspectiveProjection</a>

### 11.11.3. Class: geosrs:GilbertTwoWorldPerspectiveProjection

**Table 127** — geosrs:GilbertTwoWorldPerspectiveProjection

URI	<a href="https://w3id.org/geosrs/projection/GilbertTwoWorldPerspectiveProjection">https://w3id.org/geosrs/projection/GilbertTwoWorldPerspectiveProjection</a>
Super-classes	<a href="#">GilbertTwoWorldPerspectiveProjection</a>

### 11.11.4. Class: geosrs:LaHireProjection

**Table 128** — geosrs:LaHireProjection

URI	<a href="https://w3id.org/geosrs/projection/LaHireProjection">https://w3id.org/geosrs/projection/LaHireProjection</a>
Super-classes	<a href="#">LaHireProjection</a>

### 11.11.5. Class: geosrs:LorgnaProjection

**Table 129** — geosrs:LorgnaProjection

URI	<a href="https://w3id.org/geosrs/projection/LorgnaProjection">https://w3id.org/geosrs/projection/LorgnaProjection</a>
Super-classes	<a href="#">LorgnaProjection</a>

### 11.11.6. Class: geosrs:LowryProjection

Table 130 — geosrs:LowryProjection

URI	<a href="https://w3id.org/geosrs/projection/LowryProjection">https://w3id.org/geosrs/projection/LowryProjection</a>
Super-classes	<a href="#">LowryProjection</a>

### 11.11.7. Class: geosrs:OrthographicProjection

Table 131 — geosrs:OrthographicProjection

URI	<a href="https://w3id.org/geosrs/projection/OrthographicProjection">https://w3id.org/geosrs/projection/OrthographicProjection</a>
Super-classes	<a href="#">OrthographicProjection</a>

### 11.11.8. Class: geosrs:PerspectiveConicProjection

Table 132 — geosrs:PerspectiveConicProjection

URI	<a href="https://w3id.org/geosrs/projection/PerspectiveConicProjection">https://w3id.org/geosrs/projection/PerspectiveConicProjection</a>
Super-classes	<a href="#">PerspectiveConicProjection</a>

### 11.11.9. Class: geosrs:TiltedPerspectiveProjection

Table 133 — geosrs:TiltedPerspectiveProjection

URI	<a href="https://w3id.org/geosrs/projection/TiltedPerspectiveProjection">https://w3id.org/geosrs/projection/TiltedPerspectiveProjection</a>
Super-classes	<a href="#">TiltedPerspectiveProjection</a>

### 11.11.10. Class: geosrs:VerticalPerspectiveProjection



**Table 134** — geosrs:VerticalPerspectiveProjection

URI	<a href="https://w3id.org/geosrs/projection/VerticalPerspectiveProjection">https://w3id.org/geosrs/projection/VerticalPerspectiveProjection</a>
Super-classes	<a href="#">VerticalPerspectiveProjection</a>

## 11.12. Polyconic Projections

### Requirement 17: Polyconic Projections

**IDENTIFIER** /req/Polyconic\_Projections

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:StabiusWernerIIIPProjection, geosrs:StabiusWernerIProjection, geosrs:VanDerGrintenIIPProjection, geosrs:VanDerGrintenIProjection, geosrs:VanDerGrintenIVProjection, geosrs:WagnerIXProjection, geosrs:WagnerVIIIPProjection, geosrs:WagnerVIIPProjection to be used in SPARQL graph patterns.

### 11.12.1. Class: geosrs:GinzburgIVProjection

**Table 135** — geosrs:GinzburgIVProjection

URI	<a href="https://w3id.org/geosrs/projection/GinzburgIVProjection">https://w3id.org/geosrs/projection/GinzburgIVProjection</a>
Super-classes	<a href="#">GinzburgIVProjection</a>

### 11.12.2. Class: geosrs:GinzburgIXProjection

**Table 136** — geosrs:GinzburgIXProjection

URI	<a href="https://w3id.org/geosrs/projection/GinzburgIXProjection">https://w3id.org/geosrs/projection/GinzburgIXProjection</a>
Super-classes	<a href="#">GinzburgIXProjection</a>

### 11.12.3. Class: geosrs:GinzburgVIProjection

Table 137 — geosrs:GinzburgVIProjection

URI	<a href="https://w3id.org/geosrs/projection/GinzburgVIProjection">https://w3id.org/geosrs/projection/GinzburgVIProjection</a>
Super-classes	<a href="#">GinzburgVIProjection</a>

### 11.12.4. Class: geosrs:GinzburgVProjection

Table 138 — geosrs:GinzburgVProjection

URI	<a href="https://w3id.org/geosrs/projection/GinzburgVProjection">https://w3id.org/geosrs/projection/GinzburgVProjection</a>
Super-classes	<a href="#">GinzburgVProjection</a>

### 11.12.5. Class: geosrs:GottWagnerProjection

Table 139 — geosrs:GottWagnerProjection

URI	<a href="https://w3id.org/geosrs/projection/GottWagnerProjection">https://w3id.org/geosrs/projection/GottWagnerProjection</a>
Super-classes	<a href="#">GottWagnerProjection</a>

### 11.12.6. Class: geosrs:HillEucyclicProjection

Table 140 — geosrs:HillEucyclicProjection

URI	<a href="https://w3id.org/geosrs/projection/HillEucyclicProjection">https://w3id.org/geosrs/projection/HillEucyclicProjection</a>
Super-classes	<a href="#">HillEucyclicProjection</a>

### 11.12.7. Class: geosrs:LagrangeProjection

**Table 141** — geosrs:LagrangeProjection

URI	<a href="https://w3id.org/geosrs/projection/LagrangeProjection">https://w3id.org/geosrs/projection/LagrangeProjection</a>
Super-classes	<a href="#">LagrangeProjection</a>

### 11.12.8. Class: geosrs:LaskowskiProjection

**Table 142** — geosrs:LaskowskiProjection

URI	<a href="https://w3id.org/geosrs/projection/LaskowskiProjection">https://w3id.org/geosrs/projection/LaskowskiProjection</a>
Super-classes	<a href="#">LaskowskiProjection</a>

### 11.12.9. Class: geosrs:RectangularPolyconicProjection

**Table 143** — geosrs:RectangularPolyconicProjection

URI	<a href="https://w3id.org/geosrs/projection/RectangularPolyconicProjection">https://w3id.org/geosrs/projection/RectangularPolyconicProjection</a>
Super-classes	<a href="#">RectangularPolyconicProjection</a>

### 11.12.10. Class: geosrs:StabiusWernerIIIProjection

**Table 144** — geosrs:StabiusWernerIIIProjection

URI	<a href="https://w3id.org/geosrs/projection/StabiusWernerIIIProjection">https://w3id.org/geosrs/projection/StabiusWernerIIIProjection</a>
Super-classes	<a href="#">StabiusWernerIIIProjection</a>

### 11.12.11. Class: geosrs:StabiusWernerIProjection

**Table 145** — geosrs:StabiusWernerIProjection

URI	<a href="https://w3id.org/geosrs/projection/StabiusWernerIProjection">https://w3id.org/geosrs/projection/StabiusWernerIProjection</a>
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Super-classes	<a href="#">StabiusWernerIProjection</a>
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### 11.12.12. Class: geosrs:VanDerGrintenIIProjection

**Table 146** — geosrs:VanDerGrintenIIProjection

URI	<a href="https://w3id.org/geosrs/projection/VanDerGrintenIIProjection">https://w3id.org/geosrs/projection/VanDerGrintenIIProjection</a>
Super-classes	<a href="#">VanDerGrintenIIProjection</a>

### 11.12.13. Class: geosrs:VanDerGrintenIProjection

**Table 147** — geosrs:VanDerGrintenIProjection

URI	<a href="https://w3id.org/geosrs/projection/VanDerGrintenIProjection">https://w3id.org/geosrs/projection/VanDerGrintenIProjection</a>
Super-classes	<a href="#">VanDerGrintenIProjection</a>

### 11.12.14. Class: geosrs:VanDerGrintenIVProjection

**Table 148** — geosrs:VanDerGrintenIVProjection

URI	<a href="https://w3id.org/geosrs/projection/VanDerGrintenIVProjection">https://w3id.org/geosrs/projection/VanDerGrintenIVProjection</a>
Super-classes	<a href="#">VanDerGrintenIVProjection</a>

### 11.12.15. Class: geosrs:WagnerIXProjection

**Table 149** — geosrs:WagnerIXProjection

URI	<a href="https://w3id.org/geosrs/projection/WagnerIXProjection">https://w3id.org/geosrs/projection/WagnerIXProjection</a>
Super-classes	<a href="#">WagnerIXProjection</a>

### 11.12.16. Class: geosrs:WagnerVIIIProjection

Table 150 — geosrs:WagnerVIIIProjection

URI	<a href="https://w3id.org/geosrs/projection/WagnerVIIIProjection">https://w3id.org/geosrs/projection/WagnerVIIIProjection</a>
Super-classes	<a href="#">WagnerVIIIProjection</a>

### 11.12.17. Class: geosrs:WagnerVIIProjection

Table 151 — geosrs:WagnerVIIProjection

URI	<a href="https://w3id.org/geosrs/projection/WagnerVIIProjection">https://w3id.org/geosrs/projection/WagnerVIIProjection</a>
Super-classes	<a href="#">WagnerVIIProjection</a>

## 11.13. Polyhedral Projections

### Requirement 18: 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 152** — geosrs:AuthaGraphProjection

URI	<a href="https://w3id.org/geosrs/projection/AuthaGraphProjection">https://w3id.org/geosrs/projection/AuthaGraphProjection</a>
Super-classes	<a href="#">AuthaGraphProjection</a>

### 11.13.2. Class: geosrs:CahillKeyesProjection

**Table 153** — geosrs:CahillKeyesProjection

URI	<a href="https://w3id.org/geosrs/projection/CahillKeyesProjection">https://w3id.org/geosrs/projection/CahillKeyesProjection</a>
Super-classes	<a href="#">CahillKeyesProjection</a>

### 11.13.3. Class: geosrs:CollignonButterflyProjection

**Table 154** — geosrs:CollignonButterflyProjection

URI	<a href="https://w3id.org/geosrs/projection/CollignonButterflyProjection">https://w3id.org/geosrs/projection/CollignonButterflyProjection</a>
Super-classes	<a href="#">CollignonButterflyProjection</a>

### 11.13.4. Class: geosrs:DodecahedralProjection

**Table 155** — geosrs:DodecahedralProjection

URI	<a href="https://w3id.org/geosrs/projection/DodecahedralProjection">https://w3id.org/geosrs/projection/DodecahedralProjection</a>
Super-classes	<a href="#">DodecahedralProjection</a>

### 11.13.5. Class: geosrs:DymaxionProjection

**Table 156** — geosrs:DymaxionProjection

URI	<a href="https://w3id.org/geosrs/projection/DymaxionProjection">https://w3id.org/geosrs/projection/DymaxionProjection</a>
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Super-classes	<a href="#">DymaxionProjection</a>
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### 11.13.6. Class: geosrs:GnomonicButterflyProjection

**Table 157** — geosrs:GnomonicButterflyProjection

URI	<a href="https://w3id.org/geosrs/projection/GnomonicButterflyProjection">https://w3id.org/geosrs/projection/GnomonicButterflyProjection</a>
Super-classes	<a href="#">GnomonicButterflyProjection</a>

### 11.13.7. Class: geosrs:GnomonicCubedSphereProjection

**Table 158** — geosrs:GnomonicCubedSphereProjection

URI	<a href="https://w3id.org/geosrs/projection/GnomonicCubedSphereProjection">https://w3id.org/geosrs/projection/GnomonicCubedSphereProjection</a>
Super-classes	<a href="#">GnomonicCubedSphereProjection</a>

### 11.13.8. Class: geosrs:GnomonicIcosahedronProjection

**Table 159** — geosrs:GnomonicIcosahedronProjection

URI	<a href="https://w3id.org/geosrs/projection/GnomonicIcosahedronProjection">https://w3id.org/geosrs/projection/GnomonicIcosahedronProjection</a>
Super-classes	<a href="#">GnomonicIcosahedronProjection</a>

### 11.13.9. Class: geosrs:GuyouProjection

**Table 160** — geosrs:GuyouProjection

URI	<a href="https://w3id.org/geosrs/projection/GuyouProjection">https://w3id.org/geosrs/projection/GuyouProjection</a>
Super-classes	<a href="#">GuyouProjection</a>

### 11.13.10. Class: geosrs:IcosahedralProjection

Table 161 — geosrs:IcosahedralProjection

URI	<a href="https://w3id.org/geosrs/projection/IcosahedralProjection">https://w3id.org/geosrs/projection/IcosahedralProjection</a>
Super-classes	<a href="#">IcosahedralProjection</a>

### 11.13.11. Class: geosrs:LeeProjection

Table 162 — geosrs:LeeProjection

URI	<a href="https://w3id.org/geosrs/projection/LeeProjection">https://w3id.org/geosrs/projection/LeeProjection</a>
Super-classes	<a href="#">LeeProjection</a>

### 11.13.12. Class: geosrs:MyrahedralProjection

Table 163 — geosrs:MyrahedralProjection

URI	<a href="https://w3id.org/geosrs/projection/MyrahedralProjection">https://w3id.org/geosrs/projection/MyrahedralProjection</a>
Super-classes	<a href="#">MyrahedralProjection</a>

### 11.13.13. Class: geosrs:OctantProjection

Table 164 — geosrs:OctantProjection

URI	<a href="https://w3id.org/geosrs/projection/OctantProjection">https://w3id.org/geosrs/projection/OctantProjection</a>
Super-classes	<a href="#">OctantProjection</a>

### 11.13.14. Class: geosrs:QuadrilateralizedSphericalCubeProjection



**Table 165** — geosrs:QuadrilateralizedSphericalCubeProjection

URI	<a href="https://w3id.org/geosrs/projection/QuadrilateralizedSphericalCubeProjection">https://w3id.org/geosrs/projection/QuadrilateralizedSphericalCubeProjection</a>
Super-classes	<a href="#">QuadrilateralizedSphericalCubeProjection</a>

### 11.13.15. Class: geosrs:WatermanButterflyProjection

**Table 166** — geosrs:WatermanButterflyProjection

URI	<a href="https://w3id.org/geosrs/projection/WatermanButterflyProjection">https://w3id.org/geosrs/projection/WatermanButterflyProjection</a>
Super-classes	<a href="#">WatermanButterflyProjection</a>

## 11.14. Pseudo Azimuthal Projections

### Requirement 19: 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 167** — geosrs:AitoffObliqueProjection

URI	<a href="https://w3id.org/geosrs/projection/AitoffObliqueProjection">https://w3id.org/geosrs/projection/AitoffObliqueProjection</a>
Super-classes	<a href="#">AitoffObliqueProjection</a>

### 11.14.2. Class: geosrs:AitoffProjection

**Table 168** — geosrs:AitoffProjection

URI	<a href="https://w3id.org/geosrs/projection/AitoffProjection">https://w3id.org/geosrs/projection/AitoffProjection</a>
Definition	A modified azimuthal projection whose graticule takes the form of an ellipse
Super-classes	<a href="#">AitoffProjection</a>

### 11.14.3. Class: geosrs:HammerProjection

**Table 169** — geosrs:HammerProjection

URI	<a href="https://w3id.org/geosrs/projection/HammerProjection">https://w3id.org/geosrs/projection/HammerProjection</a>
Super-classes	<a href="#">HammerProjection</a>

### 11.14.4. Class: geosrs:Strebe1995Projection

**Table 170** — geosrs:Strebe1995Projection

URI	<a href="https://w3id.org/geosrs/projection/Strebe1995Projection">https://w3id.org/geosrs/projection/Strebe1995Projection</a>
Super-classes	<a href="#">Strebe1995Projection</a>

### 11.14.5. Class: geosrs:WinkelTripelProjection

**Table 171** — geosrs:WinkelTripelProjection

URI	<a href="https://w3id.org/geosrs/projection/WinkelTripelProjection">https://w3id.org/geosrs/projection/WinkelTripelProjection</a>
Super-classes	<a href="#">WinkelTripelProjection</a>

## 11.15. Pseudo Conical Projections

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## Requirement 20: Pseudo Conical Projections

**IDENTIFIER** /req/Pseudo\_Conical\_Projections

**STATEMENT** Implementations shall allow the RDFS classes `geosrs:AmericanPolyconicProjection`, `geosrs:BonneProjection`, `geosrs:BottomleyProjection`, `geosrs:NicolosiGlobularProjection`, `geosrs:PtolemyIIProjection`, `geosrs:WernerProjection` to be used in SPARQL graph patterns.

### 11.15.1. Class: `geosrs:AmericanPolyconicProjection`

Table 172 — `geosrs:AmericanPolyconicProjection`

URI	<a href="https://w3id.org/geosrs/projection/AmericanPolyconicProjection">https://w3id.org/geosrs/projection/AmericanPolyconicProjection</a>
Super-classes	<a href="#">AmericanPolyconicProjection</a>

### 11.15.2. Class: `geosrs:BonneProjection`

Table 173 — `geosrs:BonneProjection`

URI	<a href="https://w3id.org/geosrs/projection/BonneProjection">https://w3id.org/geosrs/projection/BonneProjection</a>
Super-classes	<a href="#">BonneProjection</a>

### 11.15.3. Class: `geosrs:BottomleyProjection`

Table 174 — `geosrs:BottomleyProjection`

URI	<a href="https://w3id.org/geosrs/projection/BottomleyProjection">https://w3id.org/geosrs/projection/BottomleyProjection</a>
Super-classes	<a href="#">BottomleyProjection</a>

### 11.15.4. Class: `geosrs:NicolosiGlobularProjection`

**Table 175** — geosrs:NicolosiGlobularProjection

URI	<a href="https://w3id.org/geosrs/projection/NicolosiGlobularProjection">https://w3id.org/geosrs/projection/NicolosiGlobularProjection</a>
Super-classes	<a href="#">NicolosiGlobularProjection</a>

### 11.15.5. Class: geosrs:PtolemyIIProjection

**Table 176** — geosrs:PtolemyIIProjection

URI	<a href="https://w3id.org/geosrs/projection/PtolemyIIProjection">https://w3id.org/geosrs/projection/PtolemyIIProjection</a>
Super-classes	<a href="#">PtolemyIIProjection</a>

### 11.15.6. Class: geosrs:WernerProjection

**Table 177** — geosrs:WernerProjection

URI	<a href="https://w3id.org/geosrs/projection/WernerProjection">https://w3id.org/geosrs/projection/WernerProjection</a>
Super-classes	<a href="#">WernerProjection</a>

## 11.16. Pseudo Cylindrical Projections

### Requirement 21: Pseudo Cylindrical Projections

**IDENTIFIER** /req/Pseudo\_Cylindrical\_Projections

**STATEMENT**

Implementations shall allow the RDFS classes geosrs:ApianIIProjection, geosrs:AtlantisProjection, geosrs:BaranyiIIIProjection, geosrs:BaranyiIIProjection, geosrs:BaranyiIProjection, 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:FahayProjection, geosrs:FoucautProjection, geosrs:FoucautSinusoidalProjection, geosrs:FournierIIProjection, geosrs:GinzburgVIIIProjection, geosrs:

## Requirement 21: Pseudo Cylindrical Projections

GoodeHomolosineProjection, geosrs:HEALPixProjection, geosrs:HufnagelProjection, geosrs:Kavrayskiy7Projection, geosrs:LoximuthalProjection, geosrs:MayrProjection, geosrs:McBrydeThomasFlatPolarParabolicProjection, 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:WagnerVIProjection, 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 178 — geosrs:ApianIIProjection

URI	<a href="https://w3id.org/geosrs/projection/ApianIIProjection">https://w3id.org/geosrs/projection/ApianIIProjection</a>
Super-classes	<a href="#">ApianIIProjection</a>

### 11.16.2. Class: geosrs:AtlantisProjection

Table 179 — geosrs:AtlantisProjection

URI	<a href="https://w3id.org/geosrs/projection/AtlantisProjection">https://w3id.org/geosrs/projection/AtlantisProjection</a>
Super-classes	<a href="#">AtlantisProjection</a>

### 11.16.3. Class: geosrs:BaranyiIIIProjection

**Table 180** — geosrs:BaranyillProjection

URI	<a href="https://w3id.org/geosrs/projection/BaranyillProjection">https://w3id.org/geosrs/projection/BaranyillProjection</a>
Super-classes	<a href="#">BaranyillProjection</a>

#### 11.16.4. Class: geosrs:BaranyillProjection

**Table 181** — geosrs:BaranyillProjection

URI	<a href="https://w3id.org/geosrs/projection/BaranyillProjection">https://w3id.org/geosrs/projection/BaranyillProjection</a>
Super-classes	<a href="#">BaranyillProjection</a>

#### 11.16.5. Class: geosrs:BaranyilProjection

**Table 182** — geosrs:BaranyilProjection

URI	<a href="https://w3id.org/geosrs/projection/BaranyilProjection">https://w3id.org/geosrs/projection/BaranyilProjection</a>
Super-classes	<a href="#">BaranyilProjection</a>

#### 11.16.6. Class: geosrs:BaranyilVProjection

**Table 183** — geosrs:BaranyilVProjection

URI	<a href="https://w3id.org/geosrs/projection/BaranyilVProjection">https://w3id.org/geosrs/projection/BaranyilVProjection</a>
Super-classes	<a href="#">BaranyilVProjection</a>

#### 11.16.7. Class: geosrs:BoggsEumorphicProjection

**Table 184** — geosrs:BoggsEumorphicProjection

URI	<a href="https://w3id.org/geosrs/projection/BoggsEumorphicProjection">https://w3id.org/geosrs/projection/BoggsEumorphicProjection</a>
Super-classes	<a href="#">BoggsEumorphicProjection</a>

### 11.16.8. Class: geosrs:BromleyProjection

Table 185 — geosrs:BromleyProjection

URI	<a href="https://w3id.org/geosrs/projection/BromleyProjection">https://w3id.org/geosrs/projection/BromleyProjection</a>
Super-classes	<a href="#">BromleyProjection</a>

### 11.16.9. Class: geosrs:CabotProjection

Table 186 — geosrs:CabotProjection

URI	<a href="https://w3id.org/geosrs/projection/CabotProjection">https://w3id.org/geosrs/projection/CabotProjection</a>
Super-classes	<a href="#">CabotProjection</a>

### 11.16.10. Class: geosrs:CollignonProjection

Table 187 — geosrs:CollignonProjection

URI	<a href="https://w3id.org/geosrs/projection/CollignonProjection">https://w3id.org/geosrs/projection/CollignonProjection</a>
Definition	An equal-area pseudocylindrical projection that maps the sphere onto a triangle or diamond
Super-classes	<a href="#">CollignonProjection</a>

### 11.16.11. Class: geosrs:CrasterParabolicProjection

Table 188 — geosrs:CrasterParabolicProjection

URI	<a href="https://w3id.org/geosrs/projection/CrasterParabolicProjection">https://w3id.org/geosrs/projection/CrasterParabolicProjection</a>
Super-classes	<a href="#">CrasterParabolicProjection</a>

### 11.16.12. Class: geosrs:DeakinMinimumErrorProjection

Table 189 — geosrs:DeakinMinimumErrorProjection

URI	<a href="https://w3id.org/geosrs/projection/DeakinMinimumErrorProjection">https://w3id.org/geosrs/projection/DeakinMinimumErrorProjection</a>
Super-classes	<a href="#">DeakinMinimumErrorProjection</a>

### 11.16.13. Class: geosrs:Eckert1Projection

Table 190 — geosrs:Eckert1Projection

URI	<a href="https://w3id.org/geosrs/projection/Eckert1Projection">https://w3id.org/geosrs/projection/Eckert1Projection</a>
Super-classes	<a href="#">Eckert1Projection</a>

### 11.16.14. Class: geosrs:Eckert2Projection

Table 191 — geosrs:Eckert2Projection

URI	<a href="https://w3id.org/geosrs/projection/Eckert2Projection">https://w3id.org/geosrs/projection/Eckert2Projection</a>
Super-classes	<a href="#">Eckert2Projection</a>

### 11.16.15. Class: geosrs:Eckert3Projection

Table 192 — geosrs:Eckert3Projection

URI	<a href="https://w3id.org/geosrs/projection/Eckert3Projection">https://w3id.org/geosrs/projection/Eckert3Projection</a>
Super-classes	<a href="#">Eckert3Projection</a>

### 11.16.16. Class: geosrs:Eckert4Projection



**Table 193** — geosrs:Eckert4Projection

URI	<a href="https://w3id.org/geosrs/projection/Eckert4Projection">https://w3id.org/geosrs/projection/Eckert4Projection</a>
Super-classes	<a href="#">Eckert4Projection</a>

### 11.16.17. Class: geosrs:Eckert5Projection

**Table 194** — geosrs:Eckert5Projection

URI	<a href="https://w3id.org/geosrs/projection/Eckert5Projection">https://w3id.org/geosrs/projection/Eckert5Projection</a>
Super-classes	<a href="#">Eckert5Projection</a>

### 11.16.18. Class: geosrs:Eckert6Projection

**Table 195** — geosrs:Eckert6Projection

URI	<a href="https://w3id.org/geosrs/projection/Eckert6Projection">https://w3id.org/geosrs/projection/Eckert6Projection</a>
Super-classes	<a href="#">Eckert6Projection</a>

### 11.16.19. Class: geosrs:EqualEarthProjection

**Table 196** — geosrs:EqualEarthProjection

URI	<a href="https://w3id.org/geosrs/projection/EqualEarthProjection">https://w3id.org/geosrs/projection/EqualEarthProjection</a>
Super-classes	<a href="#">EqualEarthProjection</a>

### 11.16.20. Class: geosrs:FaheyProjection

**Table 197** — geosrs:FaheyProjection

URI	<a href="https://w3id.org/geosrs/projection/FaheyProjection">https://w3id.org/geosrs/projection/FaheyProjection</a>
Super-classes	<a href="#">FaheyProjection</a>

### 11.16.21. Class: geosrs:FoucautProjection

Table 198 — geosrs:FoucautProjection

URI	<a href="https://w3id.org/geosrs/projection/FoucautProjection">https://w3id.org/geosrs/projection/FoucautProjection</a>
Super-classes	<a href="#">FoucautProjection</a>

### 11.16.22. Class: geosrs:FoucautSinusoidalProjection

Table 199 — geosrs:FoucautSinusoidalProjection

URI	<a href="https://w3id.org/geosrs/projection/FoucautSinusoidalProjection">https://w3id.org/geosrs/projection/FoucautSinusoidalProjection</a>
Super-classes	<a href="#">FoucautSinusoidalProjection</a>

### 11.16.23. Class: geosrs:FournierIIProjection

Table 200 — geosrs:FournierIIProjection

URI	<a href="https://w3id.org/geosrs/projection/FournierIIProjection">https://w3id.org/geosrs/projection/FournierIIProjection</a>
Super-classes	<a href="#">FournierIIProjection</a>

### 11.16.24. Class: geosrs:GinzburgVIIIProjection

Table 201 — geosrs:GinzburgVIIIProjection

URI	<a href="https://w3id.org/geosrs/projection/GinzburgVIIIProjection">https://w3id.org/geosrs/projection/GinzburgVIIIProjection</a>
Super-classes	<a href="#">GinzburgVIIIProjection</a>

### 11.16.25. Class: geosrs:GoodeHomolosineProjection

**Table 202** — geosrs:GoodeHomolosineProjection

URI	<a href="https://w3id.org/geosrs/projection/GoodeHomolosineProjection">https://w3id.org/geosrs/projection/GoodeHomolosineProjection</a>
Super-classes	<a href="#">GoodeHomolosineProjection</a>

### 11.16.26. Class: geosrs:HEALPixProjection

**Table 203** — geosrs:HEALPixProjection

URI	<a href="https://w3id.org/geosrs/projection/HEALPixProjection">https://w3id.org/geosrs/projection/HEALPixProjection</a>
Super-classes	<a href="#">HEALPixProjection</a>

### 11.16.27. Class: geosrs:HufnagelProjection

**Table 204** — geosrs:HufnagelProjection

URI	<a href="https://w3id.org/geosrs/projection/HufnagelProjection">https://w3id.org/geosrs/projection/HufnagelProjection</a>
Super-classes	<a href="#">HufnagelProjection</a>

### 11.16.28. Class: geosrs:Kavrayskiy7Projection

**Table 205** — geosrs:Kavrayskiy7Projection

URI	<a href="https://w3id.org/geosrs/projection/Kavrayskiy7Projection">https://w3id.org/geosrs/projection/Kavrayskiy7Projection</a>
Super-classes	<a href="#">Kavrayskiy7Projection</a>

### 11.16.29. Class: geosrs:LoximuthalProjection

**Table 206** — geosrs:LoximuthalProjection

URI	<a href="https://w3id.org/geosrs/projection/LoximuthalProjection">https://w3id.org/geosrs/projection/LoximuthalProjection</a>
Super-classes	<a href="#">LoximuthalProjection</a>

### 11.16.30. Class: geosrs:MayrProjection

Table 207 — geosrs:MayrProjection

URI	<a href="https://w3id.org/geosrs/projection/MayrProjection">https://w3id.org/geosrs/projection/MayrProjection</a>
Super-classes	<a href="#">MayrProjection</a>

### 11.16.31. Class: geosrs:McBrydeThomasFlatPolarParabolicProjection

Table 208 — geosrs:McBrydeThomasFlatPolarParabolicProjection

URI	<a href="https://w3id.org/geosrs/projection/McBrydeThomasFlatPolarParabolicProjection">https://w3id.org/geosrs/projection/McBrydeThomasFlatPolarParabolicProjection</a>
Super-classes	<a href="#">McBrydeThomasFlatPolarParabolicProjection</a>

### 11.16.32. Class: geosrs:McBrydeThomasFlatPolarQuarticProjection

Table 209 — geosrs:McBrydeThomasFlatPolarQuarticProjection

URI	<a href="https://w3id.org/geosrs/projection/McBrydeThomasFlatPolarQuarticProjection">https://w3id.org/geosrs/projection/McBrydeThomasFlatPolarQuarticProjection</a>
Super-classes	<a href="#">McBrydeThomasFlatPolarQuarticProjection</a>

### 11.16.33. Class: geosrs:McBrydeThomasFlatPolarSinusoidalProjection

Table 210 — geosrs:McBrydeThomasFlatPolarSinusoidalProjection

URI	<a href="https://w3id.org/geosrs/projection/McBrydeThomasFlatPolarSinusoidalProjection">https://w3id.org/geosrs/projection/McBrydeThomasFlatPolarSinusoidalProjection</a>
Super-classes	<a href="#">McBrydeThomasFlatPolarSinusoidalProjection</a>

### 11.16.34. Class: geosrs:McBrydeThomasIIProjection

**Table 211** — geosrs:McBrydeThomasIIProjection

URI	<a href="https://w3id.org/geosrs/projection/McBrydeThomasIIProjection">https://w3id.org/geosrs/projection/McBrydeThomasIIProjection</a>
Super-classes	<a href="#">McBrydeThomasIIProjection</a>

### 11.16.35. Class: geosrs:McBrydeThomasIProjection

**Table 212** — geosrs:McBrydeThomasIProjection

URI	<a href="https://w3id.org/geosrs/projection/McBrydeThomasIProjection">https://w3id.org/geosrs/projection/McBrydeThomasIProjection</a>
Super-classes	<a href="#">McBrydeThomasIProjection</a>

### 11.16.36. Class: geosrs:NaturalEarth2Projection

**Table 213** — geosrs:NaturalEarth2Projection

URI	<a href="https://w3id.org/geosrs/projection/NaturalEarth2Projection">https://w3id.org/geosrs/projection/NaturalEarth2Projection</a>
Super-classes	<a href="#">NaturalEarth2Projection</a>

### 11.16.37. Class: geosrs:NaturalEarthProjection

**Table 214** — geosrs:NaturalEarthProjection

URI	<a href="https://w3id.org/geosrs/projection/NaturalEarthProjection">https://w3id.org/geosrs/projection/NaturalEarthProjection</a>
Definition	A pseudocylindrical map projection designed by Tom Patterson and introduced in 2008
Super-classes	<a href="#">NaturalEarthProjection</a>

### 11.16.38. Class: geosrs:NellHammerProjection

**Table 215** — geosrs:NellHammerProjection

URI	<a href="https://w3id.org/geosrs/projection/NellHammerProjection">https://w3id.org/geosrs/projection/NellHammerProjection</a>
Super-classes	<a href="#">NellHammerProjection</a>

### 11.16.39. Class: geosrs:NellProjection

**Table 216** — geosrs:NellProjection

URI	<a href="https://w3id.org/geosrs/projection/NellProjection">https://w3id.org/geosrs/projection/NellProjection</a>
Super-classes	<a href="#">NellProjection</a>

### 11.16.40. Class: geosrs:OrteliusOvalProjection

**Table 217** — geosrs:OrteliusOvalProjection

URI	<a href="https://w3id.org/geosrs/projection/OrteliusOvalProjection">https://w3id.org/geosrs/projection/OrteliusOvalProjection</a>
Super-classes	<a href="#">OrteliusOvalProjection</a>

### 11.16.41. Class: geosrs:PutninsP1Projection

**Table 218** — geosrs:PutninsP1Projection

URI	<a href="https://w3id.org/geosrs/projection/PutninsP1Projection">https://w3id.org/geosrs/projection/PutninsP1Projection</a>
Super-classes	<a href="#">PutninsP1Projection</a>

### 11.16.42. Class: geosrs:PutninsP2Projection

**Table 219** — geosrs:PutninsP2Projection

URI	<a href="https://w3id.org/geosrs/projection/PutninsP2Projection">https://w3id.org/geosrs/projection/PutninsP2Projection</a>
Super-classes	<a href="#">PutninsP2Projection</a>

### 11.16.43. Class: geosrs:PutninsP3Projection

Table 220 — geosrs:PutninsP3Projection

URI	<a href="https://w3id.org/geosrs/projection/PutninsP3Projection">https://w3id.org/geosrs/projection/PutninsP3Projection</a>
Super-classes	<a href="#">PutninsP3Projection</a>

### 11.16.44. Class: geosrs:PutninsP5Projection

Table 221 — geosrs:PutninsP5Projection

URI	<a href="https://w3id.org/geosrs/projection/PutninsP5Projection">https://w3id.org/geosrs/projection/PutninsP5Projection</a>
Super-classes	<a href="#">PutninsP5Projection</a>

### 11.16.45. Class: geosrs:PutninsP6Projection

Table 222 — geosrs:PutninsP6Projection

URI	<a href="https://w3id.org/geosrs/projection/PutninsP6Projection">https://w3id.org/geosrs/projection/PutninsP6Projection</a>
Super-classes	<a href="#">PutninsP6Projection</a>

### 11.16.46. Class: geosrs:QuarticAuthalicProjection

Table 223 — geosrs:QuarticAuthalicProjection

URI	<a href="https://w3id.org/geosrs/projection/QuarticAuthalicProjection">https://w3id.org/geosrs/projection/QuarticAuthalicProjection</a>
Super-classes	<a href="#">QuarticAuthalicProjection</a>

### 11.16.47. Class: geosrs:RobinsonProjection

**Table 224** — geosrs:RobinsonProjection

URI	<a href="https://w3id.org/geosrs/projection/RobinsonProjection">https://w3id.org/geosrs/projection/RobinsonProjection</a>
Super-classes	<a href="#">RobinsonProjection</a>

### 11.16.48. Class: geosrs:SinusoidalProjection

**Table 225** — geosrs:SinusoidalProjection

URI	<a href="https://w3id.org/geosrs/projection/SinusoidalProjection">https://w3id.org/geosrs/projection/SinusoidalProjection</a>
Super-classes	<a href="#">SinusoidalProjection</a>

### 11.16.49. Class: geosrs:TheTimesProjection

**Table 226** — geosrs:TheTimesProjection

URI	<a href="https://w3id.org/geosrs/projection/TheTimesProjection">https://w3id.org/geosrs/projection/TheTimesProjection</a>
Super-classes	<a href="#">TheTimesProjection</a>

### 11.16.50. Class: geosrs:ToblerG1Projection

**Table 227** — geosrs:ToblerG1Projection

URI	<a href="https://w3id.org/geosrs/projection/ToblerG1Projection">https://w3id.org/geosrs/projection/ToblerG1Projection</a>
Super-classes	<a href="#">ToblerG1Projection</a>

### 11.16.51. Class: geosrs:ToblerHyperellipticalProjection

**Table 228** — geosrs:ToblerHyperellipticalProjection

URI	<a href="https://w3id.org/geosrs/projection/ToblerHyperellipticalProjection">https://w3id.org/geosrs/projection/ToblerHyperellipticalProjection</a>
Super-classes	<a href="#">ToblerHyperellipticalProjection</a>



### 11.16.52. Class: geosrs:WagnerIIIProjection

Table 229 — geosrs:WagnerIIIProjection

URI	<a href="https://w3id.org/geosrs/projection/WagnerIIIProjection">https://w3id.org/geosrs/projection/WagnerIIIProjection</a>
Super-classes	<a href="#">WagnerIIIProjection</a>

### 11.16.53. Class: geosrs:WagnerIIProjection

Table 230 — geosrs:WagnerIIProjection

URI	<a href="https://w3id.org/geosrs/projection/WagnerIIProjection">https://w3id.org/geosrs/projection/WagnerIIProjection</a>
Super-classes	<a href="#">WagnerIIProjection</a>

### 11.16.54. Class: geosrs:WagnerIProjection

Table 231 — geosrs:WagnerIProjection

URI	<a href="https://w3id.org/geosrs/projection/WagnerIProjection">https://w3id.org/geosrs/projection/WagnerIProjection</a>
Super-classes	<a href="#">WagnerIProjection</a>

### 11.16.55. Class: geosrs:WagnerIVProjection

Table 232 — geosrs:WagnerIVProjection

URI	<a href="https://w3id.org/geosrs/projection/WagnerIVProjection">https://w3id.org/geosrs/projection/WagnerIVProjection</a>
Super-classes	<a href="#">WagnerIVProjection</a>

### 11.16.56. Class: geosrs:WagnerVProjection

**Table 233** — geosrs:WagnerVIProjection

URI	<a href="https://w3id.org/geosrs/projection/WagnerVIProjection">https://w3id.org/geosrs/projection/WagnerVIProjection</a>
Super-classes	<a href="#">WagnerVIProjection</a>

### 11.16.57. Class: geosrs:WagnerVProjection

**Table 234** — geosrs:WagnerVProjection

URI	<a href="https://w3id.org/geosrs/projection/WagnerVProjection">https://w3id.org/geosrs/projection/WagnerVProjection</a>
Super-classes	<a href="#">WagnerVProjection</a>

### 11.16.58. Class: geosrs:WerenskioldIProjection

**Table 235** — geosrs:WerenskioldIProjection

URI	<a href="https://w3id.org/geosrs/projection/WerenskioldIProjection">https://w3id.org/geosrs/projection/WerenskioldIProjection</a>
Super-classes	<a href="#">WerenskioldIProjection</a>

### 11.16.59. Class: geosrs:PutninsP3'Projection

**Table 236** — geosrs:PutninsP3'Projection

URI	<a href="https://w3id.org/geosrs/projection/PutninsP3'Projection">https://w3id.org/geosrs/projection/PutninsP3'Projection</a>
Super-classes	<a href="#">PutninsP3'Projection</a>

### 11.16.60. Class: geosrs:PutninsP4'Projection

**Table 237** — geosrs:PutninsP4'Projection

URI	<a href="https://w3id.org/geosrs/projection/PutninsP4'Projection">https://w3id.org/geosrs/projection/PutninsP4'Projection</a>
Super-classes	<a href="#">PutninsP4'Projection</a>

### 11.16.61. Class: geosrs:PutninsP5'Projection

Table 238 — geosrs:PutninsP5'Projection

URI	<a href="https://w3id.org/geosrs/projection/PutninsP5'Projection">https://w3id.org/geosrs/projection/PutninsP5'Projection</a>
Super-classes	<a href="#">PutninsP5'Projection</a>

### 11.16.62. Class: geosrs:PutninsP6'Projection

Table 239 — geosrs:PutninsP6'Projection

URI	<a href="https://w3id.org/geosrs/projection/PutninsP6'Projection">https://w3id.org/geosrs/projection/PutninsP6'Projection</a>
Super-classes	<a href="#">PutninsP6'Projection</a>

## 11.17. Stereographic Projections

### Requirement 22: 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 240 — geosrs:MillerOblatedStereographicProjection

URI	<a href="https://w3id.org/geosrs/projection/MillerOblatedStereographicProjection">https://w3id.org/geosrs/projection/MillerOblatedStereographicProjection</a>
Super-classes	<a href="#">MillerOblatedStereographicProjection</a>

## 11.17.2. Class: geosrs:RoussilheProjection

**Table 241** — geosrs:RoussilheProjection

URI	<a href="https://w3id.org/geosrs/projection/RoussilheProjection">https://w3id.org/geosrs/projection/RoussilheProjection</a>
Super-classes	<a href="#">RoussilheProjection</a>



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# PLANET MODULE

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









# ANNEX A (INFORMATIVE) ALIGNMENTS

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

## A.1. IGN Ontology

**Table A.2 – Alignment: IGN Ontology**

FROM ELEMENT	MAPPING RELATION	TO ELEMENT	NOTES
<a href="#">geosrs:CoordinateSystem</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:CoordinateSystem</a>	-
<a href="#">geosrs:Datum</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:Datum</a>	-
<a href="#">geosrs:Ellipsoid</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:Ellipsoid</a>	-
<a href="#">geosrs:Conversion</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:Conversion</a>	-
<a href="#">geosrs:CoordinateOperation</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:CoordinateOperation</a>	-
<a href="#">geosrs:OperationMethod</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:OperationMethod</a>	-
<a href="#">geosrs:OperationParameter</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:OperationParameter</a>	-
<a href="#">geosrs:OperationParameterValue</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:OperationParameterValue</a>	-
<a href="#">geosrs:SingleOperation</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:SingleOperation</a>	-
<a href="#">geosrs:Transformation</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:Transformation</a>	-
<a href="#">geosrs:CartesianCoordinateSystem</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:CartesianCS</a>	-
<a href="#">geosrs:CoordinateSystem</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:CoordinateSystem</a>	-
<a href="#">geosrs:CoordinateSystemAxis</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:CoordinateSystemAxis</a>	-
<a href="#">geosrs:EllipsoidalCoordinateSystem</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:EllipsoidalCS</a>	-
<a href="#">geosrs:VerticalCoordinateSystem</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:VerticalCS</a>	-
<a href="#">geosrs:Datum</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:Datum</a>	-
<a href="#">geosrs:Ellipsoid</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:Ellipsoid</a>	-
<a href="#">geosrs:GeodeticDatum</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:GeodeticDatum</a>	-
<a href="#">geosrs:PrimeMeridian</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:PrimeMeridian</a>	-
<a href="#">geosrs:VerticalDatum</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:VerticalDatum</a>	-
<a href="#">geosrs:AxesList</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:AxesList</a>	-

FROM ELEMENT	MAPPING RELATION	TO ELEMENT	NOTES
<a href="#">geosrs:CRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:CRS</a>	-
<a href="#">geosrs:CompoundCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:CompoundCRS</a>	-
<a href="#">geosrs:Extent</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:Extent</a>	-
<a href="#">geosrs:GeodeticCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:GeodeticCRS</a>	-
<a href="#">geosrs:GeographicBoundingBox</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:GeographicBoundingBox</a>	-
<a href="#">geosrs:ProjectedCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:ProjectedCRS</a>	-
<a href="#">geosrs:SingleCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:SingleCRS</a>	-
<a href="#">geosrs:SingleCRSList</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:SingleCRSList</a>	-
<a href="#">geosrs:VerticalCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ign:VerticalCRS</a>	-

## A.2. ISO19111 Ontology

**Table A.3** – Alignment: ISO19111 Ontology

FROM ELEMENT	MAPPING RELATION	TO ELEMENT	NOTES
<a href="#">geosrs:CoordinateSystem</a>	<a href="#">owl:equivalentClass</a>	<a href="#">iso19111:CoordinateSystem</a>	-
<a href="#">geosrs:Datum</a>	<a href="#">owl:equivalentClass</a>	<a href="#">iso19111:Datum</a>	-
<a href="#">geosrs:Ellipsoid</a>	<a href="#">owl:equivalentClass</a>	<a href="#">iso19111:Ellipsoid</a>	-
<a href="#">geosrs:CRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">iso19111:CRS</a>	-
<a href="#">geosrs:CompoundCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">iso19111:CompoundCRS</a>	-
<a href="#">geosrs:EngineeringCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">iso19111:EngineeringCRS</a>	-
<a href="#">geosrs:GeodeticCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">iso19111:GeodeticCRS</a>	-

FROM ELEMENT	MAPPING RELATION	TO ELEMENT	NOTES
<a href="#">geosrs:GeographicCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">iso19111:GeographicCRS</a>	-
<a href="#">geosrs:ParametricCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">iso19111:ParametricCRS</a>	-
<a href="#">geosrs:ProjectedCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">iso19111:ProjectedCRS</a>	-
<a href="#">geosrs:SingleCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">iso19111:SingleCRS</a>	-
<a href="#">geosrs:TemporalCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">iso19111:TemporalCRS</a>	-
<a href="#">geosrs:VerticalCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">iso19111:VerticalCRS</a>	-

## A.3. IFC Ontology

**Table A.4** – Alignment: IFC Ontology

FROM ELEMENT	MAPPING RELATION	TO ELEMENT	NOTES
<a href="#">geosrs:AxisDirection</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ifc:IfcDirection</a>	-
<a href="#">geosrs:CRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ifc:IfcCoordinateReferenceSystem</a>	-
<a href="#">geosrs:CoordinateOperation</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ifc:IfcCoordinateOperation</a>	-
<a href="#">geosrs:ProjectedCRS</a>	<a href="#">owl:equivalentClass</a>	<a href="#">ifc:IfcProjectedCRS</a>	-
<a href="#">geosrs:axis</a>	<a href="#">owl:equivalentProperty</a>	<a href="#">ifc:axis_IfcAxis1Placement</a>	-
<a href="#">geosrs:sourceCRS</a>	<a href="#">owl:equivalentProperty</a>	<a href="#">ifc:sourceCRS</a>	-
<a href="#">geosrs:targetCRS</a>	<a href="#">owl:equivalentProperty</a>	<a href="#">ifc:targetCRS</a>	-



# ANNEX B (INFORMATIVE) SHACL SHAPES

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## ANNEX B (INFORMATIVE) SHACL SHAPES

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Overview

### Overview

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# ANNEX C (INFORMATIVE) REVISION HISTORY

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## ANNEX C (INFORMATIVE) REVISION HISTORY

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DATE	RELEASE	AUTHOR	PRIMARY CLAUSES MODIFIED	DESCRIPTION
2016-04-28	0.1	G. Editor	all	initial version



# BIBLIOGRAPHY





## BIBLIOGRAPHY

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**NOTE:** The TC has approved Springer LNCS as the official document citation type. Springer LNCS is widely used in technical and computer science journals and other publications. For citations in the text please use square brackets and consecutive numbers: [1], [2], [3]. Actual References: [n] Journal: Author Surname, A.: Title. Publication Title. Volume number, Issue number, Pages Used (Year Published)

- [1] ISO: ISO 19142, *Geographic information – Web Feature Service*. International Organization for Standardization, Geneva <https://www.iso.org/standard/42136.html>.
- [2] W3C: **Data Catalog Vocabulary**, W3C Recommendation 16 January 2014, <https://www.w3.org/TR/vocab-dcat/>
- [3] IANA: **Link Relation Types**, <https://www.iana.org/assignments/link-relations/link-relations.xml>
- [4] W3C/OGC: **Spatial Data on the Web Best Practices**, W3C Working Group Note 28 September 2017, <https://www.w3.org/TR/sdw-bp/>
- [5] W3C: **Data on the Web Best Practices**, W3C Recommendation 31 January 2017, <https://www.w3.org/TR/dwbp/>
- [6] Ben-Kiki, O., Evans, C., Ingy döt Net: **YAML Ain't Markup Language**, <https://yaml.org/>
- [7] OGC: **Web Feature Service 2.0**, <http://docs.opengeospatial.org/is/09-025r2/09-025r2.html>
- [8] Berners-Lee, T., Fielding, R., Masinter, L.: **IETF RFC 3986 – Uniform Resource Identifier (URI): Generic Syntax**, <http://tools.ietf.org/rfc/rfc3986.txt>