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I ABSTRACT

<Insert Abstract Text here>

II KEYWORDS

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

keyword_1, keyword_2, keyword_3, etc.

PREFACE

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

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

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IV SECURITY CONSIDERATIONS

No security considerations have been made for this Standard.

V SUBMITTERS

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VI SOURCE OF THE CONTENT FOR THIS OGC DOCUMENT

VII VALIDITY OF CONTENT

VIII FUTURE WORK

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

CONTRIBUTORS

Additional contributors to this Standard include the following:

Individual name(s), Organization

1 SCOPE

1 SCOPE

<Insert Scope text here>

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

2 CONFORMANCE

2 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

3 NORMATIVE REFERENCES

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

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

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

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

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

4 TERMS AND DEFINITIONS

4 TERMS AND DEFINITIONS

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

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

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

4.1. example term

term used for exemplary purposes

Note 1 to entry: An example note.

Example Here’s an example of an example term.

[**SOURCE:**]

5 CONVENTIONS

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

6 CORE

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

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

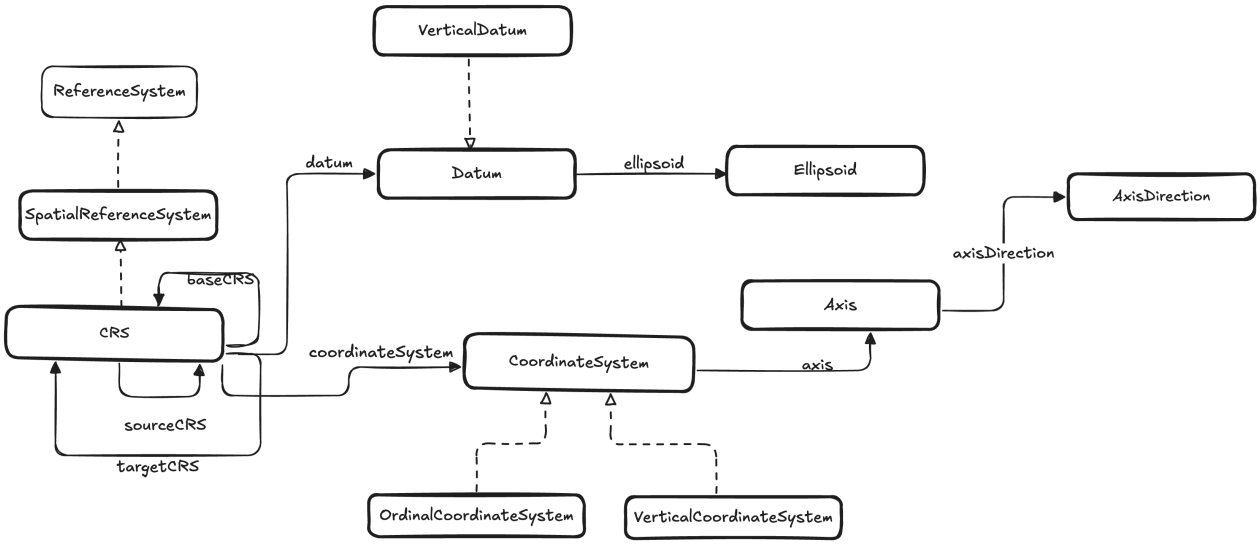

Figure 1

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

REQUIREMENTS CLASS 1: 06-CORE.ADOC EXTENSION	
IDENTIFIER	`/req/06-core.adoc`
TARGET TYPE	Implementation Specification
REQUIREMENT	/req/Coordinate_Reference_System_Parameters /req/Coordinate_Reference_System_Types

6.1. Coordinate Reference System Parameters

REQUIREMENT 1: COORDINATE REFERENCE SYSTEM PARAMETERS	
IDENTIFIER	`/req/Coordinate_Reference_System_Parameters`
STATEMENT	Implementations shall allow the RDFS classes geosrs:AreaOfUse, geosrs:Extent, geosrs:GeographicBoundingBox, geosrs:AxesList, geosrs:SingleCRSList to be used in SPARQL graph patterns.

6.1.1. Class: geosrs:AreaOfUse

Table 1 — geosrs:AreaOfUse

URI	https://w3id.org/geosrs/srs/AreaOfUse
Definition	Area within which a coordinate operation may be used.

6.1.2. Class: geosrs:Extent

Table 2 — geosrs:Extent

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

6.1.3. Class: geosrs:GeographicBoundingBox

Table 3 — geosrs:GeographicBoundingBox

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

6.1.4. Class: geosrs:AxesList

Table 4 — geosrs:AxesList

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

6.1.5. Class: geosrs:SingleCRSList

Table 5 — geosrs:SingleCRSList

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

6.2. Coordinate Reference System Types

REQUIREMENT 2: COORDINATE REFERENCE SYSTEM TYPES	
IDENTIFIER	`/req/Coordinate_Reference_System_Types`
STATEMENT	Implementations shall allow the RDFS classes geosrs:BoundCRS, geosrs:CompoundCRS, geosrs:CRS, geosrs:EngineeringCRS, geosrs:GeocentricCRS, geosrs:GeodeticCRS, geosrs:GeographicCRS, geosrs:ParametricCRS, geosrs:ProjectedCRS, geosrs:SelenographicCRS, geosrs:ReferenceSystem, geosrs:SingleCRS, geosrs:SpatialReferenceSystem, geosrs:SpatioParametricCompoundCRS, geosrs:SpatioParametricTemporalCompoundCRS, geosrs:SpatioTemporalCompoundCRS, geosrs:StaticCRS, geosrs:TemporalCRS, geosrs:VerticalCRS to be used in SPARQL graph patterns.

6.2.1. Class: geosrs:BoundCRS

Table 6 — geosrs:BoundCRS

URI	https://w3id.org/geosrs/srs/BoundCRS

Super-classes	BoundCRS

6.2.2. Class: geosrs:CompoundCRS

Table 7 — geosrs:CompoundCRS

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

6.2.3. Class: geosrs:GeocentricCRS

Table 8 — geosrs:GeocentricCRS

URI	https://w3id.org/geosrs/srs/GeocentricCRS
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	GeocentricCRS

6.2.4. Class: geosrs:ParametricCRS

Table 9 — geosrs:ParametricCRS

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

6.2.5. Class: geosrs:SelenographicCRS

Table 10 — geosrs:SelenographicCRS

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

6.2.6. Class: geosrs:SpatioParametricCompoundCRS

Table 11 — geosrs:SpatioParametricCompoundCRS

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

6.2.7. Class: geosrs:SpatioParametricTemporalCompoundCRS

Table 12 — geosrs:SpatioParametricTemporalCompoundCRS

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

6.2.8. Class: geosrs:SpatioTemporalCompoundCRS

Table 13 — geosrs:SpatioTemporalCompoundCRS

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

6.2.9. Class: geosrs:StaticCRS

Table 14 — geosrs:StaticCRS

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

6.2.10. Class: geosrs:TemporalCRS

Table 15 — geosrs:TemporalCRS

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

6.2.11. Class: geosrs:VerticalCRS

Table 16 — geosrs:VerticalCRS

URI	https://w3id.org/geosrs/srs/VerticalCRS
Definition	One-dimensional coordinate reference system associated with a vertical datum and used for recording heights or depths.Ellipsoidal heights are not captured in a vertical coordinate reference system but as part of a 3D coordinates tuple defined in a geodetic 3D coordinate

	reference system. Cf. ISO 19111:2007:2007-07, parts 8.2.2.b, table 14 and annex B.1.2.1.b.
Super-classes	VerticalCRS

7

COORDINATE OPERATION MODULE

7 COORDINATE OPERATION MODULE

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

REQUIREMENTS CLASS 2: 07-CO_EXTENSION.ADOC EXTENSION	
IDENTIFIER	`/req/07-co_extension.adoc`
TARGET TYPE	Implementation Specification
REQUIREMENT	/req/Coordinate_operation_methods /req/Coordinate_operation_parameters /req/Coordinate_operation_categories

7.1. Coordinate operation categories

REQUIREMENT 3: COORDINATE OPERATION CATEGORIES	
IDENTIFIER	`/req/Coordinate_operation_categories`
STATEMENT	Implementations shall allow the RDFS classes geosrs:GeographicObject, geosrs:Register Operations, geosrs:ScaleOperation, geosrs:RotationOperation, geosrs:IdentityOperation, geosrs: ShearOperation, geosrs:TranslationOperation, geosrs:AffineTransformationOperation, geocrs: CoordinateTransformationOperation to be used in SPARQL graph patterns.

7.1.1. Class: geosrs:GeographicObject

Table 17 — geosrs:GeographicObject

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

7.1.2. Class: geosrs:RegisterOperations

Table 18 — geosrs:RegisterOperations

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

7.1.3. Class: geosrs:ScaleOperation

Table 19 — geosrs:ScaleOperation

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

7.1.4. Class: geosrs:RotationOperation

Table 20 — geosrs:RotationOperation

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

7.1.5. Class: geosrs:IdentityOperation

Table 21 — geosrs:IdentityOperation

URI	https://w3id.org/geosrs/co/IdentityOperation
Definition	Identity transformation operation

Super-classes	IdentityOperation

7.1.6. Class: geosrs:ShearOperation

Table 22 — geosrs:ShearOperation

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

7.1.7. Class: geosrs:TranslationOperation

Table 23 — geosrs:TranslationOperation

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

7.1.8. Class: geosrs:AffineTransformationOperation

Table 24 — geosrs:AffineTransformationOperation

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

7.1.9. Class: geocrs:CoordinateTransformationOperation

Table 25 — geocrs:CoordinateTransformationOperation

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

7.2. Coordinate operation methods

REQUIREMENT 4: COORDINATE OPERATION METHODS	
IDENTIFIER	`/req/Coordinate_operation_methods`
STATEMENT	Implementations shall allow the RDFS classes geosrs:CoordinateOperation, geosrs:PassThroughOperation, geosrs:ConcatenatedOperation, geosrs:SingleOperation, geosrs:Transformation, geosrs:Conversion, geosrs:PointMotionOperation, geosrs:OperationMethod to be used in SPARQL graph patterns.

7.2.1. Class: geosrs:PassThroughOperation

Table 26 — geosrs:PassThroughOperation

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

7.2.2. Class: geosrs:ConcatenatedOperation

Table 27 — geosrs:ConcatenatedOperation

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

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

7.2.3. Class: geosrs:PointMotionOperation

Table 28 — geosrs:PointMotionOperation

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

7.3. Coordinate operation parameters

REQUIREMENT 5: COORDINATE OPERATION PARAMETERS	
IDENTIFIER	`/req/Coordinate_operation_parameters`
STATEMENT	Implementations shall allow the RDFS classes geosrs:GeneralOperationParameter, geosrs:OperationParameterGroup, geosrs:OperationParameter, geosrs:GeneralParameterValue, geosrs:ParameterValueGroup, geosrs:OperationParameterValue to be used in SPARQL graph patterns.

7.3.1. Class: geosrs:OperationParameterGroup

Table 29 — geosrs:OperationParameterGroup

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

7.3.2. Class: geosrs:ParameterValueGroup

Table 30 — geosrs:ParameterValueGroup

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

8

COORDINATE SYSTEM MODULE

8 COORDINATE SYSTEM MODULE

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

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

REQUIREMENTS CLASS 3: 08-CS_EXTENSION.ADOC EXTENSION	
IDENTIFIER	`/req/08-cs_extension.adoc`
TARGET TYPE	Implementation Specification
REQUIREMENT	/req/Coordinate_System_Types /req/Orthogonal_Coordinate_Systems /req/3D_Coordinate_System_Types /req/Celestial_Coordinate_Systems /req/Temporal_Coordinate_System_Types

8.1. 3D Coordinate System Types

REQUIREMENT 6: 3D COORDINATE SYSTEM TYPES	
IDENTIFIER	`/req/3D_Coordinate_System_Types`
STATEMENT	Implementations shall allow the RDFS classes geosrs:CylindricalCoordinateSystem, geosrs:SphericalCoordinateSystem to be used in SPARQL graph patterns.

8.1.1. Class: geosrs:CylindricalCoordinateSystem

Table 31 — geosrs:CylindricalCoordinateSystem

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

8.2. Celestial Coordinate Systems

REQUIREMENT 7: CELESTIAL COORDINATE SYSTEMS	
IDENTIFIER	`/req/Celestial_Coordinate_Systems`
STATEMENT	Implementations shall allow the RDFS classes geosrs:EclipticCoordinateSystem, geosrs:EquatorialCoordinateSystem, geosrs:GalacticCoordinateSystem, geosrs:HorizontalCoordinateSystem, geosrs:PerifocalCoordinateSystem, geosrs:SuperGalacticCS to be used in SPARQL graph patterns.

8.2.1. Class: geosrs:EclipticCoordinateSystem

Table 32 — geosrs:EclipticCoordinateSystem

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

8.2.2. Class: geosrs:EquatorialCoordinateSystem

Table 33 — geosrs:EquatorialCoordinateSystem

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

	measured relative to the celestial equator and vernal equinox, respectively.
Super-classes	EquatorialCoordinateSystem

8.2.3. Class: geosrs:GalacticCoordinateSystem

Table 34 — geosrs:GalacticCoordinateSystem

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

8.2.4. Class: geosrs:HorizontalCoordinateSystem

Table 35 — geosrs:HorizontalCoordinateSystem

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

8.2.5. Class: geosrs:PerifocalCoordinateSystem

Table 36 — geosrs:PerifocalCoordinateSystem

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

8.2.6. Class: geosrs:SuperGalacticCS

Table 37 — geosrs:SuperGalacticCS

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

8.3. Coordinate System Types

REQUIREMENT 8: 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:EngineeringCoordinateSystem, geosrs:GeodeticCoordinateSystem, geosrs:GridCoordinateSystem, geosrs:HexagonalCoordinateSystem, geosrs:LocalCoordinateSystem, geosrs:ObliqueCoordinateSystem, geosrs:OrdinalCoordinateSystem, geosrs:PlanarCoordinateSystem, geosrs:PolarCoordinateSystem to be used in SPARQL graph patterns.

8.3.1. Class: geosrs:1DCoordinateSystem

Table 38 — geosrs:1DCoordinateSystem

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

8.3.2. Class: geosrs:3DCoordinateSystem

Table 39 — geosrs:3DCoordinateSystem

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

8.3.3. Class: geosrs:AffineCoordinateSystem

Table 40 — geosrs:AffineCoordinateSystem

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

8.3.4. Class: geosrs:BarycentricCoordinateSystem

Table 41 — geosrs:BarycentricCoordinateSystem

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

8.3.5. Class: geosrs:CelestialCoordinateSystem

Table 42 — geosrs:CelestialCoordinateSystem

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

8.3.6. Class: geosrs:CurvilinearCoordinateSystem

Table 43 — geosrs:CurvilinearCoordinateSystem

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

8.3.7. Class: geosrs:EngineeringCoordinateSystem

Table 44 — geosrs:EngineeringCoordinateSystem

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

8.3.8. Class: geosrs:GeodeticCoordinateSystem

Table 45 — geosrs:GeodeticCoordinateSystem

URI	https://w3id.org/geosrs/cs/GeodeticCoordinateSystem

Definition	Coordinate system used by a Geodetic CRS, one of a Cartesian coordinate system or a spherical coordinate system.
Super-classes	GeodeticCoordinateSystem

8.3.9. Class: geosrs:GridCoordinateSystem

Table 46 — geosrs:GridCoordinateSystem

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

8.3.10. Class: geosrs:HexagonalCoordinateSystem

Table 47 — geosrs:HexagonalCoordinateSystem

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

8.3.11. Class: geosrs:LocalCoordinateSystem

Table 48 — geosrs:LocalCoordinateSystem

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

8.3.12. Class: geosrs:ObliqueCoordinateSystem

Table 49 — geosrs:ObliqueCoordinateSystem

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

8.3.13. Class: geosrs:PlanarCoordinateSystem

Table 50 — geosrs:PlanarCoordinateSystem

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

8.4. Orthogonal Coordinate Systems

REQUIREMENT 9: 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.

8.4.1. Class: geosrs:ConicalCoordinateSystem

Table 51 — geosrs:ConicalCoordinateSystem

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

8.5. Temporal Coordinate System Types

REQUIREMENT 10: TEMPORAL COORDINATE SYSTEM TYPES	
IDENTIFIER	`/req/Temporal_Coordinate_System_Types`
STATEMENT	Implementations shall allow the RDFS classes geosrs:DateTimeTemporalCoordinateSystem, geosrs:TemporalCountCoordinateSystem, geosrs:TemporalCoordinateSystem, geosrs:Temporal MeasureCoordinateSystem to be used in SPARQL graph patterns.

8.5.1. Class: geosrs:DateTimeTemporalCoordinateSystem

Table 52 — geosrs:DateTimeTemporalCoordinateSystem

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

8.5.2. Class: geosrs:TemporalCountCoordinateSystem

Table 53 — geosrs:TemporalCountCoordinateSystem

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

Definition	One-dimensional coordinate system used to record time as an integer count.
Super-classes	TemporalCountCoordinateSystem

8.5.3. Class: geosrs:TemporalCoordinateSystem

Table 54 — geosrs:TemporalCoordinateSystem

URI	https://w3id.org/geosrs/cs/TemporalCoordinateSystem
Definition	One-dimensionalcoordinate system where the axis is time.
Super-classes	TemporalCoordinateSystem

8.5.4. Class: geosrs:TemporalMeasureCoordinateSystem

Table 55 — geosrs:TemporalMeasureCoordinateSystem

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

9

DATUM MODULE

9 DATUM MODULE

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

REQUIREMENTS CLASS 4: 09-DATUM_EXTENSION.ADOC EXTENSION	
IDENTIFIER	`/req/09-datum_extension.adoc`
TARGET TYPE	Implementation Specification
REQUIREMENT	/req/Datum_Types /req/DatumTypes /req/Datum_Parameters /req/Spheroid_Types

9.1. Datum Parameters

REQUIREMENT 11: DATUM PARAMETERS	
IDENTIFIER	`/req/Datum_Parameters`
STATEMENT	Implementations shall allow the RDFS classes geosrs:PrimeMeridian, geosrs:DefiningParameter to be used in SPARQL graph patterns.

9.1.1. Class: geosrs:DefiningParameter

Table 56 — geosrs:DefiningParameter

URI	https://w3id.org/geosrs/datum/DefiningParameter
Definition	Parameter value, an ordered sequence of values, or a reference to a file of parameter values that define a paramtric datum. Cf. ISO 19111:2019 Geographic information — Referencing by coordinates.

9.2. Datum Types

REQUIREMENT 12: DATUM TYPES	
IDENTIFIER	`/req/Datum_Types`
STATEMENT	Implementations shall allow the RDFS classes geosrs:Datum to be used in SPARQL graph patterns.

9.3. DatumTypes

REQUIREMENT 13: DATUMTYPES	
IDENTIFIER	`/req/DatumTypes`
STATEMENT	Implementations shall allow the RDFS classes geosrs:GeodeticDatum, geosrs:DynamicGeodetic ReferenceFrame, geosrs:VerticalDatum, geosrs:DynamicVerticalDatum, geosrs:ParametricDatum, geosrs:EngineeringDatum, geosrs:TemporalDatum, geosrs:DatumEnsemble to be used in SPARQL graph patterns.

9.3.1. Class: geosrs:DynamicGeodeticReferenceFrame

Table 57 — geosrs:DynamicGeodeticReferenceFrame

URI	https://w3id.org/geosrs/datum/DynamicGeodeticReferenceFrame
Definition	Geodetic reference frame in which some of the parameters describe time evolution of defining station coordinatesExample: defining station coordinates having linear velocities to account for crustal motion.
Super-classes	DynamicGeodeticReferenceFrame

9.3.2. Class: geosrs:DynamicVerticalDatum

Table 58 — geosrs:DynamicVerticalDatum

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

9.3.3. Class: geosrs:ParametricDatum

Table 59 — geosrs:ParametricDatum

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

9.3.4. Class: geosrs:EngineeringDatum

Table 60 — geosrs:EngineeringDatum

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

9.3.5. Class: geosrs:TemporalDatum

Table 61 — geosrs:TemporalDatum

URI	https://w3id.org/geosrs/datum/TemporalDatum
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	TemporalDatum

9.3.6. Class: geosrs:DatumEnsemble

Table 62 — geosrs:DatumEnsemble

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

9.4. Spheroid Types

REQUIREMENT 14: SPHEROID TYPES	
IDENTIFIER	`/req/Spheroid_Types`
STATEMENT	Implementations shall allow the RDFS classes geosrs:Ellipsoid, geosrs:TriaxialEllipsoid to be used in SPARQL graph patterns.

9.4.1. Class: geosrs:TriaxialEllipsoid

Table 63 — geosrs:TriaxialEllipsoid

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

10

SRS APPLICATION MODULE

10 SRS APPLICATION MODULE

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

11

PROJECTIONS MODULE

11 PROJECTIONS MODULE

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

REQUIREMENTS CLASS 5: 11-PROJECTIONS_EXTENSION.ADOC EXTENSION	
IDENTIFIER	`/req/11-projections_extension.adoc`
TARGET TYPE	Implementation Specification
REQUIREMENT	/req/Lenticular_Projections /req/Conformal_Projections /req/Minimum_Error_Projections /req/Pseudo_Azimuthal_Projections /req/Equal_Area_Projections /req/Pseudo_Conical_Projections /req/Globular_Projections /req/Pseudo_Cylindrical_Projections /req/Cylindrical_Projections /req/Compromise_Projections /req/Polyhedral_Projections /req/Equidistant_Projections /req/Conical_Projections /req/Azimuthal_Projections /req/Perspective_Projections /req/Polyconic_Projections /req/Stereographic_Projections

REQUIREMENTS CLASS 5: 11-PROJECTIONS_EXTENSION.ADOC EXTENSION	
	/req/Coordinate_System_Parameters
	/req/Coordinate_Reference_System_Properties
	/req/Datum_Properties
	/req/Coordinate_Operation_Properties
	/req/Spheroid_Properties

11.1. Azimuthal Projections

REQUIREMENT 15: 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 64 — geosrs:BreusingGeometricProjection

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

11.1.2. Class: geosrs:BreusingHarmonicProjection

Table 65 — geosrs:BreusingHarmonicProjection

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

11.1.3. Class: geosrs:GinzburgIIProjection

Table 66 — geosrs:GinzburgIIProjection

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

11.1.4. Class: geosrs:GinzburgIProjection

Table 67 — geosrs:GinzburgIProjection

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

11.1.5. Class: geosrs:GnomonicProjection

Table 68 — geosrs:GnomonicProjection

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

11.1.6. Class: geosrs:JamesAzimuthalProjection

Table 69 — geosrs:JamesAzimuthalProjection

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

11.2. Compromise Projections

REQUIREMENT 16: COMPROMISE PROJECTIONS	
IDENTIFIER	`/req/Compromise_Projections`
STATEMENT	Implementations shall allow the RDFS classes geosrs:ArmadilloProjection, geosrs:BakerDinomic Projection, geosrs:BertinProjection, geosrs:ChamberlinTrimetricProjection, geosrs:DenoyerSemi EllipticalProjection, geosrs:FairgrieveProjection, geosrs:LarriveeProjection, geosrs:PetermannStar Projection, geosrs:SpilhausOceanicProjection, geosrs:VanDerGrintenIIIProjection, geosrs:Winkel IIProjection, geosrs:WinkelIProjection, geosrs:WinkelSnyderProjection to be used in SPARQL graph patterns.

11.2.1. Class: geosrs:ArmadilloProjection

Table 70 — geosrs:ArmadilloProjection

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

11.2.2. Class: geosrs:BakerDinomicProjection

Table 71 — geosrs:BakerDinomicProjection

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

11.2.3. Class: geosrs:BertinProjection

Table 72 — geosrs:BertinProjection

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

11.2.4. Class: geosrs:ChamberlinTrimetricProjection

Table 73 — geosrs:ChamberlinTrimetricProjection

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

11.2.5. Class: geosrs:DenoyerSemiEllipticalProjection

Table 74 — geosrs:DenoyerSemiEllipticalProjection

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

11.2.6. Class: geosrs:FairgrieveProjection

Table 75 — geosrs:FairgrieveProjection

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

11.2.7. Class: geosrs:LarriveeProjection

Table 76 — geosrs:LarriveeProjection

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

11.2.8. Class: geosrs:PetermannStarProjection

Table 77 — geosrs:PetermannStarProjection

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

11.2.9. Class: geosrs:SpilhausOceanicProjection

Table 78 — geosrs:SpilhausOceanicProjection

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

11.2.10. Class: geosrs:VanDerGrintenIIIProjection

Table 79 — geosrs:VanDerGrintenIIIProjection

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

11.2.11. Class: geosrs:WinkelIIProjection

Table 80 — geosrs:WinkelIIProjection

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

11.2.12. Class: geosrs:WinkelIProjection

Table 81 — geosrs:WinkelIProjection

URI	https://w3id.org/geosrs/projection/WinkelIProjection

Super-classes	WinkelIProjection

11.2.13. Class: geosrs:WinkelSnyderProjection

Table 82 — geosrs:WinkelSnyderProjection

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

11.3. Conformal Projections

REQUIREMENT 17: 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 83 — geosrs:AdamsProjection

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

11.3.2. Class: geosrs:AdamsWorldInASquareIIProjection

Table 84 — geosrs:AdamsWorldInASquareIIProjection

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

11.3.3. Class: geosrs:AdamsWorldInASquareIProjection

Table 85 — geosrs:AdamsWorldInASquareIProjection

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

11.3.4. Class: geosrs:AugustEpicycloidalProjection

Table 86 — geosrs:AugustEpicycloidalProjection

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

11.3.5. Class: geosrs:CoxConformalProjection

Table 87 — geosrs:CoxConformalProjection

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

11.3.6. Class: geosrs:EisenlohrProjection

Table 88 — geosrs:EisenlohrProjection

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

11.3.7. Class: geosrs:GS50Projection

Table 89 — geosrs:GS50Projection

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

11.3.8. Class: geosrs:PeirceQuincuncialProjection

Table 90 — geosrs:PeirceQuincuncialProjection

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

11.3.9. Class: geosrs:StereographicProjection

Table 91 — geosrs:StereographicProjection

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

11.4. Conical Projections

REQUIREMENT 18: 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:SchjerningIProjection, geosrs:VitkovskyIProjection to be used in SPARQL graph patterns.

11.4.1. Class: geosrs:BipolarObliqueConicConformalProjection

Table 92 — geosrs:BipolarObliqueConicConformalProjection

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

11.4.2. Class: geosrs:CentralConicProjection

Table 93 — geosrs:CentralConicProjection

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

11.4.3. Class: geosrs:HerschelConformalConicProjection

Table 94 — geosrs:HerschelConformalConicProjection

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

11.4.4. Class: geosrs:Krovak

Table 95 — geosrs:Krovak

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

11.4.5. Class: geosrs:LambertConformalConicProjection

Table 96 — geosrs:LambertConformalConicProjection

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

11.4.6. Class: geosrs:MurdochIIIProjection

Table 97 — geosrs:MurdochIIIProjection

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

11.4.7. Class: geosrs:MurdochIIProjection

Table 98 — geosrs:MurdochIIProjection

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

11.4.8. Class: geosrs:MurdochIProjection

Table 99 — geosrs:MurdochIProjection

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

11.4.9. Class: geosrs:SchjerningIProjection

Table 100 — geosrs:SchjerningIProjection

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

11.4.10. Class: geosrs:VitkovskyIProjection

Table 101 — geosrs:VitkovskyIProjection

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

11.5. Coordinate Operation Properties

REQUIREMENT 19: COORDINATE OPERATION PROPERTIES	
IDENTIFIER	`/req/Coordinate_Operation_Properties`
STATEMENT	Implementations shall allow the RDFS classes geosrs:derivingConversion, geosrs:parameter, geosrs:sourceCRS, geosrs:targetCRS to be used in SPARQL graph patterns.

11.6. Coordinate Reference System Properties

REQUIREMENT 20: COORDINATE REFERENCE SYSTEM PROPERTIES	
IDENTIFIER	`/req/Coordinate_Reference_System_Properties`

REQUIREMENT 20: COORDINATE REFERENCE SYSTEM PROPERTIES	
STATEMENT	Implementations shall allow the RDFS classes geosrs:baseCRS, geosrs:conversion, geosrs:coordinateSystem, geosrs:datum, geosrs:datumEnsemble, geosrs:domainOfValidity, geosrs:method, geosrs:EPSGcode to be used in SPARQL graph patterns.

11.7. Coordinate System Parameters

REQUIREMENT 21: COORDINATE SYSTEM PARAMETERS	
IDENTIFIER	`/req/Coordinate_System_Parameters`
STATEMENT	Implementations shall allow the RDFS classes geosrs:axis, geosrs:axisDirection to be used in SPARQL graph patterns.

11.8. Cylindrical Projections

REQUIREMENT 22: 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:ToblerCylindricalIIIProjection, geosrs:ToblerCylindricalIIProjection, geosrs:UrmayevIIIProjection, geosrs:WebMercatorProjection to be used in SPARQL graph patterns.

11.8.1. Class: geosrs:ArdenCloseProjection

Table 102 — geosrs:ArdenCloseProjection

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

11.8.2. Class: geosrs:BraunPerspectiveProjection

Table 103 — geosrs:BraunPerspectiveProjection

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

11.8.3. Class: geosrs:CompactMillerProjection

Table 104 — geosrs:CompactMillerProjection

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

11.8.4. Class: geosrs:CylindricalStereographicProjection

Table 105 — geosrs:CylindricalStereographicProjection

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

11.8.5. Class: geosrs:KarchenkoShabanovaProjection

Table 106 — geosrs:KarchenkoShabanovaProjection

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

11.8.6. Class: geosrs:LabordeProjection

Table 107 — geosrs:LabordeProjection

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

11.8.7. Class: geosrs:MercatorProjection

Table 108 — geosrs:MercatorProjection

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

11.8.8. Class: geosrs:MillerProjection

Table 109 — geosrs:MillerProjection

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

11.8.9. Class: geosrs:PattersonCylindricalProjection

Table 110 — geosrs:PattersonCylindricalProjection

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

11.8.10. Class: geosrs:PavlovProjection

Table 111 — geosrs:PavlovProjection

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

11.8.11. Class: geosrs:ToblerCylindricalIIProjection

Table 112 — geosrs:ToblerCylindricalIIProjection

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

11.8.12. Class: geosrs:ToblerCylindricalIProjection

Table 113 — geosrs:ToblerCylindricalIProjection

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

11.8.13. Class: geosrs:UrmayevIIIProjection

Table 114 — geosrs:UrmayevIIIProjection

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

11.8.14. Class: geosrs:WebMercatorProjection

Table 115 — geosrs:WebMercatorProjection

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

11.9. Datum Properties

REQUIREMENT 23: DATUM PROPERTIES	
IDENTIFIER	`/req/Datum_Properties`
STATEMENT	Implementations shall allow the RDFS classes geosrs:datumDefiningParameter, geosrs:ellipsoid, geosrs:primeMeridian to be used in SPARQL graph patterns.

11.10. Equal Area Projections

REQUIREMENT 24: 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.

11.10.1. Class: geosrs:AlbersEqualAreaProjection

Table 116 — geosrs:AlbersEqualAreaProjection

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

11.10.2. Class: geosrs:AzimuthalEqualAreaProjection

Table 117 — geosrs:AzimuthalEqualAreaProjection

URI	https://w3id.org/geosrs/projection/AzimuthalEqualAreaProjection

Super-classes	AzimuthalEqualAreaProjection

11.10.3. Class: geosrs:CylindricalEqualArea

Table 118 — geosrs:CylindricalEqualArea

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

11.10.4. Class: geosrs:GallPetersProjection

Table 119 — geosrs:GallPetersProjection

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

11.10.5. Class: geosrs:HoboDyerProjection

Table 120 — geosrs:HoboDyerProjection

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

11.10.6. Class: geosrs:LambertAzimuthalEqualArea

Table 121 — geosrs:LambertAzimuthalEqualArea

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

11.10.7. Class: geosrs:TrystanEdwardsProjection

Table 122 — geosrs:TrystanEdwardsProjection

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

11.10.8. Class: geosrs:WiechelProjection

Table 123 — geosrs:WiechelProjection

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

11.11. Equidistant Projections

REQUIREMENT 25: 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.

11.11.1. Class: geosrs:AzimuthalEquidistantProjection

Table 124 — geosrs:AzimuthalEquidistantProjection

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

Super-classes	AzimuthalEquidistantProjection

11.11.2. Class: geosrs:BerghausStarProjection

Table 125 — geosrs:BerghausStarProjection

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

11.11.3. Class: geosrs:CassiniProjection

Table 126 — geosrs:CassiniProjection

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

11.11.4. Class: geosrs:EquidistantConicProjection

Table 127 — geosrs:EquidistantConicProjection

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

11.11.5. Class: geosrs:EquidistantCylindricalProjection

Table 128 — geosrs:EquidistantCylindricalProjection

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

11.11.6. Class: geosrs:EquirectangularProjection

Table 129 — geosrs:EquirectangularProjection

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

11.11.7. Class: geosrs:ObliquePlateCarreeProjection

Table 130 — geosrs:ObliquePlateCarreeProjection

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

11.11.8. Class: geosrs:PlateCarreeProjection

Table 131 — geosrs:PlateCarreeProjection

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

11.11.9. Class: geosrs:TwoPointEquidistantProjection

Table 132 — geosrs:TwoPointEquidistantProjection

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

11.12. Globular Projections

REQUIREMENT 26: GLOBULAR PROJECTIONS	
IDENTIFIER	`/req/Globular_Projections`
STATEMENT	Implementations shall allow the RDFS classes geosrs:ApianGlobularIProjection, geosrs:Bacon GlobularProjection, geosrs:FournierGlobularIProjection to be used in SPARQL graph patterns.

11.12.1. Class: geosrs:ApianGlobularIProjection

Table 133 — geosrs:ApianGlobularIProjection

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

11.12.2. Class: geosrs:BaconGlobularProjection

Table 134 — geosrs:BaconGlobularProjection

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

11.12.3. Class: geosrs:FournierGlobularIProjection

Table 135 — geosrs:FournierGlobularIProjection

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

11.13. Lenticular Projections

REQUIREMENT 27: LENTICULAR PROJECTIONS	
IDENTIFIER	`/req/Lenticular_Projections`
STATEMENT	Implementations shall allow the RDFS classes geosrs:A4Projection, geosrs:BriesemeisterProjection, geosrs:CiricIProjection, geosrs:CupolaProjection, geosrs:DedistortProjection, geosrs:DietrichKitada Projection, geosrs:FranculaIIIProjection, geosrs:FranculaIVProjection, geosrs:FranculaIXProjection, geosrs:FranculaVIIIProjection, geosrs:FranculaVProjection, geosrs:FranculaXIIIProjection, geosrs: FranculaXIIProjection, geosrs:FranculaXIVProjection, geosrs:HamusoidalProjection, geosrs:Kiss Projection to be used in SPARQL graph patterns.

11.13.1. Class: geosrs:A4Projection

Table 136 — geosrs:A4Projection

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

11.13.2. Class: geosrs:BriesemeisterProjection

Table 137 — geosrs:BriesemeisterProjection

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

11.13.3. Class: geosrs:CiricIProjection

Table 138 — geosrs:CiricIProjection

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

11.13.4. Class: geosrs:CupolaProjection

Table 139 — geosrs:CupolaProjection

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

11.13.5. Class: geosrs:DedistortProjection

Table 140 — geosrs:DedistortProjection

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

11.13.6. Class: geosrs:DietrichKitadaProjection

Table 141 — geosrs:DietrichKitadaProjection

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

11.13.7. Class: geosrs:FranculaIIIProjection

Table 142 — geosrs:FranculaIIIProjection

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

11.13.8. Class: geosrs:FranculaIVProjection

Table 143 — geosrs:FranculaIVProjection

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

11.13.9. Class: geosrs:FranculaIXProjection

Table 144 — geosrs:FranculaIXProjection

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

11.13.10. Class: geosrs:FranculaVIIIProjection

Table 145 — geosrs:FranculaVIIIProjection

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

11.13.11. Class: geosrs:FranculaVProjection

Table 146 — geosrs:FranculaVProjection

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

11.13.12. Class: geosrs:FranculaXIIIProjection

Table 147 — geosrs:FranculaXIIIProjection

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

11.13.13. Class: geosrs:FranculaXIIProjection

Table 148 — geosrs:FranculaXIIProjection

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

11.13.14. Class: geosrs:FranculaXIVProjection

Table 149 — geosrs:FranculaXIVProjection

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

11.13.15. Class: geosrs:HamusoidalProjection

Table 150 — geosrs:HamusoidalProjection

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

11.13.16. Class: geosrs:KissProjection

Table 151 — geosrs:KissProjection

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

11.14. Minimum Error Projections

REQUIREMENT 28: MINIMUM ERROR PROJECTIONS	
IDENTIFIER	`/req/Minimum_Error_Projections`
STATEMENT	Implementations shall allow the RDFS classes geosrs:AiryProjection to be used in SPARQL graph patterns.

11.14.1. Class: geosrs:AiryProjection

Table 152 — geosrs:AiryProjection

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

11.15. Perspective Projections

REQUIREMENT 29: PERSPECTIVE PROJECTIONS	
IDENTIFIER	`/req/Perspective_Projections`
STATEMENT	Implementations shall allow the RDFS classes geosrs:CentralCylindricalProjection, geosrs:General VerticalPerspectiveProjection, geosrs:GilbertTwoWorldPerspectiveProjection, geosrs:LaHire Projection, geosrs:LorgnaProjection, geosrs:LowryProjection, geosrs:OrthographicProjection, geosrs:PerspectiveConicProjection, geosrs:TiltedPerspectiveProjection, geosrs:VerticalPerspective Projection to be used in SPARQL graph patterns.

11.15.1. Class: geosrs:CentralCylindricalProjection

Table 153 — geosrs:CentralCylindricalProjection

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

11.15.2. Class: geosrs:GeneralVerticalPerspectiveProjection

Table 154 — geosrs:GeneralVerticalPerspectiveProjection

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

11.15.3. Class: geosrs:GilbertTwoWorldPerspectiveProjection

Table 155 — geosrs:GilbertTwoWorldPerspectiveProjection

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

11.15.4. Class: geosrs:LaHireProjection

Table 156 — geosrs:LaHireProjection

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

11.15.5. Class: geosrs:LorgnaProjection

Table 157 — geosrs:LorgnaProjection

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

Super-classes	LorgnaProjection

11.15.6. Class: geosrs:LowryProjection

Table 158 — geosrs:LowryProjection

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

11.15.7. Class: geosrs:OrthographicProjection

Table 159 — geosrs:OrthographicProjection

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

11.15.8. Class: geosrs:PerspectiveConicProjection

Table 160 — geosrs:PerspectiveConicProjection

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

11.15.9. Class: geosrs:TiltedPerspectiveProjection

Table 161 — geosrs:TiltedPerspectiveProjection

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

11.15.10. Class: geosrs:VerticalPerspectiveProjection

Table 162 — geosrs:VerticalPerspectiveProjection

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

11.16. Polyconic Projections

REQUIREMENT 30: POLYCONIC PROJECTIONS	
IDENTIFIER	`/req/Polyconic_Projections`
STATEMENT	Implementations shall allow the RDFS classes geosrs:GinzburgIVProjection, geosrs:GinzburgIXProjection, geosrs:GinzburgVIProjection, geosrs:GinzburgVProjection, geosrs:GottWagnerProjection, geosrs:HillEucyclicProjection, geosrs:LagrangeProjection, geosrs:LaskowskiProjection, geosrs:RectangularPolyconicProjection, geosrs:StabiusWernerIIIProjection, geosrs:StabiusWernerIProjection, geosrs:VanDerGrintenIIProjection, geosrs:VanDerGrintenIProjection, geosrs:VanDerGrintenIVProjection, geosrs:WagnerIXProjection, geosrs:WagnerVIIIProjection, geosrs:WagnerVIIProjection to be used in SPARQL graph patterns.

11.16.1. Class: geosrs:GinzburgIVProjection

Table 163 — geosrs:GinzburgIVProjection

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

11.16.2. Class: geosrs:GinzburgIXProjection

Table 164 — geosrs:GinzburgIXProjection

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

Super-classes	GinzburgIXProjection

11.16.3. Class: geosrs:GinzburgVIProjection

Table 165 — geosrs:GinzburgVIProjection

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

11.16.4. Class: geosrs:GinzburgVProjection

Table 166 — geosrs:GinzburgVProjection

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

11.16.5. Class: geosrs:GottWagnerProjection

Table 167 — geosrs:GottWagnerProjection

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

11.16.6. Class: geosrs:HillEucyclicProjection

Table 168 — geosrs:HillEucyclicProjection

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

11.16.7. Class: geosrs:LagrangeProjection

Table 169 — geosrs:LagrangeProjection

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

11.16.8. Class: geosrs:LaskowskiProjection

Table 170 — geosrs:LaskowskiProjection

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

11.16.9. Class: geosrs:RectangularPolyconicProjection

Table 171 — geosrs:RectangularPolyconicProjection

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

11.16.10. Class: geosrs:StabiusWernerIIIProjection

Table 172 — geosrs:StabiusWernerIIIProjection

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

11.16.11. Class: geosrs:StabiusWernerIProjection

Table 173 — geosrs:StabiusWernerIProjection

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

11.16.12. Class: geosrs:VanDerGrintenIIProjection

Table 174 — geosrs:VanDerGrintenIIProjection

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

11.16.13. Class: geosrs:VanDerGrintenIProjection

Table 175 — geosrs:VanDerGrintenIProjection

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

11.16.14. Class: geosrs:VanDerGrintenIVProjection

Table 176 — geosrs:VanDerGrintenIVProjection

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

11.16.15. Class: geosrs:WagnerIXProjection

Table 177 — geosrs:WagnerIXProjection

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

Super-classes	WagnerIXProjection

11.16.16. Class: geosrs:WagnerVIIIProjection

Table 178 — geosrs:WagnerVIIIProjection

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

11.16.17. Class: geosrs:WagnerVIIProjection

Table 179 — geosrs:WagnerVIIProjection

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

11.17. Polyhedral Projections

REQUIREMENT 31: POLYHEDRAL PROJECTIONS	
IDENTIFIER	`/req/Polyhedral_Projections`
STATEMENT	Implementations shall allow the RDFS classes geosrs:AuthaGraphProjection, geosrs:CahillKeyes Projection, geosrs:CollignonButterflyProjection, geosrs:DodecahedralProjection, geosrs:Dymaxion Projection, geosrs:GnomonicButterflyProjection, geosrs:GnomonicCubedSphereProjection, geosrs: GnomonicIcosahedronProjection, geosrs:GuyouProjection, geosrs:IcosahedralProjection, geosrs:Lee Projection, geosrs:MyrahedalProjection, geosrs:OctantProjection, geosrs:QuadrilateralizedSpherical CubeProjection, geosrs:WatermanButterflyProjection to be used in SPARQL graph patterns.

11.17.1. Class: geosrs:AuthaGraphProjection

Table 180 — geosrs:AuthaGraphProjection

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

11.17.2. Class: geosrs:CahillKeyesProjection

Table 181 — geosrs:CahillKeyesProjection

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

11.17.3. Class: geosrs:CollignonButterflyProjection

Table 182 — geosrs:CollignonButterflyProjection

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

11.17.4. Class: geosrs:DodecahedralProjection

Table 183 — geosrs:DodecahedralProjection

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

11.17.5. Class: geosrs:DymaxionProjection

Table 184 — geosrs:DymaxionProjection

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

Super-classes	DymaxionProjection

11.17.6. Class: geosrs:GnomonicButterflyProjection

Table 185 — geosrs:GnomonicButterflyProjection

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

11.17.7. Class: geosrs:GnomonicCubedSphereProjection

Table 186 — geosrs:GnomonicCubedSphereProjection

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

11.17.8. Class: geosrs:GnomonicIcosahedronProjection

Table 187 — geosrs:GnomonicIcosahedronProjection

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

11.17.9. Class: geosrs:GuyouProjection

Table 188 — geosrs:GuyouProjection

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

11.17.10. Class: geosrs:IcosahedralProjection

Table 189 — geosrs:IcosahedralProjection

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

11.17.11. Class: geosrs:LeeProjection

Table 190 — geosrs:LeeProjection

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

11.17.12. Class: geosrs:MyrahedalProjection

Table 191 — geosrs:MyrahedalProjection

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

11.17.13. Class: geosrs:OctantProjection

Table 192 — geosrs:OctantProjection

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

11.17.14. Class: geosrs:QuadrilateralizedSphericalCubeProjection

Table 193 — geosrs:QuadrilateralizedSphericalCubeProjection

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

11.17.15. Class: geosrs:WatermanButterflyProjection

Table 194 — geosrs:WatermanButterflyProjection

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

11.18. Pseudo Azimuthal Projections

REQUIREMENT 32: PSEUDO AZIMUTHAL PROJECTIONS	
IDENTIFIER	`/req/Pseudo_Azimuthal_Projections`
STATEMENT	Implementations shall allow the RDFS classes geosrs:AitoffObliqueProjection, geosrs:Aitoff Projection, geosrs:HammerProjection, geosrs:Strebe1995Projection, geosrs:WinkelTripel Projection to be used in SPARQL graph patterns.

11.18.1. Class: geosrs:AitoffObliqueProjection

Table 195 — geosrs:AitoffObliqueProjection

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

11.18.2. Class: geosrs:AitoffProjection

Table 196 — geosrs:AitoffProjection

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

11.18.3. Class: geosrs:HammerProjection

Table 197 — geosrs:HammerProjection

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

11.18.4. Class: geosrs:Strebe1995Projection

Table 198 — geosrs:Strebe1995Projection

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

11.18.5. Class: geosrs:WinkelTripelProjection

Table 199 — geosrs:WinkelTripelProjection

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

11.19. Pseudo Conical Projections

REQUIREMENT 33: 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.

11.19.1. Class: geosrs:AmericanPolyconicProjection

Table 200 — geosrs:AmericanPolyconicProjection

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

11.19.2. Class: geosrs:BonneProjection

Table 201 — geosrs:BonneProjection

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

11.19.3. Class: geosrs:BottomleyProjection

Table 202 — geosrs:BottomleyProjection

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

11.19.4. Class: geosrs:NicolosiGlobularProjection

Table 203 — geosrs:NicolosiGlobularProjection

URI	https://w3id.org/geosrs/projection/NicolosiGlobularProjection

Super-classes	NicolosiGlobularProjection

11.19.5. Class: geosrs:PtolemyIIProjection

Table 204 — geosrs:PtolemyIIProjection

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

11.19.6. Class: geosrs:WernerProjection

Table 205 — geosrs:WernerProjection

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

11.20. Pseudo Cylindrical Projections

REQUIREMENT 34: 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:Baranyi IVProjection, geosrs:BoggsEumorphicProjection, geosrs:BromleyProjection, geosrs:CabotProjection, geosrs:CollignonProjection, geosrs:CrasterParabolicProjection, geosrs:DeakinMinimumError Projection, geosrs:Eckert1Projection, geosrs:Eckert2Projection, geosrs:Eckert3Projection, geosrs: Eckert4Projection, geosrs:Eckert5Projection, geosrs:Eckert6Projection, geosrs:EqualEarth Projection, geosrs:FaheyProjection, geosrs:FoucautProjection, geosrs:FoucautSinusoidalProjection, geosrs:FournierIIProjection, geosrs:GinzburgVIIIProjection, geosrs:GoodeHomolosineProjection, geosrs:HEALPixProjection, geosrs:HufnagelProjection, geosrs:Kavrayskiy7Projection, geosrs: LoximuthalProjection, geosrs:MayrProjection, geosrs:McBrydeThomasFlatPolarParabolicProjection, geosrs:McBrydeThomasFlatPolarQuarticProjection, geosrs:McBrydeThomasFlatPolarSinusoidal Projection, geosrs:McBrydeThomasIIProjection, geosrs:McBrydeThomasIProjection, geosrs:Natural Earth2Projection, geosrs:NaturalEarthProjection, geosrs:NellHammerProjection, geosrs:Nell Projection, geosrs:OrteliusOvalProjection, geosrs:PutninsP1Projection, geosrs:PutninsP2Projection,

REQUIREMENT 34: PSEUDO CYLINDRICAL PROJECTIONS
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.

11.20.1. Class: geosrs:ApianIIProjection

Table 206 — geosrs:ApianIIProjection

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

11.20.2. Class: geosrs:AtlantisProjection

Table 207 — geosrs:AtlantisProjection

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

11.20.3. Class: geosrs:BaranyiIIIProjection

Table 208 — geosrs:BaranyiIIIProjection

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

11.20.4. Class: geosrs:BaranyiIIProjection

Table 209 — geosrs:BaranyiIIProjection

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

11.20.5. Class: geosrs:BaranyiIProjection

Table 210 — geosrs:BaranyiIProjection

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

11.20.6. Class: geosrs:BaranyiIVProjection

Table 211 — geosrs:BaranyiIVProjection

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

11.20.7. Class: geosrs:BoggsEumorphicProjection

Table 212 — geosrs:BoggsEumorphicProjection

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

11.20.8. Class: geosrs:BromleyProjection

Table 213 — geosrs:BromleyProjection

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

11.20.9. Class: geosrs:CabotProjection

Table 214 — geosrs:CabotProjection

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

11.20.10. Class: geosrs:CollignonProjection

Table 215 — geosrs:CollignonProjection

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

11.20.11. Class: geosrs:CrasterParabolicProjection

Table 216 — geosrs:CrasterParabolicProjection

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

11.20.12. Class: geosrs:DeakinMinimumErrorProjection

Table 217 — geosrs:DeakinMinimumErrorProjection

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

11.20.13. Class: geosrs:Eckert1Projection

Table 218 — geosrs:Eckert1Projection

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

11.20.14. Class: geosrs:Eckert2Projection

Table 219 — geosrs:Eckert2Projection

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

11.20.15. Class: geosrs:Eckert3Projection

Table 220 — geosrs:Eckert3Projection

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

11.20.16. Class: geosrs:Eckert4Projection

Table 221 — geosrs:Eckert4Projection

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

11.20.17. Class: geosrs:Eckert5Projection

Table 222 — geosrs:Eckert5Projection

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

11.20.18. Class: geosrs:Eckert6Projection

Table 223 — geosrs:Eckert6Projection

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

11.20.19. Class: geosrs:EqualEarthProjection

Table 224 — geosrs:EqualEarthProjection

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

11.20.20. Class: geosrs:FaheyProjection

Table 225 — geosrs:FaheyProjection

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

11.20.21. Class: geosrs:FoucautProjection

Table 226 — geosrs:FoucautProjection

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

11.20.22. Class: geosrs:FoucautSinusoidalProjection

Table 227 — geosrs:FoucautSinusoidalProjection

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

11.20.23. Class: geosrs:FournierIIProjection

Table 228 — geosrs:FournierIIProjection

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

11.20.24. Class: geosrs:GinzburgVIIIProjection

Table 229 — geosrs:GinzburgVIIIProjection

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

11.20.25. Class: geosrs:GoodeHomolosineProjection

Table 230 — geosrs:GoodeHomolosineProjection

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

11.20.26. Class: geosrs:HEALPixProjection

Table 231 — geosrs:HEALPixProjection

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

11.20.27. Class: geosrs:HufnagelProjection

Table 232 — geosrs:HufnagelProjection

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

11.20.28. Class: geosrs:Kavrayskiy7Projection

Table 233 — geosrs:Kavrayskiy7Projection

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

11.20.29. Class: geosrs:LoximuthalProjection

Table 234 — geosrs:LoximuthalProjection

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

11.20.30. Class: geosrs:MayrProjection

Table 235 — geosrs:MayrProjection

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

11.20.31. Class: geosrs:McBrydeThomasFlatPolarParabolicProjection

Table 236 — geosrs:McBrydeThomasFlatPolarParabolicProjection

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

11.20.32. Class: geosrs:McBrydeThomasFlatPolarQuarticProjection

Table 237 — geosrs:McBrydeThomasFlatPolarQuarticProjection

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

11.20.33. Class: geosrs:McBrydeThomasFlatPolarSinusoidalProjection

Table 238 — geosrs:McBrydeThomasFlatPolarSinusoidalProjection

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

11.20.34. Class: geosrs:McBrydeThomasIIProjection

Table 239 — geosrs:McBrydeThomasIIProjection

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

11.20.35. Class: geosrs:McBrydeThomasIProjection

Table 240 — geosrs:McBrydeThomasIProjection

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

11.20.36. Class: geosrs:NaturalEarth2Projection

Table 241 — geosrs:NaturalEarth2Projection

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

11.20.37. Class: geosrs:NaturalEarthProjection

Table 242 — geosrs:NaturalEarthProjection

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

11.20.38. Class: geosrs:NellHammerProjection

Table 243 — geosrs:NellHammerProjection

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

11.20.39. Class: geosrs:NellProjection

Table 244 — geosrs:NellProjection

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

11.20.40. Class: geosrs:OrteliusOvalProjection

Table 245 — geosrs:OrteliusOvalProjection

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

11.20.41. Class: geosrs:PutninsP1Projection

Table 246 — geosrs:PutninsP1Projection

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

11.20.42. Class: geosrs:PutninsP2Projection

Table 247 — geosrs:PutninsP2Projection

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

11.20.43. Class: geosrs:PutninsP3Projection

Table 248 — geosrs:PutninsP3Projection

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

11.20.44. Class: geosrs:PutninsP5Projection

Table 249 — geosrs:PutninsP5Projection

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

11.20.45. Class: geosrs:PutninsP6Projection

Table 250 — geosrs:PutninsP6Projection

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

11.20.46. Class: geosrs:QuarticAuthalicProjection

Table 251 — geosrs:QuarticAuthalicProjection

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

11.20.47. Class: geosrs:RobinsonProjection

Table 252 — geosrs:RobinsonProjection

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

11.20.48. Class: geosrs:SinusoidalProjection

Table 253 — geosrs:SinusoidalProjection

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

11.20.49. Class: geosrs:TheTimesProjection

Table 254 — geosrs:TheTimesProjection

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

11.20.50. Class: geosrs:ToblerG1Projection

Table 255 — geosrs:ToblerG1Projection

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

11.20.51. Class: geosrs:ToblerHyperellipticalProjection

Table 256 — geosrs:ToblerHyperellipticalProjection

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

11.20.52. Class: geosrs:WagnerIIIProjection

Table 257 — geosrs:WagnerIIIProjection

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

11.20.53. Class: geosrs:WagnerIIProjection

Table 258 — geosrs:WagnerIIProjection

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

11.20.54. Class: geosrs:WagnerIProjection

Table 259 — geosrs:WagnerIProjection

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

11.20.55. Class: geosrs:WagnerIVProjection

Table 260 — geosrs:WagnerIVProjection

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

11.20.56. Class: geosrs:WagnerVIProjection

Table 261 — geosrs:WagnerVIProjection

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

11.20.57. Class: geosrs:WagnerVProjection

Table 262 — geosrs:WagnerVProjection

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

11.20.58. Class: geosrs:WerenskioldIProjection

Table 263 — geosrs:WerenskioldIProjection

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

11.20.59. Class: geosrs:PutninsP3'Projection

Table 264 — geosrs:PutninsP3'Projection

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

11.20.60. Class: geosrs:PutninsP4'Projection

Table 265 — geosrs:PutninsP4'Projection

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

11.20.61. Class: geosrs:PutninsP5'Projection

Table 266 — geosrs:PutninsP5'Projection

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

11.20.62. Class: geosrs:PutninsP6'Projection

Table 267 — geosrs:PutninsP6'Projection

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

11.21. Spheroid Properties

REQUIREMENT 35: SPHEROID PROPERTIES	
IDENTIFIER	`/req/Spheroid_Properties`
STATEMENT	Implementations shall allow the RDFS classes geosrs:eccentricity, geosrs:inverseFlattening, geosrs:isSphere, geosrs:semiMajorAxis, geosrs:semiMinorAxis to be used in SPARQL graph patterns.

11.22. Stereographic Projections

REQUIREMENT 36: STEREOGRAPHIC PROJECTIONS	
IDENTIFIER	`/req/Stereographic_Projections`
STATEMENT	Implementations shall allow the RDFS classes geosrs:MillerOblatedStereographicProjection, geosrs:RoussilheProjection to be used in SPARQL graph patterns.

11.22.1. Class: geosrs:MillerOblatedStereographicProjection

Table 268 — geosrs:MillerOblatedStereographicProjection

URI	https://w3id.org/geosrs/projection/MillerOblatedStereographicProjection

Super-classes	MillerOblatedStereographicProjection

11.22.2. Class: geosrs:RoussilheProjection

Table 269 — geosrs:RoussilheProjection

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

12

PLANET MODULE

12 PLANET MODULE

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

A

ANNEX A (INFORMATIVE) ALIGNMENTS

A ANNEX A (INFORMATIVE) ALIGNMENTS

Overview

Overview

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

Table A.1 — Alignment: Namespaces

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

A.1. IGN Ontology

Table A.2 — Alignment: IGN Ontology

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

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

A.2. ISO19111 Ontology

Table A.3 — Alignment: ISO19111 Ontology

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

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

A.3. IFC Ontology

Table A.4 — Alignment: IFC Ontology

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

B

ANNEX B (INFORMATIVE) SHACL SHAPES

B ANNEX B (INFORMATIVE) SHACL SHAPES

Overview

Overview

C

ANNEX C (INFORMATIVE) REVISION HISTORY

ANNEX C (INFORMATIVE) REVISION HISTORY

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

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)

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