

TERN Ontology Specification

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Status: Draft - while the document is in draft, sections of the document may contain placeholders such as **TBA** and **TBD**.

1. Metadata

| | |
|-----------------------------------|---|
| IRI | https://w3id.org/tern/profiles/tern/specification |
| Title | TERN Ontology Specification |
| Definition | This document lists the normative requirements for data aiming to conform to the TERN Ontology. It is to be used as the authoritative, human-readable list of individual requirements from which profile artefacts such as validators are derived from. |
| Created | 2022-04-06 |
| Modified | 2024-04-16 |
| Creator | TERN |
| Publisher | TERN |
| License | Creative Commons Attribution 4.0 International (CC BY 4.0) |
| Alternate document formats | PDF |

2. Preamble

2.1. Abstract

The TERN Ontology Specification addresses the data exchange and data representation problems with integrating or exchanging heterogeneous ecological field survey data. The specification combines and profiles multiple internationally-recognised Semantic Web standards and establishes links to informative resources and controlled vocabularies necessary to use the specification.

For many years, the scientific ecological community and industry partners collected rich and insightful data about the land and ecosystems by performing field surveys. Unfortunately, the state of the collected data was often unusable for prompt nationwide reporting and data analysis due to incompatible data storage solutions between non-standardised relational databases, spreadsheets and PDF documents. Without spending further time and money to extract, transform and integrate the data, much of the data's richness and usefulness is lost.

The solution to this problem of an ever-growing set of heterogeneous data is to use existing standards defined by the W3C and follow the Linked Data set of principles. By building a specification based on existing web standards, the richness of the ecological field survey data can now be integrated and queried as one large graph of data on the World Wide Web.

The TERN Ontology Specification is a profile of W3C's SOSA, SSN, SSN-ext and PROV ontologies. It uses these ontologies to describe observations and samplings as kinds of activities on a field survey trip and provides associations of these activities to persons and organisations. The TERN Ontology Specification also uses community-based standards such as OGC's GeoSPARQL to associate spatial features or geometries to things within a field survey trip and QUDT's Units vocabulary for associating units of measure to results of observations. The TERN Ontology Specification also provides a vast set of TERN-created ecology-based and ecology-related controlled vocabularies to describe observable properties, feature types, instruments and protocol methods. Lastly, the TERN

Ontology introduces Site and Site Visit classes to represent survey trips performed on ad-hoc or permanent plots and uses the Attribute class to represent auxiliary information.

2.2. Normative Status

This specification is normative for the TERN Ontology.

2.3. Normative references

2.4. Terms and definitions

2.5. Conventions

2.5.1. Symbols and abbreviated terms

2.5.2. Namespaces

2.5.3. Placeholder IRIs

2.5.4. RDF serializations

3. TERN Ontology Specification

This specification defines the classes and properties of the TERN Ontology and the set of requirements that data validators will use to ensure conformance. This specification also details how data providers should use related ontologies and controlled vocabularies to represent their ecological field survey data. Annex A lists these parts in more detail.

3.1. Scope

The TERN Ontology Specification provides a standardised way to exchange and represent ecological field survey data by defining classes, properties and controlled vocabularies that characterise terrestrial environmental and ecology data. Although the upper ontologies such as SOSA and SSN can theoretically apply to any domain, the TERN Ontology Specification focuses on representing data collected during opportunistic and plot-based field surveys.

Lastly, the TERN Ontology Specification is not concerned with validating data according to specific field survey collection protocols and instead is concerned with validating the structure and coding of the data. Individual data custodians can create a profile of the TERN Ontology Specification and extend it according to their field survey protocol's data collection methodologies by providing more specialised validation and requirements.

3.2. Standard Parts

This specification is one of many resources that make up the TERN Ontology Profile Standard and expresses its structure using the Profiles Vocabulary [PROF]. Each resource in the profile is assigned a role from the [Resource Roles vocabulary](#).

Other resources in the TERN Ontology profile include:

| | TERN Ontology - conceptual information model |
|--------------------|---|
| Description | An overview of the core concepts of the TERN Ontology. |
| Artifcat | https://linkeddata.tern.org.au/information-models/tern-ontology/conceptual-information-model |
| Role | role:guidance |

| | TERN Ontology - cookbook |
|--------------------|---|
| Description | A cookbook of patterns on representing ecological things with the TERN Ontology. |
| Artifcat | https://linkeddata.tern.org.au/information-models/tern-ontology/cookbook |
| Role | role:guidance |

| | TERN Ontology - classes, properties and shape constraints |
|--------------------|---|
| Description | A web-based viewer of the TERN Ontology classes, properties and their shape constraints. |
| Artifcat | https://linkeddata.tern.org.au/viewers/tern-ontology |
| Role | role:constraints |

| | TERN Ontology - specification |
|--------------------|---|
| Description | TERN Ontology specification (<i>this document</i>) |
| Artifcat | https://linkeddata.tern.org.au/information-models/tern-ontology/specification |
| Role | role:specification |

| | TERN Ontology - validator |
|--------------------|---|
| Description | SHACL shapes for the TERN Ontology. |
| Artifcat | https://w3id.org/tern/shapes/tern.ttl |
| Role | role:validator |

| | TERN Ontology vocabulary - feature types |
|--------------------|---|
| Description | Feature types controlled vocabulary to describe SOSA-based features of interest. |
| Artifcat | http://linked.data.gov.au/def/tern-cv/68af3d25-c801-4089-afff-cf701e2bd61d |
| Role | role:vocabulary |

| | |
|--------------------|---|
| | TERN Ontology vocabulary - observable properties |
| Description | Observable properties controlled vocabulary to describe SOSA-based observations. |
| Artifcat | http://linked.data.gov.au/def/tern-cv/5699eca7-9ef0-47a6-bcfb-9306e0e2b85e |
| Role | role:vocabulary |

| | |
|--------------------|---|
| | TERN Ontology vocabulary - attributes |
| Description | Attributes controlled vocabulary to describe facts about any entity. |
| Artifcat | http://linked.data.gov.au/def/tern-cv/dd085299-ae86-4371-ae15-61dfa432f924 |
| Role | role:vocabulary |

| | |
|--------------------|---|
| | TERN Ontology vocabulary - units of measure |
| Description | Unit of measure controlled vocabulary by QUDT |
| Artifcat | http://qudt.org/vocab/unit/ |
| Role | role:vocabulary |

| | |
|--------------------|---|
| | TERN Ontology vocabulary - instrument types |
| Description | Instrument types controlled vocabulary to describe the types of instruments used in observations and sampling acts. |
| Artifcat | http://linked.data.gov.au/def/tern-cv/a3088b5c-622d-4e25-8a75-4c4961b0dfe8 |
| Role | role:vocabulary |

| | |
|--------------------|---|
| | TERN Ontology vocabulary - site types |
| Description | Site types controlled vocabulary to describe the types of ecological survey sites. |
| Artifcat | http://linked.data.gov.au/def/tern-cv/74aa68d3-28fd-468d-8ff5-7e791d9f7159 |
| Role | role:vocabulary |

| | |
|--------------------|---|
| | TERN Ontology vocabulary - CI Role Code |
| Description | CI Role Code controlled vocabulary to describe the roles available to the TERN Ontology concepts. |
| Artifcat | http://def.isotc211.org/iso19115/-1/2018/CitationAndResponsiblePartyInformation/code/CI_RoleCode |
| Role | role:vocabulary |

3.3. Conformance

Requirements define the rules and constraints that validators will use to validate data for conformance.

Each requirement will be assigned a subset of the status types defined by the [Registry ontology](#).

| Status type | Icon | Definition |
|--------------|------|--|
| experimental | ○ | An entry that has been accepted into the register temporarily and may be subject to change or withdrawal. |
| stable | ☑ | An entry that is seen as having a reasonable measure of stability, may be used to mark the full adoption of a previously 'experimental' entry. |

4. Core

This section establishes the core requirements class and provides definitions and usage examples.

4.1. Classes


4.1.1. Class: tern:Attribute

| Property | Value |
|------------|---|
| IRI | tern:Attribute |
| Status | stable ☑ |
| Label | Attribute |
| Definition | A property-value pair to capture attributes of an individual where observations are not suitable. |
| Scope note | Follows a similar modelling pattern to schema:PropertyValue. |


4.1.1.1. Property: dcterms:type

| Property | Value |
|-----------------|---|
| IRI | dcterms:type |
| Shape IRI | https://w3id.org/tern/shapes/tern/dcterms-type |
| Status | stable ☑ |
| Label | type |
| Definition | Recommended practice is to use a controlled vocabulary such as the DCMI Type Vocabulary DCMI-TYPE . To describe the file format, physical medium, or dimensions of the resource, use the property Format. |
| Scope note | Useful to capture the proximate class type in situations when <code>rdfs:subClassOf</code> entailment is enabled and <code>rdf:type</code> is not suitable. |
| Implementation | A <code>dcterms:type</code> predicate <i>MUST</i> have an IRI value. |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.1.2. Property: tern:attribute

| Property | Value |
|-----------------|--|
| IRI | tern:attribute |
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-attribute |
| Status | stable  |
| Label | attribute |
| Definition | The identifier of the attribute concept. Attribute concepts are usually described with SKOS controlled vocabularies. TERN manages a list of attributes . |
| Scope note | |
| Implementation | A tern:Attribute <i>MUST</i> have exactly 1 tern:attribute predicate where the value node is an IRI. |
| Cardinality | Exactly 1 |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.1.3. Property: tern:hasSimpleValue

| Property | Value |
|-----------------|---|
| IRI | tern:hasSimpleValue |
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-hasSimpleValue |
| Status | stable  |
| Label | has simple value |
| Definition | The direct link to the IRI or RDF literal value. The simple value <i>MUST</i> be the same value captured in rdf:value of the tern:Value instance. |
| Scope note | |
| Implementation | A tern:Attribute <i>MUST</i> have exactly 1 tern:hasSimpleValue predicate where the value node is an IRI or literal. |
| Cardinality | Exactly 1 |
| Node kind | sh:IRIOrLiteral |
| Class type | |
| Expected values | |

4.1.1.4. Property: tern:hasValue

| Property | Value |
|----------|-------------------------------|
| IRI | tern:hasValue |

| Property | Value |
|-----------------|---|
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-hasValue |
| Status | stable ☑ |
| Label | has value |
| Definition | A link to a tern:Value instance which encapsulates the value of this Attribute. |
| Scope note | |
| Implementation | A tern:Attribute <i>MUST</i> have exactly 1 tern:hasValue predicate where the value node is an IRI. |
| Cardinality | Exactly 1 |
| Node kind | sh:BlankNodeOrIRI |
| Class type | tern:Value |
| Expected values | |

4.1.1.5. Property: tern:isAttributeOf

| Property | Value |
|-----------------|---|
| IRI | tern:isAttributeOf |
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-isAttributeOf |
| Status | stable ☑ |
| Label | is attribute of |
| Definition | A link to the individual which this attribute and its value is applied to. Inverse property of tern:hasAttribute . |
| Scope note | |
| Implementation | A tern:isAttributeOf <i>MUST</i> have an IRI value. |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.1.6. Property: void:inDataset

| Property | Value |
|------------|---|
| IRI | void:inDataset |
| Shape IRI | https://w3id.org/tern/shapes/tern/void-inDataset |
| Status | stable ☑ |
| Label | in dataset |
| Definition | A link to the RDF payload's metadata which this resource was a part of. |

| Property | Value |
|-----------------|--|
| Scope note | |
| Implementation | There <i>MUST</i> exist exactly 1 <code>void:inDataset</code> property with an IRI value to a <code>tern:RDFDataset</code> . |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:RDFDataset</code> |
| Expected values | |


4.1.1.7. `tern:Attribute` example

Annotate the volume of the soil ring using `tern:Attribute`.


```
<urn:example:soil-ring> a tern:Sampler ;
    rdfs:label "soil ring" ;
    ssn:implements <urn:example:method:soil-ring> ;
    tern:systemType <http://linked.data.gov.au/def/tern-cv/24c81cc3-4d68-45a0-91a2-051af25dfb94> ;
    tern:hasAttribute <urn:example:Attribute:1>
.

<urn:example:Attribute:1> a tern:Attribute ;
    rdfs:label "volume of soil ring" ;
    tern:attribute <http://linked.data.gov.au/def/tern-cv/039f87e5-ffd9-4676-b126-c74844d2e095> ;
    tern:hasSimpleValue 209.35 ;
    tern:hasValue [
        a tern:Float ;
        rdf:value 209.35 ;
        tern:unit <http://qudt.org/vocab/unit/CentiM3> ;
    ] ;
.
```


4.1.2. Class: `tern:Boolean`

| Property | Value |
|------------|---|
| IRI | <code>tern:Boolean</code> |
| Status | <code>stable</code>  |
| Label | Boolean |
| Definition | Class to encapsulate a true-or-false value. |
| Scope note | |


4.1.2.1. Property: `rdf:value`

| Property | Value |
|-----------------|---|
| IRI | <code>rdf:value</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Boolean-value |
| Status | stable  |
| Label | value |
| Definition | The boolean value. |
| Scope note | |
| Implementation | <code>tern:Boolean</code> <i>MUST</i> have exactly 1 <code>rdf:value</code> predicate where the value node is a literal with a datatype of <code>xsd:boolean</code> . |
| Cardinality | Exactly 1 |
| Node kind | |
| Class type | <code>xsd:boolean</code> |
| Expected values | - <code>"true"</code> http://www.w3.org/2001/XMLSchema#boolean - <code>"false"</code> http://www.w3.org/2001/XMLSchema#boolean |

4.1.3. Class: `tern>Date`

| Property | Value |
|------------|--|
| IRI | <code>tern>Date</code> |
| Status | stable  |
| Label | Date |
| Definition | A class to encapsulate an <code>xsd:date</code> value. |
| Scope note | |

4.1.3.1. Property: `rdf:value`

| Property | Value |
|----------------|--|
| IRI | <code>rdf:value</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Date-value |
| Status | stable  |
| Label | value |
| Definition | The value of the date object. |
| Scope note | |
| Implementation | A <code>tern>Date</code> <i>MUST</i> have exactly 1 <code>rdf:value</code> predicate where the value node is a literal with a datatype of <code>xsd:date</code> . |
| Cardinality | Exactly 1 |

| Property | Value |
|-----------------|-----------------------|
| Node kind | |
| Class type | <code>xsd:date</code> |
| Expected values | |

4.1.4. Class: tern:DateTime

| Property | Value |
|------------|--|
| IRI | <code>tern:DateTime</code> |
| Status | <code>stable</code> ☑ |
| Label | Date time |
| Definition | A class to encapsulate an <code>xsd:dateTime</code> value. |
| Scope note | |

4.1.4.1. Property: rdf:value

| Property | Value |
|-----------------|---|
| IRI | <code>rdf:value</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/DateTime-value |
| Status | <code>stable</code> ☑ |
| Label | value |
| Definition | The value of the datetime object. |
| Scope note | |
| Implementation | A <code>tern:DateTime</code> <i>MUST</i> have exactly 1 <code>rdf:value</code> predicate where the value node is a literal with a datatype of <code>xsd:dateTime</code> . |
| Cardinality | Exactly 1 |
| Node kind | |
| Class type | <code>xsd:dateTime</code> |
| Expected values | |

4.1.5. Class: tern:Deployment

| Property | Value |
|------------|---|
| IRI | <code>tern:Deployment</code> |
| Status | <code>experimental</code> ○ |
| Label | Deployment |
| Definition | Describes the Deployment of one or more Systems for a particular purpose. Deployment may be done on a Platform. |

| Property | Value |
|------------|-------|
| Scope note | |


4.1.5.1. Property: `ssn:deployedOnPlatform`

| Property | Value |
|-----------------|---|
| IRI | <code>ssn:deployedOnPlatform</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/ssn-deployedOnPlatform |
| Status | experimental ○ |
| Label | deployed on platform |
| Definition | Relation between a Deployment and the Platform on which the Systems are deployed. |
| Scope note | |
| Implementation | A <code>tern:Deployment</code> MAY have 1 <code>ssh:deployedOnPlatform</code> predicate where the value node is an IRI of type <code>tern:Platform</code> . |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:Platform</code> |
| Expected values | |


4.1.5.2. Property: `ssn:deployedSystem`

| Property | Value |
|-----------------|---|
| IRI | <code>ssn:deployedSystem</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/ssn-deployedSystem |
| Status | experimental ○ |
| Label | deployed system |
| Definition | Relation between a Deployment and a deployed System. |
| Scope note | |
| Implementation | A <code>tern:Deployment</code> MAY have one or many <code>ssn:deployedSystem</code> predicate where the value node is an IRI of type <code>tern:System</code> . |
| Cardinality | |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:System</code> |
| Expected values | |


4.1.6. Class: tern:FeatureOfInterest

| Property | Value |
|------------|--|
| IRI | tern:FeatureOfInterest |
| Status | stable  |
| Label | Feature of Interest |
| Definition | The thing whose property is being estimated or calculated in the course of an Observation to arrive at a Result or whose property is being manipulated by an Actuator, or which is being sampled or transformed in an act of Sampling. |
| Scope note | |

4.1.6.1. Property: tern:featureType


| Property | Value |
|-----------------|--|
| IRI | tern:featureType |
| Shape IRI | https://w3id.org/tern/shapes/tern/FeatureOfInterest-featureType |
| Status | stable  |
| Label | feature type |
| Definition | The feature type of a tern:FeatureOfInterest from a controlled vocabulary. |
| Scope note | |
| Implementation | A tern:FeatureOfInterest <i>MUST</i> have exactly 1 tern:featureType predicate where the value node is an IRI. |
| Cardinality | Exactly 1 |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.6.2. Property: dcterms:identifier


| Property | Value |
|----------------|---|
| IRI | dcterms:identifier |
| Shape IRI | https://w3id.org/tern/shapes/tern/dcterms-identifier |
| Status | stable  |
| Label | identifier |
| Definition | An unambiguous reference to the resource within a given context. |
| Scope note | |
| Implementation | N/A |
| Cardinality | |

| Property | Value |
|-----------------|-------|
| Node kind | |
| Class type | |
| Expected values | |

4.1.6.3. Property: `dcterms:type`

| Property | Value |
|-----------------|--|
| IRI | <code>dcterms:type</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/dcterms-type |
| Status | stable  |
| Label | type |
| Definition | Recommended practice is to use a controlled vocabulary such as the DCMI Type Vocabulary DCMI-<i>TYPE</i> . To describe the file format, physical medium, or dimensions of the resource, use the property <code>Format</code> . |
| Scope note | Useful to capture the proximate class type in situations when <code>rdfs:subClassOf</code> entailment is enabled and <code>rdf:type</code> is not suitable. |
| Implementation | A <code>dcterms:type</code> predicate <i>MUST</i> have an IRI value. |
| Cardinality | |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |

4.1.6.4. Property: `geo:hasGeometry`

| Property | Value |
|-----------------|---|
| IRI | <code>geo:hasGeometry</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/geo-hasGeometry |
| Status | stable  |
| Label | has geometry |
| Definition | A spatial representation for a given feature. |
| Scope note | |
| Implementation | A <code>geo:hasGeometry</code> predicate <i>MUST</i> have a blank node or IRI value. |
| Cardinality | |
| Node kind | <code>sh:BlankNodeOrIRI</code> |
| Class type | <code>geo:Geometry</code> |
| Expected values | |

4.1.6.5. Property: prov:qualifiedAttribution


| Property | Value |
|-----------------|--|
| IRI | <code>prov:qualifiedAttribution</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/prov-qualifiedAttribution |
| Status | stable ☑ |
| Label | qualified attribution |
| Definition | Attribution is the ascribing of an entity to an agent. When an entity e is attributed to agent ag, entity e was generated by some unspecified activity that in turn was associated to agent ag. Thus, this relation is useful when the activity is not known, or irrelevant. |
| Scope note | |
| Implementation | A <code>prov:qualifiedAttribution</code> <i>MUST</i> have a blank node or IRI value where the type is <code>prov:Attribution</code> . |
| Cardinality | |
| Node kind | <code>sh:BlankNodeOrIRI</code> |
| Class type | <code>prov:Attribution</code> |
| Expected values | |

4.1.6.6. Property: prov:wasAttributedTo


| Property | Value |
|-----------------|---|
| IRI | <code>prov:wasAttributedTo</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/prov-wasAttributedTo |
| Status | stable ☑ |
| Label | was attributed to |
| Definition | Attribution is the ascribing of an entity to an agent. |
| Scope note | |
| Implementation | A <code>prov:wasAttributedTo</code> predicate <i>MUST</i> have an IRI value of type <code>prov:Agent</code> . |
| Cardinality | |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>prov:Agent</code> |
| Expected values | |

4.1.6.7. Property: rdfs:comment

| Property | Value |
|----------|---------------------------|
| IRI | <code>rdfs:comment</code> |

| Property | Value |
|-----------------|---|
| Shape IRI | https://w3id.org/tern/shapes/tern/rdfs-comment |
| Status | stable  |
| Label | comment |
| Definition | A description of the subject resource. |
| Scope note | |
| Implementation | An <code>rdfs:comment</code> <i>MUST</i> have a literal value. |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |
| Class type | |
| Expected values | |

4.1.6.8. Property: `sosa:hasSample`

| Property | Value |
|-----------------|---|
| IRI | <code>sosa:hasSample</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/sosa-hasSample |
| Status | stable  |
| Label | has sample |
| Definition | Relation between a <code>FeatureOfInterest</code> and the <code>Sample</code> used to represent it. |
| Scope note | |
| Implementation | A <code>tern:FeatureOfInterest</code> <i>MAY</i> have a <code>sosa:hasSample</code> predicate where the value node is an IRI of type <code>tern:Sample</code> . |
| Cardinality | |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:Sample</code> |
| Expected values | |

4.1.6.9. Property: `sosa:isFeatureOfInterestOf`

| Property | Value |
|------------|---|
| IRI | <code>sosa:isFeatureOfInterestOf</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/sosa-isFeatureOfInterestOf |
| Status | stable  |
| Label | is feature of interest of |
| Definition | A relation between a <code>FeatureOfInterest</code> and an <code>Observation</code> about it, an <code>Actuation</code> acting on it, or an act of <code>Sampling</code> that sampled it. |

| Property | Value |
|-----------------|--|
| Scope note | |
| Implementation | A tern:FeatureOfInterest <i>MAY</i> have a sosa:isFeatureOfInterestOf predicate where the value node is an IRI of type tern:Observation or tern:Sampling . |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | tern:Observation tern:Sampling |
| Expected values | |


4.1.6.10. Property: void:inDataset

| Property | Value |
|-----------------|--|
| IRI | void:inDataset |
| Shape IRI | https://w3id.org/tern/shapes/tern/void-inDataset |
| Status | stable ☑ |
| Label | in dataset |
| Definition | A link to the RDF payload's metadata which this resource was a part of. |
| Scope note | |
| Implementation | There <i>MUST</i> exist exactly 1 void:inDataset property with an IRI value to a tern:RDFDataset . |
| Cardinality | Exactly 1 |
| Node kind | sh:IRI |
| Class type | tern:RDFDataset |
| Expected values | |

4.1.7. Class: tern:Float

| Property | Value |
|------------|---------------------------------|
| IRI | tern:Float |
| Status | stable ☑ |
| Label | Float |
| Definition | A class to encapsulate a float. |
| Scope note | |


4.1.7.1. Property: tern:uncertainty

| Property | Value |
|-----------------|--|
| IRI | <code>tern:uncertainty</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Float-uncertainty |
| Status | stable  |
| Label | uncertainty |
| Definition | Measurement error (\pm). |
| Scope note | |
| Implementation | A <code>tern:Float</code> <i>MAY</i> have 1 <code>tern:uncertainty</code> predicate where the value node is a literal with a datatype of <code>xsd:double</code> . |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:double</code> |
| Expected values | |

4.1.7.2. Property: `rdf:value`

| Property | Value |
|-----------------|--|
| IRI | <code>rdf:value</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Float-value |
| Status | stable  |
| Label | value |
| Definition | Float value. |
| Scope note | |
| Implementation | A <code>tern:Float</code> <i>MUST</i> have exactly 1 <code>rdf:value</code> where the value node is a literal with a datatype of <code>xsd:double</code> . |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:double</code> |
| Expected values | |

4.1.7.3. Property: `tern:unit`

| Property | Value |
|-----------|---|
| IRI | <code>tern:unit</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-unit |
| Status | stable  |
| Label | unit of measure |

| Property | Value |
|-----------------|--|
| Definition | The unit of measure of the value. Recommended best practice is to use the QUDT units of measure vocabulary . |
| Scope note | |
| Implementation | A <code>tern:unit</code> predicate <i>MUST</i> have an IRI value. |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |


4.1.8. Class: tern:IRI

| Property | Value |
|------------|--------------------------------------|
| IRI | <code>tern:IRI</code> |
| Status | <code>stable</code> ☑ |
| Label | IRI |
| Definition | A class to encapsulate an IRI value. |
| Scope note | |


4.1.8.1. Property: rdf:value

| Property | Value |
|-----------------|---|
| IRI | <code>rdf:value</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/IRI-value |
| Status | <code>stable</code> ☑ |
| Label | value |
| Definition | An IRI value. |
| Scope note | |
| Implementation | A <code>tern:IRI</code> <i>MUST</i> have exactly 1 <code>rdf:value</code> predicate where the value node is an IRI. |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |


4.1.9. Class: tern:Integer

| Property | Value |
|------------|--|
| IRI | <code>tern:Integer</code> |
| Status | stable  |
| Label | Integer |
| Definition | A class to encapsulate an integer value. |
| Scope note | |

4.1.9.1. Property: `tern:uncertainty`


| Property | Value |
|-----------------|--|
| IRI | <code>tern:uncertainty</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Integer-uncertainty |
| Status | stable  |
| Label | uncertainty |
| Definition | Measurement error (\pm). |
| Scope note | |
| Implementation | A <code>tern:Integer</code> <i>MAY</i> have 1 <code>tern:uncertainty</code> predicate where the value node is a literal with a datatype of <code>xsd:integer</code> or <code>xsd:double</code> . |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:integer</code> <code>xsd:double</code> |
| Expected values | |

4.1.9.2. Property: `rdf:value`


| Property | Value |
|----------------|---|
| IRI | <code>rdf:value</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Integer-value |
| Status | stable  |
| Label | value |
| Definition | Integer value. |
| Scope note | |
| Implementation | A <code>tern:Integer</code> <i>MUST</i> have exactly 1 <code>rdf:value</code> predicate where the value node is a literal with a datatype of <code>xsd:integer</code> |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:Literal</code> |

| Property | Value |
|-----------------|--------------------------|
| Class type | <code>xsd:integer</code> |
| Expected values | |


4.1.9.3. Property: tern:unit

| Property | Value |
|-----------------|--|
| IRI | <code>tern:unit</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-unit |
| Status | <code>stable</code>  |
| Label | unit of measure |
| Definition | The unit of measure of the value. Recommended best practice is to use the QUDT units of measure vocabulary . |
| Scope note | |
| Implementation | A <code>tern:unit</code> predicate <i>MUST</i> have an IRI value. |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |

4.1.10. Class: tern:Intervention

| Property | Value |
|------------|--|
| IRI | <code>tern:Intervention</code> |
| Status | <code>experimental</code>  |
| Label | Intervention |
| Definition | An <code>Intervention</code> is a human-induced activity that carries out a <code>Procedure</code> to observe or change the properties of a <code>Feature Of Interest</code> . |
| Scope note | An intervention is a management process to maintain, restore or improve an ecosystem within a spatial area. |

4.1.10.1. Property: prov:endedAtTime

| Property | Value |
|-----------|---|
| IRI | <code>prov:endedAtTime</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Intervention-endedAtTime |
| Status | <code>experimental</code>  |
| Label | ended at time |

| Property | Value |
|-----------------|---|
| Definition | The time at which an activity ended. |
| Scope note | |
| Implementation | A tern:Intervention <i>MAY</i> have a maximum of 1 prov:endedAtTime predicate where the value node is a literal with the datatype xsd:dateTime . |
| Cardinality | Maximum 1 |
| Node kind | sh:Literal |
| Class type | xsd:dateTime |
| Expected values | |

4.1.10.2. Property: **prov:startedAtTime**

| Property | Value |
|-----------------|---|
| IRI | prov:startedAtTime |
| Shape IRI | https://w3id.org/tern/shapes/tern/Intervention-startedAtTime |
| Status | experimental ○ |
| Label | started at time |
| Definition | The time at which an activity started. |
| Scope note | |
| Implementation | A tern:Intervention <i>MUST</i> have exactly 1 prov:startedAtTime predicate where the value node is a literal with the datatype xsd:dateTime . |
| Cardinality | Exactly 1 |
| Node kind | sh:Literal |
| Class type | xsd:dateTime |
| Expected values | |

4.1.10.3. Property: **dcterms:identifier**

| Property | Value |
|----------------|---|
| IRI | dcterms:identifier |
| Shape IRI | https://w3id.org/tern/shapes/tern/dcterms-identifier |
| Status | stable ☑ |
| Label | identifier |
| Definition | An unambiguous reference to the resource within a given context. |
| Scope note | |
| Implementation | N/A |
| Cardinality | |

| Property | Value |
|-----------------|-------|
| Node kind | |
| Class type | |
| Expected values | |


4.1.10.4. Property: **dcterms:type**

| Property | Value |
|-----------------|--|
| IRI | dcterms:type |
| Shape IRI | https://w3id.org/tern/shapes/tern/dcterms-type |
| Status | stable ☑ |
| Label | type |
| Definition | Recommended practice is to use a controlled vocabulary such as the DCMI Type Vocabulary DCMI-TYPE . To describe the file format, physical medium, or dimensions of the resource, use the property Format. |
| Scope note | Useful to capture the proximate class type in situations when rdfs:subClassOf entailment is enabled and rdf:type is not suitable. |
| Implementation | A dcterms:type predicate <i>MUST</i> have an IRI value. |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |


4.1.10.5. Property: **geo:hasGeometry**

| Property | Value |
|-----------------|---|
| IRI | geo:hasGeometry |
| Shape IRI | https://w3id.org/tern/shapes/tern/geo-hasGeometry |
| Status | stable ☑ |
| Label | has geometry |
| Definition | A spatial representation for a given feature. |
| Scope note | |
| Implementation | A geo:hasGeometry predicate <i>MUST</i> have a blank node or IRI value. |
| Cardinality | |
| Node kind | sh:BlankNodeOrIRI |
| Class type | geo:Geometry |
| Expected values | |


4.1.10.6. Property: prov:qualifiedAssociation

| Property | Value |
|-----------------|--|
| IRI | <code>prov:qualifiedAssociation</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/prov-qualifiedAssociation |
| Status | stable  |
| Label | qualified association |
| Definition | An activity association is an assignment of responsibility to an agent for an activity, indicating that the agent had a role in the activity. It further allows for a plan to be specified, which is the plan intended by the agent to achieve some goals in the context of this activity. |
| Scope note | |
| Implementation | A <code>prov:qualifiedAssociation</code> <i>MUST</i> have a blank node or IRI value of type <code>prov:Association</code> . |
| Cardinality | |
| Node kind | <code>sh:BlankNodeOrIRI</code> |
| Class type | <code>prov:Association</code> |
| Expected values | |


4.1.10.7. Property: prov:wasAssociatedWith

| Property | Value |
|-----------------|--|
| IRI | <code>prov:wasAssociatedWith</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/prov-wasAssociatedWith |
| Status | stable  |
| Label | was associated with |
| Definition | An activity association is an assignment of responsibility to an agent for an activity, indicating that the agent had a role in the activity. It further allows for a plan to be specified, which is the plan intended by the agent to achieve some goals in the context of this activity. |
| Scope note | |
| Implementation | A <code>prov:wasAssociatedWith</code> predicate <i>MUST</i> an IRI value of type <code>prov:Agent</code> . |
| Cardinality | |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>prov:Agent</code> |
| Expected values | |


4.1.10.8. Property: tern:hasAttribute

| Property | Value |
|-----------------|--|
| IRI | <code>tern:hasAttribute</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-hasAttribute |
| Status | stable  |
| Label | has attribute |
| Definition | Link to an Attribute. |
| Scope note | |
| Implementation | A <code>tern:hasAttribute</code> predicate <i>MUST</i> have a blank node or an IRI value of type <code>tern:Attribute</code> . |
| Cardinality | |
| Node kind | <code>sh:BlankNodeOrIRI</code> |
| Class type | <code>tern:Attribute</code> |
| Expected values | |

4.1.10.9. Property: tern:interventionType

| Property | Value |
|-----------------|--|
| IRI | <code>tern:interventionType</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-interventionType |
| Status | experimental  |
| Label | intervention type |
| Definition | The type of intervention. |
| Scope note | |
| Implementation | A <code>tern:Intervention</code> <i>MAY</i> have a maximum of 1 <code>tern:interventionType</code> predicate where the value node is an IRI. |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |

4.1.10.10. Property: void:inDataset

| Property | Value |
|-----------|---|
| IRI | <code>void:inDataset</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/void-inDataset |
| Status | stable  |

| Property | Value |
|-----------------|--|
| Label | in dataset |
| Definition | A link to the RDF payload's metadata which this resource was a part of. |
| Scope note | |
| Implementation | There <i>MUST</i> exist exactly 1 <code>void:inDataset</code> property with an IRI value to a <code>tern:RDFDataset</code> . |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:RDFDataset</code> |
| Expected values | |

4.1.10.11. tern:Intervention example

The following example is based on the [DCCEEW's RLP protocols](#) for intervention.

Definition of intervention within the field survey protocol context:

An intervention is a management process to maintain, restore or improve an ecosystem within a spatial area. Interventions can take a range of forms, including fencing to protect remnant vegetation (Spooner et al. 2002), weed and pest animal control (Martin and van Klinken 2006; Reddiex et al. 2006), restoration and revegetation, re-introductions or translocations (Silcock et al. 2019), removal of watering points, controlled burns, nest box installation and community or landholder workshops (Capon et al. 2020).

— Interventions Module, McCallum K, Laws M, Bignall J, O'Neill S, Sparrow B. (unpublished draft)
 'Interventions module' in (eds) Ecological Field Monitoring Protocols Manual: Standardising environmental monitoring and data systems for improved decision making. Draft v 0.1 Report to DAWE. TERN, Adelaide.

4.1.10.11.1. Debris removal

The RLP field survey protocols define a number of interventions in a table. Below shows one example taken from the field survey protocols for *debris removal*.

All RLP field survey interventions have *inputs* and *outputs*. Inputs are modelled as `tern:Attribute` class instances and outputs are modelled as `tern:Observation` class instances. The `tern:interventionType` property links to a *global* concept within TERN's controlled vocabularies for *debris removal* and the `sosa:usedProcedure` links to the *local* protocol-specific version of *debris removal*. The spatial extent is recorded digitally as a polygon feature in the data input app and is captured here with the `geo:hasGeometry` property pointing to a description of the polygon as an instance of `geo:Geometry`. The actual coordinates of the polygon are recorded on the geometry object with the property `geo:asWKT`. Each one of the input fields are recorded as a `tern:Attribute` linked to the intervention activity via the property `tern:hasAttribute`. Each individual outcome is also

recorded as a **tern:Attribute**. Observations that are made after the intervention can be linked using the **prov:wasInformedBy** property to express that the observational result was affected by a past intervention activity.

RLP interventions table headers

| Project Service | Field Collection | App Group | Output Measure | Mapping Requirements | Mapping Area (ha) | Reporting Fields | Data Field Class | Schema | Comment RLP | Comment TERN |
|-----------------|------------------|-----------|----------------|----------------------|-------------------|------------------|------------------|--------|-------------|--------------|
|-----------------|------------------|-----------|----------------|----------------------|-------------------|------------------|------------------|--------|-------------|--------------|

Debris removal table

[debris removal table]

Diagram modelling debris removal with the Intervention class

[intervention example debris removal]

Other interventions are described in the original document at [MERIT Ready Reckoner V3 Regional Land Partnerships – Project Services](#).

4.1.11. Class: tern:MaterialSample

| Property | Value |
|------------|---|
| IRI | tern:MaterialSample |
| Status | stable ☑ |
| Label | Material sample |
| Definition | A physical result of a sampling (or subsampling) event. In biological collections, the material sample is typically collected, and either preserved or destructively processed. |
| Scope note | |

4.1.11.1. Property: dwc:materialSampleID

| Property | Value |
|------------|---|
| IRI | dwc:materialSampleID |
| Shape IRI | https://w3id.org/tern/shapes/tern/dwc-materialSampleID |
| Status | stable ☑ |
| Label | material sample ID |
| Definition | An identifier for the MaterialSample (as opposed to a particular digital record of the material sample). In the absence of a persistent global unique identifier, construct one from a combination of identifiers in the record that will most closely make the materialSampleID globally unique. |
| Scope note | |

| Property | Value |
|-----------------|---|
| Implementation | A <code>dwc:materialSampleID</code> predicate <i>MUST</i> have a literal value with a datatype of <code>xsd:string</code> . |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:string</code> |
| Expected values | |


4.1.12. Class: tern:Observation

| Property | Value |
|------------|---|
| IRI | <code>tern:Observation</code> |
| Status | <code>stable</code> ☑ |
| Label | Observation |
| Definition | Act of carrying out an (<code>Observation</code>) <code>Procedure</code> to estimate or calculate a value of a property of a <code>FeatureOfInterest</code> . Links to a <code>Sensor</code> to describe what made the <code>Observation</code> and how; links to an <code>ObservableProperty</code> to describe what the result is an estimate of, and to a <code>FeatureOfInterest</code> to detail what that property was associated with. |
| Scope note | |


4.1.12.1. Property: sosa:hasResult

| Property | Value |
|-----------------|--|
| IRI | <code>sosa:hasResult</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Observation-hasResult |
| Status | <code>stable</code> ☑ |
| Label | has result |
| Definition | Relation linking an Observation or Actuation or act of Sampling and a Result or Sample. |
| Scope note | |
| Implementation | A <code>tern:Observation</code> <i>MUST</i> have exactly 1 <code>sosa:hasResult</code> where the value node is a blank node or IRI of type <code>tern:Value</code> . |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:BlankNodeOrIRI</code> |
| Class type | <code>tern:Value</code> |
| Expected values | |

4.1.12.2. Property: `dcterms:identifier`

| Property | Value |
|-----------------|---|
| IRI | <code>dcterms:identifier</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/dcterms-identifier |
| Status | stable  |
| Label | identifier |
| Definition | An unambiguous reference to the resource within a given context. |
| Scope note | |
| Implementation | N/A |
| Cardinality | |
| Node kind | |
| Class type | |
| Expected values | |

4.1.12.3. Property: `dcterms:type`

| Property | Value |
|-----------------|---|
| IRI | <code>dcterms:type</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/dcterms-type |
| Status | stable  |
| Label | type |
| Definition | Recommended practice is to use a controlled vocabulary such as the DCMI Type Vocabulary DCMI-TYPE . To describe the file format, physical medium, or dimensions of the resource, use the property <code>Format</code> . |
| Scope note | Useful to capture the proximate class type in situations when <code>rdfs:subClassOf</code> entailment is enabled and <code>rdf:type</code> is not suitable. |
| Implementation | A <code>dcterms:type</code> predicate <i>MUST</i> have an IRI value. |
| Cardinality | |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |

4.1.12.4. Property: `geo:hasGeometry`

| Property | Value |
|-----------|---|
| IRI | <code>geo:hasGeometry</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/geo-hasGeometry |

| Property | Value |
|-----------------|--|
| Status | stable ☑ |
| Label | has geometry |
| Definition | A spatial representation for a given feature. |
| Scope note | |
| Implementation | A <code>geo:hasGeometry</code> predicate <i>MUST</i> have a blank node or IRI value. |
| Cardinality | |
| Node kind | sh:BlankNodeOrIRI |
| Class type | geo:Geometry |
| Expected values | |

4.1.12.5. Property: prov:qualifiedAssociation


| Property | Value |
|-----------------|--|
| IRI | prov:qualifiedAssociation |
| Shape IRI | https://w3id.org/tern/shapes/tern/prov-qualifiedAssociation |
| Status | stable ☑ |
| Label | qualified association |
| Definition | An activity association is an assignment of responsibility to an agent for an activity, indicating that the agent had a role in the activity. It further allows for a plan to be specified, which is the plan intended by the agent to achieve some goals in the context of this activity. |
| Scope note | |
| Implementation | A <code>prov:qualifiedAssociation</code> <i>MUST</i> have a blank node or IRI value of type <code>prov:Association</code> . |
| Cardinality | |
| Node kind | sh:BlankNodeOrIRI |
| Class type | prov:Association |
| Expected values | |

4.1.12.6. Property: prov:wasAssociatedWith


| Property | Value |
|-----------|---|
| IRI | prov:wasAssociatedWith |
| Shape IRI | https://w3id.org/tern/shapes/tern/prov-wasAssociatedWith |
| Status | stable ☑ |
| Label | was associated with |

| Property | Value |
|-----------------|--|
| Definition | An activity association is an assignment of responsibility to an agent for an activity, indicating that the agent had a role in the activity. It further allows for a plan to be specified, which is the plan intended by the agent to achieve some goals in the context of this activity. |
| Scope note | |
| Implementation | A <code>prov:wasAssociatedWith</code> predicate <i>MUST</i> an IRI value of type <code>prov:Agent</code> . |
| Cardinality | |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>prov:Agent</code> |
| Expected values | |

4.1.12.7. Property: `rdfs:comment`


| Property | Value |
|-----------------|---|
| IRI | <code>rdfs:comment</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/rdfs-comment |
| Status | <code>stable</code>  |
| Label | comment |
| Definition | A description of the subject resource. |
| Scope note | |
| Implementation | An <code>rdfs:comment</code> <i>MUST</i> have a literal value. |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |
| Class type | |
| Expected values | |

4.1.12.8. Property: `sosa:hasFeatureOfInterest`


| Property | Value |
|------------|---|
| IRI | <code>sosa:hasFeatureOfInterest</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/sosa-hasFeatureOfInterest |
| Status | <code>stable</code>  |
| Label | has feature of interest |
| Definition | A relation between an Observation and the entity whose quality was observed, or between an Actuation and the entity whose property was modified, or between an act of Sampling and the entity that was sampled. |
| Scope note | |

| Property | Value |
|-----------------|--|
| Implementation | Exactly 1 <code>sosa:hasFeatureOfInterest</code> predicate <i>MUST</i> exist_ with an IRI value. |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:FeatureOfInterest</code> |
| Expected values | |

4.1.12.9. Property: `sosa:hasSimpleResult`

| Property | Value |
|-----------------|---|
| IRI | <code>sosa:hasSimpleResult</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/sosa-hasSimpleResult |
| Status | <code>stable</code>  |
| Label | has simple result |
| Definition | The simple value of an Observation or Actuation or act of Sampling. |
| Scope note | |
| Implementation | Exactly 1 <code>sosa:hasSimpleResult</code> predicate <i>MUST</i> exist where the value node is an IRI or literal. |
| Cardinality | Exactly 1 |
| Node kind | |
| Class type | |
| Expected values | |

4.1.12.10. Property: `sosa:madeBySensor`


| Property | Value |
|----------------|---|
| IRI | <code>sosa:madeBySensor</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/sosa-madeBySensor |
| Status | <code>stable</code>  |
| Label | made by sensor |
| Definition | Relation between an Observation and the Sensor which made the Observations. |
| Scope note | |
| Implementation | A <code>sosa:madeBySensor</code> predicate <i>MAY</i> exist where the value node is an IRI. |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:Sensor</code> |

| Property | Value |
|-----------------|-------|
| Expected values | |


4.1.12.11. Property: `sosa:observedProperty`

| Property | Value |
|-----------------|---|
| IRI | <code>sosa:observedProperty</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/sosa-observedProperty |
| Status | stable  |
| Label | observed property |
| Definition | Relation linking an Observation to the property that was observed. The ObservableProperty should be a property of the FeatureOfInterest (linked by hasFeatureOfInterest) of this Observation. |
| Scope note | |
| Implementation | A <code>tern:Observation</code> <i>MUST</i> have exactly 1 <code>sosa:observedProperty</code> where the value node is an IRI. |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |


4.1.12.12. Property: `sosa:phenomenonTime`

| Property | Value |
|-----------------|--|
| IRI | <code>sosa:phenomenonTime</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/sosa-phenomenonTime |
| Status | stable  |
| Label | phenomenon time |
| Definition | The time that the Result of an Observation, Actuation or Sampling applies to the FeatureOfInterest. Not necessarily the same as the resultTime. May be an Interval or an Instant, or some other compound TemporalEntity. |
| Scope note | |
| Implementation | Exactly 1 <code>sosa:phenomenonTime</code> predicate <i>MUST</i> exist where the value node is a blank node or IRI of type <code>time:Instant</code> . |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:BlankNodeOrIRI</code> |
| Class type | <code>time:Instant</code> |
| Expected values | |

4.1.12.13. Property: tern:resultDateTime

| Property | Value |
|-----------------|--|
| IRI | <code>tern:resultDateTime</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/sosa-resultTime |
| Status | stable  |
| Label | result date time |
| Definition | The result time is the instant of time when the Observation, Actuation or Sampling activity was completed. |
| Scope note | |
| Implementation | A <code>tern:resultDateTime</code> predicate <i>MUST</i> have a literal value where the datatype is an <code>xsd:date</code> , <code>xsd:dateTime</code> or <code>xsd:dateTimeStamp</code> . |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:dateTime</code> <code>xsd:date</code> <code>xsd:dateTimeStamp</code> |
| Expected values | |

4.1.12.14. Property: sosa:usedProcedure


| Property | Value |
|-----------------|--|
| IRI | <code>sosa:usedProcedure</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/sosa-usedProcedure |
| Status | stable  |
| Label | used procedure |
| Definition | A relation to link to a re-usable Procedure used in making an Observation, an Actuation, or a Sample, typically through a Sensor, Actuator or Sampler. |
| Scope note | |
| Implementation | Exactly 1 <code>sosa:usedProcedure</code> <i>MUST</i> exist where the value node is an IRI. |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |

4.1.12.15. Property: tern:hasSiteVisit


| Property | Value |
|----------|--------------------------------|
| IRI | <code>tern:hasSiteVisit</code> |

| Property | Value |
|-----------------|---|
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-hasSiteVisit |
| Status | stable  |
| Label | has site visit |
| Definition | A property that links, e.g., a Site to a Site Visit. |
| Scope note | |
| Implementation | A maximum of 1 tern:hasSiteVisit <i>MAY</i> exist where the value node is an IRI of type tern:SiteVisit . |
| Cardinality | Maximum 1 |
| Node kind | sh:IRI |
| Class type | tern:SiteVisit |
| Expected values | |

4.1.12.16. Property: tern:observationType

| Property | Value |
|-----------------|---|
| IRI | tern:observationType |
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-observationType |
| Status | stable  |
| Label | observation type |
| Definition | The type of observation. |
| Scope note | |
| Implementation | A maximum of 1 tern:observationType <i>MAY</i> exist with an IRI value. |
| Cardinality | Maximum 1 |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.12.17. Property: void:inDataset

| Property | Value |
|------------|---|
| IRI | void:inDataset |
| Shape IRI | https://w3id.org/tern/shapes/tern/void-inDataset |
| Status | stable  |
| Label | in dataset |
| Definition | A link to the RDF payload's metadata which this resource was a part of. |
| Scope note | |

| Property | Value |
|-----------------|--|
| Implementation | There <i>MUST</i> exist exactly 1 <code>void:inDataset</code> property with an IRI value to a <code>tern:RDFDataset</code> . |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:RDFDataset</code> |
| Expected values | |

4.1.13. Class: `tern:ObservationCollection`

| Property | Value |
|------------|---|
| IRI | <code>tern:ObservationCollection</code> |
| Status | <code>experimental</code> ○ |
| Label | Observation collection |
| Definition | Collection of one or more observations, whose members share a common value for one or more property |
| Scope note | |

4.1.13.1. Property: `sosa:hasFeatureOfInterest`

| Property | Value |
|-----------------|---|
| IRI | <code>sosa:hasFeatureOfInterest</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/ObservationCollection-hasFeatureOfInterest |
| Status | <code>experimental</code> ○ |
| Label | has feature of interest |
| Definition | A relation between an Observation and the entity whose quality was observed, or between an Actuation and the entity whose property was modified, or between an act of Sampling and the entity that was sampled. |
| Scope note | |
| Implementation | A <code>tern:ObservationCollection</code> <i>MAY</i> have a maximum of 1 <code>sosa:hasFeatureOfInterest</code> predicate where the value node is an IRI of type <code>tern:FeatureOfInterest</code> . |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:FeatureOfInterest</code> |
| Expected values | |

4.1.13.2. Property: `sosa:hasMember`

| Property | Value |
|-----------------|---|
| IRI | <code>sosa:hasMember</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/ObservationCollection-hasMember |
| Status | experimental ○ |
| Label | has member |
| Definition | Link to a member of a collection of observations that share the same value for one or more of the characteristic properties. |
| Scope note | |
| Implementation | A <code>tern:ObservationCollection</code> <i>MUST</i> have at least 1 <code>sosa:hasMember</code> predicate where the value node is an IRI of type <code>tern:Observation</code> or <code>tern:ObservationCollection</code> . |
| Cardinality | Minimum 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:Observation</code> <code>tern:ObservationCollection</code> |
| Expected values | |

4.1.13.3. Property: `sosa:hasUltimateFeatureOfInterest`

| Property | Value |
|-----------------|---|
| IRI | <code>sosa:hasUltimateFeatureOfInterest</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/ObservationCollection-hasUltimateFeatureOfInterest |
| Status | experimental ○ |
| Label | has ultimate feature of interest |
| Definition | Link to the ultimate feature of interest of an observation or act of sampling. This is useful when the proximate feature of interest is a sample of the ultimate feature of interest, directly or transitively. |
| Scope note | |
| Implementation | A <code>tern:ObservationCollection</code> <i>MAY</i> have a maximum of 1 <code>sosa:hasUltimateFeatureOfInterest</code> where the value node is an IRI of type <code>tern:FeatureOfInterest</code> . |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:FeatureOfInterest</code> |
| Expected values | |

4.1.13.4. Property: `sosa:madeBySensor`

| Property | Value |
|-----------------|--|
| IRI | <code>sosa:madeBySensor</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/ObservationCollection-madeBySensor |
| Status | experimental ○ |
| Label | made by sensor |
| Definition | Relation between an Observation and the Sensor which made the Observations. |
| Scope note | |
| Implementation | A <code>tern:ObservationCollection</code> MAY have a maximum of 1 <code>sosa:madeBySensor</code> predicate where the value node is an IRI of type <code>tern:Sensor</code> . |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:Sensor</code> |
| Expected values | |

4.1.13.5. Property: `sosa:observedProperty`

| Property | Value |
|-----------------|---|
| IRI | <code>sosa:observedProperty</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/ObservationCollection-observedProperty |
| Status | stable ☑ |
| Label | observed property |
| Definition | Relation linking an Observation to the property that was observed. The ObservableProperty should be a property of the FeatureOfInterest (linked by <code>hasFeatureOfInterest</code>) of this Observation. |
| Scope note | |
| Implementation | A <code>tern:ObservationCollection</code> MAY have a maximum of 1 <code>sosa:observedProperty</code> predicate where the value node is an IRI. |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |

4.1.13.6. Property: `sosa:phenomenonTime`

| Property | Value |
|----------|----------------------------------|
| IRI | <code>sosa:phenomenonTime</code> |

| Property | Value |
|-----------------|--|
| Shape IRI | https://w3id.org/tern/shapes/tern/ObservationCollection-phenomenonTime |
| Status | experimental ○ |
| Label | phenomenon time |
| Definition | The time that the Result of an Observation, Actuation, or Sampling applies to the FeatureOfInterest. Not necessarily the same as the resultTime. May be an interval or an instant, or some other compound temporal entity. |
| Scope note | |
| Implementation | A <code>tern:ObservationCollection</code> MAY have a maximum of 1 <code>sosa:phenomenonTime</code> predicate where the value node is an IRI of type <code>time:Instant</code> . |
| Cardinality | Maximum 1 |
| Node kind | |
| Class type | <code>time:Instant</code> |
| Expected values | |

4.1.13.7. Property: tern:resultDateTime

| Property | Value |
|-----------------|--|
| IRI | <code>tern:resultDateTime</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/ObservationCollection-resultTime |
| Status | stable ☑ |
| Label | result time |
| Definition | The result time is the instant of time when the Observation, Actuation or Sampling activity was completed. |
| Scope note | |
| Implementation | A <code>tern:ObservationCollection</code> MAY have a maximum of 1 <code>tern:resultDateTime</code> predicate where the value node is a literal with the datatype <code>xsd:date</code> , <code>xsd:dateTime</code> or <code>xsd:dateTimeStamp</code> . |
| Cardinality | Maximum 1 |
| Node kind | |
| Class type | <code>xsd:dateTime</code> <code>xsd:date</code> <code>xsd:dateTimeStamp</code> |
| Expected values | |

4.1.13.8. Property: sosa:usedProcedure

| Property | Value |
|----------|---------------------------------|
| IRI | <code>sosa:usedProcedure</code> |

| Property | Value |
|-----------------|---|
| Shape IRI | https://w3id.org/tern/shapes/tern/ObservationCollection-usedProcedure |
| Status | experimental ○ |
| Label | used procedure |
| Definition | A relation to link to a re-usable Procedure used in making an Observation, an Actuation, or a Sample, typically through a Sensor, Actuator or Sampler. |
| Scope note | |
| Implementation | A tern:ObservationCollection MAY have a maximum of 1 sosa:usedProcedure predicate where the value node is an IRI. |
| Cardinality | Maximum 1 |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.14. Class: tern:RDFDataset


| Property | Value |
|------------|---|
| IRI | tern:RDFDataset |
| Status | stable ☑ |
| Label | RDFDataset |
| Definition | A set of RDF triples that are published, maintained or aggregated by a single provider. |
| Scope note | This is a specialised version of the void:Dataset class where it may be constrained by additional property shapes in the future. |

4.1.14.1. Property: dcterms:contributor


| Property | Value |
|----------------|---|
| IRI | dcterms:contributor |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-contributor |
| Status | stable ☑ |
| Label | contributor |
| Definition | An entity, such as a person, organisation, or service, that is responsible for making contributions to the dataset. The contributor should be described as an RDF resource, rather than just providing the name as a literal. |
| Scope note | |
| Implementation | A tern:RDFDataset MAY have a dcterms:contributor predicate where the value node is an IRI. |

| Property | Value |
|-----------------|--------|
| Cardinality | |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.14.2. Property: dcterms:created

| Property | Value |
|-----------------|--|
| IRI | dcterms:created |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-created |
| Status | stable  |
| Label | created |
| Definition | Date of creation of the dataset. The value should be formatted and data-typed as an <code>xsd:date</code> . |
| Scope note | |
| Implementation | A <code>tern:RDFDataset</code> MAY have a <code>dcterms:created</code> predicate where the value node is a literal with the datatype <code>xsd:date</code> . |
| Cardinality | |
| Node kind | |
| Class type | xsd:date |
| Expected values | |

4.1.14.3. Property: dcterms:creator

| Property | Value |
|----------------|--|
| IRI | dcterms:creator |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-creator |
| Status | stable  |
| Label | creator |
| Definition | An entity, such as a person, organisation, or service, that is primarily responsible for creating the dataset. The creator should be described as an RDF resource, rather than just providing the name as a literal. |
| Scope note | |
| Implementation | A <code>tern:RDFDataset</code> MAY have a <code>dcterms:creator</code> predicate where the value node is an IRI. |
| Cardinality | |
| Node kind | sh:IRI |

| Property | Value |
|-----------------|-------|
| Class type | |
| Expected values | |


4.1.14.4. Property: **dcterms:date**

| Property | Value |
|-----------------|--|
| IRI | dcterms:date |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-date |
| Status | stable ☑ |
| Label | date |
| Definition | A point or period of time associated with an event in the life-cycle of the resource. The value should be formatted and data-typed as an xsd:date . |
| Scope note | |
| Implementation | A tern:RDFDataset <i>MAY</i> have a dcterms:date predicate where the value node is a literal with the datatype xsd:date . |
| Cardinality | |
| Node kind | |
| Class type | xsd:date |
| Expected values | |


4.1.14.5. Property: **dcterms:description**

| Property | Value |
|-----------------|---|
| IRI | dcterms:description |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-description |
| Status | stable ☑ |
| Label | description |
| Definition | A textual description of the dataset. |
| Scope note | |
| Implementation | A tern:RDFDataset <i>MAY</i> have a dcterms:description predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | |
| Class type | xsd:string |
| Expected values | |

4.1.14.6. Property: `dcterms:issued`


| Property | Value |
|-----------------|--|
| IRI | <code>dcterms:issued</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-issued |
| Status | stable  |
| Label | issued |
| Definition | Date of formal issuance (e.g., publication) of the dataset. The value should be formatted and datatyped as an <code>xsd:date</code> . |
| Scope note | |
| Implementation | A <code>tern:RDFDataset</code> <i>MAY</i> have a <code>dcterms:issued</code> predicate where the value node is a literal with the datatype <code>xsd:date</code> . |
| Cardinality | |
| Node kind | |
| Class type | <code>xsd:date</code> |
| Expected values | |

4.1.14.7. Property: `dcterms:license`


| Property | Value |
|-----------------|---|
| IRI | <code>dcterms:license</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-license |
| Status | stable  |
| Label | license |
| Definition | A legal document giving official permission to do something with the resource. |
| Scope note | |
| Implementation | A <code>tern:RDFDataset</code> <i>MAY</i> have a <code>dcterms:license</code> predicate where the value node is an IRI. |
| Cardinality | |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |

4.1.14.8. Property: `dcterms:modified`


| Property | Value |
|-----------|---|
| IRI | <code>dcterms:modified</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-modified |

| Property | Value |
|-----------------|---|
| Status | stable  |
| Label | modified |
| Definition | Date on which the dataset was changed. The value should be formatted and datatyped as an <code>xsd:date</code> . |
| Scope note | |
| Implementation | A <code>tern:RDFDataset</code> MAY have a <code>dcterms:modified</code> predicate where the value node is a literal with the datatype <code>xsd:date</code> . |
| Cardinality | |
| Node kind | |
| Class type | <code>xsd:date</code> |
| Expected values | |

4.1.14.9. Property: `dcterms:publisher`

| Property | Value |
|-----------------|--|
| IRI | <code>dcterms:publisher</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-publisher |
| Status | stable  |
| Label | publisher |
| Definition | An entity, such as a person, organisation, or service, that is responsible for making the dataset available. The publisher should be described as an RDF resource, rather than just providing the name as a literal. |
| Scope note | |
| Implementation | A <code>tern:RDFDataset</code> MAY have a <code>dcterms:publisher</code> predicate where the value node is an IRI. |
| Cardinality | |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |

4.1.14.10. Property: `dcterms:rightsHolder`

| Property | Value |
|-----------|---|
| IRI | <code>dcterms:rightsHolder</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-rightsHolder |
| Status | stable  |
| Label | rights holder |

| Property | Value |
|-----------------|--|
| Definition | A person or organization owning or managing rights over the resource. |
| Scope note | |
| Implementation | A tern:RDFDataset MAY have a dcterms:rightsHolder predicate where the value node is an IRI or literal. |
| Cardinality | |
| Node kind | sh:IRIOrLiteral |
| Class type | |
| Expected values | |

4.1.14.11. Property: dcterms:source

| Property | Value |
|-----------------|--|
| IRI | dcterms:source |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-source |
| Status | stable ☑ |
| Label | source |
| Definition | A related resource from which the dataset is derived. The source should be described as an RDF resource, rather than as a literal. |
| Scope note | |
| Implementation | A tern:RDFDataset MAY have a dcterms:source predicate where the value node is an IRI. |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.14.12. Property: dcterms:subject

| Property | Value |
|------------|--|
| IRI | dcterms:subject |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-subject |
| Status | stable ☑ |
| Label | subject |
| Definition | A topic of the resource. Recommended practice is to refer to the subject with a URI. If this is not possible or feasible, a literal value that identifies the subject may be provided. Both should preferably refer to a subject in a controlled vocabulary. |


| Property | Value |
|-----------------|---|
| Scope note | |
| Implementation | A tern:RDFDataset <i>MAY</i> have a dterms:subject predicate where the value node is an IRI or literal. |
| Cardinality | |
| Node kind | sh:IRIOrLiteral |
| Class type | |
| Expected values | |

4.1.14.13. Property: void:subset


| Property | Value |
|-----------------|---|
| IRI | void:subset |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-subset |
| Status | stable ✓ |
| Label | subset |
| Definition | <p>The void:subset property can be used to provide descriptions of parts of a dataset. A part of a dataset is itself a void:Dataset, and any of the annotations for datasets listed in this guide can be applied to the subset. Reasons for subdividing a dataset might include:</p> <ul style="list-style-type: none"> - Parts have different provenance (different dterms:source) - Parts have different publication dates (different dterms:date) - Parts are accesible through different SPARQL endpoints (different void:sparqlEndpoint) - Parts are about different topics (different dterms:subject) - Parts can be downloaded separately in different RDF dumps (different void:dataDump) |
| Scope note | |
| Implementation | A tern:RDFDataset <i>MAY</i> have a void:subset predicate where the value node is an IRI of type void:Dataset . |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | void:Dataset |
| Expected values | |

4.1.14.14. Property: dterms:title


| Property | Value |
|-----------|---|
| IRI | dterms:title |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-title |

| Property | Value |
|-----------------|--|
| Status | stable  |
| Label | title |
| Definition | The name of the dataset. |
| Scope note | |
| Implementation | A <code>tern:RDFDataset</code> MAY have a <code>dcterms:title</code> predicate where the value node is a literal with a datatype <code>xsd:string</code> . |
| Cardinality | |
| Node kind | |
| Class type | <code>xsd:string</code> |
| Expected values | |

4.1.14.15. Property: void:vocabulary


| Property | Value |
|-----------------|---|
| IRI | <code>void:vocabulary</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/RDFDataset-vocabulary |
| Status | stable  |
| Label | vocabulary |
| Definition | A vocabulary or <code>owl:Ontology</code> whose classes or properties are used in a <code>void:Dataset</code> . |
| Scope note | |
| Implementation | A <code>tern:RDFDataset</code> MAY have a <code>void:vocabulary</code> predicate where the value node is an IRI. |
| Cardinality | |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |

4.1.15. Class: tern:Result


| Property | Value |
|------------|---|
| IRI | <code>tern:Result</code> |
| Status | stable  |
| Label | Result |
| Definition | The result of an <code>Observation</code> , <code>Actuation</code> , or act of <code>Sampling</code> . To store an observation's simple result value one can use the <code>hasSimpleResult</code> property. |

| Property | Value |
|------------|-------|
| Scope note | |


4.1.15.1. Property: **sosa:isResultOf**

| Property | Value |
|-----------------|---|
| IRI | sosa:isResultOf |
| Shape IRI | https://w3id.org/tern/shapes/tern/Result-isResultOf |
| Status | stable  |
| Label | is result of |
| Definition | Relation linking a Result to the Observation or Actuation or act of Sampling that created or caused it. |
| Scope note | |
| Implementation | A tern:Result MAY have at most 1 sosa:isResultOf predicate where the value node is an IRI of type tern:Observation or tern:Sampling . |
| Cardinality | Maximum 1 |
| Node kind | sh:IRI |
| Class type | tern:Observation tern:Sampling |
| Expected values | |

4.1.16. Class: **tern:Sample**

| Property | Value |
|------------|--|
| IRI | tern:Sample |
| Status | stable  |
| Label | Sample |
| Definition | A feature which is intended to be representative of a FeatureOfInterest on which Observations may be made. |
| Scope note | A sample may be a physical sample or a sub-divided section of some larger feature of interest. For example, land surface, plant population, ground cover are all common sub-samples of a site (feature of interest) in ecological surveys. |

4.1.16.1. Property: **sosa:isResultOf**

| Property | Value |
|-----------|---|
| IRI | sosa:isResultOf |
| Shape IRI | https://w3id.org/tern/shapes/tern/Sample-isResultOf |
| Status | stable  |

| Property | Value |
|-----------------|---|
| Label | is result of |
| Definition | Relation linking a Result to the Sampling that created or caused it. |
| Scope note | |
| Implementation | A tern:Sample <i>MAY</i> have a sosa:isResultOf predicate where the value node is an IRI of type tern:Sampling . |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | tern:Sampling |
| Expected values | |

4.1.16.2. Property: sosa:isSampleOf


| Property | Value |
|-----------------|--|
| IRI | sosa:isSampleOf |
| Shape IRI | https://w3id.org/tern/shapes/tern/Sample-isSampleOf |
| Status | stable ☑ |
| Label | is sample of |
| Definition | Relation from a Sample to the FeatureOfInterest that it is intended to be representative of. |
| Scope note | |
| Implementation | A tern:Sample <i>MUST</i> have at least 1 sosa:isSampleOf predicate where the value node is an IRI of type tern:FeatureOfInterest . |
| Cardinality | Minimum 1 |
| Node kind | sh:IRI |
| Class type | tern:FeatureOfInterest |
| Expected values | |

4.1.17. Class: tern:Sampler


| Property | Value |
|------------|---|
| IRI | tern:Sampler |
| Status | stable ☑ |
| Label | Sampler |
| Definition | A device that is used by, or implements, a (Sampling) Procedure to create or transform one or more samples. |

| Property | Value |
|------------|---|
| Scope note | A ball mill, diamond drill, hammer, hypodermic syringe and needle, image Sensor or a soil auger can all act as sampling devices (i.e., be Samplers). However, sometimes the distinction between the Sampler and the Sensor is not evident, as they are packaged as a unit. A Sampler need not be a physical device. |

4.1.17.1. Property: `ssn:implements`


| Property | Value |
|-----------------|--|
| IRI | <code>ssn:implements</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Sampler-implements |
| Status | stable  |
| Label | implements |
| Definition | Relation between an entity that implements a Procedure in some executable way and the Procedure (an algorithm, procedure or method). |
| Scope note | |
| Implementation | A <code>tern:Sampler</code> <i>MUST</i> have at least 1 <code>ssn:implements</code> predicate where the value node is an IRI. |
| Cardinality | Minimum 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |

4.1.17.2. Property: `sosa:madeSampling`


| Property | Value |
|----------------|---|
| IRI | <code>sosa:madeSampling</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/sosa-madeSampling |
| Status | stable  |
| Label | made sampling |
| Definition | Relation between a Sampler (sampling device or entity) and the Sampling act it performed. |
| Scope note | |
| Implementation | A <code>sosa:madeSampling</code> predicate <i>MAY</i> exist where the value node is an IRI. |
| Cardinality | |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:Sampling</code> |

| Property | Value |
|-----------------|-------|
| Expected values | |

4.1.18. Class: tern:Sampling

| Property | Value |
|------------|--|
| IRI | tern:Sampling |
| Status | stable  |
| Label | Sampling |
| Definition | An activity of Sampling carries out a (Sampling) Procedure to create or transform one or more Samples . |
| Scope note | Crushing a rock sample in a ball mill to create sub-samples of the rock. Digging a pit through a soil sequence. Dividing a field site into quadrants. Drawing blood from a patient. Drilling an observation well. Establishing a station for environmental monitoring. Registering an image of the landscape. Sieving a powder to separate the subset finer than 100-mesh. Selecting a subset of a population. Splitting a piece of drill-core to create two new samples. Taking a diamond-drill core from a rock outcrop. |

4.1.18.1. Property: sosa:hasResult

| Property | Value |
|-----------------|---|
| IRI | sosa:hasResult |
| Shape IRI | https://w3id.org/tern/shapes/tern/Sampling-hasResult |
| Status | stable  |
| Label | has result |
| Definition | Relation linking an Observation or Actuation or act of Sampling and a Result or Sample. |
| Scope note | |
| Implementation | A tern:Sampling <i>MUST</i> have at least 1 sosa:hasResult predicate where the value node is an IRI of type tern:Sample . |
| Cardinality | Minimum 1 |
| Node kind | sh:IRI |
| Class type | tern:Sample |
| Expected values | |

4.1.18.2. Property: sosa:madeBySampler

| Property | Value |
|----------|------------------------------------|
| IRI | sosa:madeBySampler |

| Property | Value |
|-----------------|--|
| Shape IRI | https://w3id.org/tern/shapes/tern/Sampling-madeBySampler |
| Status | stable ☑ |
| Label | made by sampler |
| Definition | Relation linking an act of Sampling to the Sampler (sampling device or entity) that made it. |
| Scope note | |
| Implementation | A <code>tern:Sampling</code> MAY have a <code>sosa:madeBySampler</code> predicate where the value node is an IRI of type <code>tern:Sampler</code> . |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | <code>tern:Sampler</code> |
| Expected values | |

4.1.18.3. Property: `dcterms:identifier`


| Property | Value |
|-----------------|---|
| IRI | <code>dcterms:identifier</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/dcterms-identifier |
| Status | stable ☑ |
| Label | identifier |
| Definition | An unambiguous reference to the resource within a given context. |
| Scope note | |
| Implementation | N/A |
| Cardinality | |
| Node kind | |
| Class type | |
| Expected values | |

4.1.18.4. Property: `dcterms:type`


| Property | Value |
|-----------|---|
| IRI | <code>dcterms:type</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/dcterms-type |
| Status | stable ☑ |
| Label | type |

| Property | Value |
|-----------------|---|
| Definition | Recommended practice is to use a controlled vocabulary such as the DCMI Type Vocabulary DCMI-TYPE . To describe the file format, physical medium, or dimensions of the resource, use the property Format. |
| Scope note | Useful to capture the proximate class type in situations when <code>rdfs:subClassOf</code> entailment is enabled and <code>rdf:type</code> is not suitable. |
| Implementation | A <code>dcterms:type</code> predicate <i>MUST</i> have an IRI value. |
| Cardinality | |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |

4.1.18.5. Property: `geo:hasGeometry`

| Property | Value |
|-----------------|---|
| IRI | <code>geo:hasGeometry</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/geo-hasGeometry |
| Status | <code>stable</code>  |
| Label | has geometry |
| Definition | A spatial representation for a given feature. |
| Scope note | |
| Implementation | A <code>geo:hasGeometry</code> predicate <i>MUST</i> have a blank node or IRI value. |
| Cardinality | |
| Node kind | <code>sh:BlankNodeOrIRI</code> |
| Class type | <code>geo:Geometry</code> |
| Expected values | |

4.1.18.6. Property: `prov:qualifiedAssociation`

| Property | Value |
|------------|--|
| IRI | <code>prov:qualifiedAssociation</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/prov-qualifiedAssociation |
| Status | <code>stable</code>  |
| Label | qualified association |
| Definition | An activity association is an assignment of responsibility to an agent for an activity, indicating that the agent had a role in the activity. It further allows for a plan to be specified, which is the plan intended by the agent to achieve some goals in the context of this activity. |

| Property | Value |
|-----------------|---|
| Scope note | |
| Implementation | A prov:qualifiedAssociation <i>MUST</i> have a blank node or IRI value of type prov:Association . |
| Cardinality | |
| Node kind | sh:BlankNodeOrIRI |
| Class type | prov:Association |
| Expected values | |

4.1.18.7. Property: prov:wasAssociatedWith

| Property | Value |
|-----------------|--|
| IRI | prov:wasAssociatedWith |
| Shape IRI | https://w3id.org/tern/shapes/tern/prov-wasAssociatedWith |
| Status | stable ☑ |
| Label | was associated with |
| Definition | An activity association is an assignment of responsibility to an agent for an activity, indicating that the agent had a role in the activity. It further allows for a plan to be specified, which is the plan intended by the agent to achieve some goals in the context of this activity. |
| Scope note | |
| Implementation | A prov:wasAssociatedWith predicate <i>MUST</i> an IRI value of type prov:Agent . |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | prov:Agent |
| Expected values | |

4.1.18.8. Property: rdfs:comment

| Property | Value |
|----------------|---|
| IRI | rdfs:comment |
| Shape IRI | https://w3id.org/tern/shapes/tern/rdfs-comment |
| Status | stable ☑ |
| Label | comment |
| Definition | A description of the subject resource. |
| Scope note | |
| Implementation | An rdfs:comment <i>MUST</i> have a literal value. |
| Cardinality | |

| Property | Value |
|-----------------|-------------------|
| Node kind | sh:Literal |
| Class type | |
| Expected values | |

4.1.18.9. Property: **sosa:hasFeatureOfInterest**

| Property | Value |
|-----------------|---|
| IRI | sosa:hasFeatureOfInterest |
| Shape IRI | https://w3id.org/tern/shapes/tern/sosa-hasFeatureOfInterest |
| Status | stable ☑ |
| Label | has feature of interest |
| Definition | A relation between an Observation and the entity whose quality was observed, or between an Actuation and the entity whose property was modified, or between an act of Sampling and the entity that was sampled. |
| Scope note | |
| Implementation | Exactly 1 sosa:hasFeatureOfInterest predicate <i>MUST</i> exist_ with an IRI value. |
| Cardinality | Exactly 1 |
| Node kind | sh:IRI |
| Class type | tern:FeatureOfInterest |
| Expected values | |

4.1.18.10. Property: **tern:resultDateTime**

| Property | Value |
|----------------|--|
| IRI | tern:resultDateTime |
| Shape IRI | https://w3id.org/tern/shapes/tern/sosa-resultTime |
| Status | stable ☑ |
| Label | result date time |
| Definition | The result time is the instant of time when the Observation, Actuation or Sampling activity was completed. |
| Scope note | |
| Implementation | A tern:resultDateTime predicate <i>MUST</i> have a literal value where the datatype is an xsd:date , xsd:dateTime or xsd:dateTimeStamp . |
| Cardinality | Exactly 1 |
| Node kind | sh:Literal |

| Property | Value |
|-----------------|---|
| Class type | xsd:dateTime xsd:date xsd:dateTimeStamp |
| Expected values | |


4.1.18.11. Property: **sosa:usedProcedure**

| Property | Value |
|-----------------|--|
| IRI | sosa:usedProcedure |
| Shape IRI | https://w3id.org/tern/shapes/tern/sosa-usedProcedure |
| Status | stable ☑ |
| Label | used procedure |
| Definition | A relation to link to a re-usable Procedure used in making an Observation, an Actuation, or a Sample, typically through a Sensor, Actuator or Sampler. |
| Scope note | |
| Implementation | Exactly 1 sosa:usedProcedure <i>MUST</i> exist where the value node is an IRI. |
| Cardinality | Exactly 1 |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |


4.1.18.12. Property: **tern:hasSiteVisit**

| Property | Value |
|-----------------|---|
| IRI | tern:hasSiteVisit |
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-hasSiteVisit |
| Status | stable ☑ |
| Label | has site visit |
| Definition | A property that links, e.g., a Site to a Site Visit. |
| Scope note | |
| Implementation | A maximum of 1 tern:hasSiteVisit <i>MAY</i> exist where the value node is an IRI of type tern:SiteVisit. |
| Cardinality | Maximum 1 |
| Node kind | sh:IRI |
| Class type | tern:SiteVisit |
| Expected values | |

4.1.18.13. Property: tern:samplingType

| Property | Value |
|-----------------|---|
| IRI | <code>tern:samplingType</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-samplingType |
| Status | stable  |
| Label | sampling type |
| Definition | The type of sampling act. |
| Scope note | |
| Implementation | A <code>tern:Sampling</code> MAY have a maximum of 1 <code>tern:samplingType</code> predicate where the value node is an IRI. |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |

4.1.18.14. Property: void:inDataset


| Property | Value |
|-----------------|--|
| IRI | <code>void:inDataset</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/void-inDataset |
| Status | stable  |
| Label | in dataset |
| Definition | A link to the RDF payload's metadata which this resource was a part of. |
| Scope note | |
| Implementation | There <i>MUST</i> exist exactly 1 <code>void:inDataset</code> property with an IRI value to a <code>tern:RDFDataset</code> . |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:RDFDataset</code> |
| Expected values | |

4.1.19. Class: tern:Sensor


| Property | Value |
|----------|--|
| IRI | <code>tern:Sensor</code> |
| Status | stable  |
| Label | Sensor |

| Property | Value |
|------------|---|
| Definition | Device, agent (including humans), or software (simulation) involved in, or implementing, a Procedure. Sensors respond to a stimulus, e.g., a change in the environment, or input data composed from the results of prior Observations, and generate a Result. Sensors can be hosted by Platforms. |
| Scope note | |

4.1.19.1. Property: `ssn:implements`

| Property | Value |
|-----------------|--|
| IRI | <code>ssn:implements</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Sensor-implements |
| Status | stable  |
| Label | implements |
| Definition | Relation between an entity that implements a Procedure in some executable way and the Procedure (an algorithm, procedure or method). |
| Scope note | |
| Implementation | A <code>tern:Sensor</code> <i>MUST</i> have at least 1 <code>ssn:implements</code> predicate where the value node is an IRI. |
| Cardinality | Minimum 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |

4.1.19.2. Property: `sosa:madeObservation`

| Property | Value |
|----------------|--|
| IRI | <code>sosa:madeObservation</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Sensor-madeObservation |
| Status | stable  |
| Label | made observation |
| Definition | Relation between a <code>Sensor</code> and an <code>Observation</code> made by the <code>Sensor</code> . |
| Scope note | |
| Implementation | A <code>tern:Sensor</code> <i>MAY</i> have an <code>sosa:madeObservation</code> predicate where the value node is an IRI of type <code>tern:Observation</code> . |
| Cardinality | |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>tern:Observation</code> |

| Property | Value |
|-----------------|-------|
| Expected values | |

4.1.19.3. Property: **sosa:observes**

| Property | Value |
|-----------------|---|
| IRI | sosa:observes |
| Shape IRI | https://w3id.org/tern/shapes/tern/Sensor-observes |
| Status | stable ☑ |
| Label | observes |
| Definition | Relation between a Sensor and an ObservableProperty that it is capable of sensing. |
| Scope note | |
| Implementation | A tern:Sensor <i>MAY</i> have an sosa:observes predicate where the value node is an IRI. |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.20. Class: **tern:Site**

| Property | Value |
|------------|---|
| IRI | tern:Site |
| Status | stable ☑ |
| Label | Site |
| Definition | An ecological monitoring site where observations and samplings occur. This Site class is a subclass of Sample since ecological sites are designed to be representative of an environmental system (which may be an ecosystem or bioregion) or zone (which may be a zone such as a parcel or tract). |
| Scope note | Ausplots Rangelands Site 59858 (Site Name: WAACOO0011) |

4.1.20.1. Property: **tern:dimension**

| Property | Value |
|-----------|---|
| IRI | tern:dimension |
| Shape IRI | https://w3id.org/tern/shapes/tern/Site-dimension |
| Status | experimental ○ |
| Label | dimension |

| Property | Value |
|-----------------|--|
| Definition | Dimension in metres. |
| Scope note | |
| Implementation | A tern:Site MAY have a maximum of 1 tern:dimension predicate where the value node is a literal with the datatype <code>xsd:string</code> . |
| Cardinality | Maximum 1 |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.20.2. Property: **tern:hasSiteVisit**

| Property | Value |
|-----------------|---|
| IRI | tern:hasSiteVisit |
| Shape IRI | https://w3id.org/tern/shapes/tern/Site-hasSiteVisit |
| Status | stable ☑ |
| Label | has site visit |
| Definition | A property that links, e.g., a Site to a Site Visit. |
| Scope note | |
| Implementation | A tern:Site MAY have a tern:hasSiteVisit predicate where the value node is an IRI of type tern:SiteVisit . |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | tern:SiteVisit |
| Expected values | |

4.1.20.3. Property: **tern:locationProcedure**

| Property | Value |
|----------------|---|
| IRI | tern:locationProcedure |
| Shape IRI | https://w3id.org/tern/shapes/tern/Site-locationProcedure |
| Status | experimental ○ |
| Label | location procedure |
| Definition | Link to a procedure used to obtain the location. |
| Scope note | |
| Implementation | A tern:Site MAY have a maximum of 1 tern:locationProcedure predicate where the value node is an IRI. |

| Property | Value |
|-----------------|-----------|
| Cardinality | Maximum 1 |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.20.4. Property: geo:sfWithin

| Property | Value |
|-----------------|---|
| IRI | geo:sfWithin |
| Shape IRI | https://w3id.org/tern/shapes/tern/geo-sfWithin |
| Status | experimental ○ |
| Label | SF within |
| Definition | Exists if the subject SpatialObject is spatially within the object SpatialObject. DE-9IM: T*FF* |
| Scope note | |
| Implementation | A geo:sfWithin <i>MUST</i> have an IRI value. |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.20.5. Property: tern:locationDescription

| Property | Value |
|----------------|---|
| IRI | tern:locationDescription |
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-locationDescription |
| Status | experimental ○ |
| Label | location description |
| Definition | The description of the site's location. Example: 10km west of Fletcherview Tropical Rangeland SuperSite. |
| Scope note | |
| Implementation | A tern:locationDescription <i>MUST</i> have a literal value with the datatype xsd:string. |
| Cardinality | Maximum 1 |
| Node kind | sh:Literal |
| Class type | xsd:string |

| Property | Value |
|-----------------|-------|
| Expected values | |

4.1.20.6. Property: tern:siteDescription

| Property | Value |
|-----------------|--|
| IRI | <code>tern:siteDescription</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-siteDescription |
| Status | <code>experimental</code> ○ |
| Label | site description |
| Definition | The description of the site. Example: Outer fringe of larger lake chain, isolated by reddish dunes, yellow sand fan into western edge. Very few, 3, plants regenerating after recent moderate rains. Silt, sand with scattered iron conglomerate stones on surface. |
| Scope note | |
| Implementation | A <code>tern:siteDescription</code> <i>MUST</i> have a literal value with the datatype <code>xsd:string</code> . |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:string</code> |
| Expected values | |

4.1.21. Class: tern:SiteVisit

| Property | Value |
|------------|--|
| IRI | <code>tern:SiteVisit</code> |
| Status | <code>stable</code> ☑ |
| Label | Site Visit |
| Definition | A Site Visit is a discrete time-bounded activity at a <code>Site</code> , during which <code>Sampling</code> or <code>Observation</code> activities occur. |
| Scope note | |

4.1.21.1. Property: prov:endedAtTime


| Property | Value |
|-----------|---|
| IRI | <code>prov:endedAtTime</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/SiteVisit-endedAtTime |
| Status | <code>stable</code> ☑ |
| Label | ended at time |

| Property | Value |
|-----------------|--|
| Definition | The time at which an activity ended. |
| Scope note | |
| Implementation | A <code>tern:SiteVisit</code> <i>MAY</i> have a maximum of 1 <code>prov:endedAtTime</code> predicate where the value node is a literal with the datatype <code>xsd:dateTime</code> . |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:dateTime</code> |
| Expected values | |

4.1.21.2. Property: `prov:startedAtTime`


| Property | Value |
|-----------------|--|
| IRI | <code>prov:startedAtTime</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/SiteVisit-startedAtTime |
| Status | <code>stable</code>  |
| Label | started at time |
| Definition | The time at which an activity started. |
| Scope note | |
| Implementation | A <code>tern:SiteVisit</code> <i>MUST</i> have exactly 1 <code>prov:startedAtTime</code> predicate where the value node is a literal with the datatype <code>xsd:dateTime</code> . |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:dateTime</code> |
| Expected values | |

4.1.21.3. Property: `dcterms:identifier`


| Property | Value |
|----------------|---|
| IRI | <code>dcterms:identifier</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/dcterms-identifier |
| Status | <code>stable</code>  |
| Label | identifier |
| Definition | An unambiguous reference to the resource within a given context. |
| Scope note | |
| Implementation | N/A |
| Cardinality | |

| Property | Value |
|-----------------|-------|
| Node kind | |
| Class type | |
| Expected values | |

4.1.21.4. Property: **dcterms:type**

| Property | Value |
|-----------------|---|
| IRI | dcterms:type |
| Shape IRI | https://w3id.org/tern/shapes/tern/dcterms-type |
| Status | stable  |
| Label | type |
| Definition | Recommended practice is to use a controlled vocabulary such as the DCMI Type Vocabulary DCMI-TYPE . To describe the file format, physical medium, or dimensions of the resource, use the property Format. |
| Scope note | Useful to capture the proximate class type in situations when rdfs:subClassOf entailment is enabled and rdf:type is not suitable. |
| Implementation | A dcterms:type predicate <i>MUST</i> have an IRI value. |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.21.5. Property: **prov:qualifiedAssociation**

| Property | Value |
|----------------|--|
| IRI | prov:qualifiedAssociation |
| Shape IRI | https://w3id.org/tern/shapes/tern/prov-qualifiedAssociation |
| Status | stable  |
| Label | qualified association |
| Definition | An activity association is an assignment of responsibility to an agent for an activity, indicating that the agent had a role in the activity. It further allows for a plan to be specified, which is the plan intended by the agent to achieve some goals in the context of this activity. |
| Scope note | |
| Implementation | A prov:qualifiedAssociation <i>MUST</i> have a blank node or IRI value of type prov:Association . |
| Cardinality | |

| Property | Value |
|-----------------|-------------------|
| Node kind | sh:BlankNodeOrIRI |
| Class type | prov:Association |
| Expected values | |

4.1.21.6. Property: prov:wasAssociatedWith

| Property | Value |
|-----------------|--|
| IRI | prov:wasAssociatedWith |
| Shape IRI | https://w3id.org/tern/shapes/tern/prov-wasAssociatedWith |
| Status | stable ☑ |
| Label | was associated with |
| Definition | An activity association is an assignment of responsibility to an agent for an activity, indicating that the agent had a role in the activity. It further allows for a plan to be specified, which is the plan intended by the agent to achieve some goals in the context of this activity. |
| Scope note | |
| Implementation | A prov:wasAssociatedWith predicate <i>MUST</i> an IRI value of type prov:Agent . |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | prov:Agent |
| Expected values | |

4.1.21.7. Property: tern:locationDescription

| Property | Value |
|----------------|---|
| IRI | tern:locationDescription |
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-locationDescription |
| Status | experimental ○ |
| Label | location description |
| Definition | The description of the site's location. Example: 10km west of Fletcherview Tropical Rangeland SuperSite. |
| Scope note | |
| Implementation | A tern:locationDescription <i>MUST</i> have a literal value with the datatype xsd:string . |
| Cardinality | Maximum 1 |
| Node kind | sh:Literal |

| Property | Value |
|-----------------|------------|
| Class type | xsd:string |
| Expected values | |


4.1.21.8. Property: tern:siteDescription

| Property | Value |
|-----------------|---|
| IRI | tern:siteDescription |
| Shape IRI | https://w3id.org/tern/shapes/tern/tern-siteDescription |
| Status | experimental ○ |
| Label | site description |
| Definition | <p>The description of the site.</p> <p>Example: Outer fringe of larger lake chain, isolated by reddish dunes, yellow sand fan into western edge. Very few, 3, plants regenerating after recent moderate rains. Silt, sand with scattered iron conglomerate stones on surface.</p> |
| Scope note | |
| Implementation | A tern:siteDescription <i>MUST</i> have a literal value with the datatype xsd:string. |
| Cardinality | Maximum 1 |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |


4.1.21.9. Property: void:inDataset

| Property | Value |
|-----------------|---|
| IRI | void:inDataset |
| Shape IRI | https://w3id.org/tern/shapes/tern/void-inDataset |
| Status | stable ☑ |
| Label | in dataset |
| Definition | A link to the RDF payload's metadata which this resource was a part of. |
| Scope note | |
| Implementation | There <i>MUST</i> exist exactly 1 void:inDataset property with an IRI value to a tern:RDFDataset. |
| Cardinality | Exactly 1 |
| Node kind | sh:IRI |
| Class type | tern:RDFDataset |
| Expected values | |


4.1.22. Class: tern:System

| Property | Value |
|------------|--|
| IRI | tern:System |
| Status | stable  |
| Label | System |
| Definition | System is a unit of abstraction for pieces of infrastructure that implement Procedures. A System may have components, its subsystems, which are other Systems. |
| Scope note | |

4.1.22.1. Property: ssn:hasDeployment

| Property | Value |
|-----------------|---|
| IRI | ssn:hasDeployment |
| Shape IRI | https://w3id.org/tern/shapes/tern/System-hasDeployment |
| Status | experimental  |
| Label | has deployment |
| Definition | Relation between a System and a Deployment, recording that the System is deployed in that Deployment. |
| Scope note | |
| Implementation | A tern:System <i>MAY</i> have an ssn:hasDeployment predicate where the value node is an IRI of type tern:Deployment . |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | tern:Deployment |
| Expected values | |

4.1.22.2. Property: sosa:isHostedBy

| Property | Value |
|------------|---|
| IRI | sosa:isHostedBy |
| Shape IRI | https://w3id.org/tern/shapes/tern/System-isHostedBy |
| Status | experimental  |
| Label | is hosted by |
| Definition | Relation between a Sensor, Actuator, Sampler, or Platform, and the Platform that it is mounted on or hosted by. |
| Scope note | |

| Property | Value |
|-----------------|--|
| Implementation | A tern:System <i>MAY</i> have a maximum of 1 sosa:isHostedBy predicate where the value node is an IRI of type tern:Platform . |
| Cardinality | Maximum 1 |
| Node kind | sh:IRI |
| Class type | tern:Platform |
| Expected values | |

4.1.22.3. Property: tern:systemType

| Property | Value |
|-----------------|---|
| IRI | tern:systemType |
| Shape IRI | https://w3id.org/tern/shapes/tern/System-systemType |
| Status | experimental ○ |
| Label | system type |
| Definition | The type of system. Values are from some controlled vocabulary. |
| Scope note | |
| Implementation | A tern:System <i>MAY</i> have a tern:systemType predicate where the value node is an IRI. |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.22.4. Property: dcterms:type

| Property | Value |
|----------------|--|
| IRI | dcterms:type |
| Shape IRI | https://w3id.org/tern/shapes/tern/dcterms-type |
| Status | stable ☑ |
| Label | type |
| Definition | Recommended practice is to use a controlled vocabulary such as the DCMI Type Vocabulary DCMI-TYPE . To describe the file format, physical medium, or dimensions of the resource, use the property Format. |
| Scope note | Useful to capture the proximate class type in situations when rdfs:subClassOf entailment is enabled and rdf:type is not suitable. |
| Implementation | A dcterms:type predicate <i>MUST</i> have an IRI value. |
| Cardinality | |

| Property | Value |
|-----------------|--------|
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.22.5. Property: ssn:implements

| Property | Value |
|-----------------|--|
| IRI | ssn:implements |
| Shape IRI | https://w3id.org/tern/shapes/tern/sosa-implements |
| Status | experimental ○ |
| Label | implements |
| Definition | Relation between an entity that implements a Procedure in some executable way and the Procedure (an algorithm, procedure or method). |
| Scope note | |
| Implementation | An ssn:implements <i>MUST</i> have an IRI value. |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.1.23. Class: tern:Taxon

| Property | Value |
|------------|---|
| IRI | tern:Taxon |
| Status | stable ☑ |
| Label | Taxon |
| Definition | A group of organisms (sensu http://purl.obolibrary.org/obo/OBI_0100026) considered by taxonomists to form a homogeneous unit. |
| Scope note | The genus Truncorotaloides as published by Bronnimann et al. in 1953 in the Journal of Paleontology Vol. 27(6) p. 817-820. |

4.1.23.1. Property: dwc:acceptedNameUsage

| Property | Value |
|-----------|---|
| IRI | dwc:acceptedNameUsage |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-acceptedNameUsage |
| Status | stable ☑ |

| Property | Value |
|-----------------|---|
| Label | accepted name usage |
| Definition | The full name, with authorship and date information if known, of the currently valid (zoological) or accepted (botanical) taxon. |
| Scope note | |
| Implementation | A tern:Taxon MAY have a dwc:acceptedNameUsage predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.2. Property: **dwc:acceptedNameUsageID**

| Property | Value |
|-----------------|--|
| IRI | dwc:acceptedNameUsageID |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-acceptedNameUsageID |
| Status | stable ☑ |
| Label | accepted name usage ID |
| Definition | An identifier for the name usage (documented meaning of the name according to a source) of the currently valid (zoological) or accepted (botanical) taxon. |
| Scope note | |
| Implementation | A tern:Taxon MAY have a dwc:acceptedNameUsageID predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.3. Property: **dwc:class**

| Property | Value |
|------------|---|
| IRI | dwc:class |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-class |
| Status | stable ☑ |
| Label | class |
| Definition | The full scientific name of the class in which the taxon is classified. |
| Scope note | |

| Property | Value |
|-----------------|--|
| Implementation | A tern:Taxon <i>MAY</i> have a dwc:class predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.4. Property: dwc:cultivarEpithet

| Property | Value |
|-----------------|--|
| IRI | dwc:cultivarEpithet |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-cultivarEpithet |
| Status | stable ☑ |
| Label | cultivarEpithet |
| Definition | Part of the name of a cultivar, cultivar group or grex that follows the scientific name. |
| Scope note | |
| Implementation | A tern:Taxon <i>MAY</i> have a dwc:cultivarEpithet predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.5. Property: dwc:family

| Property | Value |
|----------------|---|
| IRI | dwc:family |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-family |
| Status | stable ☑ |
| Label | family |
| Definition | The full scientific name of the family in which the taxon is classified. |
| Scope note | |
| Implementation | A tern:Taxon <i>MAY</i> have a dwc:family predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |

| Property | Value |
|-----------------|-------------------------|
| Class type | <code>xsd:string</code> |
| Expected values | |


4.1.23.6. Property: `dwc:genericName`

| Property | Value |
|-----------------|---|
| IRI | <code>dwc:genericName</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-genericName |
| Status | <code>stable</code> ✓ |
| Label | generic name |
| Definition | The genus part of the <code>scientificName</code> without authorship. |
| Scope note | |
| Implementation | A <code>tern:Taxon</code> MAY have a <code>dwc:genericName</code> predicate where the value node is a literal with the datatype <code>xsd:string</code> . |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:string</code> |
| Expected values | |


4.1.23.7. Property: `dwc:genus`

| Property | Value |
|-----------------|---|
| IRI | <code>dwc:genus</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-genus |
| Status | <code>stable</code> ✓ |
| Label | genus |
| Definition | The full scientific name of the genus in which the taxon is classified. |
| Scope note | |
| Implementation | A <code>tern:Taxon</code> MAY have a <code>dwc:genus</code> predicate where the value node is a literal with the datatype <code>xsd:string</code> . |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:string</code> |
| Expected values | |

4.1.23.8. Property: **dwc:higherClassification**


| Property | Value |
|-----------------|---|
| IRI | dwc:higherClassification |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-higherClassification |
| Status | stable  |
| Label | higher classification |
| Definition | A list (concatenated and separated) of taxa names terminating at the rank immediately superior to the taxon referenced in the taxon record. |
| Scope note | |
| Implementation | A tern:Taxon <i>MAY</i> have a dwc:higherClassification predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.9. Property: **dwc:infragenericEpithet**


| Property | Value |
|-----------------|--|
| IRI | dwc:infragenericEpithet |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-infragenericEpithet |
| Status | stable  |
| Label | infrageneric epithet |
| Definition | The infrageneric part of a binomial name at ranks above species but below genus. |
| Scope note | |
| Implementation | A tern:Taxon <i>MAY</i> have a dwc:infragenericEpithet predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.10. Property: **dwc:infraspecificEpithet**


| Property | Value |
|----------|---------------------------------|
| IRI | dwc:infraspecificEpithet |

| Property | Value |
|-----------------|--|
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-infraspecificEpithet |
| Status | stable  |
| Label | infraspecific epithet |
| Definition | The name of the lowest or terminal infraspecific epithet of the scientificName, excluding any rank designation. |
| Scope note | |
| Implementation | A tern:Taxon MAY have a dwc:infraspecificEpithet predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.11. Property: dwc:kingdom

| Property | Value |
|-----------------|---|
| IRI | dwc:kingdom |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-kingdom |
| Status | stable  |
| Label | kingdom |
| Definition | The full scientific name of the kingdom in which the taxon is classified. |
| Scope note | |
| Implementation | A tern:Taxon MAY have a dwc:kingdom predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.12. Property: dwc:nameAccordingTo

| Property | Value |
|-----------|---|
| IRI | dwc:nameAccordingTo |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-nameAccordingTo |
| Status | stable  |
| Label | name according to |

| Property | Value |
|-----------------|---|
| Definition | The reference to the source in which the specific taxon concept circumscription is defined or implied. For taxa that result from identifications, a reference to the keys, monographs, experts and other sources should be given. |
| Scope note | |
| Implementation | A tern:Taxon MAY have a dwc:nameAccordingTo predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.13. Property: **dwc:nameAccordingToID**

| Property | Value |
|-----------------|--|
| IRI | dwc:nameAccordingToID |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-nameAccordingToID |
| Status | stable ☑ |
| Label | name according to ID |
| Definition | An identifier for the source in which the specific taxon concept circumscription is defined or implied. See nameAccordingTo. |
| Scope note | |
| Implementation | A tern:Taxon MAY have a dwc:nameAccordingToID predicate where the value node is a literal with a datatype of xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.14. Property: **dwc:namePublishedIn**

| Property | Value |
|-----------|---|
| IRI | dwc:namePublishedIn |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-namePublishedIn |
| Status | stable ☑ |
| Label | name published in |

| Property | Value |
|-----------------|---|
| Definition | A reference for the publication in which the scientificName was originally established under the rules of the associated nomenclaturalCode. |
| Scope note | |
| Implementation | A <i>tern:Taxon</i> MAY have a <i>dwc:namePublishedIn</i> predicate where the value node is a literal with the datatype <i>xsd:string</i> . |
| Cardinality | |
| Node kind | <i>sh:Literal</i> |
| Class type | <i>xsd:string</i> |
| Expected values | |

4.1.23.15. Property: *dwc:namePublishedInID*

| Property | Value |
|-----------------|---|
| IRI | <i>dwc:namePublishedInID</i> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-namePublishedInID |
| Status | <i>stable</i> ✓ |
| Label | name published in ID |
| Definition | An identifier for the publication in which the scientificName was originally established under the rules of the associated nomenclaturalCode. |
| Scope note | |
| Implementation | A <i>tern:Taxon</i> MAY have a <i>dwc:namePublishedInID</i> where the value node is a literal with the datatype <i>xsd:string</i> . |
| Cardinality | |
| Node kind | <i>sh:Literal</i> |
| Class type | <i>xsd:string</i> |
| Expected values | |

4.1.23.16. Property: *dwc:namePublishedInYear*

| Property | Value |
|------------|---|
| IRI | <i>dwc:namePublishedInYear</i> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-namePublishedInYear |
| Status | <i>stable</i> ✓ |
| Label | name published in year |
| Definition | The four-digit year in which the scientificName was published. |
| Scope note | |

| Property | Value |
|-----------------|---|
| Implementation | A tern:Taxon MAY have a dwc:namePublishedInYear predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.17. Property: **dwc:nomenclaturalCode**


| Property | Value |
|-----------------|---|
| IRI | dwc:nomenclaturalCode |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-nomenclaturalCode |
| Status | stable ☑ |
| Label | nomenclatural code |
| Definition | The nomenclatural code (or codes in the case of an ambiregnal name) under which the scientificName is constructed. |
| Scope note | |
| Implementation | A tern:Taxon MAY have a dwc:nomenclaturalCode predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.18. Property: **dwc:nomenclaturalStatus**


| Property | Value |
|----------------|--|
| IRI | dwc:nomenclaturalStatus |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-nomenclaturalStatus |
| Status | stable ☑ |
| Label | nomenclatural status |
| Definition | The status related to the original publication of the name and its conformance to the relevant rules of nomenclature. It is based essentially on an algorithm according to the business rules of the code. It requires no taxonomic opinion. |
| Scope note | |
| Implementation | A tern:Taxon MAY have a dwc:nomenclaturalStatus predicate where the value node is a literal with the datatype xsd:string . |

| Property | Value |
|-----------------|-------------------------|
| Cardinality | |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:string</code> |
| Expected values | |

4.1.23.19. Property: `dwc:order`


| Property | Value |
|-----------------|---|
| IRI | <code>dwc:order</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-order |
| Status | stable  |
| Label | order |
| Definition | The full scientific name of the order in which the taxon is classified. |
| Scope note | |
| Implementation | A <code>tern:Taxon</code> MAY have a <code>dwc:order</code> predicate where the value node is a literal with the datatype <code>xsd:string</code> . |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:string</code> |
| Expected values | |

4.1.23.20. Property: `dwc:originalNameUsage`


| Property | Value |
|----------------|--|
| IRI | <code>dwc:originalNameUsage</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-originalNameUsage |
| Status | stable  |
| Label | original name usage |
| Definition | The taxon name, with authorship and date information if known, as it originally appeared when first established under the rules of the associated nomenclaturalCode. The basionym (botany) or basonym (bacteriology) of the scientificName or the senior/earlier homonym for replaced names. |
| Scope note | |
| Implementation | A <code>tern:Taxon</code> MAY have a <code>dwc:originalNameUsage</code> predicate where the value node is a literal with the datatype <code>xsd:string</code> . |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |

| Property | Value |
|-----------------|-------------------------|
| Class type | <code>xsd:string</code> |
| Expected values | |

4.1.23.21. Property: `dwc:originalNameUsageID`

| Property | Value |
|-----------------|--|
| IRI | <code>dwc:originalNameUsageID</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-originalNameUsageID |
| Status | stable  |
| Label | original name usage ID |
| Definition | An identifier for the name usage (documented meaning of the name according to a source) in which the terminal element of the <code>scientificName</code> was originally established under the rules of the associated <code>nomenclaturalCode</code> . |
| Scope note | |
| Implementation | A <code>tern:Taxon</code> MAY have a <code>dwc:originalNameUsageID</code> predicate where the value node is a literal with the datatype <code>xsd:string</code> . |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:string</code> |
| Expected values | |

4.1.23.22. Property: `dwc:parentNameUsage`

| Property | Value |
|----------------|--|
| IRI | <code>dwc:parentNameUsage</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-parentNameUsage |
| Status | stable  |
| Label | parent name usage |
| Definition | The full name, with authorship and date information if known, of the direct, most proximate higher-rank parent taxon (in a classification) of the most specific element of the <code>scientificName</code> . |
| Scope note | |
| Implementation | A <code>tern:Taxon</code> MAY have a <code>dwc:parentNameUsage</code> predicate where the value node is a literal with the datatype <code>xsd:string</code> . |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:string</code> |

| Property | Value |
|-----------------|-------|
| Expected values | |


4.1.23.23. Property: **dwc:parentNameUsageID**

| Property | Value |
|-----------------|--|
| IRI | dwc:parentNameUsageID |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-parentNameUsageID |
| Status | stable ☑ |
| Label | parent name usage ID |
| Definition | An identifier for the name usage (documented meaning of the name according to a source) of the direct, most proximate higher-rank parent taxon (in a classification) of the most specific element of the scientificName. |
| Scope note | |
| Implementation | A tern:Taxon <i>MAY</i> have a dwc:parentNameUsageID predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |


4.1.23.24. Property: **dwc:phylum**

| Property | Value |
|-----------------|---|
| IRI | dwc:phylum |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-phylum |
| Status | stable ☑ |
| Label | phylum |
| Definition | The full scientific name of the phylum or division in which the taxon is classified. |
| Scope note | |
| Implementation | A tern:Taxon <i>MAY</i> have a dwc:phylum predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |


4.1.23.25. Property: `dwc:scientificName`

| Property | Value |
|-----------------|---|
| IRI | <code>dwc:scientificName</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-scientificName |
| Status | stable  |
| Label | scientific name |
| Definition | The full scientific name, with authorship and date information if known. When forming part of an Identification, this should be the name in lowest level taxonomic rank that can be determined. This term should not contain identification qualifications, which should instead be supplied in the IdentificationQualifier term. |
| Scope note | |
| Implementation | A <code>tern:Taxon</code> MAY have a <code>dwc:scientificName</code> predicate where the value node is a literal with the datatype <code>xsd:string</code> . |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:string</code> |
| Expected values | |


4.1.23.26. Property: `dwc:scientificNameAuthorship`

| Property | Value |
|-----------------|--|
| IRI | <code>dwc:scientificNameAuthorship</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-scientificNameAuthorship |
| Status | stable  |
| Label | scientific name authorship |
| Definition | The authorship information for the scientificName formatted according to the conventions of the applicable nomenclaturalCode. |
| Scope note | |
| Implementation | A <code>tern:Taxon</code> MAY have a <code>dwc:scientificNameAuthorship</code> predicate where the value node is a literal with the datatype <code>xsd:string</code> . |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:string</code> |
| Expected values | |

4.1.23.27. Property: **dwc:scientificNameID**


| Property | Value |
|-----------------|--|
| IRI | dwc:scientificNameID |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-scientificNameID |
| Status | stable  |
| Label | scientific name ID |
| Definition | An identifier for the nomenclatural (not taxonomic) details of a scientific name. |
| Scope note | |
| Implementation | A tern:Taxon MAY have a dwc:scientificNameID predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.28. Property: **dwc:specificEpithet**


| Property | Value |
|-----------------|---|
| IRI | dwc:specificEpithet |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-specificEpithet |
| Status | stable  |
| Label | specific epithet |
| Definition | The name of the first or species epithet of the scientificName. |
| Scope note | |
| Implementation | A tern:Taxon MAY have a dwc:specificEpithet predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.29. Property: **dwc:subfamily**


| Property | Value |
|-----------|---|
| IRI | dwc:subfamily |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-subfamily |

| Property | Value |
|-----------------|---|
| Status | stable  |
| Label | subfamily |
| Definition | The full scientific name of the subfamily in which the taxon is classified. |
| Scope note | |
| Implementation | A tern:Taxon MAY have a dwc:subfamily predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.30. Property: dwc:subgenus


| Property | Value |
|-----------------|--|
| IRI | dwc:subgenus |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-subgenus |
| Status | stable  |
| Label | subgenus |
| Definition | The full scientific name of the subgenus in which the taxon is classified. Values should include the genus to avoid homonym confusion. |
| Scope note | |
| Implementation | A tern:Taxon MAY have a dwc:subgenus predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.31. Property: dwc:taxonConceptID


| Property | Value |
|------------|---|
| IRI | dwc:taxonConceptID |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-taxonConceptID |
| Status | stable  |
| Label | taxon concept ID |
| Definition | An identifier for the taxonomic concept to which the record refers - not for the nomenclatural details of a taxon. |

| Property | Value |
|-----------------|--|
| Scope note | |
| Implementation | A tern:Taxon MAY have a dwc:taxonConceptID predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.32. Property: **dwc:taxonID**


| Property | Value |
|-----------------|--|
| IRI | dwc:taxonID |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-taxonID |
| Status | stable  |
| Label | taxon ID |
| Definition | A global unique identifier for the taxon (name in a classification). |
| Scope note | |
| Implementation | A ternTaxon MAY have a dwc:taxonID predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |
| Node kind | sh:Literal |
| Class type | xsd:string |
| Expected values | |

4.1.23.33. Property: **dwc:taxonRank**


| Property | Value |
|----------------|---|
| IRI | dwc:taxonRank |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-taxonRank |
| Status | stable  |
| Label | taxon rank |
| Definition | The taxonomic rank of the most specific name in the scientificName. |
| Scope note | |
| Implementation | A tern:Taxon MAY have a dwc:taxonRank predicate where the value node is a literal with the datatype xsd:string . |
| Cardinality | |

| Property | Value |
|-----------------|-------------------------|
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:string</code> |
| Expected values | |

4.1.23.34. Property: `dwc:taxonRemarks`


| Property | Value |
|-----------------|--|
| IRI | <code>dwc:taxonRemarks</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-taxonRemarks |
| Status | <code>stable</code>  |
| Label | taxon remarks |
| Definition | Comments or notes about the taxon or name. |
| Scope note | |
| Implementation | A <code>tern:Taxon</code> MAY have a <code>dwc:taxonRemarks</code> predicate where the value node is a literal with the datatype <code>xsd:string</code> . |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:string</code> |
| Expected values | |

4.1.23.35. Property: `dwc:taxonomicStatus`

| Property | Value |
|----------------|--|
| IRI | <code>dwc:taxonomicStatus</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-taxonomicStatus |
| Status | <code>stable</code>  |
| Label | taxonomic status |
| Definition | The status of the use of the <code>scientificName</code> as a label for a taxon. Requires taxonomic opinion to define the scope of a taxon. Rules of priority then are used to define the taxonomic status of the nomenclature contained in that scope, combined with the experts opinion. It must be linked to a specific taxonomic reference that defines the concept. |
| Scope note | |
| Implementation | A <code>tern:Taxon</code> MAY have a <code>dwc:taxonomicStatus</code> predicate where the value node is a literal with the datatype <code>xsd:string</code> . |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |

| Property | Value |
|-----------------|-------------------------|
| Class type | <code>xsd:string</code> |
| Expected values | |


4.1.23.36. Property: `dwc:verbatimTaxonRank`

| Property | Value |
|-----------------|---|
| IRI | <code>dwc:verbatimTaxonRank</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-verbatimTaxonRank |
| Status | stable  |
| Label | verbatim taxon rank |
| Definition | The taxonomic rank of the most specific name in the <code>scientificName</code> as it appears in the original record. |
| Scope note | |
| Implementation | A <code>tern:Taxon</code> MAY have a <code>dwc:verbatimTaxonRank</code> predicate where the value node is a literal with the datatype <code>xsd:string</code> . |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:string</code> |
| Expected values | |


4.1.23.37. Property: `dwc:vernacularName`

| Property | Value |
|-----------------|--|
| IRI | <code>dwc:vernacularName</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Taxon-vernacularName |
| Status | stable  |
| Label | vernacular name |
| Definition | A common or vernacular name. |
| Scope note | |
| Implementation | A <code>tern:Taxon</code> MAY have a <code>dwc:vernacularName</code> predicate where the value node is a literal with the datatype <code>xsd:string</code> . |
| Cardinality | |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:string</code> |
| Expected values | |


4.1.24. Class: tern:Text

| Property | Value |
|------------|--|
| IRI | <code>tern:Text</code> |
| Status | stable  |
| Label | Text |
| Definition | Class to encapsulate a textual value. |
| Scope note | |


4.1.24.1. Property: rdf:value

| Property | Value |
|-----------------|---|
| IRI | <code>rdf:value</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Text-value |
| Status | stable  |
| Label | value |
| Definition | The text value. |
| Scope note | |
| Implementation | A <code>tern:Text</code> <i>MUST</i> have exactly 1 <code>rdf:value</code> predicate where the value node is a literal with the datatype <code>xsd:string</code> or <code>rdf:langString</code> . |
| Cardinality | Exactly 1 |
| Node kind | |
| Class type | <code>xsd:string</code> <code>rdf:langString</code> |
| Expected values | |


4.1.25. Class: tern:Transect

| Property | Value |
|------------|---|
| IRI | <code>tern:Transect</code> |
| Status | stable  |
| Label | Transect |
| Definition | A transect is a path where observations and samplings may occur. |
| Scope note | There are several types of transects in ecology such as strip transects, line transects, belt transects, point transects and curved line transects. |


4.1.25.1. Property: tern:featureType

| Property | Value |
|-----------------|---|
| IRI | <code>tern:featureType</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Transect-featureType |
| Status | stable  |
| Label | feature type |
| Definition | The feature type of a [Feature of Interest](#FeatureofInterest). |
| Scope note | |
| Implementation | A <code>tern:Transect</code> <i>MUST</i> have exactly 1 <code>tern:featureType</code> predicate where the value node is an IRI with the value http://linked.data.gov.au/def/tern-cv/de46fa49-d1c9-4bef-8462-d7ee5174e1e1 . |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | |

4.1.25.2. Property: `geo:hasGeometry`

| Property | Value |
|-----------------|--|
| IRI | <code>geo:hasGeometry</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Transect-hasGeometry |
| Status | stable  |
| Label | has geometry |
| Definition | A spatial representation for a given feature. |
| Scope note | |
| Implementation | A <code>tern:Transect</code> <i>MAY</i> have a maximum of 1 <code>geo:hasGeometry</code> predicate where the value node is a blank node or IRI of type <code>sf:LineString</code> or <code>geo:Geometry</code> . |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:BlankNodeOrIRI</code> |
| Class type | <code>sf:LineString</code> <code>geo:Geometry</code> |
| Expected values | |

4.1.25.3. Property: `tern:transectDirection`

| Property | Value |
|-----------|---|
| IRI | <code>tern:transectDirection</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Transect-transectDirection |
| Status | stable  |

| Property | Value |
|-----------------|---|
| Label | transect direction |
| Definition | Describes the direction of the transect. |
| Scope note | |
| Implementation | A tern:Transect MAY have a maximum of 1 tern:transectDirection where the value node is an IRI or literal. |
| Cardinality | Maximum 1 |
| Node kind | sh:IRIOrLiteral |
| Class type | |
| Expected values | |

4.1.25.4. Property: **tern:transectEndPoint**

| Property | Value |
|-----------------|--|
| IRI | tern:transectEndPoint |
| Shape IRI | https://w3id.org/tern/shapes/tern/Transect-transectEndPoint |
| Status | stable ☑ |
| Label | transect end point |
| Definition | Relationship to the sf:Point representing the end of a transect. |
| Scope note | |
| Implementation | A tern:Transect MAY have a maximum of 1 tern:transectEndPoint predicate where the value node is an IRI of type sf:Point . |
| Cardinality | Maximum 1 |
| Node kind | sh:IRI |
| Class type | sf:Point |
| Expected values | |

4.1.25.5. Property: **tern:transectStartPoint**

| Property | Value |
|------------|---|
| IRI | tern:transectStartPoint |
| Shape IRI | https://w3id.org/tern/shapes/tern/Transect-transectStartPoint |
| Status | stable ☑ |
| Label | transect start point |
| Definition | Relationship to the sf:Point representing the start of a transect. |
| Scope note | |

| Property | Value |
|-----------------|--|
| Implementation | A <code>tern:Transect</code> <i>MAY</i> have a <code>tern:transectStartPoint</code> predicate where the value node is an IRI of type <code>sf:Point</code> . |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>sf:Point</code> |
| Expected values | |

4.1.26. Class: `tern:Value`

| Property | Value |
|------------|--|
| IRI | <code>tern:Value</code> |
| Status | <code>stable</code> ☑ |
| Label | Value |
| Definition | A value of an <code>Attribute</code> or an <code>Observation</code> . |
| Scope note | This is an 'abstract' class and is not intended to be used directly to create individuals. |

4.2. External Classes

4.2.1. Class: `prov:Association`

| Property | Value |
|------------|--|
| IRI | <code>prov:Association</code> |
| Status | <code>stable</code> ☑ |
| Label | Association |
| Definition | An activity association is an assignment of responsibility to an agent for an activity, indicating that the agent had a role in the activity. It further allows for a plan to be specified, which is the plan intended by the agent to achieve some goals in the context of this activity. |
| Scope note | Associate an agent to an activity (<code>tern:Sampling</code> , <code>tern:Observation</code>) with a role from ISO 19115-1's CI Role Code . |

4.2.1.1. Property: `prov:agent`

| Property | Value |
|-----------|---|
| IRI | <code>prov:agent</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Association-agent |
| Status | <code>stable</code> ☑ |

| Property | Value |
|-----------------|--|
| Label | agent |
| Definition | An agent is something that bears some form of responsibility for an activity taking place, for the existence of an entity, or for another agent's activity. |
| Scope note | |
| Implementation | A prov:Association <i>MUST</i> have exactly 1 prov:agent predicate where the value node is an IRI of an individual with the type prov:Agent . |
| Cardinality | Exactly 1 |
| Node kind | sh:IRI |
| Class type | prov:Agent |
| Expected values | |

4.2.1.2. Property: prov:hadPlan

| Property | Value |
|-----------------|---|
| IRI | prov:hadPlan |
| Shape IRI | https://w3id.org/tern/shapes/tern/Association-hadPlan |
| Status | stable ☑ |
| Label | had plan |
| Definition | A plan is an entity that represents a set of actions or steps intended by one or more agents to achieve some goals. |
| Scope note | Associate a plan to the agent which they use for their role in some activity. This may or may not be the same as the procedure of a tern:Sampling or a tern:Observation depending on the role of the agent. |
| Implementation | A prov:Association <i>MAY</i> have some prov:hadPlan predicate where the value node is an IRI. |
| Cardinality | |
| Node kind | sh:IRI |
| Class type | |
| Expected values | |

4.2.1.3. Property: prov:hadRole

| Property | Value |
|-----------|---|
| IRI | prov:hadRole |
| Shape IRI | https://w3id.org/tern/shapes/tern/Association-hadRole |
| Status | stable ☑ |
| Label | had role |

| Property | Value |
|-----------------|---|
| Definition | <code>prov:hadRole</code> references the Role (i.e. the function of an entity with respect to an activity), in the context of an instantaneous usage, generation, association, start, and end. |
| Scope note | |
| Implementation | A <code>prov:Association</code> <i>MUST</i> have exactly 1 <code>prov:hadRole</code> predicate where the value node is an IRI of a controlled concept from ISO 19115-1's CI Role Code. |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | <ul style="list-style-type: none"> - <code>author</code> - <code>co author</code> - <code>collaborator</code> - <code>contributor</code> - <code>custodian</code> - <code>distributor</code> - <code>editor</code> - <code>funder</code> - <code>mediator</code> - <code>originator</code> - <code>owner</code> - <code>point of contact</code> - <code>principal investigator</code> - <code>processor</code> - <code>publisher</code> - <code>resource provider</code> - <code>rights holder</code> - <code>sponsor</code> - <code>stakeholder</code> - <code>user</code> |

4.2.1.4. `prov:Association` example

The RDF example below illustrates how to:

- associate a `schema:Person` to an instance of `tern:Sampling` activity with the role *principal investigator*
- associate an `schema:Organization` to a `tern:MaterialSample` with the role *custodian*.

```

<org-1>
  a schema:Organization ;
  schema:name "Org 1" ;
  .

<person-1>

```

```

    a schema:Person ;
    schema:name "Person 1" ;
    schema:affiliation <org-1> ;
.


<site-visit>
  a tern:SiteVisit ;
  prov:startedAtTime "2015-03-22T13:00:00+00:00"^^xsd:dateTime ;
  tern:hasSite <...> ;
  prov:wasAssociatedWith <person-1> ;
  prov:qualifiedAssociation [
    a prov:Association ;
    prov:agent <person-1> ;
    prov:hadRole <http://def.isotc211.org/iso19115/-
1/2014/CitationAndResponsiblePartyInformation/code/CI_RoleCode/principalInvestigator>
;
  ] ;
.

<sampling-1>
  a tern:Sampling ;
  ... ;
  tern:hasSiteVisit <site-visit> ;
  prov:wasAssociatedWith <person-1> ;
  prov:qualifiedAssociation [
    a prov:Association ;
    prov:agent <person-1> ;
    prov:hadRole <http://def.isotc211.org/iso19115/-
1/2014/CitationAndResponsiblePartyInformation/code/CI_RoleCode/resourceProvider> ;
  ] ;
  sosa:hasResult <soil-sample-1> ;
.


<soil-sample-1>
  a tern:MaterialSample ;
  ... ;
  sosa:isResultOf <sampling-1> ;
  prov:wasAttributedTo <org-1> ;
  prov:qualifiedAttribution [
    a prov:Attribution ;
    prov:agent <org-1> ;
    prov:hadRole <http://def.isotc211.org/iso19115/-
1/2014/CitationAndResponsiblePartyInformation/code/CI_RoleCode/custodian> ;
  ]
.

```


4.2.2. Class: prov:Attribution

| Property | Value |
|------------|--|
| IRI | <code>prov:Attribution</code> |
| Status | stable  |
| Label | Attribution |
| Definition | Attribution is the ascribing of an entity to an agent. When an entity e is attributed to agent ag , entity e was generated by some unspecified activity that in turn was associated to agent ag . Thus, this relation is useful when the activity is not known, or irrelevant. |
| Scope note | Associate an agent to an entity (<code>tern:Sample</code> , <code>tern:FeatureOfInterest</code> , <code>tern:Site</code>) with a role from ISO 19115-1's CI Role Code . |

4.2.2.1. Property: `prov:agent`


| Property | Value |
|-----------------|--|
| IRI | <code>prov:agent</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Attribution-agent |
| Status | stable  |
| Label | agent |
| Definition | An agent is something that bears some form of responsibility for an activity taking place, for the existence of an entity, or for another agent's activity. |
| Scope note | |
| Implementation | A <code>prov:Attribution</code> <i>MUST</i> have exactly 1 <code>prov:agent</code> predicate where the value node is an IRI of an individual with the type <code>prov:Agent</code> . |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | <code>prov:Agent</code> |
| Expected values | |

4.2.2.2. Property: `prov:hadRole`

| Property | Value |
|------------|--|
| IRI | <code>prov:hadRole</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/Attribution-hadRole |
| Status | stable  |
| Label | had role |
| Definition | <code>prov:hadRole</code> references the Role (i.e. the function of an entity with respect to an activity), in the context of an instantaneous usage, generation, association, start, and end. |
| Scope note | |

| Property | Value |
|-----------------|---|
| Implementation | A <code>prov:Attribution</code> <i>MUST</i> have exactly 1 <code>prov:hadRole</code> predicate where the value node is an IRI of a controlled concept from ISO 19115-1's CI Role Code . |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | <ul style="list-style-type: none"> - author - co author - collaborator - contributor - custodian - distributor - editor - funder - mediator - originator - owner - point of contact - principal investigator - processor - publisher - resource provider - rights holder - sponsor - stakeholder - user |

4.2.3. Class: `time:Duration`

| Property | Value |
|------------|---|
| IRI | <code>time:Duration</code> |
| Status | <code>stable</code>  |
| Label | Duration |
| Definition | Duration of a temporal extent expressed as a number scaled by a temporal unit |
| Scope note | |

4.2.3.1. Property: `time:numericDuration`

| Property | Value |
|-----------|---|
| IRI | <code>time:numericDuration</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/time-numericDuration |

| Property | Value |
|-----------------|---|
| Status | stable ☑ |
| Label | numeric duration |
| Definition | Value of a temporal extent expressed as a decimal number scaled by a temporal unit |
| Scope note | |
| Implementation | A <code>time:Duration</code> <i>MUST</i> have exactly 1 <code>time:numericDuration</code> predicate where the value node is a literal with a datatype of <code>xsd:decimal</code> . |
| Cardinality | Exactly 1 |
| Node kind | |
| Class type | <code>xsd:decimal</code> |
| Expected values | |

4.2.3.2. Property: `time:unitType`

| Property | Value |
|-----------------|---|
| IRI | <code>time:unitType</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/time-unitType |
| Status | stable ☑ |
| Label | unit type |
| Definition | The temporal unit which provides the precision of a date-time value or scale of a temporal extent. |
| Scope note | |
| Implementation | A <code>time:Duration</code> <i>MUST</i> have exactly 1 <code>time:unitType</code> predicate where the value node is an IRI from a controlled list. |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:IRI</code> |
| Class type | |
| Expected values | <ul style="list-style-type: none"> - <code>day</code> - <code>hour</code> - <code>minute</code> - <code>month</code> - <code>second</code> - <code>week</code> - <code>year</code> |

4.2.4. Class: `time:Instant`

| Property | Value |
|----------------|--|
| IRI | <code>time:Instant</code> |
| Status | stable ☑ |
| Label | Instant |
| Definition | A temporal entity with zero extent or duration. |
| Implementation | One or more of [<code>time:inXSDDate</code> , <code>time:inXSDDateTimeStamp</code> , <code>time:inXSDgYear</code> , <code>time:inXSDgYearMonth</code> , <code>time:inTimePosition</code> , and <code>time:inDateTime</code>] <i>MUST</i> be present. |
| Scope note | |

4.2.4.1. Property: `time:inDateTime`


| Property | Value |
|-----------------|---|
| IRI | <code>time:inDateTime</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/time-Instant-inDateTime |
| Status | stable ☑ |
| Label | in date-time |
| Definition | Position of an instant, expressed using a structured description. |
| Scope note | |
| Implementation | Value <i>MUST</i> be a literal with a datatype of <code>xsd:dateTime</code> . Maximum of one value is allowed for this property. |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:dateTime</code> |
| Expected values | |

4.2.4.2. Property: `time:inTimePosition`


| Property | Value |
|----------------|--|
| IRI | <code>time:inTimePosition</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/time-inTimePosition |
| Status | stable ☑ |
| Label | in time position |
| Definition | Position of a time instant expressed as a <code>TimePosition</code> . |
| Scope note | |
| Implementation | Value <i>MUST</i> be an instance of <code>time:TimePosition</code> . Maximum of one value is allowed for this property. The value node <i>MUST</i> be a blank node or IRI. |
| Cardinality | Maximum 1 |

| Property | Value |
|-----------------|--------------------------------|
| Node kind | <code>sh:BlankNodeOrIRI</code> |
| Class type | <code>time:TimePosition</code> |
| Expected values | |


4.2.4.3. Property: `time:inXSDDate`

| Property | Value |
|-----------------|--|
| IRI | <code>time:inXSDDate</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/time-inXSDDate |
| Status | <code>stable</code>  |
| Label | in XSD date |
| Definition | Position of an instant, expressed using <code>xsd:date</code> . |
| Scope note | |
| Implementation | Value <i>MUST</i> be a literal with a datatype of <code>xsd:date</code> . Maximum of one value is allowed for this property. |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:date</code> |
| Expected values | |


4.2.4.4. Property: `time:inXSDDateTimeStamp`

| Property | Value |
|-----------------|---|
| IRI | <code>time:inXSDDateTimeStamp</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/time-inXSDDateTimeStamp |
| Status | <code>stable</code>  |
| Label | in XSD date-time-stamp |
| Definition | Position of an instant, expressed using <code>xsd:dateTimeStamp</code> . |
| Scope note | |
| Implementation | Value <i>MUST</i> be a literal with a datatype of <code>xsd:dateTimeStamp</code> . Maximum of one value is allowed for this property. |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:dateTimeStamp</code> |
| Expected values | |

4.2.4.5. Property: time:inXSDgYear

| Property | Value |
|-----------------|---|
| IRI | <code>time:inXSDgYear</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/time-inXSDgYear |
| Status | stable  |
| Label | in XSD g-year |
| Definition | Position of an instant, expressed using <code>xsd:gYear</code> . |
| Scope note | |
| Implementation | Value <i>MUST</i> be a literal with a datatype of <code>xsd:gYear</code> . Maximum of one value is allowed for this property. |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:gYear</code> |
| Expected values | |

4.2.4.6. Property: time:inXSDgYearMonth


| Property | Value |
|-----------------|--|
| IRI | <code>time:inXSDgYearMonth</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/time-inXSDgYearMonth |
| Status | stable  |
| Label | in XSD g-year-month |
| Definition | Position of an instant, expressed using <code>xsd:gYearMonth</code> . |
| Scope note | |
| Implementation | Value <i>MUST</i> be a literal with a datatype of <code>xsd:gYearMonth</code> . Maximum of one value is allowed for this property. |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:Literal</code> |
| Class type | <code>xsd:gYearMonth</code> |
| Expected values | |

4.2.5. Class: time:Interval


| Property | Value |
|----------|--|
| IRI | <code>time:Interval</code> |
| Status | stable  |
| Label | Interval |

| Property | Value |
|------------|---|
| Definition | A temporal entity with an extent or duration. |
| Scope note | |

4.2.5.1. Property: time:hasBeginning

| Property | Value |
|-----------------|--|
| IRI | <code>time:hasBeginning</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/time-hasBeginning |
| Status | stable  |
| Label | has beginning |
| Definition | Beginning of a temporal entity. |
| Scope note | |
| Implementation | A <code>time:hasBeginning</code> predicate <i>MUST</i> exist where the value node is a blank node or IRI of type <code>time:Instant</code> . |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:BlankNodeOrIRI</code> |
| Class type | <code>time:Instant</code> |
| Expected values | |

4.2.5.2. Property: time:hasDuration

| Property | Value |
|-----------------|---|
| IRI | <code>time:hasDuration</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/time-hasDuration |
| Status | stable  |
| Label | has duration |
| Definition | Duration of a temporal entity, event or activity, or thing, expressed as a scaled value. |
| Scope note | |
| Implementation | A <code>time:hasDuration</code> <i>MAY</i> exist where the value node is a blank node or IRI of type <code>time:Duration</code> . |
| Cardinality | Maximum 1 |
| Node kind | <code>sh:BlankNodeOrIRI</code> |
| Class type | <code>time:Duration</code> |
| Expected values | |

4.2.5.3. Property: time:hasEnd

| Property | Value |
|-----------------|--|
| IRI | <code>time:hasEnd</code> |
| Shape IRI | https://w3id.org/tern/shapes/tern/time-hasEnd |
| Status | stable ☑ |
| Label | has end |
| Definition | End of a temporal entity. |
| Scope note | |
| Implementation | A <code>time:hasEnd</code> predicate <i>MUST</i> exist where the value node is a blank node or IRI of type <code>time:Instant</code> . |
| Cardinality | Exactly 1 |
| Node kind | <code>sh:BlankNodeOrIRI</code> |
| Class type | <code>time:Instant</code> |
| Expected values | |

5. References

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Annex A: Specification Parts



This Annex is normative.

TBD.