

The Data Product (DPROD) Ontology

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<https://ekgf.github.io/grapharch/showcases/artifacts/dprod/specification/>

Latest published version:

<https://www.omg.org/spec/DPROD/>

Latest editor's draft:

<https://github.com/EKGF/dprod/tree/develop>

Document license

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Abstract

DPROD extends DCAT to enable publishers to describe Data Products and data services in a decentralized way. This documentation preview presents the native DPROD ontology, its SHACL shapes, and the dataset-schema example from this repository as an HTML reference, a companion guide and a PDF.

Status of This Document

This is a generated documentation preview, not an approved OMG standards release or a replacement for the official DPROD specification. Definitions and shape statements come from the source RDF. The publication date is read from the ontology's `dct:issued` annotation; rebuilding documentation does not change that source annotation.

The repository's `develop` branch is the source for this preview. Each build pins one concrete Git commit and records source paths, blob identities and commit provenance in its documentation knowledge graph. External ontology imports are retained as RDF assertions; this preview does not download or reason over them.

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1 DPROD Ontology

1.1 DPROD Ontology

Repository for the Data Products Ontology (DPROD), a proposed OMG standard, originally created by the EKGf Data Product Workgroup. The proposal is currently under industry review until December 2024, and until that time the main branch is locked. Any changes will occur on the `develop` branch so pull requests should be targeted at that.

- [Examples / Test Cases](#)
- [Ontologies](#)
- [Concepts](#)

The specification is generated by a Python module called `spec-generator` using the W3C Respec template (a fork of it) and published here: <https://ekgf.org/dprod>

1.1.1 Contributor Licence Agreement (CLA)

We're using the CLA assistant service to collect CLA signatures of all contributors.

CLAs signed 10

2 OWL classes

2.1 `dprod:DataProduct`

Label: data product

A rational, managed, and governed collection of data, with purpose, value and ownership, meeting consumer needs over a planned life-cycle.

IRI: <https://ekgf.org/dprod/spec/develop/DataProduct>

Note: A data product may have input and output ports, code and metadata

RDF predicate	Value
<code>rdf:type</code>	<code>rdfs:Class</code>
<code>rdf:type</code>	<code>owl:Class</code>

RDF predicate	Value
<code>rdfs:isDefinedBy</code>	<code>dprod:</code>
<code>rdfs:subClassOf</code>	<code>dcat:Resource</code>

2.2 dprod:Enumeration

Label: enumeration

The superclass of enumeration lists referenced from data product related artifacts.

IRI: <https://ekgf.org/dprod/spec/develop/Enumeration>

RDF predicate	Value
<code>rdf:type</code>	<code>rdfs:Class</code>
<code>rdf:type</code>	<code>owl:Class</code>
<code>rdfs:isDefinedBy</code>	<code>dprod:</code>

2.3 dprod:InformationSensitivityClassification

Label: information sensitivity classification

A classification of the information within a dataset to indicate the level of control and protection that must be applied.

IRI: <https://ekgf.org/dprod/spec/develop/InformationSensitivityClassification>

RDF predicate	Value
<code>rdf:type</code>	<code>rdfs:Class</code>
<code>rdf:type</code>	<code>owl:Class</code>
<code>rdfs:isDefinedBy</code>	<code>dprod:</code>
<code>rdfs:seeAlso</code>	https://spec.edmcouncil.org/cdm/ontology/Classification/InformationSensitivity

2.4 dprod:SecuritySchemaType

Label: security schema type

A classification encompassing a set of rules used for authentication and communication.

IRI: <https://ekgf.org/dprod/spec/develop/SecuritySchemaType>

RDF predicate	Value
<code>rdf:type</code>	<code>rdfs:Class</code>
<code>rdf:type</code>	<code>owl:Class</code>
<code>rdfs:isDefinedBy</code>	<code>dprod:</code>

3 Object properties

3.1 dprod:dataProductLifecycleStatus

Label: data product lifecycle status

The authored development lifecycle status of a data product.

IRI: <https://ekgf.org/dprod/spec/develop/dataProductLifecycleStatus>

Note: Values are SKOS concepts. DPROD supplies `dprod:DataProductLifecycleStatus` as an optional reference concept scheme; enterprises may use another scheme.

RDF predicate	Value
rdf:type	rdf:Property
rdf:type	owl:ObjectProperty
rdfs:domain	dprod:DataProduct
rdfs:isDefinedBy	dprod:
rdfs:range	skos:Concept
rdfs:subPropertyOf	dprod:lifecycleStatus

3.2 dprod:dataProductOwner

Label: data product owner

The agent that is accountable overall for the data product, including managing it through its lifecycle.

IRI: <https://ekgf.org/dprod/spec/develop/dataProductOwner>

RDF predicate	Value
rdf:type	rdf:Property
rdf:type	owl:ObjectProperty
rdfs:domain	dprod:DataProduct
rdfs:isDefinedBy	dprod:
rdfs:range	prov:Agent

3.3 dprod:domain

Label: domain

The business or information area supported by the data product.

IRI: <https://ekgf.org/dprod/spec/develop/domain>

Note: The domain is intended to be a resource in its own right. This specification does not constrain the class to be used.

RDF predicate	Value
rdf:type	rdf:Property
rdf:type	owl:ObjectProperty
rdfs:domain	dprod:DataProduct
rdfs:isDefinedBy	dprod:

3.4 dprod:informationSensitivityClassification

Label: information sensitivity classification

More granular classification that indicates the level of control and protection that must be applied to the asset due to the nature of the data and its sensitivity or importance to the organization.

IRI: <https://ekgf.org/dprod/spec/develop/informationSensitivityClassification>

RDF predicate	Value
rdf:type	rdf:Property
rdf:type	owl:ObjectProperty
rdfs:domain	dcat:Dataset
rdfs:isDefinedBy	dprod:
rdfs:range	dprod:InformationSensitivityClassification

3.5 dprod:inputDataset

Label: input dataset

The source data made available to the data product through input data services. Depending on the lifecycle of the data product, this may be a stated or inferred relationship aligned with the input ports.

IRI: <https://ekgf.org/dprod/spec/develop/inputDataset>

RDF predicate	Value
rdf:type	rdf:Property
rdf:type	owl:ObjectProperty
rdfs:domain	dprod:DataProduct
rdfs:isDefinedBy	dprod:
rdfs:range	dcat:Dataset

3.6 dprod:inputPort

Label: input port

A set of services exposed by a data product to collect its source data and makes it available for further internal transformation. An input port can receive data from one or more upstream sources in a push (i.e. asynchronous subscription) or pop mode (i.e. synchronous query). Each data product may have one or more input ports.

IRI: <https://ekgf.org/dprod/spec/develop/inputPort>

RDF predicate	Value
rdf:type	rdf:Property
rdf:type	owl:ObjectProperty
rdfs:domain	dprod:DataProduct
rdfs:isDefinedBy	dprod:
rdfs:range	dcat:DataService

3.7 dprod:isAccessServiceOf

Label: is access service of

The dataset distribution that is being offered through this data service.

IRI: <https://ekgf.org/dprod/spec/develop/isAccessServiceOf>

RDF predicate	Value
rdf:type	rdf:Property
rdf:type	owl:ObjectProperty
rdfs:domain	dcat:DataService
rdfs:isDefinedBy	dprod:
rdfs:range	dcat:Distribution
owl:inverseOf	dcat:accessService

3.8 dprod:isDistributionOf

Label: is distribution of

The dataset that this distribution makes available.

IRI: <https://ekgf.org/dprod/spec/develop/isDistributionOf>

RDF predicate	Value
rdf:type	rdf:Property
rdf:type	owl:ObjectProperty
rdfs:domain	dcat:Distribution
rdfs:isDefinedBy	dprod:
owl:inverseOf	dcat:distribution

3.9 dprod:lifecycleStatus

Label: lifecycle status

The authored position of a DPROD resource in its lifecycle.

IRI: <https://ekgf.org/dprod/spec/develop/lifecycleStatus>

Note: Abstract super-property for authored lifecycle statuses. Concrete sub-properties define their resource-specific domains; values come from an open SKOS taxonomy.

RDF predicate	Value
rdf:type	rdf:Property
rdf:type	owl:ObjectProperty
rdfs:isDefinedBy	dprod:
rdfs:range	skos:Concept

3.10 dprod:outputDataset

Label: output dataset

The data that is exposed by the data product through output data services in a way that can be understood and trusted. Depending on the lifecycle of the data product, this may be a stated or inferred relationship aligned with the output ports.

IRI: <https://ekgf.org/dprod/spec/develop/outputDataset>

RDF predicate	Value
rdf:type	rdf:Property
rdf:type	owl:ObjectProperty
rdfs:domain	dprod:DataProduct
rdfs:isDefinedBy	dprod:
rdfs:range	dcat:Dataset

3.11 dprod:outputPort

Label: output port

A set of services exposed by a data product to share the generated data in a way that can be understood and trusted.

IRI: <https://ekgf.org/dprod/spec/develop/outputPort>

RDF predicate	Value
rdf:type	rdf:Property
rdf:type	owl:ObjectProperty
rdfs:domain	dprod:DataProduct
rdfs:isDefinedBy	dprod:

RDF predicate	Value
<code>rdfs:range</code>	<code>dcat:DataService</code>

3.12 dprod:protocol

Label: protocol

A protocol (possibly one of many options) used to communicate with this data service.

IRI: <https://ekgf.org/dprod/spec/develop/protocol>

RDF predicate	Value
<code>rdf:type</code>	<code>rdf:Property</code>
<code>rdf:type</code>	<code>owl:ObjectProperty</code>
<code>rdfs:domain</code>	<code>dcat:DataService</code>
<code>rdfs:isDefinedBy</code>	<code>dprod:</code>

3.13 dprod:securitySchemaType

Label: security schema type

The security schema type used for authentication and communication with this Data Service.

IRI: <https://ekgf.org/dprod/spec/develop/securitySchemaType>

RDF predicate	Value
<code>rdf:type</code>	<code>rdf:Property</code>
<code>rdf:type</code>	<code>owl:ObjectProperty</code>
<code>rdfs:domain</code>	<code>dcat:DataService</code>
<code>rdfs:isDefinedBy</code>	<code>dprod:</code>

4 Datatype properties

4.1 dprod:purpose

Label: purpose

A description of the objectives and intended usage of the data product.

IRI: <https://ekgf.org/dprod/spec/develop/purpose>

RDF predicate	Value
<code>rdf:type</code>	<code>rdf:Property</code>
<code>rdf:type</code>	<code>owl:DatatypeProperty</code>
<code>rdfs:domain</code>	dprod:DataProduct
<code>rdfs:isDefinedBy</code>	<code>dprod:</code>
<code>rdfs:range</code>	<code>xsd:string</code>

5 Concept schemes

5.1 dprod:DataProductLifecycleStatus

Label: data product lifecycle status

An optional reference taxonomy for data product lifecycle statuses. Enterprises may use, extend, or replace this scheme with their own `skos:ConceptScheme`.

IRI: <https://ekgf.org/dprod/spec/develop/DataProductLifecycleStatus>

Note: DPROD does not prescribe a closed set of data product lifecycle statuses.

RDF predicate	Value
dct:title	DPROD Data Product Lifecycle Status (@en)
rdf:type	skos:ConceptScheme
rdfs:isDefinedBy	dprod:
rdfs:seeAlso	https://edmcouncil.org/wp-content/uploads/2024/03/EDMWebinar_DPSIG_04-30-Presentation.pdf#page=7

6 SHACL node shapes

6.1 dprod:shapes/DataProductShape

Label: data product shape

A rational, managed, and governed collection of data, with purpose, value and ownership, meeting consumer needs over a planned life-cycle.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataProductShape>

Note: A data product may have input and output ports, code and metadata

RDF predicate	Value
rdf:type	sh:NodeShape
rdfs:isDefinedBy	dprod:shapes/
sh:property	dprod:shapes/DataProduct-dataProductLifecycleStatus
sh:property	dprod:shapes/DataProduct-dataProductOwner
sh:property	dprod:shapes/DataProduct-description
sh:property	dprod:shapes/DataProduct-domain
sh:property	dprod:shapes/DataProduct-hasPolicy
sh:property	dprod:shapes/DataProduct-inputDataset
sh:property	dprod:shapes/DataProduct-inputPort
sh:property	dprod:shapes/DataProduct-label
sh:property	dprod:shapes/DataProduct-outputDataset
sh:property	dprod:shapes/DataProduct-outputPort
sh:property	dprod:shapes/DataProduct-purpose
sh:targetClass	dprod:DataProduct

6.2 dprod:shapes/DataServiceShape

Label: data service shape

A collection of operations that provides access to one or more datasets or data processing functions.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataServiceShape>

RDF predicate	Value
rdf:type	sh:NodeShape
rdfs:isDefinedBy	dprod:shapes/

RDF predicate	Value
sh:property	dprod:shapes/DataService-endpointDescription
sh:property	dprod:shapes/DataService-endpointURL
sh:property	dprod:shapes/DataService-isAccessServiceOf
sh:property	dprod:shapes/DataService-protocol
sh:property	dprod:shapes/DataService-securitySchemaType
sh:targetClass	dcat:DataService

6.3 dprod:shapes/DatasetShape

Label: dataset shape

A collection of data, published or curated by a single source, and available for access or download in one or more representations.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DatasetShape>

RDF predicate	Value
rdf:type	sh:NodeShape
rdfs:isDefinedBy	dprod:shapes/
sh:property	dcat:Dataset-informationSensitivityClassification
sh:property	dprod:shapes/Dataset-conformsTo
sh:property	dprod:shapes/Dataset-description
sh:property	dprod:shapes/Dataset-distribution
sh:property	dprod:shapes/Dataset-hasPolicy
sh:property	dprod:shapes/Dataset-label
sh:property	dprod:shapes/Dataset-type
sh:targetClass	dcat:Dataset

6.4 dprod:shapes/DistributionShape

Label: distribution shape

A specific representation of a dataset. A dataset might be available in multiple serializations that may differ in various ways, including natural language, media-type or format, schematic organization, temporal and spatial resolution, level of detail or profiles (which might specify any or all of the above).

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DistributionShape>

RDF predicate	Value
rdf:type	sh:NodeShape
rdfs:isDefinedBy	dprod:shapes/
sh:property	dprod:shapes/Distribution-accessService
sh:property	dprod:shapes/Distribution-conformsTo
sh:property	dprod:shapes/Distribution-format
sh:property	dprod:shapes/Distribution-isDistributionOf
sh:targetClass	dcat:Distribution

6.5 dprod:shapes/InformationSensitivityClassificationShape

Label: information sensitivity classification shape

A classification of the information within a dataset to indicate the level of control and protection that must be applied.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/InformationSensitivityClassificationShape>

RDF predicate	Value
<code>rdf:type</code>	<code>sh:NodeShape</code>
<code>rdfs:isDefinedBy</code>	<code>dprod:shapes/</code>
<code>sh:targetClass</code>	<code>dprod:InformationSensitivityClassification</code>

6.6 dprod:shapes/SecuritySchemaTypeShape

Label: security schema type shape

A classification encompassing a set of rules used for authentication and communication.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/SecuritySchemaTypeShape>

RDF predicate	Value
<code>rdf:type</code>	<code>sh:NodeShape</code>
<code>rdfs:isDefinedBy</code>	<code>dprod:shapes/</code>
<code>sh:targetClass</code>	<code>dprod:SecuritySchemaType</code>

7 SHACL property shapes

7.1 dcat:Dataset-informationSensitivityClassification

Label: dataset information sensitivity classification shape

More granular classification that indicates the level of control and protection that must be applied to the asset due to the nature of the data and its sensitivity or importance to the organization.

IRI: <http://www.w3.org/ns/dcat#Dataset-informationSensitivityClassification>

RDF predicate	Value
<code>rdf:type</code>	<code>sh:PropertyShape</code>
<code>rdfs:isDefinedBy</code>	<code>dprod:shapes/</code>
<code>sh:class</code>	<code>dprod:InformationSensitivityClassification</code>
<code>sh:path</code>	<code>dprod:informationSensitivityClassification</code>

7.2 dprod:shapes/DataProduct-dataProductLifecycleStatus

Label: data product lifecycle status shape

The authored development lifecycle status of the data product.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataProduct-dataProductLifecycleStatus>

RDF predicate	Value
<code>rdf:type</code>	<code>sh:PropertyShape</code>
<code>rdfs:isDefinedBy</code>	<code>dprod:shapes/</code>
<code>sh:class</code>	<code>skos:Concept</code>
<code>sh:maxCount</code>	<code>1 (xsd:integer)</code>
<code>sh:message</code>	dataProductLifecycleStatus, if present, must be a single skos:Concept value.
<code>sh:path</code>	<code>dprod:dataProductLifecycleStatus</code>

7.3 dprod:shapes/DataProduct-dataProductOwner

Label: data product owner shape

The agent that is accountable overall for the data product, including managing it through its lifecycle.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataProduct-dataProductOwner>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:class	prov:Agent
sh:path	dprod:dataProductOwner

7.4 dprod:shapes/DataProduct-description

Label: data product description shape

A free text description of the data product.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataProduct-description>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:datatype	xsd:string
sh:path	dct:description

7.5 dprod:shapes/DataProduct-domain

Label: data product domain shape

The business or information area supported by the data product.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataProduct-domain>

Note: The target class is left open

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:path	dprod:domain

7.6 dprod:shapes/DataProduct-hasPolicy

Label: data product has policy shape

An ODRL conformant policy expressing the rights associated with the data product. This is an inferred relationship based on the rights expressed on the individual datasets of the data product.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataProduct-hasPolicy>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:class	odrl:Policy
sh:path	odrl:hasPolicy

7.7 dprod:shapes/DataProduct-inputDataset

Label: data product input dataset shape

The source data made available to the data product through input data services. Depending on the lifecycle of the data product, this may be a stated or inferred relationship aligned with the input ports.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataProduct-inputDataset>

RDF predicate	Value
<code>rdf:type</code>	<code>sh:PropertyShape</code>
<code>rdfs:isDefinedBy</code>	<code>dprod:shapes/</code>
<code>sh:class</code>	<code>dcat:Dataset</code>
<code>sh:path</code>	dprod:inputDataset

7.8 dprod:shapes/DataProduct-inputPort

Label: data product input port shape

A set of services exposed by a data product to collect its source data and makes it available for further internal transformation. An input port can receive data from one or more upstream sources in a push (i.e. asynchronous subscription) or pop mode (i.e. synchronous query). Each data product may have one or more input ports.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataProduct-inputPort>

RDF predicate	Value
<code>rdf:type</code>	<code>sh:PropertyShape</code>
<code>rdfs:isDefinedBy</code>	<code>dprod:shapes/</code>
<code>sh:class</code>	<code>dcat:DataService</code>
<code>sh:path</code>	dprod:inputPort

7.9 dprod:shapes/DataProduct-label

Label: data product label shape

The name given to the data product.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataProduct-label>

RDF predicate	Value
<code>rdf:type</code>	<code>sh:PropertyShape</code>
<code>rdfs:isDefinedBy</code>	<code>dprod:shapes/</code>
<code>sh:datatype</code>	<code>xsd:string</code>
<code>sh:path</code>	<code>rdfs:label</code>

7.10 dprod:shapes/DataProduct-outputDataset

Label: data product output dataset shape

The data that is exposed by the data product through output data services in a way that can be understood and trusted. Depending on the lifecycle of the data product, this may be a stated or inferred relationship aligned with the output ports.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataProduct-outputDataset>

RDF predicate	Value
<code>rdf:type</code>	<code>sh:PropertyShape</code>
<code>rdfs:isDefinedBy</code>	<code>dprod:shapes/</code>
<code>sh:class</code>	<code>dcat:Dataset</code>
<code>sh:path</code>	dprod:outputDataset

7.11 dprod:shapes/DataProduct-outputPort

Label: data product output port shape

A set of services exposed by a data product to share the generated data in a way that can be understood and trusted.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataProduct-outputPort>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:class	dcat:DataService
sh:path	dprod:outputPort

7.12 dprod:shapes/DataProduct-purpose

Label: data product purpose shape

A description of the objectives and intended usage of the data product.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataProduct-purpose>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:datatype	xsd:string
sh:path	dprod:purpose

7.13 dprod:shapes/DataProduct-type

Label: data product description shape

The nature or genre of the data product.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataProduct-type>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:path	dct:type

7.14 dprod:shapes/DataService-endpointDescription

Label: data service endpoint description shape

A description of the services available via the end-points, including their operations, parameters etc.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataService-endpointDescription>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:path	dcat:endpointDescription

7.15 dprod:shapes/DataService-endpointURL

Label: data service endpoint URL shape

The root location or primary endpoint of the service.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataService-endpointURL>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:path	dcat:endpointURL

7.16 dprod:shapes/DataService-isAccessServiceOf

Label: data service is access service of shape

The dataset distribution that is being offered through this data service.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataService-isAccessServiceOf>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:class	dcat:Distribution
sh:path	dprod:isAccessServiceOf

7.17 dprod:shapes/DataService-protocol

Label: data service protocol shape

A protocol (possibly one of many options) used to communicate with this data service.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataService-protocol>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:path	dprod:protocol

7.18 dprod:shapes/DataService-securitySchemaType

Label: data service security schema type shape

The security schema type used for authentication and communication with this Data Service.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/DataService-securitySchemaType>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:class	dprod:SecuritySchemaType
sh:path	dprod:securitySchemaType

7.19 dprod:shapes/Dataset-conformsTo

Label: dataset conforms to shape

A model, schema, ontology, view or profile that the dataset conforms to.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/Dataset-conformsTo>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:path	dct:conformsTo

7.20 dprod:shapes/Dataset-description

Label: dataset distribution shape

Free text description of the dataset.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/Dataset-description>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:datatype	xsd:string
sh:path	dct:description

7.21 dprod:shapes/Dataset-distribution

Label: dataset distribution shape

An available distribution of the dataset.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/Dataset-distribution>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:class	dcat:Distribution
sh:path	dcat:distribution

7.22 dprod:shapes/Dataset-hasPolicy

Label: dataset has policy shape

An ODRL conformant policy expressing the rights associated with the resource.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/Dataset-hasPolicy>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:path	odrl:hasPolicy

7.23 dprod:shapes/Dataset-label

Label: dataset label shape

The name given to the dataset

IRI: <https://ekgf.org/dprod/spec/develop/shapes/Dataset-label>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:datatype	xsd:string
sh:path	rdfs:label

7.24 dprod:shapes/Dataset-type

Label: dataset type shape

The type or genre of the dataset.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/Dataset-type>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:path	dct:type

7.25 dprod:shapes/Distribution-accessService

Label: distribution access service shape

A data service that gives access to the distribution of the dataset.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/Distribution-accessService>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:class	dcat:DataService
sh:path	dcat:accessService

7.26 dprod:shapes/Distribution-conformsTo

Label: distribution conforms to shape

The schema that the distribution conforms to that is format and technology dependent.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/Distribution-conformsTo>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:path	dct:conformsTo

7.27 dprod:shapes/Distribution-format

Label: distribution format shape

The file format of the distribution.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/Distribution-format>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:path	dct:format

7.28 dprod:shapes/Distribution-isDistributionOf

Label: distribution is distribution of shape

The dataset that this distribution makes available.

IRI: <https://ekgf.org/dprod/spec/develop/shapes/Distribution-isDistributionOf>

RDF predicate	Value
rdf:type	sh:PropertyShape
rdfs:isDefinedBy	dprod:shapes/
sh:class	dcat:Dataset
sh:path	dprod:isDistributionOf

8 Describe a dataset schema

The Data Product provides to the consumers (dprod:outputDataset) datasets defined based on [DCAT](#). Datasets should be described ([dcat:conforms](#)) with logical models. Logical models describe business entities and their properties (attributes and relationships) with consistent business terms and they are technology independent. Ideally, logical models are based on existing standards eg, [FIBO](#), [CDM](#) etc. If a logical model does not exist to describe the dataset, then the dataset publisher can create one, preferably by using SHACL modelling language:

Example of a Dataset conforming to a SHACL Schema:

```
exampleDataset dcat:conforms exampleSchema:DatasetLogicalSchema.
exampleSchema:DatasetLogicalSchema a owl:Ontology, dct:Standard.
```

Based on [SHACL](#) all entities that exist in the dataset are Node Shapes (1). The attributes of the entities are described as Property Shapes with sh:datatype (2) The relationships are also defined as Property Shaped with sh:class the target class of the relationship (3)

```
@prefix dc:          <http://purl.org/dc/elements/1.1/> .
@prefix rdfs:        <http://www.w3.org/2000/01/rdf-schema#> .
@prefix sh:          <http://www.w3.org/ns/shacl#> .
@prefix xsd:         <http://www.w3.org/2001/XMLSchema#> .
@prefix example:     <https://y.com/schema/> .
@prefix exampleSchema: <https://y.com/schema/logical/> .
```

definition of the entity as a Node Shape (1)

```
example:Account a sh:NodeShape ;
  # human readable name of the entity
  rdfs:label "Account"@en ;
  # description of the entity
  dc:description "An Account is..." ;
  # an account has a property shape Account Age.
  # Definition of the property shape follows (2)
  sh:property example:Account-AccountAge ;
  # an account has a property shape Account Branch.
  # Definition of the property shape follows (3)
  sh:property example:Account-AccountBranch ;
  rdfs:isDefinedBy exampleSchema:DatasetLogicalSchema;
```

.

(2) Definition of the Account-AccountAge property shape

describing that an account MUST have exactly one
AccountAge attribute and its datatype is integer

```
example:Account-AccountAge a sh:PropertyShape ;
  sh:path example:AccountAge ;
  sh:datatype xsd:integer ;
  sh:minCount 1 ;
  sh:maxCount 1 ;
  rdfs:isDefinedBy exampleSchema:DatasetLogicalSchema ;
```

.

(3) Definition of the Account-AccountBranch property shape

describing than an account must have at least one
Account Branch which is another entity

```
example:Account-AccountBranch a sh:PropertyShape ;
  sh:path example:AccountBranch ;
  sh:class example:Branch ;
  sh:minCount 1 ;
```

```
rdfs:isDefinedBy exampleSchema:DatasetLogicalSchema ;  
.  
  
# definition of the entity Branch as a Node Shape (1)  
example:Branch a sh:NodeShape ;  
  rdfs:label "Branch"@en ;  
  dc:description "A Branch is.." ;  
  rdfs:isDefinedBy exampleSchema:DatasetLogicalSchema ;  
.
```