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OSLC PROMCODE Version 1.0. Part 3: Constraints

OASIS Standard

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Additional artifacts:

This specification is one component of a Work Product that also includes:

- *OSLC PROMCODE Version 1.0. Part 1: Specification*. https://docs.oasis-open.org/oslc-promcode/promcode/v1.0/os/promcode-spec.html.
- *OSLC PROMCODE Version 1.0. Part 2: Vocabulary*. https://docs.oasis-open.org/oslc-promcode/promcode/v1.0/os/promcode-vocab.html.
- *OSLC PROMCODE Version 1.0. Part 3: Constraints* (this document). https://docs.oasis-open.org/oslc-promcode/promcode/v1.0/os/promcode-shapes.html.
- Machine-readable vocabulary terms: https://docs.oasis-open.org/oslc-promcode/promcode/v1.0/os/promcode-vocab.ttl.
- Machine-readable constraints: https://docs.oasis-open.org/oslc-promcode/promcode/v1.0/os/promcode-shapes.ttl.

Related work:

This document is related to:

- *OSLC PROMCODE Use Cases Version 1.0*. Edited by Mikio Aoyama, Yoshio Horiuchi, Tom Kamimura, Shinji Matsuoka, Shigeaki Matsumoto, Masaki Wakao, Kazuo Yabuta, and Hiroyuki Yoshida. Latest stage: https://docs.oasis-open.org/oslc-promcode/usecase/v1.0/usecase-v1.0.html.

Abstract:

This document describes the definitions of the OSLC PROMCODE Shape Resources utilizing the OSLC Core Shape Resources. Implementations may use these shapes resources as a basis for their work, providing their own property additions and additional constraints on OSLC defined properties.

Status:

This document was last revised or approved by the membership of OASIS on the above date. The level of approval is also listed above. Check the "Latest stage" location noted above for possible later revisions of this document. Any other numbered Versions and other technical work produced by the Technical Committee (TC) are listed at https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=oslc-promcode#technical.

TC members should send comments on this specification to the TC's email list. Others should send comments to the TC's public comment list oslc-promcode-comment@lists.oasis-open.org, after subscribing to it by following the instructions at the "Send A Comment" button on the TC's web page at https://www.oasis-

open.org/committees/oslc-promcode/.

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Note that any machine-readable content (Computer Language Definitions) declared Normative for this Work Product is provided in separate plain text files. In the event of a discrepancy between any such plain text file and display content in the Work Product's prose narrative document(s), the content in the separate plain text file prevails.

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When referencing this specification, the following citation format should be used:

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Notices

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1. Introduction

This section is non-normative.

This specification describes the resource shapes for OSLC PROMCODE resources. PROMCODE introduces the collection of fourteen classes and each resource shape defined in this document corresponds to a class in the collection. Two classes in the collection are used as "abstract" classes. These are `ManagedItem` and `ManagedItemCollection`. The resource shape for `ManagedItem` is a resource that defines common properties of `ScopeItem`, `WorkItem`, `Artifact`, `Issue` and `Risk`, and the resource shape for `ManagedItemCollection` abstracts common properties of `Plan`, `Report`, `RiskCollection` and `IssueCollection`.

As described in [OSLC-Shapes], the representation of a property defined in a resource shape affects the result of a GET request. PROMCODE uses 'inline' representation for two properties, i.e., the representation of the property `targets` of an `Artifact` resource and the representation of the property `observes` of a `Measurement` resource. Both of these properties link the subject resources to `Measure` resources. Even though `Measure` resources are resources, they describe values in a similar way to decimals. Defining the representations of these properties to 'inline' establishes the similarity. It avoids additional network traffic to access the values that would occur if 'reference' representation is used.

1.1 Terminology

This section is non-normative.

Terminology is based on OSLC Core Overview [OSLCCore3] , W3C Linked Data Platform [LDP], W3C's Architecture of the World Wide Web [WEBARCH], Hyper-text Transfer Protocol [HTTP11]. Terminology for this specification is defined in part 1 of the multi-part specification.

1.2 Typographical Conventions and Use of RFC Terms

As well as sections marked as non-normative, all authoring guidelines, diagrams, examples, and notes in this specification are non-normative. Everything else in this specification is normative.

The key words **MUST**, **MUST NOT**, **REQUIRED**, **SHOULD**, **SHOULD NOT**, **RECOMMENDED**, **MAY**, and **OPTIONAL** in this specification are to be interpreted as described in [RFC2119].

Conventions

In this section, Resource Shape is represented in RDF+Turtle format. The following common URI prefixes are used throughout this section.

```
@prefix dcterms: <http://purl.org/dc/terms/> .
@prefix oslc: <http://open-services.net/ns/core#> .
@prefix oslc_promcode: <http://open-services.net/ns/promcode#> .
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@prefix xml: <http://www.w3.org/XML/1998/namespace> .
@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .
```

2. Resource Constraints

This section specifies the constraints for the PROMCODE resources. The resource properties are not limited to the ones defined in this specification, PROMCODE Servers may provide additional properties. It is recommended that any additional properties exist in their own unique namespace and not use the namespaces defined in these specifications.

2.1 Artifact

An artifact is a work product that is produced in a project. An artifact may be physical or digital.

- **Name:** `Artifact`
- **Type URI:** `http://open-services.net/ns/promcode#Artifact`
- **Summary:** Shape resource of an `Artifact` resource.

Artifact Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
`dcterms:description`	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	`dcterms:description` is a property to help a human understand the resource.
`dcterms:identifier`	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for the `Artifct` resource.
`dcterms:isPartOf`	Zero-or-one	unspecified	Resource	Reference	`oslc_promcode:Artifact`	`isPartOf` is a relation between a child `Artifact` resource and its parent `Artifact` resource. An `Artifact` resource may have multiple child `WorkItem` resources.
`dcterms:source`	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the `Artifact` resource that is a source of this `Artifact` resource.
`dcterms:title`	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string of the resource.
`oslc_promcode:producedFor`	Zero-or-many	unspecified	Resource	Reference	`oslc_promcode:WorkItem`, `oslc_promcode:ScopeItem`	`producedFor` is a relation between an `Artifact` resource and a `ScopeItem` resource or a `WorkItem` resource. `Artifact` is produced as a result of implementation of the `ScopeItem` resources or as a result of the work described by the `WorkItem` resource.
`oslc_promcode:sequenceNumber`	Zero-or-one	unspecified	decimal	N/A	Unspecified	A unique number assigned to this resource which represents a position in the sequential order of all `Artifact` resources of the project.
`oslc_promcode:targets`	Zero-or-many	unspecified	AnyResource	Inline	`oslc_promcode:Measure`	`targets` is a relation between an `Artifact` resource and a `Measure` resource. The representation of this property is inline.
`rdf:type`	One-or-many	unspecified	Resource	Reference	`rdfs:Class`	The resource type URIs.

2.2 IssueCollection

An IssueCollection is a resource which is a subclass of ManagedItemCollection. An IssueCollection only collects Issues. All of Issues raised in a project should be collected by an IssueCollection.

- **Name:** `IssueCollection`
- **Type URI:** `http://open-services.net/ns/promcode#IssueCollection`
- **Summary:** Shape resource of an `IssueCollection` resource.

IssueCollection Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
dcterms:date	Zero-or-one	unspecified	dateTime	N/A	Unspecified	A date on which this IssueCollection resource collects Issue resources.
dcterms:description	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	dcterms:description is a property to help a human understand the resource.
dcterms:identifier	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier of the resource.
dcterms:source	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the IssueCollection resource that is a source of this IssueCollection resource.
dcterms:title	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string of this IssueCollection resource.
oslc_promcode:belongsTo	Exactly-one	unspecified	Resource	Reference	oslc_promcode:Project	belongsTo is a relation between the IssueCollection resource and a Project resource. An acquirer and a supplier may have multiple projects in operation. The Project resource linked is used to identify the project this IssueCollection resource belongs to.
oslc_promcode:collects	Zero-or-many	unspecified	Resource	Either	oslc_promcode:Issue	collects is a relation between an IssueCollection resource and an Issue resource. An IssueCollection resource collects only Issue resources.
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	The resource type URIs.

2.3 Issue

An issue is a situation that must be resolved in order to meet the objectives of a project. Failure to resolve the situation may result in negative consequences for the project, such as a schedule delay.

- **Name:** Issue
- **Type URI:** http://open-services.net/ns/promcode#Issue
- **Summary:** Shape resource of an Issue resource.

Issue Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
dcterms:description	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	dcterms:description is a property to help a human understand the Issue resource.
dcterms:identifier	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for the Issue resource.
dcterms:source	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the Issue resource that is a source of this Issue resource.
dcterms:title	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string for the resource.
oslc_promcode:raisedBy	Zero-or-many	unspecified	Resource	Either	oslc_promcode:Risk, oslc_promcode:Artifact, oslc_promcode:WorkItem, oslc_promcode:ScopeItem, oslc_promcode:Issue	raisedBy is a relation between an Issue resource and other resources of type ScopeItem, WorkItem, Artifact, Risk and Issue. An Issue resource may be raised by one or more resources.

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
oslc_promcode:raisedDate	Zero-or-one	unspecified	dateTime	N/A	Unspecified	raisedDate is an optional property of an Issue resource. It is the raised date of the Issue resource. Its value is a dateTime.
oslc_promcode:sequenceNumber	Zero-or-one	unspecified	decimal	N/A	Unspecified	A unique number assigned to this resource which represents a position in the sequential order of all the Issue resources in the project.
oslc_promcode:stateOfIssue	Zero-or-one	unspecified	AnyResource	Either	Unspecified	stateOfIssue is a property that defines the state of an Issue resource. The value is any resource, but is expected to describe its state such as open, action taken, monitored and closed, to represent the state of issue.
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	The resource type URIs.

2.4 ManagedItemCollection

A managed item collection is container of managed items. Any combination of subclass such as a scope item, work item, artifact or issue can be hold in a ManagedItemCollection as a snapshot. ManagedItemCollection has concrete subclasses such as Plan, Report and IssueCollection.

- **Name:** ManagedItemCollection
- **Type URI:** http://open-services.net/ns/promcode#ManagedItemCollection
- **Summary:** Shape resource of ManagedItemCollection.

ManagedItemCollection Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
dcterms:date	Zero-or-one	unspecified	dateTime	N/A	Unspecified	A date on which this ManagedItemCollection resource collects member resources.
dcterms:description	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	dcterms:description is a property to help a human understand the resource.
dcterms:identifier	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a ManagedItemCollection resource.
dcterms:source	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the ManagedItemCollection resource that is a source of this ManagedItemCollection resource.
dcterms:title	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string of this ManagedItemCollection resource.
oslc_promcode:belongsTo	Exactly-one	unspecified	Resource	Reference	oslc_promcode:Project	belongsTo is a relation between the ManagedItemCollection resource and a Project resource.
oslc_promcode:collects	Zero-or-many	unspecified	Resource	Either	oslc_promcode:Issue, oslc_promcode:Risk, oslc_promcode:Artifact, oslc_promcode:WorkItem, oslc_promcode:ScopeItem	ManagedItem resources included in this ManagedItemCollection. A ManagedItemCollection resource collects resources of type ScopeItem, WorkItem, Artifact, Risk, and Issue.
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	The resource type URIs.

2.5 ManagedItem

A managed item is a scope item, work item, artifact, issue, or some other entity that is part of a project. Managed item resources use dcterms:type to specify concrete subclasses. This practice is deprecated in OSLC Core 3.0.

- **Name:** ManagedItem
- **Type URI:** http://open-services.net/ns/promcode#ManagedItem

- **Summary:** Shape resource for `ManagedItem`.

ManagedItem Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
`dcterms:description`	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	`dcterms:description` is a property to help a human understand the resource.
`dcterms:identifier`	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a `ManagedItem` resource.
`dcterms:source`	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the `ManagedItem` resource that is a source of this `ManagedItem` resource.
`dcterms:title`	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string for a `ManagedItem` resource.
`oslc_promcode:sequenceNumber`	Zero-or-one	unspecified	decimal	N/A	Unspecified	A unique number assigned to the resource which represents a position in the sequential order of resources of the same type of `ManagedItem`.
`rdf:type`	One-or-many	unspecified	Resource	Reference	`rdfs:Class`	The resource type URIs.

2.6 Measure

A measure is an observation of some measurable aspect of an artifact.

- **Name:** `Measure`
- **Type URI:** `http://open-services.net/ns/promcode#Measure`
- **Summary:** Shape resource of a `Measure` resource

Measure Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
`dcterms:description`	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	`dcterms:description` is a property to help a human understand the resource.
`dcterms:identifier`	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for the `Measure` resource.
`dcterms:title`	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string of this `Measure` resource.
`oslc_promcode:metricOfMeasure`	Zero-or-one	unspecified	AnyResource	Either	Unspecified	`metricOfMeasure` is a property that defines a metric of measure of this resource. The value is any resource, but is expected to have information on the metric of this `Measure` resource.
`oslc_promcode:unitOfMeasure`	Zero-or-one	unspecified	AnyResource	Either	Unspecified	`unitOfMeasure` is a property that defines a unit of measure of this `Measure` resource. The value is any resource, but is expected to have information on the unit of measure of this `Measure` resource, describing whether the metric is a rate, a ratio, a quantity, a time, etc.
`oslc_promcode:valueOfMeasure`	Exactly-one	unspecified	decimal	N/A	Unspecified	`valueOfMeasure` is a property that represents a value for the `Measure` resource.
`rdf:type`	One-or-many	unspecified	Resource	Reference	`rdfs:Class`	The resource type URIs.

2.7 Measurement

A measurement measures some aspect of an artifact at some point in time.

- **Name:** `Measurement`
- **Type URI:** `http://open-services.net/ns/promcode#Measurement`
- **Summary:** Shape resource of a `Measurement` resource

Measurement Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
`dcterms:date`	Exactly-one	unspecified	dateTime	N/A	Unspecified	`date` is a property of a `Measurement` resource. It is the date on which the measurement was made.

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
dcterms:description	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	dcterms:description is a property to help a human understand the resource.
dcterms:identifier	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for the Measurement resource.
oslc_promcode:measures	Exactly-one	unspecified	Resource	Reference	oslc_promcode:Artifact	measures is a relation between a Measurement resource and an Artifact resource. The measurement represented by the resource is on the artifact represented by the Artifact resource.
oslc_promcode:observes	Zero-or-many	unspecified	AnyResource	Inline	oslc_promcode:Measure	observes is a relation between a Measurement resource and a Measure resource. One Measurement resource observes zero or many Measure resources. The representation of this property is inline.
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	The resource type URIs.

2.8 Plan

A Plan is a resource which is a subclass of ManagedItemCollection to describe a plan, which is agreed between an acquirer and a supplier at project initiation. A plan consists of ScopeItems, WorkItems, Artifacts, Targets and Measures.

- **Name:** Plan
- **Type URI:** http://open-services.net/ns/promcode#Plan
- **Summary:** Shape resource of a Plan resource

Plan Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
dcterms:date	Zero-or-one	unspecified	dateTime	N/A	Unspecified	A date on which this Plan resource collects member resources.
dcterms:description	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	dcterms:description is a property to help a human understand the resource.
dcterms:identifier	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a Plan resource.
dcterms:source	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the Plan resource that is a source of this Plan resource.
dcterms:title	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string of this Plan resource.
oslc_promcode:belongsTo	Exactly-one	unspecified	Resource	Reference	oslc_promcode:Project	belongsTo is a relation between a Plan resource and a Project resource.
oslc_promcode:collects	Zero-or-many	unspecified	Resource	Either	oslc_promcode:Artifact, oslc_promcode:WorkItem, oslc_promcode:ScopeItem	collects is a relation between a Plan resource and resources, where each linked resource from the Plan resource is a ScopeItem resource, a WorkItem resource or an Artifact resource.
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	The resource type URIs.

2.9 Project

A project is software development work to achieve some business goal.

- **Name:** Project
- **Type URI:** http://open-services.net/ns/promcode#Project
- **Summary:** Shape resource of a Project resource.

Project Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
dcterms:description	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	dcterms:description is a property of a Project resource to help a human understand the project.
dcterms:identifier	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a Project resource.
dcterms:source	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the Project resource that is a source of this Project resource.
dcterms:title	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string for a Project resource.
oslc_promcode:actualEndDate	Zero-or-one	unspecified	dateTime	N/A	Unspecified	actualEndDate is a property of a Project resource that describes actual end date of the project. Its value is of type xsd:dateTime.
oslc_promcode:actualStartDate	Zero-or-one	unspecified	dateTime	N/A	Unspecified	actualStartDate is a property of a Project resource. It is the actual start date of the project. Its value is of type xsd:dateTime.
oslc_promcode:metricOfScopeItemSize	Zero-or-one	unspecified	AnyResource	Either	Unspecified	metricOfScopeItemSize is a property that describes a metric of properties of plannedSize and actualSize of ScopeItem. The value can be any resource, but it is expected to have information on the desired metric for all the ScopeItem resources of the project.
oslc_promcode:plannedEndDate	Zero-or-one	unspecified	dateTime	N/A	Unspecified	plannedEndDate is a property of a Project resource. It is the planned end date of the project. Its value is of type xsd:dateTime.
oslc_promcode:plannedStartDate	Zero-or-one	unspecified	dateTime	N/A	Unspecified	plannedStartDate is a property of a Project resource. It is the planned start date of the project. Its value is of type xsd:dateTime.
oslc_promcode:unitOfScopeItemSize	Zero-or-one	unspecified	AnyResource	Either	Unspecified	unitOfScopeItemSize is a property that describes a unit of size of properties of plannedSize and actualSize of ScopeItem. The value can be any resource, but it is expected to have information on the desired unit of size, describing whether the metric is a rate, a ratio, a quantity, a time, and so on for all the ScopeItem resources in the project.
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	The resource type URIs.

2.10 Report

A Report is a resource which is a subclass of ManagedItemCollection to describe a report. A Report is associated to corresponding Plan.

- **Name:** Report
- **Type URI:** http://open-services.net/ns/promcode#Report
- **Summary:** Shape resource of a Report resource

Report Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
dcterms:date	Zero-or-one	unspecified	dateTime	N/A	Unspecified	A date on which this Report resource collects member resources.
dcterms:description	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	dcterms:description is a property to help a human understand the resource.
dcterms:identifier	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a Report resource.
dcterms:source	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the Report resource that is a source of this Report resource.
dcterms:title	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string of this Report resource.
oslc_promcode:belongsTo	Exactly-one	unspecified	Resource	Reference	oslc_promcode:Project	belongsTo is a relation between this Report resource and a Project resources.
oslc_promcode:collects	Zero-or-many	unspecified	Resource	Either	oslc_promcode:Artifact, oslc_promcode:WorkItem, oslc_promcode:ScopeItem	collects is a relation between the Report resource and resources, where each linked resource from the Plan resource is a Scopeitem resource, a Workitem resource or an Artifact resource. The Report resource collects a subset of resources collected by the Plan resource that is linked by correspondsTo property.
oslc_promcode:correspondsTo	Zero-or-one	unspecified	Resource	Reference	oslc_promcode:Plan	correspondsTo is a relation between a Report resource and a Plan resource. A Report resource has at most one correspondsTo relation to the corresponding a Plan resource. If a plan is changed and a new Plan resource is created, the Report may need to be linked to the new Plan resource.
oslc_promcode:includes	Zero-or-many	unspecified	Resource	Either	oslc_promcode:Measurement	includes is a relation between this Report resource and Measurement resources. A Measurement resource linked by includes from this resource must measure an Artifact resource that is linked by collects property of this Report resource.
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	The resource type URIs.

2.11 RiskCollection

- **Name:** RiskCollection
- **Type URI:** http://open-services.net/ns/promcode#RiskCollection
- **Summary:** Shape resource of a RiskCollection resource.

RiskCollection Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
dcterms:date	Zero-or-one	unspecified	dateTime	N/A	Unspecified	A date on which this RiskCollection resource collects member resources.
dcterms:description	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	dcterms:description is a property to help a human understand the resource.
dcterms:identifier	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a RiskCollection resource.
dcterms:source	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the RiskCollection resource that is a source of this RiskCollection resource.
dcterms:title	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string of this RiskCollection resource.
oslc_promcode:belongsTo	Exactly-one	unspecified	Resource	Reference	oslc_promcode:Project	belongsTo is a relation between the RiskCollection resource and a Project resource.
oslc_promcode:collects	Zero-or-many	unspecified	Resource	Either	oslc_promcode:Risk	collects is a relation between a RiskCollection resource and a Risk resource.
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	The resource type URIs.

2.12 Risk

- **Name:** Risk
- **Type URI:** http://open-services.net/ns/promcode#Risk
- **Summary:** Shape resource of a Risk resource.

Risk Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
dcterms:description	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	dcterms:description is a property to help a human to understand the resource.
dcterms:identifier	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a Risk resource.
dcterms:source	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the Risk resource that is a source of this Risk resource.
dcterms:title	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string for a Risk resource.
oslc_promcode:identifiedBy	Zero-or-many	unspecified	Resource	Either	oslc_promcode:Issue, oslc_promcode:Artifact, oslc_promcode:WorkItem, oslc_promcode:ScopeItem, oslc_promcode:Risk	identifiedBy is a relation between a Risk resource and a resource of type ScopeItem, WorkItem, Artifact, Risk or Issue. A Risk resource may be identified by one or more resources.
oslc_promcode:identifiedDate	Zero-or-one	unspecified	dateTime	N/A	Unspecified	identifiedDate is the date on which the risk was identified.
oslc_promcode:sequenceNumber	Zero-or-one	unspecified	decimal	N/A	Unspecified	A unique number assigned to this resource which represents a position in the sequential order of all the Risk resources of the project.

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
oslc_promcode:stateOfRisk	exactly-one	unspecified	AnyResource	Either	Unspecified	stateOfRisk is a property that defines the state of a Risk resource. The value is any resource, but is expected to describe its state such as open, action taken, monitored and closed, to represent the state of the risk.
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	The resource type URIs.

2.13 ScopeItem

A ScopeItem defines the work to be included in or excluded from a project. It defines the boundaries of the project.

- **Name:** ScopeItem
- **Type URI:** http://open-services.net/ns/promcode#ScopeItem
- **Summary:** Shape resource of a ScopeItem resource

ScopeItem Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
dcterms:description	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	dcterms:description is a property to help a human understand the resource.
dcterms:identifier	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a ScopeItem resource.
dcterms:source	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the ScopeItem resource that is a source of this ScopeItem resource.
dcterms:title	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string for a ScopeItem resource.
oslc_promcode:actualSize	Zero-or-one	unspecified	decimal	N/A	Unspecified	actualSize is a property for actual development size for a ScopeItem resource.
oslc_promcode:isPartOf	Zero-or-one	unspecified	Resource	Reference	oslc_promcode:ScopeItem	isPartOf is a relation between a child ScopeItem resource and its parent ScopeItem resource. A ScopeItem resource may have multiple child ScopeItem resources.
oslc_promcode:plannedSize	Zero-or-one	unspecified	decimal	N/A	Unspecified	plannedSize is a property for estimated development size for a ScopeItem resource.
oslc_promcode:sequenceNumber	Zero-or-one	unspecified	decimal	N/A	Unspecified	A unique number assigned to this resource which represents a position in the sequential order of all the ScopeItem resources of the project.
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	The resource type URIs.

2.14 WorkItem

A work item describes work to be performed in a project delivery contract. It adds detail to the description of work that is described by a scope item. These details typically include cost, schedule, and resource requirements. The set of all work items in a project form a work breakdown structure.

- **Name:** WorkItem
- **Type URI:** http://open-services.net/ns/promcode#WorkItem
- **Summary:** Shape resource of a WorkItem resource

WorkItem Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
dcterms:description	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	dcterms:description is a property to help a human understand the resource.
dcterms:identifier	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for the WorkItem resource.
dcterms:source	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the WorkItem resource that is a source of this WorkItem resource.
dcterms:title	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string for the WorkItem resource.
oslc_promcode:actualEndDate	Zero-or-one	unspecified	dateTime	N/A	Unspecified	actualEndDate is a property of a WorkItem resource. It is the actual end date of the work item. Its value is of type xsd:dateTime.
oslc_promcode:actualStartDate	Zero-or-one	unspecified	dateTime	N/A	Unspecified	actualStartDate is a property of a WorkItem resource. It is the actual start date of the work item. Its value is of type xsd:dateTime.
oslc_promcode:isPartOf	Zero-or-one	unspecified	Resource	Reference	oslc_promcode:WorkItem	isPartOf is a relation between a child WorkItem resource and its parent WorkItem resource. A WorkItem resource may have multiple child WorkItem resources.
oslc_promcode:plannedEndDate	Zero-or-one	unspecified	dateTime	N/A	Unspecified	plannedEndDate is a property of a WorkItem resource. It is the planned end date of the work item. Its value is of type xsd:dateTime.
oslc_promcode:plannedStartDate	Zero-or-one	unspecified	dateTime	N/A	Unspecified	plannedStartDate is a property of WorkItem resource. It is the planned start date of the work item. Its value is of type xsd:dateTime.
oslc_promcode:representedBy	Zero-or-one	unspecified	AnyResource	Either	Unspecified	representedBy is a relation between the WorkItem resource and a resource that represents a person responsible for the progress of the work described by this resource. The value is any resource, but is expected to describe a person such as a foaf:Person resource.
oslc_promcode:requiredBy	Zero-or-many	unspecified	Resource	Reference	oslc_promcode:Artifact, oslc_promcode:ScopeItem	requiredBy is a relation between this WorkItem resource and a ScopeItem resource or an Artifact resource.
oslc_promcode:sequenceNumber	Zero-or-one	unspecified	decimal	N/A	Unspecified	A unique number assigned to this resource which represents a position in the sequential order of all the WorkItem resources of the project.
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	The resource type URIs.

3. Conformance

PROMCODE servers **MUST** follow the constraints defined here where required, and with the meanings defined here.

PROMCODE servers **MAY** provide additional constraints for specific purposes.

Appendix A. References

A.1 Normative references

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