



OSLC PROMCODE Version 1.0. Part 3: Constraints

Committee Specification 02

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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/cs02/promcode-spec.html>
- *OSLC PROMCODE Version 1.0. Part 2: Vocabulary.* <https://docs.oasis-open.org/oslc-promcode/promcode/v1.0/cs02/promcode-vocab.html>
- *OSLC PROMCODE Version 1.0. Part 3: Constraints* (this document). <https://docs.oasis-open.org/oslc-promcode/promcode/v1.0/cs02/promcode-shapes.html>
- Machine-readable vocabulary terms: <https://docs.oasis-open.org/oslc-promcode/promcode/v1.0/cs02/promcode-vocab.ttl>
- Machine-readable constraints: <https://docs.oasis-open.org/oslc-promcode/promcode/v1.0/cs02/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 [OASIS OSLC Lifecycle Integration for Project Management of Contracted Delivery \(OSLC PROMCODE\) TC](#) 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-](#)

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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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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
<code>dcterms:description</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	<code>dcterms:description</code> is a property to help a human understand the resource.
<code>dcterms:identifier</code>	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for the <code>Artifact</code> resource.
<code>dcterms:isPartOf</code>	Zero-or-one	unspecified	Resource	Reference	<code>oslc_promcode:Artifact</code>	<code>isPartOf</code> is a relation between a child <code>Artifact</code> resource and its parent <code>Artifact</code> resource. An <code>Artifact</code> resource may have multiple child <code>WorkItem</code> resources.
<code>dcterms:source</code>	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the <code>Artifact</code> resource that is a source of this <code>Artifact</code> resource.
<code>dcterms:title</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string of the resource.
<code>oslc_promcode:producedFor</code>	Zero-or-many	unspecified	Resource	Reference	<code>oslc_promcode:WorkItem</code> , <code>oslc_promcode:ScopeItem</code>	<code>producedFor</code> is a relation between an <code>Artifact</code> resource and a <code>ScopeItem</code> resource or a <code>WorkItem</code> resource. <code>Artifact</code> is produced as a result of implementation of the <code>ScopeItem</code> resources or as a result of the work described by the <code>WorkItem</code> resource.
<code>oslc_promcode:sequenceNumber</code>	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 <code>Artifact</code> resources of the project.
<code>oslc_promcode:targets</code>	Zero-or-many	unspecified	AnyResource	Inline	<code>oslc_promcode:Measure</code>	<code>targets</code> is a relation between an <code>Artifact</code> resource and a <code>Measure</code> resource. The representation of this property is inline.
<code>rdf:type</code>	One-or-many	unspecified	Resource	Reference	<code>rdfs:Class</code>	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.

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IssueCollection Properties

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

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Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
<code>oslc_promcode:raisedDate</code>	Zero-or-one	unspecified	dateTime	N/A	Unspecified	<code>raisedDate</code> is an optional property of an <code>Issue</code> resource. It is the raised date of the <code>Issue</code> resource. Its value is a <code>dateTime</code> .
<code>oslc_promcode:sequenceNumber</code>	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 <code>Issue</code> resources in the project.
<code>oslc_promcode:stateOfIssue</code>	Zero-or-one	unspecified	AnyResource	Either	Unspecified	<code>stateOfIssue</code> is a property that defines the state of an <code>Issue</code> 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.
<code>rdf:type</code>	One-or-many	unspecified	Resource	Reference	<code>rdfs:Class</code>	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
<code>dcterms:date</code>	Zero-or-one	unspecified	dateTime	N/A	Unspecified	A date on which this <code>ManagedItemCollection</code> resource collects member resources.
<code>dcterms:description</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	<code>dcterms:description</code> is a property to help a human understand the resource.
<code>dcterms:identifier</code>	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a <code>ManagedItemCollection</code> resource.
<code>dcterms:source</code>	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the <code>ManagedItemCollection</code> resource that is a source of this <code>ManagedItemCollection</code> resource.
<code>dcterms:title</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string of this <code>ManagedItemCollection</code> resource.
<code>oslc_promcode:belongsTo</code>	Exactly-one	unspecified	Resource	Reference	<code>oslc_promcode:Project</code>	<code>belongsTo</code> is a relation between the <code>ManagedItemCollection</code> resource and a <code>Project</code> resource.
<code>oslc_promcode:collects</code>	Zero-or-many	unspecified	Resource	Either	<code>oslc_promcode:Issue</code> , <code>oslc_promcode:Risk</code> , <code>oslc_promcode:Artifact</code> , <code>oslc_promcode:WorkItem</code> , <code>oslc_promcode:ScopeItem</code>	<code>ManagedItem</code> resources included in this <code>ManagedItemCollection</code> . A <code>ManagedItemCollection</code> resource collects resources of type <code>ScopeItem</code> , <code>WorkItem</code> , <code>Artifact</code> , <code>Risk</code> , and <code>Issue</code> .
<code>rdf:type</code>	One-or-many	unspecified	Resource	Reference	<code>rdfs:Class</code>	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`

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

ManagedItem Properties

Prefix Name	Occurs	Read-only	Value-type	Representation	Range	Description
<code>dcterms:description</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	<code>dcterms:description</code> is a property to help a human understand the resource.
<code>dcterms:identifier</code>	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a <code>ManagedItem</code> resource.
<code>dcterms:source</code>	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the <code>ManagedItem</code> resource that is a source of this <code>ManagedItem</code> resource.
<code>dcterms:title</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string for a <code>ManagedItem</code> resource.
<code>oslc_promcode:sequenceNumber</code>	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 <code>ManagedItem</code> .
<code>rdf:type</code>	One-or-many	unspecified	Resource	Reference	<code>rdfs:Class</code>	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

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

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

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Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
<code>dcterms:description</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	<code>dcterms:description</code> is a property to help a human understand the resource.
<code>dcterms:identifier</code>	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for the <code>Measurement</code> resource.
<code>oslc_promcode:measures</code>	Exactly-one	unspecified	Resource	Reference	<code>oslc_promcode:Artifact</code>	<code>measures</code> is a relation between a <code>Measurement</code> resource and an <code>Artifact</code> resource. The measurement represented by the resource is on the artifact represented by the <code>Artifact</code> resource.
<code>oslc_promcode:observes</code>	Zero-or-many	unspecified	AnyResource	Inline	<code>oslc_promcode:Measure</code>	<code>observes</code> is a relation between a <code>Measurement</code> resource and a <code>Measure</code> resource. One <code>Measurement</code> resource observes zero or many <code>Measure</code> resources. The representation of this property is inline.
<code>rdf:type</code>	One-or-many	unspecified	Resource	Reference	<code>rdfs:Class</code>	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
<code>dcterms:date</code>	Zero-or-one	unspecified	dateTime	N/A	Unspecified	A date on which this <code>Plan</code> resource collects member resources.
<code>dcterms:description</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	<code>dcterms:description</code> is a property to help a human understand the resource.
<code>dcterms:identifier</code>	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a <code>Plan</code> resource.
<code>dcterms:source</code>	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the <code>Plan</code> resource that is a source of this <code>Plan</code> resource.
<code>dcterms:title</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string of this <code>Plan</code> resource.
<code>oslc_promcode:belongsTo</code>	Exactly-one	unspecified	Resource	Reference	<code>oslc_promcode:Project</code>	<code>belongsTo</code> is a relation between a <code>Plan</code> resource and a <code>Project</code> resource.
<code>oslc_promcode:collects</code>	Zero-or-many	unspecified	Resource	Either	<code>oslc_promcode:Artifact</code> , <code>oslc_promcode:WorkItem</code> , <code>oslc_promcode:ScopeItem</code>	<code>collects</code> is a relation between a <code>Plan</code> resource and resources, where each linked resource from the <code>Plan</code> resource is a <code>ScopeItem</code> resource, a <code>WorkItem</code> resource or an <code>Artifact</code> resource.
<code>rdf:type</code>	One-or-many	unspecified	Resource	Reference	<code>rdfs:Class</code>	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
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Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
<code>dcterms:description</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	<code>dcterms:description</code> is a property of a <code>Project</code> resource to help a human understand the project.
<code>dcterms:identifier</code>	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a <code>Project</code> resource.
<code>dcterms:source</code>	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the <code>Project</code> resource that is a source of this <code>Project</code> resource.
<code>dcterms:title</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string for a <code>Project</code> resource.
<code>oslc_promcode:actualEndDate</code>	Zero-or-one	unspecified	dateTime	N/A	Unspecified	<code>actualEndDate</code> is a property of a <code>Project</code> resource that describes actual end date of the project. Its value is of type <code>xsd:dateTime</code> .
<code>oslc_promcode:actualStartDate</code>	Zero-or-one	unspecified	dateTime	N/A	Unspecified	<code>actualStartDate</code> is a property of a <code>Project</code> resource. It is the actual start date of the project. Its value is of type <code>xsd:dateTime</code> .
<code>oslc_promcode:metricOfScopeItemSize</code>	Zero-or-one	unspecified	AnyResource	Either	Unspecified	<code>metricOfScopeItemSize</code> is a property that describes a metric of properties of <code>plannedSize</code> , and <code>actualSize</code> of <code>ScopeItem</code> . The value can be any resource, but it is expected to have information on the desired metric for all the <code>ScopeItem</code> resources of the project.
<code>oslc_promcode:plannedEndDate</code>	Zero-or-one	unspecified	dateTime	N/A	Unspecified	<code>plannedEndDate</code> is a property of a <code>Project</code> resource. It is the planned end date of the project. Its value is of type <code>xsd:dateTime</code> .
<code>oslc_promcode:plannedStartDate</code>	Zero-or-one	unspecified	dateTime	N/A	Unspecified	<code>plannedStartDate</code> is a property of a <code>Project</code> resource. It is the planned start date of the project. Its value is of type <code>xsd:dateTime</code> .
<code>oslc_promcode:unitOfScopeItemSize</code>	Zero-or-one	unspecified	AnyResource	Either	Unspecified	<code>unitOfScopeItemSize</code> is a property that describes a unit of size of properties of <code>plannedSize</code> , and <code>actualSize</code> of <code>ScopeItem</code> . 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 <code>ScopeItem</code> resources in the project.
<code>rdf:type</code>	One-or-many	unspecified	Resource	Reference	<code>rdfs:Class</code>	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
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Standards Track Work Product

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
<code>dcterms:date</code>	Zero-or-one	unspecified	dateTime	N/A	Unspecified	A date on which this Report resource collects member resources.
<code>dcterms:description</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	<code>dcterms:description</code> is a property to help a human understand the resource.
<code>dcterms:identifier</code>	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a Report resource.
<code>dcterms:source</code>	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the Report resource that is a source of this Report resource.
<code>dcterms:title</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string of this Report resource.
<code>oslc_promcode:belongsTo</code>	Exactly-one	unspecified	Resource	Reference	<code>oslc_promcode:Project</code>	<code>belongsTo</code> is a relation between this Report resource and a Project resources.
<code>oslc_promcode:collects</code>	Zero-or-many	unspecified	Resource	Either	<code>oslc_promcode:Artifact</code> , <code>oslc_promcode:WorkItem</code> , <code>oslc_promcode:ScopeItem</code>	<code>collects</code> 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 <code>correspondsTo</code> property.
<code>oslc_promcode:correspondsTo</code>	Zero-or-one	unspecified	Resource	Reference	<code>oslc_promcode:Plan</code>	<code>correspondsTo</code> is a relation between a Report resource and a Plan resource. A Report resource has at most one <code>correspondsTo</code> 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.
<code>oslc_promcode:includes</code>	Zero-or-many	unspecified	Resource	Either	<code>oslc_promcode:Measurement</code>	<code>includes</code> is a relation between this Report resource and Measurement resources. A Measurement resource linked by <code>includes</code> from this resource must measure an Artifact resource that is linked by <code>collects</code> property of this Report resource.
<code>rdf:type</code>	One-or-many	unspecified	Resource	Reference	<code>rdfs:Class</code>	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
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Standards Track Work Product

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
<code>dcterms:date</code>	Zero-or-one	unspecified	dateTime	N/A	Unspecified	A date on which this <code>RiskCollection</code> resource collects member resources.
<code>dcterms:description</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	<code>dcterms:description</code> is a property to help a human understand the resource.
<code>dcterms:identifier</code>	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a <code>RiskCollection</code> resource.
<code>dcterms:source</code>	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the <code>RiskCollection</code> resource that is a source of this <code>RiskCollection</code> resource.
<code>dcterms:title</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string of this <code>RiskCollection</code> resource.
<code>oslc_promcode:belongsTo</code>	Exactly-one	unspecified	Resource	Reference	<code>oslc_promcode:Project</code>	<code>belongsTo</code> is a relation between the <code>RiskCollection</code> resource and a <code>Project</code> resource.
<code>oslc_promcode:collects</code>	Zero-or-many	unspecified	Resource	Either	<code>oslc_promcode:Risk</code>	<code>collects</code> is a relation between a <code>RiskCollection</code> resource and a <code>Risk</code> resource.
<code>rdf:type</code>	One-or-many	unspecified	Resource	Reference	<code>rdfs:Class</code>	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
<code>dcterms:description</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	<code>dcterms:description</code> is a property to help a human to understand the resource.
<code>dcterms:identifier</code>	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a <code>Risk</code> resource.
<code>dcterms:source</code>	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the <code>Risk</code> resource that is a source of this <code>Risk</code> resource.
<code>dcterms:title</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string for a <code>Risk</code> resource.
<code>oslc_promcode:identifiedBy</code>	Zero-or-many	unspecified	Resource	Either	<code>oslc_promcode:Issue</code> , <code>oslc_promcode:Artifact</code> , <code>oslc_promcode:WorkItem</code> , <code>oslc_promcode:ScopeItem</code> , <code>oslc_promcode:Risk</code>	<code>identifiedBy</code> is a relation between a <code>Risk</code> resource and a resource of type <code>ScopeItem</code> , <code>WorkItem</code> , <code>Artifact</code> , <code>Risk</code> or <code>Issue</code> . A <code>Risk</code> resource may be identified by one or more resources.
<code>oslc_promcode:identifiedDate</code>	Zero-or-one	unspecified	dateTime	N/A	Unspecified	<code>identifiedDate</code> is the date on which the risk was identified.
<code>oslc_promcode:sequenceNumber</code>	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 <code>Risk</code> resources of the project.

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Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
<code>oslc_promcode:stateOfRisk</code>	exactly-one	unspecified	AnyResource	Either	Unspecified	<code>stateOfRisk</code> is a property that defines the state of a <code>Risk</code> 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.
<code>rdf:type</code>	One-or-many	unspecified	Resource	Reference	<code>rdfs:Class</code>	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
<code>dcterms:description</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	<code>dcterms:description</code> is a property to help a human understand the resource.
<code>dcterms:identifier</code>	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for a <code>ScopeItem</code> resource.
<code>dcterms:source</code>	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the <code>ScopeItem</code> resource that is a source of this <code>ScopeItem</code> resource.
<code>dcterms:title</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string for a <code>ScopeItem</code> resource.
<code>oslc_promcode:actualSize</code>	Zero-or-one	unspecified	decimal	N/A	Unspecified	<code>actualSize</code> is a property for actual development size for a <code>ScopeItem</code> resource.
<code>oslc_promcode:isPartOf</code>	Zero-or-one	unspecified	Resource	Reference	<code>oslc_promcode:ScopeItem</code>	<code>isPartOf</code> is a relation between a child <code>ScopeItem</code> resource and its parent <code>ScopeItem</code> resource. A <code>ScopeItem</code> resource may have multiple child <code>ScopeItem</code> resources.
<code>oslc_promcode:plannedSize</code>	Zero-or-one	unspecified	decimal	N/A	Unspecified	<code>plannedSize</code> is a property for estimated development size for a <code>ScopeItem</code> resource.
<code>oslc_promcode:sequenceNumber</code>	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 <code>ScopeItem</code> resources of the project.
<code>rdf:type</code>	One-or-many	unspecified	Resource	Reference	<code>rdfs:Class</code>	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
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Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
<code>dcterms:description</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	<code>dcterms:description</code> is a property to help a human understand the resource.
<code>dcterms:identifier</code>	Exactly-one	unspecified	string	N/A	Unspecified	A unique identifier for the <code>WorkItem</code> resource.
<code>dcterms:source</code>	Zero-or-one	unspecified	string	N/A	Unspecified	A string that identifies the <code>WorkItem</code> resource that is a source of this <code>WorkItem</code> resource.
<code>dcterms:title</code>	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A title string for the <code>WorkItem</code> resource.
<code>oslc_promcode:actualEndDate</code>	Zero-or-one	unspecified	dateTime	N/A	Unspecified	<code>actualEndDate</code> is a property of a <code>WorkItem</code> resource. It is the actual end date of the work item. Its value is of type <code>xsd:dateTime</code> .
<code>oslc_promcode:actualStartDate</code>	Zero-or-one	unspecified	dateTime	N/A	Unspecified	<code>actualStartDate</code> is a property of a <code>WorkItem</code> resource. It is the actual start date of the work item. Its value is of type <code>xsd:dateTime</code> .
<code>oslc_promcode:isPartOf</code>	Zero-or-one	unspecified	Resource	Reference	<code>oslc_promcode:WorkItem</code>	<code>isPartOf</code> is a relation between a child <code>WorkItem</code> resource and its parent <code>WorkItem</code> resource. A <code>WorkItem</code> resource may have multiple child <code>WorkItem</code> resources.
<code>oslc_promcode:plannedEndDate</code>	Zero-or-one	unspecified	dateTime	N/A	Unspecified	<code>plannedEndDate</code> is a property of a <code>WorkItem</code> resource. It is the planned end date of the work item. Its value is of type <code>xsd:dateTime</code> .
<code>oslc_promcode:plannedStartDate</code>	Zero-or-one	unspecified	dateTime	N/A	Unspecified	<code>plannedStartDate</code> is a property of <code>WorkItem</code> resource. It is the planned start date of the work item. Its value is of type <code>xsd:dateTime</code> .
<code>oslc_promcode:representedBy</code>	Zero-or-one	unspecified	AnyResource	Either	Unspecified	<code>representedBy</code> is a relation between the <code>WorkItem</code> 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 <code>foaf:Person</code> resource.
<code>oslc_promcode:requiredBy</code>	Zero-or-many	unspecified	Resource	Reference	<code>oslc_promcode:Artifact</code> , <code>oslc_promcode:ScopeItem</code>	<code>requiredBy</code> is a relation between this <code>WorkItem</code> resource and a <code>ScopeItem</code> resource or an <code>Artifact</code> resource.
<code>oslc_promcode:sequenceNumber</code>	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 <code>WorkItem</code> resources of the project.
<code>rdf:type</code>	One-or-many	unspecified	Resource	Reference	<code>rdfs:Class</code>	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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