OASISOPENPROJECTS

OSLC Automation Version 2.1 Part 2: Vocabulary

Project Specification Draft 01
21 January 2021

This stage:

https://docs.oasis-open-projects.org/oslc-op/auto/v2.1/psd01/automation-vocab.html (Authoritative)
https://docs.oasis-open-projects.org/oslc-op/auto/v2.1/psd01/automation-vocab.pdf

Previous stage:

N/A

Latest stage:

https://docs.oasis-open-projects.org/oslc-op/auto/v2.1/automation-vocab.html (Authoritative)
https://docs.oasis-open-projects.org/oslc-op/auto/v2.1/automation-vocab.pdf

Latest version:

https://open-services.net/spec/auto/latest

Latest editor's draft:

https://open-services.net/spec/auto/latest-draft

Open Project:

OASIS Open Services for Lifecycle Collaboration (OSLC) OP

Project Chairs:

Jim Amsden (jamsden@us.ibm.com), IBM
Andrii Berezovskyi (andriib@kth.se), KTH

Editors:

Jim Amsden (jamsden@us.ibm.com), IBM
Fabio Ribeiro (fabio.ribeiro@koneksys.com), Koneksys

Additional components:

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

- *OSLC Automation Version 2.1 Part 1: Specification*. automation-spec.html
- *OSLC Automation Version 2.1 Part 2: Vocabulary (this document)*. automation-vocab.html
- *OSLC Automation Version 2.1 Part 3: Constraints*. automation-shapes.html
- *OSLC Automation Version 2.1 Machine Readable Vocabulary Terms*. automation-vocab.ttl
- *OSLC Automation Version 2.1 Machine Readable Vocabulary Constraints*. automation-shapes.ttl

Related work:

This specification is related to:

- *Open Services for Lifecycle Collaboration Automation Specification Version 2.1*. http://open-services.net/wiki/automation/OSLC-Automation-Specification-Version-2.1/

RDF Namespaces:

http://open-services.net/ns/auto#

Abstract:

This specification defines a vocabulary and resource shapes for the OSLC Automation domain.

Status:

This document was last revised or approved by the OASIS Open Services for Lifecycle Collaboration (OSLC) OP 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 Open Project are listed at https://github.com/oslc-op/oslc-specs.

Comments on this work can be provided by opening issues in the project repository or by sending email to the project's public comment list oslc-op@lists.oasis-open-projects.org.

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.

Citation format:

When referencing this specification the following citation format should be used:
[OSLC-AUTO-v2.1-Part2]
OSLC Automation Version 2.1 Part 2: Vocabulary. Edited by Jim Amsden and Fabio Ribeiro. 21 January 2021. OASIS Project Specification Draft 01. https://docs.oasis-open-projects.org/oslc-op/auto/v2.1/psd01/automation-vocab.html. Latest stage: https://docs.oasis-open-projects.org/oslc-op/auto/v2.1/automation-vocab.html.

Notices

Table of Contents

1. Introduction

This section is non-normative.

This specification defines vocabulary terms for OSLC Automation resources. The intent is to define resources needed to support common integration scenarios that require potentially long running services that manage other OSLC resources.

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 References

1.2.1 Normative references

[HTTP11]

R. Fielding; J. Gettis; J. Morgul. *Hyper-text Transfer Protocol (HTTP/1.1)*. STD 1. URL: https://tools.ietf.org/html/rfc2616

[LDP]

Steve Speicher; John Arwe; Ashok Malhotra. *Linked Data Platform 1.0*. 26 February 2015. W3C Recommendation. URL: https://www.w3.org/TR/ldp/

[OSLCCore2]

S. Speicher; D. Johnson. *OSLC Core Specification 2.0*. Finalized. URL: http://open-services.net/bin/view/Main/OslcCoreSpecification

[OSLCCore3]

Steve Speicher; Jim Amsden. *OSLC Core Overviewv3.0*. Project Specification. URL: https://docs.oasis-open-projects.org/oslc-op/core/v3.0/oslc-core.html

[RFC2119]

S. Bradner. *Key words for use in RFCs to Indicate Requirement Levels*. March 1997. Best Current Practice. URL: https://tools.ietf.org/html/rfc2119

[RFC8174]

B. Leiba. *Ambiguity of Uppercase vs Lowercase in RFC 2119 Key Words*. May 2017. Best Current Practice. URL: https://tools.ietf.org/html/rfc8174

1.2.2 Informative references

[OSLCQM]

Paul McMahan; Jim Amsden; Gray Bachelor. *OSLC Quality Management 2.1. Part 1: Specification*. Project Specification Draft. URL: https://open-services.net/spec/qm/latest

[OSLCRM]

Ian Green; Jad El-khoury. *OSLC Requirements Management Version 2.1. Part 1: Specification*. Project Specification Draft. URL: https://open-services.net/spec/rm/latest

[WEBARCH]

Ian Jacobs; Norman Walsh. *Architecture of the World Wide Web, Volume One*. 15 December 2004. W3C Recommendation. URL: https://www.w3.org/TR/webarch/

1.3 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**", "**SHALL**", "**SHALL NOT**", "**SHOULD**", "**SHOULD NOT**", "**RECOMMENDED**", "**NOT RECOMMENDED**", "**MAY**", and "**OPTIONAL**" in this specification are to be interpreted as described in BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

In addition to the namespace URIs and namespace prefixes `oslc`, `rdf`, `dcterms` and `foaf` defined in the OSLC Core specification, OSLC Automation defines the namespace URI of `http://open-services.net/ns/auto#` with a namespace prefix of `oslc_am`

This specification also uses these namespace prefix definitions:

- oslc_rm : `http://open-services.net/ns/rm#` [OSLCRM]
- oslc_qm : `http://open-services.net/ns/qm#` [OSLCQM]

2. Automation Vocabulary Terms

This specification defines the *root* superclasses, properties and values. Servers may define additional subclasses and provide additional properties as needed.

2.1 Vocabulary Details

The namespace URI for this vocabulary is: `http://open-services.net/ns/auto#`

All vocabulary URIs defined in the OSLC Automation namespace.

2.1.1 Classes in this namespace (6)

[AutomationPlan](), [AutomationRequest](), [AutomationResult](), [ParameterInstance](), [State](), [Verdict]()

AutomationPlan

http://open-services.net/ns/auto#AutomationPlan

AutomationPlan is an RDFS class.

The Automation Plan resource.

AutomationRequest

http://open-services.net/ns/auto#AutomationRequest

AutomationRequest is an RDFS class.

The Automation Request resource.

AutomationResult

http://open-services.net/ns/auto#AutomationResult

AutomationResult is an RDFS class.

The Automation Result resource.

ParameterInstance

http://open-services.net/ns/auto#ParameterInstance

ParameterInstance is an RDFS class.

The Automation Parameter Instance resource.

State

http://open-services.net/ns/auto#State

State is an RDFS class.

Defines the possible oslc_auto:state property values.

Verdict

http://open-services.net/ns/auto#Verdict

Verdict is an RDFS class.

Defines the possible oslc_auto:verdict property values.

2.1.2 Properties in this namespace (14)

binding, desiredState, executesAutomationPlan, futureAction, hasContribution, inputParameter, outputParameter, parameterDefinition, producedByAutomationRequest, progress, reportsOnAutomationPlan, state, usesExecutionEnvironment, verdict

binding

http://open-services.net/ns/auto#binding

binding is an RDF property.

A resource providing instructions that a client can follow to immediately execute the action, when the client is ready to do so. In this context (a deferred execution creation dialog), each binding is likely to be an immediate-execution binding, used during the execution phase of the deferred execution dialog interaction pattern.

desiredState

http://open-services.net/ns/auto#desiredState

desiredState is an RDF property.

Used to indicate the desired state of the automation request based on values defined by the service provider.

executesAutomationPlan

http://open-services.net/ns/auto#executesAutomationPlan

executesAutomationPlan is an RDF property.

Automation Plan run by the Automation Request. It is likely that the target resource will be an oslc_auto:AutomationPlan but that is not necessarily the case.

futureAction

http://open-services.net/ns/auto#futureAction

futureAction is an RDF property.

A resource representing actions that will become available on Automation Results that result from execution of this Plan. The resource is likely to be of type oslc:Action, but it can be of any type. Automation defines oslc_auto:TeardownAction as one kind of future action.

hasContribution

http://open-services.net/ns/auto#contribution

hasContribution is an RDF property.

A result contribution associated with this automation result. It is recommended that the contribution be an inline resource which can be retrieved with the automation result. The recommended attributes beyond the contribution itself are dcterms:title,

dcterms:description and dcterms:type to provide a description of the contribution which would be appropriate for display in a simple UI for an automation result.

inputParameter

http://open-services.net/ns/auto#inputParameter

inputParameter is an RDF property.

Parameters provided when Automation Requests are created. These include parameters provided by the creator of the Automation Request (whether by delegated UI or HTTP POST) and **MAY** include additional parameters added by the service provider during Automation Request creation. See the definition of the oslc_auto:parameterDefinition attribute of the Automation Plan for additional guidance on determining which parameters are required. Creators of Automation Requests **MAY** provide parameters beyond those defined in the Automation Plan without guarantee the service provider will recognize or honor them. It is expected that this attribute is write-able on Automation Request creation and read-only thereafter.

outputParameter

http://open-services.net/ns/auto#outputParameter

outputParameter is an RDF property.

Automation Result output parameters are parameters associated with the result other than the oslc_auto:inputParameter resources. These could be parameters added during automation execution by the service provider or external agents. They could also be copies of input parameters with values changed during execution.

parameterDefinition

http://open-services.net/ns/auto#parameterDefinition

parameterDefinition is an RDF property.

The definition of a parameter for this Automation Plan. parameterDefinitions are either a local (inline) or referenced resource and use the attributes (the range) of the oslc:Property resource with one exception. When used in the context of an oslc_auto:parameterDefinition, the cardinality of oslc:propertyDefinition becomes zero-or-one instead of exactly-one. Automation consumers creating Automation Requests **MUST** use the oslc:occurs attribute of the parameterDefinition, if present, to determine if a given parameter is required when creating the Automation Request. If the oslc:occurs attribute indicates the parameter is required (exactly-one or one-or-more), the service provider must guarantee the named parameter will be present in the Automation Result either as an oslc_auto:inputParmeter when unmodified during execution, or as an oslc_auto:outputParameter when modified during execution.

producedByAutomationRequest

http://open-services.net/ns/auto#producedByAutomationRequest

producedByAutomationRequest is an RDF property.

Automation Request which produced the Automation Result. It is likely that the target resource will be an oslc_auto:AutomationResult but that is not necessarily the case.

progress

http://open-services.net/ns/auto#progress

progress is an RDF property.

A percentage (0-100) of completion.

reportsOnAutomationPlan

http://open-services.net/ns/auto#reportsOnAutomationPlan

reportsOnAutomationPlan is an RDF property.

Automation Plan which the Automation Result reports on. It is likely that the target resource will be an oslc_auto:AutomationPlan but that is not necessarily the case.

state

http://open-services.net/ns/auto#state

state is an RDF property.

Used to indicate the state of the automation request based on values defined by the service provider. Most often a read-only property. It is expected that this will be a resource reference to a definition of a valid automation request state on the service provider.

usesExecutionEnvironment

http://open-services.net/ns/auto#usesExecutionEnvironment

usesExecutionEnvironment is an RDF property.

A resource representing the environment(s) which this Automation Plan can be executed in. The execution environment resource could represent a grouping of environmental details such as operating system, database, browser, compiler, etc. See also the execution environments section.

verdict

http://open-services.net/ns/auto#verdict

verdict is an RDF property.

Used to indicate the verdict of the automation result based on values defined by the service provider. Most often a read-only property. It is expected that this will be a resource reference to a definition of a valid automation result verdict on the service provider.

2.1.3 Resources (Individuals) in this namespace (11)

canceled, canceling, complete, error, fail, inProgress, new, passed, queued, unavailable, warning

canceled

http://open-services.net/ns/auto#canceled

canceled is an RDF individual.

Used to indicate that an automation request or result has been canceled.

canceling

http://open-services.net/ns/auto#canceling

canceling is an RDF individual.

Used to indicate the service provider is in the process of canceling an automation request or result.

complete

http://open-services.net/ns/auto#complete

complete is an RDF individual.

Used to indicate that an automation request or result is complete.

error

http://open-services.net/ns/auto#error

error is an RDF individual.

Used to indicate an automation result has completed but did not run successfully due to some error. This could be a timeout, automation coding error, network problem or other error which prevented the automation from running successfully to a pass, warning or fail verdict.

fail

http://open-services.net/ns/auto#failed

fail is an RDF individual.

Used to indicate an automation result represents a failed execution.

inProgress

http://open-services.net/ns/auto#inProgress

inProgress is an RDF individual.

Used to indicate an automation request or result is active in the service provider.

new

http://open-services.net/ns/auto#new

new is an RDF individual.

Used to indicate an automation request or result has just been created in the service provider and has not yet been acted upon.

passed

http://open-services.net/ns/auto#passed

passed is an RDF individual.

Used to indicate an automation result represents a passed execution.

queued

http://open-services.net/ns/auto#queued

queued is an RDF individual.

Primarily used to indicate an automation request or result is queued for additional actions by the service provider.

unavailable

http://open-services.net/ns/auto#unavailable

unavailable is an RDF individual.

Used to indicate an automation result is in a state where a final verdict such as oslc:auto_pass or oslc_auto:fail is not yet available. Usually used when the result is in a state other than oslc_auto:complete.

warning

http://open-services.net/ns/auto#warning

warning is an RDF individual.

Used to indicate an automation result represents an execution which encountered conditions which prevented successful execution but did not result in a failed execution.

3. Automation Resource Definitions

The Automation resource properties are not limited to the ones defined in this specification; service providers may provide additional properties. It is recommended that any additional properties exist in their own unique namespace and not use the namespaces defined in this specification.

A list of properties is defined for each type of resource. Most of these properties are identified in [OSLCCore3] Any exceptions are noted. Relationship properties refer to other resources. These resources may be in any OSLC domain (including Automation).

The diagram below shows the relationships between Automation Resources.
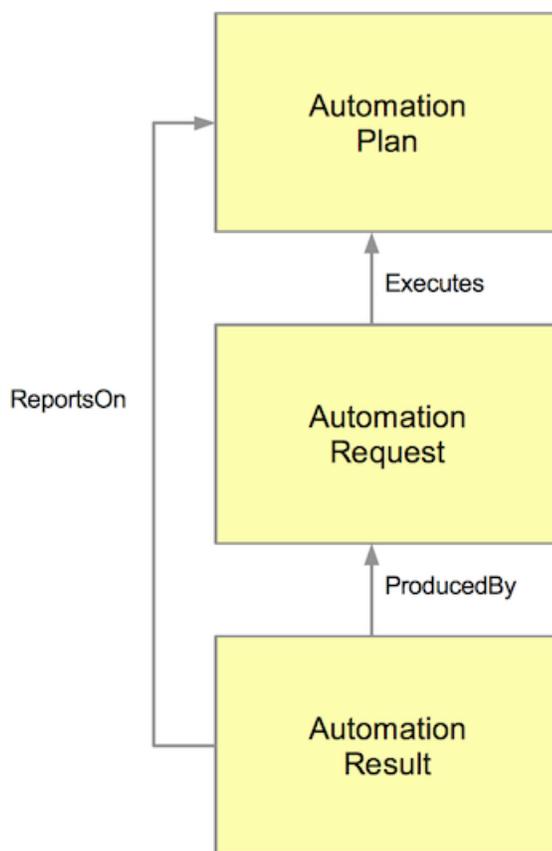
For all resource types defined in this specification, all required properties (those defined with an occurrence of exactly-one or one-or-many) MUST exist for each resource and must be provided when requested. All other properties are optional, and might not exist on some or any resources; those that do not exist will not be present in the returned representation even if requested, while those that do exist MUST be provided if requested. Providers MAY define additional provider-specific properties; providers SHOULD use their own namespaces for such properties, or use standard Dublin Core or RDF namespaces and properties where appropriate.

If no specific set of properties is requested, all properties are returned - both those defined in this specification as well as any provider-specific ones. See [OSLCCore2] Selective Property Values in OSLC Core Specification.

Consumers of OSLC Automation services should note that some resources may have a very large number of related

resources, and that some resources may be very large and/or expensive to compute. For this reason, consumers are strongly encouraged to use the `oslc.properties` parameter to limit the properties returned from a request to the subset required. See [OSLCCore2] Selective Property Values in OSLC Core Specification.

3.1 Vocabulary Details

The namespace URI for this vocabulary is: `http://open-services.net/ns/auto#`

All vocabulary URIs defined in the OSLC Automation namespace.

3.1.1 Classes in this namespace (6)

[AutomationPlan](#), [AutomationRequest](#), [AutomationResult](#), [ParameterInstance](#), [State](#), [Verdict](#)

AutomationPlan

http://open-services.net/ns/auto#AutomationPlan

AutomationPlan is an RDFS class.

The Automation Plan resource.

AutomationRequest

http://open-services.net/ns/auto#AutomationRequest

AutomationRequest is an RDFS class.

The Automation Request resource.

AutomationResult

http://open-services.net/ns/auto#AutomationResult

AutomationResult is an RDFS class.

The Automation Result resource.

ParameterInstance

http://open-services.net/ns/auto#ParameterInstance

ParameterInstance is an RDFS class.

The Automation Parameter Instance resource.

State

http://open-services.net/ns/auto#State

State is an RDFS class.

Defines the possible oslc_auto:state property values.

Verdict

http://open-services.net/ns/auto#Verdict

Verdict is an RDFS class.

Defines the possible oslc_auto:verdict property values.

3.1.2 Properties in this namespace (14)

binding, desiredState, executesAutomationPlan, futureAction, hasContribution, inputParameter, outputParameter, parameterDefinition, producedByAutomationRequest, progress, reportsOnAutomationPlan, state, usesExecutionEnvironment, verdict

binding

http://open-services.net/ns/auto#binding

binding is an RDF property.

A resource providing instructions that a client can follow to immediately execute the action, when the client is ready to do so. In this context (a deferred execution creation dialog), each binding is likely to be an immediate-execution binding, used during the execution phase of the deferred execution dialog interaction pattern.

desiredState

http://open-services.net/ns/auto#desiredState

desiredState is an RDF property.

Used to indicate the desired state of the automation request based on values defined by the service provider.

executesAutomationPlan

http://open-services.net/ns/auto#executesAutomationPlan

executesAutomationPlan is an RDF property.

Automation Plan run by the Automation Request. It is likely that the target resource will be an oslc_auto:AutomationPlan but that is not necessarily the case.

futureAction

http://open-services.net/ns/auto#futureAction

futureAction is an RDF property.

A resource representing actions that will become available on Automation Results that result from execution of this Plan. The resource is likely to be of type oslc:Action, but it can be of any type. Automation defines oslc_auto:TeardownAction as one kind of future action.

hasContribution

http://open-services.net/ns/auto#contribution

hasContribution is an RDF property.

A result contribution associated with this automation result. It is recommended that the contribution be an inline resource which can be retrieved with the automation result. The recommended attributes beyond the contribution itself are dcterms:title, dcterms:description and dcterms:type to provide a description of the contribution which would be appropriate for display in a simple UI for an automation result.

inputParameter

input arameter

http://open-services.net/ns/auto#inputParameter

inputParameter is an RDF property.

Parameters provided when Automation Requests are created. These include parameters provided by the creator of the Automation Request (whether by delegated UI or HTTP POST) and **MAY** include additional parameters added by the service provider during Automation Request creation. See the definition of the oslc_auto:parameterDefinition attribute of the Automation Plan for additional guidance on determining which parameters are required. Creators of Automation Requests **MAY** provide parameters beyond those defined in the Automation Plan without guarantee the service provider will recognize or honor them. It is expected that this attribute is write-able on Automation Request creation and read-only thereafter.

outputParameter

http://open-services.net/ns/auto#outputParameter

outputParameter is an RDF property.

Automation Result output parameters are parameters associated with the result other than the oslc_auto:inputParameter resources. These could be parameters added during automation execution by the service provider or external agents. They could also be copies of input parameters with values changed during execution.

parameterDefinition

http://open-services.net/ns/auto#parameterDefinition

parameterDefinition is an RDF property.

The definition of a parameter for this Automation Plan. parameterDefinitions are either a local (inline) or referenced resource and use the attributes (the range) of the oslc:Property resource with one exception. When used in the context of an oslc_auto:parameterDefinition, the cardinality of oslc:propertyDefinition becomes zero-or-one instead of exactly-one. Automation consumers creating Automation Requests **MUST** use the oslc:occurs attribute of the parameterDefinition, if present, to determine if a given parameter is required when creating the Automation Request. If the oslc:occurs attribute indicates the parameter is required (exactly-one or one-or-more), the service provider must guarantee the named parameter will be present in the Automation Result either as an oslc_auto:inputParmeter when unmodified during execution, or as an oslc_auto:outputParameter when modified during execution.

producedByAutomationRequest

http://open-services.net/ns/auto#producedByAutomationRequest

producedByAutomationRequest is an RDF property.

Automation Request which produced the Automation Result. It is likely that the target resource will be an oslc_auto:AutomationResult but that is not necessarily the case.

progress

http://open-services.net/ns/auto#progress

progress is an RDF property.

A percentage (0-100) of completion.

reportsOnAutomationPlan

http://open-services.net/ns/auto#reportsOnAutomationPlan

reportsOnAutomationPlan is an RDF property.

Automation Plan which the Automation Result reports on. It is likely that the target resource will be an oslc_auto:AutomationPlan but that is not necessarily the case.

state

http://open-services.net/ns/auto#state

state is an RDF property.

Used to indicate the state of the automation request based on values defined by the service provider. Most often a read-only property. It is expected that this will be a resource reference to a definition of a valid automation request state on the service provider.

usesExecutionEnvironment

http://open-services.net/ns/auto#usesExecutionEnvironment

usesExecutionEnvironment is an RDF property.

A resource representing the environment(s) which this Automation Plan can be executed in. The execution environment resource could represent a grouping of environmental details such as operating system, database, browser, compiler, etc. See also the execution environments section.

verdict

http://open-services.net/ns/auto#verdict

verdict is an RDF property.

Used to indicate the verdict of the automation result based on values defined by the service provider. Most often a read-only property. It is expected that this will be a resource reference to a definition of a valid automation result verdict on the service provider.

3.1.3 Resources (Individuals) in this namespace (11)

canceled, canceling, complete, error, fail, inProgress, new, passed, queued, unavailable, warning

canceled

http://open-services.net/ns/auto#canceled

canceled is an RDF individual.

Used to indicate that an automation request or result has been canceled.

canceling

http://open-services.net/ns/auto#canceling

canceling is an RDF individual.

Used to indicate the service provider is in the process of canceling an automation request or result.

complete

http://open-services.net/ns/auto#complete

complete is an RDF individual.

Used to indicate that an automation request or result is complete.

error

http://open-services.net/ns/auto#error

error is an RDF individual.

Used to indicate an automation result has completed but did not run successfully due to some error. This could be a timeout, automation coding error, network problem or other error which prevented the automation from running successfully to a pass, warning or fail verdict.

fail

http://open-services.net/ns/auto#failed

fail is an RDF individual.

Used to indicate an automation result represents a failed execution.

inProgress

http://open-services.net/ns/auto#inProgress

inProgress is an RDF individual.

Used to indicate an automation request or result is active in the service provider.

new

http://open-services.net/ns/auto#new

new is an RDF individual.

Used to indicate an automation request or result has just been created in the service provider and has not yet been acted upon.

passed

http://open-services.net/ns/auto#passed

passed is an RDF individual.

Used to indicate an automation result represents a passed execution.

queued

http://open-services.net/ns/auto#queued

queued is an RDF individual.

Primarily used to indicate an automation request or result is queued for additional actions by the service provider.

unavailable

http://open-services.net/ns/auto#unavailable

unavailable is an RDF individual.

Used to indicate an automation result is in a state where a final verdict such as oslc:auto_pass or oslc_auto:fail is not yet available. Usually used when the result is in a state other than oslc_auto:complete.

warning

http://open-services.net/ns/auto#warning

warning is an RDF individual.

Used to indicate an automation result represents an execution which encountered conditions which prevented successful execution but did not result in a failed execution.

4. Relationship labels

This section is non-normative.

When an RM relationship property is to be presented in a user interface, it may be helpful to provide an informative and useful textual label for that relationship instance. (This in addition to the relationship property URI and the object resource URI, which are also candidates for presentation to a user.) To this end, OSLC Servers **MAY** support a `dcterms:title` link property in RM resource representations where a relationship property is permitted, using the anchor approach outlined in the OSLC Core Links Guidance.

Servers and Clients should be aware that the `dcterms:title` of a link is unrelated to the dcterms:title of the object resource. Indeed, links may carry other properties with names in common to the object of the link, but there is no specified relationship between these property values.

5. Conformance

Architecture Management servers **MUST** use the vocabulary terms defined here where required, and with the meanings defined here.

Architecture Management servers **MAY** augment this vocabulary with additional classes, properties, and individuals.