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Protocol for Web Description Resources (POWDER): POWDER-S Vocabulary (WDRS)

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This document is also available as a non-normative RDF Schema.

Abstract

This is the namespace document for the POWDER-S vocabulary, part of the Protocol for Web Description Resources. Although this document sets out the domain and range of each term, their full definitions are to be found in other documents in the set, notably the Description Resources document [DR] and the Formal Semantics document [FORMAL].

Status of this document

This section describes the status of this document at the time of its publication. Other documents may supersede this document. A list of current W3C publications and the latest revision of this technical report can be found in the W3C technical reports index at http://www.w3.org/TR/.

This document describes the POWDER-S schema which has the namespace `http://www.w3.org/2007/05/powder-s#`. It was developed by the POWDER Working Group which does not expect to publish further updates. However, this document has no formal status (it is neither a W3C Recommendation nor a Working Group Note) and future changes, typically in the form of corrections, are possible. Such a correction has been made. Previously (a version dated 30 April 2009) an erroneous range restriction was applied to the `describedby` property. This has been removed.

Please send comments about this document to public-powderwg@w3.org (with public archive).

Publication of this document does not imply endorsement by the W3C Membership. This is a draft document and may be updated, replaced or obsoleted by other documents at any time. It is inappropriate to cite this document as other than work in progress.

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1 Introduction

The Protocol for Web Description Resources (POWDER) allows metadata to be associated with groups of resources such as those found on a Web site. Its main 'unit of information' is the Description Resource (DR), one or more of which are contained in a POWDER document. Processing such a document yields RDF triples describing the resources that are within the scope of the DRs. POWDER documents are written in XML and have relatively loose semantics, however, a GRDDL transform, associated with the root namespace, renders the data in RDF/OWL with more formal semantics.

An RDF vocabulary is defined to support Semantic POWDER, or POWDER-S encoding, of Description Resources. This is the namespace document for that vocabulary. Although this document sets out the domain and range of each term, their full definitions are to be found in other documents in the set, notably the Description Resources document [DR] and the Formal Semantics document [FORMAL].

1.1 Namespaces

The POWDER-S vocabulary namespace is
`http://www.w3.org/2007/05/powder-s#` for which we use the prefix `wdrs`. All prefixes used in this document, together with their associated namespaces, are shown in the table below.

Prefix	Namespace
wdrs	`http://www.w3.org/2007/05/powder-s#`
rdf	`http://www.w3.org/1999/02/22-rdf-syntax-ns#`
rdfs	`http://www.w3.org/2000/01/rdf-schema#`
owl	`http://www.w3.org/2002/07/owl#`
dcterms	`http://purl.org/dc/terms/`
xsd	`http://www.w3.org/TR/xmlschema-2/`

2 The Vocabulary Terms

2.1 Classes

2.1.1 Class `Document`

RDFS Class

Label: *POWDER document*

Subclass of: http://www.w3.org/2002/07/owl#Ontology

In domain of: data_error

Defined in: http://www.w3.org/TR/powder-dr/#structure

A POWDER document.

2.1.2 Class `Processor`

RDFS Class

Label: *POWDER processor*

Subclass of: http://purl.org/dc/terms/Agent

In domain of: proc_error

In range of: notknownto

Defined in: http://www.w3.org/TR/powder-dr/#powderprocessor

A software agent able to process POWDER documents.

2.2 Properties

2.2.1 Property `text`

RDF Property

Label: *text that may be displayed*

Type: http://www.w3.org/2002/07/owl#AnnotationProperty

Defined in: http://www.w3.org/TR/powder-dr/#line13

This property provides a summary of the descriptorset that it annotates, suitable for display to end users.

2.2.2 Property `issuedby`

RDF Property

Label: *issued by*

Type: http://www.w3.org/2002/07/owl#AnnotationProperty

Defined in: http://www.w3.org/TR/powder-dr/#line3

This property denotes the author of a POWDER document.

2.2.3 Property `matchesregex`

RDF Property

Label: *matches regular expression*

Type: http://www.w3.org/2002/07/owl#DatatypeProperty

Domain: http://www.w3.org/2000/01/rdf-schema#Resource

Range: http://www.w3.org/2001/XMLSchema#string

Defined in: http://www.w3.org/TR/powder-formal/#regexSemantics

See also: http://www.w3.org/TR/xpath-functions/#regex-syntax

This is the key 'include' property for IRI set definitions in POWDER-S. It is necessary to take account of the POWDER Semantic Extension to process this fully. The value is a regular expression that is matched against an IRI.

2.2.4 Property `notmatchesregex`

RDF Property

Label: *matches regular expression*

Type: http://www.w3.org/2002/07/owl#DatatypeProperty

Domain: http://www.w3.org/2000/01/rdf-schema#Resource

Range: http://www.w3.org/2001/XMLSchema#string

Defined in: http://www.w3.org/TR/powder-formal/#regexSemantics

See also: http://www.w3.org/TR/xpath-functions/#regex-syntax

This is the key 'exclude' property for IRI set definitions in POWDER-S. It is necessary to take account of the POWDER Semantic Extension to process this fully. The value is a regular expression that is matched against an IRI.

2.2.5 Property `hasIRI`

RDF Property

Label: *has IRI*

Type: http://www.w3.org/2002/07/owl#DatatypeProperty

Domain: http://www.w3.org/2000/01/rdf-schema#Resource

Range: http://www.w3.org/2001/XMLSchema#anyURI

Defined in: http://www.w3.org/TR/powder-formal/#oxRegexSemantics

This property is meant to be used in OWL2 instead of wdrs:matchesregex. It denotes the string data range corresponding to a set of IRIs.

2.2.6 Property `tag`

RDF Property

Label: *tag*

Type: http://www.w3.org/2002/07/owl#DatatypeProperty

Range: http://www.w3.org/2001/XMLSchema#token

Defined in: http://www.w3.org/TR/powder-dr/#tags

Property linking to a free-text tag which may include spaces.

2.2.7 Property `notknownto`

RDF Property

Label: *not known to*

Range: #Processor

Defined in: http://www.w3.org/TR/powder-dr/#powderprocessor

Property used in results returned from a POWDER Processor that has no data about the candidate resource. The value is the IRI of the processor.

2.2.8 Property `describedby`

RDF Property

Label: *described by*

Defined in: http://www.w3.org/TR/powder-dr/#semlink

An RDF property to exactly match the describedby relationship type introduced in http://www.w3.org/TR/powder-dr/#assoc-linking and formally defined in appendix D of the same document, i.e. the relationship A 'describedby' B asserts that resource B provides a description of resource A. There are no constraints on the format or representation of either A or B, neither are there any further constraints on either resource.

2.2.9 Property `authenticate`

RDF Property

Label: *authenticate*

Defined in: http://www.w3.org/TR/powder-dr/#discover

A pointer to a document that describes how Description Resources created by a FOAF Agent or a DC Terms Agent may be authenticated

2.2.10 Property `validfrom`

RDF Property

Label: *valid from*

Type: http://www.w3.org/2002/07/owl#AnnotationProperty

Defined in: http://www.w3.org/TR/powder-dr/#certification

Provides a timestamp that a POWDER Processor may use when assessing trustworthiness of a POWDER document. Informally, a POWDER Processor should normally ignore data in the document before the given date.

2.2.11 Property `validuntil`

RDF Property

Label: *valid until*

Type: http://www.w3.org/2002/07/owl#AnnotationProperty

Defined in: http://www.w3.org/TR/powder-dr/#certification

Provides a timestamp that a POWDER Processor may use when assessing trustworthiness of a POWDER document. Informally, a POWDER Processor should normally ignore data in the document after the given date.

2.2.12 Property `logo`

RDF Property

Label: *logo*

Type: http://www.w3.org/2002/07/owl#AnnotationProperty

Defined in: http://www.w3.org/TR/powder-dr/#line13

Points to a graphic summary for the resources in a given class. Typically, it is a logo denoting conformance of a given (set of) resource(s) to a given set of criteria.

2.2.13 Property `sha1sum`

RDF Property

Label: *SHA-1 sum*

Range: http://www.w3.org/2001/XMLSchema#base64Binary

Defined in: http://www.w3.org/TR/powder-dr/#certification

Links to a Base64-encoded binary SHA-1 hash of the described resource. May be used by POWDER Processors when assessing trustworthiness of a DR.

2.2.14 Property `certified`

RDF Property

Label: *certified*

Range: http://www.w3.org/2001/XMLSchema#boolean

Defined in: http://www.w3.org/TR/powder-dr/#certification

A property that takes a Boolean value to declare whether the author of the data certifies the described resource.

2.2.15 Property `certifiedby`

RDF Property

Label: *certified by*

Type: http://www.w3.org/2002/07/owl#AnnotationProperty

Defined in: http://www.w3.org/TR/powder-dr/#certification

A property that links a resource to a POWDER document that certifies it.

2.2.16 Property `supportedby`

RDF Property

Label: *supported by*

Type: http://www.w3.org/2002/07/owl#AnnotationProperty

Defined in: http://www.w3.org/TR/powder-dr/#supportedBy

A property that links a POWDER document to some other data source that supports the descriptions provided.

2.2.17 Property `data_error`

RDF Property

Label: *data error*

Domain: #Document

Defined in: http://www.w3.org/TR/powder-dr/#ppErrorhandling

A property denoting a description of the specific error found in a given POWDER document.

2.2.18 Property `proc_error`

RDF Property

Label: *processing error*

Domain: #Processor

Defined in: http://www.w3.org/TR/powder-dr/#ppErrorhandling

A property denoting a description of the specific software error.

2.2.19 Property `error_code`

RDF Property

Label: *error code*

Range: http://www.w3.org/2001/XMLSchema#nonNegativeInteger

Defined in: http://www.w3.org/TR/powder-dr/#ppErrorhandling

A property denoting the code of any error encountered by the POWDER processor.

References

[FORMAL]
    Protocol for Web Description Resources (POWDER): Formal Semantics, S. Konstantopoulos, P. Archer. This document is at http://www.w3.org/TR/powder-formal/

[DR]
    Protocol for Web Description Resources (POWDER): Description Resources, P Archer, K. Smith, A Perego. This document is at http://www.w3.org/TR/powder-dr/

Acknowledgements