



SAML V2.0 Metadata Extensions for Registration and Publication Information Version 1.0

Committee Specification Draft 01

22 March 2011

Specification URIs:

This Version:

<http://docs.oasis-open.org/security/saml/Post2.0/saml-metadata-rpi/v1.0/csd01/saml-metadata-rpi-v1.0-csd01.odt> (Authoritative)
<http://docs.oasis-open.org/security/saml/Post2.0/saml-metadata-rpi/v1.0/csd01/saml-metadata-rpi-v1.0-csd01.html>
<http://docs.oasis-open.org/security/saml/Post2.0/saml-metadata-rpi/v1.0/csd01/saml-metadata-rpi-v1.0-csd01.pdf>

Previous Version:

N/A

Latest Version:

<http://docs.oasis-open.org/security/saml/Post2.0/saml-metadata-rpi/v1.0/saml-metadata-rpi-v1.0.odt> (Authoritative)
<http://docs.oasis-open.org/security/saml/Post2.0/saml-metadata-rpi/v1.0/saml-metadata-rpi-v1.0.html>
<http://docs.oasis-open.org/security/saml/Post2.0/saml-metadata-rpi/v1.0/saml-metadata-rpi-v1.0.pdf>

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XML Schemas:

<http://docs.oasis-open.org/security/saml/Post2.0/saml-metadata-rpi/v1.0/csd01/xsd/>

This specification defines extensions for use with SAML V2.0 Metadata [SAML2Meta].

Declared XML Namespace(s):

`urn:oasis:names:tc:SAML:metadata:rpi`

Abstract:

This document defines a set of extensions to SAML metadata that provide information about the creation and intended usage of the metadata document and information about who and how particular entities were registered.

Status:

This document was last revised or approved by the OASIS Security Services (SAML) TC on the above date. The level of approval is also listed above. Check the "Latest Version" location noted above for possible later revisions of this document.

Technical Committee members should send comments on this specification to the Technical Committee's email list. Others should send comments to the Technical Committee by using the "Send A Comment" button on the Technical Committee's web page at <http://www.oasis-open.org/committees/security/>.

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Citation Format:

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

[SAML-Metadata-RPI-v1.0]

SAML V2.0 Metadata Extensions for Registration and Publication Information Version 1.0. 22 March 2011. OASIS Committee Specification Draft 01. <http://docs.oasis-open.org/security/saml/Post2.0/saml-metadata-rpi/v1.0/csd01/saml-metadata-rpi-v1.0-csd01.odt>.

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Table of Contents

1	1 Introduction.....	5
2	1.1 Terminology and Notation.....	5
3	1.2 Normative References.....	5
4	2 Metadata Extensions for Registration and Publication Information.....	7
5	2.1 Registration Information.....	7
6	2.1.1 Element <mdrpi:RegistrationInfo>.....	7
7	2.1.2 Element <mdrpi:RegistrationPolicy>.....	8
8	2.2 Publication Information.....	8
9	2.2.1 Element <mdrpi:PublicationInfo>.....	8
10	2.2.2 Element <mdrpi:UsagePolicy>.....	9
11	2.3 Publication Path.....	9
12	2.3.1 Element <mdrpi:PublicationPath>.....	10
13	2.3.2 Element <mdrpi:Publication>.....	10
14	2.4 Example.....	11
15	3 Conformance.....	13
16	3.1 SAML V2.0 Metadata Extensions for Documentation and Registration Information Version 1.0.....	13
17	Appendix A.Acknowledgments.....	14
18	Appendix B.Revision History.....	15
19		

1 Introduction

SAML Metadata [SAML2Meta] provides a mechanism for describing the information necessary for various SAML actors to interact. However, it does not provide basic information which may facilitate the business processes surrounding the production, consumption or use of metadata. For example, when a metadata document was created, when an entity was first registered, etc.

The extensions defined in this document are informed by the common registration/publication model found in other network architectures (e.g., DNS, PKI). In this case the registrar is an organization that accepts metadata for a particular entity and vouches for some, or all, of the data contained therein. The publisher is responsible for making information, collected from registrars or other publishers, available, hopefully in a scalable manner, to interested consumers.

1.1 Terminology and Notation

The keywords "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this specification are to be interpreted as described in IETF RFC 2119 [RFC 2119].

Conventional XML namespace prefixes are used throughout the listings in this specification to stand for their respective namespaces as follows, whether or not a namespace declaration is present in the example:

Prefix	XML Namespace	Comments
saml:	urn:oasis:names:tc:SAML:2.0:assertion	This is the SAML V2.0 assertion namespace defined in the SAML V2.0 core specification [SAML2Errata].
md:	urn:oasis:names:tc:SAML:2.0:metadata	This is the SAML V2.0 metadata namespace defined in the SAML V2.0 metadata specification [SAML2Meta].
mdrpi:	urn:oasis:names:tc:SAML:metadata:rpi	The namespace defined by this document.
xsd:	http://www.w3.org/2001/XMLSchema	This namespace is defined in the W3C XML Schema specification [Schema1]. In schema listings, this is the default namespace and no prefix is shown.
xsi:	http://www.w3.org/2001/XMLSchema-instance	This is the XML Schema namespace for schema-related markup that appears in XML instances [Schema1].

This specification uses the following typographical conventions in text: `<ns:Element>`, `Attribute`, **Datatype**, `OtherCode`.

This specification uses the following typographical conventions in XML listings:

```
Listings of XML schemas appear like this.
```

```
Listings of XML examples appear like this. These listings are non-  
normative.
```

1.2 Normative References

- [RFC 2119] S. Bradner. *Key words for use in RFCs to Indicate Requirement Levels*. IETF RFC 2119, March 1997. <http://www.ietf.org/rfc/rfc2119.txt>.

- 47 **[SAML2Errata]** OASIS Approved Errata, *SAML V2.0 Errata*, October 2009. [http://docs.oasis-](http://docs.oasis-open.org/security/saml/v2.0/sstc-saml-approved-errata-2.0.pdf)
48 [open.org/security/saml/v2.0/sstc-saml-approved-errata-2.0.pdf](http://docs.oasis-open.org/security/saml/v2.0/sstc-saml-approved-errata-2.0.pdf).
- 49 **[SAML2Meta]** OASIS Standard, *Metadata for the OASIS Security Assertion Markup Language*
50 *(SAML) V2.0*. March 2005. [http://docs.oasis-open.org/security/saml/v2.0/saml-](http://docs.oasis-open.org/security/saml/v2.0/saml-metadata-2.0-os.pdf)
51 [metadata-2.0-os.pdf](http://docs.oasis-open.org/security/saml/v2.0/saml-metadata-2.0-os.pdf).
- 52 **[Schema1]** H. S. Thompson et al. XML Schema Part 1: Structures. World Wide Web
53 Consortium Recommendation, May 2001. See [http://www.w3.org/TR/2001/REC-](http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/)
54 [xmlschema-1-20010502/](http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/).
- 55 **[Schema2]** Paul V. Biron, Ashok Malhotra. *XML Schema Part 2: Datatypes*. World Wide
56 Web Consortium Recommendation, May 2001. See
57 <http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/>.

2 Metadata Extensions for Registration and Publication Information

2.1 Registration Information

The registration information extension is used to provide information about the registrar of an entity. That is, the entity that took in SAML metadata, verified the metadata according to its registration policy, and made the information available to a wider audience. The entity registrar can be thought of as similar to a DNS registrar.

The `<mdrpi:RegistrationInfo>` container element, defined below, **MUST** appear within the `<md:Extensions>` element of `<md:EntityDescriptor>` or `<md:EntitiesDescriptor>` elements. The use of `<mdrpi:RegistrationInfo>`, or any other element defined in this section, outside of that context is not defined by this specification.

The `<mdrpi:RegistrationInfo>` element **MUST NOT** appear more than once within the `<md:Extensions>` element of a given `<md:EntitiesDescriptor>` or `<md:EntityDescriptor>` element.

When a `<mdrpi:RegistrationInfo>` element appears in the `<md:Extensions>` element of a `<md:EntitiesDescriptor>` element it applies to all descendant `<md:EntitiesDescriptor>` and `<md:EntityDescriptor>` elements. That is to say, this is equivalent to putting an identical `<mdrpi:RegistrationInfo>` on every descendant `<md:EntityDescriptor>`. When used in this manner, descendant `<md:EntitiesDescriptor>` and `<md:EntityDescriptor>` elements **MUST NOT** contain a `<mdrpi:RegistrationInfo>` element in their `<md:Extensions>` element.

2.1.1 Element `<mdrpi:RegistrationInfo>`

The `<mdrpi:RegistrationInfo>` contains information that describes the registrar of an entity.

`registrationAuthority` [Required]

The unique identifier of the authority that registered the entity. It is **RECOMMENDED** that this be a URL that resolves to a human readable page describing the registrar authority (i.e., the registrar's home page).

`registrationInstant` [Optional]

The instant the entity was registered with the authority. This attribute **SHOULD** be populated for all newly registered entities but is optional because the registration instant may not have been tracked, by the registrar, for existing entities.

Time values **MUST** be expressed in the UTC timezone using the 'Z' timezone identifier.

`<mdrpi:RegistrationPolicy>` [Optional]

The policy under which the entity was registered.

There **SHOULD NOT** be more than one `<mdrpi:RegistrationPolicy>`, within a given `<mdrpi:RegistrationInfo>`, for a given language.

```
<element name="RegistrationInfo" type="mdrpi:RegistrationInfoType" />
```

```

94 <complexType name="RegistrationInfoType">
95   <sequence>
96     <element ref="mdrpi:RegistrationPolicy" />
97     <any namespace="##other" processContents="lax"/>
98   </sequence>
99   <attribute name="registrationAuthority" type="anyURI" use="required"/>
100  <attribute name="registrationInstant" type="dateTime" />
101  <anyAttribute namespace="##other" processContents="lax" />
102 </complexType>

```

103 2.1.2 Element <mdrpi:RegistrationPolicy>

104 The <mdrpi:RegistrationPolicy> element is a URL to the localized registration policy of the
105 registrar. The URL MUST represent a single, immutable, policy document. Any changes made to an
106 existing policy document MUST result in a new URL. The URL SHOULD resolve to a human readable
107 form of the policy document for the entire period in which the policy may be in use.

```

108 <element name="RegistrationPolicy" type="md:localizedURIType" />

```

109 2.2 Publication Information

110 The publication information extension provides information that helps uniquely identify a specific
111 publication of metadata and provide some information about its intended use. The ability to uniquely
112 identify a particular publication can be very helpful in troubleshooting issues as well as facilitating the
113 identification of the path a particular bit of metadata took before it arrived at a consumer (see section
114 2.3).

115 The <mdrpi:PublicationInfo> element, defined below, MUST appear within the
116 <md:Extensions> element of either <md:EntitiesDescriptor> or <md:EntityDescriptor>
117 elements. The use of <mdrpi:PublicationInfo>, or any other element defined in this section,
118 outside of that context is not defined by this specification.

119 The <mdrpi:PublicationInfo> element SHOULD only be used on the root element of a metadata
120 document.

121 The <mdrpi:PublicationInfo> element MUST NOT appear more than once within the
122 <md:Extensions> element of a given <md:EntitiesDescriptor> or <md:EntityDescriptor>
123 element.

124 2.2.1 Element <mdrpi:PublicationInfo>

125 The <mdrpi:PublicationInfo> element contains information which pertains to the publication of a
126 metadata document. Within a given <mdrpi:PublicationInfo> either the creationInstant or
127 publicationId element SHOULD be present.

128 publisher [Required]

129 A unique identifier for the publisher of the metadata. This may be the location from which the
130 metadata was retrieved, an abstracted identifier such as a SAML entity ID, or some other unique
131 identifier for the publisher.

132 creationInstant [Optional]

133 The instant the metadata publication was created. Creation is loosely defined as the moment
134 the metadata publication is ready for consumption by external processes. This may, for
135 example, correspond to the time a document is signed.

136 Time values MUST be expressed in the UTC timezone using the 'Z' timezone identifier.

137 publicationId [Optional]

138 A unique, publisher-specific, identifier for this metadata publication. This identifier MAY change
139 independently of the ID attribute found on <md:EntitiesDescriptor> and
140 <md:EntityDescriptor> elements. For example, if a metadata document is auto-generated,
141 the ID attribute may change upon each generation but the publicationId may only change if
142 a particular set of data of changes.

143 The publicationId MUST be considered an opaque string.

144 <mdrpi:UsagePolicy> [Optional]

145 A description of the intended usage for the metadata document.

146 There SHOULD NOT be more than one <mdrpi:UsagePolicy>, within a given
147 <mdrpi:PublicationInfo>, for a given language.

```
148 <element name="PublicationInfo" type="mdrpi:PublicationInfoType" />
149 <complexType name="PublicationInfoType">
150   <sequence>
151     <element ref="mdrpi:UsagePolicy" minOccurs="0"
152     maxOccurs="unbounded"/>
153     <any namespace="##other" processContents="lax"/>
154   </sequence>
155   <attribute name="publisher" type="string" use="required" />
156   <attribute name="creationInstant" type="dateTime" />
157   <attribute name="publicationId" type="string" />
158   <anyAttribute namespace="##other" processContents="lax" />
159 </complexType>
```

160 2.2.2 Element <mdrpi:UsagePolicy>

161 The <mdrpi:UsagePolicy> element is a URL to a localized description of the intended usage of this
162 metadata publication. The URL MUST represent a single, immutable, policy document. Any changes
163 made to an existing policy document MUST result in a new URL. The URL SHOULD resolve to a human
164 readable form of the policy document for the entire period in which the policy may be in use.

```
165 <element name="UsagePolicy" type="md:localizedURIType" />
```

166 2.3 Publication Path

167 In some cases, a metadata document may be published by something other than the original registrar
168 (e.g., a metadata lookup service or an aggregator that assembled a new document from a number of
169 other documents). In such cases it can be helpful to know the path the <md:EntitiesDescriptor> or
170 <md:EntityDescriptor> elements took before being included in the consumed document. The
171 <mdrpi:PublicationPath>, defined below, provides a way of expressing this.

172 The <mdrpi:PublicationPath> element MUST appear within the <md:Extensions> element of
173 either <md:EntitiesDescriptor> or <md:EntityDescriptor> elements. The use of
174 <mdrpi:PublicationPath>, or any other element defined in this section, outside of that context is not
175 defined by this specification.

176 The <mdrpi:PublicationPath> element MUST NOT appear more than once within the
177 <md:Extensions> element of a given <md:EntitiesDescriptor> or <md:EntityDescriptor>
178 element.

179 When a <mdrpi:PublicationPath> element appears in the <md:Extensions> element of a
180 <md:EntitiesDescriptor> element it applies to all descendant <md:EntitiesDescriptor> and
181 <md:EntityDescriptor> elements. That is to say, this is equivalent to putting an identical

182 <mdrpi:PublicationPath> on every descendant <md:EntitiesDescriptor> and
183 <md:EntityDescriptor>. When used in this manner, descendant <md:EntitiesDescriptor>
184 and <md:EntityDescriptor> elements MUST NOT contain a <mdrpi:PublicationPath>
185 element in their <md:Extensions> element.

186 **2.3.1 Element <mdrpi:PublicationPath>**

187 The <mdrpi:PublicationPath> element provides a record of the publication path, from current
188 publication to initial publication, for the <md:EntitiesDescriptor> or <md:EntityDescriptor>
189 element on which it resides.

190 Each contained <mdrpi:Publication> element represents one step in the publication path. The list
191 of <mdrpi:Publication> elements is ordered from most recent, excluding the current publication, to
192 least recent (the initial source publication).

193 For example, assume the current publication is PubC. Further assume that an
194 <md:EntityDescriptor> in PubC was retrieved from PubB which itself received the
195 <md:EntityDescriptor> from PubA. In such a situation the publication path for that entity descriptor
196 would be PubB, PubA.

197 <mdrpi:Publication> [zero or more]

198 The publication from which the <md:EntityDescriptor> or <md:EntitiesDescriptor>,
199 to which this extension is applied, was retrieved.

```
200     <element name="PublicationPath" type="mdrpi:PublicationPathType" />  
201     <complexType name="PublicationPathType">  
202         <sequence>  
203             <element ref="mdrpi:Publication" minOccurs="0"  
204             maxOccurs="unbounded" />  
205         </sequence>  
206     </complexType>
```

207 **2.3.2 Element <mdrpi:Publication>**

208 The <mdrpi:Publication> element identifies a metadata publication that was incorporated, in full or
209 in part, in to the metadata document containing this extension.

210 publisher [Required]

211 The publisher value of the <mdrpi:PublicationInfo> found on the root element of the
212 document containing the republished <md:EntitiesDescriptor> or
213 <md:EntityDescriptor> elements.

214 creationInstant [Optional]

215 The creationInstant value of the <mdrpi:PublicationInfo> found on the root element
216 of the document containing the republished <md:EntitiesDescriptor> or
217 <md:EntityDescriptor> elements.

218 publicationId [Optional]

219 The publicationId value of the <mdrpi:PublicationInfo> found on the root element of
220 the document containing the republished <md:EntitiesDescriptor> or
221 <md:EntityDescriptor> elements.

```

222 <element name="Publication" type="mdrpi:PublicationType" />
223 <complexType name="PublicationType">
224   <attribute name="publisherID" type="string" use="required" />
225   <attribute name="creationInstant" type="dateTime" />
226   <attribute name="publicationId" type="string" />
227 </complexType>

```

228 2.4 Example

```

229 <EntitiesDescriptor xmlns="urn:oasis:names:tc:SAML:2.0:metadata"
230   xmlns:mdrpi="urn:oasis:names:tc:SAML:metadata:dri">
231
232   <Extensions>
233
234     <mdrpi:RegistrationInfo creationInstant="2010-11-17T16:59:02Z">
235       <mdrpi:UsagePolicy xml:lang="en">
236         http://www.switch.ch/aai/metadata/en_usage.html
237       </mdrpi:UsagePolicy>
238       <mdrpi:UsagePolicy xml:lang="de">
239         http://www.switch.ch/aai/metadata/de_usage.html
240       </mdrpi:UsagePolicy>
241     </mdrpi:RegistrationInfo>
242
243     <mdrpi:PublicationInfo publisher="urn:example.org:md:publisher"
244       publicationId="1q2w3e4r" />
245   </Extensions>
246
247   <!-- SWITCH IDP -->
248   <EntityDescriptor entityID="https://aai-logon.switch.ch/idp/shibboleth">
249
250     <Extensions>
251
252       <mdrpi:RegistrationInfo
253         registrationAuthority="urn:mace:switch.ch:SWITCHaai"
254         registrationInstant="2006-05-29T11:34:27Z">
255         <mdrpi:RegistrationPolicy xml:lang="en">
256           http://www.switch.ch/aai/metadata/en_registration.html
257         </mdrpi:RegistrationPolicy>
258         <mdrpi:RegistrationPolicy xml:lang="de">
259           http://www.switch.ch/aai/metadata/de_registration.html
260         </mdrpi:RegistrationPolicy>
261       </mdrpi:RegistrationInfo>
262
263       <mdrpi:PublicationPath publisher="urn:mace:switch.ch:SWITCHaai"
264         publicationId="http://metadata.aai.switch.ch/metadata.switchaai.xml"
265     />
266
267     </Extensions>
268
269     <IDPSSODescriptor
270       protocolSupportEnumeration="urn:oasis:names:tc:SAML:2.0:protocol">
271       <SingleSignOnService
272         Binding="urn:oasis:names:tc:SAML:2.0:bindings:HTTP-POST"
273         Location="https://aai-logon.switch.ch/idp/profile/SAML2/POST/SSO"/>
274     </IDPSSODescriptor>
275   </EntityDescriptor>
276
277   <!-- Ohio State IDP -->
278   <EntityDescriptor entityID="urn:mace:incommon:osu.edu">
279
280     <Extensions>
281
282       <mdrpi:RegistrationInfo
283         registrationAuthority="urn:mace:incommon">
284         <mdrpi:RegistrationPolicy xml:lang="en">

```

```
285         http://www.incommonfederation.org/metadata/en_registration.html
286     </mdrpi:RegistrationPolicy>
287 </mdrpi:RegistrationInfo>
288
289     <mdrpi:PublicationPath publisher="urn:mace:incommon"
290         publicationId="http://incommonfederation.org/InCommon-
291 metadata.xml"/>
292
293 </Extensions>
294
295 <IDPSSODescriptor
296     protocolSupportEnumeration="urn:oasis:names:tc:SAML:1.1:protocol">
297     <SingleSignOnService
298         Binding="urn:mace:shibboleth:1.0:profiles:AuthnRequest"
299         Location="https://idp.ohio-state.edu/idp/profile/Shibboleth/SSO"/>
300     </IDPSSODescriptor>
301 </EntityDescriptor>
302
303 </EntitiesDescriptor>
```

304 **3 Conformance**

305 **3.1 SAML V2.0 Metadata Extensions for Documentation and**
306 **Registration Information Version 1.0**

307 A metadata producer conforms to this profile if it has the ability to produce metadata in accordance with
308 sections 2.1, 2.2 and 2.3.

309

Appendix A. Acknowledgments

310

The editors would like to acknowledge the contributions of the OASIS Security Services Technical Committee, whose voting members at the time of publication were:

311

312

- Scott Cantor, Internet2

313

- Thomas Hardjono, M.I.T.

314

- Frederick Hirsch, Nokia Corp.

315

- Phil Hunt, Oracle Corp.

316

- Ari Kermaier, Oracle Corp.

317

- Nathan Klingenstein, Internet2

318

- Chad La Joie, Internet2

319

- Hal Lockhart, Oracle Corp.

320

- Thinh Nguyenphu, Nokia Siemens Networks GmbH

321

- Rob Philpott, EMC Corp.

322

- Anil Saldhana, Red Hat

323

- David Staggs, Veterans Health Administration

324

- Emily Xu, Oracle Corp.

325

The editor would also like to acknowledge the following contributors:

326

- Ian Young, EDINA, University of Edinburgh

327 **Appendix B. Revision History**

328 Changes made to produce WD05

- 329 • Corrected XML schema for optional elements that mistakenly did not have a minOccurs="0"

330 Changes made to produce WD04

- 331 • Add list of voting members to Appendix A: Acknowledgements

332 Changes made to produce WD03

- 333 • Corrected references to CreationInstant and SerialNumber elements which were replaced with
334 attributes on the PublicationInfo element

- 335 • Editorial and grammar fix ups

336 Changes made to produce WD02

- 337 • Title changed to "SAML V2.0 Metadata Extensions for Registration and Publication Information"

- 338 • Namespace changed to urn:oasis:names:tc:SAML:metadata:rpi

- 339 • Concept of "document information" changed to "publication information" with corresponding
340 element name changes.

- 341 • Registration Information put before publication information

- 342 • Editorial and grammar fix ups

343