



# XACML v3.0 Multiple Resource Profile Version 1.0

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- Multiple resource profile of XACML v2.0

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None

### Abstract:

This document provides a profile for requesting access to more than one resource in a single XACML Request Context, or for requesting a single response to a request for an entire hierarchy.

### Status:

This document was last revised or approved by the eXtensible Access Control Markup Language (XACML) TC on the above date. The level of approval is also listed above. Check the "Latest Version" or "Latest Approved Version" location noted above for possible later revisions of this document.

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# 1 Introduction

## {Non-normative}

The policy evaluation performed by an XACML Policy Decision Point, or PDP, is defined in terms of a single requested resource in the XACML Specification [XACML], with the authorization decision contained in a single <Result> element of the response context. A Policy Enforcement Point, or PEP, however, may wish to submit a single request context for access to multiple resources, and may wish to obtain a single response context that contains a separate authorization decision (<Result> element) for each requested resource. Such a request context might be used to avoid sending multiple decision request messages between a PEP and PDP, for example. Alternatively, a PEP may wish to submit a single request context for all the *nodes* in a hierarchy, and may wish to obtain a single authorization decision (<Result> element) that indicates whether access is permitted to all of the requested *nodes*. Such a request context might be used when the requester wants access to an entire XML document, to an entire sub-tree of elements in such a document, or to an entire file system directory with all its subdirectories and files, for example.

This Profile describes three ways in which a PEP can request authorization decisions for multiple resources in a single request context, and how the result of each such authorization decision is represented in the single response context that is returned to the PEP.

This Profile also describes two ways in which a PEP can request a single authorization decision in response to a request for all the *nodes* in a hierarchy.

Support for each of the mechanisms described in this Profile is optional for compliant XACML implementations.

## 1.1 Glossary

### Hierarchical resource

A resource that is organized as a tree or forest (Directed Acyclic Graph) of individual resources called *nodes*.

### Node

An individual resource that is part of a *hierarchical resource*.

## 1.2 Abbreviated identifiers

Commonly used resource attributes are abbreviated as follows:

### “resource-id” attribute

A resource attribute with an `AttributeId` of “urn:oasis:names:tc:xacml:1.0:resource:resource-id”.

### “scope” attribute

A resource attribute with an `AttributeId` of “urn:oasis:names:tc:xacml:2.0:resource:scope”. See Section 4.1 for more information about this attribute.

## 1.3 Terminology

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

The phrase {Optional} means that the described functionality is optional for compliant XACML implementations, but, if the functionality is claimed as being supported according to this Profile, then it SHALL be supported in the way described.

43 Example code listings appear like this.

44 In descriptions of syntax, elements in angle brackets (“<”, “>”) are to be replaced by appropriate values,  
45 square brackets (“[”, “]”) enclose optional elements, elements in quotes are literal components, and “\*”  
46 indicates that the preceding element may occur zero or more times.

## 47 1.4 Normative References

- 48 **[Hierarchical]** E.Rissanen, R. Levinson and H. Lockhart eds., *Hierarchical XACML v3.0*  
49 *Hierarchical Resource Profile Version 1.0*, Working draft 8, 5 April 2009, FIXME  
50 URL
- 51 **[RFC2119]** S. Bradner, *Key words for use in RFCs to Indicate Requirement Levels*,  
52 <http://www.ietf.org/rfc/rfc2119.txt>, IETF RFC 2119, March 1997.
- 53 **[XACML]** E. Rissanen, ed., *eXtensible Access Control Markup Language (XACML) Version*  
54 *3.0*, Working draft 11, 5 April 2009, FIXME URL
- 55 **[XPath]** *XML Path Language (XPath)*, Version 1.0, W3C Recommendation 16, November  
56 1999. Available at <http://www.w3.org/TR/xpath>

## 57 1.5 Non-Normative References

58 None

---

## 2 Requests for multiple resources

### {Optional}

A single XACML request context MAY represent a request for access to multiple resources, with a separate authorization decision desired for each resource. The syntax and semantics of such requests and responses are specified in this Section.

The `<Result>` elements produced by evaluating a request for access to multiple resources SHALL be identical to those that would be produced from a series of requests, each requesting access to exactly one of the resources. Each such resource is called an Individual Resource. The conceptual request context that corresponds to each `<Result>` element is called an Individual Resource Request. This mapping of an original request context containing multiple authorization decision requests to Individual Resource Requests, and the corresponding mapping of multiple authorization decisions to multiple `<Result>` elements in a single response context MAY be performed by the Context Handler described in the non-normative Data-flow model of the core XACML specification [XACML]. This Profile does NOT REQUIRE that the implementation of the evaluation of a request for access to multiple resources conform to the preceding model or that actual Individual Resource Requests be constructed. The Profile REQUIRES only that the `<Result>` elements SHALL be the same as if the preceding model were used.

Three ways of specifying requests for access to multiple resources are described in the following Sections. Each way of specifying requests describes the Individual Resource Requests that correspond to the `<Result>` elements in the response context.

A single XACML request context submitted by a PEP MAY use more than one of these ways of requesting access to multiple resources in different `<Resource>` elements.

### 2.1 Nodes identified by “scope”

#### {Optional}

This Section describes the use of two values for the “scope” resource attribute to specify a request for access to multiple resources in a hierarchy. This syntax MAY be used with any *hierarchical resource* [Hierarchical], regardless of whether it is an XML document or not. The “scope” resource attribute is defined in Section 4.

#### 2.1.1 Profile URI

The following URIs SHALL be used as URI identifiers for the functionality specified in this Section of this Profile. The first identifier SHALL be used when the functionality is supported for XML resources, and the second identifier SHALL be used when the functionality is supported for resources that are not XML documents:

- urn:oasis:names:tc:xacml:3.0:profile:multiple:scope:xml
- urn:oasis:names:tc:xacml:3.0:profile:multiple:scope:non-xml

#### 2.1.2 Original request context syntax

The original XACML request context `<Attributes>` element in the resource category SHALL contain a “scope” attribute with a value of either “Children”, or “Descendants”. If the requested resources are in an XML document, then the `<Content>` element SHALL be present and SHALL contain the entire XML document of which the requested elements are a part. Also, if the requested resources are in an XML document, then the XPath [XPath] expression used as the value of the “resource-id” attribute SHALL evaluate to a nodeset containing exactly one node.

### 100 2.1.3 Semantics

101 Such a request context SHALL be interpreted as a request for access to a set of **nodes** in a hierarchy  
102 relative to the single **node** specified in the “resource-id” attribute. If the value of the “scope” attribute  
103 is “Children”, each Individual Resource is the one **node** indicated by the “resource-id” attribute (or  
104 attributes, where the single resource has multiple normative identifiers) and all of its immediate child  
105 **nodes**. If the value of the “scope” attribute is “Descendants”, the Individual Resource is the one **node**  
106 indicated by the “resource-id” attribute and all of its descendant **nodes**.

107 Each Individual Resource Request SHALL be identical to the original request context with two exceptions:  
108 the “scope” attribute SHALL NOT be present and the <Attributes> element SHALL represent a single  
109 Individual Resource. This <Attributes> element SHALL contain at least one “resource-id”  
110 attribute, and all values for such attributes SHALL be unique, normative identities of the Individual  
111 Resource. If the “resource-id” attribute in the original request context contained an *Issuer*, the  
112 “resource-id” attributes in the Individual Resource Request SHALL contain the same *Issuer*. If a  
113 <Content> element was present in the original request context, then that same <Content> element  
114 SHALL be included in each Individual Resource Request. If the “resource-id” attribute in the original  
115 request context contained an *IncludeInResult*, the “resource-id” attributes in the Individual  
116 Resource Request SHALL contain the same *IncludeInResult*.

117 Neither XACML nor this Profile specifies how the Context Handler obtains the information required to  
118 determine which **nodes** are children or descendants of a given **node**, except in the case of an XML  
119 document, where the information SHALL be obtained from the <Content> element.

## 120 2.2 Nodes identified by XPath

### 121 {Optional}

122 This Section describes use of an XPath [**XPath**] expression in the “resource-id” attribute, together with  
123 an “XPath-expression” value in the “scope” attribute to specify a request for access to multiple **nodes**  
124 in an XML document. This syntax SHALL be used only with resources that are XML documents.

### 125 2.2.1 Profile URI

126 The following URI SHALL be used as the URI identifier for the functionality specified in this Section of this  
127 Profile:

- 128 • urn:oasis:names:tc:xacml:3.0:profile:multiple:xpath-expression

### 129 2.2.2 Original request context

130 The original XACML request context <Attributes> element in the resource category SHALL contain a  
131 <Content> element and a “resource-id” attribute with a *DataType* of  
132 “urn:oasis:names:tc:xacml:3.0:data-type:xpathExpression”, such that the <AttributeValue> of the  
133 “resource-id” attribute is an XPath expression that evaluates to a nodeset that represents multiple  
134 nodes in the resource category <Content> element. The <Attributes> element with the resource  
135 category SHALL contain a “scope” attribute with a value of “XPath-expression”.

### 136 2.2.3 Semantics

137 Such a request context SHALL be interpreted as a request for access to the multiple nodes in the  
138 nodeset represented by the <AttributeValue> of the “resource-id” attribute. Each such node  
139 SHALL represent an Individual Resource.

140 Each Individual Resource Request SHALL be identical to the original request context with two exceptions:  
141 the “scope” attribute SHALL NOT be present and the “resource-id” attribute value SHALL be an  
142 XPath expression that evaluates to a single node in the <Content> element. That node SHALL be the  
143 Individual Resource. If the “resource-id” attribute in the original request context contained an *Issuer*,  
144 the “resource-id” attribute in the Individual Resource Request SHALL contain the same *Issuer*. If the

145 “resource-id” attribute in the original request context contained an `IncludeInResult`, the  
146 “resource-id” attribute in the Individual Resource Request SHALL contain the same  
147 `IncludeInResult`.

## 148 **2.3 Multiple <Attributes> elements**

### 149 **{Optional}**

150 This Section describes use of multiple `<Attributes>` elements with the same category in a request  
151 context to specify a request for access to multiple resources or requests for access by multiple subjects.  
152 This syntax MAY be used with any resource or resources, regardless of whether they are XML  
153 documents or not and regardless of whether they are **hierarchical resources [Hierarchical]** or not.

### 154 **2.3.1 Profile URI**

155 The following URI SHALL be used as the URI identifier for the functionality specified in this Section of this  
156 Profile:

- 157 • `urn:oasis:names:tc:xacml:3.0:profile:multiple:multiple-resource-elements`

### 158 **2.3.2 Original request context**

159 The XACML request context SHALL contain multiple `<Attributes>` elements with the same category.

### 160 **2.3.3 Semantics**

161 Such a request context SHALL be interpreted as a request for access to all resources specified in the  
162 individual `<Attributes>` elements. Each `<Attributes>` element SHALL represent one Individual  
163 Resource, subject, or another category unless that element utilizes the other mechanisms described in  
164 this Profile.

165 For each combination of repeated `<Attributes>` elements, one Individual Resource Request SHALL  
166 be created. This Individual Request SHALL be identical to the original request context with one  
167 exception: only one `<Attributes>` element of each repeated category SHALL be present. If such a  
168 `<Attributes>` element contains a “scope” attribute having any value other than “Immediate”, then the  
169 Individual Request SHALL be further processed according to the corresponding Section of this Profile  
170 listed in Section 4.1. This processing may involve decomposing the one Individual Request into other  
171 Individual Requests before evaluation by the PDP.

## 172 **2.4 By reference to <Attributes> elements**

### 173 **{Optional}**

174 This section describes use of a list of references to `<Attributes>` elements to construct multiple  
175 individual `<Request>` elements.

### 176 **2.4.1 Profile URI**

177 The following URIs SHALL be used as URI identifiers for the functionality specified in this Section of this  
178 Profile.

- 179 • `urn:oasis:names:tc:xacml:3.0:profile:multiple:reference`

### 180 **2.4.2 Original request context**

181 The original XACML `<Request>` element SHALL contain a `<MultiRequests>` element.

### 182 **2.4.3 Semantics**

183 Such a request context SHALL be interpreted as multiple individual request contexts specified by  
184 references to <Attributes> elements.

185 The context handler MUST construct a new <Request> element for each <RequestReference>  
186 element contained in the <MultiRequests> element, and process the generated <Request> element.

187 Each <RequestReference> element contains one or more <AttributesReference> elements,  
188 each of which refers to the xml:id XML attribute of one of the <Attributes> elements in the enclosing  
189 original <Request> element. The generated <Request> element MUST be identical to a <Request>  
190 element which contains the referenced <Attributes> elements.

191 The result(s) of each such generated <Request> element MUST be included as one or more <Result>  
192 elements in the <Response> element corresponding to the original <Request> element. There may be  
193 multiple results for a single generated <Request> element when the generated <Request> element  
194 makes use of one or more of the other multiple request schemes in this profile. There MUST be exactly  
195 one <Response> element for the original <Request> element.

196 If a <RequestReference> contains an invalid reference, then the corresponding <Result> MUST  
197 contain an Indeterminate decision with status code urn:oasis:names:tc:xacml:1.0:status:syntax-error.

---

## 198 3 Requests for an entire hierarchy

### 199 {Optional}

200 In some cases, a resource is hierarchical, but the authorization decision request is intended to request  
201 access to all the **nodes** within that resource or to an entire sub-hierarchy of **nodes** within that resource.  
202 This might be the case when access to an XML document is being requested for purposes of making a  
203 copy of the entire document, or where access to an entire file system directory with all its subdirectories  
204 and files is being requested. A single <Result> is desired, indicating whether the requester is permitted  
205 to access the entire set of **nodes**.

206 The <Result> element produced by evaluating such a request for access SHALL be identical to that  
207 produced by the following process. A series of request contexts is evaluated, each requesting access to  
208 exactly one **node** of the hierarchy. The <Decision> in the single <Result> that is returned to the PEP  
209 SHALL be “Permit” if and only if all <Result> elements resulting from the evaluation of the individual  
210 **nodes** contained a <Decision> of “Permit”. Otherwise, the <Decision> in the single <Result>  
211 returned to the PEP SHALL be “Deny”. This Profile does NOT REQUIRE that the implementation of the  
212 evaluation of a request for access to such a **hierarchical resource** conform to the preceding model or  
213 that actual request contexts corresponding to the individual **nodes** in the hierarchy be constructed. This  
214 Profile REQUIRES only that the <Result> element SHALL be the same as if the preceding model were  
215 used.

216 Two syntax's for this functionality are specified in the following Sections, one for use with resources that  
217 are XML documents, and the other for use with resources that are not XML documents.

### 218 3.1 XML resources

#### 219 {Optional}

220 This Section describes the syntax for requesting access to an entire XML document, or to an element  
221 within that document with all its recursive sub-elements.

#### 222 3.1.1 Profile URI

223 The following URI SHALL be used as the identifier for the functionality specified in this Section of this  
224 Profile:

- 225 • urn:oasis:names:tc:xacml:3.0:profile:multiple:entire-hierarchy.xml

#### 226 3.1.2 Original request context

227 The <Attributes> element with the resource category in the original request context SHALL contain a  
228 “scope” attribute with a value of “EntireHierarchy”.

229 The <Attributes> element in the original request context SHALL contain a single “resource-id”  
230 attribute with a `DataType` of “urn:oasis:names:tc:xacml:3.0:data-type:xpathExpression” (defined in  
231 **[Hierarchical]**), such that the <AttributeValue> evaluates to a nodeset that represents exactly one  
232 node in the <Content> element.

233 The <Attributes> element in the original request context MAY contain other attributes.

#### 234 3.1.3 Semantics

235 The <Result> of such a request SHALL be equivalent to that produced by the following process. For  
236 each **node** in the requested hierarchy, the Context Handler SHALL create a new request context. Each  
237 such request context SHALL contain a single <Attributes> element with the resource category having  
238 a “resource-id” attribute with a `DataType` of “urn:oasis:names:tc:xacml:3.0:data-  
239 type:xpathExpression” (defined in **[Hierarchical]**) and a value that is an XPath **[XPath]** expression that

240 evaluates to a nodeset that contains exactly that one node in the <Content> element. The Context  
241 Handler SHALL submit each such new request context to the PDP for evaluation and SHALL keep track  
242 of the <Decision> in the corresponding <Result> elements. If and only if all the new request contexts  
243 evaluate to “Permit”, then a single <Result> containing a <Decision> of “Permit” SHALL be placed  
244 into the response context returned to the PEP. If any of the new request contexts evaluates to “Deny”,  
245 “Indeterminate”, or “NotApplicable”, then a single <Result> containing a <Decision> of “Deny”  
246 SHALL be placed into the response context returned to the PEP. If any attribute in the original request  
247 context contained an IncludeInResult, then the attribute SHALL be included in the result.

## 248 3.2 Non-XML resources

### 249 {Optional}

250 This Section describes the syntax for requesting access to an entire hierarchy of *nodes* within a  
251 *hierarchical resource* that is not an XML document.

### 252 3.2.1 Profile URI

253 The following URI SHALL be used as the identifier for the functionality specified in this Section of this  
254 Profile:

- 255 • urn:oasis:names:tc:xacml:3.0:profile:multiple:entire-hierarchy:non-xml

### 256 3.2.2 Original request context

257 The <Attributes> element with the resource category in the original request context SHALL contain a  
258 “scope” attribute with a value of “EntireHierarchy”.

259 The <Attributes> element in the original request context SHALL contain a single “resource-id”  
260 attribute that represents a single *node* in a *hierarchical resource*.

261 The <Attributes> element in the original request context MAY contain other attributes.

262 The representation of *nodes* in a *hierarchical resource* specified in Section FIXME 2.2 of the  
263 Hierarchical resource profile of XACML v3.0 [**Hierarchical**] MAY be used to represent the identity of the  
264 single *node*.

### 265 3.2.3 Semantics

266 The <Result> of such a request SHALL be equivalent to that produced by the following process. For  
267 each *node* in the requested hierarchy, the Context Handler SHALL create a new request context. Each  
268 such request context SHALL contain a single <Attributes> element with the resource category having  
269 a “resource-id” attribute with a value that is the identity of that one *node* in the hierarchy. The Context  
270 Handler SHALL submit each such new request context to the PDP for evaluation and SHALL keep track  
271 of the <Decision> in the corresponding <Result> elements. If and only if all the new request contexts  
272 evaluate to “Permit”, then a single <Result> containing a <Decision> of “Permit” SHALL be placed  
273 into the response context returned to the PEP. If any of the new request contexts evaluates to “Deny”,  
274 “Indeterminate”, or “NotApplicable”, then a single <Result> containing a <Decision> of “Deny”  
275 SHALL be placed into the response context returned to the PEP. If any attribute in the original request  
276 context contained an IncludeInResult, then the attribute SHALL be included in the result.

277 Neither XACML nor this Profile specifies how the Context Handler obtains the information required to  
278 determine which *nodes* are descendants of the originally specified *node*, or how to represent the identity  
279 of each such *node*. The representation of *nodes* in a *hierarchical resource* specified in Section FIXME  
280 2.2 of the Hierarchical resource profile of XACML v3.0 [**Hierarchical**] MAY be used to represent the  
281 identity of each such *node*.

---

## 282 4 New attribute identifiers

### 283 4.1 “scope”

284 The following identifier is used as the `AttributeId` of a resource attribute that indicates the scope of a  
285 request for access in a single `<Attributes>` element of a request context.

- 286 • `urn:oasis:names:tc:xacml:2.0:resource:scope`

287 The attribute SHALL have a `DataType` of “`http://www.w3.org/2001/XMLSchema#string`”.

288 The valid values for this attribute are listed below, along with a reference to the Section of this Profile or to  
289 the core XACML specification that describes how the `<Attributes>` element with the resource category  
290 is to be processed. An implementation MAY support any subset of these values, including the empty set.

- 291 • “Immediate” - The `<Attributes>` element refers to a single non-**hierarchical resource** or to a  
292 single **node** in a **hierarchical resource**. This is the default value, if no “scope” attribute is present.  
293 The `<Attributes>` element SHALL be processed according to the core XACML specification [XACML].
- 294 • “Children” - The `<Attributes>` element refers to multiple resources in a hierarchy. The set of  
295 resources consists of a single **node** described by the “resource-id” resource attribute and of all  
296 that **node's** immediate children in the hierarchy. The `<Attributes>` element SHALL be processed  
297 according to Section 2.1 of this Profile.
- 298 • “Descendants” - The `<Attributes>` element refers to multiple resources in a hierarchy. The set  
299 of resources consists of a single **node** described by the “resource-id” resource attribute and of all  
300 that **node's** descendants in the hierarchy. The `<Attributes>` element SHALL be processed  
301 according to Section 2.1 of this Profile.
- 302 • “XPath-expression” - The `<Attributes>` element refers to multiple resources. The set of  
303 resources consists of the nodes in a nodeset described by the “resource-id” resource attribute.  
304 Each of the **nodes** SHALL be contained in the `<Content>` element of the `<Attributes>` element. The  
305 `<Resource>` element SHALL be processed according to Section 2.2 of this Profile.
- 306 • “EntireHierarchy” - The `<Resource>` element refers to a single resource. The resource  
307 consists of a **node** described by the “resource-id” resource attribute along with all that **node's**  
308 descendants. All of the **nodes** SHALL be nodes in an XML document that is contained in the  
309 `<Content>` element of the `<Attributes>` element. The `<Attributes>` element SHALL be  
310 processed according to Section 2.4.

---

## 311 5 New profile identifiers

312 The following URI values SHALL be used as URI identifiers for the functionality specified in various  
313 Sections of this Profile:

314 Section 2.1: “scope attribute of “children” or “descendants” in <Attributes>: XML resources

- 315 • urn:oasis:names:tc:xacml:3.0:profile:multiple:scope:xml

316 Section 2.1: “scope attribute of “children” or “descendants” in <Attributes>: Non-XML resources

- 317 • urn:oasis:names:tc:xacml:3.0:profile:multiple:scope:non-xml

318 Section 2.2: XPath expression in “resource-id” attribute

- 319 • urn:oasis:names:tc:xacml:3.0:profile:multiple:xpath-expression

320 Section 2.3: Multiple <Attributes> elements

- 321 • urn:oasis:names:tc:xacml:3.0:profile:multiple:multiple-resource-elements

322 Section 2.4: By reference to <Attributes> elements

- 323 • urn:oasis:names:tc:xacml:3.0:profile:multiple:reference

324 Section 3.1: Requests for an entire hierarchy: XML resources

- 325 • urn:oasis:names:tc:xacml:3.0:profile:multiple:entire-hierarchy:xml

326 Section 3.2: Requests for an entire hierarchy: Non-XML resources

- 327 • urn:oasis:names:tc:xacml:3.0:profile:multiple:entire-hierarchy:non-xml

---

## 328 6 Conformance

329 An implementation may conform to this specification in one or more of the following ways.

### 330 6.1 Processor of requests for multiple resources as nodes identified 331 by “scope”

332 An implementation conforms as a processor of requests for multiple resources as nodes identified by  
333 “scope” if it is able to process XACML requests in the manner described in sections 2.1 and 4 of this  
334 specification.

### 335 6.2 Processor of requests for multiple resources as nodes identified 336 by XPath

337 An implementation conforms as a processor of requests for multiple resources as nodes identified by  
338 XPath if it is able to process XACML requests in the manner described in sections 2.2 and 4 of this  
339 specification.

### 340 6.3 Processor of requests for multiple resources by multiple 341 <Attributes> elements

342 An implementation conforms as a processor of requests for multiple resources by multiple  
343 <Attributes> elements if it is able to process XACML requests in the manner described in sections 2.3  
344 and 4 of this specification.

### 345 6.4 Processor of requests for multiple resources by reference to 346 <Attributes> elements

347 An implementation conforms as a processor of requests for multiple resources by references to  
348 <Attributes> elements if it is able to process XACML requests in the manner described in sections 2.4  
349 and 4 of this specification.

### 350 6.5 Processor of requests for an entire hierarchy of XML resources

351 An implementation conforms as a processor of requests for an entire hierarchy of XML resources if it is  
352 able to process XACML requests in the manner described in sections 3.1 and 4 of this specification.

### 353 6.6 Processor of requests for an entire hierarchy of non-XML 354 resources

355 An implementation conforms as a processor of requests for an entire hierarchy of non-XML resources if it  
356 is able to process XACML requests in the manner described in sections 3.2 and 4 of this specification.

---

357 **A. Acknowledgements**

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360 **Participants:**

361 Anthony Nadalin  
362 Bill Parducci  
363 Daniel Engovatov  
364 Hal Lockhart  
365 Michael McIntosh  
366 Ron Jacobson  
367 Seth Proctor  
368 Steve Anderson  
369 Tim Moses

370

## B. Revision History

371 [optional; should not be included in OASIS Standards]

372

Revision	Date	Editor	Changes Made
WD 1	[Rev Date]	Erik Rissanen	Initial update to XACML 3.0.
WD 2	28 Dec 2007	Erik Rissanen	Update to current OASIS template.
WD 3	4 Nov 2008	Erik Rissanen	Define behavior for the IncludeInResult attribute.
WD 4	3 Mar 2009	Erik Rissanen	Added the new <MultiRequests> scheme.
WD 5		Erik Rissanen	Changed error behavior in <MultiRequests> Clarified some text Editorial cleanups Conformance section

373

374