



Creating A Single Global Electronic Market

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5 **OASIS/ebXML Registry Information Model v1.0**
6 **DRAFT**

7 **OASIS/ebXML Registry Technical Committee**

8 **27 June 2001**

9

10 **1 Status of this Document**

11
12 Distribution of this document is unlimited.

13
14 ***This version:***

15 <http://www.oasis-open.org/committees/regrep/documents/rimV1-0.doc>

16
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21 **2 OASIS/ebXML Registry Technical Committee**

22 This document, in its current form, has been approved by the OASIS/ebXML
23 Registry Technical Committee as DRAFT Specification of the TC. At the time of
24 this approval the following were members of the OASIS/ebXML Registry
25 Technical Committee.

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146 **3 Introduction**

147 **3.1 Summary of Contents of Document**

148 This document specifies the information model for the ebXML *Registry*.

149

150 A separate document, ebXML Registry Services Specification [ebRS], describes
151 how to build *Registry Services* that provide access to the information content in
152 the ebXML *Registry*.

153 **3.2 General Conventions**

- 154 o *UML* diagrams are used as a way to concisely describe concepts. They are
155 not intended to convey any specific *Implementation* or methodology
156 requirements.
- 157 o Interfaces are often used in *UML* diagrams. They are used instead of *Classes*
158 with attributes to provide an abstract definition without implying any specific
159 *Implementation*. Specifically, they do not imply that objects in the *Registry* will
160 be accessed directly via these interfaces. Objects in the *Registry* are
161 accessed via interfaces described in the ebXML Registry Services
162 Specification. Each get method in every interface has an explicit indication of
163 the attribute name that the get method maps to. For example getName
164 method maps to an attribute named `name`.
- 165 o The term “*repository item*” is used to refer to an object that has been
166 submitted to a Registry for storage and safekeeping (e.g. an XML document
167 or a DTD). Every repository item is described by a RegistryEntry instance.
- 168 o The term “RegistryEntry” is used to refer to an object that provides metadata
169 about a repository item.
- 170 o The term “RegistryObject” is used to refer to the base interface in the
171 information model to avoid the confusion with the common term “object”.
172 However, when the term “object” is used to refer to a *class* or an interface in
173 the information model, it may also mean RegistryObject because almost all
174 classes are descendants of RegistryObject.

175

176 The information model does not deal with the actual content of the repository. All
177 *Elements* of the information model represent metadata about the content and not
178 the content itself.

179

180 Software practitioners MAY use this document in combination with other ebXML
181 specification documents when creating ebXML compliant software.

182

183 The keywords MUST, MUST NOT, REQUIRED, SHALL, SHALL NOT, SHOULD,
184 SHOULD NOT, RECOMMENDED, MAY, and OPTIONAL, when they appear in
185 this document, are to be interpreted as described in RFC 2119 [Bra97].

186

187 **3.2.1 Naming Conventions**

188

189 In order to enforce a consistent capitalization and naming convention in this
190 document, "Upper Camel Case" (*UCC*) and "Lower Camel Case" (*LCC*)
191 Capitalization styles are used in the following conventions

192

- 193 • Element name is in *UCC* convention
194 (example: <UpperCamelCaseElement/>).
- 195 • Attribute name is in *LCC* convention
196 (example: <UpperCamelCaseElement
197 lowerCamelCaseAttribute="Whatever"/>).
- 198 • *Class*, *Interface* names use *UCC* convention
199 (examples: *ClassificationNode*, *Versionable*).
- 200 • *Method* name uses *LCC* convention
201 (example: *getName()*, *setName()*)

202

203 Also, *Capitalized Italics* words are defined in the ebXML Glossary [ebGLOSS].

204 **3.3 Audience**

205 The target audience for this specification is the community of software
206 developers who are:

- 207 o Implementers of ebXML *Registry Services*
- 208 o Implementers of ebXML *Registry Clients*

209 **3.4 Related Documents**

210 The following specifications provide some background and related information to
211 the reader:

212

- 213 a) ebXML Registry Services Specification [ebRS] - defines the actual
214 *Registry Services* based on this information model
- 215 b) ebXML Collaboration-Protocol Profile and Agreement Specification
216 [ebCPP] - defines how profiles can be defined for a *Party* and how two
217 *Parties'* profiles may be used to define a *Party* agreement
- 218 c) ebXML Business Process Specification Schema [ebBPSS]
- 219 d) ebXML Technical Architecture Specification [ebTA]

220

221 **4 Design Objectives**

222 **4.1 Goals**

223 The goals of this version of the specification are to:

- 224 o Communicate what information is in the *Registry* and how that information is
- 225 organized
- 226 o Leverage as much as possible the work done in the OASIS [OAS] and the
- 227 ISO 11179 [ISO] Registry models
- 228 o Align with relevant works within other ebXML working groups
- 229 o Be able to evolve to support future ebXML *Registry* requirements
- 230 o Be compatible with other ebXML specifications
- 231

232 **5 System Overview**

233 **5.1 Role of ebXML Registry**

234
235 The *Registry* provides a stable store where information submitted by a

236 *Submitting Organization* is made persistent. Such information is used to facilitate

237 ebXML-based *Business to Business* (B2B) partnerships and transactions.

238 Submitted content may be *XML* schema and documents, process descriptions,

239 *Core Components*, context descriptions, *UML* models, information about parties

240 and even software components.

241 **5.2 Registry Services**

242 A set of *Registry Services* that provide access to *Registry* content to clients of the

243 *Registry* is defined in the ebXML Registry Services Specification [ebRS]. This

244 document does not provide details on these services but may occasionally refer

245 to them.

246 **5.3 What the Registry Information Model Does**

247 The Registry Information Model provides a blueprint or high-level schema for the

248 ebXML *Registry*. Its primary value is for implementers of ebXML *Registries*. It

249 provides these implementers with information on the type of metadata that is

250 stored in the *Registry* as well as the relationships among metadata *Classes*.

251 The Registry information model:

- 252 o Defines what types of objects are stored in the *Registry*
- 253 o Defines how stored objects are organized in the *Registry*
- 254 o Is based on ebXML metamodels from various working groups
- 255

256 **5.4 How the Registry Information Model Works**

257 Implementers of the ebXML *Registry* MAY use the information model to

258 determine which *Classes* to include in their *Registry Implementation* and what

259 attributes and methods these *Classes* may have. They MAY also use it to

260 determine what sort of database schema their *Registry Implementation* may
261 need.

262 [Note]The information model is meant to be
263 illustrative and does not prescribe any
264 specific *Implementation* choices.
265

266 **5.5 Where the Registry Information Model May Be Implemented**

267 The Registry Information Model MAY be implemented within an ebXML *Registry*
268 in the form of a relational database schema, object database schema or some
269 other physical schema. It MAY also be implemented as interfaces and *Classes*
270 within a *Registry Implementation*.

271 **5.6 Conformance to an ebXML Registry**

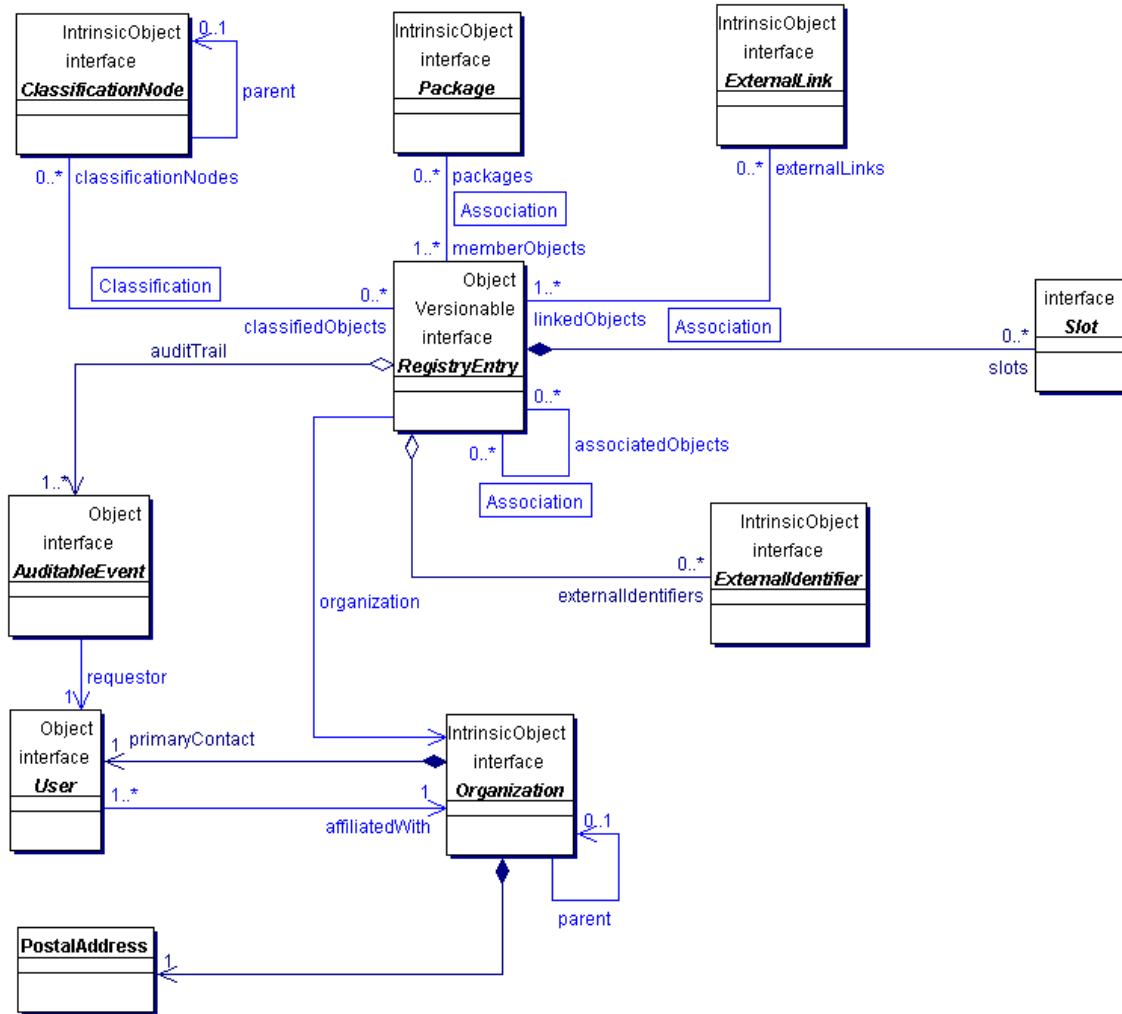
272
273 If an *Implementation* claims *Conformance* to this specification then it supports all
274 required information model *Classes* and interfaces, their attributes and their
275 semantic definitions that are visible through the ebXML *Registry Services*.

276 **6 Registry Information Model: High Level Public View**

277 This section provides a high level public view of the most visible objects in the
278 *Registry*.

279
280 Figure 1 shows the high level public view of the objects in the *Registry* and their
281 relationships as a *UML Class Diagram*. It does not show *Inheritance*, *Class*
282 attributes or *Class* methods.

283 The reader is again reminded that the information model is not modeling actual
284 repository items.
285



286

287

Figure 1: Information Model High Level Public View

288 **6.1 RegistryEntry**

289 The central object in the information model is a RegistryEntry. An Instance of
 290 RegistryEntry exists for each content Instance submitted to the Registry.
 291 Instances of the RegistryEntry Class provide metadata about a repository item.
 292 The actual repository item (e.g. a DTD) is not contained in an Instance of the
 293 RegistryEntry Class. Note that most Classes in the information model are
 294 specialized sub-classes of RegistryEntry. Each RegistryEntry is related to exactly
 295 one repository item.

296 **6.2 Slot**

297 Slot Instances provide a dynamic way to add arbitrary attributes to RegistryEntry
 298 Instances. This ability to add attributes dynamically to RegistryEntry Instances
 299 enables extensibility within the Registry Information Model.

300 **6.3 Association**

301 Association *Instances* are RegistryEntries that are used to define many-to-many
302 associations between objects in the information model. Associations are
303 described in detail in section 10.

304 **6.4 ExternalIdentifier**

305 ExternalIdentifier *Instances* provide additional identifier information to
306 RegistryEntry such as DUNS number, Social Security Number, or an alias name
307 of the organization.

308 **6.5 ExternalLink**

309 ExternalLink *Instances* are RegistryEntries that model a named URI to content
310 that is not managed by the *Registry*. Unlike managed content, such external
311 content may change or be deleted at any time without the knowledge of the
312 *Registry*. RegistryEntry may be associated with any number of ExternalLinks.
313 Consider the case where a *Submitting Organization* submits a repository item
314 (e.g. a *DTD*) and wants to associate some external content to that object (e.g.
315 the *Submitting Organization's* home page). The ExternalLink enables this
316 capability. A potential use of the ExternalLink capability may be in a GUI tool that
317 displays the ExternalLinks to a RegistryEntry. The user may click on such links
318 and navigate to an external web page referenced by the link.

319 **6.6 ClassificationNode**

320 ClassificationNode *Instances* are RegistryEntries that are used to define tree
321 structures where each node in the tree is a ClassificationNode. *Classification*
322 trees constructed with ClassificationNodes are used to define *Classification*
323 schemes or ontologies. ClassificationNode is described in detail in section 11.

324 **6.7 Classification**

325 Classification *Instances* are RegistryEntries that are used to classify repository
326 items by associating their RegistryEntry *Instance* with a ClassificationNode within
327 a *Classification* scheme. Classification is described in detail in section 11.

328 **6.8 Package**

329 Package *Instances* are RegistryEntries that group logically related
330 RegistryEntries together. One use of a Package is to allow operations to be
331 performed on an entire *Package* of objects. For example all objects belonging to
332 a Package may be deleted in a single request.

333 **6.9 AuditableEvent**

334 AuditableEvent *Instances* are Objects that are used to provide an audit trail for
335 RegistryEntries. AuditableEvent is described in detail in section 8.

336 **6.10 User**

337 User *Instances* are Objects that are used to provide information about registered
338 users within the *Registry*. User objects are used in audit trail for RegistryEntries.
339 User is described in detail in section 8.
340

341 **6.11 PostalAddress**

342 PostalAddress is a simple reusable *Entity Class* that defines attributes of a postal
343 address.
344

345 **6.12 Organization**

346 Organization *Instances* are RegistryEntries that provide information on
347 organizations such as a *Submitting Organization*. Each Organization *Instance*
348 may have a reference to a parent Organization.

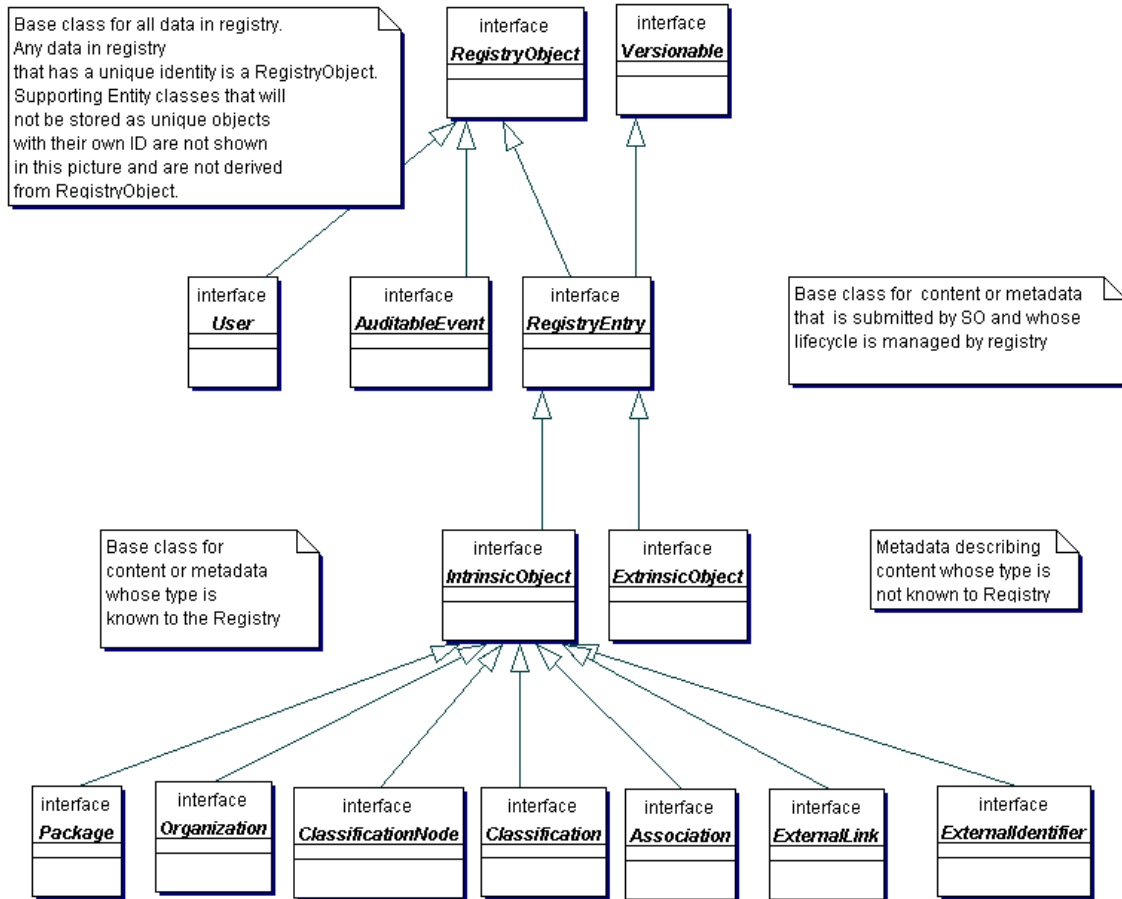
349 **7 Registry Information Model: Detail View**

350 This section covers the information model *Classes* in more detail than the Public
351 View. The detail view introduces some additional *Classes* within the model that
352 were not described in the public view of the information model.
353

354 Figure 2 shows the *Inheritance* or “is a” relationships between the *Classes* in the
355 information model. Note that it does not show the other types of relationships,
356 such as “has a” relationships, since they have already been shown in a previous
357 figure. *Class* attributes and *class* methods are also not shown. Detailed
358 description of methods and attributes of most interfaces and *Classes* will be
359 displayed in tabular form following the description of each *Class* in the model.
360

361 The interface Association will be covered in detail separately in section 10. The
362 interfaces Classification and ClassificationNode will be covered in detail
363 separately in section 11.
364

365 The reader is again reminded that the information model is not modeling actual
366 repository items.



367
368
369

Figure 2: Information Model *Inheritance View*

370 7.1 Interface RegistryObject

371 All Known Subinterfaces:

372 [Association](#), [Classification](#), [ClassificationNode](#), [ExternalLink](#),
 373 [ExtrinsicObject](#), [IntrinsicObject](#), [RegistryEntry](#), [Organization](#), [Package](#),
 374 [User](#), [AuditableEvent](#), [ExternalIdentifier](#)

375
 376 RegistryObject provides a common base interface for almost all objects in the
 377 information model. Information model *Classes* whose *Instances* have a unique
 378 identity and an independent life cycle are descendants of the RegistryObject
 379 *Class*.

380
 381 Note that Slot and PostalAddress are not descendants of the RegistryObject
 382 *Class* because their *Instances* do not have an independent existence and unique
 383 identity. They are always a part of some other *Class's Instance* (e.g. Organization
 384 has a PostalAddress).
 385
 386

Method Summary of RegistryObject	
AccessControlPolicy	<p>getAccessControlPolicy ()</p> <p>Gets the AccessControlPolicy object associated with this RegistryObject. An AccessControlPolicy defines the <i>Security Model</i> associated with the RegistryObject in terms of “who is permitted to do what” with that RegistryObject. Maps to attribute named <code>accessControlPolicy</code>.</p>
String	<p>getDescription ()</p> <p>Gets the context independent textual description for this RegistryObject. Maps to attribute named <code>description</code>.</p>
String	<p>getName ()</p> <p>Gets user friendly, context independent name for this RegistryObject. Maps to attribute named <code>name</code>.</p>
String	<p>getID ()</p> <p>Gets the universally unique ID, as defined by [UUID], for this RegistryObject. Maps to attribute named <code>id</code>.</p>
void	<p>setDescription (String description)</p> <p>Sets the context, independent textual description for this RegistryObject.</p>
void	<p>setName (String name)</p> <p>Sets user friendly, context independent name for this RegistryObject.</p>
void	<p>setID (String id)</p> <p>Sets the universally unique ID, as defined by [UUID], for this RegistryObject.</p>

387

388

388 7.2 Interface Versionable

389 All Known Subinterfaces:

390 [Association](#), [Classification](#), [ClassificationNode](#), [ExternalLink](#),
 391 [ExtrinsicObject](#), [IntrinsicObject](#), [RegistryEntry](#), [Organization](#), [Package](#),
 392 [ExternalIdentifier](#)

393
 394 The Versionable interface defines the behavior common to *Classes* that are
 395 capable of creating versions of their *Instances*. At present all RegistryEntry
 396 *Classes* are REQUIRED to implement the Versionable interface.
 397

Method Summary of Versionable

int	getMajorVersion () Gets the major revision number for this version of the Versionable object. Maps to attribute named <code>majorVersion</code> .
int	getMinorVersion () Gets the minor revision number for this version of the Versionable object. Maps to attribute named <code>minorVersion</code> .
void	setMajorVersion (int majorVersion) Sets the major revision number for this version of the Versionable object.
void	setMinorVersion (int minorVersion) Sets the minor revision number for this version of the Versionable object.

398

399 7.3 Interface RegistryEntry

400 All Superinterfaces:

401 [RegistryObject](#), [Versionable](#)

402 All Known Subinterfaces:

403 [Association](#), [Classification](#), [ClassificationNode](#), [ExternalLink](#),
 404 [ExtrinsicObject](#), [IntrinsicObject](#), [Organization](#), [Package](#), [ExternalIdentifier](#)

405
 406 RegistryEntry is a common base *Class* for all metadata describing submitted
 407 content whose life cycle is managed by the *Registry*. Metadata describing
 408 content submitted to the *Registry* is further specialized by the ExtrinsicObject and
 409 IntrinsicObject subclasses of RegistryEntry.
 410
 411
 412
 413

Method Summary of RegistryEntry	
Collection	<p>getAssociatedObjects ()</p> <p>Returns the collection of RegistryObjects associated with this RegistryObject. Maps to attribute named <code>associatedObjects</code>.</p>
Collection	<p>getAuditTrail ()</p> <p>Returns the complete audit trail of all requests that effected a state change in this RegistryObject as an ordered Collection of AuditableEvent objects. Maps to attribute named <code>auditTrail</code>.</p>
Collection	<p>getClassificationNodes ()</p> <p>Returns the collection of ClassificationNodes associated with this RegistryObject. Maps to attribute named <code>classificationNodes</code>.</p>
Collection	<p>getExternalLinks ()</p> <p>Returns the collection of ExternalLinks associated with this RegistryObject. Maps to attribute named <code>externalLinks</code>.</p>
Collection	<p>getExternalIdentifiers ()</p> <p>Returns the collection of ExternalIdentifiers associated with this RegistryObject. Maps to attribute named <code>externalIdentifiers</code>.</p>
String	<p>getObjectType ()</p> <p>Gets the pre-defined object type associated with this RegistryEntry. This SHOULD be the name of a object type as described in 7.3.2. Maps to attribute named <code>objectType</code>.</p>
Collection	<p>getOrganizations ()</p> <p>Returns the collection of Organizations associated with this RegistryObject. Maps to attribute named <code>organizations</code>.</p>
Collection	<p>getPackages ()</p> <p>Returns the collection of Packages associated with this RegistryObject. Maps to attribute named <code>packages</code>.</p>
String	<p>getStatus ()</p> <p>Gets the life cycle status of the RegistryEntry within the <i>Registry</i>. This SHOULD be the name of a RegistryEntry status type as described in 7.3.1. Maps to attribute named <code>status</code>.</p>
String	<p>getUserVersion ()</p> <p>Gets the userVersion attribute of the RegistryEntry within the <i>Registry</i>. The userVersion is the version for the RegistryEntry as assigned by the user.</p>
void	<p>setUserVersion (String UserVersion)</p> <p>Sets the userVersion attribute of the RegistryEntry within the <i>Registry</i>.</p>
String	<p>getStability ()</p> <p>Gets the stability indicator for the ReastrvEntry within the</p>

	<i>Registry</i> . The stability indicator is provided by the submitter as a guarantee of the level of stability for the content. This SHOULD be the name of a stability type as described in 7.3.3. Maps to attribute named <code>stability</code> .
Date	getExpirationDate () Gets expirationDate attribute of the RegistryEntry within the <i>Registry</i> . This attribute defines a time limit upon the stability guarantee provided by the stability attribute. Once the expirationDate has been reached the stability attribute in effect becomes STABILITY_DYNAMIC implying that content can change at any time and in any manner. A null value implies that there is no expiration on stability attribute. Maps to attribute named <code>expirationDate</code> .
void	setExpirationDate (Date expirationDate) Sets expirationDate attribute of the RegistryEntry within the <i>Registry</i> .
Collection	getSlots () Gets the collection of slots that have been dynamically added to this RegistryObject. Maps to attribute named <code>slots</code> .
void	addSlots (Collection newSlots) Adds one or more slots to this RegistryObject. Slot names MUST be locally unique within this RegistryObject. Any existing slots are not effected.
void	removeSlots (Collection slotNames) Removes one or more slots from this RegistryObject. Slots to be removed are identified by their name.

414

Methods inherited from interface RegistryObject
getAccessControlPolicy , getDescription , getName , getID , setDescription , setName , setID

415

Methods inherited from interface Versionable
getMajorVersion , getMinorVersion , setMajorVersion , setMinorVersion

416 **7.3.1 Pre-defined RegistryEntry Status Types**

417 The following table lists pre-defined choices for RegistryEntry status attribute.
 418 These pre-defined status types are defined as a *Classification* scheme. While the
 419 scheme may easily be extended, a *Registry* MUST support the status types listed
 420 below.

421

Name	Description
------	-------------

Submitted	Status of a RegistryEntry that catalogues content that has been submitted to the <i>Registry</i> .
Approved	Status of a RegistryEntry that catalogues content that has been submitted to the <i>Registry</i> and has been subsequently approved.
Deprecated	Status of a RegistryEntry that catalogues content that has been submitted to the <i>Registry</i> and has been subsequently deprecated.
Withdrawn	Status of a RegistryEntry that catalogues content that has been withdrawn from the <i>Registry</i> .

422 7.3.2 Pre-defined Object Types

423 The following table lists pre-defined object types. Note that for an ExtrinsicObject
 424 there are many types defined based on the type of repository item the
 425 ExtrinsicObject catalogs. In addition there there are object types defined for
 426 IntrinsicObject sub-classes that may have concrete *Instances*.

427

428 These pre-defined object types are defined as a *Classification* scheme. While the
 429 scheme may easily be extended a *Registry* MUST support the object types listed
 430 below.

431

name	description
Unknown	An ExtrinsicObject that catalogues content whose type is unspecified or unknown.
CPA	An ExtrinsicObject of this type catalogues an <i>XML</i> document <i>Collaboration Protocol Agreement (CPA)</i> representing a technical agreement between two parties on how they plan to communicate with each other using a specific protocol.
CPP	An ExtrinsicObject of this type catalogues an document called <i>Collaboration Protocol Profile (CPP)</i> that provides information about a <i>Party</i> participating in a <i>Business</i> transaction.
Process	An ExtrinsicObject of this type catalogues a process description document.
Role	An ExtrinsicObject of this type catalogues an <i>XML</i> description of a <i>Role</i> in a <i>Collaboration Protocol Profile (CPP)</i> .
ServiceInterface	An ExtrinsicObject of this type catalogues an <i>XML</i> description of a service interface as defined by [ebCPP].
SoftwareComponent	An ExtrinsicObject of this type catalogues a software component (e.g., an EJB or <i>Class</i> library).

Transport	An ExtrinsicObject of this type catalogues an <i>XML</i> description of a transport configuration as defined by [ebCPP].
UMLModel	An ExtrinsicObject of this type catalogues a <i>UML</i> model.
XMLSchema	An ExtrinsicObject of this type catalogues an <i>XML</i> schema (<i>DTD</i> , <i>XML Schema</i> , <i>RELAX grammar</i> , etc.).
Package	A Package object
ExternalLink	An ExternalLink object
ExternalIdentifier	An ExternalIdentifier object
Association	An Association object
Classification	A Classification object
ClassificationNode	A ClassificationNode object
AuditableEvent	An AuditableEvent object
User	A User object
Organization	An Organization object

432

433 7.3.3 Pre-defined RegistryEntry Stability Enumerations

434 The following table lists pre-defined choices for RegistryEntry stability attribute.
 435 These pre-defined stability types are defined as a *Classification* scheme. While
 436 the scheme may easily be extended, a *Registry* MAY support the stability types
 437 listed below.

438

Name	Description
Dynamic	Stability of a RegistryEntry that indicates that the content is dynamic and may be changed arbitrarily by submitter at any time.
DynamicCompatible	Stability of a RegistryEntry that indicates that the content is dynamic and may be changed in a backward compatible way by submitter at any time.
Static	Stability of a RegistryEntry that indicates that the content is static and will not be changed by submitter.

439

440

441 7.4 Interface Slot

442

443 Slot *Instances* provide a dynamic way to add arbitrary attributes to RegistryEntry
 444 *Instances*. This ability to add attributes dynamically to RegistryEntry *Instances*
 445 enables extensibility within the Registry Information Model.

446

447 In this model, a RegistryEntry may have 0 or more Slots. A slot is composed of a
 448 name, a slotType and a collection of values. The name of slot is locally unique
 449 within the RegistryEntry *Instance*. Similarly, the value of a Slot is locally unique
 450 within a slot *Instance*. Since a Slot represent an extensible attribute whose value
 451 may be a collection, therefore a Slot is allowed to have a collection of values
 452 rather than a single value. The slotType attribute may optionally specify a type or
 453 category for the slot.
 454
 455

Method Summary of Slot	
String	getName () Gets the name of this RegistryObject. Maps to attribute named <code>name</code> .
void	setName (String name) Sets the name of this RegistryObject. Slot names are locally unique within a RegistryEntry <i>Instance</i> .
String	getSlotType () Gets the slotType or category for this slot. Maps to attribute named <code>slotType</code> .
void	setSlotType (String slotType) Sets the slotType or category for this slot.
Collection	getValues () Gets the collection of values for this RegistryObject. The type for each value is String. Maps to attribute named <code>values</code> .
void	setValues (Collection values) Sets the collection of values for this RegistryObject.

456

457 **7.5 Interface ExtrinsicObject**

458 **All Superinterfaces:**

459 [RegistryEntry](#), [RegistryObject](#), [Versionable](#)

460

461 ExtrinsicObjects provide metadata that describes submitted content whose type
 462 is not intrinsically known to the *Registry* and therefore MUST be described by
 463 means of additional attributes (e.g., mime type).

464

465 Examples of content described by ExtrinsicObject include *Collaboration Protocol*
 466 *Profiles (CPP)*, *Business Process* descriptions, and schemas.

467

Method Summary of Extrinsic Object	
String	getContentURI() Gets the URI to the content catalogued by this ExtrinsicObject. A <i>Registry</i> MUST guarantee that this URI is resolvable. Maps to attribute named <code>contentURI</code> .
String	getMimeType() Gets the mime type associated with the content catalogued by this ExtrinsicObject. Maps to attribute named <code>mimeType</code> .
boolean	isOpaque() Determines whether the content catalogued by this ExtrinsicObject is opaque to (not readable by) the <i>Registry</i> . In some situations, a <i>Submitting Organization</i> may submit content that is encrypted and not even readable by the <i>Registry</i> . Maps to attribute named <code>opaque</code> .
void	setContentURI(String uri) Sets the URI to the content catalogued by this ExtrinsicObject.
void	setMimeType(String mimeType) Sets the mime type associated with the content catalogued by this ExtrinsicObject.
void	setOpaque(boolean isOpaque) Sets whether the content catalogued by this ExtrinsicObject is opaque to (not readable by) the <i>Registry</i> .

468

469 Note that methods inherited from the base interfaces of this interface are not
470 shown.

471 **7.6 Interface IntrinsicObject**

472 **All Superinterfaces:**

473 [RegistryEntry](#), [RegistryObject](#), [Versionable](#)

474 **All Known Subinterfaces:**

475 [Association](#), [Classification](#), [ClassificationNode](#), [ExternalLink](#), [Organization](#),
476 [Package](#), [ExternalIdentifier](#)

477

478 IntrinsicObject serve as a common base *Class* for derived *Classes* that catalogue
479 submitted content whose type is known to the *Registry* and defined by the
480 ebXML *Registry* specifications.

481

482 This interface currently does not define any attributes or methods. Note that
483 methods inherited from the base interfaces of this interface are not shown.

484

485 **7.7 Interface Package**

486 **All Superinterfaces:**

487 [IntrinsicObject](#), [RegistryEntry](#), [RegistryObject](#), [Versionable](#)

488
489
490
491
492
493

Logically related RegistryEntries may be grouped into a Package. It is anticipated that *Registry Services* will allow operations to be performed on an entire *Package* of objects in the future.

Method Summary of Package

Collection	getMemberObjects() Get the collection of RegistryEntries that are members of this Package. Maps to attribute named <code>memberObjects</code> .
------------	--

494

495 7.8 Interface ExternalIdentifier

496 **All Superinterfaces:**

497 [IntrinsicObject](#), [RegistryEntry](#), [RegistryObject](#), [Versionable](#)

498
499
500
501
502
503
504
505
506

ExternalIdentifier *Instances* provide the additional identifier information to RegistryEntry such as DUNS number, Social Security Number, or an alias name of the organization. The attribute *name* inherited from RegistryObject is used to contain the identification scheme (Social Security Number, etc), and the attribute *value* contains the actual information. Each RegistryEntry may have 0 or more association(s) with ExternalIdentifier.

See Also:

Method Summary of ExternalIdentifier

String	getValue() Gets the value of this ExternalIdentifier. Maps to attribute named <code>value</code> .
Void	setValue(String value) Sets the value of this ExternalIdentifier.

507
508
509

Note that methods inherited from the base interfaces of this interface are not shown.

510 7.9 Interface ExternalLink

511 **All Superinterfaces:**

512 [IntrinsicObject](#), [RegistryEntry](#), [RegistryObject](#), [Versionable](#)

513
514
515
516
517

ExternalLinks use URIs to associate content in the *Registry* with content that may reside outside the *Registry*. For example, an organization submitting a *DTD* could use an ExternalLink to associate the *DTD* with the organization's home page.

OASIS/ebXML Registry Information Model

518

519

Method Summary of ExternalLink	
Collection	getLinkedObjects () Gets the collection of RegistryObjects that use this external link. Maps to attribute named <code>linkedObjects</code> .
URI	getExternalURI () Gets URI to the external content. Maps to attribute named <code>externalURI</code> .
void	setExternalURI (URI uri) Sets URI to the external content.

520

521 Note that methods inherited from the base interfaces of this interface are not
522 shown.

523 8 Registry Audit Trail

524 This section describes the information model *Elements* that support the audit trail
525 capability of the *Registry*. Several *Classes* in this section are *Entity Classes* that
526 are used as wrappers to model a set of related attributes. These *Entity Classes*
527 do not have any associated behavior. They are analogous to the “struct”
528 construct in the C programming language.

529

530 The `getAuditTrail()` method of a `RegistryEntry` returns an ordered `Collection` of
531 `AuditableEvents`. These `AuditableEvents` constitute the audit trail for the
532 `RegistryEntry`. `AuditableEvents` include a timestamp for the *Event*. Each
533 `AuditableEvent` has a reference to a `User` identifying the specific user that
534 performed an action that resulted in an `AuditableEvent`. Each `User` is affiliated
535 with an `Organization`, which is usually the *Submitting Organization*.

536 8.1 Interface AuditableEvent

537 **All Superinterfaces:**

538 [RegistryObject](#)

539

540 `AuditableEvent` *Instances* provide a long-term record of *Events* that effect a
541 change of state in a `RegistryEntry`. A `RegistryEntry` is associated with an ordered
542 `Collection` of `AuditableEvent` *Instances* that provide a complete audit trail for that
543 `RegistryObject`.

544

545 `AuditableEvents` are usually a result of a client-initiated request. `AuditableEvent`
546 *Instances* are generated by the *Registry Service* to log such *Events*.

547

548 Often such *Events* effect a change in the life cycle of a `RegistryEntry`. For
549 example a client request could Create, Update, Deprecate or Delete a
550 `RegistryEntry`. No `AuditableEvent` is created for requests that do not alter the

551 state of a RegistryEntry. Specifically, read-only requests do not generate an
 552 AuditableEvent. No AuditableEvent is generated for a RegistryEntry when it is
 553 classified, assigned to a Package or associated with another RegistryObject.
 554
 555

556 8.1.1 Pre-defined Auditable Event Types

557 The following table lists pre-defined auditable event types. These pre-defined
 558 event types are defined as a *Classification* scheme. While the scheme may
 559 easily be extended, a *Registry* MUST support the event types listed below.
 560

Name	description
Created	An <i>Event</i> that created a RegistryEntry.
Deleted	An <i>Event</i> that deleted a RegistryEntry.
Deprecated	An <i>Event</i> that deprecated a RegistryEntry.
Updated	An <i>Event</i> that updated the state of a RegistryEntry.
Versioned	An <i>Event</i> that versioned a RegistryEntry.

561

Method Summary of AuditableEvent	
User	getUser() Gets the User that sent the request that generated this <i>Event</i> . Maps to attribute named <code>user</code> .
String	getEventType() The type of this <i>Event</i> as defined by the name attribute of an event type as defined in section 8.1.1. Maps to attribute named <code>eventType</code> .
RegistryEntry	getRegistryEntry() Gets the RegistryEntry associated with this AuditableEvent. Maps to attribute named <code>registryEntry</code> .
Timestamp	getTimestamp() Gets the Timestamp for when this <i>Event</i> occurred. Maps to attribute named <code>timestamp</code> .

562

563 Note that methods inherited from the base interfaces of this interface are not
 564 shown.

565 8.2 Interface User

566 All Superinterfaces:

567 [RegistryObject](#)

568

569 User *Instances* are used in an *AuditableEvent* to keep track of the identity of the
 570 requestor that sent the request that generated the *AuditableEvent*.

571

Method Summary of User	
Organization	getOrganization () Gets the <i>Submitting Organization</i> that sent the request that effected this change. Maps to attribute named <i>organization</i> .
PostalAddress	getAddress () Gets the postal address for this user. Maps to attribute named <i>address</i> .
String	getEmail () Gets the email address for this user. Maps to attribute named <i>email</i> .
TelephoneNumber	getFax () The FAX number for this user. Maps to attribute named <i>fax</i> .
TelephoneNumber	getMobilePhone () The mobile telephone number for this user. Maps to attribute named <i>mobilePhone</i> .
PersonName	getPersonName () Name of contact person. Maps to attribute named <i>personName</i> .
TelephoneNumber	getPager () The pager telephone number for this user. Maps to attribute named <i>pager</i> .
TelephoneNumber	getTelephone () The default (land line) telephone number for this user. Maps to attribute named <i>telephone</i> .
URL	getUrl () The <i>URL</i> to the web page for this contact. Maps to attribute named <i>url</i> .

572

573 8.3 Interface Organization

574 **All Superinterfaces:**

575 [IntrinsicObject](#), [RegistryEntry](#), [RegistryObject](#), [Versionable](#)

576

577 Organization *Instances* provide information on organizations such as a
 578 *Submitting Organization*. Each Organization *Instance* may have a reference to a
 579 parent Organization. In addition it may have a contact attribute defining the
 580 primary contact within the organization. An Organization also has an address
 581 attribute.

582

Method Summary of Organization	
PostalAddress	getAddress () Gets the PostalAddress for this Organization. Maps to attribute named <code>address</code> .
User	getPrimaryContact () Gets the primary Contact for this Organization. The primary contact is a reference to a User object. Maps to attribute named <code>primaryContact</code> .
TelephoneNumber	getFax () Gets the FAX number for this Organization. Maps to attribute named <code>fax</code> .
Organization	getParent () Gets the parent Organization for this Organization. Maps to attribute named <code>parent</code> .
TelephoneNumber	getTelephone () Gets the main telephone number for this Organization. Maps to attribute named <code>telephone</code> .

583

584

Note that methods inherited from the base interfaces of this interface are not shown.

585

586

587

8.4 Class PostalAddress

588

589

590

PostalAddress is a simple reusable *Entity Class* that defines attributes of a postal address.

591

592

Field Summary	
String	city The city.
String	country The country.
String	postalCode The postal or zip code.
String	state The state or province.
String	street The street.

593

594

8.5 Class TelephoneNumber

595

596
597
598

A simple reusable *Entity Class* that defines attributes of a telephone number.

Field Summary	
String	<u>areaCode</u> Area code.
String	<u>countryCode</u> country code.
String	<u>extension</u> internal extension if any.
String	<u>number</u> The telephone number suffix not including the country or area code.
String	<u>url</u> A URL that can dial this number electronically.

599

600 8.6 Class PersonName

601
602
603
604

A simple *Entity Class* for a person's name.

Field Summary	
String	<u>firstName</u> The first name for this person.
String	<u>lastName</u> The last name (surname) for this person.
String	<u>middleName</u> The middle name for this person.

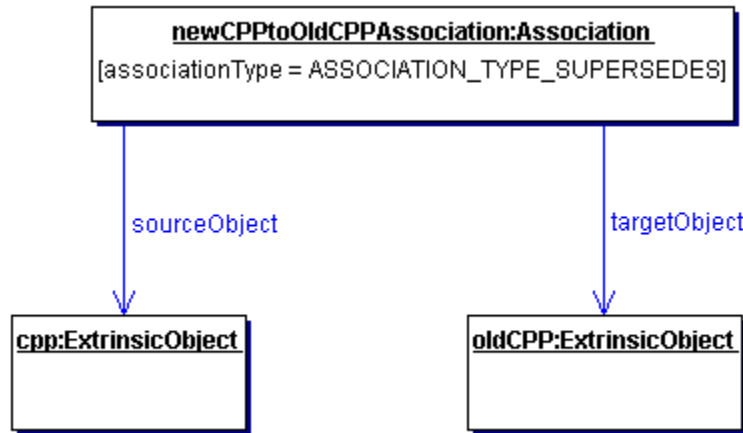
605

606 9 RegistryEntry Naming

607 A RegistryEntry has a name that may or may not be unique within the *Registry*.
608
609 In addition a RegistryEntry may have any number of context sensitive alternate
610 names that are valid only in the context of a particular *Classification* scheme.
611 Alternate contextual naming will be addressed in a later version of the Registry
612 Information Model.
613

614 **10 Association of RegistryEntry**

615 A RegistryEntry may be associated with 0 or more RegistryObjects. The
 616 information model defines an Association *Class*. An *Instance* of the Association
 617 *Class* represents an association between a RegistryEntry and another
 618 RegistryObject. An example of such an association is between ExtrinsicObjects
 619 that catalogue a new *Collaboration Protocol Profile (CPP)* and an older
 620 *Collaboration Protocol Profile* where the newer *CPP* supersedes the older *CPP*
 621 as shown in Figure 3.



622
 623 **Figure 3: Example of RegistryEntry Association**
 624

625 **10.1 Interface Association**

626 **All Superinterfaces:**

627 [IntrinsicObject](#), [RegistryEntry](#), [RegistryObject](#), [Versionable](#)

628
 629
 630 Association *Instances* are used to define many-to-many associations between
 631 RegistryObjects in the information model.

632
 633 An *Instance* of the Association *Class* represents an association between two
 634 RegistryObjects.
 635
 636
 637

Method Summary of Association	
String	getAssociationType () Gets the association type for this Association. This MUST be the name attribute of an association type as defined by 10.1.1. Maps to attribute named <code>associationType</code> .
Object	getSourceObject ()

	Gets the RegistryObject that is the source of this Association. Maps to attribute named <code>sourceObject</code> .
String	getSourceRole() Gets the name of the <i>Role</i> played by the source RegistryObject in this Association. Maps to attribute named <code>sourceRole</code> .
Object	getTargetObject() Gets the RegistryObject that is the target of this Association. Maps to attribute named <code>targetObject</code> .
String	getTargetRole() Gets the name of the <i>Role</i> played by the target RegistryObject in this Association. Maps to attribute named <code>targetRole</code> .
boolean	isBidirectional() Determine whether this Association is bi-directional. Maps to attribute named <code>bidirectional</code> .
void	setBidirectional(boolean bidirectional) Set whether this Association is bi-directional.
void	setSourceRole(String sourceRole) Sets the name of the <i>Role</i> played by the source RegistryObject in this Association.
void	setTargetRole(String targetRole) Sets the name of the <i>Role</i> played by the destination RegistryObject in this Association.

638 10.1.1 Pre-defined Association Types

639 The following table lists pre-defined association types. These pre-defined
 640 association types are defined as a *Classification* scheme. While the scheme may
 641 easily be extended a *Registry* MUST support the association types listed below.

642

name	description
RelatedTo	Defines that source RegistryObject is related to target RegistryObject.
HasMember	Defines that the source Package object has the target RegistryEntry object as a member. Reserved for use in Packaging of RegistryEntries.
ExternallyLinks	Defines that the source ExternalLink object externally links the target RegistryEntry object. Reserved for use in associating ExternalLinks with RegistryEntries.
ExternallyIdentifies	Defines that the source ExternalIdentifier object identifies the target RegistryEntry object. Reserved for use in associating ExternalIdentifiers with RegistryEntries.

ContainedBy	Defines that source RegistryObject is contained by the target RegistryObject.
Contains	Defines that source RegistryObject contains the target RegistryObject.
Extends	Defines that source RegistryObject inherits from or specializes the target RegistryObject.
Implements	Defines that source RegistryObject implements the functionality defined by the target RegistryObject.
InstanceOf	Defines that source RegistryObject is an <i>Instance</i> of target RegistryObject.
SupersededBy	Defines that the source RegistryObject is superseded by the target RegistryObject.
Supersedes	Defines that the source RegistryObject supersedes the target RegistryObject.
UsedBy	Defines that the source RegistryObject is used by the target RegistryObject in some manner.
Uses	Defines that the source RegistryObject uses the target RegistryObject in some manner.
ReplacedBy	Defines that the source RegistryObject is replaced by the target RegistryObject in some manner.
Replaces	Defines that the source RegistryObject replaces the target RegistryObject in some manner.

643

644 [Note] In some association types, such as Extends and
645 Implements, although the association is between
646 RegistryObjects, the actual relationship
647 specified by that type is between repository
648 items pointed by RegistryObjects.

649 **11 Classification of RegistryEntry**

650 This section describes the how the information model supports *Classification* of
651 RegistryEntry. It is a simplified version of the OASIS classification model [OAS].

652

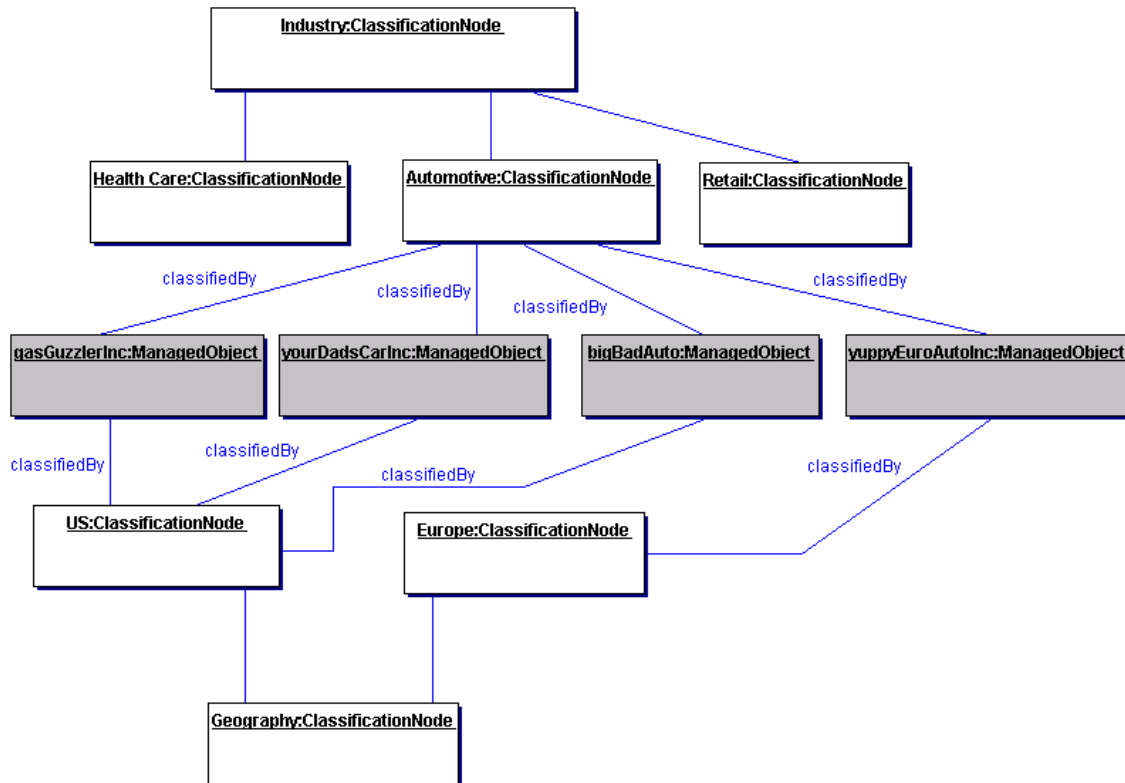
653 A RegistryEntry may be classified in many ways. For example the RegistryEntry
654 for the same *Collaboration Protocol Profile (CPP)* may be classified by its
655 industry, by the products it sells and by its geographical location.

656

657 A general *Classification* scheme can be viewed as a *Classification* tree. In the
658 example shown in Figure 4, RegistryEntries representing *Collaboration Protocol*
659 *Profiles* are shown as shaded boxes. Each *Collaboration Protocol Profile*
660 represents an automobile manufacturer. Each *Collaboration Protocol Profile* is
661 classified by the ClassificationNode named Automotive under the root
662 ClassificationNode named Industry. Furthermore, the US Automobile

663 manufacturers are classified by the US ClassificationNode under the Geography
 664 ClassificationNode. Similarly, a European automobile manufacturer is classified
 665 by the Europe ClassificationNode under the Geography ClassificationNode.

666
 667 The example shows how a RegistryEntry may be classified by multiple
 668 *Classification* schemes. A *Classification* scheme is defined by a
 669 ClassificationNode that is the root of a *Classification* tree (e.g. Industry,
 670 Geography).



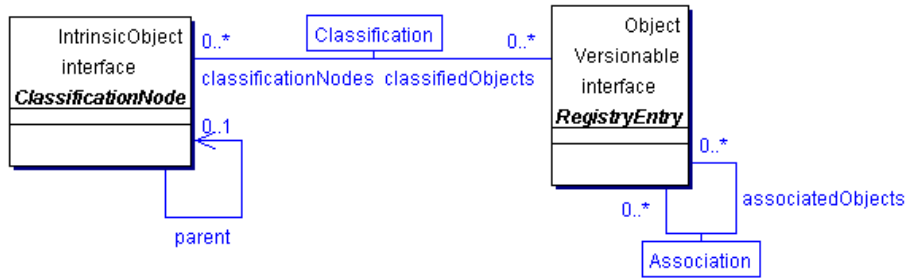
671
 672

Figure 4: Example showing a *Classification* Tree

673 [Note]It is important to point out that the dark
 674 nodes (gasGuzzlerInc, yourDadsCarInc etc.) are
 675 not part of the *Classification* tree. The leaf
 676 nodes of the *Classification* tree are Health
 677 Care, Automotive, Retail, US and Europe. The
 678 dark nodes are associated with the
 679 *Classification* tree via a *Classification*
 680 *Instance* that is not shown in the picture

681
 682
 683
 684

In order to support a general *Classification* scheme that can support single level as well as multi-level *Classifications*, the information model defines the *Classes* and relationships shown in Figure 5.



685

686

Figure 5: Information Model *Classification* View

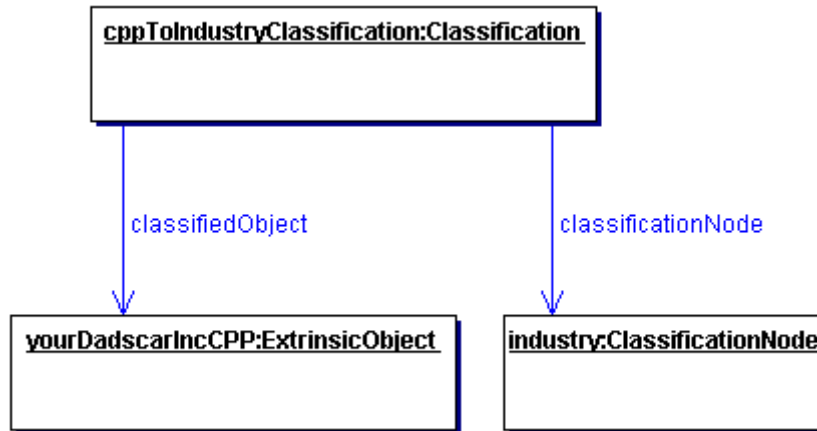
687

A Classification is a specialized form of an Association. Figure 6 shows an example of an ExtrinsicObject *Instance* for a *Collaboration Protocol Profile (CPP)* object that is classified by a ClassificationNode representing the Industry that it belongs to.

688

689

690



691

692

Figure 6: Classification *Instance* Diagram

693 **11.1 Interface ClassificationNode**

694 **All Superinterfaces:**

695

[IntrinsicObject](#), [RegistryEntry](#), [RegistryObject](#), [Versionable](#)

696

697

ClassificationNode *Instances* are used to define tree structures where each node in the tree is a ClassificationNode. Such *Classification* trees constructed with ClassificationNodes are used to define *Classification* schemes or ontologies.

698

699

See Also:

700

701

[Classification](#)

702

703

Method Summary of ClassificationNode

Collection	getClassifiedObjects () Get the collection of RegistryObjects classified by this ClassificationNode. Maps to attribute named
------------	--

	<code>classifiedObjects.</code>
ClassificationNode	getParent() Gets the parent ClassificationNode for this ClassificationNode. Maps to attribute named <code>parent</code> .
String	getPath() Gets the path from the root ancestor of this ClassificationNode. The path conforms to the [XPATH] expression syntax (e.g. “/Geography/Asia/Japan”). Maps to attribute named <code>path</code> .
void	setParent(ClassificationNode parent) Sets the parent ClassificationNode for this ClassificationNode.
String	getCode() Gets the code for this ClassificationNode. See section 11.4 for details. Maps to attribute named <code>code</code> .
void	setCode(String code) Sets the code for this ClassificationNode. See section 11.4 for details.

704

705

Note that methods inherited from the base interfaces of this interface are not shown.

706

707

708

709

In Figure 4, several *Instances* of ClassificationNode are defined (all light colored boxes). A ClassificationNode has zero or one ClassificationNodes for its parent and zero or more ClassificationNodes for its immediate children. If a ClassificationNode has no parent then it is the root of a *Classification* tree. Note that the entire *Classification* tree is recursively defined by a single information model *Element* ClassificationNode.

710

711

712

713

714

715

11.2 Interface Classification

716

All Superinterfaces:

717

[IntrinsicObject](#), [RegistryEntry](#), [RegistryObject](#), [Versionable](#)

718

719

Classification *Instances* are used to classify repository item by associating their RegistryEntry *Instance* with a ClassificationNode *Instance* within a *Classification* scheme.

720

721

722

723

724

In Figure 4, Classification *Instances* are not explicitly shown but are implied as associations between the RegistryEntries (shaded leaf node) and the associated ClassificationNode

725

726

Method Summary of Classification

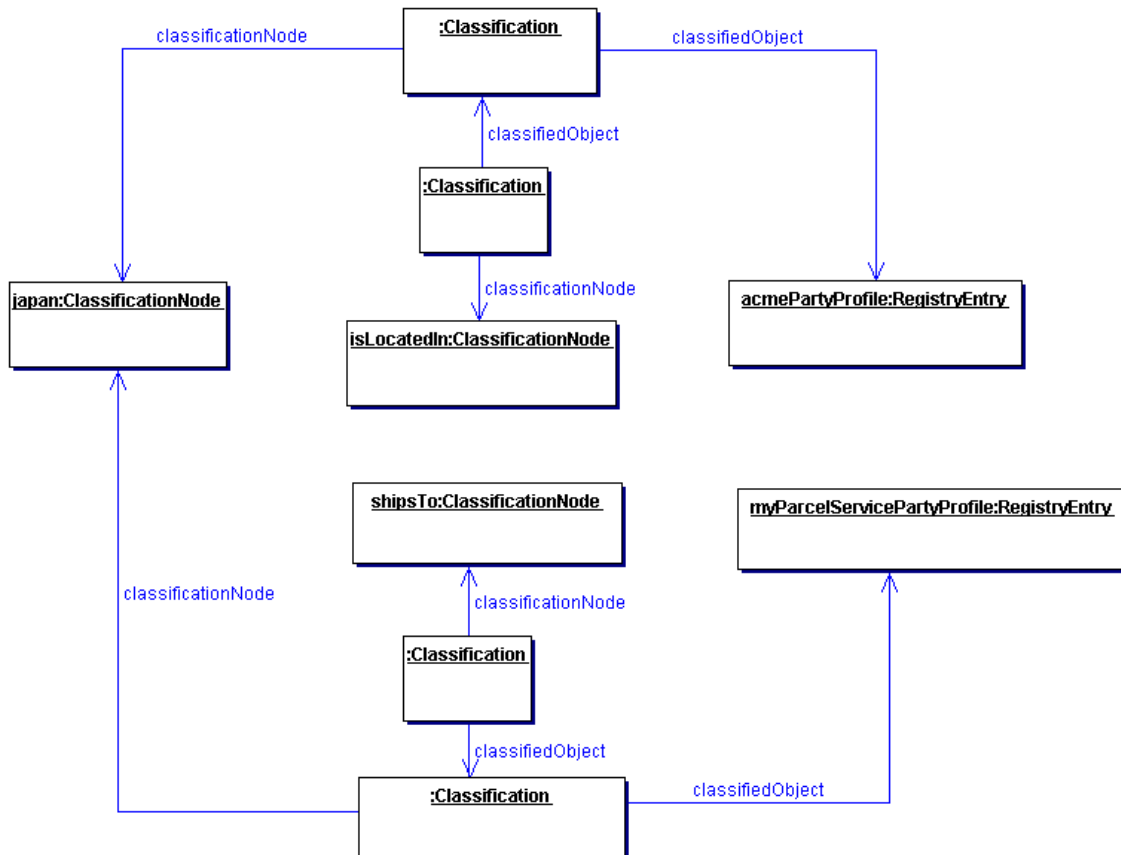
RegistryObject	getClassifiedObject()
--------------------------------	---------------------------------------

	Gets the RegistryObject that is classified by this Classification. Maps to attribute named <code>classifiedObject</code> .
RegistryObject	getClassificationNode () Gets the ClassificationNode that classifies the RegistryObject in this Classification. Maps to attribute named <code>classificationNode</code> .

727 Note that methods inherited from the base interfaces of this interface are not
728 shown.

729 **11.2.1 Context Sensitive Classification**

730 Consider the case depicted in Figure 7 where a *Collaboration Protocol Profile* for
731 ACME Inc. is classified by the Japan ClassificationNode under the Geography
732 *Classification* scheme. In the absence of the context for this *Classification* its
733 meaning is ambiguous. Does it mean that ACME is located in Japan, or does it
734 mean that ACME ships products to Japan, or does it have some other meaning?
735 To address this ambiguity a Classification may optionally be associated with
736 another ClassificationNode (in this example named `isLocatedIn`) that provides the
737 missing context for the Classification. Another *Collaboration Protocol Profile* for
738 MyParcelService may be classified by the Japan ClassificationNode where this
739 Classification is associated with a different ClassificationNode (e.g. named
740 `shipsTo`) to indicate a different context than the one used by ACME Inc.



741

742

Figure 7: Context Sensitive Classification

743 Thus, in order to support the possibility of Classification within multiple contexts,
 744 a Classification is itself classified by any number of Classifications that bind the
 745 first Classification to ClassificationNodes that provide the missing contexts.

746

747 In summary, the generalized support for *Classification* schemes in the
 748 information model allows:

- 749 o A RegistryEntry to be classified by defining a Classification that associates it
 750 with a ClassificationNode in a *Classification* tree.
- 751 o A RegistryEntry to be classified along multiple facets by having multiple
 752 *Classifications* that associate it with multiple ClassificationNodes.
- 753 o A *Classification* defined for a RegistryEntry to be qualified by the contexts in
 754 which it is being classified.

755

11.3 Example of Classification Schemes

756 The following table lists some examples of possible *Classification* schemes
 757 enabled by the information model. These schemes are based on a subset of
 758 contextual concepts identified by the ebXML Business Process and Core
 759 Components Project Teams. This list is meant to be illustrative not prescriptive.

760

761

Classification Scheme (Context)	Usage Example
Industry	Find all Parties in Automotive industry
Process	Find a ServiceInterface that implements a Process
Product	Find a <i>Business</i> that sells a product
Locale	Find a Supplier located in Japan
Temporal	Find Supplier that can ship with 24 hours
Role	Find All Suppliers that have a <i>Role</i> of "Seller"

762

Table 1: Sample Classification Schemes

763

11.4 Standardized Taxonomy Support

764 Standardized taxonomies also referred to as ontologies or coding schemes exist
 765 in various industries to provide a structured coded vocabulary. The ebXML
 766 *Registry* does not define support for specific taxonomies. Instead it provides a
 767 general capability to link RegistryEntries to codes defined by various taxonomies.

768

769 The information model provides two alternatives for using standardized
 770 taxonomies for *Classification* of RegistryEntries.

771 **11.4.1 Full-featured Taxonomy Based Classification**

772 The information model provides a full-featured taxonomy based *Classification*
773 alternative based *Classification* and *ClassificationNode Instances*. This
774 alternative requires that a standard taxonomy be imported into the *Registry* as a
775 *Classification* tree consisting of *ClassificationNode Instances*. This specification
776 does not prescribe the transformation tools necessary to convert standard
777 taxonomies into ebXML *Registry Classification* trees. However, the
778 transformation MUST ensure that:

- 779 1. The name attribute of the root *ClassificationNode* is the *name* of the
780 standard taxonomy (e.g. NAICS, ICD-9, SNOMED).
- 781 2. All codes in the standard taxonomy are preserved in the *code* attribute of
782 a *ClassificationNode*.
- 783 3. The intended structure of the standard taxonomy is preserved in the
784 *ClassificationNode* tree, thus allowing polymorphic browse and drill down
785 discovery. This means that is searching for entries classified by Asia will
786 find entries classified by descendants of Asia (e.g. Japan and Korea).

787 **11.4.2 Light Weight Taxonomy Based Classification**

788 The information model also provides a lightweight alternative for classifying
789 *RegistryEntry Instances* by codes defined by standard taxonomies, where the
790 submitter does not wish to import an entire taxonomy as a native *Classification*
791 scheme.

792
793 In this alternative the submitter adds one or more taxonomy related Slots to the
794 *RegistryEntry* for a submitted repository item. Each Slot's name identifies a
795 standardized taxonomy while the Slot's value is the code within the specified
796 taxonomy. Such taxonomy related Slots MUST be defined with a slotType of
797 *Classification*.

798
799 For example if a *RegistryEntry* has a Slot with name "NAICS", a slotType of
800 "Classification" and a value "51113" it implies that the *RegistryEntry* is classified
801 by the code for "Book Publishers" in the NAICS taxonomy. Note that in this
802 example, there is no need to import the entire NAICS taxonomy, nor is there any
803 need to create *Instances* of *ClassificationNode* or *Classification*.

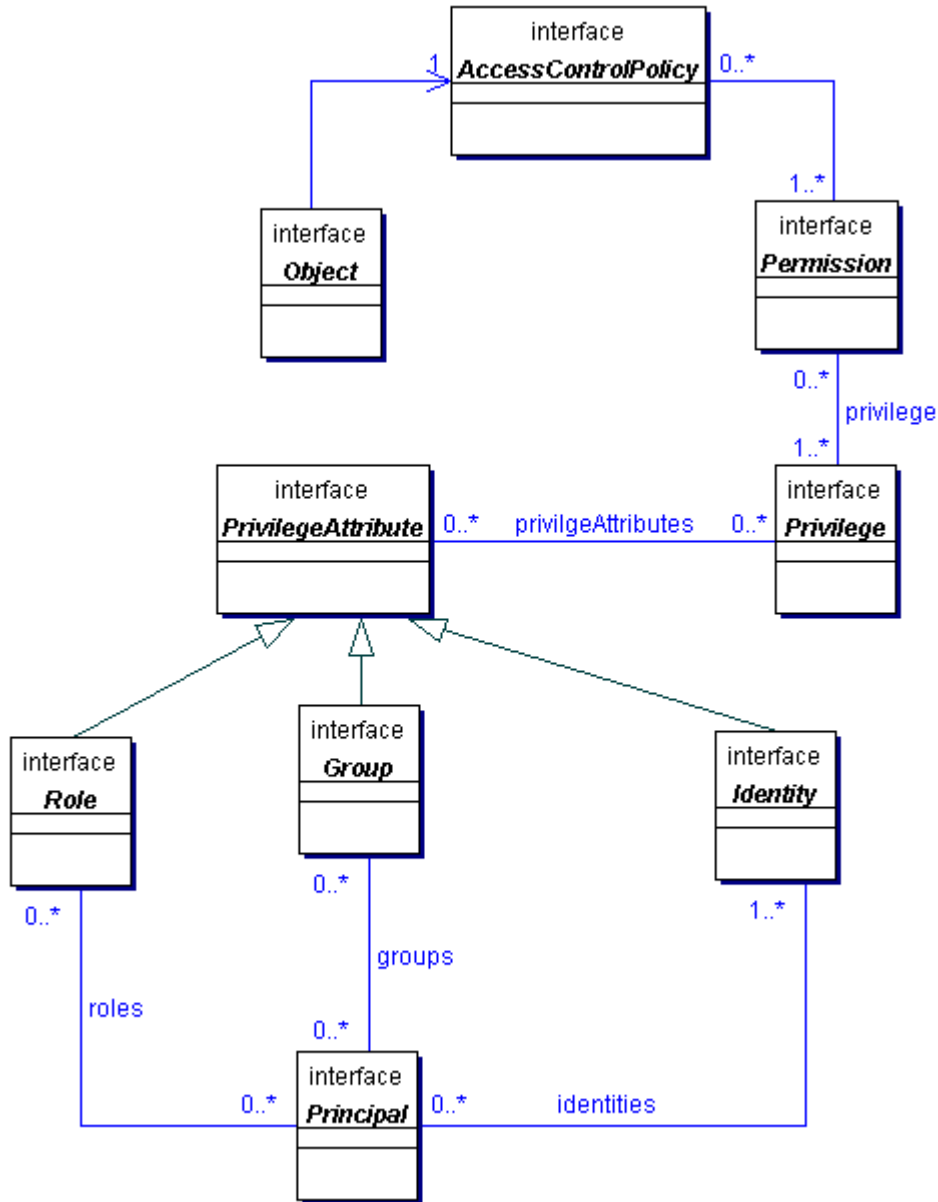
804
805 The following points are noteworthy in this light weight *Classification* alternative:
806

- 807 • Validation of the name and the value of the "Classification" is responsibility
808 of the SO and not of the ebXML *Registry* itself.
- 809 • Discovery is based on exact match on slot name and slot value rather
810 than the flexible "browse and drill down discovery" available to the heavy
811 weight *Classification* alternative.

812 **12 Information Model: Security View**

813 This section describes the aspects of the information model that relate to the
 814 security features of the *Registry*.

815
 816 Figure 8 shows the view of the objects in the *Registry* from a security
 817 perspective. It shows object relationships as a *UML Class* diagram. It does not
 818 show *Class* attributes or *Class* methods that will be described in subsequent
 819 sections. It is meant to be illustrative not prescriptive.
 820



821
 822

Figure 8: Information Model: Security View

823 12.1 Interface AccessControlPolicy

824 Every RegistryObject is associated with exactly one AccessControlPolicy which
 825 defines the policy rules that govern access to operations or methods performed
 826 on that RegistryObject. Such policy rules are defined as a collection of
 827 Permissions.

828
 829
 830
 831

Method Summary of AccessControlPolicy

Collection	getPermissions() Gets the Permissions defined for this AccessControlPolicy. Maps to attribute named <code>permissions</code> .
------------	--

832

833 12.2 Interface Permission

834

835 The Permission object is used for authorization and access control to
 836 RegistryObjects in the *Registry*. The Permissions for a RegistryObject are
 837 defined in an AccessControlPolicy object.

838

839 A Permission object authorizes access to a method in a RegistryObject if the
 840 requesting Principal has any of the Privileges defined in the Permission.

841 **See Also:**

842 [Privilege](#), [AccessControlPolicy](#)

843

Method Summary of Permission

String	getMethodName() Gets the method name that is accessible to a Principal with specified Privilege by this Permission. Maps to attribute named <code>methodName</code> .
Collection	getPrivileges() Gets the Privileges associated with this Permission. Maps to attribute named <code>privileges</code> .

844

845 12.3 Interface Privilege

846

847 A Privilege object contains zero or more PrivilegeAttributes. A PrivilegeAttribute
 848 can be a Group, a Role, or an Identity.

849

850 A requesting Principal **MUST** have all of the `PrivilegeAttributes` specified in a
 851 `Privilege` in order to gain access to a method in a protected `RegistryObject`.
 852 Permissions defined in the `RegistryObject`'s `AccessControlPolicy` define the
 853 Privileges that can authorize access to specific methods.

854
 855 This mechanism enables the flexibility to have object access control policies that
 856 are based on any combination of Roles, Identities or Groups.

857 **See Also:**

858 [PrivilegeAttribute](#), [Permission](#)

859

860

861

Method Summary of Privilege

Collection	<code>getPrivilegeAttributes()</code> Gets the <code>PrivilegeAttributes</code> associated with this <code>Privilege</code> . Maps to attribute named <code>privilegeAttributes</code> .
------------	--

862

863 **12.4 Interface PrivilegeAttribute**

864 **All Known Subinterfaces:**

865 [Group](#), [Identity](#), [Role](#)

866

867 `PrivilegeAttribute` is a common base *Class* for all types of security attributes that
 868 are used to grant specific access control privileges to a Principal. A Principal may
 869 have several different types of `PrivilegeAttributes`. Specific combination of
 870 `PrivilegeAttributes` may be defined as a `Privilege` object.

871 **See Also:**

872 [Principal](#), [Privilege](#)

873 **12.5 Interface Role**

874 **All Superinterfaces:**

875 [PrivilegeAttribute](#)

876

877 A security Role `PrivilegeAttribute`. For example a hospital may have *Roles* such
 878 as Nurse, Doctor, Administrator etc. Roles are used to grant Privileges to
 879 Principals. For example a Doctor *Role* may be allowed to write a prescription but
 880 a Nurse *Role* may not.

881 **12.6 Interface Group**

882 **All Superinterfaces:**

883 [PrivilegeAttribute](#)

884

885 A security Group PrivilegeAttribute. A Group is an aggregation of users that may
 886 have different Roles. For example a hospital may have a Group defined for
 887 Nurses and Doctors that are participating in a specific clinical trial (e.g.
 888 AspirinTrial group). Groups are used to grant Privileges to Principals. For
 889 example the members of the AspirinTrial group may be allowed to write a
 890 prescription for Aspirin (even though Nurse Role as a rule may not be allowed to
 891 write prescriptions).

892 12.7 Interface Identity

893 **All Superinterfaces:**

894 [PrivilegeAttribute](#)

895

896 A security Identity PrivilegeAttribute. This is typically used to identify a person, an
 897 organization, or software service. Identity attribute may be in the form of a digital
 898 certificate.

899 12.8 Interface Principal

900

901 Principal is a completely generic term used by the security community to include
 902 both people and software systems. The Principal object is an entity that has a set
 903 of PrivilegeAttributes. These PrivilegeAttributes include at least one identity, and
 904 optionally a set of role memberships, group memberships or security clearances.
 905 A principal is used to authenticate a requestor and to authorize the requested
 906 action based on the PrivilegeAttributes associated with the Principal.

907 **See Also:**

908 PrivilegeAttributes, [Privilege](#), [Permission](#)

909

Method Summary of Principal

Collection	getGroups () Gets the Groups associated with this Principal. Maps to attribute named <code>groups</code> .
Collection	getIdentities () Gets the Identities associated with this Principal. Maps to attribute named <code>identities</code> .
Collection	getRoles () Gets the Roles associated with this Principal. Maps to attribute named <code>roles</code> .

910

911

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943

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