

1 ebXML Registry and Repository Part 1: Business Domain

2 *ebXML Working Draft issue date July 28, 2000*

3 Version: 1.0

4
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13 *Abstract*

14 This document is Part 1 of the Functional Requirement Specification for an ebXML-compliant
15 registry and repository. Part 1 defines the scope of the workflow to interact with a registry and
16 repository, the actors involved in these interactions and the overall Domain Architecture for
17 the e-Business Requirements of the registry and the repository. The Domain Architecture
18 provides the basis of the detailed workflow specifications as defined in *ebXML Registry and*
19 *Repository Part 2: e-Business Requirements* as well as forming the basis of traceability
20 between Part 1 and Part 2.

21 *Status of this Document*

22 This is the first public working draft of the *ebXML Registry and Repository Part 1: Business*
23 *Domain*, issued by the ebXML Registry and Repository Project Team for public review and by
24 members and project teams of ebXML.

25
26 This working draft incorporates the decisions of the ebXML Registry and Repository project
27 team as of May 11, 2000. The first comment period opens May 15, 2000 and ends May 29,
28 2000. Comments with associated starting line number and ending line number, and proposed
29 changes (required) should be emailed to joe.dalman@tiecommerceusa.com in DocBook, MS
30 Word or plain text format. We will not accept this document edited with revisions on.

31
32 During the first comment period, the project team will review public comments while
33 continuing its development of *ebXML Registry and Repository Part 2: e-Business*
34 *Requirements*. Part 2 will focus on the detailed workflows that highlight the business-to-
35 business (B2B) interchanges between users, a registry, and a repository.

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73 **1 Introduction**

74 This *ebXML Registry and Repository Part I: Business Domain* working draft defines the scope
75 and functional requirements of an ebXML-compliant registry and repository.

76
77 Section 2 defines the actors that can interact with a registry and repository, and represents
78 the relationships between these actors in an Actor Relationship diagram. This diagram is a
79 hierarchical view that depicts actor inheritance and specialization as well as dependencies
80 between actors.

81
82 Section 3 defines the scope of the registry and repository as reflected by a high-level
83 business domain Use Case. The use cases define the usage viewpoints from the perspective
84 of several actors, including that of an ebXML business application.

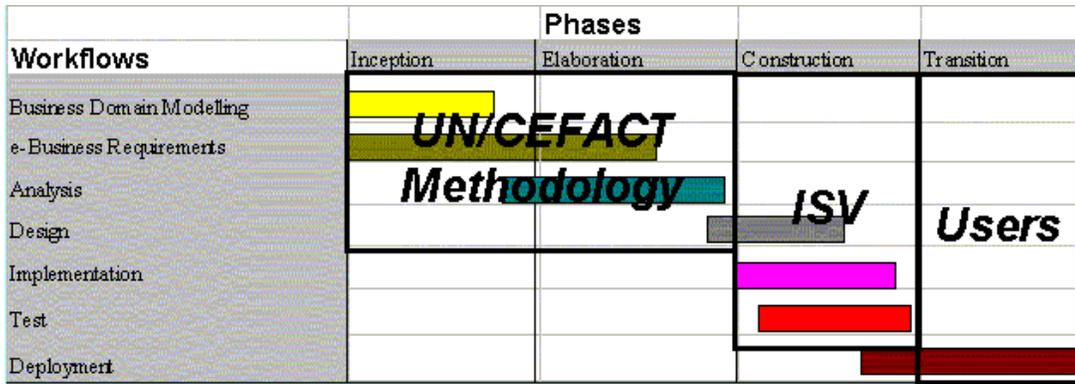
85
86 Section 4 defines the ebXML Registry and Repository overall architecture through the use of
87 a Domain Package diagram. Each package categorizes general functionality that could
88 potentially become the software components, but not necessarily, since some functionality
89 may be embedded within another service.

90 **1.1 Purpose**

91 The purpose of this working document is to define the overall system boundary as defined in
92 the UN/CEFACT/TMWG UML Profile and Methodology. It is to define the scope of the overall
93 system and provide a reasonable understanding of the size of the project.

94
95 The methodology covers four main workflows as shown below, as this working document is
96 the first of four documents.

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Figure 1. Phases and Workflows

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Ultimately, the result of the methodology will enable the ebXML Registry and Repository Project Team to apply Production Rules to generate the XML interface for both the Registry and the Repository. Software vendors can use the XML interfaces specifications as well as the UML models to understand the static and dynamic behavior of the system in order to construct the systems. With these specifications, conformance testing can be more clearly defined, since software components must conform to the XML interfaces, and the interactions to the system should be according to the UML activity and sequence diagrams.

It should be understood that this working document defines the scope for a network of registries and a network of repositories. This approach fits the model of world wide Internet, incorporating a vast number of interdependencies between companies, vertical domains relying on other vertical domains (finance, logistics, purchasing) and specifications relying on other specifications. It is envisioned that existing EDI directories could become repositories, and their traditional references to outside associations that maintain code lists (i.e., phone numbers, mailing addresses) could be replaced by ebXML based links from one repository to another. While some organizations advocate the philosophy of a single global repository, ebXML Registry and Repository disagrees with this since the approach will not scale.

ISO specification 11179 defines a general model for registries and repositories and the roles and responsible parties with respect to those systems. This ISO specification has been used as a starting point for the ebXML Registry and Repository specifications.

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1.2 Dependencies on other Specifications

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Each ebXML Registry and Repository specification (Part 1 through Part 4) is based on the business requirements as documented in the ebXML Business Requirements Specification.

The Unified Modeling Language version 1.3, as issued by the Object Management Group, is used to define the entire ebXML Registry and Repository specification. The intent is a top-down model driven design approach versus a bottom-up approach based on data models or hand developed DTDs and brute force software development. This allows the business needs to drive the technology usage, provides a technology neutral representation of the specifications, and allows for the auto-generation of software code including XML specifications.

The UN/CEFACT/TMWG UML Profile and Methodology, which defines how and which UML artifacts need to be produced, is being utilized. It is adapted from the Rational Unified Process and specifically focused on e-Business Process modeling, including business-to-business (B2B) transactions. While its intent is to provide a protocol-neutral method of defining e-Business Processes, it also includes sample methods to auto-generate XML interfaces from the UML model by applying Production Rules. These XML interfaces follow a request/response model for real-time interaction with a registry and repository.

144 Regarding W3C specifications, ebXML Registry and Repository project team will consider any
 145 W3C Recommendations in the design or implementation of an ebXML-compliant registry and
 146 repository. W3C specifications in progress such as Xlink and Xpointer are key specifications
 147 that will be monitored. Such specifications should be helpful in enabling internetworking of
 148 registries to repositories and repositories to repositories.

149

150 Regarding non-W3C specifications, in the design and implementation, the ebXML Registry
 151 and Repository project team will consider any existing specifications that it finds of value to
 152 the project.

153

154 The Registry and Repository project team is considering transforming the Registry and
 155 Repository UML model to XML as according to the Object Management Group XML Metadata
 156 Interchange (XMI) v1.1 specification.

157 **1.3 References**

158 Many of the terms and definitions can be found in:

159

- 160 • ISO 11179
- 161 • OMG UML Specification
- 162 • TMWG Glossary
- 163 • OMG XMI Specification

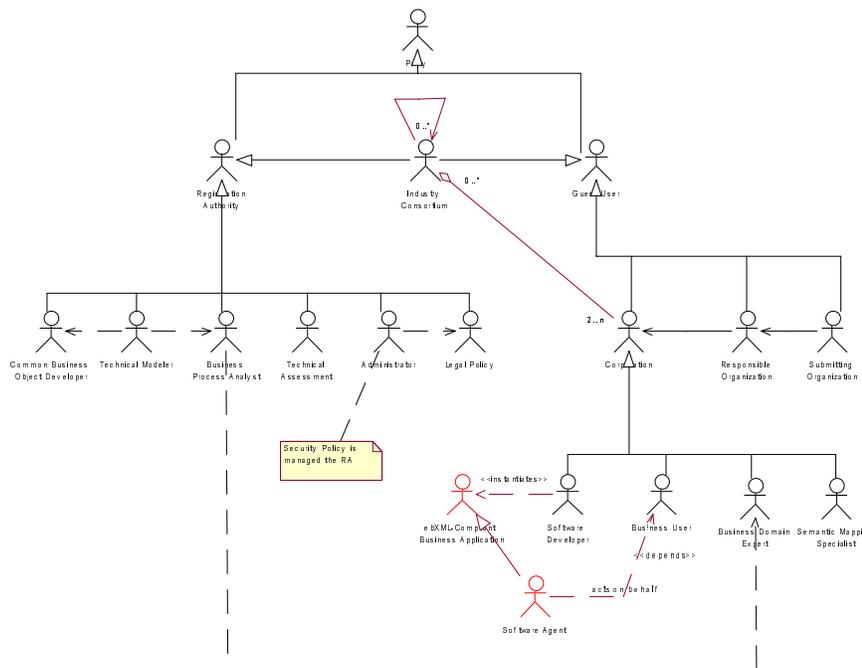
164

165 They are not repeated here. The ebXML Registry and Repository project team will create it's
 166 own glossary which will be merged into the overall ebXML glossary.

167 **2 Actor Relationships**

168 The complete Actor Relationship class diagram depicts the hierarchical relationships, the
 169 unidirectional associations, and the dependencies between the actors. The actor
 170 relationships are not intended to specify role based authorization. The registration authority
 171 shall define the security policy.

172



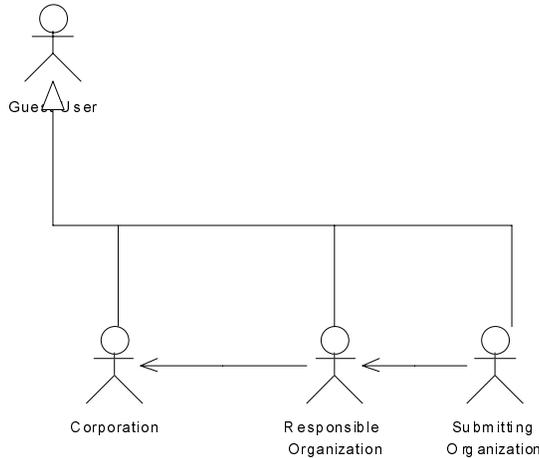
173

174 **Figure 2.**

175 The main areas in this hierarchy are elaborated upon below.

176 2.1 Guest User

177 The Guest User is an actor that inherits from the superclass actor Party. The Guest User is
178 an organization or individual that acts on behalf of the organization, but has very limited
179 responsibilities and privileges, e.g., access rights.



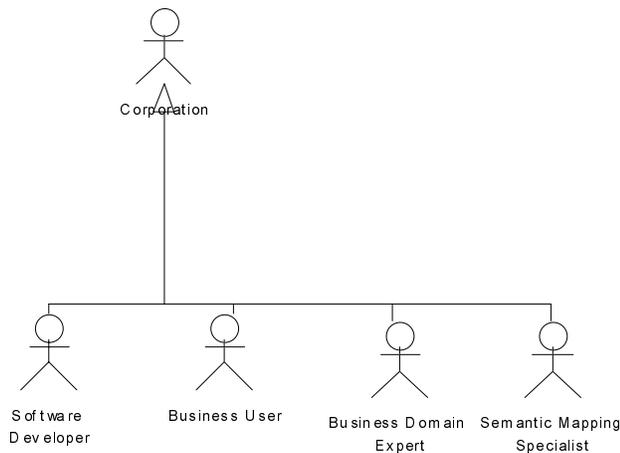
180

181 Figure 3.

182 Specialized actor classes of Guest User include the Corporation who is generally the end
183 user of the registry and repository, the Responsible Organization and the Submitting
184 Organization (for definitions of SO and RA, see ISO 11179). Unidirectional associations are
185 drawn between these organizations; e.g., the Submitting Organization acts on behalf of the
186 Responsible Organization who in turns acts on behalf of the Corporation.

187 2.2 Corporation

188 A Corporation is a collection of individuals that work together to achieve a common goal
189 through its policies, processes, and resources. Shown are four types of actors, three of which
190 could reside in a typical corporate business environment,; specifically, the Business Domain
191 Expert, Business User and the Semantic Mapping Specialist.
192



193

194 Figure 4.

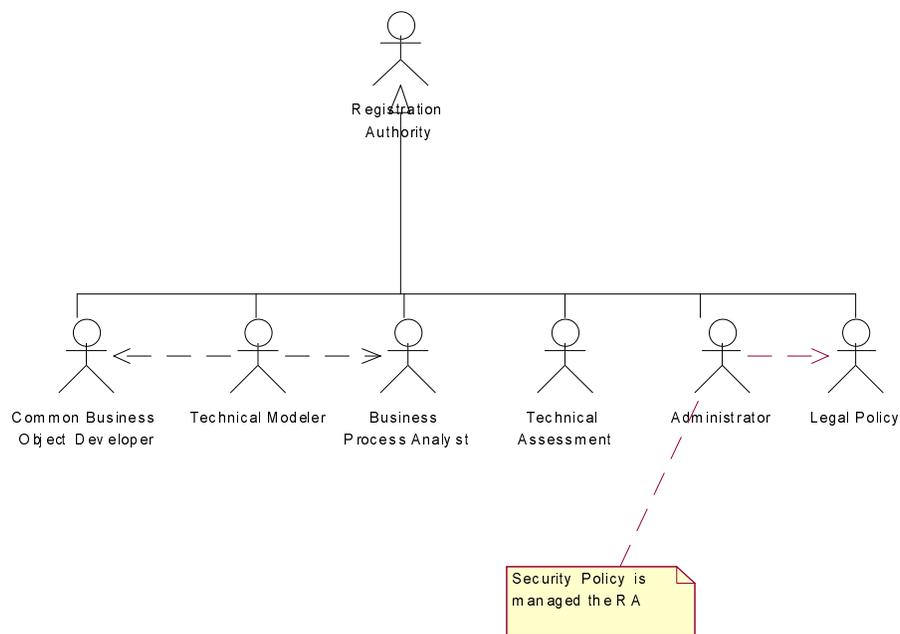
195 The Business Domain Expert is an actor that represents the corporate needs in the
 196 development of B2B specifications. The Semantic Mapping Specialist is an actor that reviews
 197 available B2B standards and specifications and maps them to the corporate internal business
 198 processes and application metadata representations. The Semantic Mapping Specialist
 199 traditionally supports EDI transactions or internal application-to-application (A2A) interfaces.

200
 201 The Software Developer produces software that meets the needs of the Corporation, as
 202 expressed by the Business Domain Expert.
 203

204 2.3 Registration Authority

205 The Registration Authority (RA) is shown with several actors that could actually be part of the
 206 RA itself, subcontracted resources, or in some cases volunteers.
 207

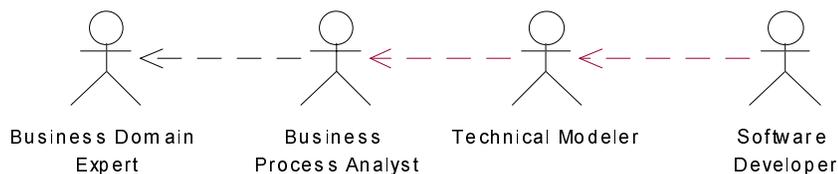
208



209

210 **Figure 5.**

211 Shown are six examples of roles within the Registration Authority. Three actors support the
 212 knowledge extraction process to define the business and functional requirements of B2B
 213 transactions: the Business Process Analyst, the Technical Modeler, and somewhat indirectly,
 214 the Common Business Object Developer. These Actors are found in the UN/CEFACT/TMWG
 215 UML Profile and Methodology. The Business Process Analyst is a facilitator with the skills to
 216 ask questions of the Business Domain Expert and is vertical domain "neutral" in order to
 217 provide alternative recommendations to the Business Domain Expert
 218



219

220 **Figure 6.**

221 The Technical Modeler is familiar with the selected UML modeling tool and knows how to
222 interact with the repository for model development and to search for existing patterns. The
223 Technical Modeler is reliant on the Business Process Analyst skills in extracting knowledge
224 from the Business Domain Expert.

225
226 The Common Business Object Developer is skilled in reviewing UML models and detecting
227 “patterns” in both business process models (activity diagrams and sequence diagrams) and
228 data / design patterns (class diagrams). The Technical Modeler is also dependent on the
229 Common Business Object Developer, who has the ability to obtain reusable common
230 business objects for inclusion into the models in development.

231
232 The Technical Assessment actor is responsible for UML model consistency and clarity. One
233 task of the Technical Assessment actor is to identify semantic overlap, where equivalent
234 semantic information is represented in different ways. Technical Assessment works with the
235 Common Business Object Developer to resolve such issues. The Technical Assessment
236 analyst is responsible for reviewing an industry submission of a model, identifying the
237 submission’s relevance, uncovering any semantic overlaps with other specifications in the
238 repository, assigning model integration project plans, and issuing recommendations for the
239 final approval of a proposed specification. Model integration is a step that harmonizes
240 multiple submitted models that are indirectly inter-dependent to each other. This occurs
241 primarily between vertical domains, in which each vertical domain names one or more
242 semantic units differently (ref: UN Layout Key).

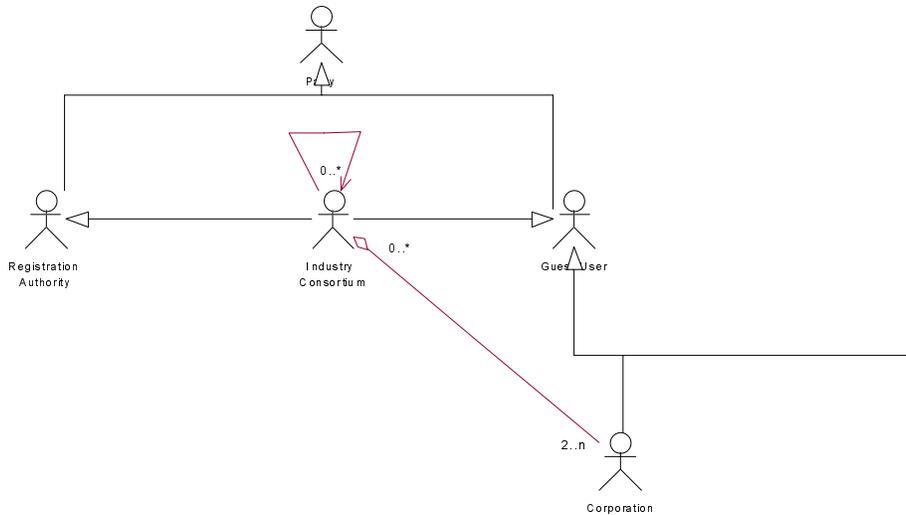
243
244 The Administrator actor is responsible for the day-to-day operation of the ebXML Registry and
245 of the Repository. This includes networking, server scalability, and usage statistics. The
246 administrator has a thorough understanding of the overall *ebXML Architecture*, *ebXML*
247 *Transport, Packaging, and Routing specifications*, and the APIs to the Registry and
248 Repository as defined in *ebXML Registry and Repository Part 4: Design* (to track the number
249 of API requests).

250
251 The legal/policy actor is responsible for the business arrangements, legal policies, and
252 operational policies of the registry and repository.

253 **2.4 Industry Consortium**

254 The Industry Consortium can be a Registration Authority as well as a Guest User therefore
255 multiple inheritance is shown. In reality, the inheritance to Registration Authority has optional
256 cardinality, as the Industry Consortium may not choose to host its own ebXML-compliant
257 Registry and Repository.

258



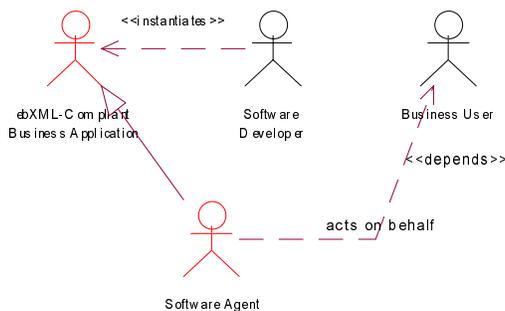
259
260
261

262 **Figure 7.**

263 The aggregation between the Industry Consortium and the Corporation shows that an Industry
264 Consortium consists of two (2) or more Corporations. The Corporation may belong more than one
265 Industry Consortium or none at all. This also shows that a corporation may act as a Registration
266 Authority. The reflexive aggregation relationship from the Industry Consortium to itself illustrates that a
267 consortium may have consortia members.

268 **2.5 ebXML Business Application**

269 An ebXML Business Application is an application that can communicate with the ebXML-
270 compliant registry. An independent software vendor may develop such an application or it
271 may be developed internally by a corporate development team using the ebXML
272 specifications for a given problem domain. This is shown by the “instantiates” relationship
273 between the Independent Software Vendor and the ebXML-compliant Business Application.
274



275
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Figure 8.

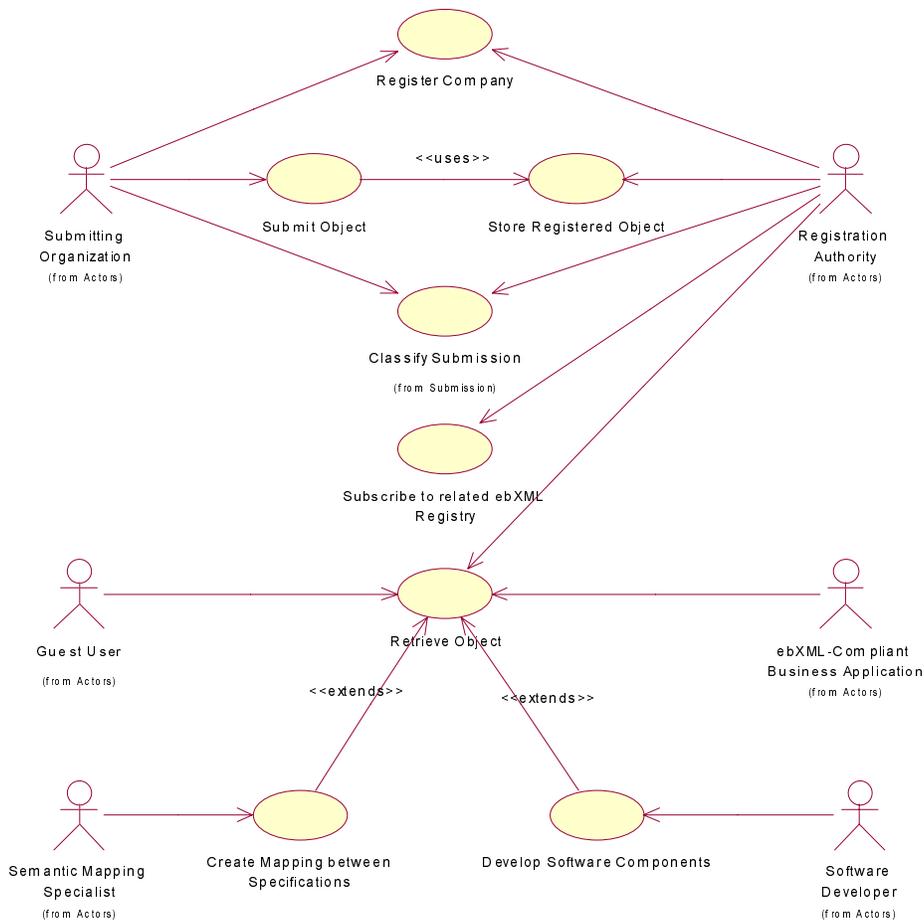
277 A specialized actor class of the ebXML-compliant Business Application is the Software Agent.
278 This is shown by an inheritance relationship to the ebXML-compliant Business Application
279 actor. Software agents are based on artificial intelligence technology and are emerging in the
280 industry at a rapid pace. A software agent acts on behalf of the Business User actor who
281 configures the agent by specifying a unique profile that classifies a problem domain. This is
282 noted by the “dependency” association between the Software Agent and the Business User.

283 The unique behavior of the software agent is that it typically runs in an autonomous mode
 284 without initiation by the Business User, and presents to the Business User information that
 285 conforms to the profile. Software agents could monitor B2B transactions for anomalies,
 286 detect trends, find new trading partners, and configure B2B integration systems.
 287
 288 Software agents will be able to interact with an ebXML-compliant registry, and request
 289 specifications for e-Business Processes and any referenced data interchange specifications
 290 in the e-Business Process.

291 **3 Domain Use Case**

292 The overall scope of the registry and repository is the submission, classification, and storage of
 293 specifications and proposals, while allowing the creation of new specifications. Domain
 294 Use Case provides an overall, high-level context of the business problem, a boundary to the
 295 scope of the functionality, and traceability to the actors involved as defined in the Actor
 296 Relationships hierarchical diagram. It does not delve into how the system performs the tasks
 297 on a functional basis.
 298

299 All actors are human actors with the exception of the ebXML Business Application. (It does
 300 not appear as a different UML icon as suggested by other modeling conventions.) It is
 301 important to refer back to the Actor Relationship diagram to understand the various
 302 associations between the actors in the context of their roles. This approach enables a simple
 303 Domain Use Case diagram as shown below.
 304



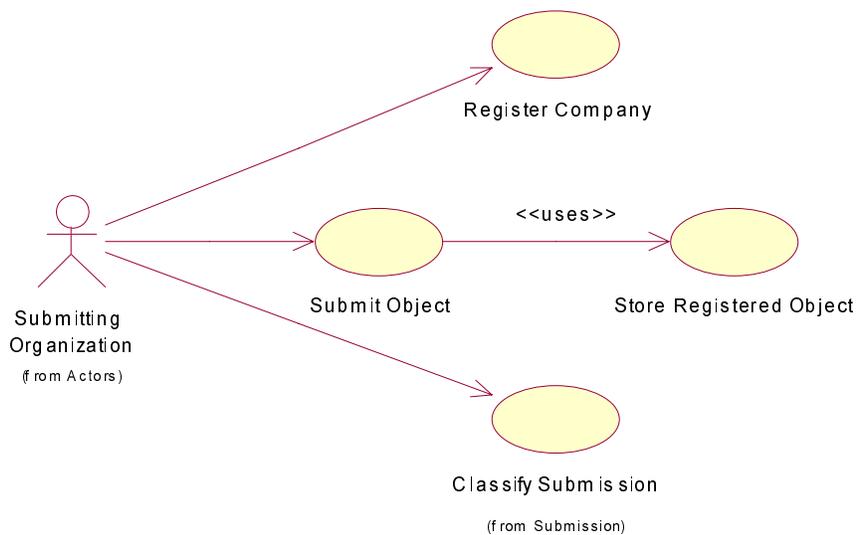
305
 306 **Figure 9.**

307 Detailed discussion of each actor's viewpoint follows.

308 3.1 Submitting Organization

309 The Submitting Organization (SO) is responsible for the submission of items that are to be
310 included into an ebXML Repository and referenced in an ebXML Registry. Depending on RA
311 policies, the SO may first register itself and be approved to submit items as noted by the
312 Register Company use case. After the RA approves the SO (see 3.4), appropriate access
313 rights are granted that allow the SO to maintain its submissions and their metadata based on
314 the different status codes specified by *ebXML Registry and Repository Part 3:Analysis*.

315
316 The Submit Object use case provides the ability to submit a package. The Submit Object use
317 case always "uses" the Store Registered Object use case to enter the submission into the
318 repository. Since an object can contain other embedded objects, each object within the
319 collection may also be registered in the registry, at the discretion of the SO. The RA may at a
320 later date create another collection, and relate that collection to the SO collection.
321



322

323 Figure 10

324 The SO may attempt to classify its submission, however, it is only a recommendation for the
325 classification as the Registration Authority may change or add classification information after
326 researching the submission. A record is created in the ebXML Registry (hence the term
327 "register"), and a submission object is created in the repository as a container of the
328 submission, which may be a collection of various documents, models, DTDs, schemas and
329 other related information.

330

331 3.2 Guest User

332 A Guest User is only granted read access. The Retrieve Object use case is abstract and
333 includes the ability to directly retrieve data from the Repository or to search the ebXML
334 Registry metadata in many ways, such as through unique identification, classification
335 schemes, browsing, or complex search mechanisms. In the latter instance, a request may be
336 sent from the Registry to the Repository to obtain a copy of the requested item.

337



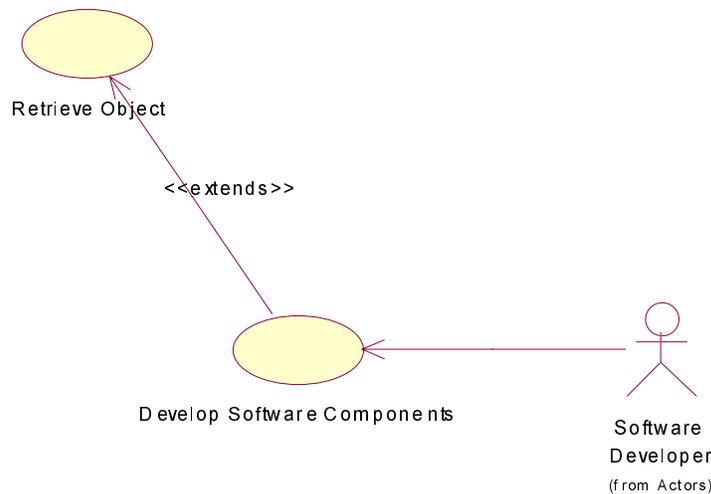
338

339 **Figure 11.**

340 There is an implied trusted security relationship between the Registry and Repository that
 341 should be transparent to the Guest User. Through the use of the Security Services and
 342 dependent on the access rights defined by the RA, the Guest User may need to authenticate
 343 to the Registry.
 344

345 **3.3 Software Developer**

346 The Software Developer actor uses the ebXML Registry and Repository to retrieve B2B
 347 specifications, in order to Develop Software Components. The Develop Software
 348 Components use case is extended by the Retrieve Object use case since at some point the
 349 specifications must be downloaded or viewed on-line. It is not required at all times (optional)
 350 throughout the software development life cycle, therefore the <<extends>> stereotype is used
 351 versus the <<uses>> stereotype.



352

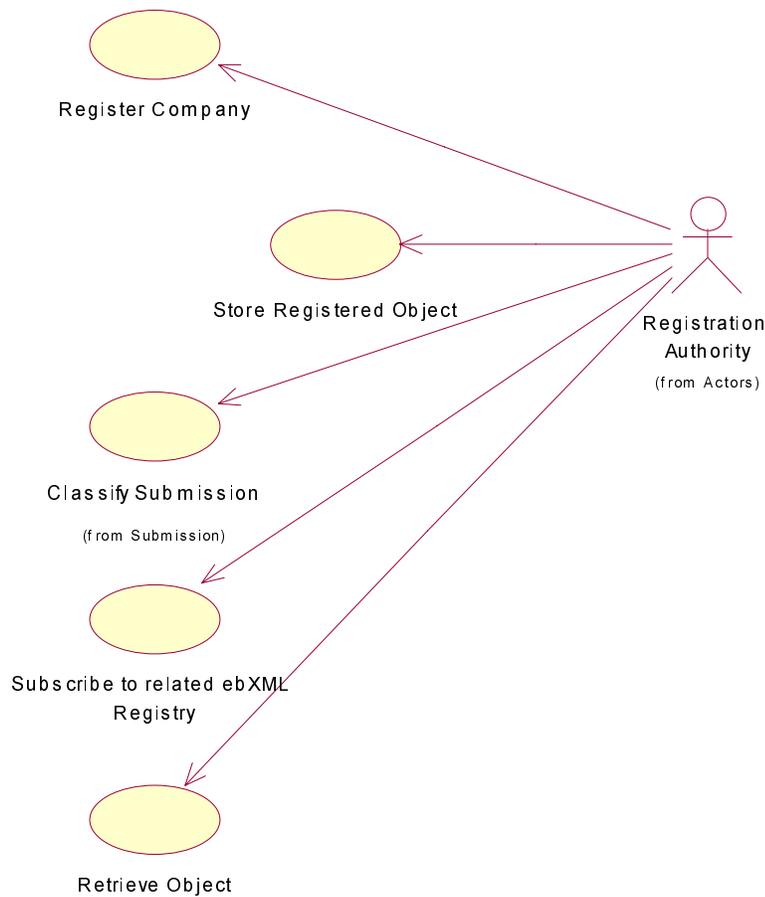
353 **Figure 12.**

354 The software developer can, through its association to the SO, register and submit software
 355 components that have been constructed, tested, and certified to be compliant to the retrieved
 356 specification(s). The components will then be available for download by the Business User.
 357

358 In addition, since the Software Developer is a special type of Guest User, the Software
 359 Developer may browse the registry and repository in a read-only mode to determine whether
 360 there are any specifications that may be of interest. This allows the Software Developer to
 361 determine if the Develop Software Components use case should be entered.
 362

363 **3.4 Registration Authority (RA)**

364 The Registration Authority (RA) is the owner of an ebXML registry and has "create" access to
 365 at least one Repository. The RA may authorize or reject the SO's registration request that
 366 was initiated in the Register Company use case. Which action is taken by the RA is beyond
 367 the scope of the ebXML specification.



368

369 **Figure 13.**

370 The Store Registered Object use case allows the RA the ability to limit public access to any
 371 items that the SO may have submitted. A submitted object may reside in a queue until the
 372 Submitted Object is reviewed by the RA and the RA grants access. The RA may have a
 373 policy to certify the SO and allow the SO to store an object without prior review by the RA.
 374 Factors that may go into certification criteria include the number of submissions, accuracy of
 375 the SO's classifications, and ability for an software developer to produce software
 376 components based on the SO's specification quality.

377
 378 The Subscribe to related ebXML Registry and Repository use case allows a Registration
 379 Authority to subscribe to an ebXML compliant Registry and Repository which may be of
 380 interest to the RA. For example, the RA may note that a submitted object is dependent on a
 381 specification that resides in another ebXML compliant Registry and Repository administered
 382 by separate RA. If that specification changes, the SO should be informed of that change and
 383 perhaps research that change to determine whether the change impacts the submitted object.
 384

385 *3.5 ebXML-compliant Business Application (ebAppl)*

386 The ebXML-compliant Business Application imposes run-time requirements on the ebXML
 387 Registry and Repository, causing response time to become a key factor in the Retrieve Object
 388 use case. If the ebAppl is smart (software agent), the search and retrieval of items can be
 389 more complex, and collections of items could be returned. Therefore, collections of items are
 390 in scope for Retrieve Object use case.

391



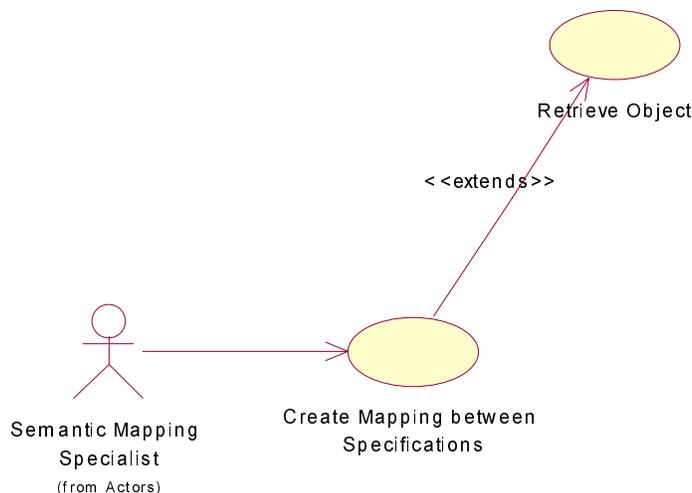
392
393

394 **Figure 14.**

395 An example of a reason for an ebXML-compliant Business Application to interact with an
396 ebXML Registry is to discover new trading partners that participate in a given marketplace, or
397 provide certain products and services. This type of data is supported by the ebXML Business
398 Process Metamodel, which is similar to eCo's Type Registry specifications.

399 *3.6 Semantic Mapping Specialist*

400 The usage of the ebXML Registry and Repository by the Semantic Mapping Specialist actor is
401 very similar in scope to that of the Software Developer, except that the creation of maps
402 includes the retrieval of two or more specifications. The interaction is the same in that the
403 Create Map between Specifications use case is extended by the Retrieve Object use case.
404 Specifications can be downloaded and mappings can be created off-line.



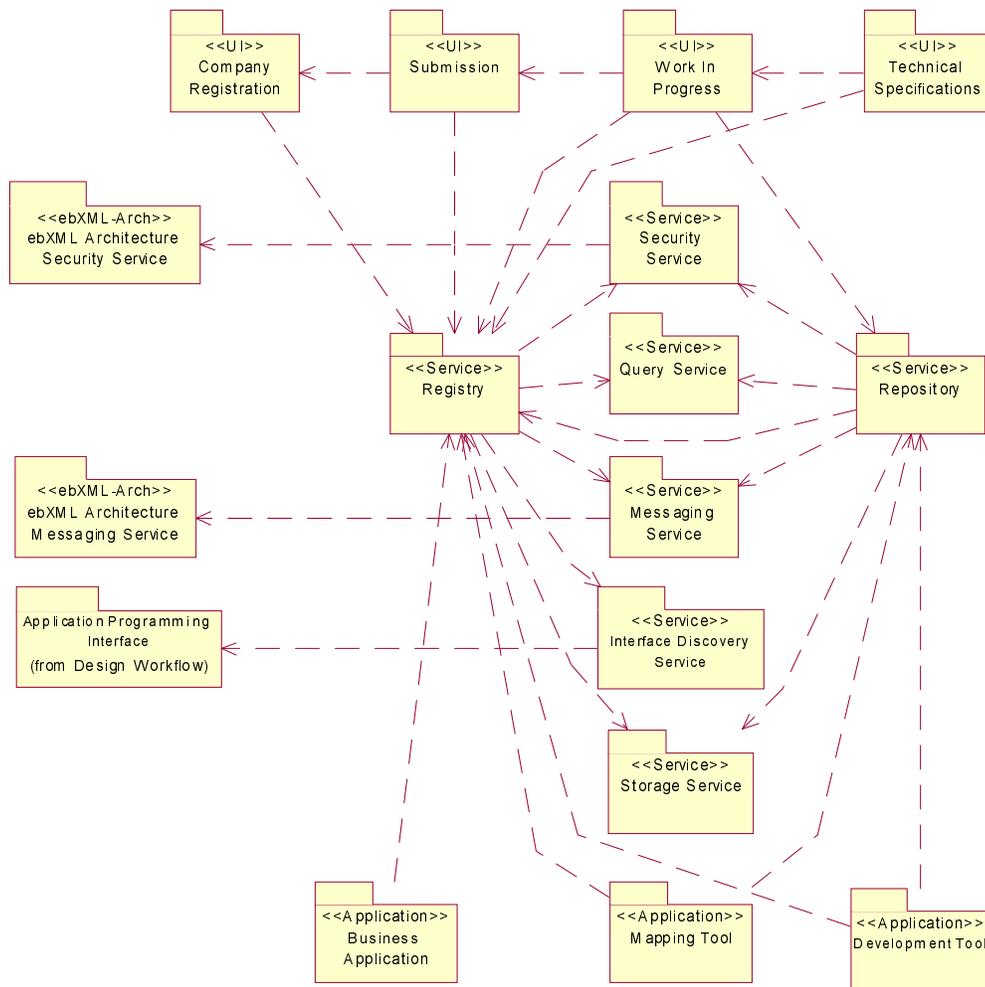
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406 **Figure 15.**

407 The type of mappings could be "bridges" beyond two or more specifications, or integration
408 mappings to commercial software in which the vendor does not provide an integration
409 interface. Again, the Semantic Mapping Specialist is a special type of 1) Guest User for
410 read-only search and retrieval usage, and/or 2) Corporation which can submit its work
411 through its association to the SO. An ebXML compliant Registry and Repository will likely
412 contain mappings, likely in the form of XSLT.

413 *4 ebXML Registry and Repository Architecture (Domain Package Diagram)*

414 The following Domain Package Diagram details the various "subsystems" which carry out the
415 responsibilities for the domain use cases. A specific use case may be carried out by a
416 subsystem or an interaction between subsystems. The partitioning of the responsibilities for
417 each use case into packages or subsystems provides for an architecture that is intended to
418 scale with size and increased volume of usage over time.
419



420

421 **Figure 16.**

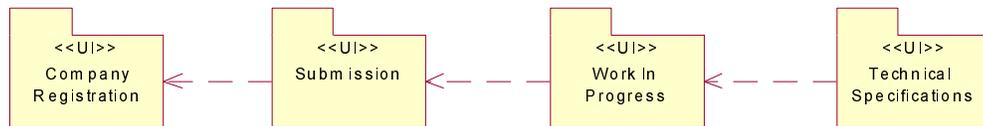
422 Within the Registry and Repository <<Service>> packages there are optional <<Service>>
 423 packages that cover additional capabilities. Each of these services will have its own API.
 424 The services are noted as optional or mandatory, and reflect whether a repository can be
 425 implemented by a file-based system, which is the minimum condition for implementation.
 426 These services are covered in section 4.6 and 4.7.

427

428 This document discusses the high level statement of the scope of each package and the
 429 interrelationships. The document *ebXML Registry and Repository Part 2: e-Business
 430 Requirements* provides more detail. Specifically, each package will have one use case
 431 diagram, and each use case will have a detailed activity diagram that describes the workflow.
 432

433 4.1 Interrelationships between <<UI>>

434 The <<UI>> stereotype provides the scope for the User Interfaces and the workflow required
 435 for companies and individuals to interact with the registry and retrieve information from the
 436 repository. There are four main areas that comprise the registry and repository as shown in
 437 figure 17.



438
439

440 **Figure 17.**

441 This shows how to submit an item or package of items to a repository, allow people to be
442 aware that it has been submitted, and if desired, allow the submission to progress into an
443 approved standard or specification. The Registration package is traceable to the Register
444 Company use case. It will provide the use case diagram and detailed workflows for each use
445 case in the diagram.

446
447 After an organization is registered with the RA and becomes an SO, it can submit items to the
448 Registry and Repository. The Submission package is traceable to the Submit Items, Store
449 Items, Classify Submissions, and Retrieve Items use cases. Unique classification schemes
450 may be needed for each type of submission, since some submissions may have different
451 important characteristics or attributes to describe them. Classifications will be detailed in
452 *ebXML Registry and Repository Part 3: Analysis*, which will define the class diagrams for the
453 registry.

454
455 If the SO intends for the submission to become an ebXML Specification to cover a business
456 process, the submission may need to be enhanced. The Work In Progress package
457 describes the workflow steps to become a Technical Specification, including library control
458 functions such as checkin/checkout and versioning. Types of workflow steps may include
459 enhancement of a submitted item to ensure that it meets the requirements of the ebXML
460 Business Process Metamodel, harmonization with existing common business objects (Core
461 Components) residing in the repository, and integration with other submitted items that may
462 have overlapping semantics. Overlaps may occur for different vertical domains that have
463 dependencies to each other. If a submission is not intended to be an ebXML Specification,
464 but perhaps only a corporate specification, it still may reside in the repository but classified
465 accordingly. In that case, there is no work to be performed, and the submission would pass
466 rapidly through the Work In Progress package and flow into the Technical Specifications
467 package.

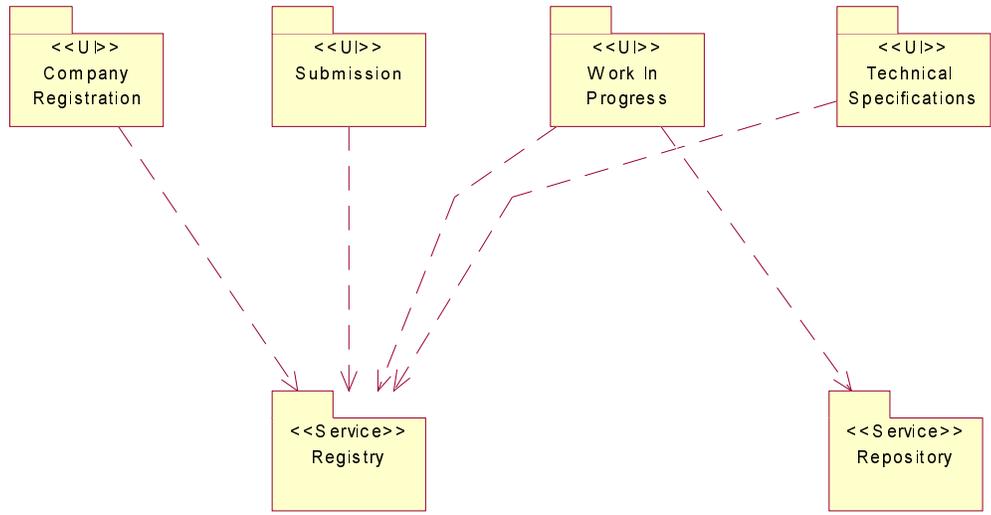
468
469 The Technical Specifications package allows the submission to become a specification that
470 can be viewed by **the public**. Work in progress is not available to the public unless in alpha
471 or beta form, and classified as such. The Technical Specifications package provides the
472 ability to browse the registry based on various classification schemes and to create simple
473 and complex searches to find specifications.

474

475 *4.2 Interrelationships between <<UI>> and <<Services>>*

476 In order for the <<UI>> packages to complete each step of the workflow, each package must
477 interact with the Registry package. The Work in Progress package may interface directly with
478 the Repository package to add modified copies when a library control service is provided with
479 the repository. Since the registry maintains state information about the original submitted
480 item, the original copy will always be retained.

481



482

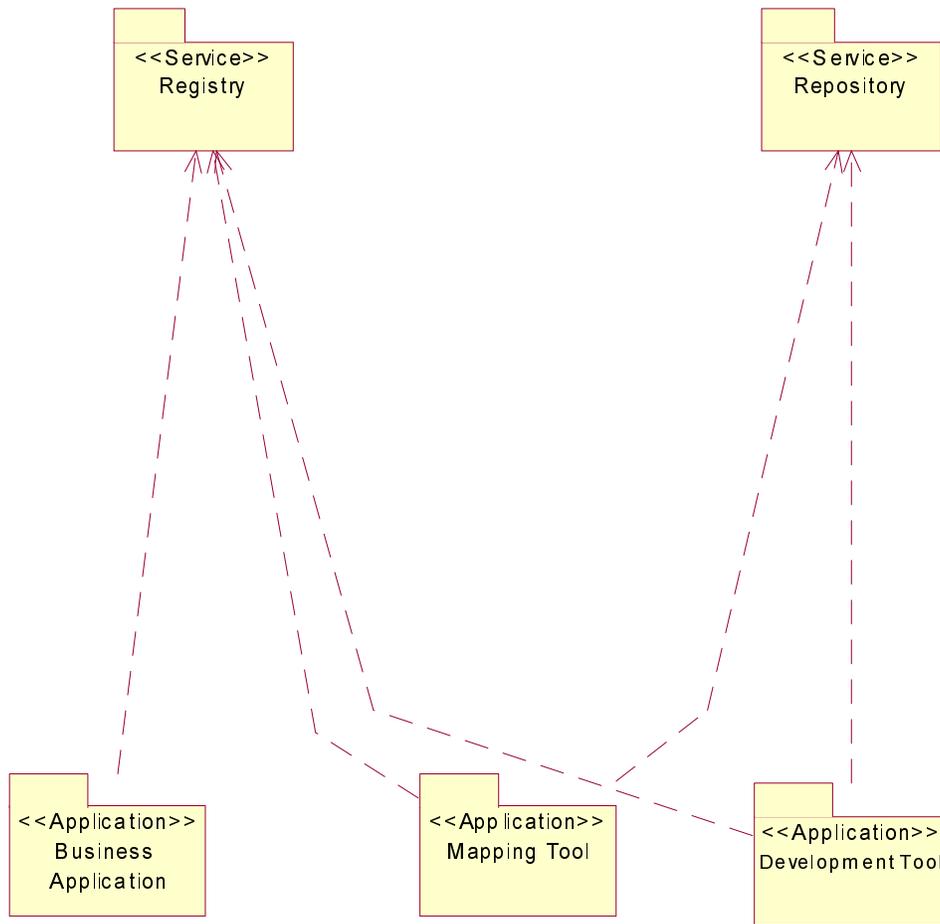
483 **Figure 18.**

484 **4.3 Interrelationships between <<Applications>> and <<Services>>**

485 The Registry and Repository also provide the ability for various development and business
 486 applications to interact with them.

487

488 As in typical software development life cycle, application development tools interact directly
 489 with the Repository. The two <<Application>> packages that are shown are the Mapping
 490 Tool, and the Development Tool. While they are both development tools *per se*, the Mapping
 491 Tools involves two or more specifications that need to be mapped at any one time. The
 492 Development Tool is a typical Integrated Development Environment including commercial
 493 Java, C++ and Smalltalk environments (VisualAge, Visual C++, Visual Café are examples).
 494 These IDEs require various features of the repository including check-out/check-in services,
 495 versioning services, transformation services for code generation as well as other features.



496

497 **Figure 19.**

498 The Business Application <<Application>> can only interface directly with the Registry, and
 499 has no need for the repository services including check-out/check-in. This is traceable to the
 500 Retrieve Item use case in which the ebXML-compliant Business Application interacts with that
 501 use case.

502

503 **4.4 Interrelationships between <<ebXML-Arch>> and <<Services>>**

504 The Security and the Message services are related to the overall ebXML Architecture for
 505 security services and message services in conformance with the ebXML Transport, Routing,
 506 and Package specification. Thus the authentication, certificate, and encryption techniques
 507 are common across all ebXML-compliant Business Applications. Since the ebXML Registry
 508 and Repository are also ebXML-compliant Business Applications, communication with these
 509 services relies upon the ebXML TRP messaging services.

510



511

512



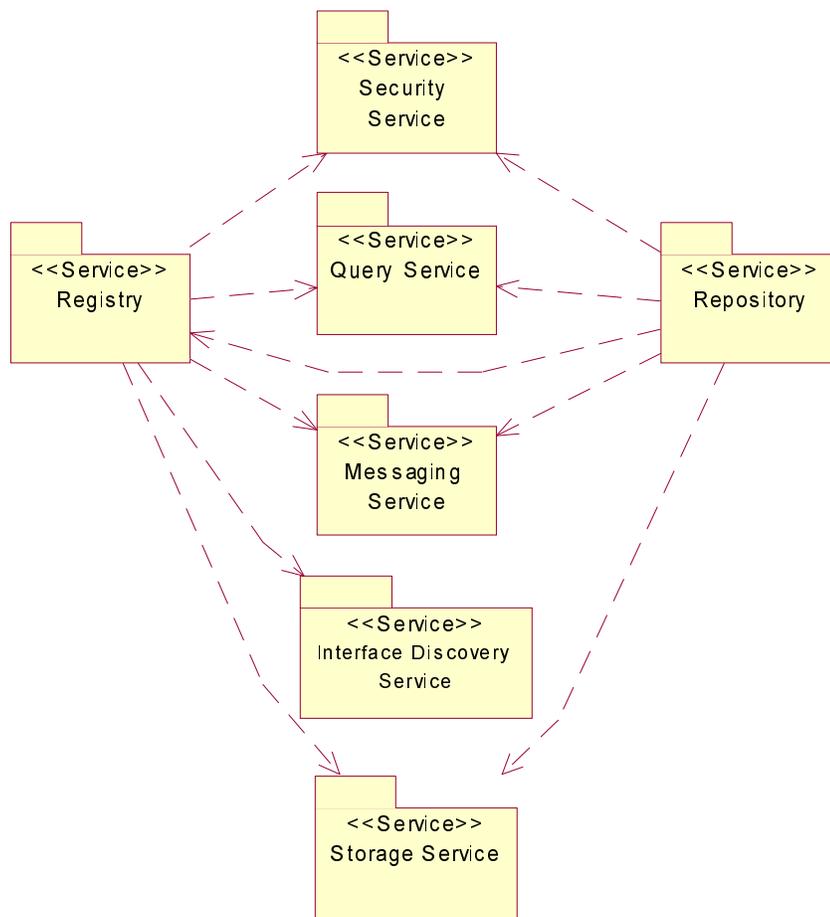
513
514

515 **Figure 20.**

516 **4.5 Interrelationships between <<Services>>**

517 As previously stated, the Registry and Repository both depend on a common security and
518 messaging service, as formerly illustrated.

519
520 For the simple case of retrieval of a registered item by reference to a unique identifier over
521 HTTP it is desirable to support "THTTP" as specified by RFC-2483 and revised by the OASIS
522 registry and repository Technical Committee as well as TRP.



523

524 **Figure 21**

525 The dependencies between the Registry and Repository show a number of different features.
526 First, the Registry's dependency on the Repository shows a publish and subscribe
527 mechanism, in which the Registry receives metadata from a Repository particularly when a
528 specification reaches a state in which the information needs to become public, or a new
529 version is issued. The Registry may subscribe to more than one Repository besides its
530 Primary Repository.

531 A Primary Repository is an ebXML-compliant Repository maintained by the RA to which the
 532 Registry has write authorization. This is shown by the Repository's dependency on the
 533 Registry to receive its content and establish a URI link to the content. This URI link must be
 534 maintained by the Registry.
 535
 536 The dependencies on the query service package show that metadata in the registry can be
 537 searched to find information regarding contents of the repository. This metadata describes the
 538 contents in the repository including its URI for the ability to retrieve a copy of the item. In
 539 addition, based on the RA's policies or types of information stored, the repository content
 540 could be searched. The types of searches our defined in *ebXML Registry and Repository*
 541 *Part 3:Analysis*.
 542
 543 The dependencies on the storage service shows that registered items in the repository must
 544 be stored. In addition, the classification schemes and metadata are stored in the registry.
 545 The physical storage mechanisms are not specified, but could be as simple as a file system.
 546



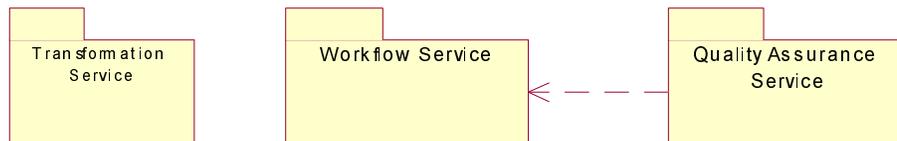
547
 548 Figure 22

549 The Interface Discovery service package describe a mandatory service that must be
 550 implemented by the RA. The RA chooses which optional services they will provide. Interface
 551 Discovery service is the mechanism that advertises which interfaces are available. Based on
 552 the security policies set up by the RA, these interfaces may be restricted.
 553

554 The application programming interface will be defined in *ebXML Registry and Repository Part*
 555 *4:Design*.

556 4.6 Optional Services within the <<Service>> Registry package

557



558
 559 Figure 23.

560 4.6.1 <<Service>> Transformation Service

561 The Transformation Service is used to transform objects into another form. (e.g., IDEF-1X to
 562 XMI, XMI to XML Schema). *This is going to be defined by ebXML Registry and Repository*
 563 *Part 2:e-Business Requirements*.

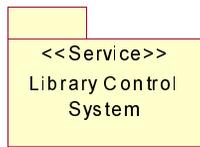
564 4.6.2 <<Service>> Workflow Service

565 The Workflow Service carries out the workflows that are defined by *ebXML Registry and*
 566 *Repository Part 2:e-Business Requirements*.

567 4.6.3 <<Service>> Quality Assurance Service

568 The Quality Assurance Service is used to validate content based on its classification and is
 569 only invoked on certain workflow events, dependent on the policies and procedures of the RA;
 570 e.g., registration of ebXML business process model. *This is going to be defined by ebXML*
 571 *Registry and Repository Part 2:e-Business Requirements*.

572 **4.7 Optional Services within the <<Service>> Repository package**



573

574 Figure 24

575 **4.7.1 <<Service>> Library Control Service**

576 The library control system package is an optional service that supports development, e.g., the
577 work in progress package. *This is going to be defined by ebXML Registry and Repository*
578 *Part 2:e-Business Requirements.*

579 **Appendix**

- 580 • OASIS Registry and Repository Technical Committee
- 581 • UN/CEFACT UML Profile and Methodology
- 582 • OMG Meta Object Facility (MOF)
- 583 • OMG Unified Modeling Language version 1.3 includes UML, OCL and XMI (located
- 584 on Rational's web site)
- 585 • ISO 11179
- 586

587

588

589

590