

An OASIS White Paper

End-to-End Resource Planning (EERP) Model and Use Case

Detailed Context and Example for SOA-EERP Technical Committee Specifications

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For OASIS SOA-EERP TC

http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=soa-eerp



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14 OASIS (Organization for the Advancement of Structured Information Standards) is a not-for-profit,
15 international consortium that drives the development, convergence, and adoption of e-business
16 standards. Members themselves set the OASIS technical agenda, using a lightweight, open process
17 expressly designed to promote industry consensus and unite disparate efforts. The consortium
18 produces open standards for Web services, security, e-business, and standardization efforts in the
19 public sector and for application-specific markets. OASIS was founded in 1993. More information
20 can be found on the OASIS website at <http://www.oasis-open.org>.

21 The purpose of the OASIS SOA-EERP TC is to define standards for End-to-End Resource
22 Planning (EERP) in a Service-Oriented Architecture context. EERP is a technology that
23 optimizes deployment of services onto a SOA description of an application. This work will
24 be carried out through continued refinement and the addition of interoperation protocols to
25 Business Quality of Services (BQoS), Business Rating of Services, and Business
26 Services Level Agreement (SLA) specifications. See the TC Charter¹ for more information.

¹ Linked from http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=soa-eerp

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54 Introduction

55 This document introduces Service Oriented Architecture (SOA) End-to-End Resource
56 Planning (EERP). We discuss the motivations, then describe the conceptual framework,
57 model, specifications, and end with a detailed example of how the Technical Committee's
58 work to date is used applying EERP. As of this writing, the OASIS SOA-EERP TC has
59 approved three XML vocabulary specifications as committee drafts.

60 For a given service there may a number of potential suppliers. EERP optimizes
61 deployment of services onto a SOA description of an application. Describing the required
62 information—business characteristics of a service, the reputation of potential service
63 providers, and business service-level agreements—enables analysis and optimization of
64 business results in the space of possible service deployments.

65 The specifications can be applied to other areas. For example, bQoS might be used for
66 describing the characteristics of energy or goods bought and sold, and the characteristics
67 of services such as medical, shipping, and more. The reputation of a trading or business
68 partner is useful in many contexts.

69 EERP Technology

70 Overview

71 As Service-Oriented Architecture (SOA)² has matured as a development, deployment, and governance
72 paradigm, the performance of SOA deployments has received increasing attention.

73 End-to-End Resource Planning (EERP) applies service discovery, composition, simulation, and
74 optimization techniques in a novel way to improve business results. As the software industry has applied
75 SOA to e-Business deployments, self-optimizing systems as exemplified by EERP have become more
76 feasible and more useful.

77 Different deployments of services onto a business process have varying business value. For example, a
78 shipper might offer faster but more expensive service. EERP models the business process and the range
79 of potential services, and then guides the selection and deployment of services based on the overall end-
80 to-end business value.

81 Modeling the business characteristics of a service is a prerequisite for estimating the business value of
82 the process that uses those services; likewise, the reliability of the service provided needs to be
83 understood. Finally, establishing agreements about the business service is essential to long-term value
84 chain improvement.

85 Many of these parts of EERP are useful separately. For example, descriptions of a service can be part of
86 defining characteristics of specific services or goods bought or sold, from energy to medical services.

87 Challenges in Implementing EERP

88 The following issues are not addressed in Public Review Draft 01 and are not part of the current work
89 plan of the Technical Committee:

- 90 • The discovery, selection, assembly, and management of services supporting business processes³
- 91 • Monitoring and evolution over time of both the set of services selected and of the performance of
92 the business process itself
- 93 • Determining and implementing the types of optimization to be supported

94 The definition of the interoperation protocol is on the work plan of the Technical Committee; however
95 Committee Draft 02 defines message content rather than message sequencing and exchanges.
96 Examples in later sections are not intended to indicate the final work of the Technical Committee.

² While we describe services and their characteristics in the context of the Reference Model for Service-Oriented Architecture [SOA-RM], we are not assembling or otherwise manipulating services in the descriptions in this white paper.

³ Other OASIS Technical Committees and other standardization work have addressed many of these challenges. For example, the Web Services Device Discovery and Device Profile OASIS Standards address discovery and criteria by which a selection can be made. The OASIS Service Component Architecture addresses assembly of SOA services.

97 **Enablers for Optimization**

98 We define "optimization" as maximizing business value by enabling improved real-life e-Business process
99 and resource planning. Optimization can take place at both design time and run time. The focus of the
100 SOA-EERP Technical Committee is on enablers for optimization and process improvement rather than on
101 the complete EERP environment.

102 Enabling technology defined by the Technical Committee to date include definition of the framework for
103 representing business service characteristics (how to represent cost, time, and cost), a means to describe
104 the reputation of the service providers to solicit and report information, and a means to describe what we
105 call business service-level agreement.

106 **Services** are performed by people, machines, and hardware/software applications, and represented by
107 SOA services. The qualities of a business service are expressed by means of the Business Quality of
108 Service (bQoS) specification. The nature of bQoS varies across industries and services.

109 Businesses improve their **business processes** in order to reduce cost, improve efficiency, and otherwise
110 improve business results. The definition and annotation of business processes are outside the scope of
111 the Technical Committee's work.

112 **Use of EERP Techniques**

113 Parties interested in this work would include enterprises that deploy and manage solutions that use SOA
114 techniques and which want to develop effective business processes and improve the performance and
115 agility of those solutions.

116 The EERP specifications can be applied to other areas. For example, BQOS may be applicable for
117 definition of characteristics of energy, goods bought and sold, and services such as medical, shipping,
118 and more. The reputation of a trading or business partner is useful in many contexts.

119 Extensive applications of SOA-EERP techniques will likely be most cost-effective for long-running
120 business processes, although SOA-EERP enabling specifications will also help in the definition and
121 design of SOA end-to-end business processes.

122 Early versions of EERP and the SOA-EERP specifications are currently deployed in industry portals in
123 China to facilitate service selection and business process improvement, For example,
124 www.10109555.com , which is China's largest agricultural information service platform, has used early
125 versions of EERP.

126 **Status of the Standards Process**

127 As of this writing, Committee Draft⁴ 2 of the SOA-EERP specifications has been approved by the
128 Technical Committee. This white paper will be edited and released as part of Public Review 01. The
129 specifications are:

- 130 • SOA-EERP Business Quality of Service (bQoS)
- 131 • SOA-EERP Business Rating of Service (Rating)
- 132 • SOA-EERP Business Service Level Agreement (SLA)

⁴ As defined in the OASIS Technical Committee Process <http://www.oasis-open.org/committees/process.php>

133 These XML vocabulary specifications address the exchange of information that models the business
134 characteristics of a service, permits assertions or queries related to the credibility of the service and its
135 provider, and the establishment of agreements about the business service.

136 The SOA-EERP TC will continue the standard development process toward to its ultimate goal of
137 standardizing protocols and message contents so users may apply EERP to guide the selection and
138 deployment of services based on end-to-end business value.

139 Conceptual Framework and Message Flow

140 Overview

141 This section describes a conceptual framework in which the current Technical Committee XML
142 vocabulary specifications would fit. In addition to the current work in progress, the conceptual framework
143 describes work that would facilitate service selection and business process improvement from end-to-end.
144 See the Technical Committee charter for the scope of the work.

145 We include a diagram of the conceptual framework, and of messages flows with brief descriptions to
146 demonstrate how the current specifications fit into the overall EERP architecture. We also include timeline
147 and sequence diagrams to show how an implementation would use these specifications in an end-to-end
148 fashion and build a continuous business process improvement loop.

149 Conceptual Framework and Actors

150 Figure 1 is the conceptual framework for EERP. In this figure, the Business Quality of Service is
151 abbreviated as **bQoS**, Business Rating is abbreviated as **Rating**, and Business Service Level Agreement
152 is abbreviated as **SLA**.

153 The **service requester** is the client system who asks the EERP system to find an optimal solution.

154 **Service providers** provide business services. Each service provider may provide the same service but
155 with different bQoS and Ratings⁵. Services may be running on different platforms with different
156 implementations, but they all support EERP exchanges of bQoS, Rating, and SLA information in the XML
157 formats defined by the Technical Committee.

158 The **EERP Portal** accepts the request from the Service requester, performs bQoS and rating queries,
159 calculates optimal solution(s), and then returns the result to the service requester.

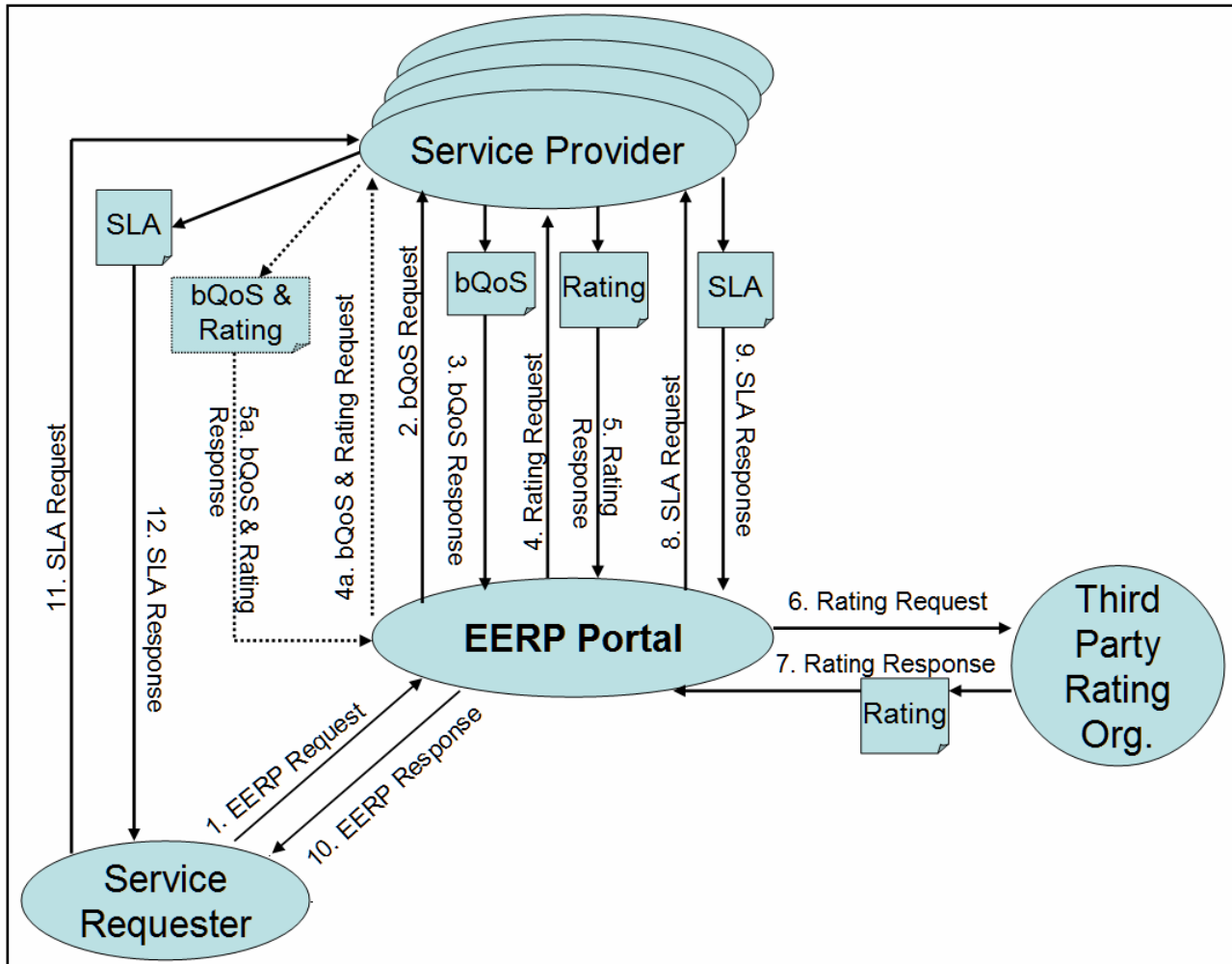
160 The **Rating provider service** issues either an aggregated numeric number or an aggregated classification
161 description to represent the rating value of a given business service.

162 The **Rating provider service**, given a reference to a particular business service and provider, issues either
163 a number or a classification description.

⁵ The specifications as of this writing do not define the relationships between service providers and multiple bQoS and Ratings.

164 **Message Exchange Example**

165 We show the message exchanges graphically then in tabular form. Committee Draft 02 (CD02) describes
 166 the XML vocabulary for the content of the message inside a SOAP or REST request/response. For
 167 example, an EERP system might have the following messages exchange flow as shown in Figure 1
 168 below.



169 *Figure 1 -- EERP Conceptual Framework*

170 Information exchanged in messages 2 through 9 is defined by Committee Draft 02 versions of the
 171 specifications. The results of these requests are used to calculate the optimal deployment for a given set
 172 of services requests.

173 A list of alternatives might be returned in message 10. Each step in the process would have a service
 174 provider determined for each service and for each alternative.

175 Messages 11 and 12 are exchanged between the service requester and the selected service providers to
 176 define the business SLA.

177 **Message Flow**

178 The service requester wants to search for the optimal end-to-end solution for a given set of services. The
 179 following sequence of messages would work. Note that the Technical Committee has not defined the
 180 messages in steps 1, 10, 11, and 12.

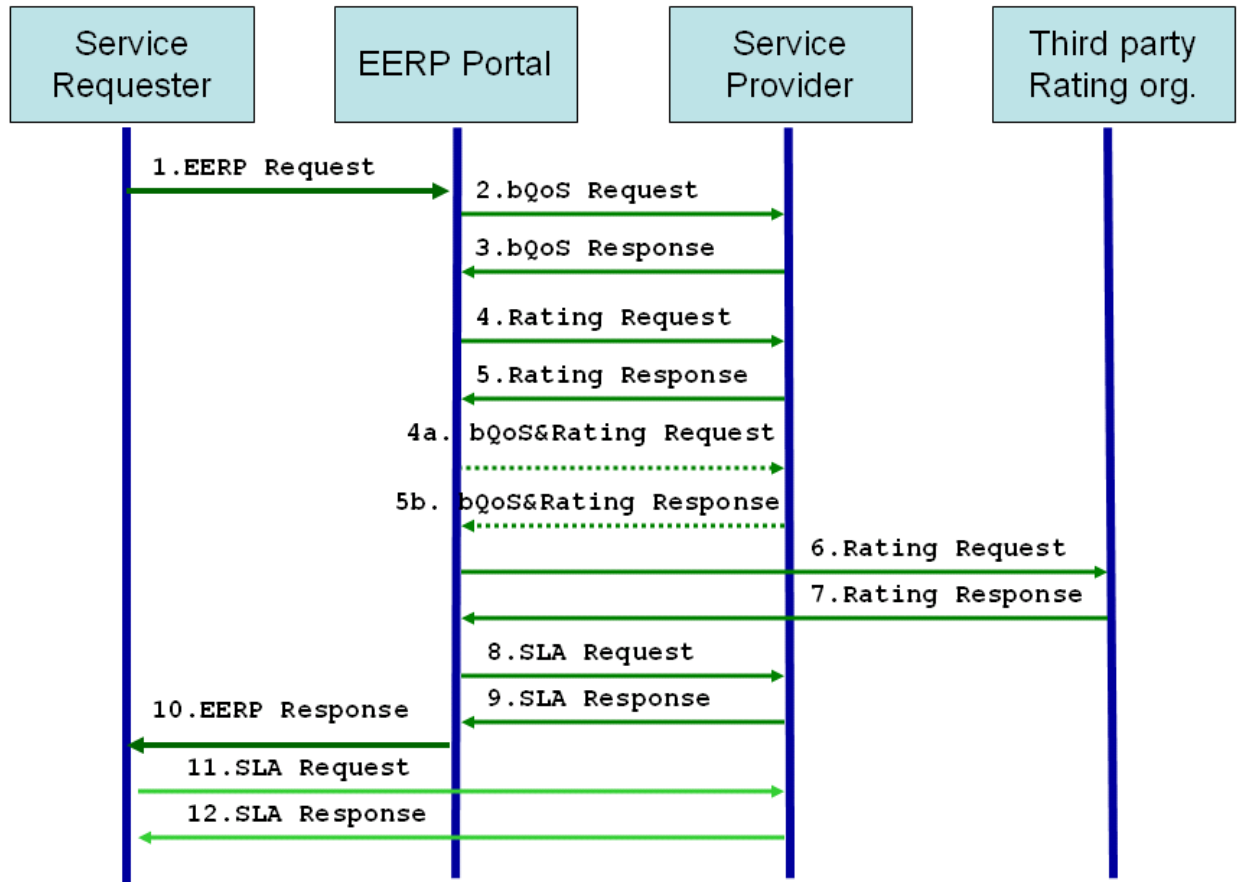
181

Step	Message	Description
1	EERP Request*	Service Requester sends EERP Request message to EERP Portal
2	bQoS Request	EERP Portal sends bQoS Request messages to all Service Providers to query the business quality of services
3	bQoS Response Message	Service Providers send bQoS Responses back to EERP Portal
4	Rating Request	EERP Portal sends Rating Request message to all Service Providers to query the credentials of the Provider
5	Rating Response Message	Service Providers send Rating Response message back to EERP Portal
6	Rating Request	EERP Portal sends Rating Request message to third party Rating organization to query the rating for the given Provider
7	Rating Response Message	Third party Rating organization sends Rating Response message back to EERP Portal
8	SLA Request	Based on the behavior of the Service Requester, EERP Portal can send SAL Request message to the Service Provider to obtain the commitments from the Provider
9	SLA Response Message	Service Provider commits to the agreement and sends the SLA Response message back to EERP Portal
10	EERP Response*	After the optimization calculation on all the information that EERP Portal received from all Service Providers, EERP Portal sends EERP Response message back to Service Requester
11	SLA Request*	Service Requester sends SLA Request message to the Service Providers to obtain the commitments from the Service Providers for those no SLA service in the set
12	SLA Response Message*	Service Provider commits the agreement and sends SLA Response message back to Service Requester

182 * The contents of the indicated messages are not currently defined by the Technical Committee

183 Optionally, a protocol might send a single message combining messages 2 and 4 with the response
 184 combining messages 3 and 5. These are shown in Figure 1 as messages 4a and 5b.

185 We conclude this section with a timing diagram:



186

187

Figure 2: EERP Message Sequence

188 A Guided Tour through the XML Vocabulary Specifications

189 Overview

190 NOTE THAT THE FORMATTING IS SERIOUSLY INCONSISTENT WITH THE OASIS WHITE PAPER
191 TEMPLATE THROUGHOUT BUT ESPECIALLY IN THIS SECTION.

192 As described previously, the current work in the TC includes the following three specifications:

- 193 • SOA-EERP Business Quality of Service (bQoS)
- 194 • SOA-EERP Business Rating of Service
- 195 • SOA-EERP Business Service Level Agreement (SLA)

196
197 This section gives brief descriptions on these three XML vocabulary specifications, their relationship and
198 provides high-level diagrams for their XML schemas.

199
200 XML schema diagrams are produced by Altova XML Spy. For readability, some detail is omitted. A key to
201 the notation is available.⁶

202 The Three Specifications

203 EERP applies service discovery, composition, simulation, and optimization techniques in a novel way to
204 improve business results. It takes as input a model of a business process and the range of potential
205 services, and then guides the selection and deployment of services based on the end-to-end business
206 value.

207
208 EERP Business Quality of Service (bQoS) Specification is an XML vocabulary by which a business
209 application may communicate selected business characteristics of the service it provides. Modeling the
210 business characteristics of a service is a prerequisite for estimating the business value of the process that
211 uses those services.

212
213 EERP Business Rating of Services Specification is an XML vocabulary for information exchange on
214 business creditability, reliability and reputation of the service providers. The creditability, reliability and
215 reputation of the service need to be understood for estimating the overall business quality of the process
216 that uses those services.

217
218 The business characteristics of the service defined in the bQoS specification and the business rating
219 characteristics of the service defined in the Business Rating specification together will enable EERP to
220 determine the varieties of optimization to be supported, and to select optimal end-to-end solution.

221
222 EERP Business Service Level Agreement for (BSLA) Specification is an XML vocabulary for information
223 exchange by which a business application can manage and evaluate services with agreed business
224 quality of service, obligations and terms.

225
226 Modeling the business service-level agreements to manage and evaluate services and establishing
227 agreements about the business service is essential to long-term value chain improvement. The details of

⁶ The XML Schema diagrams were drawn using Altova XMLSpy. For an explanation of the symbols used in these diagrams, see <http://www.e.govt.nz/standards/e-gif/authentication/data-formats-v1.1/chapter15.html> or <http://www.diversitycampus.net/Projects/TDWG-SDD/Minutes/SchemaDocu/SchemaDesignElements.html>.

228 the business service level agreement defined in the BSLA specification will enable EERP to determine
229 the varieties of optimization to be supported, and to effectively manage the end-to-end business process.
230

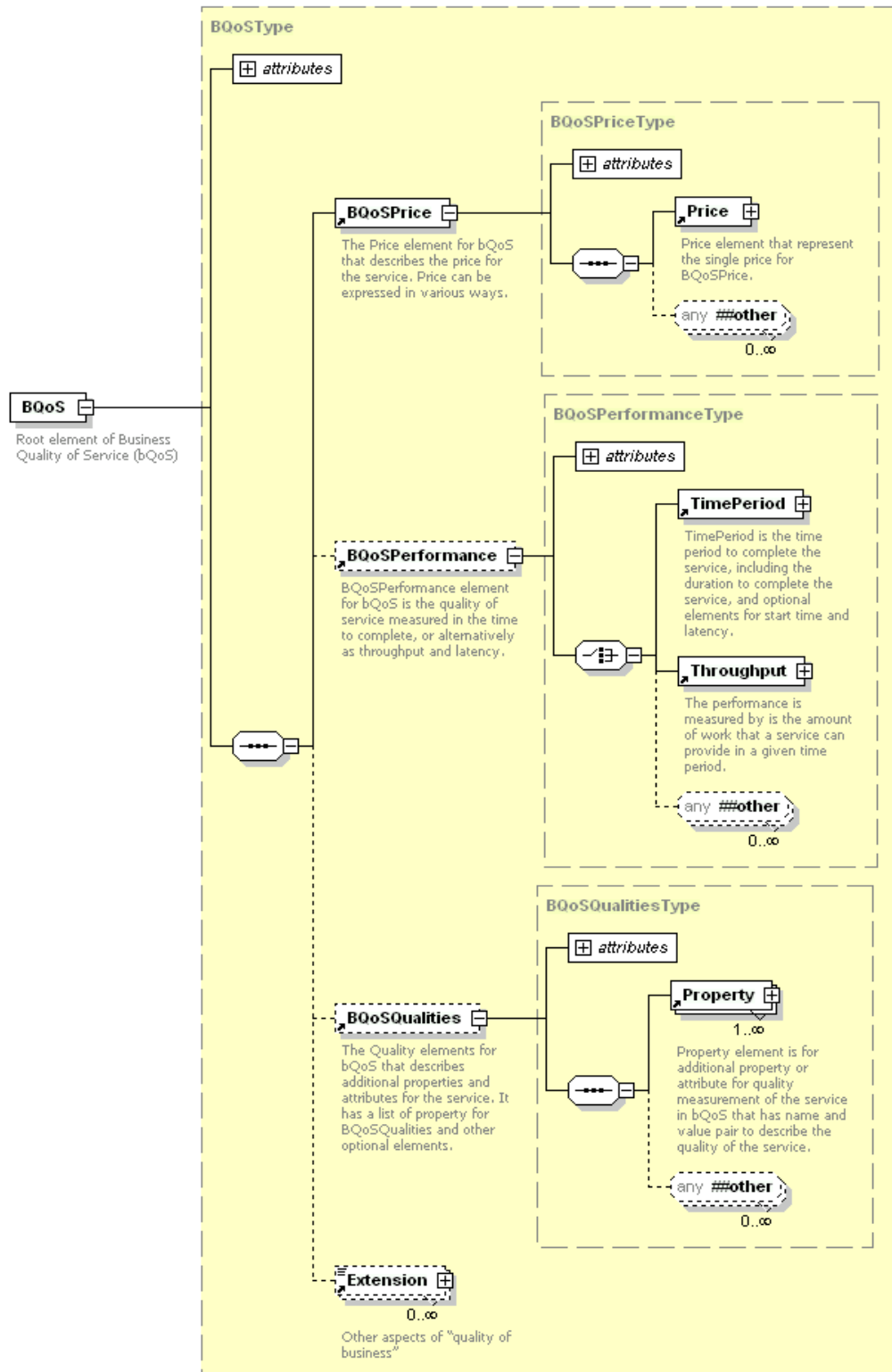
231 For example, when a service requester sends an EERP request message to the EERP Portal, the EERP
232 Portal can query the business characteristics and the business rating characteristics of each service
233 within the business process for all qualified service providers in the network, and calculate the possible
234 optimized alternatives for the requester. To achieve end-to-end business value for the business process,
235 additional message exchanges can be done to establish the business service-level agreements, and to
236 manage and evaluate services.

237 **EERP Business Quality of Service (bQoS) Specification and Schema**

238 The Business Quality of Service (BQoS) of the XML vocabulary is defined in XML Schema format that
239 defines many quality measurement indicators. It has the following major elements:

- 240 • BQoSPrice indicates price or cost for the service
- 241 • BQoSPerformance indicates time to complete the service, or in the alternative, throughput and
242 latency
- 243 • BQoSQualities indicates additional properties and attributes
- 244 • Additional elements for quality of service

245



246

Generated by XmlSpy

www.altova.com

247

Figure 3 XML Schema for Business Quality of Service

248 **Business Rating Specification and Schema**

249 The Business Rating specification is for business reliability and reputation of the service and its
250 services provider. It can have one or more of the following elements:

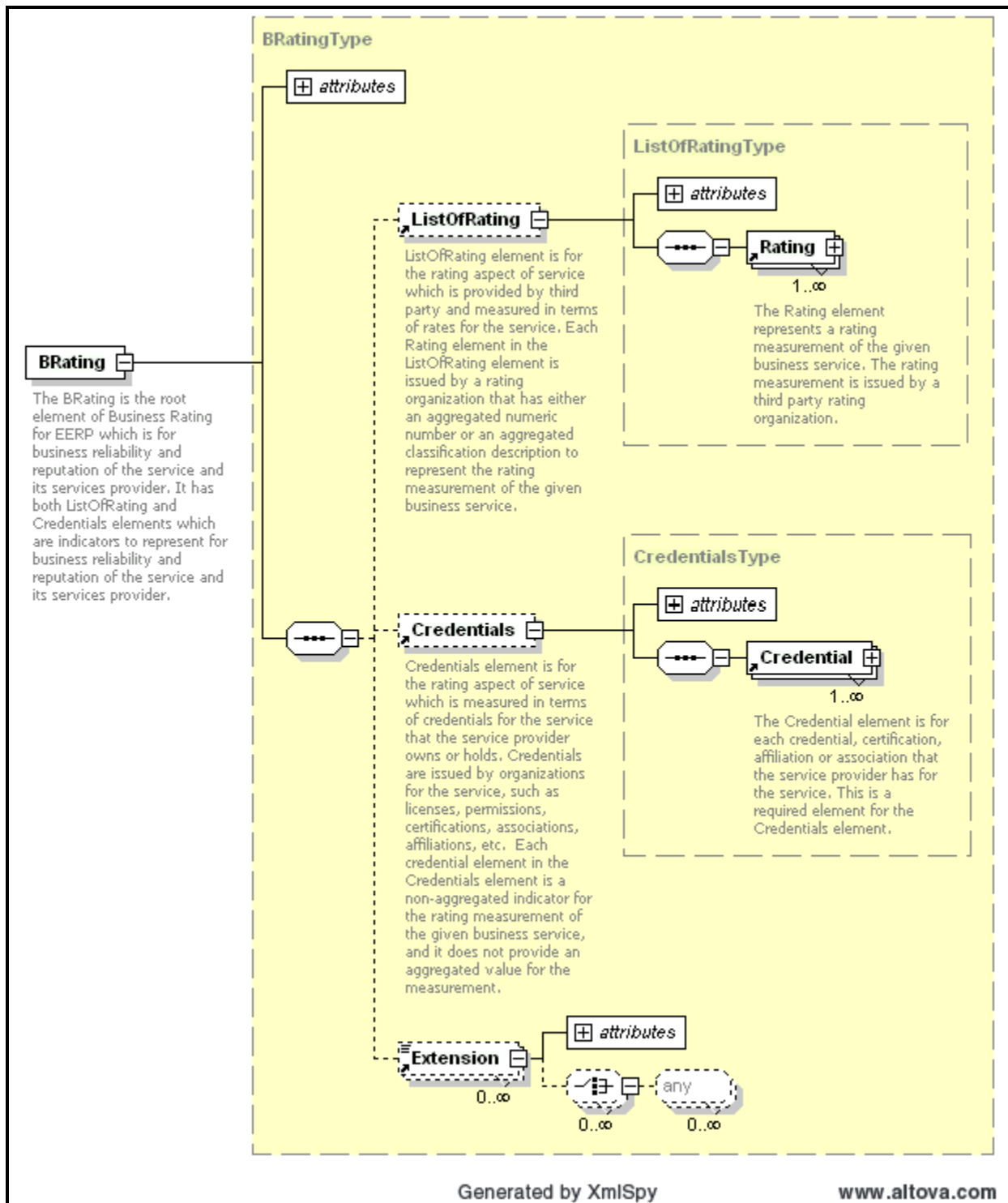
251

252 • ListOfRating element is for the third party rating of service. Each Rating element in the
253 ListOfRating is issued by a rating organization that has either an aggregated numeric rating or an
254 aggregated classification description to represent the rating of the given business service.

255 • Credentials element is for credentials for the service that the service provider owns or holds.
256 Credentials are issued by organizations regulating the service, such as licenses, permissions,
257 certifications, associations, or affiliations. Each individual element in Credentials contains a
258 single credential for the given business service. .

259 • Any additional elements for rating the service. For example, this could be one or more elements
260 of PerformanceQualityAssertionEvaluation that provides a mechanism for Service Rating Entities
261 to provide their evaluation for how well the Service Provider fulfills the Service Provider's own
262 Quality Assertion(s) of its service.

263 Figure 4 is the diagram of the XML Schema for Business Rating:



264
265

Figure 4 XML Schema for Business Rating

266 **EERP Business Service Level Agreement Specification**

267 EERP Business Service Level Agreement Specification defines business Service Level
268 Agreement (SLA) between the service requestor and service provider for a give service.
269 Business SLA is a formal contract between a service provider and a client guaranteeing quantifiable
270 business quality of service (bQoS) at defined levels.

271

272 It can have one or more of the following elements:

- 273 • SLAParties describes the parties involved in the SLA for the service
- 274 • SLAParameters describes the parameters for the service, which are defined ways of monitoring
275 of QoS metrics.
- 276 • SLAObligations describes the agreed SLA obligations for the service.
- 277 • SLATerms describes the agreed SLA Terms for the service.
- 278 • Any additional elements for the agreement of the service.

279 Figure 5 is the diagram of XML Schema for Business SLA:

BSLA

The BSLA is the root element for EERP-Service-level agreement (SLA). Business SLA is a formal contract between a service provider and a client guaranteeing quantifiable business quality of service (bQoS) at defined levels.

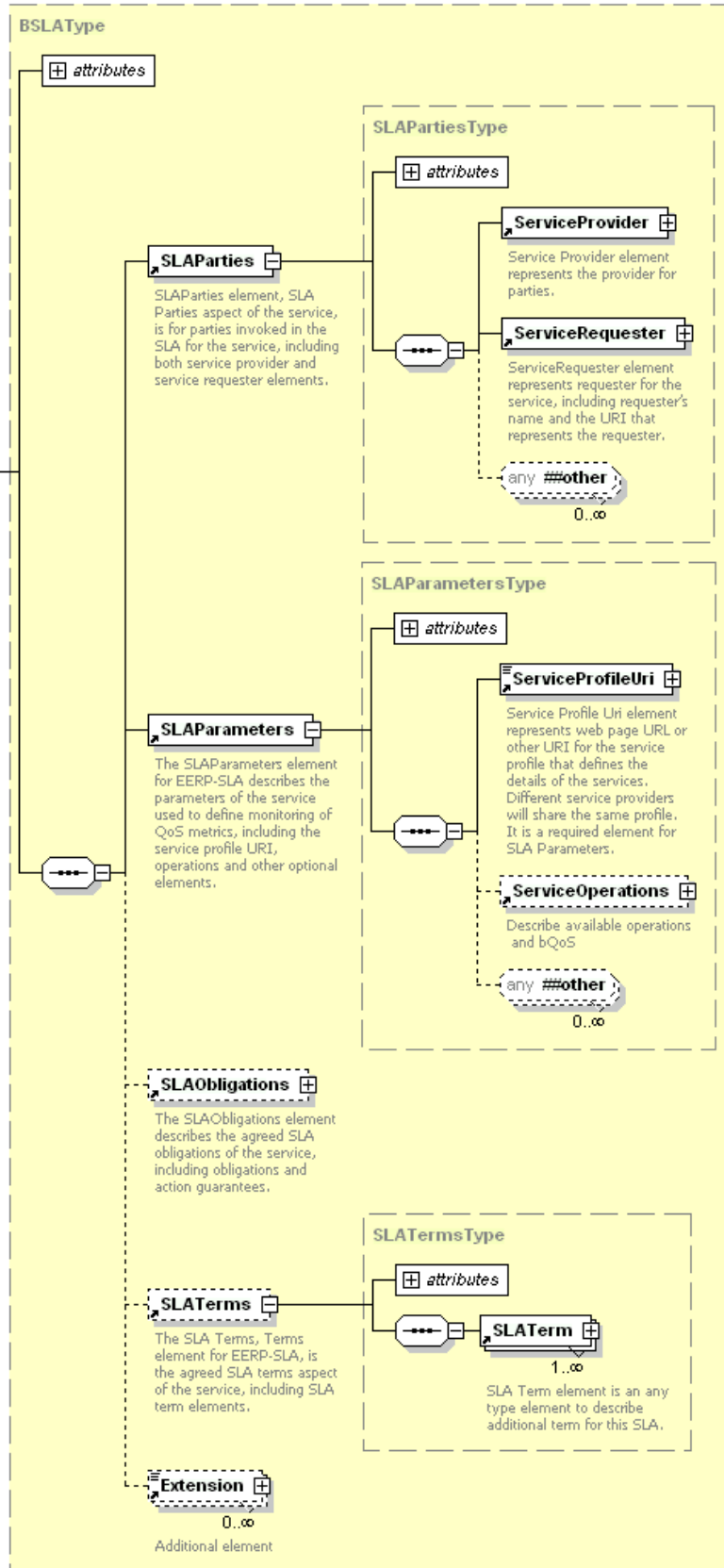
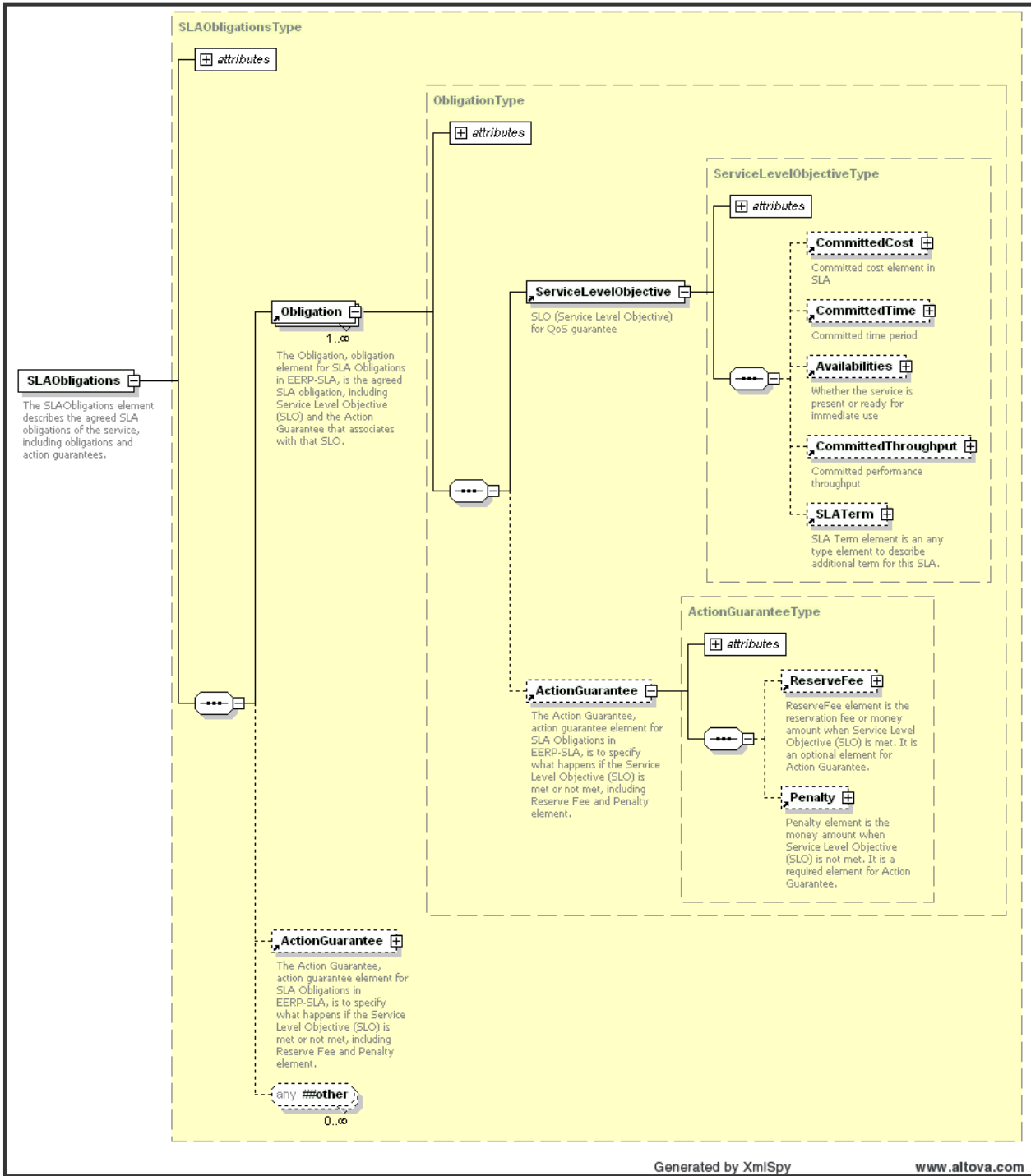


Figure 5 -- XML Schema for BSLA

283 The following is the diagram of XML Schema for SLAObligations element within the Business SLA:



284 Figure 6 -- XML Schema for SLAObligations Element

285 Use Case and Examples

286 Overview

287 This section describes a use case to illustrate how these specifications, EERP bQoS, EERP Rating and
288 EERP SLA, would be used.

289 The Use Case

290 A typical EERP application system may be drawn as follows.

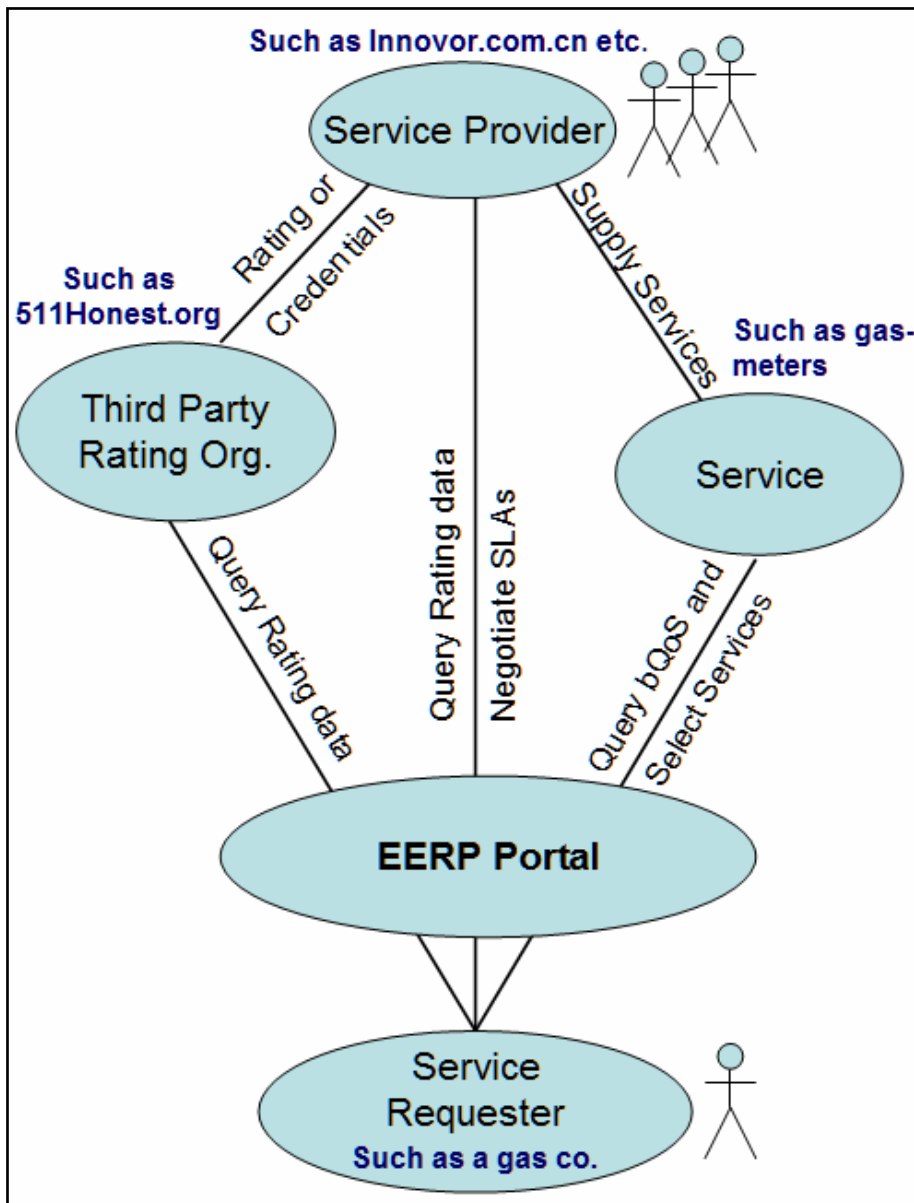


Figure 7 -- EERP Application Use Case

309 The Scenario

310 The Requester in our example is Sichuan My Gas Corporation (<http://www.mygas.com.cn>), a Chinese
311 gas company that supplies natural gas to citizens living in the Sichuan Province, in Western China. It
312 needs to order some gas meters for its customers.

313 Service is to provide a batch of gas meters. One of the Service Providers is Hangzhou MyGasMeter
314 Technology Co. Ltd. (<http://www.mygasmeter.com.cn>), a gas meter producer that produces high quality
315 IC-gas-meter in a timely fashion. The example Service Provider is located in Zhejiang Province, in
316 Eastern China.

317 The rating organization is 51Honest.org (<http://www.51honest.org/>), a rating organization that has the
318 experience to evaluate and certify a service provider in the industry. 51Honest.org is located in Northern
319 China.

320 Detailed example XML instances are listed in this section. These examples follow the schemas in
321 Committee Draft 02 for EERP bQoS, Rating and SLA.

322 Actors

- 323 • **Service requester:** requests a service through the EERP systems to find the optimal solution
- 324 • **Service providers:** provides the service, each with a different bQoS and Rating
- 325 • **EERP Portal:** a system that accepts the request from the Service requester. It performs bQoS and
326 Rating queries, calculates the optimal solution, and returns the result back to Service requester.
- 327 • **Third party Rating Provider:** provides the rating service for the service providers

328 EERP Detailed Examples

329 Namespaces

330 Unless overridden by a namespace declaration inside an XML fragment, this document uses the following
331 namespaces:

Prefix	Namespace
--------	-----------

s	http://schemas.xmlsoap.org/soap/envelope
---	---

eerp	http://docs.oasis-open.org/soa-eerp/eerp/200903
------	---

bqos	http://docs.oasis-open.org/soa-eerp/bqos/200903
------	---

bsla	http://docs.oasis-open.org/soa-eerp/sla/200903
------	---

rt	http://docs.oasis-open.org/soa-eerp/rt/200903
----	---

cbc urn:oasis:names:specification:ubl:schema:xsd:CommonBasicComponents-2

udt urn:un:unece:uncefact:data:specification:UnqualifiedDataTypesSchemaModule:2

xsd <http://www.w3.org/2001/XMLSchema>

332 EERP bQoS Example

333 This bQoS example demonstrates the use of the EERP bQoS specification. The business quality of
334 service on the gas-meters, including price, throughput and some properties, are described in XML to
335 meet the specification provided by the gas-meter producer, Hangzhou MyGasMeter Technology Co. Ltd.
336 (<http://www.mygasmeter.com.cn>), the EERP Service Provider.

337 The bQoS instance has the following items:

- 338 1. The price of the gas-meters is CNY(RMB) 120,000.00 per batch, and 1,000 gas-meters a batch
339 delivery
- 340 2. The throughput is 1,000 gas-meters in one batch, one batch per week or 7 days
- 341 3. Some of the gas-meter properties are listed in our example: integrated IC-Card-Box, with a solid
342 iron shell.

```
343  
344 (01) <?xml version="1.0" encoding="UTF-8"?>  
345 (02) <bqos:BQoS ...  
346 (03)   xmlns:bqos="http://docs.oasis-open.org/soa-eerp/bqos/200903"  
347 (04)   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" >  
348 (05)   <bqos:BQoSPrice >  
349 (06)     <bqos:Price>  
350 (07)       <bqos:Unit unitCode="EA">1000</bqos:Unit>  
351 (08)       <bqos:Amount currencyID="CNY">120000</bqos:Amount>  
352 (09)     </bqos:Price>  
353 (10)   </bqos:BQoSPrice>  
354 (11)   <bqos:BQoSPerformance>  
355 (12)     <bqos:Throughput >  
356 (13)       <bqos:Duration unitCode="DAY">7</bqos:Duration>  
357 (14)       <!-- batch production, generally 1000 sets a batch -->  
358 (15)       <bqos:Quantity>1000</bqos:Quantity>  
359 (16)       <bqos:Latency unitCode="DAY">0</bqos:Latency>  
360 (17)     </bqos:Throughput>  
361 (18)   </bqos:BQoSPerformance>  
362 (19)   <bqos:BQoSQualities>  
363 (20)     <bqos:Property>  
364 (21)       <bqos:PropertyName languageID="zh-  
365 cn">外壳</bqos:PropertyName>  
366 (22)       <bqos:PropertyValue languageID="zh-  
367 cn">铁壳</bqos:PropertyValue>  
368 (23)     </bqos:Property>  
369 (24)     <bqos:Property>  
370 (25)       <bqos:PropertyName languageID="en">IC-Card-  
371 Box</bqos:PropertyName>  
372 (26)       <bqos:PropertyValue  
373 languageID="en">integrated</bqos:PropertyValue>
```

```

374 (27) </bqos:Property>
375 (28) </bqos:BQoSQualities>
376 (29) </bqos:BQoS>

```

377 EERP Rating Example

378 This Rating example illustrates ratings and credentials for the gas-meter producing service. In this
379 example the service provider is Hangzhou MyGasMeter Technology Co. Ltd.
380 (<http://www.mygasmeter.com.cn>):

381 The Rating message has the following items:

- 382 1. Credit rating on provider is 980.1, rated by 51Honest.org (<http://www.51Honest.org>), a third-party
383 organization in northern China
- 384 2. License on gas-meter production is issued in December 1997, by the Zhejiang Bureau of Quality
385 and Technical Supervision in the P. R. of China (<http://www.zjbts.gov.cn/>), a government agency.
- 386 3. Certificate on gas-meter product is the first Dual-Explosion-Proof Certificate in November 1997.
387 The Certificate is issued by a third-party organization, the National Supervision and Inspection
388 Center for Explosion Protection and Safety of Instrumentation (NEPSI) in Shanghai in the P. R.
389 China (<http://www.sipai.com/sitiias/nepsi.asp>)

```

390 (01) <?xml version="1.0" encoding="UTF-8"?>
391 (02) <BRating xmlns="http://docs.oasis-open.org/soa-eerp/rt/200903" >
392 (03)   <ListOfRating>
393 (04)     <Rate Type="Credit" >
394 (05)       <RatingIssuer>
395 (06)         <IssuerName languageID="zh-
396 CN">信星计划51Honest.org </IssuerName>
397         <IssuerUri>http://www.51Honest.org</IssuerUri>
398       </RatingIssuer>
399       <RatingNumeric>980.1</RatingNumeric>
400       <RatingDate>2008-12-31</RatingDate>
401       <RatingReferenceUri/>
402     </Rate>
403   </ListOfRate>
404   <Credentials>
405     <Credential Type="License" >
406       <CredentialIssuer>
407         <IssuerName languageID="zh-
408 CN">浙江省质量技术监督局</IssuerName>
409         <IssuerUri>http://www.zjbts.gov.cn/</IssuerUri>
410       </CredentialIssuer>
411       <CredentialClass languageID="zh-
412 CN">中华人民共和国计量器具生产制造许可证</CredentialClass>
413       <License languageID="en-us">ZJJHJDJ-
414 JL1997120001</License>
415       <CredentialDate>
416         <DateIssued>1997-12-01</DateIssued>
417       </CredentialDate>
418       <CredentialReferenceUri/>
419     </Credential>
420   </Credentials>
421 </BRating>
422 </Credential Type="Certification">

```



```

423 (29) <CredentialIssuer>
424 (30) <IssuerName languageID="en">National Supervision
425 and Inspection Center for Explosion Protection and Safety of
426 Instrumentation ( NEPSI ) in Shanghai, P.R.China</IssuerName>
427 <IssuerUri>http://www.sipai.com/sitiiias/nepsi.asp</IssuerUri>
428 (31) </CredentialIssuer>
429 (32) <CredentialClass languageID="en">the first Dual-
430 Explosion-Proof Certificate</CredentialClass>
431 (33) <License languageID="en-us">NEPSI-
432 FB1997110001</License>
433 (34) <CredentialDate>
434 (35) <DateIssued>1997-11-01</DateIssued>
435 (36) </CredentialDate>
436 (37) <CredentialReferenceUri/>
437 (38) </Credential>
438 (39) </Credentials>
439 (40) </BRating>

```

440 EERP SLA Example

441 This SLA example shows the following agreement on the gas-meters between Hangzhou MyGasMeter
442 Technology Co. Ltd. (<http://www.mygasmeter.com.cn>), an EERP Service Provider, and Sichuan
443 Mianyang Gas Corp. (<http://www.mygas.com.cn>), an EERP Service Requester:

444 The SLA will have the following terms:

- 445 1. The service will charge CNY(RMB) 120,000.00 per batch of gas-meter products
- 446 2. The reservation fee for guarantee will charge CNY(RMB) 10.00 per batch
- 447 3. The Committed Time for delivery is 7 days (one week) or a little longer per batch, but not later
448 than April 1, 2009
- 449 4. The committed throughput is 1,000 gas-meters in one batch, per week (7 days)
- 450 5. The penalty will be CNY(RMB) 0.00 per batch, if entry #3 and #4 of the SLA cannot be met **and is**
451 **fulfilled** by the service provider

```

452 (01) <?xml version="1.0" encoding="UTF-8"?>
453 (02) <BSLA xmlns="http://docs.oasis-open.org/soa-eerp/sla/200903"
454 (03) xmlns:bqos="http://docs.oasis-open.org/soa-eerp/bqos/200903"
455 (04) xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
456 (05) ...>
457 (06) <SLAParties>
458 (07) <!--
459 (08) Service Provider=杭州西湖电子
460 (09) -->
461 (10) <ServiceProvider SPID="1">
462 (11) <ServiceUri>http://www.mygasmeter.com.cn</ServiceUri>
463 (12) <ServiceProviderName>Hangzhou MyGasMeter Technology Co. Ltd,
464 Zhejiang Prov., P.R.China</ServiceProviderName>
465 (13) </ServiceProvider>
466 (14) <!--
467 (15) ServiceRequester:服务请求人 四川燃气公司
468 (16) -->

```

```

470 (17) <ServiceRequester>
471 (18)
472 <ServiceRequesterUri>http://www.mygas.com.cn</ServiceRequesterUri>
473 (19) <ServiceRequesterName>Mianyang Gas Corp., Sichuan Prov.,
474 P.R.China</ServiceRequesterName>
475 (20) </ServiceRequester>
476 (21) </SLAParties>
477 (22)
478 (23) <SLAParameters>
479 (24) <ServiceProfileUri>http://UnkownServiceURL
480 (http://www.mygasmeter.com.cn)</ServiceProfileUri>
481 (25) <ServiceOperations>
482 (26) <hasCommittedCost>true</hasCommittedCost>
483 (27) <hasCommittedTime>true</hasCommittedTime>
484 <hasAvailabilities>true</hasAvailabilities>
485 <hasCommittedThroughput>true</hasCommittedThroughput>
486 <hasOtherTerms>true</hasOtherTerms>
487 (28) </ServiceOperations>
488 (29) </SLAParameters>
489 (30)
490 (31) <!-- SLA Obligation elements -->
491 (32) <SLAObligations>
492 (33) <Obligation>
493 (34) <ServiceLevelObjective>
494 (35) <CommittedCost>
495 (36) <bqos:Unit unitCode="EA">1000</bqos:Unit>
496 (37) <bqos:Amount
497 currencyID="CNY">120000.00</bqos:Amount>
498 (38) </CommittedCost>
499 (39) </ServiceLevelObjective>
500 (40) <ActionGuarantee>
501 (41) <ReserveFee>
502 (42) <bqos:Unit unitCode="EA">1000</bqos:Unit>
503 (43) <bqos:Amount currencyID="CNY">10.00</bqos:Amount>
504 (44) </ReserveFee>
505 (45) </ActionGuarantee>
506 (46) </Obligation>
507 (47) <Obligation>
508 (48) <ServiceLevelObjective>
509 (49) <CommittedTime timeZone="CST" description="+08:00 China
510 Stand Time, Beijing Time or HK Time">
511 (50) <bqos:Duration unitCode="DAY"> 7</bqos:Duration>
512 (51) <CommittedCompletionTime>2009-04-
513 01T00:00:00</CommittedCompletionTime>
514 (52) </CommittedTime>
515 (53) </ServiceLevelObjective>
516 (54) <ActionGuarantee>
517 (55) <ReserveFee>
518 (56) <bqos:Unit unitCode="EA">1000</bqos:Unit>
519 (57) <bqos:Amount currencyID="CNY">0.00</bqos:Amount>
520 (58) </ReserveFee>
521 (59) </ActionGuarantee>
522 (60) </Obligation>
523 (61) <Obligation>
524 (62) <!-- No. 3 delivery after 7 days, BUT before 2009-04-01 -->
525 (63) <ServiceLevelObjective>
526 (64) <CommittedTime >
527 (65) <bqos:Duration unitCode="DAY"> 7</bqos:Duration>
528 (66) <CommittedCompletionTime>2009-04-
529 01T00:00:00Z</CommittedCompletionTime>
530 (67) </CommittedTime>
531 (68) </ServiceLevelObjective>

```

```

532 (69)         <ActionGuarantee/>
533 (70)     </Obligation>
534 (71)     <Obligation>
535 (72)         <ServiceLevelObjective>
536 (73)             <Availabilities >
537 (74)                 <Availability isAvailable="true">
538 (75)                     <From>2009-01-01T00:00:00Z</From>
539 (76)                     <To>2010-01-01T00:00:00Z</To>
540 (77)                 </Availability>
541 (78)             </Availabilities>
542 (79)         </ServiceLevelObjective>
543 (80)         <ActionGuarantee/>
544 (81)     </Obligation>
545 (82)     <Obligation>
546 (83)         <ServiceLevelObjective>
547 (84)             <CommittedThroughput >
548 (85)                 <bqos:Duration unitCode="DAY">7</bqos:Duration>
549 (86)                 <!-- batch production, generally 1000 sets a
550 batch -->
551 (87)                 <bqos:Quantity unitCode="EA">1000</bqos:Quantity>
552 (88)                 <bqos:Latency unitCode="DAY">0</bqos:Latency>
553 (89)             </CommittedThroughput>
554 (90)         </ServiceLevelObjective>
555 (91)         <ActionGuarantee/>
556 (92)     </Obligation>
557 (93)     <ActionGuarantee>
558 (94)         <ReserveFee>
559 (95)             <bqos:Unit unitCode="EA">1000</bqos:Unit>
560 (96)             <bqos:Amount currencyID="CNY">0.00</bqos:Amount>
561 (97)         </ReserveFee>
562 (98)         <Penalty>
563 (99)             <bqos:Unit unitCode="EA">1000</bqos:Unit>
564 (100)            <bqos:Amount currencyID="CNY">0.00</bqos:Amount>
565 (101)        </Penalty>
566 (102)    </ActionGuarantee>
567 (103) </SLAObligations>
568 (104) </BSLA>

```

569

References

- 570
571 **[EERP-BQoS]** OASIS Specification, Committee Draft, "SOA-EERP Business Quality of Service
572 Version 1.0"
573 [http://docs.oasis-open.org/soa-eerp/bqos/v1.0/SOA-EERP-bQoS-
Specification.pdf](http://docs.oasis-open.org/soa-eerp/bqos/v1.0/SOA-EERP-bQoS-
574 Specification.pdf)
575 **[EERP-Rating]** OASIS Specification, Committee Draft, "SOA-EERP Business Rating of Service
576 Version 1.0"
577 <http://docs.oasis-open.org/soa-eerp/rt/v1.0/SOA-EERP-Rating-Specification.pdf>
578 **[EERP-BSLA]** OASIS Specification, Committee Draft, "SOA-EERP Business Service Level
579 Agreement Version 1.0"
580 [http://docs.oasis-open.org/soa-eerp/sla/v1.0/BusinessServiceLevelAgreement-
Specification.pdf](http://docs.oasis-open.org/soa-eerp/sla/v1.0/BusinessServiceLevelAgreement-
581 Specification.pdf)
582 **[SOA-RM]** OASIS Standard, "Reference Model for Service Oriented Architecture v1.0"
583 <http://docs.oasis-open.org/soa-rm/v1.0/soa-rm.pdf>

584

585 **ALL LINKS NEED TO BE VERIFIED FOR THE APPROPRIATE VERSIONS (CD, PR).**

586 **Revision History**

587

Rev	Date	By Whom	What
WD01	2009-07-07	Szu Chang	First merge of previous documents contributed to SOA-EERP TC
WD02	2009-07-21	Szu Chang	Fixed review comments on Issue i060.
WD03	2009-08-05	Szu Chang	Get changes on Issue i061
WD04	2009-08-30	William Cox	Rewrite for language, focus, and to show value
WD05	2009-09-13	Szu Chang and William Cox	Redraw figures (Chang), corrected many issues in text per TC notes (Cox)

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