SOA-EERP Business Rating of Service
Version 1.0
Committee Draft 03
6 January 2010

Specification URIs:
This Version:
http://docs.oasis-open.org/soa-eerp/rt/v1.0/SOA-EERP-Rating-Spec-cd03.html
http://docs.oasis-open.org/soa-eerp/rt/v1.0/SOA-EERP-Rating-Spec-cd03.doc
http://docs.oasis-open.org/soa-eerp/rt/v1.0/SOA-EERP-Rating-Spec-cd03.pdf (Authoritative)

Previous Version:
N/A

Latest Version:
http://docs.oasis-open.org/soa-eerp/rt/v1.0/SOA-EERP-Rating-Specification.doc

Technical Committee:
OASIS Service-Oriented Architecture End-to-End Resource Planning (SOA-EERP) TC

Chair(s):
William Cox
Andy Lee, Changfeng Open Standards Platform Software Alliance

Editor(s):
Szu Chang, Changfeng Open Standards Platform Software Alliance

Related work:
This specification is related to:

This document is one of three closely related specifications, SOA-EERP Business Quality of Service (bQoS), SOA-EERP Rating and SOA-EERP Service Level Agreement which need to be understood in combination.

Declared XML Namespace(s):
http://docs.oasis-open.org/ns/soa-eerp/rt/200903

Abstract:
This document specifies the XML vocabulary for business rating, one of three Specifications for end-to-end resource planning (EERP). Business rating describes the business-related rating and credentials for a service.
Status:

This document was last revised or approved by the SOA-EERP TC on the above date. The level of approval is also listed above. Check the “Latest Version” or “Latest Approved Version” location noted above for possible later revisions of this document.

Technical Committee members should send comments on this specification to the Technical Committee’s email list. Others should send comments to the Technical Committee by using the “Send A Comment” button on the Technical Committee’s web page at http://www.oasis-open.org/committees/soa-eerp/.

For information on whether any patents have been disclosed that may be essential to implementing this specification, and any offers of patent licensing terms, please refer to the Intellectual Property Rights section of the Technical Committee web page (http://www.oasis-open.org/committees/soa-eerp/ipr.php).

The non-normative errata page for this specification is located at http://www.oasis-open.org/committees/soa-eerp/.
Notices

Copyright © OASIS® 2010. All Rights Reserved.

All capitalized terms in the following text have the meanings assigned to them in the OASIS Intellectual Property Rights Policy (the "OASIS IPR Policy"). The full Policy may be found at the OASIS website.

This document and translations of it may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published, and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this section are included on all such copies and derivative works. However, this document itself may not be modified in any way, including by removing the copyright notice or references to OASIS, except as needed for the purpose of developing any document or deliverable produced by an OASIS Technical Committee (in which case the rules applicable to copyrights, as set forth in the OASIS IPR Policy, must be followed) or as required to translate it into languages other than English.

The limited permissions granted above are perpetual and will not be revoked by OASIS or its successors or assigns.

This document and the information contained herein is provided on an "AS IS" basis and OASIS DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY OWNERSHIP RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

OASIS requests that any OASIS Party or any other party that believes it has patent claims that would necessarily be infringed by implementations of this OASIS Committee Specification or OASIS Standard, to notify OASIS TC Administrator and provide an indication of its willingness to grant patent licenses to such patent claims in a manner consistent with the IPR Mode of the OASIS Technical Committee that produced this specification.

OASIS invites any party to contact the OASIS TC Administrator if it is aware of a claim of ownership of any patent claims that would necessarily be infringed by implementations of this specification by a patent holder that is not willing to provide a license to such patent claims in a manner consistent with the IPR Mode of the OASIS Technical Committee that produced this specification. OASIS may include such claims on its website, but disclaims any obligation to do so.

OASIS takes no position regarding the validity or scope of any intellectual property or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; neither does it represent that it has made any effort to identify any such rights. Information on OASIS' procedures with respect to rights in any document or deliverable produced by an OASIS Technical Committee can be found on the OASIS website. Copies of claims of rights made available for publication and any assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementers or users of this OASIS Committee Specification or OASIS Standard, can be obtained from the OASIS TC Administrator. OASIS makes no representation that any information or list of intellectual property rights will at any time be complete, or that any claims in such list are, in fact, Essential Claims.

The names "OASIS", "SOA-EERP" and "EERP-Rating" are trademarks of OASIS, the owner and developer of this specification, and should be used only to refer to the organization and its official outputs. OASIS welcomes reference to, and implementation and use of, specifications, while reserving the right to enforce its marks against misleading uses. Please see http://www.oasis-open.org/who/trademark.php for above guidance.
# Table of Contents

1  Introduction .............................................................................................................................. 5
   1.1 Terminology .......................................................................................................................... 5
       1.1.1 Notational Conventions .............................................................................................. 5
   1.2 Normative References ......................................................................................................... 6
       1.2.1 Reference ...................................................................................................................... 6
   1.3 Non-Normative References .................................................................................................. 6
2  Business Rating Measurement ................................................................................................. 7
   2.1 Namespaces .......................................................................................................................... 7
   2.2 Schema Files ......................................................................................................................... 7
   2.3 Rating Measurement Indicators .......................................................................................... 7
3  ListOfRating ............................................................................................................................... 9
4  Rating Credentials ..................................................................................................................... 12
5  Rating Examples ....................................................................................................................... 16
   5.1 Service Rating with an Engineering Service ....................................................................... 16
   5.2 Service Rating for Gas-Meters Product ............................................................................... 17
6  Conformance .............................................................................................................................. 19
   A. Acknowledgements ............................................................................................................... 21
   B. XML Schema for Business Rating ....................................................................................... 22
   C. Non-Normative Text ............................................................................................................. 29
   D. Revision History ................................................................................................................... 30
1 Introduction

This document is the specification for Business Rating for End-to-End Resource Planning (EERP), an XML vocabulary for information exchange on business creditability, reliability and reputation of the service providers.

EERP applies service discovery, composition, simulation, and optimization techniques in a novel way to improve business results. It models the business process and the range of potential services, then guide the selection and deployment of services based on the end-to-end business value.

The creditability, reliability and reputation of the service need to be understood for estimating the overall business quality of the process that uses those services. The business rating characteristics of the service defined in this Business Rating specification will enable EERP to determine the varieties of optimization to be supported, and to select optimal end-to-end solution.

1.1 Terminology

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

1.1.1 Notational Conventions

This specification uses the following syntax to define outlines for detailed elements:

- The syntax appears as an XML instance, but values in italics indicate data types instead of literal values.
- Characters are appended to elements and attributes to indicate cardinality:
  - “?” (0 or 1)
  - “*” (0 or more)
  - “+” (1 or more)
- The character “|” is used to indicate a choice between alternatives.
- The characters “(“ and “)” are used to indicate that contained items are to be treated as a group with respect to cardinality or choice.
- The characters “[“ and “]” are used to call out references and property names.
- Ellipses (i.e., “...”) indicate points of extensibility. Additional children and/or attributes MAY be added at the indicated extension points but MUST NOT contradict the semantics of the parent and/or owner, respectively. By default, if a receiver does not recognize an extension, the receiver SHOULD ignore the extension; exceptions to this processing rule, if any, are clearly indicated below.
- XML namespace prefixes (see Table 1) are used to indicate the namespace of the element being defined.

Elements and Attributes defined by this specification are referred to in the text of this document using XPath 1.0 expressions. Extensibility points are referred to using an extended version of this syntax:

- An element extensibility point is referred to using {any} in place of the element name. This indicates that any element name can be used, from any namespace other than the namespace of this specification.
- An attribute extensibility point is referred to using @{any} in place of the attribute name. This indicates that any attribute name can be used, from any namespace other than the namespace of this specification.
Extensibility points in the exemplar may not be described in the corresponding text.

1.2 Normative References


[UBL-20-cbc] Universal Business Language (UBL) v2.0, Common Basic Components

[UBL-20-udt] Universal Business Language (UBL) v2.0. Unqualified Data Type


[CEFACT] CEFAXT – Core components specifications - http://webster.disa.org/cefact-groups/tmg/

1.2.1 Reference

In this document reference is made to some basic elements and data types in UBL 2.0, in the following schema:

- UBL 2.0 Common Basic Components (UBL-20-cbc), UBL-CommonBasicComponents-2.0.xsd
- UBL 2.0 Unqualified Data Type (UBL-20-udt), UnqualifiedDataTypeSchemaModule-2.0.xsd

This specification is designed to work with the general Web Services framework including WSDL service descriptions, and SOAP message structure and message processing model. The XML vocabulary defined in this specification should be applicable to any version of SOAP.

1.3 Non-Normative References

None.
2 Business Rating Measurement

The Business Rating of the XML vocabulary is defined in XML Schema format that has many rating measurement indicators.

2.1 Namespaces

The XML namespace URI that MUST be used by implementations of this specification is:

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

Table 1 lists XML namespaces that are used in this specification. The choice of any namespace prefix is arbitrary and not semantically significant.

Table 1: Prefixes and XML Namespaces used in this specification.

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Namespace</th>
<th>Specification(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td><a href="http://schemas.xmlsoap.org/soap/envelope/">http://schemas.xmlsoap.org/soap/envelope/</a></td>
<td>[SOAP]</td>
</tr>
<tr>
<td>S12</td>
<td><a href="http://www.w3.org/2003/05/soap-envelope">http://www.w3.org/2003/05/soap-envelope</a></td>
<td>[SOAP12]</td>
</tr>
<tr>
<td>xsd</td>
<td><a href="http://www.w3.org/2001/XMLSchema">http://www.w3.org/2001/XMLSchema</a></td>
<td>[XML-Schema1], [XML-Schema2]</td>
</tr>
<tr>
<td>udt</td>
<td>urn:un:unece:unecfact:data:specification:UnqualifiedDataTypesSchemaModule:2</td>
<td>[UBL-20-udt], [CEFACT]</td>
</tr>
<tr>
<td>ccts</td>
<td>urn:un:unece:unecfact:documentation:2</td>
<td>[UBL-20], [CEFACT]</td>
</tr>
<tr>
<td>rt</td>
<td><a href="http://docs.oasis-open.org/ns/soa-eerp/rt/200903">http://docs.oasis-open.org/ns/soa-eerp/rt/200903</a></td>
<td>This specification</td>
</tr>
</tbody>
</table>

2.2 Schema Files

A normative copy of the XML Schema [XML-Schema1, XML-Schema2] description for this specification can be retrieved from the following address:

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

2.3 Rating Measurement Indicators

The BRating is the root element of Business Rating for EERP which is for business reliability and reputation of the service and its services provider. It can have one or more of the following elements:

- ListOfRating element is for the rating aspect of service which is provided by third party and measured in terms of rates for the service. Each Rating element in the ListOfRating element is issued by a rating organization that has either an aggregated numeric number or an aggregated classification description to represent the rating measurement of the given business service.

- Credentials element is for the rating aspect of service which is measured in terms of credentials for the service that the service provider owns or holds. Credentials are issued by organizations for
the service, such as licenses, permissions, certifications, associations, affiliations, etc. Each
credential element in the Credentials element is a non-aggregated indicator for the rating
measurement of the given business service, and it does not provide an aggregated value for the
measurement.

- Any additional elements for the rating aspect of service. This can be one or more elements of
  Performance:QualityAssessmentEvaluation that will provider a mechanism for Service
  Rating Entities to provide their evaluation for how well the Service Provider fulfill the
  Quality Assertion(s) of its service.

Both the ListOfRating and Credentials elements describe information about the given business service.
They are not related however. The Rating element inside the ListOfRating must be issued by a third-party
rating organization. The service provider cannot issue a Rating for itself, but can claim what kind of
credentials it owns or holds in the Credential elements. The Rating element and Credential element
cannot be mixed. A Business Rating document/message, with a root element of <rt:BRating>, can have
either ListOfRating element or Credentials element, or both elements.

**Syntax**

```xml
<rt:BRating xmlns:rt="..." ...>
  <rt:ListOfRating ...>rt:ListOfRatingType</rt:ListOfRating> ?
  <rt:Credentials ...>rt:CredentialsType</rt:Credentials> ?
  ...
</rt:BRating>
```

The following describes the attributes and elements listed in the schema outlined above:

/rt:BRating

The root element of Rating for EERP

/rt:BRating/@{any}

This is an extensibility mechanism to allow additional attributes, based on schemas, to be added
to the element in the future. Unrecognized attributes MAY cause a fault or be silently ignore.

/rt:BRating/rt:ListOfRating

List of Rating, rating aspect of the service in BRating element, is to hold those Rating elements. It
is an optional element and has one or many Rating elements, see Section 3 for more details.

/rt:BRating/rt:ListOfRating/@{any}

This is an extensibility mechanism to allow additional attributes, based on schemas, to be added
to the ListOfRating element in the future. Unrecognized attributes MAY cause a fault or be silently
ignore.

/rt:BRating/rt:Credentials

Credentials element is for credential aspect of the service in which the service provider has
such as license, certification, affiliations, associations, etc. It is optional element and has one or
many Credential elements, see Section 4 for more details.

/rt:BRating/rt:Credentials/@{any}

This is an extensibility mechanism to allow additional attributes, based on schemas, to be added
to the Credentials element in the future. Unrecognized attributes MAY cause a fault or be silently
ignore.

/ rt:BRating /{any}

This is an extensibility mechanism to allow different (extensible) elements/parameters to be
specified in the future. Unrecognized elements MAY cause a fault or be silently ignore. This can
be one or more elements of /rt:BRating/Performance/QualityAssessmentEvaluation for third-party
Service Rating Entities to provide their evaluation for how well the Service Provider fulfill the
Quality Assertion(s) of this service.
3 ListOfRating

The ListOfRating element contains the list of Rating issued by a third party rating organization. Each Rating element in the ListOfRating has one of the following two elements to represent the rating measurement of the given business service:

- An aggregated number, in `<rt:RatingNumeric>` element
- An aggregated classification description, in `<rt:RatingDescription>` element

There SHOULD be zero or one ListOfRating element present in the rating of service.

Syntax

```
<rt:ListOfRating xmlns:rt="..." />
  <rt:Rating Type="..." ...
    rt:QualityRatingType
    rt:IssueType ...
    rt:IssuerNameType ...
    rt:IssuerUriType ...
    ...
  </rt:RatingIssuer>
  <rt:RatingDescription languageID="...
    rt:RatingDescriptionType</rt:RatingDescription> ?
  <rt:RatingNumeric ...
    rt:RatingNumericType</rt:RatingNumeric> ?
  <rt:RatingDate ...
    rt:RatingDateType</rt:RatingDate> ?
  <rt:RatingReferenceUri ...
    rt:RatingUriType</rt:RatingReferenceUri> ?
  ...
</rt:Rating> +
</rt:ListOfRating>
```

The following describes the attributes and elements listed in the schema outlined above:

- `/rt:BRating/rt:ListOfRating` List of ratings for a service that has one or more Rating elements.
- `/rt:BRating/rt:ListOfRating/rt:Rating` The Rating element represents a rating measurement of the given business service. The rating measurement is issued by a third party rating organization. This is a required element for the ListOfRating element.
- `/rt:BRating/rt:ListOfRating/rt:Rating/@Type` Type is an optional attribute of Simple Type to identify what kind of Rating element it is.
- `/rt:BRating/rt:ListOfRating/rt:Rating/@{any}` This is an extensibility mechanism to allow additional attributes, based on schemas, to be added to the ListOfRating element in the future. Unrecognized attributes MAY cause a fault or be silently ignored.
- `/rt:BRating/rt:ListOfRating/rt:Rating/rt:RatingIssuer` Issuing organization for this rating includes the issuer name and the URI in the Element. This element is to represent the rating issuer organization. It is a required element for Rating.
- `/rt:BRating/rt:ListOfRating/rt:Rating/rt:IssuerName` IssuerName element, Name for the issuing organization for this rating, is an optional element for RatingIssuer.
It is the URI that represents the issuer organization. It is a required element for RatingIssuer.

This is an extensibility mechanism to allow additional attributes, based on schemas, to be added to the IssuerUri element in the future. Unrecognized attributes MAY cause a fault or be silently ignored.

Rating description for the rating where the rating can be represented in String format, such as Good, Fair, Average, etc. It is an optional element for Rating.


This is an extensibility mechanism to allow additional attributes, based on schemas, to be added to the RatingDescription element in the future. Unrecognized attributes MAY cause a fault or be silently ignored.

RatingNumeric element, Numeric value for the rating, is an optional element for Rating.

This is an extensibility mechanism to allow additional attributes, based on schemas, to be added to the RatingNumeric element in the future. Unrecognized attributes MAY cause a fault or be silently ignored.

RatingDate is the date when this Rating is obtained. It is an optional element for Rating.

Expired is an optional attribute to indicate this Rating is expired or not. The value of this Expired attribute is set to true means this Rating has been expired as of the RatingDate.

This is an extensibility mechanism to allow additional attributes, based on schemas, to be added to the RatingDate element in the future. Unrecognized attributes MAY cause a fault or be silently ignored.

RatingReferenceUri, Web page URL or other URI for this rating to reference to, is an optional element for the Rating element.

This is an extensibility mechanism to allow additional attributes, based on schemas, to be added to the Rating element in the future. Unrecognized attributes MAY cause a fault or be silently ignored.

Example

The following example illustrates the use of List of Rating element. It describes a Rating element that is issued by Better Business Bureau:

```
(001) <?xml version="1.0" encoding="utf-8"?>
(002) <ListOfRating xmlns="..." ...>
(003)     <Rating Type="BBB">
(004)         <RatingIssuer>
```
The following example illustrates the use of List of Rating element. It describes a Rating element that is issued by 51Honest.org in China:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<BRating xmlns="..." ...>
  <ListOfRating>
    <Rating Type="51honest">
      <IssuerName languageID="zh-CN">农博网</IssuerName>
      <IssuerUri>www.51honest.org</IssuerUri>
      <RatingDescription languageID="zh-CN">信星计划</RatingDescription>
      <RatingNumeric>175</RatingNumeric>
      <RatingDate>2009-03-06</RatingDate>
      <RatingReferenceUri>
        http://www.51honest.org/index.jsp?url=detail.credit%3faction=hywzMemberInfo%26credcod...%26amp;firm=34825#bbbrating
      </RatingReferenceUri>
    </Rating>
  </ListOfRating>
</BRating>
```
4 Rating Credentials

The Rating Credentials element for EERP-Rating, describes the credentials held by the service provider with respect to a specific service.

Credentials may be issued with respect to a service provider and service by third-party organizations, such as licenses, permissions, certifications, awards, associations, and affiliations.

Not like the Rating element inside the ListOfRating, each credential element in the Credentials element is an independent, non-aggregated indicator for the rating measurement of the given business service. There MAY be zero or one Credentials element present in the rating of service.

Syntax

```
<rt:Credentials xmlns:bgos="..." ...>
  <rt:Credential>
    <rt:CredentialType>
      <rt:CredentialIssuer ...>rt:IssuerType</rt:CredentialIssuer>
      ...<rt:CredentialIssuer>
      ...<rt:CredentialClass languageID="...">rt:CredentialClassType</rt:CredentialClass> ... rt:LisenseType</rt:License> ...
      <rt:CredentialDate ...>rt:CredentialDateType</rt:CredentialDate> ...
      <rt:ExpirationDate ...>rt:ExpirationDateType</rt:ExpirationDate> ...
      <rt:CredentialReferenceUri ...>rt:RatingUriType</rt:CredentialReferenceUri>
    </rt:Credential>
  
  ...
</rt:Credentials>
```

The following describes the attributes and elements listed in the schema outlined above:

/rt:BRating/rt:Credentials

Credential aspect of the service which the service provider has, including certification, affiliations and associations. It has a list of credential for Credentials.

/rt:BRating/rt:Credentials/rt:Credential

The Credential element is for each credential, certification, affiliation or association that the service provider has for the service. This is a required element for the Credentials element.

/rt:BRating/rt:Credentials/rt:Credential/@Type

Type of the credential, an optional attribute in the Credential element, using enumeration type, and the value SHOULD be one of the following:

- Affiliation
- Association
- Award
- Certification
- License
- Membership
- Permission
- Others

/rt:BRating/rt:Credentials/rt:Credential/@{any}

This is an extensibility mechanism to allow additional attributes, based on schemas, to be added to the Credential element in the future. Unrecognized attributes MAY cause a fault or be silently ignored.

/rt:BRating/rt:Credentials/rt:Credential/rt:CredentialIssuer

CredentialIssuer element is for issuing organization for this credential, such as the issuer of certification, association, affiliation or Credential. For example, the Issuer can be AAA, BBB, or
State of California, etc. This element is a required element for Credential, which includes the
issuer name and the URI that represent this rating issuer organization.

IssuerName element, Issuer’s name for the issuing organization for this rating or credential, is an
optional element for CredentialIssuer.

Language ID is a required attribute in the IssuerName element, using xsd:language type. The

This is an extensibility mechanism to allow additional attributes, based on schemas, to be added
to the IssuerUri element in the future. Unrecognized attributes MAY cause a fault or be silently
ignore.

This is an extensibility mechanism to allow different (extensible) property or attribute
elements/parameters to be specified in the future. Unrecognized elements MAY cause a fault or be
silently ignore.

CredentialClass element is the classification of the credential such as five-stars, or golden
member. It is an optional element for the Credential. It is an optional element for the Credential.

Language ID is a required attribute in the CredentialClass element, using xsd:language type. The

This is an extensibility mechanism to allow additional attributes, based on schemas, to be added
to the CredentialClass element in the future. Unrecognized attributes MAY cause a fault or be
silently ignore.

License element, the license number or membership number of the credential, is an optional
element for the Credential element.

Language ID is a required attribute in the License element, using xsd:language type. The value

This is an extensibility mechanism to allow additional attributes, based on schemas, to be added
to the License element in the future. Unrecognized attributes MAY cause a fault or be silently
ignore.

CredentialDate element is the date on this credential, including date when this credential, license
or certificate is issued and the expiration date for this license or membership. It is an optional
element for the Credential element.

This is an extensibility mechanism to allow additional attributes, based on schemas, to be added
to the CredentialDate element in the future. Unrecognized attributes MAY cause a fault or be
silently ignore.
DateIssued element is the date when this credential, license or certificate is issued. It is an optional element for the CredentialDate element.

This is an extensibility mechanism to allow additional attributes, based on schemas, to be added to the DateIssued element in the future. Unrecognized attributes MAY cause a fault or be silently ignore.

ExpirationDate element, Expiration date for this license or membership, is an optional element for the CredentialDate element.

This is an extensibility mechanism to allow additional attributes, based on schemas, to be added to the ExpirationDate element in the future. Unrecognized attributes MAY cause a fault or be silently ignore.

CredentialReferenceUri element, Web page URL or other URI for this credential reference, is an optional element for Credential.

This is an extensibility mechanism to allow different (extensible) property or attribute elements/parameters to be specified in the future. Unrecognized elements MAY cause a fault or be silently ignore.

The following example illustrates the use of rating Credentials element. It describes the credential of professional license issued by California Board For Professional Engineers And Land Surveyors:

```xml
<?xml version="1.0" encoding="utf-8"?>
<Credentials xmlns="..." ...>
    <Credential Type="License">
        <CredentialIssuer>
            <IssuerName languageID="EN">California Board For Professional Engineers And Land Surveyors</IssuerName>
            <IssuerUri>http://www.pels.ca.gov/</IssuerUri>
        </CredentialIssuer>
        <CredentialClass languageID="EN">CIVIL ENGINEER</CredentialClass>
        <License languageID="EN">42456</License>
        <CredentialDate>
            <ExpirationDate>2010-03-31</ExpirationDate>
        </CredentialDate>
        <CredentialReferenceUri>http://www2.dca.ca.gov/pls/wllpub/WLLQRYNA$LCEV2.QueryView?P_LICENSE_NUMBER=42456&amp;P_LTE_ID=741</CredentialReferenceUri>
    </Credential>
</Credentials>
```

The following example illustrates the use of rating Credentials element. It describes the credential of member of ASCE:

```xml
<?xml version="1.0" encoding="utf-8"?>
<Credentials xmlns="..." ...>
    <Credential Type="Membership">
        ...<IssuerName languageID="EN">American Society of Civil Engineers</IssuerName>
        ...<CredentialClass languageID="EN">MEMBER</CredentialClass>
        ...<License languageID="EN">0123456789</License>
        ...<CredentialDate>
            <ExpirationDate>2022-03-31</ExpirationDate>
        </CredentialDate>
        ...<CredentialReferenceUri>http://www.asce.org/membership</CredentialReferenceUri>
    </Credential>
</Credentials>
```
The following example illustrates the use of rating Credentials element. It describes the credential of Association type issued by Better Business Bureau, Inc.:

```xml
<?xml version="1.0" encoding="utf-8"?>
<Credentials xmlns="..." ...>
    <Credential Type="Association">
        <CredentialIssuer>
            <IssuerName languageID="EN">Better Business Bureau, Inc.</IssuerName>
            <IssuerUri>http://goldengate.bbb.org/</IssuerUri>
        </CredentialIssuer>
        <CredentialClass languageID="EN">3</CredentialClass>
        <CredentialReferenceUri>http://www.res99.com/hotel/10021453-102008020.html?ses=1e65c27bad8e92b07a39070f3d0f87</CredentialReferenceUri>
    </Credential>
</Credentials>
```
5 Rating Examples

5.1 Service Rating with an Engineering Service

The following example illustrates a Business Rating result of a civil engineering service. The service provider has the following rating and credentials for a service:

1. The service is classified as A+ by BBB (Better Business Bureau, Inc.), as of May 8th, 2009.
2. The service provider holds a civil engineer’s professional license as one of credentials, which is issued by California Board for Professional Engineers and Land Surveyors. This license expiration date is December 31st, 2010.
3. In additional, the service provider is a member of ASCE (American Society of Civil Engineers since August 13th, 1987. This membership expiration date is December 31st, 2010.

The following example illustrates the whole Rating document for above ratings:

```xml
<ArrayOfRating>
  <Rating Type="BBB">
    <RatingIssuer>
      <IssuerName languageID="EN">Better Business Bureau, Inc.</IssuerName>
      <IssuerUri>http://www.bbb.org/business-reviews/ratings/</IssuerUri>
    </IssuerIssuer>
    <RatingDescription languageID="EN">A+</RatingDescription>
    <RatingDate>2009-05-08</RatingDate>
    <RatingReferenceUri>
  </Rating>
  <Credentials>
    <Credential Type="License">
      <CredentialIssuer>
        <IssuerName languageID="EN">California Board For Professional Engineers And Land Surveyors</IssuerName>
        <IssuerUri>http://www.pels.ca.gov/</IssuerUri>
      </CredentialIssuer>
      <CredentialClass languageID="EN">CIVIL ENGINEER</CredentialClass>
      <License languageID="EN">42456</License>
      <CredentialDate>
        <ExpirationDate>2010-12-31</ExpirationDate>
      </CredentialDate>
      <CredentialReferenceUri>
        http://www2.dca.ca.gov/pls/wllpub/WLLQRYNA$LCEV2.QueryView?P_LICENSE_NUMBER=42456&amp;P_LTE_ID=741</CredentialReferenceUri>
    </Credential>
    <Credential Type="Membership">
      <CredentialIssuer>
        <IssuerName languageID="EN">American Society of Civil Engineers</IssuerName>
        <IssuerUri>http://www.asce.org/</IssuerUri>
      </CredentialIssuer>
      <CredentialClass languageID="EN">Member</CredentialClass>
    </Credential>
  </Credentials>
</ArrayOfRating>
```
5.2 Service Rating for Gas-Meters Product

This Rating example illustrates the ratings and credentials for gas-meters produced by a fictitious Hangzhou Innover Technology Co. Ltd.

The Rating message has the following contents:

1) Credit rating on this provider is 980.1, rated by 51Honest.org (http://www.51Honest.org), a third-party organization in China

2) License on gas-meter production is issued in December, 1997, by a department in government that is Zhejiang Bureau of Quality and Technical Supervision in the China (http://www.zjbts.gov.cn/).

3) Certificate on gas-meter product is certificated as the first Dual-Explosion-Proof Certificate in November 1997, Certificate is issued by a third-party organization, National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI) in Shanghai, China (http://www.sipai.com/sitiias/nepsi.asp)

```xml
<BRating xmlns="...">
  <ListOfRating>
    <Rating Type="Credit">
      <RatingIssuer>
        <IssuerName languageID="zh-CN">信星计划 51Honest.org</IssuerName>
        <IssuerUri>http://www.51Honest.org</IssuerUri>
      </RatingIssuer>
      <RatingNumeric>980.1</RatingNumeric>
      <RatingDate>2009-04-31</RatingDate>
    </Rating>
  </ListOfRating>
  <Credentials>
    <Credential Type="License">
      <CredentialIssuer>
        <IssuerName languageID="zh-CN">浙江省质量技术监督局</IssuerName>
        <IssuerUri>http://www.zjbts.gov.cn</IssuerUri>
      </CredentialIssuer>
      <License languageID="en-us">ZJHJDJ-JL1997120001</License>
      <CredentialDate>
        <DateIssued>1997-12-01</DateIssued>
      </CredentialDate>
    </Credential>
  </Credentials>
  <Credential Type="Certification">
    <CredentialIssuer>
      <IssuerName languageID="en">National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation in Shanghai</IssuerName>
      <IssuerUri>http://www.sipai.com/sitiias/nepsi.asp</IssuerUri>
    </CredentialIssuer>
    <CredentialClass languageID="en">The first Dual-Explosion-Proof Certificate</CredentialClass>
    <License languageID="en-us">NEPSI-FB1997110001</License>
    <CredentialDate>
      <DateIssued>1997-11-01</DateIssued>
    </CredentialDate>
  </Credential>
</BRating>
```
(36)   </Credential>
(37)   </Credentials>
(38)   </BRating>
6 Conformance

An implementation conforms to this specification if it satisfies all of the MUST or REQUIRED level requirements defined within this specification. A SOAP Node MUST NOT use the XML namespace identifier for this specification (listed in Section 1.1) within SOAP Envelopes unless it is compliant with this specification.

This specification references a number of other specifications (listed in Section 1.4.2). In order to comply with this specification, an implementation MUST implement the portions of referenced specifications necessary to comply with the required provisions of this specification. Additionally, the implementation of the portions of the referenced specifications that are specifically cited in this specification MUST comply with the rules for those portions as established in the referenced specification.

Normative text within this specification takes precedence over normative outlines (as described in section 1.4.1), which in turn take precedence over the XML Schema [XML Schema Part 1, Part 2] and WSDL [WSDL 1.1] descriptions. That is, the normative text in this specification further constrains the schemas and/or WSDL that are part of this specification; and this specification contains further constraints on the elements defined in referenced schemas.

The minimum set of information exchange for Business Rating that would allow conforming applications to exchange information and satisfy the conformance should have either

```
<BRating xmlns="http://docs.oasis-open.org/ns/soa-eerp/rt/200903">
  <ListOfRating>
    <Rating>
      <RatingIssuer>
        <IssuerUri>http://www.sample-rating-issuer.org</IssuerUri>
      </RatingIssuer>
    </Rating>
  </ListOfRating>
</BRating>
```

Or like this:

```
<BRating xmlns="http://docs.oasis-open.org/ns/soa-eerp/rt/200903">
  <Credentials>
    <Credential>
      <CredentialIssuer>
        <IssuerUri>http://www.sample-cred-issuer.com</IssuerUri>
      </CredentialIssuer>
    </Credential>
  </Credentials>
</BRating>
```

This specification defines a number of extensions; compliant services are NOT REQUIRED to implement those extensions defined in this specification. However, if a service implements an aspect of the specification, it MUST comply with the requirements specified (e.g. related "MUST" statements). If an implementation silently ignore unrecognized attributes where any attribute is allowed, or silently ignore
unrecognized elements where any element is allowed, should be considered as interoperable implementation.
A. Acknowledgements

The following individuals have participated in the creation of this specification and are gratefully acknowledged:

Participants:

- Rex Brooks (Individual)
- Szu Chang (Changfeng Open Standards Platform Software Alliance)
- William Cox (Individual)
- Andy Lee (Changfeng Open Standards Platform Software Alliance)
- Carl Mattocks (Individual)
- James Zhili Zhang (TIBCO Software Inc.)
- Hong Zhou (Changfeng Open Standards Platform Software Alliance)
B. XML Schema for Business Rating

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!-
Document Type: EERP-Rating CD03
Create On: 01/06/2010
-->
<!-- ===== xsd:schema Element With Namespaces Declarations ===== -->
<!-- ===== Copyright Notice ===== -->
<!-- OASIS takes no position regarding the validity or scope of any
intellectual property or other rights that might be claimed to pertain
to the implementation or use of the technology described in this
document or the extent to which any license under such rights
might or might not be available; neither does it represent that it has
made any effort to identify any such rights. Information on OASIS's
procedures with respect to rights in OASIS specifications can be
found at the OASIS website. Copies of claims of rights made
available for publication and any assurances of licenses to be made
available, or the result of an attempt made to obtain a general
license or permission for the use of such proprietary rights by
implementors or users of this specification, can be obtained from
the OASIS Executive Director.

OASIS invites any interested party to bring to its attention any
copyrights, patents or patent applications, or other proprietary
rights which may cover technology that may be required to
implement this specification. Please address the information to the
OASIS Executive Director.

Copyright (C) OASIS Open 2008-2010. All Rights Reserved.

This document and translations of it may be copied and furnished to
others, and derivative works that comment on or otherwise explain
it or assist in its implementation may be prepared, copied,
published and distributed, in whole or in part, without restriction of
any kind, provided that the above copyright notice and this
paragraph are included on all such copies and derivative works.
However, this document itself may not be modified in any way,
such as by removing the copyright notice or references to OASIS,
except as needed for the purpose of developing OASIS
 specifications, in which case the procedures for copyrights defined
in the OASIS Intellectual Property Rights document must be
followed, or as required to translate it into languages other than
English.

The limited permissions granted above are perpetual and will not be
revoked by OASIS or its successors or assigns.

This document and the information contained herein is provided on
an "AS IS" basis and OASIS DISCLAIMS ALL WARRANTIES,
EXpress OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY
WARRANTY THAT THE USE OF THE INFORMATION HERIN
WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED
WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A
PARTICULAR PURPOSE.
-->
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns="http://docs.oasis-open.org/ns/soa-eerp/rt/200903"
xmlns:eerp="http://docs.oasis-open.org/ns/soa-eerp/rt/200903"
xmlns:udt="urn:un:unece:uncefact:data:specification:UnqualifiedDataTypesSchemaModule:2"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:rt="http://docs.oasis-open.org/ns/soa-eerp/rt/200903"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
targetNamespace="http://docs.oasis-open.org/ns/soa-eerp/rt/200903"
elementFormDefault="qualified" attributeFormDefault="unqualified" version="1.0">
<!----- Imports ------ -->
schemaLocation="http://docs.oasis-open.org/ubl/os-UBL-2.0/xsd/common/UBL-CommonBasicComponents-2.0.xsd"/>
</xsd:schema>
```
<xsd:import
namespace="urn:un:unece:uncefact:data:specification:UnqualifiedDataTypesSchemaModule:2"
schemaLocation="http://docs.oasis-open.org/ubl/os-UBL-2.0/xsd/common/UnqualifiedDataTypeSchemaModule-2.0.xsd"/>

<!-- ===== Root Element ===== -->
<xsd:element name="BRating" type="BRatingType">
  <xsd:annotation>
    <xsd:documentation>The BRating is the root element of Business Rating for EERP which is for
business reliability and reputation of the service and its services provider. It has both
ListOfRating and Credentials elements which are indicators to represent for business reliability
and reputation of the service and its services provider. </xsd:documentation>
  </xsd:annotation>
</xsd:element>

<!-- ===== Element Declarations ===== -->
<xsd:element name="Credential" type="CredentialType">
  <xsd:annotation>
    <xsd:documentation>The Credential element is for each credential, certification,
affiliation or association that the service provider has for the service. </xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="CredentialClass" type="CredentialClassType">
  <xsd:annotation>
    <xsd:documentation>CredentialClass element is the classification of the credential such as
five-stars, or golden member. </xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="CredentialDate" type="CredentialDateType">
  <xsd:annotation>
    <xsd:documentation>CredentialDate element is the date on this credential, including date
when this credential, license or certificate is issued and the expiration date for this license
or membership. </xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="CredentialIssuer" type="IssuerType">
  <xsd:annotation>
    <xsd:documentation>Name of affiliations or associations</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="Credentials" type="CredentialsType">
  <xsd:annotation>
    <xsd:documentation>The Rating Credentials element for EERP-Rating, describes the
credentials held by the service provider with respect to a specific service.
Credentials may be issued with respect to a service provider and service by third-party
organizations, such as licenses, permissions, certifications, awards, associations, and
affiliations. </xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="DateIssued" type="DateIssuedType">
  <xsd:annotation>
    <xsd:documentation>The date when this credential, license or certificate was
issued</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="ExpirationDate" type="ExpirationDateType">
  <xsd:annotation>
    <xsd:documentation>Expiration date for this license or membership</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="IssuerName" type="IssuerNameType">
  <xsd:annotation>
    <xsd:documentation>Name for the issuing organization for the rating or
credential</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="IssuerUri" type="RatingUriType">
  <xsd:annotation>
    <xsd:documentation>the URI that represent the issuer organization. </xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="License" type="LicenseType">
  <xsd:annotation>
    <xsd:documentation>License number </xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:annotation>
  <xsd:documentation>The ListOfRating element contains the list of Rating issued by a third
  party rating organization. Each Rating element in the ListOfRating has one of the two elements to
  represent the rating measurement of the given business service: 1) - an aggregated number, in
  RatingNumeric element. 2) - an aggregated classification description, in RatingDescription
  element </xsd:documentation>
</xsd:annotation>

<xsd:element name="ListofRating" type="ListofRatingType">
  <xsd:annotation>
    <xsd:documentation>The ListOfRating element contains the list of Rating issued by a third
    party rating organization. Each Rating element in the ListOfRating has one of the two elements to
    represent the rating measurement of the given business service. The rating measurement is issued by a third party rating organization. </xsd:documentation>
  </xsd:annotation>
  <xsd:element name="Rating" type="RatingType">
    <xsd:annotation>
      <xsd:documentation>The Rating element represents a rating measurement of the given business
      service. The rating measurement can be represented in String format, such as Good, Fair, Average, etc. </xsd:documentation>
    </xsd:annotation>
    <xsd:element name="RatingDescription" type="RatingDescriptionType">
      <xsd:annotation>
        <xsd:documentation>Rating description for the rating where the rating can be represented in String format, such as Good, Fair, Average, etc. </xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="RatingDate" type="RatingDateType">
      <xsd:annotation>
        <xsd:documentation>Date when this Rating is obtained </xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="RatingIssuer" type="IssuerType">
      <xsd:annotation>
        <xsd:documentation>Issuing organization for this quality/rating, including the issuer name
        and the URI that represent this rating issuer organization </xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="RatingNumeric" type="RatingNumericType">
      <xsd:annotation>
        <xsd:documentation>Rating numeric number </xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="RatingReferenceUri" type="RatingUriType">
      <xsd:annotation>
        <xsd:documentation>Web page URL or other URI for this rating to reference
        to. </xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:element>
</xsd:annotation>

<!-- Extension -->
<xsd:element name="Extension">
  <xsd:complexType mixed="true">
    <xsd:choice minOccurs="0" maxOccurs="unbounded">
      <xsd:any processContents="skip" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:choice>
    <xsd:attribute name="optional" type="xsd:boolean" use="optional" default="true"/>
  </xsd:complexType>
</xsd:element>

<!-- ===== Type Definitions ===== -->
<xsd:complexType name="CredentialClassType">
  <xsd:annotation>
    <xsd:documentation>Complex type for membership classification </xsd:documentation>
  </xsd:annotation>
  <xsd:simpleContent>
    <xsd:extension base="cbc:NameType">
      <xsd:anyAttribute namespace="##any" processContents="lax"/>
    </xsd:extension>
  </xsd:simpleContent>
</xsd:complexType>

<xsd:complexType name="CredentialDateType">
  <xsd:annotation>
    <xsd:documentation>Complex type for the date on this credential </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="DateIssued" minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>
The date when this credential, license or certificate is issued.

Expiration date for this Rating, license or membership.

The Credential element is for each credential, certification, affiliation or association that the service provider has for the service. This is a required element for the Credentials element.

Issuing organization for this credential, such as the name of certification, association, affiliation or credential, such as AAA, BBB, or State of California, including the issuer name and the URI that represent this rating issuer organization.

CredentialClass element is the classification of the credential such as five-stars, or golden member. It is an optional element for the Credential.

License element, the license number or membership number of the credential, is an optional element for the Credential element.

CredentialReferenceUri element, Web page URL or other URI for this credential reference, is an optional element for Credential.

The complex type of the date when this certificate or license is issued.

Complex type for one credential or association.

Issuer for this credential or association that the service provider has for the service. This is a required element for the Credentials element.
<xsd:complexType name="BRatingType">
  <xsd:annotation>
    <xsd:documentation>Complex type for the EERP-Rating</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="ListOfRating" minOccurs="0">
      <xsd:annotation>
        <xsd:documentation>ListOfRating element is for the rating aspect of service which is provided by third party and measured in terms of rates for the service. Each Rating element in the ListOfRating element is issued by a rating organization that has either an aggregated numeric number or an aggregated classification description to represent the rating measurement of the given business service.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element ref="Credentials" minOccurs="0">
      <xsd:annotation>
        <xsd:documentation>Credentials element is for the rating aspect of service which is measured in terms of credentials for the service that the service provider owns or holds. Credentials are issued by organizations for the service, such as licenses, permissions, certifications, associations, affiliations, etc. Each credential element in the Credentials element is a non-aggregated indicator for the rating measurement of the given business service, and it does not provide an aggregated value for the measurement.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element ref="Extension" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
  <xsd:anyAttribute namespace="##any" processContents="lax"/>
</xsd:complexType>

<xsd:complexType name="ExpirationDateType">
  <xsd:annotation>
    <xsd:documentation>Complex type of expiration date</xsd:documentation>
  </xsd:annotation>
  <xsd:simpleContent>
    <xsd:extension base="cbc:ExpiryDateType">
      <xsd:anyAttribute namespace="##any" processContents="lax"/>
    </xsd:extension>
  </xsd:simpleContent>
</xsd:complexType>

<xsd:complexType name="IssuerNameType">
  <xsd:annotation>
    <xsd:documentation>Complex type for the Rating issuer name</xsd:documentation>
  </xsd:annotation>
  <xsd:simpleContent>
    <xsd:extension base="cbc:NameType"/>
  </xsd:simpleContent>
</xsd:complexType>

<xsd:complexType name="IssuerType">
  <xsd:annotation>
    <xsd:documentation>Complex type for issuing organization, including the issuer name and the URI that represent this rating issuer organization.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="IssuerName" minOccurs="0">
      <xsd:annotation>
        <xsd:documentation>Name for the issuing organization for this rating or credential</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element ref="IssuerUri">
      <xsd:annotation>
        <xsd:documentation>The URI that represent the issuer organization.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
  <xsd:anyAttribute namespace="##any" processContents="lax"/>
</xsd:complexType>

<xsd:complexType name="LicenseType">
  <xsd:annotation>
    <xsd:documentation>Complex type for the rating aspect of service which is measured in terms of licenses for the service that the service provider owns or holds. Licenses are issued by organizations for the service, such as software, trademarks, patents, etc. Each license element in the Licenses element is a non-aggregated indicator for the rating measurement of the given business service, and it does not provide an aggregated value for the measurement.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="Extension" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
  <xsd:anyAttribute namespace="##any" processContents="lax"/>
</xsd:complexType>
<xsd:documentation>Complex type for the license number or membership number</xsd:documentation>
</xsd:annotation>
<xsd:simpleContent>
<xsd:extension base="cbc:NameType">
<xsd:anyAttribute namespace="##any" processContents="lax"/>
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>

<xsd:complexType name="ListOfRatingType">
<xsd:annotation>
<xsd:documentation>Complex type for ListOfRating</xsd:documentation>
</xsd:annotation>
<xsd:sequence>
<xsd:element ref="Rating" maxOccurs="unbounded">
<xsd:annotation>
<xsd:documentation>The Rating element represents a rating measurement of the given business service. The rating measurement is issued by a third party rating organization.</xsd:documentation>
</xsd:annotation>
</xsd:element>
</xsd:sequence>
<xsd:anyAttribute namespace="##any" processContents="lax"/>
</xsd:complexType>

<xsd:complexType name="RatingDescriptionType">
<xsd:annotation>
<xsd:documentation>Complex type for the description of the Rating</xsd:documentation>
</xsd:annotation>
<xsd:simpleContent>
<xsd:extension base="cbc:NameType">
<xsd:anyAttribute namespace="##any" processContents="lax"/>
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>

<xsd:complexType name="RatingDateType">
<xsd:annotation>
<xsd:documentation>Complex type of the date when this Rating is obtained</xsd:documentation>
</xsd:annotation>
<xsd:simpleContent>
<xsd:extension base="cbc:ExpiryDateType">
<xsd:attribute name="Expired" type="xsd:boolean" use="optional" default="false"/>
<xsd:anyAttribute namespace="##any" processContents="lax"/>
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>

<xsd:complexType name="RatingNumericType">
<xsd:annotation>
<xsd:documentation>Complex type of Rating's value number</xsd:documentation>
</xsd:annotation>
<xsd:simpleContent>
<xsd:extension base="udt:NumericType">
<xsd:anyAttribute namespace="##any" processContents="lax"/>
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>

<xsd:complexType name="RatingType">
<xsd:annotation>
<xsd:documentation>Complex type for Rating for EERP Rating</xsd:documentation>
</xsd:annotation>
<xsd:sequence>
<xsd:element ref="RatingIssuer">
<xsd:annotation>
<xsd:documentation>Issuing organization for this rating, including the issuer name and the URI that represent this rating issuer organization.</xsd:documentation>
</xsd:annotation>
</xsd:element>

<xsd:element ref="RatingDescription" minOccurs="0">
<xsd:annotation>
<xsd:documentation>Rating description for the rating where the rating can be represented in String format, such as Good, Fair, Average, etc. It is an optional element for Rating.</xsd:documentation>
</xsd:annotation>
</xsd:element>
</xsd:sequence>
<xsd:anyAttribute namespace="##any" processContents="lax"/>
</xsd:complexType>
<xsd:element name="Rating" minOccurs="0">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="RatingNumeric" minOccurs="0"/>
      <xsd:element ref="RatingDate" minOccurs="0"/>
      <xsd:element ref="RatingReferenceUri" minOccurs="0"/>
    </xsd:sequence>
    <xsd:attribute name="Type" type="CrendtialTypeEnum" use="optional"/>
    <xsd:attribute anyAttribute namespace="##other" processContents="lax"/>
  </xsd:complexType>
</xsd:element>

<xsd:element name="RatingUriType">
  <xsd:simpleContent>
    <xsd:extension base="xsd:anyURI">
      <xsd:anyAttribute namespace="##any" processContents="lax"/>
    </xsd:extension>
  </xsd:simpleContent>
</xsd:element>

<xsd:simpleType name="CrendtialTypeEnum">
  <xsd:annotation>
    <xsd:documentation>Crendtial Type enumeration</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Affiliation"/>
    <xsd:enumeration value="Association"/>
    <xsd:enumeration value="Award"/>
    <xsd:enumeration value="Certification"/>
    <xsd:enumeration value="License"/>
    <xsd:enumeration value="Membership"/>
    <xsd:enumeration value="Permission"/>
    <xsd:enumeration value="Others"/>
  </xsd:restriction>
</xsd:simpleType>
C. Non-Normative Text

None
### D. Revision History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Editor</th>
<th>Changes Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.9</td>
<td>03/17/2009</td>
<td>Szu Chang</td>
<td>Initial draft</td>
</tr>
<tr>
<td>WD01</td>
<td>04/23/2009</td>
<td>Szu Chang</td>
<td>Renamed draft 0.9 to working draft 01 (WD01)</td>
</tr>
<tr>
<td>WD02</td>
<td>05/09/2009</td>
<td>Szu Chang</td>
<td>Fixed Issue #I007, I008 and I009, and get ready for Committee Draft CD01</td>
</tr>
<tr>
<td>WD03</td>
<td>05/17/2009</td>
<td>Szu Chang</td>
<td>Added conformance section</td>
</tr>
<tr>
<td>WD04</td>
<td>06/08/2009</td>
<td>Szu Chang</td>
<td>Fixed Issue #I018</td>
</tr>
<tr>
<td>WD05</td>
<td>06/12/2009</td>
<td>Szu Chang</td>
<td>Fixed Issue #I018 that changed BusinessRating to BRating</td>
</tr>
<tr>
<td>WD07</td>
<td>07/03/2009</td>
<td>Szu Chang</td>
<td>Fixed Issue #I027, I034, I050, and I054.</td>
</tr>
<tr>
<td>CD02</td>
<td>07/11/2009</td>
<td>Szu Chang</td>
<td>Changed WD07 to CD02 after approved by TC</td>
</tr>
<tr>
<td>CD03</td>
<td>01/06/2010</td>
<td>Szu Chang</td>
<td>Changed NS and fixed URIs from CD02 to CD03</td>
</tr>
</tbody>
</table>