



# Table of Contents

31 [1 Introduction](#) ..... 3

32 [1.1 Goals and Requirements](#) ..... 3

33 [1.1.1 Requirements](#)..... 3

34 [1.1.2 Non-Goals](#)..... 3

35 [1.2 Terminology](#)..... 3

36 [1.3 Namespaces](#) ..... 4

37 [1.4 Fault Definition](#) ..... 4

38 [2 Base Fault Type](#)..... 5

39 [2.1 Example SOAP 1.1 Encoding of a Base Fault](#)..... 6

40 [2.2 Example SOAP 1.2 Encoding of a Base Fault](#)..... 6

41 [3 Use of Base Faults in WSDL 1.1](#) ..... 6

42 [4 Security Considerations](#)..... 6

43 [5 References](#)..... 6

44 [5.1 Normative References](#) ..... 6

45 [5.2 Non-Normative References](#)..... 6

46 [Appendix A. Acknowledgments](#)..... 6

47 [Appendix A. Revision History](#) ..... 6

48 [Appendix B. Notices](#) ..... 6

49 [Appendix B. XML Schema](#)..... 6

50 [Appendix B. WSDL 1.1](#)..... 6

51 [v](#).....

**Deleted:** 1 . Introduction . 3¶  
 1.1 Goals and Requirements . 3¶  
 1.1.1 Requirements . 3¶  
 1.1.2 Non-Goals . 3¶  
 1.2 Terminology . 3¶  
 1.3 Namespaces . 4¶  
 1.4 Fault Definition . 4¶  
 2 . Base Fault Type . 5¶  
 2.1 Example SOAP 1.1 Encoding of a Base Fault . 6¶  
 2.2 Example SOAP 1.2 Encoding of a Base Fault . 6¶  
 3 . Use of Base Faults in WSDL 1.1 . 8¶  
 4 . Security Considerations . 10¶  
 5 . References . 11¶  
 5.1 Normative References . 11¶  
 5.2 Non-Normative References . 11¶  
 Appendix A. Acknowledgments . 12¶  
 Appendix B. Revision History . 14¶  
 Appendix C. Notices . 15¶  
 Appendix D. XML Schema . 16¶  
 Appendix E. WSDL 1.1 . 19¶

**Deleted:** wsrf-ws\_base\_faults-1.2-spec-pr-01.

**Deleted:** pdf

**Deleted:** wd

**Deleted:** 9

**Deleted:** 16 September

**Deleted:** 15 September 2005¶

# 52 1 Introduction

53 A designer of a Web services application often uses interfaces defined by others. Managing faults  
54 in such an application is more difficult when each interface uses a different convention for  
55 representing common information in fault messages.

56 Support for problem determination and fault management can be enhanced by specifying Web  
57 services fault messages in a common way. When the information available in faults from various  
58 interfaces is consistent, it is easier for requestors to understand faults. It is also more likely that  
59 common tooling can be created to assist in the handling of faults.

60 WS-BaseFaults defines an XML Schema type for a base fault, along with rules for how this fault  
61 type is used by Web services.

62 WS-BaseFaults is inspired by a portion of the Global Grid Forum's "Open Grid Services  
63 Infrastructure (OGSI) Version 1.0" specification [\[OGSI\]](#).

Field Code Changed

## 64 1.1 Goals and Requirements

65 The goal of WS-BaseFaults is to standardize the terminology, concepts, XML types, and WSDL  
66 usage of a base fault type for Web service interfaces.

### 67 1.1.1 Requirements

68 This specification intends to meet the following requirements:

69 Define a standard XML Schema type containing base fault information.

70 Define how this base fault type is used within WSDL defined interfaces.

### 71 1.1.2 Non-Goals

72 The following topics are outside the scope of this specification:

73 It is not an objective of this specification to define a common hierarchy of common faults upon the  
74 base fault.

## 75 1.2 Terminology

76 The keywords "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD",  
77 "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be  
78 interpreted as described in [RFC2119](#).

79 When describing abstract data models, this specification uses the notational convention used by  
80 the [\[XML-Infoset\]](#). Specifically, abstract property names always appear in square brackets (e.g.,  
81 [some property]).

82 This specification uses a notational convention, referred to as "Pseudo-schemas" in a fashion  
83 similar to the WSDL 2.0 Part 1 specification. A Pseudo-schema uses a BNF-style convention to  
84 describe attributes and elements:

85 `?' denotes optionality (i.e. zero or one occurrences),

86 `\*' denotes zero or more occurrences,

87 `+' one or more occurrences,

88 `[ ]' and `]' are used to form groups.

Field Code Changed

Field Code Changed

Deleted:

Deleted: [WSDL 2.0].

Formatted: Font: Not Italic

Formatted: Font: Not Italic

Deleted: wsrf-ws\_base\_faults-1.2-  
spec-pr-01.

Deleted: pdf

Deleted: wd

Deleted: 9

Deleted: 16 September

Deleted: 15 September 2005

89 `|` represents choice.

90 Attributes are conventionally assigned a value which corresponds to their type, as defined in the  
91 normative schema.

```
92 <!-- sample pseudo-schema -->  
93 <element  
94     required_attribute_of_type_QName="xs:QName"  
95     optional_attribute_of_type_string="xs:string"? >  
96     <required_element />  
97     <optional_element />?  
98     <one_or_more_of_these_elements />+  
99     [ <choice_1 /> | <choice_2 /> ]*  
100 </element>
```

101  
102 Where there is disagreement between the separate XML schema and WSDL files describing the  
103 messages defined by this specification and the normative descriptive text (excluding any pseudo-  
104 schema) in this document, the normative descriptive text will take precedence over the separate  
105 files. The separate files take precedence over any pseudo-schema and over any schema and  
106 WSDL included in the appendices

### 107 1.3 Namespaces

108 The following namespaces are used in this document:

Prefix	Namespace
s11	<a href="http://schemas.xmlsoap.org/soap/envelope/">http://schemas.xmlsoap.org/soap/envelope/</a>
s12	<a href="http://www.w3.org/2003/05/soap-envelope">http://www.w3.org/2003/05/soap-envelope</a>
xsd	<a href="http://www.w3.org/2001/XMLSchema">http://www.w3.org/2001/XMLSchema</a>
xsi	<a href="http://www.w3.org/2001/XMLSchema-instance">http://www.w3.org/2001/XMLSchema-instance</a>
wsrf-bf	<a href="http://docs.oasis-open.org/wsr/bf-2">http://docs.oasis-open.org/wsr/bf-2</a>
wsa	<a href="http://www.w3.org/2005/08/addressing">http://www.w3.org/2005/08/addressing</a>

Field Code Changed

Field Code Changed

### 109 1.4 Fault Definition

110 All faults defined by this specification MUST use the following wsa:Action

111 URI:

112

113 <http://docs.oasis-open.org/wsr/fault>

114

- Deleted: wsrf-ws\_base\_faults-1.2-spec-pr-01.
- Deleted: pdf
- Deleted: wd
- Deleted: 9
- Deleted: 16 September
- Deleted: 15 September 2005

## 2 Base Fault Type

116 The base fault has the following syntax. The normative XML Schema definition is in Appendix D:

```

117 <BaseFault>
118   <Timestamp>xsd:dateTime</Timestamp>
119   <OriginatorReference>
120     wsa:EndpointReferenceType
121   </OriginatorReference> ?
122   <ErrorCode dialect="anyURI">xsd:anyType</ErrorCode> ?
123   <Description>xsd:string</Description> *
124   <FaultCause>{any}</FaultCause> ?
125   {any}*
126 </BaseFault>

```

127 /wsrf-bf:BaseFault/Timestamp

128 This REQUIRED element MUST be the time at which the fault occurred. There MUST be only  
 129 one timestamp element in BaseFault. In the absence of the time zone designation, the  
 130 xsd:dateTime value MUST be interpreted as universal time (UTC) time.

131 /wsrf-bf:BaseFault/OriginatorReference

132 This OPTIONAL element is a WS-Addressing [WS-Addressing] EndpointReference of the Web  
 133 service that generated the fault. This element MAY be omitted if the fault originator is clearly  
 134 implied by the context in which the fault appears (for example in a simple request response  
 135 message exchange). One use of this element is in a situation of nested faults.

Field Code Changed

136 /wsrf-bf:BaseFault/ErrorCode

137 This OPTIONAL element provides convenient support for legacy fault reporting systems (e.g.,  
 138 POSIX errno). The dialect attribute on ErrorCode MUST be a URI that defines the context in  
 139 which the ErrorCode MUST be interpreted. For example, a URI might be defined that describes  
 140 how a POSIX errno is mapped to a ErrorCode and that URI must appear on any ErrorCode  
 141 element carrying a POSIX errno.

142 /wsrf-bf:BaseFault/Description

143 This OPTIONAL element contains a plain language description of the fault. This description is  
 144 expected to be helpful in explaining the fault to users. There MAY be any number of description  
 145 elements.

146 /wsrf-bf:BaseFault/FaultCause

147 This OPTIONAL element, if present, MUST contain a BaseFault or an element whose type  
 148 extends the BaseFaultType that describes an underlying cause of this fault. The ability to include  
 149 a FaultCause element in a fault allows for *chaining* of fault information so that a recipient of a fault  
 150 MAY examine details underlying the cause of the fault.

151 Note that there is no required child element within BaseFault that identifies the particular type (or  
 152 class) of fault. Rather, an application-specific extension of BaseFault MUST be defined for each  
 153 distinct type of fault

154 /wsrf-bf:BaseFault/{any}

155 BaseFault does include open element extensibility for the purpose of allowing generic fault  
 156 processors to validate faults that have extended the BaseFault type.

157 To define an extended fault, you MUST use XML Schema extension to extend the BaseFault type  
 158 to include additional attributes and/or elements.

Deleted: wsrf-ws\_base\_faults-1.2-spec-pr-01.

Deleted: pdf

Deleted: wd

Deleted: 9

Deleted: 16 September

Deleted: 15 September 2005¶

## 2.1 Example SOAP 1.1 Encoding of a Base Fault

160 The WS-Resource [\[WS-Resource\]](#) specification defines the ResourceUnknownFault BaseFault.  
 161 The below shows a non-normative example SOAP 1.1 [\[SOAP 1.1\]](#) encoding of such a fault:

```

162 <s11:Envelope
163     xmlns="http://schemas.xmlsoap.org/soap/envelope/"
164     xmlns:s11="http://schemas.xmlsoap.org/soap/envelope/"
165     xmlns:wsa=" http://www.w3.org/2005/08/addressing"
166     xmlns:wsrf-bf="http://docs.oasis-open.org/wsrfl/bf-2"
167     xmlns:wsrf-r="http://docs.oasis-open.org/wsrfl/r-2">
168   <s11:Header>
169     <wsa:Action>
170       http://docs.oasis-open.org/wsrfl/fault
171     </wsa:Action>
172     ...
173     <!-- other headers elided for clarity -->
174   </s11:Header>
175   <s11:Body>
176     <s11:Fault>
177       <faultcode>s11:Client</faultcode>
178       <faultstring>No such resource exists</faultstring>
179       <faultactor>http://example.org/someactor</faultactor>
180       <detail>
181         <wsrf-r:ResourceUnknownFault>
182           <wsrf-bf:Timestamp>
183             2005-05-04T20:18:44.970Z
184           </wsrf-bf:Timestamp>
185           <wsrf-bf:Description>
186             Resource unknown
187           </wsrf-bf:Description>
188         </wsrf-r:ResourceUnknownFault>
189       </detail>
190     </s11:Fault>
191   </s11:Body>
192 </s11:Envelope>

```

Formatted: Font: Not Bold

Deleted: WS-Resource

Formatted: Font: Not Bold

Deleted: WS-Resource

Formatted: Font: Not Bold

Deleted: SOAP 1.1

Deleted: SOAP 1.1

Deleted: 3

Deleted: 1

Deleted: 1

## 193 | 2.2 Example SOAP 1.2 Encoding of a Base Fault

194 The WS-Resource [\[WS-Resource\]](#) specification defines the ResourceUnknownFault BaseFault.  
 195 The below shows a non-normative example SOAP 1.2 [\[SOAP 1.2\]](#) encoding of such a fault:

```

196 <s12:Envelope
197     xmlns="http://schemas.xmlsoap.org/soap/envelope/"
198     xmlns:s12="http://www.w3.org/2003/05/soap-envelope"
199     xmlns:wsa="http://www.w3.org/2005/08/addressing"
200     xmlns:wsrf-bf="http://docs.oasis-open.org/wsrfl/bf-2"
201     xmlns:wsrf-r="http://docs.oasis-open.org/wsrfl/r-2">
202   <s12:Header>
203     <wsa:Action>
204       http://docs.oasis-open.org/wsrfl/fault
205     </wsa:Action>
206     ...
207     <!-- other headers elided for clarity -->
208   </s12:Header>
209   <s12:Body>

```

Formatted: Font: Not Bold

Deleted: WS-Resource

Formatted: Font: Not Bold

Deleted: WS-Resource

Formatted: Hyperlink

Deleted:

Deleted: 3

Deleted: 1

Deleted: 1

Deleted: wsrf-ws\_base\_faults-1.2-spec-pr-01.

Deleted: pdf

Deleted: wd

Deleted: 9

Deleted: 16 September

Deleted: 15 September 2005

```
210 <s12:Fault>
211   <Code>
212     <Value>s12:Sender</Value>
213   </Code>
214   <Reason>
215     <Text xml:lang="en">No such resource exists</Text>
216   </Reason>
217   <Detail>
218     <wsrf-r:ResourceUnknownFault>
219       <wsrf-bf:Timestamp>
220         2005-05-04T20:18:44.970Z
221       </wsrf-bf:Timestamp>
222       <wsrf-bf:Description>
223         Resource unknown
224       </wsrf-bf:Description>
225     </wsrf-r:ResourceUnknownFault>
226   </Detail>
227 </s12:Fault>
228 </s12:Body>
229 </s12:Envelope>
```

230

- Deleted:** wsrf-ws\_base\_faults-1.2-spec-pr-01.
- Deleted:** pdf
- Deleted:** wd
- Deleted:** 9
- Deleted:** 16 September
- Deleted:** 15 September 2005¶

### 3 Use of Base Faults in WSDL 1.1

Each distinct type of base fault associated with a WSDL [WSDL 1.1] operation SHOULD be listed as a separate fault response in the WSDL operation definition, as follows:

1. As described above, there MUST be a distinct XML Schema complexType that extends wsrf-bf:BaseFaultType, which represents this fault's distinct type. This extended fault complexType MAY contain additional attributes and/or elements.

2. An element MUST be defined for this distinct fault, whose type is the complexType of the distinct fault as defined in step 1.

3. A WSDL message MUST be defined for this distinct fault. This message MUST have one part. The WSDL part MUST have an 'element' attribute and this MUST refer by QName to the element of this distinct fault as defined in step 2.

4. The WSDL operation MUST have a fault element for this distinct fault. The value of the WSDL fault element's name attribute SHOULD be the same as the NCName of the fault element defined in step 2, although it MAY choose to ignore this rule (for example to avoid NCName collisions between fault elements defined in different namespaces). The value of the WSDL fault element's message attribute MUST refer by QName to the WSDL message element of this distinct fault as defined in step 3.

In addition to any operation-specific faults, all WSDL operations MAY also have a WSDL fault element whose name attribute has the value "BaseFault" and whose message element has the value "wsrf-bf:BaseFaultMessage".

The following non-normative example defines a portType named "pt" with a single operation named "op" that has two distinct faults, "hisFault" and "herFault", in addition to a basic "baseFault". The "hisFault" element does not extend "BaseFault" with any additional information (i.e. it just defines a distinct fault type with the base information), while the "herFault" element extends "BaseFault" with an additional details element.

```

256 ...
257 <wsdl:definitions ...>
258   <wsdl:types>
259     <xsd:schema ...>
260       <!-- Type and element declarations for each distinct fault
261 -->
262       <xsd:complexType name="HisFaultType">
263         <xsd:complexContent>
264           <xsd:extension base="wsrf-bf:BaseFaultType"/>
265         </xsd:complexContent>
266       </xsd:complexType>
267       <xsd:element name="hisFault" type="tns:HisFaultType"/>
268
269       <xsd:complexType name="HerFaultType">
270         <xsd:complexContent>
271           <xsd:extension base="wsrf-bf:BaseFaultType">
272             <xsd:sequence>
273               <xsd:element name="details" type="xsd:string"/>
274             </xsd:sequence>
275           </xsd:extension>
276         </xsd:complexContent>
277       </xsd:complexType>
278       <xsd:element name="herFault" type="tns:HerFaultType"/>
279
280     </xsd:schema>
281   </wsdl:types>

```

Deleted: WSDL 1.1

Formatted: Font: Not Bold

Deleted: WSDL 1.1

Formatted: Bullets and Numbering

Comment [bpm1]: WSRF142

Deleted: The value of the WSDL part's name attribute MUST be fault, and the value of its element attribute MUST refer by QName to the element of this distinct fault as defined in step 2.

Comment [bpm2]: WSRF145

Deleted: wsrf-ws\_base\_faults-1.2-spec-pr-01.

Deleted: pdf

Deleted: wd

Deleted: 9

Deleted: 16 September

Deleted: 15 September 2005



```

282
283 <!-- WSDL messages for each distinct fault -->
284 <wsdl:message name="hisFaultMessage">
285   <wsdl:part name="fault" element="tns:hisFault"/>
286 </wsdl:message>
287 <wsdl:message name="herFaultMessage">
288   <wsdl:part name="fault" element="tns:herFault"/>
289 </wsdl:message>
290
291 <wsdl:portType name="pt">
292   <wsdl:operation name="op">
293     <!-- WSDL operation fault elements for each distinct fault
294 -->
295     <wsdl:input ... />
296     <wsdl:output ... />
297     <wsdl:fault name="hisFault"
298       message="tns:hisFaultMessage"/>
299     <wsdl:fault name="herFault"
300       message="tns:herFaultMessage"/>
301     <wsdl:fault name="BaseFault"
302       message="wsrf-bf:BaseFaultMessage"/>
303   </wsdl:operation>
304 </wsdl:portType>
305 </wsdl:definitions>

```

306

307 A Web service MAY return a more refined fault in place of a particular fault that is defined by a  
308 WSDL operation. To do so, a complexType MUST be defined that extends one of the faults found  
309 in the WSDL operation. The fault message that is returned by the service MUST then use the  
310 element of the fault from which the more refined fault is derived with an xsi:type attribute whose  
311 value is the QName of the complexType for the more refined fault.

312 For example, if an implementation of the "pt" example above wants to return a more refined  
313 version hisFault for the "op" operation, it must define a complexType of hisFault such as:

```

314 ... targetNamespace="http://example.com/ExtendedFaults" ...
315
316 <xsd:complexType name="ExtendedHisFaultType">
317   <xsd:complexContent>
318     <xsd:extension base="tns:HisFaultType">
319       <xsd:sequence>
320         <xsd:element name="otherDetails"
321           type="xsd:string"/>
322       </xsd:sequence>
323     </xsd:extension>
324   </xsd:complexContent>
325 </xsd:complexType>

```

326 This example service can then return a fault message for the "op" operation such as:

```

327 <hisFault
328   xmlns:ef="http://example.com/ExtendedFaults"
329   xsi:type="ef:ExtendedHisFaultType">
330   <timeStamp>...</timeStamp>
331   ...
332   <otherDetails>...</otherDetails>
333 </hisFault>

```

**Deleted:** wsrf-ws\_base\_faults-1.2-spec-pr-01.

**Deleted:** pdf

**Deleted:** wd

**Deleted:** 9

**Deleted:** 16 September

**Deleted:** 15 September 2005

## 4 Security Considerations

335 Fault messages may contain sensitive information. Policies should be defined such that such  
 336 sensitive content of fault messages are appropriately protected. For example, the security policy  
 337 can be specified to require that the sensitive content be encrypted based on WS-Security [WS-  
 338 [Security](#)]. Depending on the context in which the fault occurred, it may also be desirable that  
 339 the integrity of the message be ensured. In such cases, the security policy can reflect this by  
 340 specifying the need to digitally sign the resulting fault messages based on the WS-Security  
 341 specification.

**Deleted:** Error! Reference source not found.  
**Deleted:** Error! Reference source not found.  
 WS-Security

- Deleted:** wsrf-ws\_base\_faults-1.2-spec-pr-01.
- Deleted:** pdf
- Deleted:** wd
- Deleted:** 9
- Deleted:** 16 September
- Deleted:** 15 September 2005

342 **5 References**

343 **5.1 Normative References**

344 **[RFC2119]**  
345 [S. Bradner, \*Key words for use in RFCs to Indicate Requirement\*](#)  
346 [1650 Levels](#), <http://www.ietf.org/rfc/rfc2119.txt>, IETF RFC 2119, March  
347 [1651 1997](#).

← --- Formatted: Indent: Left: 0.5"

349 **[WSDL 1.1]**  
350 <http://www.w3.org/TR/wsdl>

352 **[XML-Infoset]**  
353 <http://www.w3.org/TR/xml-infoset/>

355 **[XML]**  
356 <http://www.w3.org/TR/REC-xml>

357 **5.2 Non-Normative References**

358 **[OGSI]**  
359 <http://www.gridforum.org/documents/GFD.15.pdf>

Field Code Changed

361 **[SOAP 1.1]**  
362 <http://www.w3.org/TR/2000/NOTE-SOAP-20000508/>

364 **[SOAP 1.2]**  
365 <http://www.w3.org/TR/2003/REC-soap12-part1-20030624/>

367 **[WS-Addressing]**  
368 <http://www.w3.org/TR/ws-addr-core/>

Field Code Changed

370 **[WS-I Basic Profile 1.1]**  
371 <http://www.ws-i.org/Profiles/BasicProfile-1.1-2004-08-24.html>

373 **[WS-Resource]**  
374 [http://docs.oasis-open.org/wsr/wsr/ws\\_resource-1.2-spec-pr-02.pdf](http://docs.oasis-open.org/wsr/wsr/ws_resource-1.2-spec-pr-02.pdf)

Field Code Changed

376 **[WS-Security]**  
377 <http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-soap-message-security-1.0.pdf>

Deleted: wsrf-ws\_base\_faults-1.2-spec-pr-01.

Deleted: pdf

Deleted: wd

Deleted: 9

Deleted: 16 September

Deleted: 15 September 2005

## Appendix A. Acknowledgments

381 Special thanks to the Global Grid Forum's Open Grid Services Infrastructure working group,  
382 which defined the OGSi v1.0 [OGSI] specification which was a large inspiration for the ideas  
383 expressed in this specification.

384 The following individuals were members of the committee during the development of this  
385 specification:

386 Mario Antonioletti (EPCC, The University of Edinburgh), Akhil Arora (Sun Microsystems), Tim  
387 Banks (IBM), Jeff Bohren (OpenNetwork), Fred Carter (AmberPoint), Martin Chapman (Oracle),  
388 Glen Daniels (Sonic Software), David De Roure (University of Southampton), Thomas Freund  
389 (IBM), John Fuller (Individual), Stephen Graham (IBM), Anish Karmarkar (Oracle), Hideharu Kato  
390 (Hitachi), David Levine (IBM), Paul Lipton (Computer Associates), Mark Little (Arjuna  
391 Technologies Limited), Lily Liu (WebMethods, Inc.), Tom Maguire (IBM), Susan Malaika (IBM),  
392 Mark Mc Keown (University of Manchester), David Martin (IBM), Samuel Meder (Argonne  
393 National Laboratory), Jeff Mischkinsky (Oracle), Roger Menday (Forschungszentrum Jülich  
394 GmbH), Bryan Murray (Hewlett-Packard), Mark Peel (Novell), Alain Regnier (Ricoh Company,  
395 Ltd.), Ian Robinson (IBM), Tom Rutt (Fujitsu), Mitsunori Satomi (Hitachi), Igor Sedukhin  
396 (Computer Associates), Hitoshi Sekine (Ricoh Company, Ltd.), Frank Siebenlist (Argonne  
397 National Laboratory), Alex Sim (Lawrence Berkeley National Laboratory), David Snelling (Fujitsu),  
398 Latha Srinivasan (Hewlett-Packard), Rich Thompson (IBM), Jem Treadwell (Hewlett-Packard),  
399 Steve Tuecke (Argonne National Laboratory), William Vambenepe (Hewlett-Packard), Katy Warr  
400 (IBM), Alan Weissberger (NEC Corporation), Pete Wenzel (SeeBeyond Technology Corporation),  
401 Kirk Wilson (Computer Associates) and Umit Yalcinalp (SAP).

402

Deleted: .....

Deleted: wsrf-ws\_base\_faults-1.2-spec-pr-01.

Deleted: pdf

Deleted: wd

Deleted: 9

Deleted: 16 September

Deleted: 15 September 2005

## Appendix B. Revision History

Rev	Date	By Whom	What
wd-01	2004-06-02	Lily Liu, Sam Meder	Initial version created from submission by contributing companies. Minor modifications made to reflect OASIS formatting.
wd-02	2004-06-10	Sam Meder	Consistency fixes from Ian Robinson Updated namespaces Cleaned up the references
wd-02	2004-06-28	Lily Liu	Namespace fixes in xsd and wsdl and minor format changes in the requirement section.
wd-02	2004-06-30	Sam Meder	Inserted updated schema and wsdl – adds elementFormDefault="qualified" attributeFormDefault="unqualified" attributes to schema declarations.
wd-03	2004-11-11	Lily Liu	Issue resolutions from October F2F: WSRF43 Updated the status section Updated document identifier, location and namespaces <ul style="list-style-type: none"> <li>Changed doc identifier to "Summary Info Title"</li> </ul>
wd-04	2005-02-17	Lily Liu	Issue resolutions from Jan F2F, 2005: Updated draft number and namespaces <ul style="list-style-type: none"> <li>Applied resolutions to issues 62, 81, 90, and 96.</li> </ul>
wd-05	2005-05-17	Sam Meder	Updated draft number and namespaces <ul style="list-style-type: none"> <li>Applied resolutions to issues 92, 99, 100, 106, 109, 110, 114</li> </ul>
pr-01	2005-06-13	Sam Meder	Changed status to PR
<a href="#">wd-07</a>	<a href="#">2005-09-15</a>	<a href="#">Bryan Murray</a>	<a href="#">Address Public Review comments</a> <ul style="list-style-type: none"> <li><a href="#">Apply resolutions for issues 124, 141, 110, 142, 145</a></li> </ul>
<a href="#">wd-08</a>	<a href="#">2005-09-16</a>	<a href="#">Bryan Murray</a>	<a href="#">Correct link to WS-Addressing spec</a>
<a href="#">wd-09</a>	<a href="#">2005-09-16</a>	<a href="#">Bryan Murray</a>	<a href="#">Move WS-I reference to non-normative</a>

**Formatted:** Bullets and Numbering

**Deleted:** wsrf-ws\_base\_faults-1.2-spec-pr-01.

**Deleted:** pdf

**Deleted:** wd

**Deleted:** 9

**Deleted:** 16 September

**Deleted:** 15 September 2005

404 **Appendix C. Notices**

405 OASIS takes no position regarding the validity or scope of any intellectual property or other rights  
406 that might be claimed to pertain to the implementation or use of the technology described in this  
407 document or the extent to which any license under such rights might or might not be available;  
408 neither does it represent that it has made any effort to identify any such rights. Information on  
409 OASIS's procedures with respect to rights in OASIS specifications can be found at the OASIS  
410 website. Copies of claims of rights made available for publication and any assurances of licenses  
411 to be made available, or the result of an attempt made to obtain a general license or permission  
412 for the use of such proprietary rights by implementers or users of this specification, can be  
413 obtained from the OASIS Executive Director.

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

417 Copyright © OASIS Open 2004. *All Rights Reserved.*

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

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

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

434

- Deleted: wsrf-ws\_base\_faults-1.2-spec-pr-01.
- Deleted: pdf
- Deleted: wd
- Deleted: 9
- Deleted: 16 September
- Deleted: 15 September 2005

# Appendix D. XML Schema

436 The XML types and elements used in this specification are included here for convenience. The  
437 authoritative version of this schema document is available at:

438 <http://docs.oasis-open.org/wsrf/bf-2.xsd>

Deleted: 1

```

439 <?xml version="1.0" encoding="UTF-8"?>
440 <!--
441     OASIS takes no position regarding the validity or scope of any
442     intellectual property or other rights that might be claimed to pertain
443     to the implementation or use of the technology described in this
444     document or the extent to which any license under such rights might or
445     might not be available; neither does it represent that it has made any
446     effort to identify any such rights. Information on OASIS's procedures
447     with respect to rights in OASIS specifications can be found at the
448     OASIS website. Copies of claims of rights made available for
449     publication and any assurances of licenses to be made available, or the
450     result of an attempt made to obtain a general license or permission for
451     the use of such proprietary rights by implementers or users of this
452     specification, can be obtained from the OASIS Executive Director.
453
454     OASIS invites any interested party to bring to its attention any
455     copyrights, patents or patent applications, or other proprietary rights
456     which may cover technology that may be required to implement this
457     specification. Please address the information to the OASIS Executive
458     Director.
459
460     Copyright (C) OASIS Open (2005). All Rights Reserved.
461
462     This document and translations of it may be copied and furnished to
463     others, and derivative works that comment on or otherwise explain it or
464     assist in its implementation may be prepared, copied, published and
465     distributed, in whole or in part, without restriction of any kind,
466     provided that the above copyright notice and this paragraph are
467     included on all such copies and derivative works. However, this
468     document itself may not be modified in any way, such as by removing the
469     copyright notice or references to OASIS, except as needed for the
470     purpose of developing OASIS specifications, in which case the
471     procedures for copyrights defined in the OASIS Intellectual Property
472     Rights document must be followed, or as required to translate it into
473     languages other than English.
474
475     The limited permissions granted above are perpetual and will not be
476     revoked by OASIS or its successors or assigns.
477
478     This document and the information contained herein is provided on an
479     "AS IS" basis and OASIS DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED,
480     INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE
481     INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED
482     WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.
483     -->
484
485 <xsd:schema
486     xmlns="http://www.w3.org/2001/XMLSchema"
487     xmlns:xsd="http://www.w3.org/2001/XMLSchema"
488     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
489     xmlns:wsa="http://www.w3.org/2005/08/addressing"
490     xmlns:wsrf-bf=
491         "http://docs.oasis-open.org/wsrf/bf-2"
492     elementFormDefault="qualified" attributeFormDefault="unqualified"

```

- Deleted: 3
- Deleted: 1
- Deleted: wsrf-ws\_base\_faults-1.2-spec-pr-01.
- Deleted: pdf
- Deleted: wd
- Deleted: 9
- Deleted: 16 September
- Deleted: 15 September 2005

493  
494  
495  
496  
497  
498  
499  
500  
501  
502  
503  
504  
505  
506  
507  
508  
509  
510  
511  
512  
513  
514  
515  
516  
517  
518  
519  
520  
521  
522  
523  
524  
525  
526  
527  
528  
529  
530  
531  
532  
533  
534  
535  
536  
537  
538  
539  
540  
541  
542  
543  
544  
545  
546  
547  
548  
549  
550  
551  
552  
553  
554  
555

```
targetNamespace=  
  "http://docs.oasis-open.org/wsrf/bf-2">  
<xsd:import  
  namespace="http://www.w3.org/2005/08/addressing"  
  schemaLocation=  
    "http://www.w3.org/2005/08/addressing/ws-addr.xsd"/>  
  
<xsd:import namespace="http://www.w3.org/XML/1998/namespace"  
  schemaLocation="http://www.w3.org/2001/xml.xsd">  
  <xsd:annotation>  
    <xsd:documentation>  
      Get access to the xml: attribute groups for xml:lang as  
declared on 'schema'  
    and 'documentation' below  
    </xsd:documentation>  
  </xsd:annotation>  
</xsd:import>  
<!-- ===== BaseFault Types ===== -->  
  
<xsd:element name="BaseFault" type="wsrf-bf:BaseFaultType"/>  
  
<xsd:complexType name="BaseFaultType">  
  <xsd:sequence>  
    <xsd:any namespace="##other" processContents="lax"  
      minOccurs="0" maxOccurs="unbounded"/>  
    <xsd:element name="Timestamp" type="xsd:dateTime"  
      minOccurs="1" maxOccurs="1"/>  
    <xsd:element name="Originator" type="wsa:EndpointReferenceType"  
      minOccurs="0" maxOccurs="1"/>  
    <xsd:element name="ErrorCode"  
      minOccurs="0" maxOccurs="1">  
      <xsd:complexType>  
        <xsd:complexContent mixed="true">  
          <xsd:extension base="xsd:anyType">  
            <xsd:attribute name="dialect" type="xsd:anyURI"  
              use="required"/>  
          </xsd:extension>  
        </xsd:complexContent>  
      </xsd:complexType>  
    </xsd:element>  
  
    <xsd:element name="Description"  
      minOccurs="0" maxOccurs="unbounded">  
      <xsd:complexType>  
        <xsd:simpleContent>  
          <xsd:extension base="xsd:string">  
            <xsd:attribute ref="xml:lang" use="optional"/>  
          </xsd:extension>  
        </xsd:simpleContent>  
      </xsd:complexType>  
    </xsd:element>  
  
    <xsd:element name="FaultCause" minOccurs="0" maxOccurs="1">  
      <xsd:complexType>  
        <xsd:sequence>  
          <xsd:any namespace="##other" processContents="lax"  
            minOccurs="1" maxOccurs="1"/>  
        </xsd:sequence>  
      </xsd:complexType>  
    </xsd:element>  
  </xsd:sequence>  
<xsd:anyAttribute namespace="##other" processContents="lax"/>  
</xsd:complexType>
```

Deleted: 1

Deleted: 3

Deleted: 3

Deleted: ¶

Comment [bpm3]: WSRF110

Deleted: ¶  
<xsd:any  
namespace="##other"  
processContents="lax"¶  
minOccurs="0"  
maxOccurs="unbounded"/>¶

Deleted: wsrf-ws\_base\_faults-1.2-spec-pr-01.

Deleted: pdf

Deleted: wd

Deleted: 9

Deleted: 16 September

Deleted: 15 September 2005¶



- Deleted:** wsrf-ws\_base\_faults-1.2-spec-pr-01.
- Deleted:** pdf
- Deleted:** wd
- Deleted:** 9
- Deleted:** 16 September
- Deleted:** 15 September 2005

## Appendix E. WSDL 1.1

558 | The WSDL 1.1 for the Web service methods described in this specification is compliant with [\[WS-](#)  
559 | [Basic Profile 1.1\]](#), and is included here for convenience. The authoritative version of this WSDL  
560 | is available at:

Deleted:

561 | <http://docs.oasis-open.org/wsrf/bfw-2.wsdl>

Deleted: 1

```
562 | <?xml version="1.0" encoding="UTF-8"?>
563 | <!--
564 |     OASIS takes no position regarding the validity or scope of any
565 |     intellectual property or other rights that might be claimed to pertain
566 |     to the implementation or use of the technology described in this
567 |     document or the extent to which any license under such rights might or
568 |     might not be available; neither does it represent that it has made any
569 |     effort to identify any such rights. Information on OASIS's procedures
570 |     with respect to rights in OASIS specifications can be found at the
571 |     OASIS website. Copies of claims of rights made available for
572 |     publication and any assurances of licenses to be made available, or the
573 |     result of an attempt made to obtain a general license or permission for
574 |     the use of such proprietary rights by implementors or users of this
575 |     specification, can be obtained from the OASIS Executive Director.
576 |
577 |     OASIS invites any interested party to bring to its attention any
578 |     copyrights, patents or patent applications, or other proprietary rights
579 |     which may cover technology that may be required to implement this
580 |     specification. Please address the information to the OASIS Executive
581 |     Director.
582 |
583 |     Copyright (C) OASIS Open (2005). All Rights Reserved.
584 |
585 |     This document and translations of it may be copied and furnished to
586 |     others, and derivative works that comment on or otherwise explain it or
587 |     assist in its implementation may be prepared, copied, published and
588 |     distributed, in whole or in part, without restriction of any kind,
589 |     provided that the above copyright notice and this paragraph are
590 |     included on all such copies and derivative works. However, this
591 |     document itself may not be modified in any way, such as by removing the
592 |     copyright notice or references to OASIS, except as needed for the
593 |     purpose of developing OASIS specifications, in which case the
594 |     procedures for copyrights defined in the OASIS Intellectual Property
595 |     Rights document must be followed, or as required to translate it into
596 |     languages other than English.
597 |
598 |     The limited permissions granted above are perpetual and will not be
599 |     revoked by OASIS or its successors or assigns.
600 |
601 |     This document and the information contained herein is provided on an
602 |     "AS IS" basis and OASIS DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED,
603 |     INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE
604 |     INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED
605 |     WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.
606 |     -->
607 | <wsdl:definitions name="BaseFaults"
608 |     xmlns="http://schemas.xmlsoap.org/wsdl/"
609 |     xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
610 |     xmlns:xsd="http://www.w3.org/2001/XMLSchema"
611 |     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
612 |     xmlns:wsrf-bf=
613 |         "http://docs.oasis-open.org/wsrf/bf-2"
614 |     targetNamespace=
```

Deleted: 1

Deleted: wsrf-ws\_base\_faults-1.2-spec-pr-01.

Deleted: pdf

Deleted: wd

Deleted: 9

Deleted: 16 September

Deleted: 15 September 2005

615  
616  
617  
618  
619  
620  
621  
622  
623  
624  
625  
626  
627  
628  
629  
630  
631

```
"http://docs.oasis-open.org/wsrfl/bfw-2">  
  
<!-- ===== Types Definitions ===== -->  
<wsdl:types>  
  <xsd:schema  
    elementFormDefault="qualified"  
    attributeFormDefault="unqualified" >  
    <xsd:import  
      namespace="http://docs.oasis-open.org/wsrfl/bf-2"  
      schemaLocation="http://docs.oasis-open.org/wsrfl/bf-2.xsd"/>  
    </xsd:schema>  
  </wsdl:types>  
  
  <wsdl:message name="BaseFaultMessage" >  
    <wsdl:part name="Fault" element="wsrf-bf:BaseFault" />  
  </wsdl:message>  
</wsdl:definitions>
```

- Deleted: 1
- Deleted: 1
- Deleted: 1

- Deleted: wsrf-ws\_base\_faults-1.2-spec-pr-01.
- Deleted: pdf
- Deleted: wd
- Deleted: 9
- Deleted: 16 September
- Deleted: 15 September 2005