



Service Component Architecture Web Service Binding Specification Version 1.1

Committee Draft 02 Revision 2

9th June, 2009

Specification URIs:

This Version:

<http://docs.oasis-open.org/opencsa/sca-bindings/sca-binding-ws-1.1-spec-cd02.html>
<http://docs.oasis-open.org/opencsa/sca-bindings/sca-binding-ws-1.1-spec-cd02.doc>
<http://docs.oasis-open.org/opencsa/sca-bindings/sca-binding-ws-1.1-spec-cd02.pdf>
(Authoritative)

Previous Version:

<http://docs.oasis-open.org/opencsa/sca-bindings/sca-wsbinding-1.1-spec-cd01.html>
<http://docs.oasis-open.org/opencsa/sca-bindings/sca-wsbinding-1.1-spec-cd01.doc>
<http://docs.oasis-open.org/opencsa/sca-bindings/sca-wsbinding-1.1-spec-cd01.pdf> (Authoritative)

Latest Version:

<http://docs.oasis-open.org/opencsa/sca-bindings/sca-binding-ws-1.1-spec.html>
<http://docs.oasis-open.org/opencsa/sca-bindings/sca-binding-ws-1.1-spec.doc>
<http://docs.oasis-open.org/opencsa/sca-bindings/sca-binding-ws-1.1-spec.pdf> (Authoritative)

Latest Approved Version:

Technical Committee:

[OASIS Service Component Architecture / Bindings \(SCA-Bindings\) TC](#)

Chair(s):

Simon Holdsworth, IBM

Editor(s):

Simon Holdsworth, IBM
Anish Karmarkar, Oracle
Piotr Przybylski, IBM

Related work:

This specification replaces or supersedes:

- [Service Component Architecture Web Service Binding Specification Version 1.00, March 21 2007](#)

This specification is related to:

- [Service Component Architecture Assembly Model Specification Version 1.1](#)
- [Service Component Architecture Policy Framework Specification Version 1.1](#)

Declared XML Namespace(s):

<http://docs.oasis-open.org/ns/opencsa/sca/200903>

Abstract:

The SCA Web Service binding specified in this document applies to the services and references of an SCA composite. It defines the manner in which a service can be made available as a web service, and in which a reference can invoke a web service.

This binding is a WSDL-based binding; that means it either references an existing WSDL binding or allows one to specify enough information to generate one. When an existing WSDL binding is not referenced, rules defined in this document allow one to generate a WSDL binding.

Status:

This document was last revised or approved by the OASIS Service Component Architecture / Bindings (SCA-Bindings) 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/sca-bindings/>.

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/sca-bindings/ipr.php>).

The non-normative errata page for this specification is located at <http://www.oasis-open.org/committees/sca-bindings/>.

Notices

Copyright © OASIS® 2005, 2009. 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 name "OASIS" is a trademark 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
1.2	Normative References.....	6
1.3	Non-Normative References.....	6
1.4	Naming Conventions.....	6
2	Web Service Binding Schema.....	8
2.1	Compatibility of SCA Service Interfaces and WSDL portTypes.....	10
2.2	Endpoint URI resolution.....	11
2.3	Interface mapping.....	11
2.4	Production of WSDL description for an SCA service.....	11
2.5	Additional binding configuration data.....	12
2.6	Web Service Binding and SOAP Intermediaries.....	12
2.7	Support for WSDL extensibility.....	12
2.8	Intents listed in the bindingType.....	12
2.9	Intents and binding configuration.....	13
3	Web Service Binding Examples.....	14
3.1	Example Using WSDL documents.....	14
3.2	Examples Without a WSDL Document.....	15
4	Transport Binding.....	17
4.1	Intents.....	17
4.2	Default Transport Binding Rules.....	17
4.2.1	WS-I Basic Profile Alignment.....	17
4.2.2	Default Transport Binding Rules.....	17
5	Conformance.....	19
5.1	SCA WS Binding XML Document.....	19
5.2	SCA Runtime.....	19
A.	Web Services XML Binding Schema: sca-binding-webservice.xsd.....	20
B.	Conformance Items.....	21
C.	Appendix - WSDL Generation.....	24
D.	Acknowledgements.....	25
E.	Non-Normative Text.....	26
F.	Revision History.....	27

1 Introduction

The SCA Web Service binding specified in this document applies to the services and references of composites and components [**SCA-Assembly**]. It defines the manner in which a service can be made available as a web service, and in which a reference can invoke a web service.

This binding is a WSDL-based binding; that means it either references an existing WSDL binding or can be configured to specify enough information to generate one. When an existing WSDL binding is not referenced, rules defined in this document allow one to generate a WSDL binding. This specification only defines a binding using WSDL 1.1.

The Web Service binding can point to an existing WSDL [**WSDL11**] document, separately authored, that specifies the details of the WSDL binding to be used to provide or invoke the web service. In this case the SCA web services binding allows anything that is valid in a WSDL binding, including rpc-encoded style and binding extensions. It is the responsibility of the SCA system provider to ensure support for all options specified in the WSDL binding. Interoperation of such services is not guaranteed.

The SCA Web Service binding also provides attributes that can be used to provide the details of a WSDL SOAP binding. This allows a WSDL document to be synthesized in the case that one does not already exist. In this case only WS-I compliant mapping is supported.

The SCA Web Service binding can be further customized through the use of SCA Policy Sets. For example, a requirement to conform to a WS-I profile [**WSI-Profiles**] could be represented with a policy set.

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**].

This specification uses predefined namespace prefixes throughout; they are given in the following list. Note that the choice of any namespace prefix is arbitrary and not semantically significant.

Table 1-1 Prefixes and Namespaces used in this specification

Prefix	Namespace	Notes
xs	"http://www.w3.org/2001/XMLSchema"	Defined by XML Schema 1.0 specification
wsa	"http://www.w3.org/2005/08/addressing"	Defined by WS-Addressing 1.0
wsp	"http://www.w3.org/ns/ws-policy"	Defined by WS-Policy 1.5
wsrmp	"http://docs.oasis-open.org/ws-rx/wsrmp/200702"	Defined by WS-ReliableMessaging Policy 1.2
soap11	"http://schemas.xmlsoap.org/soap/envelope/"	Defined by SOAP 1.1
soap12	"http://www.w3.org/2005/08/addressing"	Defined by SOAP 1.2
wsdli	"http://www.w3.org/ns/wsdli-instance"	Defined by WSDL 2.0

wsoap11	"http://schemas.xmlsoap.org/wsdl/soap/"	Defined by WSDL 1.1 [WSDL11]
wsoap12	"http://schemas.xmlsoap.org/wsdl/soap12/"	Defined by [W11-SOAP12]
sca	"http://docs.oasis-open.org/ns/opencsa/sca/200903"	Defined by the SCA specifications

31

32 1.2 Normative References

- 33 [RFC2119] S. Bradner, *Key words for use in RFCs to Indicate Requirement Levels*,
34 <http://www.ietf.org/rfc/rfc2119.txt>, IETF RFC 2119, March 1997.
- 35 [SCA-Assembly] <http://docs.oasis-open.org/opencsa/sca-assembly/sca-assembly-1.1-spec.pdf>
- 36 [SCA-Policy] <http://docs.oasis-open.org/opencsa/sca-policy/sca-policy-1.1-spec.pdf>
- 37 [SCA-JCAA] <http://docs.oasis-open.org/opencsa/sca-j/sca-javacaa-1.1-spec.pdf>
- 38 [WSDL11] E. Christensen et al, *Web Service Description Language (WSDL) 1.1*,
39 <http://www.w3.org/TR/2001/NOTE-wsdl-20010315>, W3C Note, March 15 2001.
- 40 [WSDL20] Chinnici et al, *Web Service Description Language (WSDL) Version 2.0 Part 1:
41 Core Language*, <http://www.w3.org/TR/2007/REC-wsdl20-20070626/>, W3C
42 Recommendation, June 26 2007.
- 43 [WSI-Profiles] <http://www.ws-i.org/Profiles/BasicProfile-1.1.html>
44 <http://www.ws-i.org/Profiles/AttachmentsProfile-1.0.html>
45 <http://www.ws-i.org/Profiles/SimpleSoapBindingProfile-1.0.html>
46 <http://www.ws-i.org/Profiles/BasicSecurityProfile-1.0.html>
- 47 [JAX-WS] <http://jcp.org/en/jsr/detail?id=224>
- 48 [SOAP11] <http://www.w3.org/TR/2000/NOTE-SOAP-20000508/>
- 49 [SOAP] <http://www.w3.org/TR/2003/REC-soap12-part1-20030624/>
50 <http://www.w3.org/TR/2000/NOTE-SOAP-20000508/>
- 51 [SOAP12Adjuncts] SOAP Version 1.2 Part 2: Adjuncts (Second Edition)
52 <http://www.w3.org/TR/soap12-part2/>
- 53 [WS-Addr] <http://www.w3.org/TR/2006/REC-ws-addr-core-20060509/>
- 54 [W11-SOAP12] <http://www.w3.org/Submission/wsdl11soap12/>
- 55

56 1.3 Non-Normative References

- 57 [WSI-AP] <http://www.ws-i.org/Profiles/AttachmentsProfile-1.0.html>
- 58 [MTOM] <http://www.w3.org/TR/2005/REC-soap12-mtom-20050125/>

59 1.4 Naming Conventions

60 This specification follows some naming conventions for artifacts defined by the
61 specification. In addition to the conventions defined by section 1.3 of the Assembly
62 [SCA-Assembly] specification, this specification adds three additional conventions:

- 63 1. Where the names of elements and attributes consist partially or wholly of
64 acronyms, the letters of the acronyms use the same case. When the acronym
65 appears at the start of the name of an element or an attribute, or after a period,
66 it is in lower case. If it appears elsewhere in the name of an element or an
67 attribute, it is in upper case. For example, an attribute might be named "uri" or
68 "jndiURL".

- 69
70
71
72
73
74
75
2. Where the names of types consist partially or wholly of acronyms, the letters of the acronyms are in all upper case. For example, an XML Schema type might be named "JCABinding" or "MessageID".
 3. Values, including local parts of QName values, follow the rules for names of elements and attributes as stated above, with the exception that the letters of acronyms are in all upper case. For example, a value might be "JMSDefault" or "namespaceURI".

2 Web Service Binding Schema

The Web Service binding element is defined by the following pseudo-schema.

```
<binding.ws name="xs:NCName"?
  requires="list of xs:QName"?
  policySets="list of xs:QName"?
  uri="xs:anyURI"?
  wsdlElement="xs:anyURI"?
  wsdl:wsdlLocation="list of xs:anyURI pairs"?
  ...>
<wireFormat/>?
<operationSelector/>?
<endpointReference>...</endpointReference>*
...
</binding.ws>
```

- ***/binding.ws/@name*** - as defined in the SCA Assembly Specification [SCA-Assembly].
- ***/binding.ws/@requires*** - as defined in the SCA Assembly Specification [SCA-Assembly].
- ***/binding.ws/@policySets*** - as defined in the SCA Assembly Specification SCA-Assembly.
- ***/binding.ws/@uri*** - the resolution algorithm of Section 2.2 below describes how this attribute is interpreted. For an SCA reference, the @uri attribute MUST be an absolute value. [BWS20001]
- ***/binding.ws/@wsdlElement*** – when present this attribute specifies the URI of a WSDL element. The value of the @wsdlElement attribute MUST identify an element in an existing WSDL 1.1 document. [BWS20002] The value of the @wsdlElement attribute MUST identify an element in an existing WSDL 1.1 document. The URI can have the following forms:
 - Service:
`<WSDL-namespace-URI>#wsdl.service(<service-name>)`
If the binding is for an SCA service, the *wsdlElement* attribute MUST NOT specify the *wsdl.service* form of URI. [BWS20003]
If the binding is for an SCA reference, the set of available ports for the reference consists of the ports in the WSDL service that have portTypes which are compatible supersets of the SCA reference as defined in the SCA Assembly Model specification [SCA-Assembly] and satisfy all the policy constraints of the binding.
If the *wsdl.service* form of *wsdlElement* is used on an SCA reference binding, the set of available ports for the reference MUST contain at least one port. [BWS20004] The set of available ports represents a single SCA reference binding with respect to the multiplicity of that SCA reference. If the *wsdl.service* form of *wsdlElement* is used on an SCA reference binding, the SCA runtime MUST raise an error if there are no available ports that it supports. [BWS20005] When an invocation is made using an SCA reference binding with the *wsdl.service* form of *wsdlElement*, the SCA runtime MUST use exactly one port from the set of

122 available ports for the reference (with port selection on a per-invocation basis
123 permitted). [BWS20006]

- 124 • Port:

125 <WSDL-namespace-URI>#wsdl.port(<service-name>/<port-name>)

126 If the binding is for an SCA service, the portType associated with the specified
127 WSDL port MUST be compatible with the SCA service interface as defined in
128 section 2.1, and the port MUST satisfy all the policy constraints of the
129 binding. [BWS20007] The SCA runtime MUST expose an endpoint for the specified
130 WSDL port, or raise an error if it does not support the WSDL port. [BWS20008] If
131 the binding is for an SCA reference, the portType associated with the specified
132 WSDL port MUST be a compatible superset of the SCA reference interface as
133 defined in the SCA Assembly Model specification [SCA-Assembly], and the port
134 MUST satisfy all the policy constraints of the binding. [BWS20009] The SCA
135 runtime MUST use the specified WSDL port for invocations made using the SCA
136 reference, or raise an error if it does not support the WSDL port. [BWS20010]

- 137 • Binding:

138 <WSDL-namespace-URI>#wsdl.binding(<binding-name>)

139 If the binding is for an SCA service, the portType associated with the specified
140 WSDL binding MUST be compatible with the SCA service interface as defined in
141 section 2.1, and the WSDL binding MUST satisfy all the policy constraints of the
142 binding. [BWS20011] The SCA runtime MUST expose an endpoint for the
143 specified WSDL binding, or raise an error if it does not support the WSDL binding.
144 [BWS20012]

145 If the binding is for an SCA reference, the portType associated with the specified
146 WSDL binding MUST be a compatible superset of the SCA reference interface as
147 defined in the SCA Assembly Model specification [SCA-Assembly], and the
148 WSDL binding MUST satisfy all the policy constraints of the binding.
149 [BWS20013] The SCA runtime MUST use the specified WSDL binding for
150 invocations made using the SCA reference, or raise an error if it does not support
151 the WSDL binding. [BWS20014]

152 When the *wsdl.binding* form of *wsdlElement* is used, the endpoint address URI
153 for an SCA reference MUST be specified by either the *@uri* attribute on the
154 binding or a WS-Addressing *EndpointReference* element, except where the SCA
155 Assembly Model specification [SCA-Assembly] states that the *@uri* attribute can
156 be omitted. [BWS20015]

- 157 • **/binding.ws/@wsdli:wsdlLocation** – when present this attribute specifies the
158 location(s) of the WSDL document(s) associated with specific namespace(s).

159 The *@wsdli:wsdlLocation* attribute MAY be specified by the binding in the event that
160 the <WSDL-namespace-URI> in the 'endpoint' attribute is not dereferencable, or
161 when the intended WSDL document is to be found at a different location than the
162 one pointed to by the <WSDL-namespace-URI>. [BWS20016]

163 If the *@wsdli:wsdlLocation* attribute is used the *@wsdlElement* attribute MUST also
164 be specified. [BWS20017] The semantics of this attribute are specified in Section 7.1
165 of WSDL 2.0 [WSDL20]. The value of the *@wsdli:wsdlLocation* attribute MUST
166 identify an existing WSDL 1.1 document. [BWS20018]

- 167 • **/binding.ws/wireFormat** – as defined in the SCA Assembly Specification [SCA-
168 Assembly]. This specification does not define any new wireFormat elements.

- 169 • ***/binding.ws/operationSelector*** – as defined in the SCA Assembly
170 Specification[**SCA-Assembly**]. This specification does not define any new
171 operationSelector elements.
- 172 • ***/binding.ws/endpointReference*** – when present this element provides the WS-
173 Addressing [**WS-Addr**] EndpointReference that specifies the endpoint for the service
174 or reference.
- 175 • ***/binding.ws/@{any}*** - this is an extensibility mechanism to allow extensibility via
176 attributes.
- 177 • ***/binding.ws/any*** – this is an extensibility mechanism to allow extensibility via
178 elements.

179 A binding.ws element MUST NOT contain more than one of any of the following: the
180 @uri attribute; the @wsdlElement attribute referring to a WSDL port or to a WSDL
181 service; the endpointReference element. [BWS20019]

182 The endpoint address URI for an SCA service or the callback element of an SCA
183 reference is determined as specified in section 2.2. For the *callback* element of an SCA
184 service, the binding MUST NOT specify an endpoint address URI or a WS-Addressing
185 EndpointReference. [BWS20020]

186 The SCA runtime MUST support all the attributes of the <binding.ws> element, namely
187 @name, @uri, @requires, @policySets, @wsdlElement, and
188 @wsdl:wsdlLocation.[BWS20021]

189 The SCA runtime SHOULD support the element <endpointReference>. [BWS20022] If an
190 SCA runtime does not support the element <endpointReference>, then it MUST reject
191 an SCA WS Binding XML document (as defined in Section 5.1) that contains the element.
192 [BWS20023]

193 The <binding.ws> element MUST conform to the XML schema defined in sca-binding-
194 webservice.xsd. [BWS20024]

195 2.1 Compatibility of SCA Service Interfaces and WSDL portTypes

196 A WSDL portType is compatible with an SCA service interface if and only if all of the
197 following conditions are satisfied:

- 198 1. The SCA service interface is remotable.
- 199 2. The operations on the portType are the same as the operations on the SCA
200 service interface, with the same operation name, same input types (taking order
201 as significant), same output types (taking order as significant), and same
202 fault/exception types. If the SCA service interface is not a WSDL portType, it is
203 mapped to a WSDL portType for the purposes of this comparison. The mapping
204 is defined in the relevant SCA specification for the interface type. If the interface
205 cannot be mapped to WSDL, the SCA service interface is not compatible with the
206 WSDL portType.
- 207 3. WSDL 1.1 message parts can point to an XML Schema element declaration or an
208 XML Schema type. When determining compatibility between two WSDL
209 operations, a message part that points to an XML Schema element is considered
210 to be incompatible with a message part that points to an XML Schema type.
- 211 4. If either the portType or the SCA service interface declares an SCA callback
212 interface, then both the portType and the SCA service interface declare callback
213 interfaces and these callback interfaces are compatible according to points 1
214 through 3 above.

215 2.2 Endpoint URI resolution

216 This specification does not mandate any particular way to determine the URI for a web
217 services binding on an SCA service. An absolute URI can be indicated by the @uri
218 attribute, by the URI in a wsa:Address element within an endpointReference element, or
219 by the URI indicated in a WSDL Port via a @wsdlElement attribute. Implementations
220 can use the specified URI as the service endpoint URI or they can use a different URI
221 which might include portions of the specified URI. For example, the service endpoint
222 URI might be produced by modifying any or all of the host name, the port number, and
223 a portion of the path.

224 Note that if no absolute URI is indicated by any of these elements, implementations can
225 use the structural URI for the binding as a portion of the URI for the eventual deployed
226 endpoint. In addition, the @uri attribute value could be relative; implementations are
227 encouraged to combine this value with the structural URI for the service in determining
228 a deployed URI.

229 The target address for a reference binding is defined as one of the following:

- 230 A. The value of the @uri attribute
- 231 B. The value of the wsa:Address element of the endpointReference element
- 232 C. The value of the address element of the WSDL port referenced by the
233 @wsdlElement attribute
- 234 D. The value of the address element of one of the set of available WSDL ports as
235 specified under the definition of the @wsdlElement attribute when it references a
236 WSDL service element

237 If there is no target address for a reference binding, the SCA runtime MUST raise an
238 error. [BWS20025]

239 For a reference binding, the SCA runtime MUST use the target address. [BWS20026]

240 2.3 Interface mapping

241 When *binding.ws* is used on a service or reference with an interface that is not defined
242 by *interface.wsdl*, the SCA runtime MUST derive a WSDL portType for the service or
243 reference from the interface using the rules defined for that SCA interface type. When
244 *binding.ws* is used on a service or reference with an interface that is not defined by
245 *interface.wsdl*, the SCA runtime MUST derive a WSDL portType for the service or
246 reference from the interface using the rules defined for that SCA interface type.

247 An SCA runtime MUST raise an error if the interface on a service or reference element
248 with a *binding.ws* element does not map to a WSDL portType. [BWS20028]

249 For example, for *interface.java*, the mapping to a WSDL portType is as defined in the
250 SCA Java Common Annotations and API Specification [SCA-JCAA].

251 *binding.ws* implementations can use appropriate standards, for example WS-I AP 1.0
252 [WSI-AP] or MTOM [MTOM], to map interface parameters to binary attachments
253 transparently to the target component.

254

255 2.4 Production of WSDL description for an SCA service

256 Any service hosted by an SCA runtime with one or more web service bindings with HTTP
257 endpoints SHOULD return a WSDL description of the service in response to an HTTP GET
258 request with the "?wsdl" suffix to that HTTP endpoint. [BWS20029]

259 If none of the web service bindings for an SCA service have HTTP endpoints, then the
260 SCA runtime SHOULD provide some other means of obtaining the WSDL description of
261 the service. [BWS20030] This can include out of band mechanisms, for example
262 publication to a UDDI registry.

263 Refer to section 4 for a detailed definition of the rules that are used for generating the
264 WSDL description of an SCA service with one or more web service bindings.

265

266 2.5 Additional binding configuration data

267 SCA runtime implementations MAY provide additional metadata that is associated with a
268 web service binding. [BWS20031]

269 This can be used for example to enable JAX-WS [JAX-WS] handlers to be executed as
270 part of the target component dispatch. The specification of such metadata is SCA
271 runtime-specific and is outside of the scope of this document.

272

273 2.6 Web Service Binding and SOAP Intermediaries

274 The Web Service binding does not provide any direct or explicit support for SOAP
275 intermediaries [SOAP].

276

277 2.7 Support for WSDL extensibility

278 When a binding.ws element uses the @wsdlElement attribute, the details of the binding
279 are specified by the WSDL element referenced by the value of the attribute. Per the
280 WSDL specification, WSDL allows for extensibility via elements as well as attributes, and
281 it specifies rules for processing such elements. This specification does not constrain the
282 use of such extensibility in WSDL and relies on the rules specified in the WSDL
283 specification for processing such extended elements.

284 An SCA runtime MUST support the WSDL extensions defined in the namespace
285 associated with the prefix "sca" (as defined in section 1.1). [BWS20032]

286 The SCA runtime MUST support the WSDL 1.1 binding extension for SOAP 1.1 over HTTP
287 [WSDL11], as identified by the WSDL element wsoap11:binding that has the
288 @transport attribute with a value of "http://schemas.xmlsoap.org/soap/http".
289 [BWS20033]

290 The SCA runtime SHOULD support the WSDL 1.1 binding extension for SOAP 1.2 over
291 HTTP [W11-SOAP12], as identified by the WSDL element wsoap12:binding that has
292 the @transport attribute with a value of "http://schemas.xmlsoap.org/soap/http".
293 [BWS20034]

294 Because a WSDL document might contain extension elements that cannot be supported
295 by the SCA runtime, when using the @wsdlElement form of binding.ws it is not possible
296 to determine whether the binding is supported by the SCA runtime without parsing the
297 referenced WSDL element and its dependent elements.

298 2.8 Intents listed in the bindingType

299 This specification places no requirements on the intents that are listed as either
300 @alwaysProvides or @mayProvides in the bindingType for binding.ws.

301 2.9 Intents and binding configuration

302 This binding mandates support for SOAP 1.1 and encourages SOAP 1.2 support. The
303 <bindingType> element associated with this binding MUST include the SOAP.1_1 intent
304 in its @mayProvides or @alwaysProvides attributes. [BWS20035] The <bindingType>
305 element associated with this binding SHOULD include the SOAP.1_2 intent in its
306 @mayProvides attribute. [BWS20036] For more details on the <bindingType> element
307 see [SCA-Policy].

308 The SCA runtime MUST raise an error if a web service binding is configured with a policy
309 intent(s) that conflicts with the binding instance's configuration. [BWS20037]

310 For example, it is an error to use the SOAP policy intent in combination with a WSDL
311 binding that does not use SOAP.

312

3 Web Service Binding Examples

313

The following snippets show the `sca.composite` file for the `MyValueComposite` file containing the service element for the `MyValueService` and reference element for the `StockQuoteService`. Both the service and the reference use a Web Service binding.

315

316

317

3.1 Example Using WSDL documents

318

This example shows a service and reference using the SCA Web Service binding, using existing WSDL documents in both cases. In each case there is a single binding element, whose name defaults to the service/reference name.

319

320

321

The service's binding is defined by the WSDL document associated with the given URI.

322

This service conforms to WS-I Basic Profile 1.1.

323

The first reference's binding is defined by the specified WSDL service in the WSDL document at the given location. The reference can use any of the WSDL service's ports to invoke the target service. The second reference's binding is defined by the specified WSDL binding. The specific endpoint URI to be invoked is provided via the `@uri` attribute.

324

325

326

327

328

329

```
<?xml version="1.0" encoding="ASCII"?>
<composite xmlns="http://docs.oasis-open.org/ns/opencsa/sca/200903"
  name="MyValueComposite">
  <service name="MyValueService">
    <interface.java interface="services.myvalue.MyValueService"/>
    <binding.ws wsdlElement="http://www.example.org/MyValueService#
wsdl.binding(MyValueService/MyValueServiceSOAP)"/>
    ...
  </service>
  ...
  <reference name="StockQuoteReference1">
    <interface.java interface="services.stockquote.StockQuoteService"/>
    <binding.ws wsdlElement="http://www.example.org/StockQuoteService#
      wsdl.service(StockQuoteService) "
      wsdl:wsdlLocation="http://www.example.org/StockQuoteService
      http://www.example.org/StockQuoteService.wsdl"/>
  </reference>
  <reference name="StockQuoteReference2">
    <interface.java interface="services.stockquote.StockQuoteService"/>
    <binding.ws wsdlElement="http://www.example.org/StockQuoteService#
      wsdl.binding(StockQuoteBinding) "
      wsdl:wsdlLocation="http://www.example.org/StockQuoteService
      http://www.example.org/StockQuoteService.wsdl"
      uri="http://www.example.org/StockQuoteService5"/>
  </reference>
</composite>
```

358

3.2 Examples Without a WSDL Document

The next example shows the simplest form of the binding element without WSDL document, assuming all defaults for portType mapping and SOAP binding synthesis. The service and reference each have a single binding element, whose name defaults to the service/reference name.

The service is to be made available at a location determined by the deployment of this component. It will have a single port address and SOAP binding, with a simple WS-I BasicProfile 1.1 compliant binding, and using the default options for mapping the Java interface to a WSDL portType.

The reference indicates a service to be invoked which has a SOAP binding and portType that matches the default options for binding synthesis and interface mapping. One particular use of this case would be where the reference is to an SCA service with a web service binding which itself uses all the defaults.

372

```
373 <?xml version="1.0" encoding="ASCII"?>
374 <composite xmlns="http://docs.oasis-open.org/ns/opencsa/sca/200903"
375           name="MyValueComposite">
376
377     <service name="MyValueService">
378       <interface.java interface="services.myvalue.MyValueService"/>
379       <binding.ws/>
380       ...
381     </service>
382
383     ...
384
385     <reference name="StockQuoteService">
386       <interface.java interface="services.stockquote.StockQuoteService"/>
387       <binding.ws uri="http://www.example.org/StockQuoteService"/>
388     </reference>
389 </composite>
```

The next example shows the use of the binding element without a WSDL document, with multiple SOAP bindings with non-default values. The SOAP 1.2 binding name defaults to the service name, the SOAP 1.1 binding is given an explicit name. The reference has a web service binding which uses SOAP 1.2, but otherwise uses all the defaults for SOAP binding. The reference binding name defaults to the reference name.

396

```
397 <?xml version="1.0" encoding="ASCII"?>
398 <composite xmlns="http://docs.oasis-open.org/ns/opencsa/sca/200903"
399           name="MyValueComposite">
400
401     <service name="MyValueService">
402       <interface.java interface="services.myvalue.MyValueService"/>
403       <binding.ws name="MyValueServiceSOAP11" requires="SOAP_1_1"/>
404       <binding.ws requires="SOAP_1_2"/>
405       ...
406     </service>
407
408     ...
409
410     <reference name="StockQuoteService">
411       <interface.java interface="services.stockquote.StockQuoteService"/>
412       <binding.ws uri="http://www.example.org/StockQuoteService"
413                 requires="SOAP_1_2"/>
414     </reference>
```

415

```
</composite>
```

416

417 4 Transport Binding

418 The binding.ws element provides numerous ways to specify exactly how messages ought
419 to be transmitted from or to the reference or service. Those ways include references to
420 WSDL binding elements from the @wsdlElement attribute, policy intents, and even
421 vendor extensions within the binding.ws element. This section describes the defaults to
422 be used if the specific transport details are not otherwise specified.

423 4.1 Intents

424 So as to narrow the range of choices for how messages are carried, the following policy
425 intents affect the transport binding:

- 426 • SOAP
427 When the SOAP intent is required, the SCA runtime MUST transmit and receive
428 messages using SOAP. One or more SOAP versions can be used. [BWS40001]
- 429 • SOAP.1_1
430 When the SOAP.1_1 intent is required, the SCA runtime MUST transmit and receive
431 messages using only SOAP 1.1. [BWS40002]
- 432 • SOAP.1_2
433 When the SOAP.1_2 intent is required, the SCA runtime MUST transmit and receive
434 messages using only SOAP 1.2. [BWS40003]

435 4.2 Default Transport Binding Rules

436 4.2.1 WS-I Basic Profile Alignment

437 To align to WS-I Basic Profile, the resulting WSDL port needs to be all document-literal,
438 or all rpc-literal binding (per WS-I Basic Profile 1.1 R2705 [WSI-Profiles]). This means,
439 for any given portType, for all messages referenced by all operations in that portType,
440 either

- 441 • that every message part references an XML Schema type (rpc-literal pattern)
- 442 • or that every message references exactly zero or one XML Schema elements
443 (document-literal pattern)

444 For an SCA service or reference element, the portType from the service's or reference's
445 interface or derived from that interface MUST follow either the rpc-literal or document-
446 literal pattern. [BWS40004]

447 The rest of this section assumes the short-hand reference of a "rpc-literal" or
448 "document-literal" pattern, depending on which of the two bullet points above it
449 matches.

450 4.2.2 Default Transport Binding Rules

451 The following defines the **default transport binding rules** for the Web Service binding:

- 452 • HTTP-based transfer protocol;
- 453 • SOAP 1.1 binding;
- 454 • "literal" format as described in section 3.5 of [WSDL11];

- 455
- 456
- Either the document literal or rpc literal pattern, depending on the service or reference interface as described in section 4.2.1;
 - For document literal pattern, each message uses "document" style, as per section 3.5 of **[WSDL11]**;
 - For rpc-literal pattern, each message uses "rpc" style, as per section 3.5 of **[WSDL11]** and the child elements of the SOAP Body element are namespace qualified with a non-empty namespace name;
 - For SOAP 1.1 messages, the SOAPAction HTTP header described in section 6.1.1 of "Simple Object Access Protocol (SOAP) 1.1" **[SOAP11]** represents the empty string, in quotes ("");
 - For SOAP 1.2 messages, the SOAP Action feature described in section 6.5 of **[SOAP12Adjuncts]** does not appear;
 - All WSDL message parts are carried in the SOAP body.

462

463

464

465

466

467

468

469

In the event that the transport details are not otherwise determined, an SCA runtime MUST enable the default transport binding rules. **[BWS40005]** :

- 470
- 471
- 472
- When using the default transport binding rules, the SCA runtime MAY provide additional WSDL bindings, unless policy is applied that explicitly restricts this. **[BWS40006]**
 - When using the default transport binding rules with the rpc-literal pattern, the SCA runtime SHOULD use the structural URI associated with the binding as the namespace of the child elements of the SOAP body element. **[BWS40007]**
- 473
- 474
- 475

476 5 Conformance

477 The XML schema pointed to by the RDDL document at the namespace URI, defined by
478 this specification, are considered to be authoritative and take precedence over the XML
479 schema defined in the appendix of this document.

480 There are two categories of artifacts for which this specification defines conformance:

- 481 a) SCA WS Binding XML Document
- 482 b) SCA Runtime

483 5.1 SCA WS Binding XML Document

484 An SCA WS Binding XML document is an SCA Composite Document, or an SCA
485 ComponentType Document, as defined by the SCA Assembly specification Section 13.1
486 **[SCA-Assembly]**, that uses the <binding.ws> element.

487 An SCA WS Binding XML document **MUST** be a conformant SCA Composite Document or
488 a SCA ComponentType Document, as defined by the SCA Assembly specification **[SCA-**
489 **Assembly]**, and **MUST** comply with all the applicable requirements specified in this
490 specification.

491 5.2 SCA Runtime

492 An implementation that claims to conform to the requirements of an SCA Runtime
493 defined in this specification has to meet the following conditions:

- 494 1. The implementation **MUST** comply with all statements in Appendix B:
495 Conformance Items related to an SCA Runtime, notably all "MUST" statements
496 have to be implemented.
- 497 2. The implementation **MUST** conform to the SCA Assembly Model Specification
498 Version 1.1 **[SCA-Assembly]**, and to the SCA Policy Framework Version 1.1
499 **[SCA-Policy]**.
- 500 3. The implementation **MUST** reject a SCA WS Binding XML Document that is not
501 conformant per Section 5.1.

502
503

A. Web Services XML Binding Schema: sca-binding-webservice.xsd

```
504 <?xml version="1.0" encoding="UTF-8"?>
505 <!-- Copyright(C) OASIS 2005, 2009.All Rights Reserved.
506     OASIS trademark, IPR and other policies apply.-->
507
508 <schema xmlns="http://www.w3.org/2001/XMLSchema"
509     targetNamespace="http://docs.oasis-open.org/ns/opencsa/sca/200903"
510     xmlns:sca="http://docs.oasis-open.org/ns/opencsa/sca/200903"
511     xmlns:wsdli="http://www.w3.org/ns/wsdli-instance"
512     xmlns:wsa="http://www.w3.org/2005/08/addressing"
513     elementFormDefault="qualified">
514
515     <import namespace="http://www.w3.org/ns/wsdli-instance"
516         schemaLocation="http://www.w3.org/2007/05/wsdli/wsdli20-
517 instance.xsd"
518     />
519     <import namespace="http://www.w3.org/2005/08/addressing"
520         schemaLocation="http://www.w3.org/2006/03/addressing/ws-addr.xsd"
521     />
522     <include schemaLocation="sca-core-1.1-cd03.xsd"/>
523
524     <element name="binding.ws" type="sca:WebServiceBinding"
525         substitutionGroup="sca:binding"/>
526     <complexType name="WebServiceBinding">
527         <complexContent>
528             <extension base="sca:Binding">
529                 <sequence>
530                     <element ref="sca:wireFormat"
531                         minOccurs="0" maxOccurs="1" />
532                     <element ref="sca:operationSelector"
533                         minOccurs="0" maxOccurs="1" />
534
535                     <element name="endpointReference"
536                         type="wsa:EndpointReference"
537                         minOccurs="0" maxOccurs="unbounded"/>
538                     <any namespace="##other" processContents="lax"
539                         minOccurs="0" maxOccurs="unbounded"/>
540                 </sequence>
541                 <attribute name="wsdlElement" type="anyURI" use="optional"/>
542                 <attribute ref="wsdli:wsdlLocation" use="optional"/>
543                 <anyAttribute namespace="##any" processContents="lax"/>
544             </extension>
545         </complexContent>
546     </complexType>
547
548 </schema>
```

549

B. Conformance Items

551 This section contains a list of conformance items for the SCA Web Service Binding specification.

Conformance ID	Description
[BWS20001]	For an SCA reference, the @uri attribute MUST be an absolute value.
[BWS20002]	The value of the @wsdlElement attribute MUST identify an element in an existing WSDL 1.1 document.
[BWS20003]	If the binding is for an SCA service, the wsdlElement attribute MUST NOT specify the wsdl.service form of URI.
[BWS20004]	If the wsdl.service form of wsdlElement is used on an SCA reference binding, the set of available ports for the reference MUST contain at least one port.
[BWS20005]	If the wsdl.service form of wsdlElement is used on an SCA reference binding, the SCA runtime MUST raise an error if there are no available ports that it supports.
[BWS20006]	When an invocation is made using an SCA reference binding with the wsdl.service form of wsdlElement, the SCA runtime MUST use exactly one port from the set of available ports for the reference (with port selection on a per-invocation basis permitted).
[BWS20007]	If the binding is for an SCA service, the portType associated with the specified WSDL port MUST be compatible with the SCA service interface as defined in section 2.1, and the port MUST satisfy all the policy constraints of the binding.
[BWS20008]	The SCA runtime MUST expose an endpoint for the specified WSDL port, or raise an error if it does not support the WSDL port.
[BWS20009]	If the binding is for an SCA reference, the portType associated with the specified WSDL port MUST be a compatible superset of the SCA reference interface as defined in the SCA Assembly Model specification [SCA-Assembly], and the port MUST satisfy all the policy constraints of the binding.
[BWS20010]	The SCA runtime MUST use the specified WSDL port for invocations made using the SCA reference, or raise an error if it does not support the WSDL port.
[BWS20011]	If the binding is for an SCA service, the portType associated with the specified WSDL binding MUST be compatible with the SCA service interface as defined in section 2.1, and the WSDL binding MUST satisfy all the policy constraints of the binding.
[BWS20012]	The SCA runtime MUST expose an endpoint for the specified WSDL binding, or raise an error if it does not support the WSDL binding.
[BWS20013]	If the binding is for an SCA reference, the portType associated with the specified WSDL binding MUST be a compatible superset of the SCA reference interface as defined in the SCA Assembly Model specification [SCA-Assembly], and the WSDL binding MUST satisfy all the policy constraints of the binding.
[BWS20014]	The SCA runtime MUST use the specified WSDL binding for invocations made using the SCA reference, or raise an error if it does not support the WSDL

	binding.
[BWS20015]	When the <i>wSDL.binding</i> form of <i>wSDL.Element</i> is used, the endpoint address URI for an SCA reference MUST be specified by either the <i>@uri</i> attribute on the binding or a WS-Addressing <i>EndpointReference</i> element, except where the SCA Assembly Model specification [SCA-Assembly] states that the <i>@uri</i> attribute can be omitted.
[BWS20016]	The <i>@wsdl:wsdlLocation</i> attribute MAY be specified by the binding in the event that the <WSDL-namespace-URI> in the 'endpoint' attribute is not dereferencable, or when the intended WSDL document is to be found at a different location than the one pointed to by the <WSDL-namespace-URI>.
[BWS20017]	If the <i>@wsdl:wsdlLocation</i> attribute is used the <i>@wSDL.Element</i> attribute MUST also be specified.
[BWS20018]	The semantics of this attribute are specified in Section 7.1 of WSDL 2.0 [WSDL20]. The value of the <i>@wsdl:wsdlLocation</i> attribute MUST identify an existing WSDL 1.1 document.
[BWS20019]	A <i>binding.ws</i> element MUST NOT contain more than one of any of the following: the <i>@uri</i> attribute; the <i>@wSDL.Element</i> attribute referring to a WSDL port or to a WSDL service; the <i>endpointReference</i> element.
[BWS20020]	For the <i>callback</i> element of an SCA service, the binding MUST NOT specify an endpoint address URI or a WS-Addressing <i>EndpointReference</i> .
[BWS20021]	The SCA runtime MUST support all the attributes of the <binding.ws> element, namely <i>@name</i> , <i>@uri</i> , <i>@requires</i> , <i>@policySets</i> , <i>@wSDL.Element</i> , and <i>@wsdl:wsdlLocation</i> .
[BWS20022]	The SCA runtime SHOULD support the element <endpointReference>.
[BWS20023]	If an SCA runtime does not support the element <endpointReference>, then it MUST reject an SCA WS Binding XML document (as defined in Section 5.1) that contains the element.
[BWS20024]	The <binding.ws> element MUST conform to the XML schema defined in <i>sca-binding-webservice.xsd</i> .
[BWS20025]	If there is no target address for a reference binding, the SCA runtime MUST raise an error.
[BWS20026]	For a reference binding, the SCA runtime MUST use the target address.
When <i>binding.ws</i> is used on a service or reference with an interface that is not defined by <i>interface.wSDL</i> , the SCA runtime MUST derive a WSDL portType for the service or reference from the interface using the rules defined for that SCA interface type.	When <i>binding.ws</i> is used on a service or reference with an interface that is not defined by <i>interface.wSDL</i> , the SCA runtime MUST derive a WSDL portType for the service or reference from the interface using the rules defined for that SCA interface type.

[BWS20028]	An SCA runtime MUST raise an error if the interface on a service or reference element with a binding.ws element does not map to a WSDL portType.
[BWS20029]	Any service hosted by an SCA runtime with one or more web service bindings with HTTP endpoints SHOULD return a WSDL description of the service in response to an HTTP GET request with the "?wsdl" suffix to that HTTP endpoint.
[BWS20030]	If none of the web service bindings for an SCA service have HTTP endpoints, then the SCA runtime SHOULD provide some other means of obtaining the WSDL description of the service.
[BWS20031]	SCA runtime implementations MAY provide additional metadata that is associated with a web service binding.
[BWS20032]	An SCA runtime MUST support the WSDL extensions defined in the namespace associated with the prefix "sca" (as defined in section 1.1).
[BWS20033]	The SCA runtime MUST support the WSDL 1.1 binding extension for SOAP 1.1 over HTTP [WSDL11], as identified by the WSDL element wsoap11:binding that has the @transport attribute with a value of "http://schemas.xmlsoap.org/soap/http".
[BWS20034]	The SCA runtime SHOULD support the WSDL 1.1 binding extension for SOAP 1.2 over HTTP [W11-SOAP12], as identified by the WSDL element wsoap12:binding that has the @transport attribute with a value of "http://schemas.xmlsoap.org/soap/http".
[BWS20035]	The <bindingType> element associated with this binding MUST include the SOAP.1_1 intent in its @mayProvides or @alwaysProvides attributes.
[BWS20036]	The <bindingType> element associated with this binding SHOULD include the SOAP.1_2 intent in its @mayProvides attribute.
[BWS20037]	The SCA runtime MUST raise an error if a web service binding is configured with a policy intent(s) that conflicts with the binding instance's configuration.
[BWS40001]	When the SOAP intent is required, the SCA runtime MUST transmit and receive messages using SOAP. One or more SOAP versions can be used.
[BWS40002]	When the SOAP.1_1 intent is required, the SCA runtime MUST transmit and receive messages using only SOAP 1.1.
[BWS40003]	When the SOAP.1_2 intent is required, the SCA runtime MUST transmit and receive messages using only SOAP 1.2.
[BWS40004]	For an SCA service or reference element, the portType from the service's or reference's interface or derived from that interface MUST follow either the rpc-literal or document-literal pattern.
[BWS40005]	In the event that the transport details are not otherwise determined, an SCA runtime MUST enable the default transport binding rules.
[BWS40006]	When using the default transport binding rules, the SCA runtime MAY provide additional WSDL bindings, unless policy is applied that explicitly restricts this.
[BWS40007]	When using the default transport binding rules with the rpc-literal pattern, the SCA runtime SHOULD use the structural URI associated with the binding as the namespace of the child elements of the SOAP body element.

552

C. Appendix - WSDL Generation

553

Due to the number of factors that determine how a WSDL might be generated, including compatibility with existing WSDL uses, precise details cannot be specified. For example, implementation decisions can affect the way WSDL might be generated. For reference, and consistency, this section suggests non-normative choices for some of the various details involved in generating WSDL. For brevity, the following definitions apply:

554

555

556

557

558

- component name = the value of the @name attribute of the component element containing the binding.ws element

559

560

- service name = the value of the @name attribute of the service element containing the binding.ws element

561

562

- binding name = the value of @name attribute of the binding.ws element, or the default if no @name attribute is present

563

564

- SOAP version = either "SOAP11" or "SOAP12" as appropriate

565

With those definitions in place, here are the suggested choices:

566

- wsdl:definitions/@name = <component name> + "." + <service name>

567

- wsdl:definitions/@targetNamespace = <structural URI for the service>

568

- import each WSDL 1.1 portType, rather than putting them inline

569

- wsdl:binding/@name = <binding name> + <SOAP version> + "Binding"

570

- wsdl:service/@name = <service name>

571

- wsdl:port/@name = <binding name> + <SOAP version> + "Port"

572 **D. Acknowledgements**

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

575 **Participants:**

576 [Participant Name, Affiliation | Individual Member]

577 [Participant Name, Affiliation | Individual Member]

578

F. Revision History

581 [optional; should not be included in OASIS Standards]

Revision	Date	Editor	Changes Made
1	2007-09-25	Anish Karmarkar	Applied the OASIS template + related changes to the Submission
2	2008-04-02	Anish Karmarkar	<ul style="list-style-type: none"> * Partially applied the resolution of issue 14 in the conformance section. * Applied resolution to issue 9. * Applied resolution to issue 15. * Applied resolution to issue 16. * Applied resolution to issue 10. * Applied resolution to issue 8. * Applied resolution to issue 3.
3	2008-06-12	Simon Holdsworth	<ul style="list-style-type: none"> * Completed application of resolution to issue 10 * Applied most of the editorial changes from Eric Johnson's review
4	2008-08-13	Anish Karmarkar	<ul style="list-style-type: none"> * Applied rest of Eric Johnson's ed review comments. * Applied resolution of issue 13. * Reapplied resolution of issue 15 (it was not applied correctly before) * Applied resolution of issue 19. * Applied resolution of issue 30. * Applied resolution of issue 32. * Applied resolution of issue 36. * Applied resolution of issue 38.
cd01-rev1	2008-10-16	Simon Holdsworth	Applied resolution of issue 41.
cd01-rev2	2008-10-20	Anish Karmarkar	Added rfc2119 statements.
cd01-rev3	2008-11-19	Anish Karmarkar	Incorporated feedback from Bryan, Eric & Dave
cd01-rev3	2008-12-02	Anish Karmarkar	Removed 'required' word associated with description of pseudo-schema + changed section 2.6 (wsdl extensibility) per the TC decision. Both of these were associated with issue 51 (2119 stmts)
cd01-rev5	2009-02-06	Simon Holdsworth	<ul style="list-style-type: none"> Applied resolution of issue 11 Applied resolution of issue 49 Applied action item 20080904-1
cd02	2009-02-16	Simon Holdsworth	Renamed, applied editorial issues
cd02-rev1	2009-06-02	Anish Karmarkar	* Applied resolution of issue 61 by using the

			<p>document at http://www.oasis-open.org/apps/org/workgroup/sca-bindings/download.php/32160/sca-binding-ws-1.1-spec-cd02-issue61-rev3.doc as the base document.</p> <ul style="list-style-type: none"> * Updated NS URI (Applied action item 20090311-2). * Updated Copyright statement in various places. * Updated schema per http://lists.oasis-open.org/archives/sca-bindings/200903/msg00057.html (Applied action item 20090312-1). * Applied resolution of issue 23, 25, 43, 54, 55, 64. * Replaced 3 occurrences of 'required' with 'specified'. * Recreated all bookmarks, cross-references, and conformance item table.
cd0-rev2	2009-06-09	Anish Karmarkar	Ed. fixes. Changed the way the crossrefs/bookmarks for RFC2119 keywords work. Fixed a few references.

582