

Bindings for OBIX: SOAP Bindings Version 1.0

Committee Specification Draft 02 / Public Review Draft 02

19 December 2013

Specification URIs

This version:

<http://docs.oasis-open.org/obix/obix-soap/v1.0/csprd02/obix-soap-v1.0-csprd02.pdf> (Authoritative)
<http://docs.oasis-open.org/obix/obix-soap/v1.0/csprd02/obix-soap-v1.0-csprd02.html>
<http://docs.oasis-open.org/obix/obix-soap/v1.0/csprd02/obix-soap-v1.0-csprd02.doc>

Previous version:

<http://docs.oasis-open.org/obix/obix-soap/v1.0/csprd01/obix-soap-v1.0-csprd01.pdf> (Authoritative)
<http://docs.oasis-open.org/obix/obix-soap/v1.0/csprd01/obix-soap-v1.0-csprd01.html>
<http://docs.oasis-open.org/obix/obix-soap/v1.0/csprd01/obix-soap-v1.0-csprd01.doc>

Latest version:

<http://docs.oasis-open.org/obix/obix-soap/v1.0/obix-soap-v1.0.pdf> (Authoritative)
<http://docs.oasis-open.org/obix/obix-soap/v1.0/obix-soap-v1.0.html>
<http://docs.oasis-open.org/obix/obix-soap/v1.0/obix-soap-v1.0.doc>

Technical Committee:

OASIS Open Building Information Exchange (oBIX) TC

Chair:

Toby Considine (toby.considine@unc.edu), University of North Carolina at Chapel Hill

Editor:

Markus Jung (mjung@auto.tuwien.ac.at), Institute of Computer Aided Automation, Vienna University of Technology

Additional artifacts:

This prose specification is one component of a Work Product that also includes:

- WSDL files: <http://docs.oasis-open.org/obix/obix-soap/v1.0/csprd02/wSDL/>

Related work:

This specification is related to:

- *OBIX Version 1.1*. Edited by Craig Gemmill. Latest version. <http://docs.oasis-open.org/obix/obix/v1.1/obix-v1.1.html>.
- *Bindings for OBIX: REST Bindings Version 1.0*. Edited by Craig Gemmill and Markus Jung. Latest version. <http://docs.oasis-open.org/obix/obix-rest/v1.0/obix-rest-v1.0.html>.
- *Bindings for OBIX: WebSocket Bindings Version 1.0*. Edited by Matthias Hub. Latest version. <http://docs.oasis-open.org/obix/obix-websocket/v1.0/obix-websocket-v1.0.html>.
- *Encodings for OBIX: Common Encodings Version 1.0*. Edited by Marcus Jung. Latest version. <http://docs.oasis-open.org/obix/obix-encodings/v1.0/obix-encodings-v1.0.html>.

Abstract:

This document specifies SOAP protocol bindings for OBIX.

Status:

This document was last revised or approved by the OASIS Open Building Information Exchange (oBIX) TC on the above date. The level of approval is also listed above. Check the “Latest 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/obix/>.

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/obix/ipr.php>).

Citation format:

When referencing this specification the following citation format should be used:

[OBIX-SOAP]

Bindings for OBIX: SOAP Bindings Version 1.0. Edited by Markus Jung. 19 December 2013. OASIS Committee Specification Draft 02 / Public Review Draft 02. <http://docs.oasis-open.org/obix/obix-soap/v1.0/csprd02/obix-soap-v1.0-csprd02.html>. Latest version: <http://docs.oasis-open.org/obix/obix-soap/v1.0/obix-soap-v1.0.html>.

Notices

Copyright © OASIS Open 2013. 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/policies-guidelines/trademark> for above guidance.

Table of Contents

1	Introduction	5
1.1	Terminology	5
1.2	Normative References	5
1.3	Non-Normative References	5
2	SOAP Binding.....	6
2.1	SOAP Example	6
2.2	Error Handling.....	6
2.3	Security	6
2.4	Localization	6
2.5	WSDL.....	6
3	Conformance	9
Appendix A.	Acknowledgments	10
Appendix B.	Revision History	11

1 Introduction

This document specifies the SOAP protocol bindings for OBIX.

1.1 Terminology

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

1.2 Normative References

- RFC2119** Bradner, S., “Key words for use in RFCs to Indicate Requirement Levels”, BCP 14, RFC 2119, March 1997. <http://www.ietf.org/rfc/rfc2119.txt>.
- OBIX** *OBIX Version 1.1*. Edited by Craig Gemmill. Latest version. <http://docs.oasis-open.org/obix/obix/v1.1/obix-v1.1.html>.
- OBIX REST** *Bindings for OBIX: REST Bindings Version 1.0*. Edited by Craig Gemmill and Markus Jung. Latest version. <http://docs.oasis-open.org/obix/obix-rest/v1.0/obix-rest-v1.0.html>.
- WS-I** R. Chumbley, J. Durand, G. Pilz, T. Rutt, Basic Profile Version 2.0, Web Services Interoperability Organization, 09 November 2010
- SOAP** M Gudgin, M Hadley, N Mendelsohn, J Moreau, H Nielsen, A Karmarkar, Y Lafon, W3C SOAP Version 1.2 (Second Edition), W3C Recommendation 27 April 2007

1.3 Non-Normative References

23 2 SOAP Binding

24 The SOAP binding maps a SOAP operation to each of the three OBIX request types: `read`, `write` and
25 `invoke`. Like the HTTP binding, `read` is supported by every object, `write` is supported by objects whose
26 `writable` attribute is `true`, and `invoke` is only supported by operations. Inputs and outputs of each
27 request are specific to the target object.

28 Unlike the HTTP binding, requests are not accessed via the URI of the target object, but instead via the
29 URI of the SOAP server with the object's URI encoded into the body of the SOAP envelope.

30 2.1 SOAP Example

31 The following is a SOAP request to an OBIX server's `About` object:

```
32 <env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">  
33   <env:Body>  
34     <obixWS:read xmlns:obixWS=" http://docs.oasis-open.org/obix/ns/201312/wsd1"  
35       xmlns="http://docs.oasis-open.org/obix/ns/201312/schema"  
36       href="http://localhost/obix/about" />  
37   </env:Body>  
38 </env:Envelope>
```

39 An example response to the above request:

```
40 <env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">  
41   <env:Body>  
42     <obixWS:response xmlns:obixWS=" http://docs.oasis-open.org/obix/ns/201312/wsd1"  
43       xmlns="http://docs.oasis-open.org/obix/ns/201312/schema">  
44       <obj name="about"  
45         href="http://localhost/obix/about/">  
46         <str name="obixVersion" val="1.1"/>  
47         <str name="serverName" val="obix"/>  
48         <abstime name="serverTime" val="2006-02-08T09:40:55.000+05:00:00Z"/>  
49         <abstime name="serverBootTime" val="2006-02-08T09:33:31.980+05:00:00Z"/>  
50         <str name="vendorName" val="Acme, Inc."/>  
51         <uri name="vendorUrl" val="http://www.acme.com"/>  
52         <str name="productName" val="Acme OBIX Server"/>  
53         <str name="productVersion" val="1.0.3"/>  
54         <uri name="productUrl" val="http://www.acme.com/obix"/>  
55       </obj>  
56     </obixWS:response>  
57   </env:Body>  
58 </env:Envelope>
```

59 2.2 Error Handling

60 The OBIX specification defines no SOAP faults. If a request is processed by an OBIX server, then a valid
61 OBIX document SHOULD be returned with a failure indicated via the `err` object.

62 2.3 Security

63 Refer to the recommendations in WS-I Basic Profile 2.0 for security [WS-I].

64 2.4 Localization

65 SOAP bindings SHOULD follow localization patterns defined for the HTTP binding when applicable (see
66 Section [OBIX REST]).

67 2.5 WSDL

68 In the types section of the WSDL document, the OBIX schema is imported. Server implementations might
69 consider providing the `schemaLocation` attribute which is absent in the standard document.

70 Each instance will have to provide its own services section of the WSDL document. The following
71 is an example of the WSDL service element:

```
72 <wsdl:service name="obix">  
73 <wsdl:port name="obixPort" binding="tns:obixSoapBinding">  
74 <soap:address location="http://localhost/obix/soap"/>  
75 </wsdl:port>  
76 </wsdl:service>
```

77 Standard OBIX WSDL is:

```
78 <wsdl:definitions targetNamespace="http://docs.oasis-open.org/obix/ns/201312/wsdl"  
79 xmlns="http://docs.oasis-open.org/obix/ns/201312/wsdl"  
80 xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"  
81 xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"  
82 xmlns:xsd="http://www.w3.org/2001/XMLSchema"  
83 xmlns:obix="http://docs.oasis-open.org/obix/ns/201312/wsdl">  
84 <wsdl:types>  
85 <xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"  
86 elementFormDefault="qualified" targetNamespace="http://docs.oasis-  
87 open.org/obix/ns/201312/wsdl"  
88 xmlns="http://docs.oasis-open.org/obix/ns/201312/wsdl">  
89 <xsd:import namespace="http://docs.oasis-open.org/obix/ns/201312/schema"  
90 schemaLocation="obix.xsd" />  
91 <xsd:complexType name="ReadReq">  
92 <xsd:attribute name="href" type="xsd:anyURI" />  
93 </xsd:complexType>  
94 <xsd:complexType name="WriteReq">  
95 <xsd:complexContent>  
96 <xsd:extension base="ReadReq">  
97 <xsd:sequence>  
98 <xsd:element ref="obix:obj" maxOccurs="1"  
99 minOccurs="1" />  
100 </xsd:sequence>  
101 </xsd:extension>  
102 </xsd:complexContent>  
103 </xsd:complexType>  
104 <xsd:complexType name="InvokeReq">  
105 <xsd:complexContent>  
106 <xsd:extension base="ReadReq">  
107 <xsd:sequence>  
108 <xsd:element ref="obix:obj" maxOccurs="1"  
109 minOccurs="1" />  
110 </xsd:sequence>  
111 </xsd:extension>  
112 </xsd:complexContent>  
113 </xsd:complexType>  
114 <xsd:element name="read" type="ReadReq" />  
115 <xsd:element name="write" type="WriteReq" />  
116 <xsd:element name="invoke" type="InvokeReq" />  
117 </xsd:schema>  
118 </wsdl:types>  
119 <wsdl:message name="readSoapReq">  
120 <wsdl:part name="body" element="read" />  
121 </wsdl:message>  
122 <wsdl:message name="readSoapRes">  
123 <wsdl:part name="body" element="obix:obj" />  
124 </wsdl:message>  
125 <wsdl:message name="writeSoapReq">  
126 <wsdl:part name="body" element="write" />  
127 </wsdl:message>  
128 <wsdl:message name="writeSoapRes">  
129 <wsdl:part name="body" element="obix:obj" />  
130 </wsdl:message>  
131 <wsdl:message name="invokeSoapReq">  
132 <wsdl:part name="body" element="invoke" />  
133 </wsdl:message>  
134 <wsdl:message name="invokeSoapRes">  
135 <wsdl:part name="body" element="obix:obj" />  
136 </wsdl:message>  
137 <wsdl:portType name="OBIXSoapPort">  
138 <wsdl:operation name="read">  
139 <wsdl:input message="readSoapReq" />
```

```

140     <wsdl:output message="readSoapRes" />
141 </wsdl:operation>
142 <wsdl:operation name="write">
143   <wsdl:input message="writeSoapReq" />
144   <wsdl:output message="writeSoapRes" />
145 </wsdl:operation>
146 <wsdl:operation name="invoke">
147   <wsdl:input message="invokeSoapReq" />
148   <wsdl:output message="invokeSoapRes" />
149 </wsdl:operation>
150 </wsdl:portType>
151 <wsdl:binding name="OBIXSoapBinding" type="OBIXSoapPort">
152   <soap:binding style="document"
153     transport="http://schemas.xmlsoap.org/soap/http" />
154   <wsdl:operation name="read">
155     <soap:operation soapAction="http://docs.oasis-open.org/obix/ns/201312/wsdl/read"
156       style="document" />
157     <wsdl:input>
158       <soap:body use="literal" />
159     </wsdl:input>
160     <wsdl:output>
161       <soap:body use="literal" />
162     </wsdl:output>
163   </wsdl:operation>
164   <wsdl:operation name="write">
165     <soap:operation soapAction="http://docs.oasis-open.org/obix/ns/201312/wsdl/write"
166       style="document" />
167     <wsdl:input>
168       <soap:body use="literal" />
169     </wsdl:input>
170     <wsdl:output>
171       <soap:body use="literal" />
172     </wsdl:output>
173   </wsdl:operation>
174   <wsdl:operation name="invoke">
175     <soap:operation soapAction="http://docs.oasis-open.org/obix/ns/201312/wsdl/invoke"
176       style="document" />
177     <wsdl:input>
178       <soap:body use="literal" />
179     </wsdl:input>
180     <wsdl:output>
181       <soap:body use="literal" />
182     </wsdl:output>
183   </wsdl:operation>
184 </wsdl:binding>
185
186 <wsdl:service name="obix">
187   <wsdl:port name="obixPort" binding="OBIXSoapBinding">
188     <soap:address location="http://localhost/soap" />
189   </wsdl:port>
190 </wsdl:service>
191 </wsdl:definitions>

```

192

3 Conformance

193

An implementation is compliant with this specification if it implements all MUST or REQUIRED level requirements.

194

195 Appendix A. Acknowledgments

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

198 **Participants:**

199 Ron Ambrosio, IBM
200 Brad Benson, Trane
201 Ron Bernstein, LonMark International*
202 Ludo Bertsch, Continental Automated Buildings Association (CABA)
203 Chris Bogen, US Department of Defense
204 Rich Blomseth, Echelon Corporation
205 Anto Budiardjo, Clasma Events, Inc.
206 Jochen Burkhardt, IBM
207 JungIn Choi, Kyungwon University
208 David Clute, Cisco Systems, Inc.*
209 Toby Considine, University of North Carolina at Chapel Hill
210 William Cox, Individual
211 Robert Dolin, Echelon Corporation
212 Marek Dzedzic, Treasury Board of Canada, Secretariat
213 Brian Frank, SkyFoundry
214 Craig Gemmill, Tridium, Inc.
215 Matthew Giannini, Tridium, Inc.
216 Christopher Kelly, Cisco Systems
217 Wonsuk Ko, Kyungwon University
218 Perry Krol, TIBCO Software Inc.
219 Corey Leong, Individual
220 Ulf Magnusson, Schneider Electric
221 Brian Meyers, Trane
222 Jeremy Roberts, LonMark International
223 Thorsten Roggendorf, Echelon Corporation
224 Anno Scholten, Individual
225 John Sublett, Tridium, Inc.
226 Dave Uden, Trane
227 Ron Zimmer, Continental Automated Buildings Association (CABA)*
228 Rob Zivney, Hirsch Electronics Corporation
229 Markus Jung, Institute of Computer Aided Automation, Vienna University of Technology
230

231

Appendix B. Revision History

232

Revision	Date	Editor	Changes Made
wd01	18 Mar 2013	Markus Jung	Initial creation, WSDL modifications, SOAP
wd02	26 Mar 2013	Markus Jung	Reverted changes to the state of OBIX 1.1 WD07.
wd03	13 Jun 2013	Markus Jung	Formatting changes
wd04	28 Jun 2013	Markus Jung	Modified WSDL to work with the OBIX 1.1 XML schema. Introduced wrapping response type and element.
WD05	8 Jul 2013	Toby Considine	Minor formatting and before PR
wd06	7 Nov 2013	Markus Jung	Incorporating PR review comments
wd07	5 Dec 2013	Markus Jung	Fixed namespaces
wd08	16 Dec 2013	Markus Jung	Updated namespaces, Uppercase writing of OBIX
wd09	16 Dec 2013	Markus Jung	Minor fixes: OBIX-83, OBIX-84

233

234