3. Indicating Use of WS-Addressing

This specification supports a mechanism for indicating, in a WSDL description, that the endpoint conforms to the WS-Addressing specification. That mechanism uses WS-Policy Framework [*WS Policy 1.5 - Framework*].

3.1 WS-Policy Assertions

The mechanism for indicating that a binding or endpoint conforms to the WS-Addressing specification is through the use of the Web Services Policy - Framework [*WS Policy 1.5 - Framework*] and Web Services Policy - Attachment [*WS Policy 1.5 - Attachment*] specifications. This specification defines three policy assertions.

For WSDL 1.1, these assertions may be attached to `wsdl11:port` or `wsdl11:binding`. For WSDL 2.0, they may be attached to `wsdl20:endpoint` or `wsdl20:binding`.

3.1.1 Addressing Assertion

The wsam:Addressing policy assertion is a nested policy container assertion. The meaning of this assertion, when present in a policy alternative, is that WS-Addressing is required to communicate with the subject. In order to indicate that the subject supports WS-Addressing but does not require its use, an additional policy alternative should be provided which does not contain this assertion. This may be done in WS-Policy compact form by adding the attribute wsp:Optional="true" to the wsam:Addressing assertion.

Two nested Policy Assertion types are defined for use with the Addressing assertion (i.e., AnonymousResponses, and NonAnonymousResponses),. These nested policy assertions are used for the policy subject to indicate its support for sending responses associated with a particular type of EPR. Lack of presence of either of these nested Policy assertions indicates that the policy subject does not support sending responses associated with EPRs.

3.1.2 AnonymousResponses Assertion

The wsam:AnonymousResponses element MAY be used as a policy assertion nested within the wsam:Addressing assertion in accordance with the rules laid down by WS-Policy Framework 1.5 section 4.3.2.

The appearance of this element within a policy alternative, nested within an Addressing assertion, indicates that the policy subject supports sending responses to request messages with response endpoint EPRs that contain the anonymous URI ("http://www.w3.org/2005/08/addressing/anonymous") as the value of [address]. In other words, the endpoint supports anonymous responses.

The None URI ("http://www.w3.org/2005/08/addressing/none") may appear as the value of [address] in place of the anonymous URI; this value MUST be accepted.

3.1.3 NonAnonymousResponses Assertion

The wsam:NonAnonymousResponses element MAY be used as a policy assertion nested within the Addressing assertion in accordance with the rules laid down by WS-Policy Framework 1.5 section 4.3.2.

The appearance of this element within a policy alternative, nested within an Addressing assertion, indicates that the policy subject supports sending responses to request messages with response endpoint EPRs that contain something other than the anonymous URI as the value of [address]. In other words, the endpoint guarantees supports non-anonymous responses. This assertion is deliberately vague; its presence indicates that some non-anonymous addresses will be accepted but doesn't constrain what such an address might look like. A receiver can still reject a request that contains an address that it doesn't understand or that requires a binding it doesn't support.

The None URI ("http://www.w3.org/2005/08/addressing/none") may appear as the value of [address] in place of a non-anonymous address; this value MUST be accepted.

3.1.4 Examples (Compact Form)

Example 3-1. Subject supports WS-Addressing, no support for sending responses associated with EPRs

```
<wsp:Policy>
    <wsam:Addressing wsp:Optional="true">
        <wsp:Policy/>
    </wsam:Addressing>
</wsp:Policy>
```

Example 3-2. Subject requires WS-Addressing, no support for sending responses associated with EPRs

```
<wsp:Policy>
    <wsam:Addressing>
        <wsp:Policy/>
    </wsam:Addressing>
</wsp:Policy>
```

Example 3-3. Subject supports WS-Addressing, and supports sending responses associated with anonymousEPRs and also supports sending responses associated with non-anonymous response EPRs

```
<wsp:Policy>
    <wsam:Addressing wsp:Optional="true">
        <wsp:Policy>
            <wsam:AnonymousResponses />
            <wsam:NonAnonymousResponses />
        </wsp:Policy>
    </wsam:Addressing>
```

```
</wsp:Policy>
```

Example 3-5. Subject requires WS-Addressing and only supports sending responses associated with non-anonymous response EPRs

```
<wsp:Policy>
    <wsam:Addressing>
        <wsp:Policy>
            <wsam:NonAnonymousResponses/>
        </wsp:Policy>
    </wsam:Addressing>
</wsp:Policy>
```

3.1.5 Examples (Normal Form)

Example 3-6. Subject supports WS-Addressing, no support for sending responses associated with EPRs

```
<wsp:Policy>
    <wsp:ExactlyOne>
        <wsp:All/>
        <wsp:All>
            <wsam:Addressing>
                <wsp:Policy>
                    <wsp:ExactlyOne>
                        <wsp:All/>
                    </wsp:ExactlyOne>
                </wsp:Policy>
            </wsam:Addressing>
        </wsp:All>
    </wsp:ExactlyOne>
</wsp:Policy>
```

Example 3-7. Subject requires WS-Addressing, no support for sending responses associated with EPRs

```
<wsp:Policy>
    <wsp:ExactlyOne>
        <wsp:All>
            <wsam:Addressing>
                <wsp:Policy>
                    <wsp:ExactlyOne>
                        <wsp:All/>
                    </wsp:ExactlyOne>
                </wsp:Policy>
            </wsam:Addressing>
        </wsp:All>
    </wsp:ExactlyOne>
</wsp:Policy>
```

Example 3-8. Subject supports WS-Addressing, and supports sending responses associated with anonymousEPRs and also supports sending responses associated with non-anonymous response EPRs

```
<wsp:Policy>
    <wsp:ExactlyOne>
        <wsp:All/>
        <wsp:All>
            <wsam:Addressing>
```

```
            <wsp:Policy>
                <wsp:ExactlyOne>
                    <wsp:All>
                        <wsam:AnonymousResponses/>
                        <wsam:NonAnonymousResponses/>
                    </wsp:All>
                </wsp:ExactlyOne>
            </wsp:Policy>
        </wsam:Addressing>
    </wsp:All>
</wsp:ExactlyOne>
</wsp:Policy>
</wsp:Policy>
```

Example 3-10. Subject requires WS-Addressing and only supports sending responses associated with non-anonymous response EPRs

```
<wsp:Policy>
    <wsp:ExactlyOne>
        <wsp:All>
            <wsam:Addressing>
                <wsp:Policy>
                    <wsp:ExactlyOne>
                        <wsp:All>
                            <wsam:NonAnonymousResponses/>
                        </wsp:All>
                    </wsp:ExactlyOne>
                </wsp:Policy>
            </wsam:Addressing>
        </wsp:All>
    </wsp:ExactlyOne>
</wsp:Policy>
```
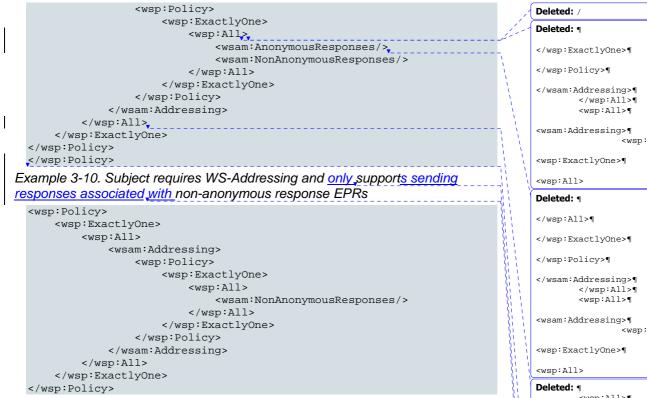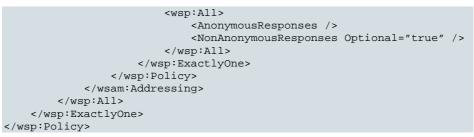
3.1.6 Finding Compatible Policies

When a client is looking for an endpoint with compatible policy, one common method used is to take the policy intersection between the policy which the client is looking for, and the policy asserted in the WSDL document; a non-empty intersection is sought. The policy used by the client must be written carefully to avoid unexpected results; failing to take care could mean missing a compatible policy.

Consider the following example, where we have a client who does not care whether the endpoint explicitly supports anonymous responses, and a WSDL which states that the endpoint does explicitly support anonymous responses.

Example 3-11. Client looking for an endpoint which supports Addressing, and only requires anonymous responses

```
<wsp:Policy>
    <wsp:ExactlyOne>
        <wsp:All>
            <wsam:Addressing>
                <wsp:Policy>
                    <wsp:ExactlyOne>
```

```
                    <wsp:All>
                        <AnonymousResponses />
                        <NonAnonymousResponses Optional="true" />
                    </wsp:All>
                </wsp:ExactlyOne>
            </wsp:Policy>
        </wsam:Addressing>
    </wsp:All>
  </wsp:ExactlyOne>
</wsp:Policy>
```

Example 3-12. Client looking for an endpoint which supports Addressing, and does not require support for responses (will intersect with anything)

```
<wsp:Policy>
    <wsp:ExactlyOne>
        <wsp:All>
            <wsam:Addressing>
                <wsp:Policy>
                    <wsp:ExactlyOne>
                        <wsp:All>
                            <AnonymousResponses Optional="true" />
                            <NonAnonymousResponses Optional="true" />
                        </wsp:All>
                    </wsp:ExactlyOne>
                </wsp:Policy>
            </wsam:Addressing>
        </wsp:All>
    </wsp:ExactlyOne>
</wsp:Policy>
```