Web Services for Management
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instance. In this sense, a management reso

wsa:Address

This is the URI of the transport address

wsa:ReferenceParameters/wsman:ResourceURI

This is the URI of the management resource being accessed. Both this URI and the wsa:Address URI form the full address of the resource.

wsa:ReferenceParameters/wsman:SelectorSet

The optional set of Selectors as described in 2.9. These are used to select an instance if the ResourceURI represents

http://schemas.xmlsoap.org/ws/2004/09/enumeration/GetStatus

http://schemas.xmlsoap.org/ws/2004/09/enumeration/Release

http://schemas.xmlsoap.org/ws/2004/08/eventing/Subscribe

R2.4-9: If a valid request is received but the resource is not available at that time, a service SHOULD issue either a wsa:DestinationUnreachable fault, but MAY issue a wsa:EndpointUnvailable fault if it can be determined that the resource is actually offline as opposed to being incorrectly formatted or non-existent.

Note that all secondary messages which are continuations of prior messages, such as wsen:Pull or wsen:Release (both of which continue wsen:Enumerate) must still contain an endpoint reference. The fact that these messages also contain context information from a prior message is not material to the SOAP messaging and addressing model.

Note that custom-WSDL based methods should have both a ResourceURI identity from the perspective of addressing, and have a wsa:Action from the point of view of execution. In many cases9(o)2, the ResourceURI is simply an acronym for the WSDL identity and Port, and the wsa:Act9(o)2ion is the specify a 62ic method within that Port9(o)2 (or Interface) definition.

While the URI could theoretically be used alone to define an instance of a multi-instance resource, it is recommended that the wsa:To be used to locate the WS-Management service, the wsman:ResourceURI be used to identify the resource type, and that wsman:SelectorSet be used to reference the instance. I the resource only consists of a single instance, then the wsman:ResourceURI alone refers to the singleton instace.

The following faults apply:

R2.4-10: The9(o)2 service SHOUL9(o)2D issue fa9(o)2ults rela resource:

a) If the resou9(o)2rce is offline, a wsa:En

R2.5-2: A conformant service MAY require that all responses be delivered over the

R2.5-6: If the wsa:ReplyTo address is not usable or is missing, the service should not reply to the request, as there is no way to properly reply and it should close or terminate the connection according to the rules of the current network

```
(2)     xmlns:s="http://www.w3.org/2003/05/soap-envelope"
(3)     xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
(4)     xmlns:wsman="http://schemas.xmlsoap.org/ws/2005/06/management">
(5)   <s:Header>
(6)     ...
(7)     <wsa:To> http://1.2.3.4/wsman </wsa:To>
(8)     <wsa:FaultTo>
(9)        <wsa:Address>
requde( way)PS 8 0whaDe3.0URIT4(5jE-1)-HT3((5jE- the(TD Twf bSd 19. l-4 -1.1437 7425fBT9222-0.00[/T-4515(er-7foll
```

This rule allows selector names to be disjoint across instances of the same resource. Selectors should be treated loos

```
(1) <s:Envelope
(2)     xmlns:s="http://www.w3.org/266 /05/soap-envelope"
(3)     xmlns:wsa="http://schemas.xmlsoap.org/ws/2664/08/addressing"
(4)     xmlns:wsman="http://schemas.xmlsoap.org/ws/2665/06/management">
(5)   <s:Header>
(6)     ...
(7)     <wsman:SelectorSet>
(8)       <wsman:Selector Name="Primary">
```

In other words, to model the "Get" of item "Disk", the ResourceURI defines the reference to "Disk" (using Selectors to indicate which disk), but the wsa:Action URI is what will contain the "Get". Implementations are free to additionally support custom methods which combine the notion of "Get" and "Disk into a single "GetDisk" action, as long as they strive to support the separated form to maximize interoperation. One of 003nn

R3.1-5: If mustUnderstand is applied to the wsman:OperationTimeout, then the service MUST observe the requested value or return the fault specified in R3.1-2. The service SHOULD attempt to complete the request within the specified time or issue a fault without any further delay.

wxf:Delete, or a wxf:Create), the serv

b) wsman:InvalidOptions with a detail code of wsman:faultDetail/InvalidName in

The following describes additional, normative constraints on the outline listed above:

wsman:OptionSet

Used to wrap individual option blocks. In this example s:mustUnderstand is set to "true", indicating that the overall block must be processed using the rules above and cannot be ignored.

wsman:OptionSet/wsman:Option/@Name

```
(1) <s:Envelope
(2)     xmlns:s="http://www.w3.org/2003/05/soap-envelope"
(3)     xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
(4)     xmlns:wsman="http://schemas.xmlsoap.org/ws/2005/06/management">
(5)     <s:Header>
(6)
(7)     <wsa:To>
(8)      http://1.2.3.4/wsman/
(9)     </wsa:To>
(10)    <wsman:ResourceURI>wsman:samples.org/2005/02/physicalDisk</wsman:ResourceURI>
(11)    <wsa:ReplyTo>
(12)       <wsa:Address>
(13)          http://schemas.xmlsoap.org/ws/2004/08/addressing/role/anonymous
(14)      </wsa:Address>
(15)    </wsa:ReplyTo>
(16)    <wsa:Action>
(17)          http://schemas.xmlsoap.org/ws/2004/09/transfer/Get
(18)    </wsa:Action>
(19)    <wsa:MessageID>
(20)          uuid:d9726315-bc91-430b-9ed8-ce5ffb858a87
(21)    </wsa:MessageID>
(22)    <wsman:SelectorSet>
(23)
```

Throughout, it must be remembered that th

```
(12)    <s:Body>
(13)     <wxf:ResourceCreated>
(14)        <wsa:Address>
(15)          http://schemas.xmlsoap.org/ws/2004/08/addressing/role/anonymous/
(16)        </wsa:Address>
(17)        <wsa:ReferenceParameters>
(18)         <wsman:ResourceURI>wsman:samples.org/2005/02/virtualDrive</wsman:ResourceURI>
(19)         <wsman:SelectorSet>
(20)           <wsman:Selector Name="ID"> F: </wsman:Selector>
(21)         </wsman:SelectorSet>
(22)        </wsa:ReferenceParameters>
(23)     </wxf:ResourceCreated>
(24)    </s:Body>
(25)
```

Note that the response contains two sections

R4.7-5: If the supplied Body does not have the correct content in order for the resource to be updated, the service SHOULD return a wxf:InvalidRepresentation fault and detail codes of

a) wsman:faultDetail/InvalidValues if one

off the response until the rename is completed, but this is not a strict requirement.

...to act as a placeholder for the real address, suffixed by the ResourceURI. The actual transport address could also legally be used.

In this example, only the Selector indicating the drive letter is changed from the "C:" indicated by the the new value on line 31.

The response indicates the new EPR:

```
(40)   <s:Envelope
(41)       xmlns:s="http://www.w3.org/2003/05/soap-envelope"
(42)       xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
(43)       xmlns:wsman="http://schemas.xmlsoap.org/ws/2005/06/management">
(44)    <s:Header>
(45)      <wsa:To>
(46)          http://schemas.xmlsoap.org/ws/2004/08/addressing/role/anonymous
(47)      </wsa:To>
(48)      <wsa:Action s:mustUnderstand="true">
(49)         http://schemas.xmlsoap.org/ws/2005/06/management/RenameResponse
(50)      </wsa:Action>
(51)      <wsa:MessageID s:mustUnderstand="true">
(52)         uuid:d9726315-bc91-430b-9ed8-ce5ffb858a88
(53)      </wsa:MessageID>
(54)      <wsa:RelatesTo>
(55)          uuid:d9726315-bc91-430b-9ed8-ce5ffb858a87
(56)      </wsa:RelatesTo>
(57)    </s:Header>
(58)    <s:Body>
(59)      <wsman:RenamedTo>
(60)       <wsa:EndpointReference>
(61)         <wsa:Address>
(62)       http://1.2.3.4/wsman
(63)        </wsa:Address>
(64)        <wsman:ResourceURI>wsman:samples.org/2005/02/LogicalDisk</wsman:ResourceURI>
(65)         <wsman:SelectorSet>
(66)           <wsman:Selector Name="Drive"> D: </wsman:Selector>
(67)         </wsman:SelectorSet>
(68)       </wsa:EndpointReference>
(69)      </wsman:RenamedTo>
(70)    </s:Body>
(71)   </s:Envelope>
```

Note that the response contains the new EPR in its entirety, ready to use in a new wxf:Get (after the required transformation discussed in 2.2). Note specifically that the ResourceURI is added back into the new EPR (line 59) even though it was not part of the rename, and the wsa:Address is the actualded ress that the client would use to retrieve the resource, not the "anonymous" role URI.

4.9 Fragment-Level WS-Transfer

Because WS-Transfer works with entire instances and it may be inconvenient to specify hundreds or thousands of EPRs justdto model fragment-level access with full EPRs, WS-

(c) Context Size: 1.

(d) Variable Bindings: None.

(e) Function Libraries: Core Function Library [XPath 1.0].

(f) Namespace Declarations: The [in-scope namespaces] property [XML Infoset] of the first child of /s:Envelope/s:Body.

This is nothing more than stating that the XPath is to be interpreted relative to XML of the returned object and not over any of the SOAP content.

For WS-Enumeration, the XPath is interpreted as defined in the WS-Enumeration specification, although the output is subsequently wrapped in wsman:XmlFragment wrappers once the XPath is evaluated.

Note that an XPath value may refer to the entire node, so the concept of a fragment can include the gmt. gm ransfer is thus a proper superset of normal WS-Transfer.

If full XPath cannot be

4.10 Fragment-Level WS-Transfer:Get

Fragment-level gets are as for full wxf:Get, except for the wsman:FragmentTransfer header (line 24). This example is drawn from the example in 4.2:

```
(1) <s:Envelope
(2)     xmlns:s="http://www.w3.org/2003/05/soap-envelope"
(3)     xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
```

```
(3)         <c> </c>
(4)         <d> </d>
(5)
```

In this case, the <Body> contains both the element and the value:

```
(4) <s:Body>
(5)    <wsman:XmlFragment>
(6)       <VolumeLabel> MyDisk </VolumeLabel>
(7)     </wsman:XmlFragment>
(8) </s:Body>
(9) </s:Envelope>
```

enumerating the instances.

The WS-Enumeration specification indicates that enumeration is a three-part operation: An initial wsen:Enumerate is issued to establish the enumeration context and wsen:Pull operations are used to iterate

5.3 Filter Intepretation

Filters are generally intended to select entire XML infosets or "object" representations.

uses SOAP processing which is already present for other WS-Management operations.

5.4 WS-Enumeration:Pull

The wsen:Pull message is used to continue an enumeration, i.e., retrieve batches of results from the initial wsen:Enumerate.

Since wsen:Pull allows the client to specify a wide range of batching and timing parameters, it is often advisable for per client to know ahead of time what the valid ranges are. This should be exported from per service in per fo

5 W

suitable dialect in the wsen:Filter. The resulting set of Items in the wsen:Pull SHOULD be wrapped with wsman:XmlFragment wrappers:

```
(1) ...
```

```
(31)      <wsen:Enumerate>

(32)        <wsen:Filter Dialect="..."> filter </wsen:Filter>
```

7.0 Eventing

7.1 General

If the service can emit events

service supports the entire specification for that dialect, only that the expression conforms to the rules of that dialect. Most services will use XPath only for filtering, but will not support the composition of new XML or removing portions of XML which would result itchemlioexamp.7-4.4e

connect several times with suitable timeouts before giving up.

R7.2.3-1: A service MAY observe any connec

the response, but as specified in WS-Eventing, this implies the subscription

where it left off.

```
(20)    </s:Header>
(21)    <s:Body>
(22)       ...event content...
(23)    </s:Body>
(24)    </s:Envelope>
```

The following describes additional, normative constraints on the outline listed above:

wsman:Bookmark

XML content supplied by the service which indicates the logical position of this event or event batch in the event stream implied by the subscription.

R7.2.6-2: If bookmarks are supported, they MUST consist of XML content defined by the specific service, but may not be simple text. [That is, wsman:Bookmark

events for the subscription asynchronously without regarding to any events already in transit. This is primarily useful when the order of events does not matter, such as with events containing running totals in which each new event can replace the previous one completely and the timestamp is sufficient for identifying the most recent event.

(g) http://schemas.xmlsoap.org/ws/2005/06/management/PushWithAck
With this mode, there is only one event per SOAP message, but each event is acknowledged before another may be sent. The service MUST queue all undelivered events for the subscription only deliver each new event after the previous one has been acknowledged.

(h) http://schemas.xmlsoap.org/ws/2005/06/management/Events
With this mode, there can be many events per SOAP message, but each batch is

The maximum number of octets for the entire

R7.2.12-1: A service MAY support the http://schemas.xmlsoap.org/ws/2005/06/management/Events delivery mode. If the delivery mode is not supported, a fault of

```
(18)       <wsman:Events>
(19)         <wsman:Event Action="event action URI"> +
(20)           ...event body...
(21)         </wsman:Event>
(22)       </wsman:Events>
(23)     </s:Body>
(24)   </s:Envelope>
```

s:Envelope/s:Header/wsa:Action
MUST be http://schemas.xmlsoap.org/ws/2005/06/management/Events.

s:Envelope/s:Body/wsman:Events/wsman:Event
Ech of these required elem ntain the body of the corresponding event

R7.2.13-1: A service is NOT REQUIRED to support the http://schemas.xmlsoap.org/ws/2005/06/management/Pull delivery mode. If requested and not supported, the service MUST return a fault of wse:DeliveryModeRequestedUnavailable.

Note that wsman:MaxElements, wsman:MaxEnvelopeSize, and wsman:MaxTime do not apply in the wse:Subscribe message when using this delivery mode, as the wsen:Pull message contains all of the necessary functionality for controlling the batching and timing of

7.7 Acknowledgement of Delivery

In order to ensure delivery is acknowledged at th

```
(4)
(5)    <s:Envelope ...>
(6)     <s:Headers>
(7)       ...
(8)       <wsa:To> endpoint reference from the event delivery ReplyTo field </wsa:To>
(9)       <wsa:Action> http://schemas.xmlsoap.org/ws/2005/06/management/Ack </wsa:Action>
(10)
```

```
(24)          <wsman:DroppedEvents Action="wsa:Action URI of dropped event">
(25)             xs:int
(26)          </wsman:DroppedEvents>
(27)          ...
(28)       </s:Body>
(29)    </s:Envelope>
```

resources available through a service.

Typically, the client may need to list available resources, obtain XML schemas or WSDL

authentication technique to be used at event-delivery needs to be specified by the subscriber, since the subscriber will have to authenticate the service (acting as publisher) at event-time.

9.3 Interoperation Conformance

This specification does not mandate that conformant services must provide HTTP or HTTPS based access. However, it does mandate that if HTTP or HTTPS is used, at least one of the

	Client		Service

9.6 wsman:secprofile/https/basic

This profile establishes the use of Basic authentication over HTTPS. This is used when only a server-side certificate is in use to encrypt the connection, but the service still needs to authenticate the client.

The typical sequence is:

	Client		Service
1	Client connects with no auth header using HTTPS	Č	Service sees no header, but

9.8 wsman:secprofile/https/mutual

In this security mode, the client supplies an X.509 certificate and it is used to authenticate

3	Client selects Basic as the auth mode to use and includes it in the Authorization header, as defined for HTTP 1.1	Č	Service authenticates the client again before performing the operation

In the initial request, the HTTPS authorization header MUST be

```
Authorization: wsman:secprofile/https/mutual/basic
```

This indicates to the service that this special

9.13 wsman:secprofile/http/spnego-kerberos

This is the same as wsman:secprofile/https/spnego-kerberos except that it is performed over an HTTP connection. See **[22]** for details.

While this profile supports secure authenticati

```
(10)        <wst:IssuedTokens mustUnderstand="true">
(11)          <wst:RequestSecurityTokenResponse>
(12)            <wst:TokenType>
(13)     http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-username-token-profile-
(14)    13. Tc( )Tj/TT1dprofile-ET070.5 655.02 471 12.9642BT7.98 0 0 7.98 72 670.2 Tm0 g((442))Tj/TT6 1 T52.406
```

(9)

for WS-Management encoding over HTTP and HTTPS:

1. **SOAP Version 1.2 Part 2: Adjuncts**

implement TLS_RSA_WITH_RC4_128_SHA. It is RECOMMENDED that the service also support TLS_RSA_WITH_AES_12CBC_SHA.

R10.2-11: When delivering faults, an HTTP

exceeding 32,767 octets.

R10.6-7: A service MAY always emit *faults* that are 4096 octets or less in length, regardless of any requests by the client

Management processing chain. Whatever case usage is established by the sender of the message should be retained throughout the lifetime of that message.

10.9 The wsman: URI scheme

This specification makes use of a wsman: URI scheme for three purposes:

(1) Fault detail URIs **wsman:faultDetail/....**

(2) Security profile URIs **wsman:secProfile/...**

(3) WS-Management-575 0 icfilter dialects **wsman:filterDialect/...**

e s7(ime :-4.5(ic Tc00c( )Tj -723e0 48 m 1 -398 l 24 0 89 0 171 30 0 97 re 2.5 (SHELL) -42 58 68 4 0 T 2 T 1 4 T 0 5 1 5 0 3 T

detail. This is typically extracted from the "Reason" field of the Master Fault Table. However, the text may be adjusted to reflect a specific circumstance. This element may be repeated for each language. Note that the xml:lang attribute MUST be present.

s:Body/s:Fault/s:Detail

```
(1) <s:Detail>
(2)   <wsman:FaultDetail>... </wman:FaultDetail>
(3)   <ExtensionData xmlns="vendor-specific-namespace">...</ExtensionData>
(4)    ...
(5) </s:Detail>
```

The extension data elements may appear before or after any WS-Management-specific

Remedy	Client must acquire the correct credentials and retry the operatidn.

11.6.2 wsman:NdAck

Fault Subcdde	wsman:NoAck
Action URI	http://schemas.xmlsoap.org/ws/2005/06/management/fault
Cdde	s:Sender
Reason	The receiver did not acknowledge the event delivery.
Detail	None

Action URI	http://schemas.xmlsoap
Cdde	s:Sender

Applicability	All messages
Remedy	Client must wait and retry

11.6.5 wsman:AlreadyExists

Fault Subcode

</wsman:FaultDetail>

</s:Detail>

Code	s:Sender
Reason	The event source cannot process the subscription.
Detail	

```
</s:Detail>
```

Action URI	http://schemas.xmlsoap.org/ws/2004/09/enumeration/fault
Code	s:Sender
Reason	Filtered enumeration is not supported.
Detail	
Comments	Returned when the service does not support filtering of enumerations at

the w1man:faultDetail/FilteringRequired needs to be included in the

11.6.18 wsman:InvalidBookmark

Fault Subcode	wsman:InvalidBookmark
Action URI	http://schemas.xmlsoap.org/ws/2005/06/management/fault
Code	s:Sender

11.6.21 wsen:InvalidExpirationTime

Fault Subcode	wsen:InvalidExpirationTime
Detail	none
Reason	The expiration time was not valid.
Action URI	http://schemas.xmlsoap.org/ws/2004/09/enumeration/fault
Code	s:Sender

Code	s:Sender
Reason	One or more options were not valid.
Detail	<s:Detail> <wsman:FaultDetail> If possible, one of the following URI values </wsman:FaultDetail> </s:Detail> wsman:faultDetail/NotSupported wsman:faultDetail/InvalidName wsman:faultDetail/InvalidValue
Comments	This generically covers all cases where the option names or values are not

Comments	Returned when a parameter to a custom action was not valid. This is a default for new implementations which need to have a generic fault for this case. The method may also return any specific fault of its own.
Applicability	All messages with custom actions

Note the anomalous case where a schema violation does not occur, but the namespace is simply the wrong one, in which wsman:faultDetail/InvalidNamespace is returned.

11.6.28

11.6.30 wsman:RenameFailure

Comments	Used for any XML parsing failure or schema violations. Note that full validation of the SOAP against schemas is not expected in real-time, but processors may in fact

This is also returned in all enum

Detail	<s:Detail> <wsman:FaultDetail> If possible, one of the following URI values </wsman:FaultDetail> </s:Detail>
	One of the following: wsman:faultDetail/AuthorizationMode wsman:faultDetail/AddressingMode wsman:faultDetail/Ack wsman:faultDetail/OperationTimeout wsman:faultDetail/Locale wsman:faultDetail/ExpirationTime wsman:faultDetail/FragmentLevelAccess wsman:faultDetail/DeliveryRetries wsman:faultDetail/Heartbeats wsman:faultDetail/Bookmarks wsman:faultDetail/MaxElements wsman:faultDetail/MaxTime wsman:faultDetail/MaxEnvelopeSize wsman:faultDetail/MaxEnvelopePolicy wsman:faultDetail/FilteringRequired wsman:faultDetail/InsecureAddress wsman:faultDetail/FormatMismatch wsman:faultDetail/FormatSecurityToken wsman:faultDetail/AsynchronousRequest wsman:faultDetail/MissingValues wsman:faultDetail/InvalidValues wsman:faultDetail/InvalidNamespace wsman:faultDetail/Rename wsman:faultDetail/OptionSet

fragment and is targeted for use with Fragment Transfer (4.9) of this specification:

```
(19)    a/c[1]                          // Selects <c><d>200</d></c>
(20)    a/c[2]/d[2]                     // Selects <d> 400 </d>
(21)    a/c[2]/d[2]/text()              // Selects 400
(22)    a/b/text()                      // Selects  100
(23)    a/b/@x                           // Selects x="y"
```

Note that the only filtering expression capability is an array selection. Also note that XPath can return a node set. In section 4.9 of this specification, the intent is to select a specific node, not a set of nodes, so if the situation occurs as illustrated on line (13) above, most

13. WS-Management XSD

A normative copy of the XML Schema [XML Schema Part 1, Part 2

```
    targetNamespace="http://schemas.xmlsoap.org/ws/2005/06/management"
    xmlns:tns="http://schemas.xmlsoap.org/ws/2005/06/management"
    xmlns:xs="http://www.w3.org/2001/XMLSchema"
    xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
    xmlns:s="http://www.w3.org/2003/05/soap-envelope"
    xmlns:wxf="http://schemas.xmlsoap.org/ws/2004/09/transfer"
    elementFormDefault="qualified"
    >

   <xs:import namespace="http://schemas.xmlsoap.org/ws/2004/09/transfer"
schemaLocation="transfer.xsd"/>




      <xs:simpleContent>
        <xs:extension base="xs:anyURI">
          <xs:anyAttribute namespace="##other" processContents="lax" />
        </xs:extension>
      </xs:simpleContent>
  </xs:complexType>

  <xs:element name="ResourceURI" type="tns:ResourceURIType"/>
```



```
  <xs:complexType name="ResourceURIType">
```

```
<xs:element name="MaxEnvelopeSize" type="tns:MaxEnvelopeSizeType"/>

<xs:element name="OperationTimeout" type="xs:duration"/>

<xs:complexType name="LocaleType">
    <xs:simpleContent>
      <xs:extension base="xs:string">

      </xs:extension>
```

```
  <xs:element name="Item" type="tns:ItemType"/>
```

```
        <xs:sequence>
```

```
    <xs:enumeration value="wsman:faultDetail/ReadOnly"/>
    <xs:enumeration value="wsman:faultDetail/ResourceOffline"/>
    <xs:enumeration value="wsman:faultDetail/Rename"/>
    <xs:enumeration value="wsman:faultDetail/SelectorLimit"/>
    <xs:enumeration value="wsman:faultDetail/ServiceEnvelopeLimit"/>
    <xs:enumeration value="wsman:faultDetail/TargetAlreadyExists"/>
    <xs:enumeration value="wsman:faultDetail/TypeMismatch"/>
    <xs:enumeration value="wsman:faultDetail/UnexpectedSelectors"/>
    <xs:enumeration value="wsman:faultDetail/UnreportableSuccess"/>
    <xs:enumeration value="wsman:faultDetail/URILimitExceeded"/>
    <xs:enumeration value="wsman:faultDetail/Whitespace"/>
 </xs:restriction>
</xs:simpleType>

<xs:simpleType name="FaultDetailOpenType" >
  <xs:union memberTypes="tns:FaultDetailType xs:anyURI" />
</xs:simpleType>

<xs:element name="FaultDetail" type="tns:FaultDetailOpenType"/>

<xs:simpleType name="WSManURIListType">
 <xs:restriction base="xs:anyURI">
  <xs:enumeration value="http://schemas.xmlsoap.org/ws/2005/06/management/Rename"/>
  <xs:enumeration value="http://schemas.xmlsoap.org/ws/2005/06/management/RenameResponse"/>
  <xs:enumeration value="http://schemas.xmlsoap.org/ws/2005/06/management/fault"/>
  <xs:enumeration value="http://schemas.xmlsoap.org/ws/2005/06/management/Heartbeat"/>
  <xs:enumeration value="http://schemas.xmlsoap.org/ws/2005/06/management/bookmark/earliest"/>
  <xs:enumeration value="http://schemas.xmlsoap.org/ws/2005/06/management/PushWithAck"/>
  <xs:enumeration value="http://schemas.xmlsoap.org/ws/2005/06/management/Events"/>
  <xs:enumeration value="http://schemas.xmlsoap.org/ws/2005/06/management/Event"/>
  <xs:enumeration value="http://schemas.xmlsoap.org/ws/2005/06/management/Pull"/>
  <xs:enumeration value="http://schemas.xmlsoap.org/ws/2005/06/management/Ack"/>
  <xs:enumeration value="wsman:secprofile/http/basic"/>
  <xs:enumeration value="wsman:secprofile/http/digest"/>
  <xs:enumeration value="wsman:secprofile/https/basic"/>
```

This specification has been developed as a result of joint work with many individuals and teams, including:

14.0 Acknowledgements

[5] WS-I Basic Profile 1.1
http://www.ws-i.org/Profiles/BasicProfile-1.1-2004-08-24.html

[6] WS-Addressing
D. Box et al, "Web Services Addressing (WS-Addressing),"August 2004

[7] WS-Transfer
J. Alexander et al, "Web Services Transfer (WS-Transfer)," September 2004

http://www.ietf.org/internet-drafts/draft-jaganathan-kerberos-http-00.txt