Section
3.2 Considerations on the Use of Extensibility Points

3.4 Compliance

3.5 XML Namespaces

4 Web Services Metadata Collection
/mex:Metadata/mex:MetadataSection/@Dialect

/mex:Metadata/mex:MetadataSection/@Identifier

/mex:Metadata/mex:MetadataSection/mex:MetadataReference

/mex:Metadata/mex:MetadataSection/mex:MetadataLocation

5 Metadata Resources

6.1 GetWSDL

[Body]/mex:GetWSDLResponse/xs:any

[Body]/mex:GetMetadata@Content

http://www.w3.org/2002/ws/ra/edcopies/ws-mex/Content/All
[Body]/mex:GetMetadata/mex:Dialect

[Body]/mex:GetMetadata/mex:Dialect@Type

[Body]/mex:GetMetadata/mex:Dialect@Identifier

[Body]/mex:GetMetadata/mex:Dialect@Content

6.2 GetMetadata

[Body]/mex:GetMetadataResponse/mex:Metadata

[Body]/mex:PutMetadata

[Body]/mex:PutMetadata/mex:Metadata

6.3 PutMetadata

[Body]/mex:PutMetadataResponse

[Body]/mex:DeleteMetadata

[Body]/mex:DeleteMetadata/mex:Dialect@Identifier

[Body]/mex:DeleteMetadata/mex:Dialect@Content

6.4 DeleteMetadata

/mex:Location@URL

/mex:Reference

8.2 Associating Policies with Endpoint References

9 Exposing Metadata for Implicitly Defined Features

10 Faults

10.1 UnsupportedMetadata

10.2 UnknownDialect

/mex:MetadataExchange

Context	Tested
Implementations **MAY** add child elements and/or attributes at the indicated extension points but **MUST** NOT contradict the semantics of the parent and/or owner, respectively.	0
Extension elements and attributes **MUST NOT** use the Web Services Metadata Exchange namespace URI.	0
A SOAP Node **MUST NOT** use the XML namespace identifier for this specification (listed in 3.5 XML Namespaces) within SOAP Envelopes unless it is compliant with this specification.	0
All messages defined by this specification **MUST** conform to the WS-Addressing specifications and be sent to a Web service that is addressable by an EPR (see [WS-Addressing]).	1
Unless otherwise noted, all IRIs are absolute IRIs and IRI comparison **MUST** be performed according to [RFC 3987] section 5.3.1.	0
For any message defined by this specification, any **OPTIONAL** elements or attributes in the message **MAY** be used by senders of the message; however receivers of those messages **MUST** support those **OPTIONAL** elements and attributes, unless other behavior is explicitly defined by this specification.	0
Support for the GetMetadata operation by a Web service is **OPTIONAL**. If metadata about a Web service endpoint is referenced by a MetadataReference, which is a [WS-Addressing] endpoint reference, then the MetadataReference **MUST** refer to a [WS-Transfer] resource. The referred resource **MAY** also support other resource management and access specifications (e.g. HTTP, WS-ResourceFramework).	0
Implementations of this specification **MUST** conform to the corrected version of WSDL as defined by the 'WSDL Correction' sections of WS-I Basic Profile 1.2 [BP12] and WS-I Basic Profile 2.0 [BP20].	0
The XML namespace URI that **MUST** be used by implementations of this specification is: ...	1
This **REQUIRED** attribute indicates the type and version of the metadata unit contained in this MetadataSection (e.g., WSDL version 1.1). This **MUST** be the QName of the root element of the metadata.	0
If the value of the Dialect attribute of the MetadataSection is one of the values in the table below, the Identifier attribute **MUST** have the indicated, corresponding value.	0
If there is no algorithm defined for how to determine the Identifier value for a particular type of metadata, then the Identifier **MUST** use a value of "" (empty string).	0
The metadata resource **MUST** support the Get operation [WS-Transfer] to allow the retrieval of the metadata unit for the MetadataSection's Dialect and Identifier.	0
When this element is present, it **MUST** have no element siblings.	0
This contains a URL to metadata, and the metadata **MUST** be retrievable from that URL using the primary access mechanism for the scheme of the URL. For example, for an HTTP URL, the metadata **MUST** be retrievable by sending an HTTP GET request to the URL.	0
When this element is present, it **MUST** have no element siblings.	

When a metadata resource is addressable by an endpoint reference the resource's representation **MUST** be retrievable using the Get operation defined in [WS-Transfer] and **MAY** be updated as any other [WS-Transfer] resource. When the resource is addressed by a URL the resource's representation **MUST** be retrievable using an HTTP GET and MAY be updated as any other HTTP resource. 0

This operation **MUST** be supported by compliant WS-MetadataExchange service endpoints. 1

Through examination of this WSDL document, and by following any references within it, a requester **MUST** be able to retrieve any metadata needed to interact with the service. 0

a requester **MUST** be able to determine the set of implicit features available and any related metadata associated with those features 0

If the endpoint accepts a GetWSDL request, it MUST reply with a GetWSDLResponse message. 1

When the GetWSDLResponse element contains any child elements, the first element MUST either be the WSDL metadata document, or a reference to the WSDL metadata document, of the endpoint. While an endpoint MAY choose to return a reference to the WSDL, it is STRONGLY RECOMMENDED that the WSDL metadata document itself be returned. If a requester would like a reference to the WSDL then it can use the GetMetadata operation specifying the appropriate Content URI. 1

Any extension elements MUST appear after the WSDL document/reference.

If no dialect elements are present in the request, the response MUST only include MetadataSections of the content form specified by this attribute. 0

If the specified content form is not available, or not known, then the response MUST include zero MetadataSections of the specified form. 0

The service MUST return all available content forms 0

When this repeating OPTIONAL element is present, the response MUST include only MetadataSections corresponding to metadata specified by the combination of the QName, Identifier and Content attributes of each of the Dialect elements. For each Dialect element if there is no metadata for that combination of attributes then the response MUST NOT include any MetadataSections for that Dialect element. 1

1

When this element is not present, the endpoint MUST return all available metadata.

This REQUIRED attribute specifies the Metadata Dialect. The response MUST only include MetadataSections corresponding to the Dialect specified by this QName. If the receiver does not have any MetadataSections of this indicated Dialect, the response MUST include zero MetadataSections for this QName. 0.5

When this OPTIONAL attribute is present, the response MUST include only MetadataSections with the indicated identifier; if the receiver does not have any MetadataSections of the indicated identifier, the response MUST include zero MetadataSections for this QName/Identifier pair. 0.5

When this attribute is not present, the implied value is any identifier. If multiple MetadataSections have the indicated Dialect and Identifier then all of them MUST be returned. 0

For the dialect indicated, the response MUST include only MetadataSections of the content form specified by this attribute. 0

If the specified content form is not available, or not known, then the response MUST include zero MetadataSections of the specified form for this QName/Identifier pair. 0

Subject to authorization restrictions, services MUST return all the MetadataSections corresponding to the GetMetadata request.	0
If an endpoint accepts a GetMetadata request, it MUST reply with a GetMetadataResponse message.	1
The body of the response message MUST contain one mex:Metadata element as defined in 4 Web Services Metadata Collection.	1
This REQUIRED element MUST have as its first child element an element that comprises the representation of the metadata that is to be replaced.	1
The body of the PutMetadata message MUST contain one mex:Metadata element as defined in 4 Web Services Metadata Collection.	1
The mex:Metadata element contains one MetadataSection child for each distinct unit of metadata to be updated. All resource metadata (identified by the Dialect, Identifier and Content values) specified by each metadata section MUST be replaced in its entirety by the metadata specified in the PutMetadata request message; the service MUST treat the incoming MetadataSections as the complete set of metadata for the specified Dialect, Identifier and Content values and any metadata previously associated with that triplet of values MUST be removed.	0
If there is no Metadata associated with the resource that corresponds to a MetadataSection child contained within the mex:Metadata element, the endpoint MUST create the Metadata if the MetadataSection has a dialect that is supported by the endpoint and if the creation of the Metadata will not invalidate the endpoint.	0
When storing references, the endpoint MUST NOT resolve the references in an attempt to persist the actual metadata document itself.	0
An endpoint MUST reject a PutMetadata request if it is unable to process all of the metadata updates requested. If the dialect, identifier or content form specified in one or more MetadataSections is unsupported by the endpoint, the endpoint MUST generate a mex:UnsupportedMetadata fault. If the creation or update of the endpoint's Metadata will render the endpoint invalid (either because the metadata is of an invalid syntax for the dialect or because the metadata will cause a semantic conflict with the endpoint's definition), the endpoint MUST generate an mex:InvalidMetadata fault.	0
If an endpoint accepts a PutMetadata request, it MUST reply with a PutMetadataResponse message.	1
This REQUIRED element, if it contains any child elements, MUST have as its first child element, a mex:Metadata element that comprises the representation of the metadata that has been updated. Additional extension elements MAY be included after the element representing the metadata updates.	1
This REQUIRED element MUST have as its first children elements one or more elements that comprise the representation of the metadata that is to be deleted. Additional extension elements MAY be included after the element representing the metadata to be deleted.	1
When this OPTIONAL attribute is present, only metadata with the indicated identifier is to be deleted. Absence of this attribute indicates that all metadata matching the specified Dialect and Content MUST be removed.	0
When this OPTIONAL attribute is present, only metadata of the specific content form is to be deleted. Absence of this attribute indicates that all metadata matching the specified Dialetc and Identifier MUST be removed.	0

An endpoint MUST reject a DeleteMetadata request if it is unable to process all of the metadata deletes requested. If the dialect, identifier or content form specified in one or more of the Dialect elements is unsupported by the endpoint, the endpoint MUST generate a mex:UnsupportedMetadata fault. If the deletion of the specified Metadata will render the endpoint invalid, the endpoint MUST generate an mex:InvalidMetadata fault. Note that an otherwise valid request that refers to metadata that does not exist is not considered an error condition. Rather, the service MUST continue as if it had successfully processed that one delete request.

If an endpoint accepts a DeleteMetadata request, it MUST reply with a DeleteMetadataResponse message.	1
This REQUIRED attribute contains the URL of an HTTP metadata resource. This resource MUST support retrieval of the metadata via an HTTP GET request.	0
This element is an endpoint reference to a metadata resource. This resource MUST support retrieval of the metadata via a WS-Transfer Get request.	0
The wsp:Policy or wsp:PolicyReference element, when present, represents the capabilities and requirements of the endpoint referenced by the EPR as defined by Section 3, "Policy Model", in the [WS-Policy] specification. Policy attached to an EPR in this manner MUST be applicable to all message exchanges using the endpoint referenced by that EPR.	0
When a Feature WSDL does not provide a concrete endpoint, the consumer MUST use the concrete aspects of the endpoint's WSDL.	0
All fault messages defined in this specification MUST be sent according to the rules and usage described in [WS-Addressing 1.0 SOAP Binding] Section 6 for encoding SOAP 1.1 and SOAP 1.2 faults. The [Action] property below MUST be used for faults defined in this specification:	0
This fault MUST be generated when one or more metadata dialect(s) specified on the request message are unsupported by the endpoint.	0
This fault MUST be generated when the metadata passed on the PutMetadata request message is invalid or when the Metadata would render the endpoint invalid.	0
When present in a policy alternative, it indicates that the WS-MetadataExchange protocol MUST be used when communicating with this endpoint.	0

28.57%

Test/Notes

Assumes implementations will generate faults in the face of WS-Addressing errors. Some evidence for this has been confirmed via testing.

None of the client implementations is (AFAWK) flexible about the namespace URI.

None of the tests verify QName against contents.

None of the tests verify the Identifier value against the Dialect type.

None of the tests verify the Identifier value against the Dialect type.

There is no linkage between the WS-Mex tests and WS-Transfer tests.

None of the tests require the presence of a mex:MetadataReference

No testing of HTTP, FTP, or any other URI schemes. No testing of mex:MetadataLocation

None of the tests require the presence of a mex:MetadataLocation

See rows 14 and 16.

4.1GetWSDL Test

No examination or testing of the returned
WSDL is required in the scenarios.

See row 20.

4.1GetWSDL Test

4.1.2 specifies that the
GetWSDLResponse must be valid
None of the tests deal with extensions.

None of the tests deal with @Content.

None of the tests deal with @Content.
None of the tests deal with @Content.

4.3, 4.4, and 4.5 test these.
4.2 test this, but we need to have more
rigor about what types and forms of
metadata are expected to be present and
returned.

4.4 probably test this (the scenario isn't
clear on exactly how the metadata is
"unknown").

4.4 probably test this (the scenario isn't
clear on exactly how the metadata is
"unknown").

No tests for multiple MetadataSections
with the same Dialect and Identifier.

None of the tests deal with @Content.

None of the tests deal with @Content.

The scenarios don't specify anything
about the metadata that should be present
prior to running the tests.

4.2, 4.3, 4.4, 4.5 all test this

4.2, 4.3, 4.4, 4.5 all test this

4.6

4.6

None of these assertions are tested for.

Not tested for; no expectations defined on
presence/absence of specific metadata

Not tested for

None of these conditions is tested for.

4.6

4.6

4.7

4.7 does not include a test for missing
@Identifier

4.8 does not include a test for missing
@Content

None of these conditions is tested for.

4.7

HTTP GET not tested for

Reference retrieval not tested for

Policy conformance not tested for

Consumer's behavior not tested for this assertion

The scenarios do not include any tests for faults

The scenarios do not include any tests for faults

The scenarios do not include any tests for faults

The scenarios don't test the mex:MetadataExchange policy