



# IMS Membership Management Services WSDL Binding

## Version 1.0 Final Specification

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# 1. Introduction

## 1.1 Membership Management Services Overview

The Membership Management Services specification [MemberServices, 04a] is the definition of how systems manage the exchange of information that describes people within the context of learning. The Membership Management Services specification is constructed following the recommendations documented in the IMS Abstract Framework (IAF) [AbsGloss, 03], [AbsASC, 03], [AbsWhite, 03]. This means that this specification is based upon the concepts of:

- Interoperability – Membership Management Services focuses on the exchange of Member(s) information between Enterprise systems. There are no assumptions in the specification on how the data is managed within the Enterprise systems;
- Service-oriented – Membership Management Services defines the exchange of information in terms of the services being supplied by the collaboration of the systems;
- Component-based – the Membership Management Services will be combined with the Group Management Services and Person Management Services to provide the Enterprise Service. Other services will be added to it in later releases;
- Layering – the Membership Management Service is a part of the Application Services layer but it interacts with the services available in the Common Services layer, e.g., authentication;
- Behaviors and Data Models – the Membership Management Services are defined in terms of their behaviors and data models. The behaviors cause changes in the state of the data model and the state of the data model will only be altered as a result of a clearly defined behavior;
- Multiple Bindings – the Membership Management Services information model is to be defined using the Unified Modelling Language (UML). This enables reliable mapping of the information model into a range of different bindings. The bindings of immediate importance are to the Web Services Description Language (WSDL);
- Adoption – the Membership Management Services are based upon the original Enterprise specification data model. While there are significant changes the underlying data model has been maintained and the core Person structures remain.

## 1.2 Scope and Context

This document is the IMS Membership Management Services WSDL Binding v1.0 and as such it is used in conjunction with the following documents:

- a) IMS Enterprise Services Core Use Cases v1.0 [EntServices, 04a] – the set of use cases that are the basis for the definition of the Person Management Services Information Model;
- b) IMS Membership Management Services Information Model v1.0 [MemberServices, 04] – the behavior and data model definition of the Membership Management Services;
- c) IMS Enterprise Services Best Practice and Implementation Guide v1.0 [EntServices, 04c] – this presents information that helps implementers adopt the specification;
- d) IMS Enterprise Services Conformance Specification v1.0 [EntServices, 04b] – the definition of the conformance criteria that must be followed by systems that wish to claim compliance to the Enterprise Services Information Model.

As such the Membership Management Services specification supersedes the original Enterprise specifications:

- a) IMS Enterprise Information Model Final Specification v1.1 [Enterprise, 02a].
- b) IMS Enterprise XML Binding Final Specification v1.1 [Enterprise, 02b];
- c) IMS Enterprise Services Best Practice & Implementation Guide Final Specification v1.1 [Enterprise, 02c].

This WSDL binding takes the Membership Management Service Information Model and produces an encoding of that description in WSDL. This WSDL binding is generated as recommended by the IMS General Web Services documents [GWS, 04a], [GWS, 04b].

## 1.3 Structure of this Document

The structure of this document is:

- |   |  |
|---|--|
| 2. Application of the WSDL Binding Guidelines | A description of how the General Web Services WSDL binding guidelines have been applied to the Membership Management Services Information Model; |
| 3. Data Model Binding                         | The description of the XML schemas that are created to reflect the data model of the Membership Management Services Information Model;           |
| 4. Synchronous WSDL Binding                   | The description of the SOAP messages and the corresponding XML schemas that are created as the synchronous WSDL binding;                         |
| 5. Asynchronous WSDL Binding                  | The description of the SOAP messages and the corresponding XML schemas that are created as the asynchronous WSDL binding;                        |
| Appendix A – Binding Files Listings           | The WSDL listings for the synchronous and asynchronous SOAP/http binding of the Membership Management Services Information Model.                |

## 1.4 Nomenclature

API	Application Programming Interface
IAF	IMS Abstract Framework
UML	Unified Modelling Language
W3C	World Wide Web Consortium
WSDL	Web Services Description Language
XML	Extensible Mark-up Language

## 1.5 References

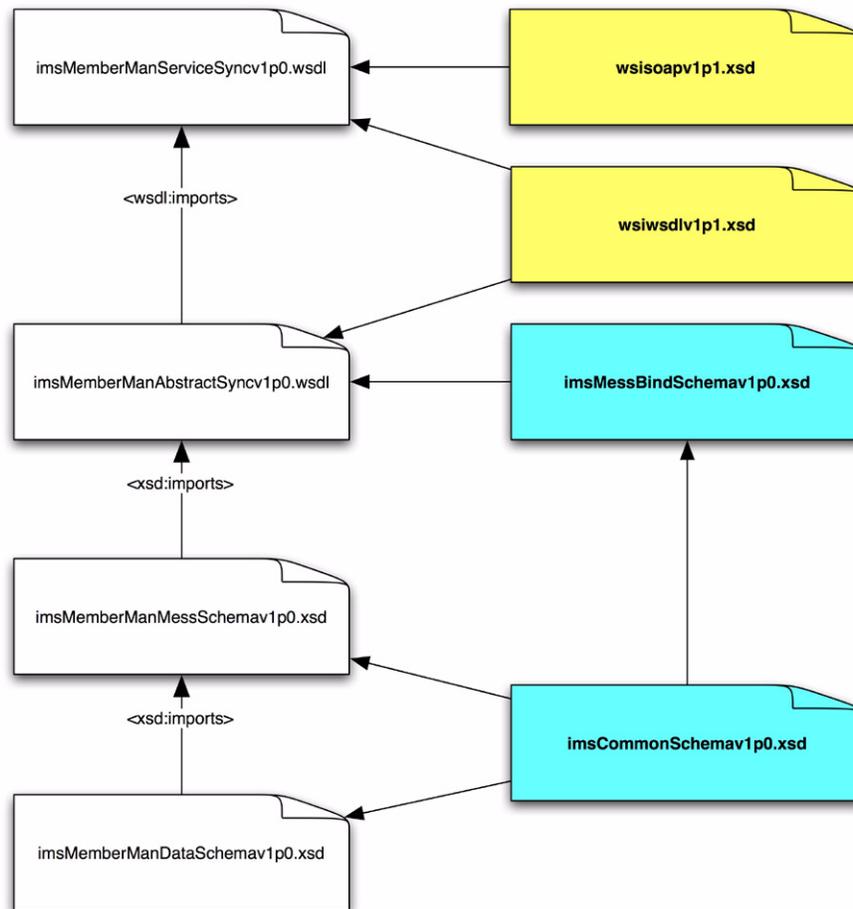
- |                    |  |
|--------------------|--|
| [AbsASCs, 03]      | <i>IMS Abstract Framework: Applications, Services &amp; Components v1.0</i> , Ed. C.Smythe, <u>IMS Global Learning Consortium, Inc.</u> , July 2003.                       |
| [AbsGloss, 03]     | <i>IMS Abstract Framework: Glossary v1.0</i> , Ed. C.Smythe, <u>IMS Global Learning Consortium, Inc.</u> , July 2003.  |
| [AbsWhite, 03]     | <i>IMS Abstract Framework: White Paper v1.0</i> , Ed. C.Smythe, <u>IMS Global Learning Consortium, Inc.</u> , July 2003.   |
| [Cockburn, 01]     | <i>Writing Effective Use-case</i> , A.Cockburn, <u>Addison-Wesley</u> , 2001, ISBN 0-201-70225-8.  |
| [CommonData, 04]   | <i>IMS Enterprise Services Common Data Definitions Specification v1.0</i> , C.Smythe and C.Vento, <u>IMS Global Learning Consortium, Inc.</u> , June 2004.                 |
| [Enterprise, 02a]  | <i>IMS Enterprise Information Model v1.1</i> , G.Collier, C.Etesse, W.Veress and C.Smythe, <u>IMS Global Learning Consortium, Inc.</u> , July 2002.                        |
| [Enterprise, 02b]  | <i>IMS Enterprise XML Binding v1.1</i> , G.Collier, C.Etesse, W.Veress and C.Smythe, <u>IMS Global Learning Consortium, Inc.</u> , July 2002.                              |
| [Enterprise, 02c]  | <i>IMS Enterprise Best Practice &amp; Implementation Guide v1.1</i> , G.Collier, C.Etesse, W.Veress and C.Smythe, <u>IMS Global Learning Consortium, Inc.</u> , July 2002. |
| [EntServices, 04a] | <i>IMS Enterprise Services Core Use Cases Description v1.0</i> , C.Smythe and C.Vento, <u>IMS Global Learning Consortium, Inc.</u> , June 2004.                            |
| [EntServices, 04b] | <i>IMS Enterprise Services Conformance Specification v1.0</i> , C.Smythe and C.Vento, <u>IMS Global Learning Consortium, Inc.</u> , June 2004.                             |

- [EntServices, 04c] *IMS Enterprise Services Best Practices & Implementation Guide v1.0*, C.Smythe and C.Vento, IMS Global Learning Consortium, Inc., June 2004.
- [GWS, 04a] *IMS General Web Services Base Profiles v1.0*, C.Schroeder, S.Raju, and C.Smythe, IMS Global Learning Consortium, Inc., June 2004.
- [GWS, 04b] *IMS General Web Services Binding Methodology & Recipes v1.0*, C.Schroeder, S.Raju, and C.Smythe, IMS Global Learning Consortium, Inc., June 2004.
- [MemberServices, 04] *IMS Member Management Services Information Model v1.0*, C.Smythe and C.Vento, IMS Global Learning Consortium, Inc., June 2004.
- [SpecDev, 03] *IMS Specification Development Methods & Best Practices Draft 5.0*, C.Smythe, IMS Global Learning Consortium, Inc., August 2003.

## 2. Application of the WSDL Binding Guidelines

### 2.1 Synchronous Binding

The WSDL bindings have been generated using the methodology documented in [GWS 04a] and [GWS, 04b]. The composition of the synchronous WSDL binding is shown in Figure 2.1.



**Figure 2.1 Membership WSDL and XSD binding file composition.**

The binding files described in Figure 2.1 contain:

- ‘imsMemberManServiceSyncv1p0.wsdl’ – the service specific WSDL binding file. For the Membership Management Service this is based upon SOAP/http. This file imports the abstract definitions using the <wSDL:import> construct. The listing of this file is given in Appendix A;
- ‘imsMemberManAbstractSyncv1p0.wsdl’ – the abstract message definitions that represent the behavior of the Membership Management Service operations. This file imports the message XSD using the <xsd:import> construct. The listing of this file is given in Appendix A;
- ‘imsMemberManMessSchemav1p0.xsd’ – the XSD definitions for the synchronous and asynchronous messages. This file imports the Membership data model XSD using the <xsd:import> construct. The listing of this file is given in Appendix A;
- ‘imsMemberManDataSchemav1p0.xsd’ – the definition of the Membership data model. This is the file that was produced by the equivalent data model binding in Enterprise v1.1. The listing of this file is given in Appendix A;

- ‘imsMessBindSchemav1p0.xsd’ – the XSD binding of the message header parts. This includes the message headers for synchronous, polled and asynchronous message models;
- ‘imsCommonSchemav1p0.xsd’ – the XSD binding of the IMS Enterprise Service common data objects. This file is used by the Membership message and data model XSDs as well as the IMS message binding XSD;
- ‘wsiwsdlv1p1.xsd’ – this is the reference XSD for the WSDL definition. This file is the WS-I amended version of the original file from W3C;
- ‘wsisoapv1p1.xsd’ – this is the reference XSD for the SOAP extensions to WSDL. This file is from WS-I.

The name spaces used within these bindings are listed in Table 2.1.

**Table 2.1 The namespaces used in the synchronous binding files.**

Namespace	Prefix	Usage
–	“tns:”	The target namespace identifier.
http://www.w3.org/2001/XMLSchema	“xsd:”	The XML schema definition namespace.
/imsCommonSchemav1p0	“esx:”	The IMS Enterprise Service common data model definitions namespace.
/imsMessBindSchemav1p0	“isb:”	The IMS message header binding definitions namespace.
/mms/xsd/imsMemberManDataSchemav1p0	“mem:”	The data model namespace for the Membership class.
/mms/xsd/imsMemberManMessSchemav1p0	“imsmms:”	The IMS Membership Management Services message binding definitions namespace.
/mms/wsd/imsMemberManAbstractSyncv1p0	“absm:”	The Membership Management Service abstract definitions file references.
wsisoapv1p1	“soap:”	The SOAP references used within the WSDL files.
wsiwsdlv1p1	“wsdl:”	The default WSDL files namespace for WSDL v1.1.

## 2.2 Asynchronous Binding

**Note:** At the time of publication the Asynchronous Binding had not been tested. The details for creating the Asynchronous Binding are available in the IMS Membership Management Service WSDL Binding V2.0 Public Draft document. The Asynchronous Binding details will be issued in V2.0 of this document once testing has been completed.

### 3. Data Model XML Schemas Binding

#### 3.1 <membership> Element

The XSD visualization of the <person> data model is shown in Figure 3.1. This is the XML equivalent of the UML description in Figure 4.1 and Tables 4.1 and 4.2 [MemberServices, 04].



Figure 3.1 <membership> element composition.

##### 3.1.1 <groupSourcedId> Element

See Table 4.1 and the OCL definitions in sub-section 4.1.4 [MemberServices, 04].

#### 3.2 <member> Element

The XSD visualization of the <member> data model is shown in Figure 3.2. This is the XML equivalent of the UML description in Figure 4.1 and Tables 4.3 and 4.4 [MemberServices, 04].



Figure 3.2 <member> element composition.

##### 3.2.1 <memberSourcedId> Element

See Table 4.3 and the OCL definitions in sub-section 4.1.4 [MemberServices, 04].

##### 3.2.2 <idType> Element

See Table 4.3 and the OCL definitions in sub-section 4.1.4 [MemberServices, 04].

#### 3.3 <role> Element

The XSD visualization of the <role> data model is shown in Figure 3.3. This is the XML equivalent of the UML description in Figure 4.1 and Table 4.5 [MemberServices, 04].

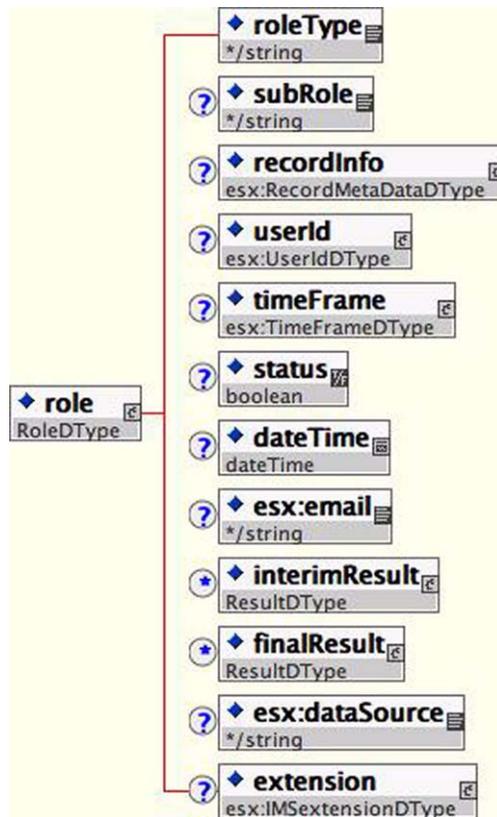


Figure 3.3 <role> element composition.

### 3.3.1 <roleType> Element

See Table 4.5 and the OCL definitions in sub-section 4.1.4 [MemberServices, 04].

### 3.3.2 <subRole> Element

See Table 4.5 and the OCL definitions in sub-section 4.1.4 [MemberServices, 04].

### 3.3.3 <recordInfo> Element

The XSD visualization of the <recordInfo> data model is shown in Figure 3.4. This is the XML equivalent of the UML description in Figure 4.1 and Table 4.5 [MemberServices, 04].

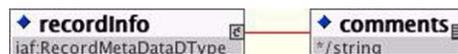


Figure 3.4 <recordInfo> element composition.

### 3.3.4 <userId> Element

The XSD visualization of the <userId> data model is shown in Figure 3.5. This is the XML equivalent of the UML description in Figure 4.1 and Table 4.5 [MemberServices, 04].

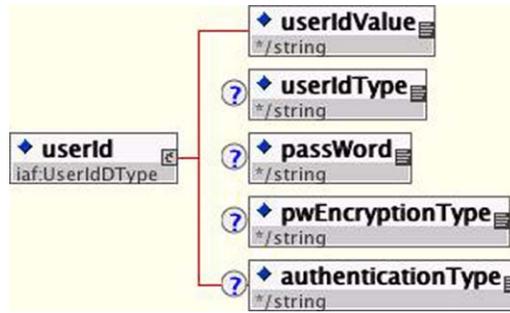


Figure 3.5 <userId> element composition.

### 3.3.5 <email> Element

See Table 4.5 and the OCL definitions in sub-section 4.1.4 [MemberServices, 04].

### 3.3.6 <timeFrame> Element

The XSD visualization of the <timeFrame> data model is shown in Figure 3.6. This is the XML equivalent of the UML description in Figure 4.1 and Table 4.5 [MemberServices, 04].

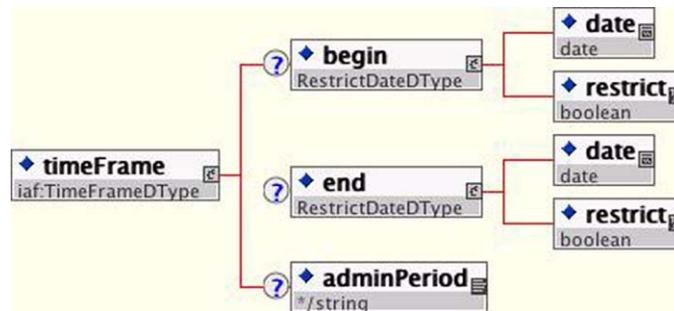


Figure 3.6 <timeFrame> element composition.

### 3.3.7 <status> Element

See Table 4.5 and the OCL definitions in sub-section 4.1.4 [MemberServices, 04].

### 3.3.8 <dateTime> Element

See Table 4.5 and the OCL definitions in sub-section 4.1.4 [MemberServices, 04].

### 3.3.9 <interimResult> Element

The XSD visualization of the <timeFrame> data model is shown in Figure 3.7. This is the XML equivalent of the UML description in Figure 4.1 and Tables 4.6, 4.7, 4.8, 4.9 and 4.10 [MemberServices, 04].

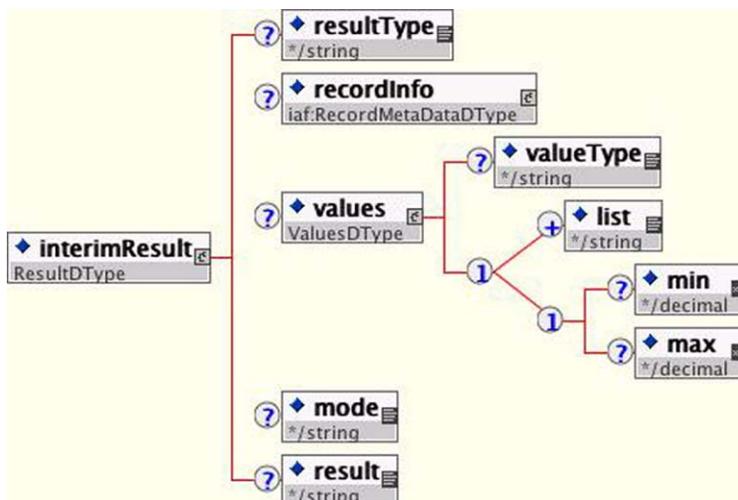


Figure 3.7 <interimResult> element composition.

### 3.3.10 <finalResult> Element

The XSD visualization of the <timeFrame> data model is shown in Figure 3.8. This is the XML equivalent of the UML description in Figure 4.1 and Tables 4.6, 4.7, 4.8, 4.9 and 4.10 [MemberServices, 04].

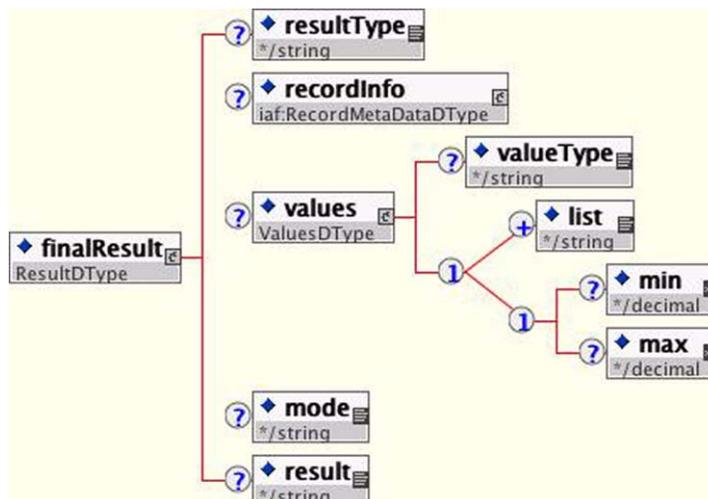


Figure 3.8 <finalResult> element composition.

### 3.3.11 <dataSource> Element

See Table 4.5 and the OCL definitions in sub-section 4.1.4 [MemberServices, 04].

### 3.3.12 <extension> Element

The XSD visualization of the <timeFrame> data model is shown in Figure 3.9. This is the XML equivalent of the UML description in Figure 4.1 and Table 4.5 [MemberServices, 04].

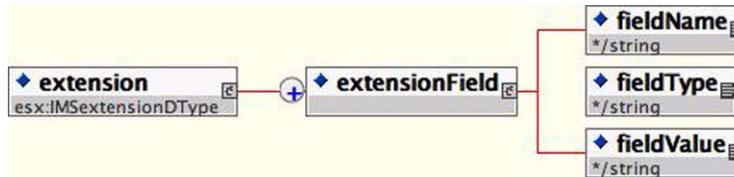


Figure 3.9 <extension> element composition.

### 3.3.13 <membershipSet> Element

The XSD visualization of the <membershipSet> data model is shown in Figure 3.10. This is the XML equivalent of the UML description in Figure 4.2 and Table 4.11 [MemberServices, 04].

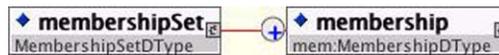


Figure 3.10 <membershipSet> element composition.

### 3.3.14 <membershipIdPair> Element

The XSD visualization of the <membershipIdPair> data model is shown in Figure 3.11. This is the XML equivalent of the UML description in Figure 4.3 and Table 4.13 [MemberServices, 04].

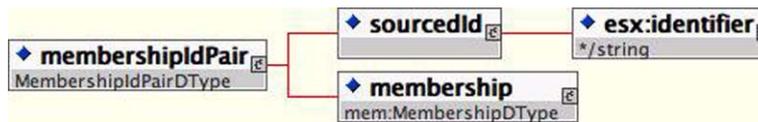


Figure 3.11 <membershipIdPair> element composition.

### 3.3.15 <membershipIdPairSet> Element

The XSD visualization of the <membershipIdPairSet> data model is shown in Figure 3.12. This is the XML equivalent of the UML description in Figure 4.3 and Table 4.12 [MemberServices, 04].

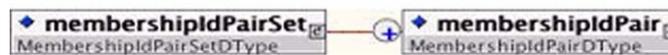


Figure 3.12 <membershipIdPairSet> element composition.

### 3.3.16 <sourcedIdSet> Element

The XSD visualization of the <sourcedIdSet> data model is shown in Figure 3.13.

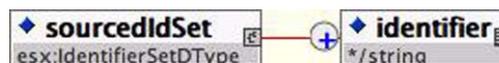


Figure 3.13 <sourcedIdSet> element composition.

### 3.3.17 <pairSourcedIdSet> Element

The XSD visualization of the <pairSourcedIdSet> data model is shown in Figure 3.14. This is the XML equivalent of the UML description in Figure 4.2 [CommonData, 04].



Figure 3.14 <pairSourcedIdSet> element composition.

## 4. Synchronous WSDL Binding

### 4.1 SOAP Specific Service Binding

The key properties of the Specific Service binding files are detailed in Table 4.1. The Service Specific filename is: 'imsMemberManServiceSyncv1p0.wsdl'.

**Table 4.1 Properties of the specific service file.**

Property	Value
Transport Mechanism	SOAPv1.1/HTTPv1.1
Service Name	"MembershipManagementServiceSync"
Service Port Name	"MembershipManagementServiceSyncSoap"
Service Binding Name	"MembershipManagementServiceSyncSoap"
Binding Port Type	"MembershipManagementServiceSync"

### 4.2 Abstract Definition Binding

The key properties of the Specific Service binding files are detailed in Table 4.2. The Abstract Definitions filename is: 'imsMemberManAbstractSyncv1p0.wsdl'.

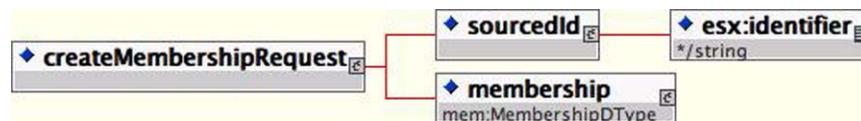
**Table 4.2 Properties of the abstract definitions file.**

Property	Value
Port Type Name	"MembershipManagementServiceSync"

### 4.3 Message XML Schemas

#### 4.3.1 'createMembershipRequest' Message

This is the request message from the Reference Agent to the Sync Agent to invoke the 'createMembership()' operation. See 'createMembership()' sub-section of [MemberServices, 04].



**Figure 4.1 <createMembershipRequest> element composition.**

Two parameters are supplied:

- sourcedId – the unique identifier to be assigned to the new Membership record;
- membership – the Membership data to be stored in the new record.

#### 4.3.2 'createMembershipResponse' Message

This is the response message from the Sync Agent to the Reference Agent to complete the 'createMembership()' operation. See 'createMembership()' sub-section of [MemberServices, 04].



**Figure 4.2 <createMembershipResponse> element composition.**

The <createMembershipResponse> element is empty.

**Note:** The status information is returned in the header of the SOAP transport message.

### 4.3.3 ‘createByProxyMembershipRequest’ Message

This is the request message from the Reference Agent to the Sync Agent to invoke the ‘createByProxyMembership()’ operation. See ‘createByProxyMembership()’ sub-section of [MemberServices, 04].



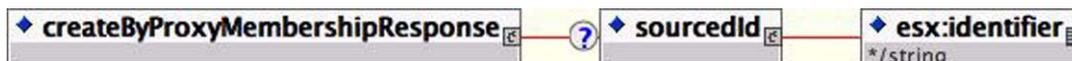
**Figure 4.3 <createByProxyMembershipRequest> element composition.**

Three parameters are supplied:

- groupSourcedId – the unique identifier for the Group of the new Membership record;
- memberSourcedId – the unique identifier for the Member of the new Membership record;
- membership – the Membership data to be stored in the new record.

### 4.3.4 ‘createByProxyMembershipResponse’ Message

This is the response message from the Sync Agent to the Reference Agent to complete the ‘createByProxyMembership()’ operation. See ‘createByProxyMembership()’ sub-section of [MemberServices, 04].



**Figure 4.4 <createByProxyMembershipResponse> element composition.**

The returned information is:

- sourcedId – the unique identifier assigned by the Sync Agent to the new record.

**Note:** The status information is returned in the header of the SOAP transport message.

### 4.3.5 ‘deleteMembershipRequest’ Message

This is the request message from the Reference Agent to the Sync Agent to invoke the ‘deleteMembership()’ operation. See ‘deleteMembership()’ sub-section of [MemberServices, 04].



**Figure 4.5 <deleteMembershipRequest> element composition.**

One parameter is supplied:

- sourcedId – the identifier of the Membership record to be deleted;

### 4.3.6 'deleteMembershipResponse' Message

This is the response message from the Sync Agent to the Reference Agent to complete the 'deleteMembership()' operation. See 'deleteMembership()' sub-section of [MemberServices, 04].



Figure 4.6 <deleteMembershipResponse> element composition.

The <deleteMembershipResponse> element is empty.

**Note:** The status information is returned in the header of the SOAP transport message.

### 4.3.7 'readMembershipRequest' Message

This is the request message from the Reference Agent to the Sync Agent to invoke the 'readMembership()' operation. See 'readMembership()' sub-section of [MemberServices, 04].



Figure 4.7 <readMembershipRequest> element composition.

One parameter is supplied:

- sourcedId – the identifier of the Membership record to be read.

### 4.3.8 'readMembershipResponse' Message

This is the response message from the Sync Agent to the Reference Agent to complete the 'readMembership()' operation. See 'readMembership()' sub-section of [MemberServices, 04].



Figure 4.8 <readMembershipResponse> element composition.

The returned information is:

- membership – the returned Membership record.

**Note:** The status information is returned in the header of the SOAP transport message.

### 4.3.9 'updateMembershipRequest' Message

This is the request message from the Reference Agent to the Sync Agent to invoke the 'updateMembership()' operation. See 'updateMembership()' sub-section of [MemberServices, 04].

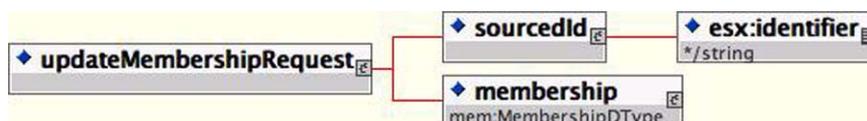


Figure 4.9 <updateMembershipRequest> element composition.

Two parameters are supplied:

- sourcedId – the identifier of the Membership record to be changed;
- membership – the Membership data to be stored in the new record.

#### 4.3.10 ‘updateMembershipResponse’ Message

This is the response message from the Sync Agent to the Reference Agent to complete the ‘updateMembership()’ operation. See ‘updateMembership()’ sub-section of [MemberServices, 04].



Figure 4.10 <updateMembershipResponse> element composition.

The <updateMembershipResponse> element is empty.

**Note:** The status information is returned in the header of the SOAP transport message.

#### 4.3.11 ‘replaceMembershipRequest’ Message

This is the request message from the Reference Agent to the Sync Agent to invoke the ‘replaceMembership()’ operation. See ‘replaceMembership()’ sub-section of [MemberServices, 04].

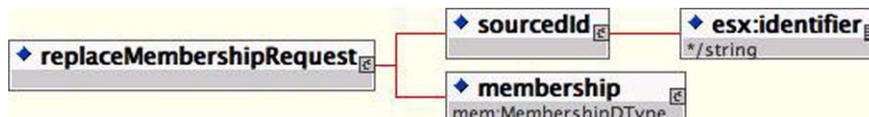


Figure 4.11 <replaceMembershipRequest> element composition.

Two parameters are supplied:

- sourcedId – the identifier of the Membership record to be changed;
- membership – the Membership data to be stored in the new record.

#### 4.3.12 ‘replaceMembershipResponse’ Message

This is the response message from the Sync Agent to the Reference Agent to complete the ‘replaceMembership()’ operation. See ‘replaceMembership()’ sub-section of [MemberServices, 04].



Figure 4.12 <replaceMembershipResponse> element composition.

The <replaceMembershipResponse> element is empty.

**Note:** The status information is returned in the header of the SOAP transport message.

#### 4.3.13 ‘changeMembershipIdentifierRequest’ Message

This is the request message from the Reference Agent to the Sync Agent to invoke the ‘changeMembershipIdentifier()’ operation. See ‘changeMembershipIdentifier()’ sub-section of [MemberServices, 04].

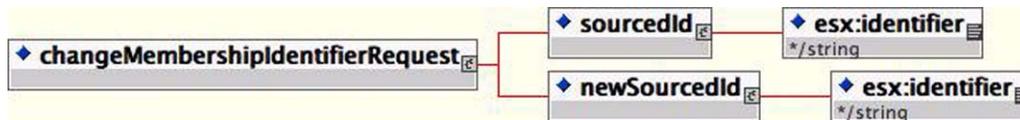


Figure 4.13 <changeMembershipIdentifierRequest> element composition.

Two parameters are supplied:

- sourcedId – the identifier of the Membership whose identifier is to be changed;
- newSourcedId – the new identifier for the Membership record.

#### 4.3.14 ‘changeMembershipIdentifierResponse’ Message

This is the response message from the Sync Agent to the Reference Agent to complete the ‘changeMembershipIdentifier()’ operation. See ‘changeMembershipIdentifier()’ sub-section of [MemberServices, 04].



Figure 4.14 <changeMembershipIdentifierResponse> element composition.

The <changeMembershipIdentifierResponse> element is empty.

**Note:** The status information is returned in the header of the SOAP transport message.

#### 4.3.15 ‘createMembershipsRequest’ Message

This is the request message from the Reference Agent to the Sync Agent to invoke the ‘createMemberships()’ operation. See ‘createMemberships()’ sub-section of [MemberServices, 04].



Figure 4.15 <createMembershipsRequest> element composition.

One parameter is supplied:

- membershipIdPairSet – the list of identifiers (Membership, source Group and source Member) and membership tuples for the new Membership records.

#### 4.3.16 ‘createMembershipsResponse’ Message

This is the response message from the Sync Agent to the Reference Agent to complete the ‘createMemberships()’ operation. See ‘createMemberships()’ sub-section of [MemberServices, 04].



Figure 4.16 <createMembershipsResponse> element composition.

The <createMembershipsResponse> element is empty.

**Note:** The status information is returned in the header of the SOAP transport message.

#### 4.3.17 'createByProxyMembershipsRequest' Message

This is the request message from the Reference Agent to the Sync Agent to invoke the 'createByProxyMemberships()' operation. See 'createByProxyMemberships()' sub-section of [MemberServices, 04].



**Figure 4.17** <createByProxyMembershipsRequest> element composition.

One parameter is supplied:

- membershipIdPairSet – the list of identifiers (source Group and source Member) and membership tuples for the new Membership records

#### 4.3.18 'createByProxyMembershipsResponse' Message

This is the response message from the Sync Agent to the Reference Agent to complete the 'createByProxyMemberships()' operation. See 'createByProxyMemberships()' sub-section of [MemberServices, 04].



**Figure 4.18** <createByProxyMembershipsResponse> element composition.

The returned information is:

- sourcedIdSet – the set of unique identifiers that have been allocated by the Sync Agent to the newly created records.

**Note:** The status information is returned in the header of the SOAP transport message.

#### 4.3.19 'deleteMembershipsRequest' Message

This is the request message from the Reference Agent to the Sync Agent to invoke the 'deleteMemberships()' operation. See 'deleteMemberships()' sub-section of [MemberServices, 04].



**Figure 4.19** <deleteMembershipsRequest> element composition.

One parameter is supplied:

- sourcedIdSet – the set of unique identifiers for the Membership records that are to be deleted.

#### 4.3.20 'deleteMembershipsResponse' Message

This is the response message from the Sync Agent to the Reference Agent to complete the 'deleteMemberships()' operation. See 'deleteMemberships()' sub-section of [MemberServices, 04].



**Figure 4.20** <deleteMembershipsResponse> element composition.

The <deleteMembershipsResponse> element is empty.

**Note:** The status information is returned in the header of the SOAP transport message.

#### 4.3.21 'readMembershipsRequest' Message

This is the request message from the Reference Agent to the Sync Agent to invoke the 'readMemberships()' operation. See 'readMemberships()' sub-section of [MemberServices, 04].



**Figure 4.21** <readMembershipsRequest> element composition.

One parameter is supplied:

- sourcedIdSet – the set of unique identifiers for the Membership records that are to be read.

#### 4.3.22 'readMembershipsResponse' Message

This is the response message from the Sync Agent to the Reference Agent to complete the 'readMemberships()' operation. See 'readMemberships()' sub-section of [MemberServices, 04].



**Figure 4.22** <readMembershipsResponse> element composition.

The returned information is:

- membershipSet – the set of Membership records that have been read.

**Note:** The status information is returned in the header of the SOAP transport message.

#### 4.3.23 'readMembershipsForPersonRequest' Message

This is the request message from the Reference Agent to the Sync Agent to invoke the 'readMembershipsForPerson()' operation. See 'readMembershipsForPerson()' sub-section of [MemberServices, 04].



**Figure 4.23** <readMembershipsForPersonRequest> element composition.

One parameter is supplied:

- personSourcedId – the identifier of the Person whose Membership records are to be returned.

#### 4.3.24 'readMembershipsForPersonResponse' Message

This is the response message from the Sync Agent to the Reference Agent to complete the 'readMembershipsForPerson()' operation. See 'MembershipsForPerson()' sub-section of [MemberServices, 04].



Figure 4.24 <readMembershipsForPersonResponse> element composition.

The returned information is:

- membershipSet – the set of Membership records that have been read.

**Note:** The status information is returned in the header of the SOAP transport message.

#### 4.3.25 'readMembershipsForGroupRequest' Message

This is the request message from the Reference Agent to the Sync Agent to invoke the 'readMembershipsForGroup()' operation. See 'readMembershipsForGroup()' sub-section of [MemberServices, 04].



Figure 4.25 <readMembershipsForGroupRequest> element composition.

One parameter is supplied:

- groupSourcedId – the identifier of the Group whose Membership records are to be returned.

#### 4.3.26 'readMembershipsForGroupResponse' Message

This is the response message from the Sync Agent to the Reference Agent to complete the 'readMembershipsForGroup()' operation. See 'MembershipsForGroup()' sub-section of [MemberServices, 04].



Figure 4.26 <readMembershipsForGroupResponse> element composition.

The returned information is:

- membershipSet – the set of Membership records that have been read.

**Note:** The status information is returned in the header of the SOAP transport message.

#### 4.3.27 'updateMembershipsRequest' Message

This is the request message from the Reference Agent to the Sync Agent to invoke the 'updateMemberships()' operation. See 'updateMemberships()' sub-section of [MemberServices, 04].



Figure 4.27 <updateMembershipsRequest> element composition.

One parameter is supplied:

- membershipIdPairSet – the list of identifier and membership tuples for the Membership records to be changed.

#### 4.3.28 ‘updateMembershipsResponse’ Message

This is the response message from the Sync Agent to the Reference Agent to complete the ‘updateMemberships()’ operation. See ‘updateMemberships()’ sub-section of [MemberServices, 04].



Figure 4.28 <updateMembershipsResponse> element composition.

The <updateMembershipsResponse> element is empty.

**Note:** The status information is returned in the header of the SOAP transport message.

#### 4.3.29 ‘replaceMembershipsRequest’ Message

This is the request message from the Reference Agent to the Sync Agent to invoke the ‘updateMemberships()’ operation. See ‘updateMemberships()’ sub-section of [MemberServices, 04].



Figure 4.29 <replaceMembershipsRequest> element composition.

One parameter is supplied:

- membershipIdPairSet – the list of identifier and membership tuples for the Membership records to be changed.

#### 4.3.30 ‘replaceMembershipsResponse’ Message

This is the response message from the Sync Agent to the Reference Agent to complete the ‘replaceMemberships()’ operation. See ‘replaceMemberships()’ sub-section of [MemberServices, 04].



Figure 4.30 <replaceMembershipsResponse> element composition.

The <replaceMembershipsResponse> element is empty.

**Note:** The status information is returned in the header of the SOAP transport message.

#### 4.3.31 ‘changeMembershipsIdentifierRequest’ Message

This is the request message from the Reference Agent to the Sync Agent to invoke the ‘changeMembershipsIdentifier()’ operation. See ‘changeMembershipsIdentifier()’ sub-section of [MemberServices, 04].



Figure 4.31 <changeMembershipsIdentifierRequest> element composition.

One parameter is supplied:

- pairSourcedIdSet – the list of paired old and new identifier.

#### 4.3.32 ‘changeMembershipsIdentifierResponse’ Message

This is the response message from the Sync Agent to the Reference Agent to complete the ‘changeMembershipsIdentifier()’ operation. See ‘changeMembershipsIdentifier()’ sub-section of [MemberServices, 04].



**Figure 4.32** <changeMembershipsIdentifierResponse> element composition.

The <changeMembershipsIdentifierResponse> element is empty.

**Note:** The status information is returned in the header of the SOAP transport message.

## 4.4 SOAP Messages

The set of example SOAP/HTTP messages are described in Table 4.3. The ‘Example File’ entries are hot-text links to the files themselves.

**Table 4.3** SOAP/HTTP example messages for the synchronous binding.

Message	Example File
‘createMembershipRequest’ Message	<a href="/examples/createMembershipRequestSync.txt">/examples/createMembershipRequestSync.txt</a>
‘createMembershipResponse’ Message	<a href="/examples/createMembershipResponseSync.txt">/examples/createMembershipResponseSync.txt</a>
‘createByProxyMembershipRequest’ Message	<a href="/examples/createByProxyMembershipRequestSync.txt">/examples/createByProxyMembershipRequestSync.txt</a>
‘createByProxyMembershipResponse’ Message	<a href="/examples/createByProxyMembershipResponseSync.txt">/examples/createByProxyMembershipResponseSync.txt</a>
‘deleteMembershipRequest’ Message	<a href="/examples/deleteMembershipRequestSync.txt">/examples/deleteMembershipRequestSync.txt</a>
‘deleteMembershipResponse’ Message	<a href="/examples/deleteMembershipResponseSync.txt">/examples/deleteMembershipResponseSync.txt</a>
‘readMembershipRequest’ Message	<a href="/examples/readMembershipRequestSync.txt">/examples/readMembershipRequestSync.txt</a>
‘readMembershipResponse’ Message	<a href="/examples/readMembershipResponseSync.txt">/examples/readMembershipResponseSync.txt</a>
‘updateMembershipRequest’ Message	<a href="/examples/updateMembershipRequestSync.txt">/examples/updateMembershipRequestSync.txt</a>
‘updateMembershipResponse’ Message	<a href="/examples/updateMembershipResponseSync.txt">/examples/updateMembershipResponseSync.txt</a>
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‘createByProxyMembershipsResponse’ Message	<a href="/examples/createByProxyMembershipsResponseSync.txt">/examples/createByProxyMembershipsResponseSync.txt</a>
‘deleteMembershipsRequest’ Message	<a href="/examples/deleteMembershipsRequestSync.txt">/examples/deleteMembershipsRequestSync.txt</a>
‘deleteMembershipsResponse’ Message	<a href="/examples/deleteMembershipsResponseSync.txt">/examples/deleteMembershipsResponseSync.txt</a>
‘readMembershipsRequest’ Message	<a href="/examples/readMembershipsRequestSync.txt">/examples/readMembershipsRequestSync.txt</a>

Message	Example File
'readMembershipsResponse' Message	<a href="/examples/readMembershipsResponseSync.txt">/examples/readMembershipsResponseSync.txt</a>
'readMembershipsForPersonRequest' Message	<a href="/examples/readMembershipsForPersonRequestSync.txt">/examples/readMembershipsForPersonRequestSync.txt</a>
'readMembershipsForPersonResponse' Message	<a href="/examples/readMembershipsForPersonResponseSync.txt">/examples/readMembershipsForPersonResponseSync.txt</a>
'readMembershipsForGroupRequest' Message	<a href="/examples/readMembershipsForGroupRequestSync.txt">/examples/readMembershipsForGroupRequestSync.txt</a>
'readMembershipsForGroupResponse' Message	<a href="/examples/readMembershipsForGroupResponseSync.txt">/examples/readMembershipsForGroupResponseSync.txt</a>
'updateMembershipsRequest' Message	<a href="/examples/updateMembershipsRequestSync.txt">/examples/updateMembershipsRequestSync.txt</a>
'updateMembershipsResponse' Message	<a href="/examples/updateMembershipsResponseSync.txt">/examples/updateMembershipsResponseSync.txt</a>
'replaceMembershipsRequest' Message	<a href="/examples/replaceMembershipsRequestSync.txt">/examples/replaceMembershipsRequestSync.txt</a>
'replaceMembershipsResponse' Message	<a href="/examples/replaceMembershipsResponseSync.txt">/examples/replaceMembershipsResponseSync.txt</a>
'changeMembershipsIdentifierRequest' Message	<a href="/examples/changeMembershipsIdentifierRequestSync.txt">/examples/changeMembershipsIdentifierRequestSync.txt</a>
'changeMembershipsIdentifierResponse' Message	<a href="/examples/changeMembershipsIdentifierResponseSync.txt">/examples/changeMembershipsIdentifierResponseSync.txt</a>

## 5. Asynchronous WSDL Binding

**Note:** At the time of publication the Asynchronous Binding had not been tested. The details for creating the Asynchronous Binding are available in the IMS Membership Management Service WSDL Binding V2.0 Public Draft document. The Asynchronous Binding details will be issued in V2.0 of this document once testing has been completed.

## Appendix A – Binding WSDL Listings

### A1 – Synchronous Binding

The bindings listed below are for the synchronous SOAPv1.1/HTTPv1.1 based implementation. The set of binding files are given in Table A.1. These files can be accessed by ‘clicking’ on the appropriate file name.

**Table A.1 List of synchronous binding files.**

Property	Value
Service Specific File	<a href="/mms/wsd/imsMemberManServiceSync_v1p0.wsd">/mms/wsd/imsMemberManServiceSync_v1p0.wsd</a>
Abstract Definitions File	<a href="/mms/wsd/imsMemberManAbstractSync_v1p0.wsd">/mms/wsd/imsMemberManAbstractSync_v1p0.wsd</a>
Messages XSD	<a href="/mms/xsd/imsMemberManMessSchema_v1p0.xsd">/mms/xsd/imsMemberManMessSchema_v1p0.xsd</a>
Data Model XSD	<a href="/mms/xsd/imsMemberManDataSchema_v1p0.xsd">/mms/xsd/imsMemberManDataSchema_v1p0.xsd</a>
Enterprise Common XSD	<a href="/services/common/imsCommonSchema_v1p0.xsd">/services/common/imsCommonSchema_v1p0.xsd</a>
Message Binding XSD	<a href="/services/common/imsMessBindSchema_v1p0.xsd">/services/common/imsMessBindSchema_v1p0.xsd</a>

### A2 – Asynchronous Binding

**Note:** At the time of publication the Asynchronous Binding had not been tested. The details for creating the Asynchronous Binding are available in the IMS Membership Management Service WSDL Binding V2.0 Public Draft document. The Asynchronous Binding details will be issued in V2.0 of this document once testing has been completed.

## About This Document

<b>Title</b>	IMS Membership Management Services WSDL Binding
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<b>Version</b>	1.0
<b>Version Date</b>	11 June 2004
<b>Status</b>	<b>Final Specification</b>
<b>Summary</b>	This document presents the IMS Membership Management Services WSDL Binding. The original Enterprise specification was based upon the description of the data model for the information to be exchanged between communicating enterprise systems. The Enterprise Services specification extends this work by adding a series of behavioural models that define how the data models are to be manipulated. The material in this document describes the Web Services Description Language binding of the Membership Management Services Information Model using SOAPv1.1/HTTPv1.1 as the underlying messaging and transport mechanism. This version supersedes the IMS Enterprise v1.1 specifications.
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To register any comments or questions about this specification please visit:  
<http://www.imsglobal.org/developers/ims/imsforum/categories.cfm?catid=20>

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## Revision History

Version No.	Release Date	Comments
Public Draft 1.0	12 January 2004	The final approved Public Draft Document for the IMS Person Management Services Specification.
Public Draft 2.0	19 April 2004	This is the second formal release of the Public Draft document for the IMS Membership Management Services Specification. The differences to the first release are: a) The asynchronous binding information has been added; b) In the synchronous binding section the example SOAP messages have been replaced by hot text links to external files that contain the examples. There is one file per example; c) The data model descriptions have been placed in their own section; d) Appendix A and B have been combined. The actual listing has been removed and hot text links are used to reference the listing.
Final Specification 1.0	11 June 2004	This is the formal Final Release of the IMS Membership Management Services WSDL Binding specification.

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