[MS-OXWAVLS]: Availability Web Service Protocol Specification

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Revision Summary			
Author	Date	Version	Comments
Microsoft Corporation	April 4, 2008	0.1	Initial Availability.
Microsoft Corporation	April 25, 2008	0.2	Revised and updated property names and other technical content.

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1 Introduction

The Availability Web Service Protocol specifies how a client can get the Free/Busy/Tentative/OOF status of a set of users, rooms, and resources within a specified time window. Refer to [MS-OXOCAL] protocol for information about meetings and scheduling meetings.

Additionally, this protocol specifies how a client can get suggestions for alternate meeting times.

1.1 Glossary

The following terms are defined in [MS-OXGLOS]:

Free/Busy

public folder

SOAP body

The following terms are specific to this document:

Good Threshold: This is the threshold that is used to determine whether a meeting suggestion is considered Good or Fair.

Merged Free/Busy: A string representation of the attendee's Free/Busy information for the duration specified.

Meeting Suggestion: A possible alternate meeting time for the attendees of the meeting.

Out of Office (OOF): This is one of the possible values for Free/Busy Status on an appointment. It means that the user has indicated that they will be out of their office during the time of this appointment.

Proxy request: A request that is forwarded by a service to another service so that the requested data can then be processed. The original service acts as a proxy for the service that handles the request.

Working hours: Times of the day that are valid for meetings to be considered for an attendee.

MAY, SHOULD, MUST, SHOULD NOT, MUST NOT: These terms (in all caps) are used as described in [RFC2119]. All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

1.2 References

1.2.1 Normative References

[MS-OXGLOS] Microsoft Corporation, "Office Exchange Protocols Master Glossary", April 2008.

[MS-OXOCAL] Microsoft Corporation, "Appointment and Meeting Object Protocol Specification", April 2008.

[MS-OXOPFFB] Microsoft Corporation, "Public Folder Based Free/Busy Protocol Specification", April 2008.

[MS-OXPROPS] Microsoft Corporation, "Office Exchange Protocols Master Property List Specification", April 2008.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, http://www.ietf.org/rfc/rfc2119.txt.

[RFC2616] Fielding, R., et al, "Hypertext Transfer Protocol -- HTTP/1.1", RFC 2616, June 1999, http://www.ietf.org/rfc/rfc2616.txt.

[SOAP1.1] Box, D., Ehnebuske, D., Kakivaya, G., Layman, A., Mendelsohn, N., Nielsen, H. F., Thatte, S., and Winer, D., "Simple Object Access Protocol (SOAP) 1.1", May 2000, http://www.w3.org/TR/2000/NOTE-SOAP-20000508/.

[WSDL] Christensen, E., Curbera, F., Meredith, G., and Weerawarana, S., "Web Services Description Language (WSDL) 1.1", W3C Note, March 2001, http://www.w3.org/TR/2001/NOTE-wsdl-20010315.

[XML10] World Wide Web Consortium, "Extensible Markup Language (XML) 1.0 (Third Edition)", February 2004, http://www.w3.org/TR/2004/REC-xml-20040204/.

[XMLNS] World Wide Web Consortium, "Namespaces in XML 1.0 (Second Edition)", August 2006, http://www.w3.org/TR/REC-xml-names/.

[XMLSCHEMA1] Thompson, H.S., Ed., Beech, D., Ed., Maloney, M., Ed., and Mendelsohn, N., Ed., "XML Schema Part 1: Structures", W3C Recommendation, May 2001, http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/.

[XMLSCHEMA2] Biron, P.V., Ed. and Malhotra, A., Ed., "XML Schema Part 2: Datatypes", W3C Recommendation, May 2001, http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/.

1.2.2 Informative References

[MSDN-GUA] Microsoft Corporation, "Getting User Availability (Exchange Web Services)", http://go.microsoft.com/fwlink/?LinkId=112409.

1.3 Protocol Overview (Synopsis)

The **Availability Service** (AS) enables retrieval of up-to-date **Free/Busy** and meeting suggestions for a set of mailboxes. Typically, this set of mailboxes represents attendees and resources of a meeting. Clients use the SOAP [SOAP1.1] protocol to contact the Availability Service to make a GetUserAvailability request.

This specification describes the request and response for the GetUserAvailability operation.

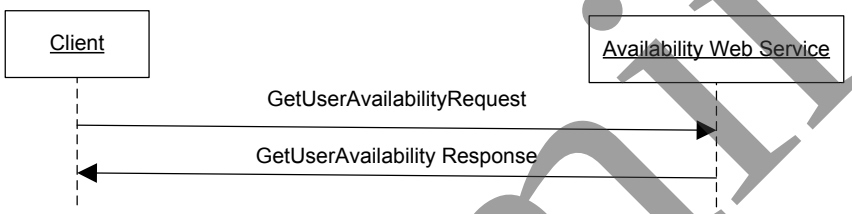
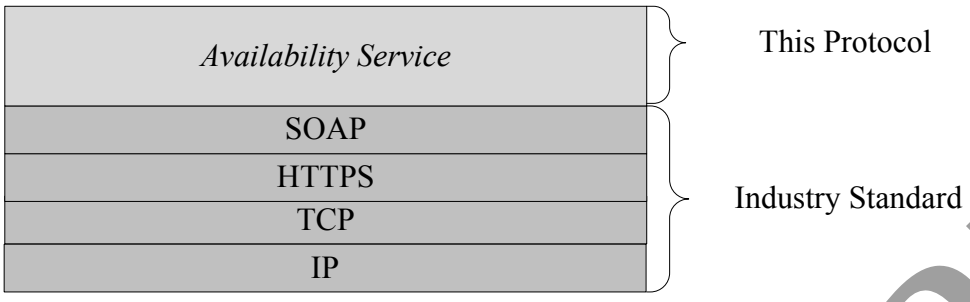


Figure 1. Availability SOAP message between client and server

1.4 Relationship to Other Protocols

Clients can contact the Availability Service using SOAP over HTTP as described in [RFC2616].



1.5 Prerequisites/Preconditions

None. <1>

1.6 Applicability Statement

None.

1.7 Versioning and Capability Negotiation

- **Supported Transports:** This protocol uses SOAP 1.1.
- **Protocol Versions:** This protocol specifies only one WSDL portType version.
- **Security and Authentication Methods:** This protocol relies on the Web server hosting it to perform authentication.
- **Localization:** This protocol includes text strings in various messages. Localization considerations for such strings are specified in sections 2.2 and 3.1.4.
- **Capability Negotiation:** None.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

Soap version supported – Soap 1.1. For more information, see [SOAP1.1] .

2.2 Common Message Syntax

2.2.1 Namespaces

See [XMLNS] for the namespaces specification.

Prefix	Namespace URI	Reference
soap	http://schemas.xmlsoap.org/wsdl/soap/	[SOAP1.1]
tns	http://schemas.microsoft.com/exchange/services/2006/messages	[MS-OXWAVLS]
xs	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1]
targetNamespace	http://schemas.microsoft.com/exchange/services/2006/messages	[MS-OXWAVLS]
wsdl	http://schemas.xmlsoap.org/wsdl/	[WSDL]
t	http://schemas.microsoft.com/exchange/services/2006/types	[MS-OXWAVLS]
m	http://schemas.microsoft.com/exchange/services/2006/messages	[MS-OXWAVLS]

2.2.2 Simple Types

2.2.2.1 t:DayOfWeekType

This specifies the list of working days scheduled for a mailbox user. The values of Day, Weekday, and WeekendDay MUST NOT be used.

```
<xs:simpleType name="DayOfWeekType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Sunday" />
    <xs:enumeration value="Monday" />
```

```
      <xs:enumeration value="Tuesday" />
      <xs:enumeration value="Wednesday" />
      <xs:enumeration value="Thursday" />
      <xs:enumeration value="Friday" />
      <xs:enumeration value="Saturday" />
      <xs:enumeration value="Day" />
      <xs:enumeration value="Weekday" />
      <xs:enumeration value="WeekendDay" />
    </xs:restriction>
  </xs:simpleType>
```

2.2.2.2 t:FreeBusyViewType

This enumeration specifies the type of requested Free/Busy information that is returned in a response when it occurs as an instance in the context of a RequestedView element. This enumeration specifies the type of Free/Busy information actually returned in a response when it occurs as an instance in the context of a FreeBusyView element.

```
<xs:simpleType name="FreeBusyViewType">
      <xs:list>
            <xs:simpleType>
            <xs:restriction base="xs:string">
                  <xs:enumeration value="None" />
                  <xs:enumeration value="MergedOnly" />
                  <xs:enumeration value="FreeBusy" />
                  <xs:enumeration value="FreeBusyMerged" />
                  <xs:enumeration value="Detailed" />
                  <xs:enumeration value="DetailedMerged" />
            </xs:restriction>
            </xs:simpleType>
      </xs:list>
</xs:simpleType>
```

Value	Description
None	This value is not valid for requests. This value is valid for responses.
MergedOnly	Specifies that **Merged Free/Busy** is requested or returned..
FreeBusy	Represents the status information: Free, Busy, Tentative, and OOF. This also includes the start/end times of the appointments. This view is richer than the public folder Free/Busy view (as specified in [MS-OXOPFFB]) because individual meeting start and end times are provided instead of an aggregated Free/Busy stream.
FreeBusyMerged	Represents all the properties in **FreeBusy** with a stream of Merged Free/Busy information.
Detailed	Represents the status information: Free, Busy, Tentative, and OOF;

	the start/end times of the appointments; and various properties of the appointment such as subject, location, and importance. This requested view will return the maximum amount of information for which the requesting user is privileged. If Merged Free/Busy information only is available, **MergedOnly** will be returned. Otherwise, **FreeBusy** or **Detailed** will be returned.
DetailedMerged	Represents all the properties in **Detailed** with a stream of Merged Free/Busy information. If Merged Free/Busy information only is available, **MergedOnly** will be returned. Otherwise, **FreeBusyMerged** or **DetailedMerged** will be returned.

Merged Free/Busy is a string representation of the Calendar Folder for the duration that was requested. The MergedFreeBusyInterval specified in the request is used to break up the requested duration into separate blocks whose size=merged free busy interval. The blocks contain a number that represents the Free/Busy status of the calendar.

Number	Free/Busy Status
0	Free
1	Tentative
2	Busy
3	OOF
4	No data (indicates that the requestor does not have permissions to see Free/Busy)

Handling of overlapping appointments – if the block has overlapping appointments the following precedence order is used (high->low): OOF, Busy, Tentative, Free <2>.

The mailbox owner MAY grant users specific Free/Busy view permissions. This can be done by setting the FreeBusy permissions on the Calendar Folder as specified in [MS-OXOCAL] in the mailbox <3>.

2.2.2.3 t:LegacyFreeBusyType

This simple type specifies the public folder [MS-OXOPFFB] Free/Busy type when it occurs as an instance in the context of a BusyType element of either the CalendarEvent or IndividualAttendeeConflictData complex type.

```
<xs:simpleType name="LegacyFreeBusyType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="Free" />
      <xs:enumeration value="Tentative" />
      <xs:enumeration value="Busy" />
      <xs:enumeration value="OOF" />
      <xs:enumeration value="NoData" />
    </xs:restriction>
  </xs:simpleType>
```

Value	Definition
Free	Indicates that the status is free.
Tentative	Indicates that the status is tentative.
Busy	Indicates that the status is busy.
OOF	Indicates that the status is Out of Office.
NoData	Indicates that no data could be retrieved for the recipient.

2.2.2.4 t:MeetingAttendeeType

This type is used in the SuggestionViewOptions and is used to designate roles for each of the attendees.

```
    <xs:simpleType name="MeetingAttendeeType">
        <xs:restriction base="xs:string">
            <xs:enumeration value="Organizer"/>
            <xs:enumeration value="Required"/>
            <xs:enumeration value="Optional"/>
            <xs:enumeration value="Room"/>
            <xs:enumeration value="Resource"/>
        </xs:restriction>
    </xs:simpleType>
```

Value	Description
Organizer	Attendee is the organizer of the meeting.
Required	Required attendee to the meeting.
Optional	Optional attendee to the meeting.
Room	Represents a room resource used for the meeting.
Resource	A resource such as a TV or projector that is scheduled for use in the meeting.

2.2.2.5 t:ResponseClassType

This type specifies if the request was successfully processed by the Availability Service.

```
<xs:simpleType name="ResponseClassType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Success" />
    <xs:enumeration value="Warning" />
    <xs:enumeration value="Error" />
  </xs:restriction>
</xs:simpleType>
```

Value	Description
Success = 0	Specifies that the request was successfully processed.
Warning = 1	Specifies that an unusual situation was encountered during the processing of the request and the request may not have been processed successfully.
Error = 2	Specifies that the request could not be processed.

2.2.2.6 t:ResponseCodeType

The ResponseCodeType enumeration specifies the status states of a response.

```
<xs:simpleType name="ResponseCodeType">
    <xs:annotation>
      <xs:documentation>
          Represents the message keys that can be returned by
response error messages
      </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:string">
          <xs:enumeration value="NoError"/>
          <xs:enumeration value="ErrorAccessDenied"/>
          <xs:enumeration value="ErrorAccountDisabled"/>
```

```
            <xs:enumeration value="ErrorAddressSpaceNotFound"/>
            <xs:enumeration value="ErrorADOperation"/>
            <xs:enumeration value="ErrorADSessionFilter"/>
            <xs:enumeration value="ErrorADUnavailable"/>
            <xs:enumeration value="ErrorAutoDiscoverFailed"/>
            <xs:enumeration value="ErrorAvailabilityConfigNotFound"/>
            <xs:enumeration value="ErrorConnectionFailed"/>
            <xs:enumeration value="ErrorCorruptData"/>
            <xs:enumeration value="ErrorDataSourceOperation"/>
            <xs:enumeration value="ErrorFreeBusyGenerationFailed"/>
            <xs:enumeration
value="ErrorIndividualMailboxLimitReached"/>
            <xs:enumeration
value="ErrorInvalidCrossForestCredentials"/>
            <xs:enumeration value="ErrorIncorrectSchemaVersion"/>
            <xs:enumeration value="ErrorInsufficientResources"/>
            <xs:enumeration value="ErrorInternalServerError"/>
            <xs:enumeration value="ErrorInternalServerTransientError"/>
            <xs:enumeration value="ErrorInvalidAccessLevel"/>
            <xs:enumeration value="ErrorInvalidAuthorizationContext"/>
            <xs:enumeration value="ErrorInvalidFreeBusyViewType"/>
            <xs:enumeration
value="ErrorInvalidMergedFreeBusyInterval"/>
            <xs:enumeration value="ErrorInvalidNetworkServiceContext"/>
            <xs:enumeration value="ErrorInvalidRecipients"/>
            <xs:enumeration value="ErrorInvalidRequest"/>
            <xs:enumeration value="ErrorInvalidSecurityDescriptor"/>
            <xs:enumeration value="ErrorInvalidSmtpAddress"/>
            <xs:enumeration value="ErrorInvalidTimeInterval"/>
            <xs:enumeration value="ErrorItemNotFound"/>
            <xs:enumeration value="ErrorLogonAsNetworkServiceFailed"/>
            <xs:enumeration value="ErrorMailboxConfiguration"/>
            <xs:enumeration value="ErrorMailboxDataArrayEmpty"/>
            <xs:enumeration value="ErrorMailboxDataArrayTooBig"/>
            <xs:enumeration value="ErrorMailboxLogonFailed"/>
            <xs:enumeration value="ErrorMailboxMoveInProgress"/>
            <xs:enumeration value="ErrorMailboxStoreUnavailable"/>
            <xs:enumeration value="ErrorMailRecipientNotFound"/>
            <xs:enumeration
value="ErrorMeetingSuggestionGenerationFailed"/>
            <xs:enumeration value="ErrorMissingArgument"/>
            <xs:enumeration value="ErrorNoCalendar"/>
            <xs:enumeration value="ErrorProxyRequestNotAllowed"/>
            <xs:enumeration value="ErrorProxyRequestProcessingFailed"/>
            <xs:enumeration
value="ErrorPublicFolderRequestProcessingFailed"/>
            <xs:enumeration value="ErrorPublicFolderServerNotFound"/>
            <xs:enumeration value="ErrorRequestStreamTooBig"/>
            <xs:enumeration value="ErrorResponseSchemaValidation"/>
            <xs:enumeration value="ErrorResultSetTooBig"/>
            <xs:enumeration value="ErrorSchemaValidation"/>
            <xs:enumeration value="ErrorServerBusy"/>
            <xs:enumeration value="ErrorServiceDiscoveryFailed"/>
            <xs:enumeration value="ErrorTimeIntervalTooBig"/>
```

```
<xs:enumeration value="ErrorTimeoutExpired"/>
<xs:enumeration value="ErrorTokenSerializationDenied"/>
<xs:enumeration value="ErrorWin32InteropError"/>
</xs:restriction>
```

Value	Description
NoError = 0	No error returned in the request.
ErrorAccessDenied = 1	Caller does not have access to make the request.
ErrorAccountDisabled = 2	Caller's account has been disabled in the directory service.
ErrorADOperation = 4	The directory service operation did not succeed. Try again later.
ErrorADSessionFilter = 5	Invalid search criteria encountered when searching the directory service.
ErrorADUnavailable = 6	The directory service is unavailable. Try again later.
ErrorConnectionFailed = 52	Unable to connect to the Mailbox Server.
ErrorCorruptData = 54	This error is returned when attempting to access an item in the mailbox store that is corrupt.
ErrorDataSourceOperation = 59	This error is returned when a data source (directory service or Mailbox store) failed to complete the operation.
ErrorIncorrectSchemaVersion = 101	This is returned as a warning and indicates that the schema version that is sent in the request is incorrect.
ErrorInsufficientResources = 103	Indicates that the mailbox server is overloaded. Try your request again later.
ErrorInternalServerError = 104	Indicates that an internal server error occurred.
ErrorInternalServerTransientError = 105	Indicates that an internal server error occurred and that you should try your request again later.
ErrorInvalidRecipients = 126	Indicates that the set of recipients passed in has some recipients that are invalid.
ErrorInvalidRequest = 162	Indicates that the SOAP request has a SOAP

	action header, but nothing in the SOAP body. Note that the SOAP Action header is not required because Web Services can determine the method to call from the local name of the root element in the SOAP body.
ErrorInvalidServerVersion = 168	Indicates that the server version passed in the request is invalid.
ErrorItemNotFound = 184	Indicates that the item was not found or you do not have rights to access the item.
ErrorMailboxConfiguration = 188	Indicates that the mailbox information in the directory service is configured incorrectly.
ErrorMailboxMoveInProgress = 189	Indicates that the mailbox is being moved to a different mailbox store or server. This also may indicate that the mailbox is on another server or mailbox database.
ErrorMailboxStoreUnavailable = 190	Indicates one of the following error conditions occurred: 1) The mailbox store is corrupt. 2) The mailbox store is being stopped. 3) The mailbox store is offline 4) A network error occurred when attempting to access the mailbox store. 5) The mailbox store is overloaded and cannot accept more connections. 6) The mailbox store has been paused. The request should be retried at a later time.
ErrorNotEnoughMemory = 219	Indicates that the operation could not be completed because of insufficient memory.
ErrorResponseSchemaValidation = 249	Occurs when the response cannot be validated against the schema.
ErrorSchemaValidation = 254	Occurs when the request cannot be validated against the schema.
ErrorServerBusy = 262	Occurs when the server is busy.
ErrorTokenSerializationDenied = 269	Occurs when the Availability Service is

	contacted by another Availability Service and there is corruption in the data.
ErrorRequestStreamTooBig = 5000	Occurs when the request stream is larger than 400Kb.
ErrorMailboxDataArrayEmpty = 5001	Occurs when there are no entries in the mailbox array passed in the request.
ErrorMailboxDataArrayTooBig = 5002	Occurs when the size of the mailbox data array passed in the request is larger than array size supported. By default the allowed limit is 100.
ErrorTimeIntervalTooBig = 5003	Indicates that the time window that was specified is larger than the allowed limit. By default, the allowed limit is 42 days.
ErrorInvalidMergedFreeBusyInterval = 5004	Indicates that the supplied Merged Free/Busy internal value is invalid. The default minimum value is 5 minutes. The default maximum value is 1440 minutes.
ErrorResultSetTooBig = 5005	Indicates that the number of Calendar entries for a given recipient exceeds the allowed limit of 1000. Reduce the window and try again.
ErrorInvalidClientSecurityContext = 5006	Indicates an invalid client security context.
ErrorMailboxLogonFailed = 5007	Occurs when the connection to the mailbox to get the calendar view information failed.
ErrorMailRecipientNotFound = 5008	Occurs if the MailboxData information cannot be mapped to a valid mailbox account.
ErrorInvalidTimeInterval = 5009	Indicates that the specified time interval is invalid.
ErrorPublicFolderServerNotFound = 5010	Indicates that the request to retrieve Free/Busy information for a recipient failed because recipient's organizational unit did not have a public folder server associated with it.
ErrorInvalidAccessLevel = 5011	Indicates that the level of access that the caller has on the Free/Busy data is invalid.
ErrorInvalidSecurityDescriptor = 5012	Indicates that the security descriptor on the Calendar folder in the store is corrupted.
ErrorWin32InteropError = 5013	Indicates that there was an internal failure

	during communication with unmanaged code.
ErrorProxyRequestNotAllowed = 5014	Indicates that the AS was not allowed to proxy the request to another A S.
ErrorProxyRequestProcessingFailed = 5015	Indicates that a proxy request failed. This response can be caused by network connectivity issues or request time-out issues.
ErrorPublicFolderRequestProcessingFailed = 5016	Occurs when the recipient is located on a server that uses public folders to store Free/Busy information and the request to retrieve Free/Busy information for the recipient from the public folder server failed.
ErrorServiceDiscoveryFailed = 5021	Indicates that the AS failed to discover another AS. This occurs when the AS needs to make a proxy request.
ErrorAddressSpaceNotFound = 5023	Occurs when the AS has to contact another AS for information and cannot find end point information.
ErrorAvailabilityConfigNotFound = 5024	This occurs when the AS gets a request from another AS and configuration information is missing.
ErrorInvalidCrossForestCredentials = 5025	Occurs when the credentials used to proxy a request to a different directory service forest fails authentication.
ErrorInvalidFreeBusyViewType = 5026	Occurs if a FreeBusyViewType of None is requested.
ErrorTimeoutExpired = 5027	Occurs when there is not enough time to complete the processing of the request.
ErrorMissingArgument = 5028	Indicates that a required argument was missing from the request. The response message text indicates which argument to check.
ErrorNoCalendar = 5029	Occurs if there is no Calendar folder for the mailbox.
ErrorInvalidAuthorizationContext = 5032	Indicates that the authorization procedure for the requestor failed.
ErrorLogonAsNetworkServiceFailed = 5033	Occurs when the AS has to contact another AS and cannot impersonate the Network

	Service.
ErrorInvalidNetworkServiceContext = 5034	Indicates an error in the Network Service account on the Client Access server.
ErrorInvalidSmtpAddress = 5035	Indicates that the SMTP address cannot be parsed.
ErrorIndividualMailboxLimitReached = 5036	Occurs when the request contains too many attendees to resolve. By default, the maximum number of attendees to resolve is 100. This is usually returned when distribution lists have to be expanded.
ErrorNoFreeBusyAccess = 5037	Indicates that the caller does not have Free/Busy viewing rights on the Calendar folder in question.
ErrorAutoDiscoverFailed = 5039	Indicates that the AS was unable to get a successful response from the AS.
ErrorMeetingSuggestionGenerationFailed = 5040	Indicates that the suggestions engine encountered a problem when it was trying to generate the suggestions.
ErrorFreeBusyGenerationFailed = 5041	Occurs when Free/Busy information cannot be retrieved because of an intervening failure.

2.2.2.7 t:SuggestionQuality

Specifies the quality level of the suggestion time.

```
<xs:simpleType name="SuggestionQuality">
      <xs:restriction base="xs:string">
            <xs:enumeration value="Excellent" />
            <xs:enumeration value="Good" />
            <xs:enumeration value="Fair" />
            <xs:enumeration value="Poor" />
      </xs:restriction>
</xs:simpleType>
```

Value	Description
Excellent	Request: Caller wants suggestions for times where there are no conflicts. Response: Indicates that 0% of the attendees have a conflict for the suggested meeting time.

Good	Request: Caller wants suggestions for times where the percentage of conflicts is equal to or less than the GoodThreshold value. Response: Indicates that the suggested meeting time has a conflict percentage that is equal to or lower than the GoodThreshold value.
Fair	Request: Percentage of conflicts is between GoodThreshold and 50%.
Poor	Percentage of conflicts is greater than or equal to 50%.

2.2.3 Complex Types

2.2.3.1 ArrayOfAttendeeConflictData

The ArrayOfAttendeeConflictData type specifies an array of conflict data for queried attendees while retrieving suggested meeting times.

```
<xs:complexType name="ArrayOfAttendeeConflictData">
    <xs:choice minOccurs="0" maxOccurs="unbounded">
      <xs:element minOccurs="1" maxOccurs="1"
name="UnknownAttendeeConflictData" nillable="true"
type="t:UnknownAttendeeConflictData" />
      <xs:element minOccurs="1" maxOccurs="1"
name="IndividualAttendeeConflictData" nillable="true"
type="t:IndividualAttendeeConflictData" />
      <xs:element minOccurs="1" maxOccurs="1"
name="TooBigGroupAttendeeConflictData" nillable="true"
type="t:TooBigGroupAttendeeConflictData" />
      <xs:element minOccurs="1" maxOccurs="1"
name="GroupAttendeeConflictData" nillable="true"
type="t:GroupAttendeeConflictData" />
      </xs:choice>
</xs:complexType>
```

Element	Type	Definition
UnknownAttendeeConflictData	UnknownAttendeeConflictData	Represents an attendee that is not recognized (not a user, distribution list or contact). MUST be present but its value can be null.
IndividualAttendeeConflictData	IndividualAttendeeConflictData	Specifies the attendee's Free/Busy status for a time window that occurs at the same time as the suggested meeting time. MUST be present but the value can be null.

TooBigGroupAttendeeConflictData	TooBigGroupAttendeeConflictData	Represents an attendee which is a distribution list that was too large to expand. MUST be present and the value can be null. Default maximum group size = 100. This can be configured using the.

GroupAttendeeConflictData	GroupAttendeeConflictData	Contains the conflict information about the number of attendees available, the number of attendees that have conflicts and the number of attendees that do not have Free/Busy information in a distribution list. MUST be present but the value can be null.

2.2.3.2 t:ArrayOfCalendarEvent

The ArrayOfCalendarEvent type specifies an array of calendar events for the attendee.

```
  <xs:complexType name="ArrayOfCalendarEvent">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded"
name="CalendarEvent" type="t: CalendarEvent " />
    </xs:sequence>
  </xs:complexType>
```

Element	Type	Definition
CalendarEvent	t:CalendarEvent	Represents a unique calendar item occurrence. MAY be present.

2.2.3.3 m:ArrayOfFreeBusyResponse

Contains the requested users' availability information. The order of the individual elements of this array MUST match the order of the users in the GetUserAvailabilityRequest.

```
<xs:complexType name="ArrayOfFreeBusyResponse">
      <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="unbounded"
      name="FreeBusyResponse" type="m:FreeBusyResponseType" />
      </xs:sequence>
</xs:complexType>
```

Element	Type	Definition
FreeBusyResponse	m:FreeBusyResponseType	Contains the Free/Busy information for a single mailbox user and the response status. MAY be present.

2.2.3.4 t:ArrayOfMailboxData

The **MailboxDataArray** element contains a list of mailboxes to query for availability information.

```
<xs:complexType name="ArrayOfMailboxData">
      <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="unbounded"
      name="MailboxData" nillable="true" type="t:MailboxData" />
      </xs:sequence>
</xs:complexType>
```

Element	Type	Definition
MailboxDataArray	t:MailboxData	While the maxOccurs is unbounded, GetUserAvailability restricts this to 100 entries by default. MAY be present.

2.2.3.5 t:ArrayOfSuggestion

The ArrayOfSuggestion type specifies an array meeting suggestions in an Availability response.

```
<xs:complexType name="ArrayOfSuggestion">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="Suggestion"
type="t:Suggestion" />
  </xs:sequence>
</xs:complexType>
```

Element	Type	Definition
Suggestion	t: Suggestion	While the maxOccurs is unbounded, GetUserAvailability restricts this to 100 entries by default. MAY be present.

2.2.3.6 t:ArrayOfSuggestionDayResult

The ArrayOfSuggestionDayResult type specifies an array of meeting suggestion organized by date.

```
  <xs:complexType name="ArrayOfSuggestionDayResult">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded"
name="SuggestionDayResult" type="t:SuggestionDayResult" />
    </xs:sequence>
  </xs:complexType>
```

Element	Type	Definition
SuggestionDayResult	t: SuggestionDayResult	Array of SuggestionDayResult MAY be present.

2.2.3.7 t:ArrayOfWorkingPeriod

The ArrayOfWorkingPeriod type specifies the working period information for the mailbox user.

```
  <xs:complexType name="ArrayOfWorkingPeriod">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded"
name="WorkingPeriod" type="t:WorkingPeriod" />
    </xs:sequence>
  </xs:complexType>
```

Element	Type	Definition
WorkingPeriod	t:WorkingPeriod	Contains the work week days and hours of the mailbox user. MAY be present.

2.2.3.8 AttendeeConflictData

The AttendeeConflictData type specifies the abstract base type used for the UnknownAttendeeConflictData, TooBigGroupAttendeeConflictData, IndividualAttendeeConflictData, and GroupAttendeeConflictData types.

```
<xs:complexType name="AttendeeConflictData" abstract="true"/>
```

2.2.3.9 BaseRequestType

This is an abstract type that GetUserAvailabilityRequestType derives from.

```
<xs:complexType name="BaseRequestType" abstract="true"/>
```

2.2.3.10 t:CalendarEvent

This type represents an item in the calendar.

```
<xs:complexType name="CalendarEvent">
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="1" name="StartTime"
type="xs:dateTime" />
      <xs:element minOccurs="1" maxOccurs="1" name="EndTime"
type="xs:dateTime" />
      <xs:element minOccurs="1" maxOccurs="1" name="BusyType"
type="t:LegacyFreeBusyType" />
      <xs:element minOccurs="0" maxOccurs="1"
name="CalendarEventDetails" type="t:CalendarEventDetails" />
    </xs:sequence>
  </xs:complexType>
```

Element	Type	Definition
StartTime	xs:dateTime	Represents the start of a calendar event. MUST be present.
EndTime	xs:dateTime	Represents the end of a calendar event. MUST be present.
BusyType	t:LegacyFreeBusyType	Represents the Free/Busy status set for the calendar event. MUST be present.
CalendarEventDetails	t:CalendarEventDetails	Provides additional information for a calendar event. MAY be present.

The level of detail provided by this type, and the element of the same name, depends on the permissions granted to the requestor. This element MUST be included when the FreeBusyViewType element is set to FreeBusy, FreeBusyMerged, Detailed, or DetailedMerged. This element MAY not include any child elements if no calendar items are present in the requested time window.

2.2.3.11 t:CalendarEventDetails

This type specifies additional information about a calendar event.

```
  <xs:complexType name="CalendarEventDetails">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="ID"
type="xs:string" />
      <xs:element minOccurs="0" maxOccurs="1" name="Subject"
type="xs:string" />
      <xs:element minOccurs="0" maxOccurs="1" name="Location"
type="xs:string" />
      <xs:element minOccurs="1" maxOccurs="1" name="IsMeeting"
type="xs:boolean" />
      <xs:element minOccurs="1" maxOccurs="1" name="IsRecurring"
type="xs:boolean" />
      <xs:element minOccurs="1" maxOccurs="1" name="IsException"
type="xs:boolean" />
```

```
      <xs:element minOccurs="1" maxOccurs="1" name="IsReminderSet"
type="xs:boolean" />
      <xs:element minOccurs="1" maxOccurs="1" name="IsPrivate"
type="xs:boolean" />
    </xs:sequence>
  </xs:complexType>
```

Element	Type	Definition
ID	xs:string	Represents the entry ID of the calendar item. MAY be present.
Subject	xs:string	Represents the subject of the calendar item. MAY be present.
Location	xs:string	Represents the location field of the calendar item. MAY be present.
IsMeeting	xs:boolean	Indicates whether the calendar event is a meeting or an appointment. MUST be present and can only occur once.
IsRecurring	xs:boolean	Indicates whether the calendar event is an instance of a recurring calendar item or a single calendar item. MUST be present and can only occur once.

IsException	xs:boolean	Indicates whether an instance of a recurring calendar item is changed from the master. MUST be present and can only occur once.
IsReminderSet	xs:boolean	Indicates whether a reminder has been set for the calendar event. MUST be present and can only occur once.
IsPrivate	xs:boolean	Indicates whether the calendar item is private. MUST be present and can only occur once.

Restrictions:

1) All the child elements are listed in the sequence they occur.

2) If the IsPrivate element is set to true, the other elements contained in the CalendarEventDetails type MUST not be returned.

The following maps the information in the CalendarEvent to properties on the Calendar item.

Element	MAPI Property	Flags Used
ID	PidTagEntryId [MS-OXPROPS]	n/a
Subject	PidTagSubject [MS-OXPROPS]	n/a
Location	PidTagLocation [MS-OXPROPS]	n/a

IsMeeting	PidLidAppointmentStateFlags [MS-OXOCAL]	Flag used is asfMeeting
IsRecurring	PidLidRecurring [MS-OXOCAL]	n/a
IsException	PidLidIsException[MS-OXOCAL]	n/a
IsReminderSet	PidLidReminderSet[MS-OXOCAL]	
IsPrivate	PidTagSensitivity [MS-OXPROPS]	If the property is set to SENSITIVITY_PRIVATE, IsPrivate returns TRUE.

2.2.3.12 t:Duration

Specifies the time interval.

```
<xs:complexType name="Duration">
      <xs:sequence>
            <xs:element minOccurs="1" maxOccurs="1" name="StartTime"
type="xs:dateTime" />
            <xs:element minOccurs="1" maxOccurs="1" name="EndTime"
type="xs:dateTime" />
      </xs:sequence>
  </xs:complexType>
```

Element	Definition
StartTime	Represents the start time of the window. MUST be present.
EndTime	Represents the end time of the window. MUST be present.

Restriction: EndTime MUST be greater than the StartTime.

2.2.3.13 t:EmailAddress

Specifies the name and the address of the attendee.

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

```
      <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="1" name="Name"
      type="xs:string" />
            <xs:element minOccurs="1" maxOccurs="1" name="Address"
type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="RoutingType"
type="xs:string" />
      </xs:sequence>
</xs:complexType>
```

Element	Type	Definition
Name	xs:string	Specifies the display name of the attendee. MAY be present.
Address	xs:string	Specifies the e-mail address of the attendee. MUST be present
RoutingType	xs:string	Specifies the routing protocol for the e-mail address. MAY be present.

This protocol only supports SMTP addresses.

2.2.3.14 m:FreeBusyResponseType

Specifies the returned response from the service.

```
<xs:complexType name="FreeBusyResponseType">
      <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="1"
      name="ResponseMessage" type="m:ResponseMessageType" />
            <xs:element minOccurs="0" maxOccurs="1" name="FreeBusyView"
      type="t:FreeBusyView" />
      </xs:sequence>
</xs:complexType>
```

Element	Type	Definition
ResponseMessage	m:ResponseMessageType	Specifies descriptive information about the response status. MAY be present.

FreeBusyView	t:FreeBusyView	Specifies availability information for a specific user. MAY be present.

2.2.3.15 t:FreeBusyView

This type specifies the Free/Busy information returned in the response.

```
<xs:complexType name="FreeBusyView">
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="1" name="FreeBusyViewType"
type="t:FreeBusyViewType" />
      <xs:element minOccurs="0" maxOccurs="1" name="MergedFreeBusy"
type="xs:string" />
      <xs:element minOccurs="0" maxOccurs="1" name="CalendarEventArray"
type="t:ArrayOfCalendarEvent" />
      <xs:element minOccurs="0" maxOccurs="1" name="WorkingHours"
type="t:WorkingHours" />
    </xs:sequence>
  </xs:complexType>
```

Element	Type	Definition
FreeBusyViewType	t:FreeBusyViewType	Represents the type of the Free/Busy information that is returned in the response. MUST be present.
MergedFreeBusy	xs:string	Represents the Merged Free/Busy information. MAY be present but MUST be present if one of the following was requested in the RequestView element of the request: 1) MergedOnly 2) FreeBusyMerged 3) DetailedMerged

CalendarEventArray	t:ArrayOfCalendarEvent	Contains the array of calendar appointments in the mailbox. MAY be present, but MUST be present if the following was requested in the RequestView element of the request: 1) FreeBusy 2) FreeBusyMerged 3) Detailed 4) DetailedMerged
WorkingHours	t:WorkingHours	Represents the time zone settings and working hours for the requested mailbox user. MAY be present.

2.2.3.16 t:FreeBusyViewOptions

FreeBusyViewOptions indicates what data is to be returned in the response.

```
<xs:complexType name="FreeBusyViewOptionsType">
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="1" name="TimeWindow"
type="t:Duration" />
      <xs:element minOccurs="0" maxOccurs="1"
name="MergedFreeBusyIntervalInMinutes" type="xs:int" />
      <xs:element minOccurs="0" maxOccurs="1" name="RequestedView"
type="t:FreeBusyViewType" />
    </xs:sequence>
  </xs:complexType>
```

Element	Type	Definition
TimeWindow	t:Duration	Represents the time span for the queried users' availability. MUST occur once. Maximum time period is 42 days.

MergedFreeBusyIntervalInMinutes	xs:int	Represents the time difference between two successive slots in the merged Free/Busy view. MAY be present. Minimum value = 5, Maximum value = 1440 (represents a day). Default is 30.
RequestedView	t:FreeBusyViewType	Defines the type of calendar information that a client requests. MUST be a string with one of the following values: 1) MergedOnly 2) FreeBusy 3) FreeBusyMerged 4) Detailed 5) DetailedMerged MUST NOT be a string with a value of None.

2.2.3.17 m:GetUserAvailabilityRequestType

The GetUserAvailabilityRequestType type specifies the arguments used to obtain user availability information.

```
<xs:complexType name="GetUserAvailabilityRequestType">
  <xs:complexContent mixed="false">
    <xs:extension base="m:BaseRequestType">
      <xs:sequence>
        <xs:element ref="t:TimeZone" />
        <xs:element name="MailboxDataArray" type="t:ArrayOfMailboxData"
/>
        <xs:element minOccurs="0" maxOccurs="1"
ref="t:FreeBusyViewOptions" />
```

```
        <xs:element minOccurs="0" maxOccurs="1"
ref="t:SuggestionsViewOptions" />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Element	Type	Definition
TimeZone	t:TimeZone	Contains elements that identify time zone information. This element also contains information about the transition between standard time and daylight saving time. All times returned in the GetUserAvailability response will be in this time zone. MUST be present.
MailboxDataArray	t:ArrayOfMailboxData	Contains a list of mailboxes to query for availability information. MUST be present.
FreeBusyViewOptions	t:FreeBusyViewOptions	Specifies the type of Free/Busy information returned in the response. MAY be present.
SuggestionsViewOptions	t:SuggestionsViewOptions	Contains the options for obtaining meeting suggestion information. MAY be present.

2.2.3.18 m:GetUserAvailabilityResponseType

The GetUserAvailabilityResponseType type specifies what information is returned in a GetUserAvailability operation response.

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

```
      <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="1"
      name="FreeBusyResponseArray" type="m:ArrayOfFreeBusyResponse" />
            <xs:element minOccurs="0" maxOccurs="1"
      name="SuggestionsResponse" type="m:SuggestionsResponseType" />
      </xs:sequence>
</xs:complexType>

      <xs:element name="GetUserAvailabilityResponse"
type="m:GetUserAvailabilityResponseType" />
```

Element	Type	Definition
FreeBusyResponseArray	m:ArrayOfFreeBusyResponse	Contains the requested users' availability information and the response status. MAY be present. MUST be present if the FreeBusyViewOptions is present in the request.
SuggestionsResponse	m:SuggestionsResponseType	Contains the suggested data for requested meeting suggestions MAY be present. MUST be present if the SuggestionsViewOptions is present in the request.

2.2.3.19 t:GroupAttendeeConflictData

The GroupAttendeeConflictData type specifies aggregate conflict information about the number of users who are available, the number of users who have conflicts and the number of users who do not have availability information in a distribution list for a suggested meeting time.

```
<xs:complexType name="GroupAttendeeConflictData">
  <xs:complexContent mixed="false">
    <xs:extension base="t:AttendeeConflictData">
      <xs:sequence>
        <xs:element minOccurs="1" maxOccurs="1" name="NumberOfMembers"
type="xs:int" />
        <xs:element minOccurs="1" maxOccurs="1" name="
NumberOfMembersAvailable" type="xs:int" />
```

```
        <xs:element minOccurs="1" maxOccurs="1"
name="NumberOfMembersWithConflict" type="xs:int" />
        <xs:element minOccurs="1" maxOccurs="1"
name="NumberOfMembersWithNoData" type="xs:int" />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Element	Type	Definition
NumberOfMembers	xs:int	Represents the number of attendees in the distribution list. If the number of members in the distribution list exceeds 100. GroupAttendeeConflictData will only return information for the first 100 members. MUST be present.
NumberOfMembersAvailable	xs:int	Represents the number of attendees that are available. MAY be present.
NumberOfMembersWithConflict	xs:int	Represents the number of attendees that have conflicts. MAY be present.
NumberOfMembersWithNoData	xs:int	Represents the number of attendees for which data could not be retrieved. MAY be present.

2.2.3.20 t:IndividualAttendeeConflictData

The IndividualAttendeeConflictData type specifies a user's or contact's Free/Busy status for a time window that occurs at the same time as the suggested meeting time identified in the Suggestion element.

```
<xs:complexType name="IndividualAttendeeConflictData">
  <xs:complexContent mixed="false">
    <xs:extension base="t:AttendeeConflictData">
```

```
      <xs:sequence>
        <xs:element minOccurs="1" maxOccurs="1" name="BusyType"
type="t:LegacyFreeBusyType" />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Element	Type	Definition
BusyType	LegacyFreeBusyType	Represents the Free/Busy status of an attendee for a suggested meeting time. MUST be present.

2.2.3.21 t:MailboxData

This type specifies details about an attendee.

```
<xs:complexType name="MailboxData">
      <xs:sequence>
            <xs:element minOccurs="1" maxOccurs="1" name="Email"
      type="t:EmailAddress" />
            <xs:element minOccurs="1" maxOccurs="1" name="AttendeeType"
      type="t:MeetingAttendeeType" />
            <xs:element minOccurs="0" maxOccurs="1"
      name="ExcludeConflicts" type="xs:boolean" />
      </xs:sequence>
</xs:complexType>
```

Element	Type	Definition
Email	t:EmailAddress	Represents an attendee. MUST be present.
AttendeeType	t:MeetingAttendeeType	Represents the type of attendee identified in the Email element. This is used in requests for meeting suggestions. MUST be present.

ExcludesConflicts	xs:boolean	Specifies whether to return suggested times for calendar times that conflict among the attendees. This is used for meeting suggestions calculation. MAY be present.

2.2.3.22 m:ResponseMessageType

Specifies whether the service returned a successful response or not.

```
<xs:complexType name="ResponseMessageType">
      <xs:sequence minOccurs="0">
            <xs:element name="MessageText" type="xs:string"
minOccurs="0"/>
            <xs:element name="ResponseCode" type="m:ResponseCodeType"
      minOccurs="0"/>
            <xs:element name="DescriptiveLinkKey" type="xs:int"
minOccurs="0"/>
            <xs:element name="MessageXml" minOccurs="0">
                  <xs:complexType>
                        <xs:sequence>
                              <xs:any processContents="lax"
minOccurs="0" maxOccurs="unbounded"/>
                        </xs:sequence>
                  </xs:complexType>
            </xs:element>
      </xs:sequence>
      <xs:attribute name="ResponseClass" type="t:ResponseClassType"
use="required"/>
</xs:complexType>
```

Attributes:

Attribute	Type	Definition
ResponseClass	t:ResponseClassType	Represents the status of the response. The following values are valid for this attribute: • Success • Warning • Error

Elements:

Element	Type	Definition
MessageText	xs:string	Provides a text description of the status of the response. MAY be present but it MUST be present when errors are returned.
ResponseCode	t: ResponseCodeType	Provides an error code that identifies the specific error that the request encountered. MAY be present.
DescriptiveLinkKey	xs:int	Currently unused and is reserved for future use. It contains a value of 0.
MessageXml	Complex type defined above.	Provides additional error response information. MAY be present

2.2.3.23 t:SerializableTimeZone

This contains elements that identify time zone information. This element also contains information about the transition between standard time and daylight saving time. The **TimeZone** element in the GetUserAvailabilityRequest message represents the time zone in which the DateTime values in the request are specified. The DateTime values returned by the Availability Service are also in this time zone. The exception is that working hours in an Availability response are returned in the time zone of the attendee.

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

    <xs:sequence>
```

```
            <xs:element minOccurs="1" maxOccurs="1" name="Bias"
      type="xs:int" />
            <xs:element minOccurs="1" maxOccurs="1" name="StandardTime"
      type="t:SerializableTimeZoneTime" />
            <xs:element minOccurs="1" maxOccurs="1" name="DaylightTime"
      type="t:SerializableTimeZoneTime" />
      </xs:sequence>
</xs:complexType>

<xs:element name="TimeZone" type="t:SerializableTimeZone" />
```

Element	Type	Definition
Bias	xs:int	Represents the general offset from Coordinated Universal Time (UTC). This value is in minutes. MUST be present.
StandardTime	t:SerializableTimeZoneTime	Represents an offset from the time relative to UTC represented by the Bias element. This element also contains information about the transition to standard time from daylight saving time in regions where daylight saving time is observed. MUST be present.
DaylightTime	t:SerializableTimeZoneTime	Represents an offset from the time relative to UTC represented by the Bias element in regions where daylight saving time is observed. This element also contains information about when the transition to daylight saving time from standard time occurs. MUST be present.

2.2.3.24 t:SerializableTimeZoneTime

This type specifies the start and end dates of daylight saving time.

```
<xs:complexType name="SerializableTimeZoneTime">
    <xs:sequence>
```

```
      <xs:element minOccurs="1" maxOccurs="1" name="Bias" type="xs:int"
/>
      <xs:element minOccurs="1" maxOccurs="1" name="Time"
type="xs:string" />
      <xs:element minOccurs="1" maxOccurs="1" name="DayOrder"
type="xs:short" />
      <xs:element minOccurs="1" maxOccurs="1" name="Month"
type="xs:short" />
      <xs:element minOccurs="1" maxOccurs="1" name="DayOfWeek"
type="t:DayOfWeekType" />
      <xs:element minOccurs="0" maxOccurs="1" name="Year"
type="xs:string" />
    </xs:sequence>
  </xs:complexType>
```

Element	Type	Definition
Bias	xs:int	Represents the offset from the UTC offset that is identified by the Bias element for standard time and daylight saving time. This value is in minutes. MUST be present and can only occur once.

Time	xs:string	Represents the transition time of day to and from standard time and daylight saving time. MUST be present and can only occur once. Format: hh:mm:ss hh: hours ranging from 0 to 23. mm: minutes ranging from 0 to 59 ss: seconds ranging from 0 to 59.

DayOrder	xs:short	For relative time zones, this represents the nth occurrence of the day that is specified in the DayOfWeek type that represents the date of transition from and to standard time and daylight saving time. For dynamic time zones, this represents the actual day of the month. MUST be present and can only occur once. Valid values are between 1-5 or 1-31. For time zones that do not have transitions, 0 SHOULD be used.

Month	xs:short	Represents the transition month of the year to and from standard time and daylight saving time. MUST be present. Valid values for time zones that have transitions: 1-12, where 1 means January and 12 means December. For time zones that do not have transitions, 0 SHOULD be used.
DayOfWeek	t:DayOfWeekType	Represents the day of the week when the transition to and from standard time and daylight saving time occurs. MUST be present and can only occur once.
Year	xs:string	Defines a time zone that changes depending on the year. MAY be present. Minimum: 1601 Maximum: 4500

When the Year value is present in the element (for dynamic time zones), the DayOrder MUST be between 1 and 31. When the Year value is not present (for relative time zones), the

DayOrder MUST be between 1 and 5, where 1 represents the Sunday of the first week of the month and 5 represents the Sunday of the last week of the month.

2.2.3.25 t:Suggestion

The Suggestion type specifies a single meeting suggestion in an Availability response.

```
<xs:complexType name="Suggestion">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="MeetingTime"
type="xs:dateTime" />
    <xs:element minOccurs="1" maxOccurs="1" name="IsWorkTime"
type="xs:boolean" />
    <xs:element minOccurs="1" maxOccurs="1" name="SuggestionQuality"
type="t:SuggestionQuality" />
    <xs:element minOccurs="0" maxOccurs="1"
name="AttendeeConflictDataArray" type="t:ArrayOfAttendeeConflictData" />
  </xs:sequence>
</xs:complexType>
```

Element	Type	Definition
MeetingTime	xs:datetime	Represents a suggested meeting time. MUST be present.
IsWorkTime	xs:boolean	Represents whether the suggested meeting time occurs during scheduled working hours of the organizer. MUST be present.
SuggestionQuality	t:SuggestionQuality	Represents the quality of the suggested meeting time.

AttendeeConflictDataArray	t:ArrayOfAttendeeConflictData	Contains an array of conflicts between attendees and the suggested meeting time. MAY be present.

2.2.3.26 t:SuggestionDayResult

The SuggestionDayResult type specifies a single day that contains suggested meeting times in an Availability response.

```
<xs:complexType name="SuggestionDayResult">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="Date" type="xs:dateTime"
/>
    <xs:element minOccurs="1" maxOccurs="1" name="DayQuality"
type="t:SuggestionQuality" />
    <xs:element minOccurs="0" maxOccurs="1" name="SuggestionArray"
type="t:ArrayOfSuggestion" />
  </xs:sequence>
</xs:complexType>
```

Element	Type	Definition
Date	xs:dateTime	Date that contains the suggested meeting times. MUST be present.
DayQuality	t:SuggestionQuality	Quality of the best suggestion for the day. MUST be present.
SuggestionArray	t:ArrayOfSuggestion	Array of meeting suggestions. MAY be present.

2.2.3.27 m:SuggestionsResponseType

This type specifies the response returned from the service for meeting suggestions.

```
<xs:complexType name="SuggestionsResponseType">
      <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="1"
      name="ResponseMessage" type="m:ResponseMessageType" />
            <xs:element minOccurs="0" maxOccurs="1"
      name="SuggestionDayResultArray"
      type="t:ArrayOfSuggestionDayResult" />
      </xs:sequence>
</xs:complexType>
```

Element	Type	Definition
ResponseMessage	m:ResponseMessageType	Provides descriptive information about the response status. MAY be present.
SuggestionDayResultArray	t:ArrayOfSuggestionDayResult	Contains an array of meeting suggestions organized by date. MAY be present.

2.2.3.28 t:SuggestionsViewOptionsType

The **SuggestionsViewOptionsType** type specifies the options for obtaining meeting suggestion information.

```
<xs:complexType name="SuggestionsViewOptionsType">
      <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="1"
name="GoodThreshold" type="xs:int" />
            <xs:element minOccurs="0" maxOccurs="1"
name="MaximumResultsByDay" type="xs:int" />
            <xs:element minOccurs="0" maxOccurs="1"
name="MaximumNonWorkHourResultsByDay" type="xs:int" />
            <xs:element minOccurs="0" maxOccurs="1"
name="MeetingDurationInMinutes" type="xs:int" />
            <xs:element minOccurs="0" maxOccurs="1"
name="MinimumSuggestionQuality" type="t:SuggestionQuality" />
            <xs:element minOccurs="1" maxOccurs="1"
name="DetailedSuggestionsWindow" type="t:Duration" />
            <xs:element minOccurs="0" maxOccurs="1"
name="CurrentMeetingTime" type="xs:dateTime" />
            <xs:element minOccurs="0" maxOccurs="1"
name="GlobalObjectId" type="xs:string" />
      </xs:sequence>
```

```
</xs:complexType>
```

Element	Type	Definition
GoodThreshold	xs:int	GoodThreshold is the threshold that determines whether the suggestion is considered Good or Fair. The suggested meeting time is considered Excellent if there are no conflicts. The suggested meeting time is considered Poor if the percentage of conflicts is greater than 50%. The suggested meeting time is considered Good if the percentage of conflicts is less than the GoodThreshold. The suggested meeting time is considered Fair if the percentage of conflicts is greater than the GoodThreshold but less than 50%. Element MAY be present. If the element is present, the value MUST be an integer >= 1 and <= 49. The default is 25.

MaximumResultsByDay	xs:int	Specifies the number of suggested meeting times per day that is returned in the response. MAY be present. If present, MUST be an int >=1 and <= 48 Default is 10
MaximumNonWorkHourResultsByDay	xs:int	Specifies the number of suggested results for meeting times outside the regular working hours of the organizer per day. MAY be present, if present, MUST be an int >= 0 and <= 48 Default is 0
MeetingDurationInMinutes	xs:int	Specifies the length in minutes of the meeting to be suggested. MAY be present. If present, MUST be an int >= 1 and <= 1440. Default is 30.
MinimumSuggestionQuality	t:SuggestionQuality	Specifies the minimum quality of meeting suggestions which should be returned in the response. MAY be present. Default is SuggestionQuality.Fair

DetailedSuggestionsWindow	t:Duration	Specifies the time span that is queried for detailed information about suggested meeting times. MUST be present. StartTime and EndTime fields have dates only and no time information present in the DateTime.
CurrentMeetingTime	xs:dateTime	Represents the start time of a meeting that you want to update with the suggested meeting time results. MAY be present.
GlobalObjectId	xs:string	Represents the global object Id (PidLidGlobalObjectId [MS-OXOCAL] of the calendar item that should be ignored while calculating suggestions. MAY be present.

2.2.3.29 t:TooBigGroupAttendeeConflictData

The TooBigGroupAttendeeConflictData type specifies an attendee that was resolved as a distribution list but the distribution list was too large to expand.

```
<xs:complexType name="TooBigGroupAttendeeConflictData">
  <xs:complexContent mixed="false">
    <xs:extension base="t:AttendeeConflictData" />
  </xs:complexContent>
</xs:complexType>
```

This extends the AttendeeConflictData type.

2.2.3.30 t:UnknownAttendeeConflictData

The UnknownAttendeeConflictData type specifies that an attendee cannot be found in the directory, or that the attendee is not a user, distribution list, or contact for use in a suggested meeting time response.

```
<xs:complexType name="UnknownAttendeeConflictData">
  <xs:complexContent mixed="false">
    <xs:extension base="t:AttendeeConflictData" />
  </xs:complexContent>
</xs:complexType>
```

This extends the AttendeeConflictData type.

2.2.3.31 t:Value

The Value type specifies information returned in message xml of a response.

```
<xs:complexType name="Value">
  <xs:simpleContent>
    <xs:extension base="xs:string">
      <xs:attribute name="Name" type="xs:string" use="required" />
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
```

2.2.3.32 t:WorkingHours

The WorkingHours type specifies the time zone settings and working hours for the requested mailbox user.

```
  <xs:complexType name="WorkingHours">
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="1" name="TimeZone"
type="t:SerializableTimeZone" />
      <xs:element minOccurs="1" maxOccurs="1" name="WorkingPeriodArray"
type="t:ArrayOfWorkingPeriod" />
    </xs:sequence>
  </xs:complexType>
```

Element	Type	Definition
TimeZone	t:SerializableTimeZone	Contains information that identifies the time zone information. MUST be present.

WorkingPeriodArray	t:ArrayOfWorkingPeriod	Contains working period information for the mailbox user. MUST be present.

2.2.3.33 t:WorkingPeriod

The WorkingPeriod type contains the work week days and hours of the mailbox user.

```
  <xs:complexType name="WorkingPeriod">
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="1" name="DayOfWeek"
type="t:DaysOfWeekType" />
      <xs:element minOccurs="1" maxOccurs="1" name="StartTimeInMinutes"
type="xs:int" />
      <xs:element minOccurs="1" maxOccurs="1" name="EndTimeInMinutes"
type="xs:int" />
    </xs:sequence>
  </xs:complexType>
```

Element	Type	Definition
DayOfWeek	t:DaysOfWeekType	Contains the list of working days scheduled for the mailbox user. MUST be present.
StartTimeInMinutes	xs:int	Represents the start of the working day for a mailbox user. Minutes are counted starting from 12 A.M. MUST be present.
EndTimeInMinutes	xs:int	Represents the end of the working day for a mailbox user. Minutes are counted starting from 12 A.M. MUST be present.

2.2.4 Elements

2.2.4.1 t:FreeBusyViewOptions

The FreeBusyViewOptions element specifies the type of Free/Busy information returned in the response.

```
<xs:element name="FreeBusyViewOptions" type="t:FreeBusyViewOptionsType" />
```

2.2.4.2 t:GetUserAvailabilityRequest

The GetUserAvailabilityRequest element specifies the root element in a GetUserAvailability request.

```
<xs:element name="GetUserAvailabilityRequest"
type="m:GetUserAvailabilityRequestType" />
```

2.2.4.3 t:GetUserAvailabilityResponse

The GetUserAvailabilityResponse element specifies the root element in a GetUserAvailability response.

```
<xs:element name="GetUserAvailabilityResponse"
type="m:GetUserAvailabilityResponseType" />
```

2.2.4.4 t:ServerVersionInfo

This type specifies the version of the service.

```
<xs:element name="ServerVersionInfo">
      <xs:complexType>
            <xs:attribute name="MajorVersion" type="xs:int"
      use="optional"/>
            <xs:attribute name="MinorVersion" type="xs:int"
use="optional"/>
            <xs:attribute name="MajorBuildNumber" type="xs:int"
use="optional"/>
            <xs:attribute name="MinorBuildNumber" type="xs:int"
      use="optional"/>
            <xs:attribute name="Version" type="xs:string"
      use="optional"/>
      </xs:complexType>
</xs:element>
```

Attribute	Type	Definition
MajorVersion	xs:int	Describes the major version number of the server.
MinorVersion	xs:int	Describes the minor version number of the server.
MajorBuildNumber	xs:int	Describes the major build number.
MinorBuildNumber	xs:int	Describes the minor build number.
Version	xs:string	Version of the server that is processing the request as obtained from the server object in the directory service.

2.2.4.5 t:SuggestionsViewOptions

Contains the options for obtaining meeting suggestion information.

```
<xs:element name="SuggestionsViewOptions"
type="t:SuggestionsViewOptionsType" />
```

2.2.4.6 t:TimeZone

The TimeZone element specifies time zone related information.

```
<xs:element name="TimeZone" type="t:SerializableTimeZone" />
```

2.2.4.7 t:Value

The Value element specifies information returned in message xml of a response.

```
<xs:element name="Value" type="t:Value"/>
```

2.2.5 Attributes

This specification does not define any common attribute definitions.

2.2.6 Groups

This specification does not define any common group definitions.

2.2.7 Attribute Groups

This specification does not define any common attribute group definitions.

2.2.8 Messages

The Availability Service messages are described in section 3.1.4.1.7.

3 Protocol Details

This protocol specifies a way of getting calendar data for a set of mailboxes (can be users, rooms or resources) from a server.

The client side of this protocol is simply a pass-through. That is, no additional timers or other state is required on the client side of this protocol. Calls made by the higher-layer protocol or application are passed directly to the transport, and the results returned by the transport are passed directly back to the higher-layer protocol or application.

3.1 ExchangeServicePortType:Server Details

3.1.1 Abstract Data Model

The Availability Service is a stateless protocol.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Message Processing Events and Sequencing Rules

Operation	Description
GetUserAvailability	The GetUserAvailability operation provides up-to-date availability information for a set of users.

The only operation is GetUserAvailability which is stateless and does not have sequencing rules for this operation.

3.1.4.1 GetUserAvailability

This operation provides current user availability information at a specified level of detail.

```
<wsdl:portType name="ExchangeServicePortType">
      <wsdl:operation name="GetUserAvailability">
            <wsdl:input message="tns:GetUserAvailabilitySoapIn" />
            <wsdl:output message="tns:GetUserAvailabilitySoapOut" />
            </wsdl:operation>
</wsdl:portType>

<wsdl:message name="GetUserAvailabilitySoapIn">
      <wsdl:part name="GetUserAvailabilityRequest"
</wsdl:message>

<wsdl:message name="GetUserAvailabilitySoapOut">
      <wsdl:part name="GetUserAvailabilityResult"
element="GetUserAvailabilityResponse" />
      <wsdl:part name="ServerVersion" element="ServerVersionInfo"/>
</wsdl:message>
```

The GetUserAvailability operation requires an input message – GetUserAvailabilitySoapIn and will return an output message called GetUserAvailabilitySoapOut.

3.1.4.1.1 Simple Types

All simple types from section 2.2.2 are specific to this operation.

3.1.4.1.2 Complex Types

All complex types from section 2.2.3 are specific to this operation.

3.1.4.1.3 Elements

All elements from section 2.2.4 are specific to this operation.

3.1.4.1.4 Attributes

This specification does not define any common attribute definitions that are specific to this operation.

3.1.4.1.5 Groups

This specification does not define any common group definitions that are specific to this operation.

3.1.4.1.6 Attribute Groups

This specification does not define any common attribute group definitions that are specific to this operation.

3.1.4.1.7 Messages

3.1.4.1.7.1 GetUserAvailabilitySoapIn

Parameters for the GetUserAvailabilitySoapIn message:

Parameter	Element/Type	Description
GetUserAvailabilityRequest	GetUserAvailabilityRequest <4>	This part contains the information required to query for Availability.

3.1.4.1.7.2 GetUserAvailabilitySoapOut

Parameters for the GetUserAvailabilitySoapOut message:

Parameter	Element/Type	Description
GetUserAvailabilityResult	GetUserAvailabilityResponse	Response containing availability information that was requested.
ServerVersion	ServerVersionInfo	Used for diagnostic purposes.

3.1.5 Timer Events

None.

3.1.6 Other Local Events

None.

3.2 ExchangeServicePortType :Client Details

The client side of this protocol is simply a pass-through. That is, no additional timers or other state is required on the client side of this protocol. Calls made by the higher-layer protocol or application are passed directly to the transport, and the results returned by the transport are passed directly back to the higher-layer protocol or application.

3.2.1 Abstract Data Model

The Availability Service is a stateless protocol.

3.2.2 Timers

None.

3.2.3 Initialization

None.

3.2.4 Message Processing Events and Sequencing Rules

None.

3.2.5 Timer Events

None.

3.2.6 Other Local Events

None.

4 Protocol Examples

4.1 GetUserAvailability Request

The following example demonstrates how to get detailed availability information for 2 users in the Pacific Time Zone, one user has been given Free/Busy permissions, and the other user's mailbox is on machine that does not use the Availability Service to provide Free/Busy information <5>.

Working hours for both users are Monday-Friday, 0800 to 1700.

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
   <soap:Body>
    <GetUserAvailabilityRequest
  xmlns="http://schemas.microsoft.com/exchange/services/2006/messages">
      <TimeZone
  xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
        <Bias>480</Bias>
        <StandardTime>
          <Bias>0</Bias>
          <Time>02:00:00</Time>
          <DayOrder>5</DayOrder>
          <Month>10</Month>
          <DayOfWeek>Sunday</DayOfWeek>
        </StandardTime>
        <DaylightTime>
          <Bias>-60</Bias>
          <Time>02:00:00</Time>
          <DayOrder>1</DayOrder>
          <Month>4</Month>
          <DayOfWeek>Sunday</DayOfWeek>
        </DaylightTime>
      </TimeZone>
```

```
      <MailboxDataArray>
        <MailboxData
  xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
          <Email>
            <Name></Name>
            <Address>user1@example.com</Address>
            <RoutingType>SMTP</RoutingType>
          </Email>
          <AttendeeType>Required</AttendeeType>
          <ExcludeConflicts>false</ExcludeConflicts>
        </MailboxData>
        <MailboxData
  xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
          <Email>
            <Name></Name>
            <Address>user2@example.com</Address>
            <RoutingType>SMTP</RoutingType>
          </Email>
          <AttendeeType>Required</AttendeeType>
          <ExcludeConflicts>false</ExcludeConflicts>
        </MailboxData>
      </MailboxDataArray>
      <FreeBusyViewOptions
  xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
        <TimeWindow>
          <StartTime>2008-01-20T00:00:00</StartTime>
          <EndTime>2008-01-21T00:00:00</EndTime>
        </TimeWindow>

  <MergedFreeBusyIntervalInMinutes>30</MergedFreeBusyIntervalInMinutes>
        <RequestedView>Detailed</RequestedView>
      </FreeBusyViewOptions>
    </GetUserAvailabilityRequest>
  </soap:Body>
</soap:Envelope>
```

4.2 GetUserAvailability Response

The following is an example of a successful response from the Availability Web service.

```
<?xml version="1.0" encoding="utf-8" ?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Header>
    <t:ServerVersionInfo MajorVersion="8" MinorVersion="1"
  MajorBuildNumber="240" MinorBuildNumber="5"
  xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types" />
  </soap:Header>
  <soap:Body>
```

```
  <GetUserAvailabilityResponse
xmlns="http://schemas.microsoft.com/exchange/services/2006/messages">
    <FreeBusyResponseArray>
      <FreeBusyResponse>
        <ResponseMessage ResponseClass="Success">
          <ResponseCode>NoError</ResponseCode>
        </ResponseMessage>
        <FreeBusyView>
          <FreeBusyViewType
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">FreeB
usy</FreeBusyViewType>
          <CalendarEventArray
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
            <CalendarEvent>
              <StartTime>2008-01-21T11:30:00</StartTime>
              <EndTime>2008-01-21T14:00:00</EndTime>
              <BusyType>Tentative</BusyType>
            </CalendarEvent>
            <CalendarEvent>
              <StartTime>2008-01-21T13:00:00</StartTime>
              <EndTime>2008-01-21T14:00:00</EndTime>
              <BusyType>Tentative</BusyType>
            </CalendarEvent>
          </CalendarEventArray>
          <WorkingHours
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
            <TimeZone>
              <Bias>480</Bias>
              <StandardTime>
                <Bias>0</Bias>
                <Time>02:00:00</Time>
                <DayOrder>1</DayOrder>
                <Month>11</Month>
                <DayOfWeek>Sunday</DayOfWeek>
              </StandardTime>
              <DaylightTime>
                <Bias>-60</Bias>
                <Time>02:00:00</Time>
                <DayOrder>2</DayOrder>
                <Month>3</Month>
                <DayOfWeek>Sunday</DayOfWeek>
              </DaylightTime>
            </TimeZone>
            <WorkingPeriodArray>
              <WorkingPeriod>
                <DayOfWeek>Monday Tuesday Wednesday Thursday
Friday</DayOfWeek>
                <StartTimeInMinutes>480</StartTimeInMinutes>
                <EndTimeInMinutes>1020</EndTimeInMinutes>
              </WorkingPeriod>
            </WorkingPeriodArray>
          </WorkingHours>
        </FreeBusyView>
      </FreeBusyResponse>
```

```
      <FreeBusyResponse>
        <ResponseMessage ResponseClass="Success">
          <ResponseCode>NoError</ResponseCode>
        </ResponseMessage>
        <FreeBusyView>
          <FreeBusyViewType
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">Detai
led</FreeBusyViewType>
          <CalendarEventArray
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
            <CalendarEvent>
              <StartTime>2008-01-21T08:00:00</StartTime>
              <EndTime>2008-01-21T09:00:00</EndTime>
              <BusyType>Tentative</BusyType>
              <CalendarEventDetails>

<ID>00000000CEB2AC9CFA28D311AECE0008C707F197070019398D273324D3118A2B000
8C7E9A5690000000A24590000603ECC64E5A9D843AFA932BEBCE2DE3D0002B8745C8200
00</ID>
                <Subject>Meeting1</Subject>
                <Location>Location1</Location>
                <IsMeeting>true</IsMeeting>
                <IsRecurring>false</IsRecurring>
                <IsException>false</IsException>
                <IsReminderSet>false</IsReminderSet>
                <IsPrivate>false</IsPrivate>
              </CalendarEventDetails>
            </CalendarEvent>
            <CalendarEvent>
              <StartTime>2008-01-21T13:00:00</StartTime>
              <EndTime>2008-01-21T14:00:00</EndTime>
              <BusyType>Busy</BusyType>
              <CalendarEventDetails>

<ID>00000000CEB2AC9CFA28D311AECE0008C707F197070019398D273324D3118A2B000
8C7E9A5690000000A24590000EF70892B18E20546A69506A5B037FFF60034E85A281800
00</ID>
                <Subject>Meeting2</Subject>
                <Location>Location2</Location>
                <IsMeeting>true</IsMeeting>
                <IsRecurring>false</IsRecurring>
                <IsException>false</IsException>
                <IsReminderSet>false</IsReminderSet>
                <IsPrivate>false</IsPrivate>
              </CalendarEventDetails>
            </CalendarEvent>
            <CalendarEvent>
              <StartTime>2008-01-21T14:30:00</StartTime>
              <EndTime>2008-01-21T15:00:00</EndTime>
              <BusyType>Busy</BusyType>
              <CalendarEventDetails>

<ID>00000000CEB2AC9CFA28D311AECE0008C707F197070019398D273324D3118A2B000
```

```
8C7E9A5690000000A245900005B0217B934765A46963D785DF0840DDC00B35D7DF3C800
00</ID>
                <Subject>Meeting3</Subject>
                <Location>my office</Location>
                <IsMeeting>true</IsMeeting>
                <IsRecurring>true</IsRecurring>
                <IsException>false</IsException>
                <IsReminderSet>true</IsReminderSet>
                <IsPrivate>false</IsPrivate>
              </CalendarEventDetails>
            </CalendarEvent>
          </CalendarEventArray>
          <WorkingHours
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
            <TimeZone>
              <Bias>480</Bias>
              <StandardTime>
                <Bias>0</Bias>
                <Time>02:00:00</Time>
                <DayOrder>1</DayOrder>
                <Month>11</Month>
                <DayOfWeek>Sunday</DayOfWeek>
              </StandardTime>
              <DaylightTime>
                <Bias>-60</Bias>
                <Time>02:00:00</Time>
                <DayOrder>2</DayOrder>
                <Month>3</Month>
                <DayOfWeek>Sunday</DayOfWeek>
              </DaylightTime>
            </TimeZone>
            <WorkingPeriodArray>
              <WorkingPeriod>
                <DayOfWeek>Monday Tuesday Wednesday Thursday
Friday</DayOfWeek>
                <StartTimeInMinutes>480</StartTimeInMinutes>
                <EndTimeInMinutes>1020</EndTimeInMinutes>
              </WorkingPeriod>
            </WorkingPeriodArray>
          </WorkingHours>
        </FreeBusyView>
      </FreeBusyResponse>
    </FreeBusyResponseArray>
  </GetUserAvailabilityResponse>
 </soap:Body>
</soap:Envelope>
```

4.3 Unsuccessful Response

4.3.1 SOAP Exception

The following is an example of a SOAP exception that is thrown when the MailboxData array is empty.

```
<?xml version="1.0" encoding="utf-8" ?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Header>
    <t:ServerVersionInfo MajorVersion="8" MinorVersion="1"
  MajorBuildNumber="240" MinorBuildNumber="5"
  xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types" />
  </soap:Header>
  <soap:Body>
    <soap:Fault>
      <faultcode>soap:Client</faultcode>

  <faultstring>Microsoft.Exchange.InfoWorker.Common.Availability.Identity
  ArrayEmptyException: The MailboxData array is empty. ---> The
  MailboxData array is empty.</faultstring>
      <faultactor>https://server/ews/exchange.asmx</faultactor>
      <detail>
        <ErrorCode
  xmlns="http://schemas.microsoft.com/exchange/services/2006/messages">50
  01</ErrorCode>
      </detail>
    </soap:Fault>
  </soap:Body>
</soap:Envelope>
```

4.3.2 GetUserAvailability Error response

The following is an example where a mailbox in the MailboxData array cannot be found in the directory service.

```
<?xml version="1.0" encoding="utf-8" ?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchemainstance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Header>
    <t:ServerVersionInfo MajorVersion="8" MinorVersion="1"
  MajorBuildNumber="240" MinorBuildNumber="5"
  xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types" />
  </soap:Header>
  <soap:Body>
    <GetUserAvailabilityResponse
  xmlns="http://schemas.microsoft.com/exchange/services/2006/messages">
      <FreeBusyResponseArray>
        <FreeBusyResponse>
          <ResponseMessage ResponseClass="Error">
            <MessageText>
              Unable to resolve email address <>SMTP:nouser@example.com
  to an Active Directory object.
            </MessageText>
            <ResponseCode>ErrorMailRecipientNotFound</ResponseCode>
            <DescriptiveLinkKey>0</DescriptiveLinkKey>
```

```
            <MessageXml>
              <ExceptionType
  xmlns="http://schemas.microsoft.com/exchange/services/2006/errors">Micr
  osoft.Exchange.InfoWorker.Common.Availability.MailRecipientNotFoundExce
  ption</ExceptionType>
              <ExceptionCode
  xmlns="http://schemas.microsoft.com/exchange/services/2006/errors">5009
  </ExceptionCode>
            </MessageXml>
          </ResponseMessage>
          <FreeBusyView>
            <FreeBusyViewType
  xmlns="http://schemas.microsoft.com/exchange/services/2006/types">None<
  /FreeBusyViewType>
          </FreeBusyView>
        </FreeBusyResponse>
      </FreeBusyResponseArray>
    </GetUserAvailabilityResponse>
  </soap:Body>
</soap:Envelope>
```

5 Security

5.1 Security Considerations for Implementers

The Availability Service does not use additional security mechanisms.

5.2 Index of Security Parameters

None.

6 Appendix A: Full WSDL

See [WSDL] for a specification of Web Service Description Language (WSDL).

```
<?xml version="1.0" encoding="utf-8"?>
      <wsdl:definitions
      xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
      xmlns:tns="http://schemas.microsoft.com/exchange/services/2006/me
      ssages"
      xmlns:s="http://www.w3.org/2001/XMLSchema"
      targetNamespace=http://schemas.microsoft.com/exchange/services/20
      06/messages
      xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
      xmlns:t="http://schemas.microsoft.com/exchange/services/2006/type
s">
      <wsdl:types>
            <xs:schema id="messages"
                  elementFormDefault="qualified"
                  version="Exchange2007_SP1"
                  xmlns:m=http://schemas.microsoft.com/exchange/service
            s/2006/messages
```

```
            xmlns:tns=http://schemas.microsoft.com/exchange/services/2006/messages
            xmlns:t=http://schemas.microsoft.com/exchange/services/2006/types
            xmlns:xs=http://www.w3.org/2001/XMLSchema
            targetNamespace="http://schemas.microsoft.com/exchange/services/2006/messages">

            <!-- Import common types. -->
            <xs:import
namespace="http://schemas.microsoft.com/exchange/services/2006/types"
schemaLocation="types.xsd"/>
            <!-- Basic response type -->
            <!-- Common to all responses -->
            <xs:simpleType name="ResponseCodeType">
                  <xs:annotation>
                        <xs:documentation>
                              Represents the message keys that
can be returned by response error messages
                        </xs:documentation>
                  </xs:annotation>
                  <xs:restriction base="xs:string">
                        <xs:enumeration value="NoError"/>
                        <xs:enumeration
value="ErrorAccessDenied"/>
                        <xs:enumeration
value="ErrorAccountDisabled"/>
                        <xs:enumeration
value="ErrorAddressSpaceNotFound"/>
                        <xs:enumeration
value="ErrorADOperation"/>
                        <xs:enumeration
value="ErrorADSessionFilter"/>
                        <xs:enumeration
value="ErrorADUnavailable"/>
                        <xs:enumeration
value="ErrorAutoDiscoverFailed"/>
                        <xs:enumeration
value="ErrorAvailabilityConfigNotFound"/>
                        <xs:enumeration
value="ErrorConnectionFailed"/>
                        <xs:enumeration
value="ErrorCorruptData"/>
                        <xs:enumeration
value="ErrorDataSourceOperation"/>
                        <xs:enumeration
value="ErrorFreeBusyGenerationFailed"/>
                        <xs:enumeration
value="ErrorIndividualMailboxLimitReached"/>
                        <xs:enumeration
value="ErrorInvalidCrossForestCredentials"/>
                        <xs:enumeration
value="ErrorIncorrectSchemaVersion"/>
```

```
                              <xs:enumeration
value="ErrorInsufficientResources"/>
                              <xs:enumeration
value="ErrorInternalServerError"/>
                              <xs:enumeration
value="ErrorInternalServerTransientError"/>
                              <xs:enumeration
value="ErrorInvalidAccessLevel"/>
                              <xs:enumeration
value="ErrorInvalidAuthorizationContext"/>
                              <xs:enumeration
value="ErrorInvalidFreeBusyViewType"/>
                              <xs:enumeration
value="ErrorInvalidMergedFreeBusyInterval"/>
                              <xs:enumeration
value="ErrorInvalidNetworkServiceContext"/>
                              <xs:enumeration
value="ErrorInvalidRecipients"/>
                              <xs:enumeration
value="ErrorInvalidRequest"/>
                              <xs:enumeration
value="ErrorInvalidSecurityDescriptor"/>
                              <xs:enumeration
value="ErrorInvalidSmtpAddress"/>
                              <xs:enumeration
value="ErrorInvalidTimeInterval"/>
                              <xs:enumeration
value="ErrorItemNotFound"/>
                              <xs:enumeration
value="ErrorLogonAsNetworkServiceFailed"/>
                              <xs:enumeration
value="ErrorMailboxConfiguration"/>
                              <xs:enumeration
value="ErrorMailboxDataArrayEmpty"/>
                              <xs:enumeration
value="ErrorMailboxDataArrayTooBig"/>
                              <xs:enumeration
value="ErrorMailboxLogonFailed"/>
                              <xs:enumeration
value="ErrorMailboxMoveInProgress"/>
                              <xs:enumeration
value="ErrorMailboxStoreUnavailable"/>
                              <xs:enumeration
value="ErrorMailRecipientNotFound"/>
                              <xs:enumeration
value="ErrorMeetingSuggestionGenerationFailed"/>
                              <xs:enumeration
value="ErrorMissingArgument"/>
                              <xs:enumeration value="ErrorNoCalendar"/>
                              <xs:enumeration
value="ErrorProxyRequestNotAllowed"/>
                              <xs:enumeration
value="ErrorProxyRequestProcessingFailed"/>
```

```
                              <xs:enumeration
value="ErrorPublicFolderRequestProcessingFailed"/>
                              <xs:enumeration
value="ErrorPublicFolderServerNotFound"/>
                              <xs:enumeration
value="ErrorRequestStreamTooBig"/>
                              <xs:enumeration
value="ErrorResponseSchemaValidation"/>
                              <xs:enumeration
value="ErrorResultSetTooBig"/>
                              <xs:enumeration
value="ErrorSchemaValidation"/>
                              <xs:enumeration value="ErrorServerBusy"/>
                              <xs:enumeration
value="ErrorServiceDiscoveryFailed"/>
                              <xs:enumeration
value="ErrorTimeIntervalTooBig"/>
                              <xs:enumeration
value="ErrorTimeoutExpired"/>
                              <xs:enumeration
value="ErrorTokenSerializationDenied"/>
                              <xs:enumeration
value="ErrorWin32InteropError"/>
                        </xs:restriction>
                  </xs:simpleType>

                  <xs:complexType name="ResponseMessageType">
                        <xs:sequence minOccurs="0">
                              <xs:element name="MessageText"
type="xs:string" minOccurs="0"/>
                              <xs:element name="ResponseCode"
type="m:ResponseCodeType" minOccurs="0"/>
                              <xs:element name="DescriptiveLinkKey"
type="xs:int" minOccurs="0"/>
                              <xs:element name="MessageXml"
minOccurs="0">
                                    <xs:complexType>
                                          <xs:sequence>
                                                <xs:any
processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                                          </xs:sequence>
                                    </xs:complexType>
                              </xs:element>
                        </xs:sequence>
                        <xs:attribute name="ResponseClass"
type="t:ResponseClassType" use="required"/>
                  </xs:complexType>

                  <!-- Base types for all messages. -->
                  <xs:complexType name="BaseRequestType"
abstract="true"/>

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

```
                        <xs:complexContent mixed="false">
                              <xs:extension base="m:BaseRequestType">
                                    <xs:sequence>
                                          <xs:element ref="t:TimeZone"
/>
                                          <xs:element
name="MailboxDataArray" type="t:ArrayOfMailboxData" />
                                          <xs:element minOccurs="0"
maxOccurs="1" ref="t:FreeBusyViewOptions" />
                                          <xs:element minOccurs="0"
maxOccurs="1" ref="t:SuggestionsViewOptions" />
                                    </xs:sequence>
                              </xs:extension>
                        </xs:complexContent>
                  </xs:complexType>

                  <xs:element name="GetUserAvailabilityRequest"
type="m:GetUserAvailabilityRequestType" />

                  <!-- FreeBusyResponse -->

                  <xs:complexType name="FreeBusyResponseType">
                        <xs:sequence>
                              <xs:element minOccurs="0" maxOccurs="1"
name="ResponseMessage" type="m:ResponseMessageType" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="FreeBusyView" type="t:FreeBusyView" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:complexType name="ArrayOfFreeBusyResponse">
                        <xs:sequence>
                              <xs:element minOccurs="0"
maxOccurs="unbounded" name="FreeBusyResponse"
type="m:FreeBusyResponseType" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:complexType name="SuggestionsResponseType">
                        <xs:sequence>
                              <xs:element minOccurs="0" maxOccurs="1"
name="ResponseMessage" type="m:ResponseMessageType" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="SuggestionDayResultArray" type="t:ArrayOfSuggestionDayResult" />
                        </xs:sequence>
                  </xs:complexType>

                  <!-- GetUserAvailabilityResponse -->

                  <xs:complexType
name="GetUserAvailabilityResponseType">
                        <xs:sequence>
                              <xs:element minOccurs="0" maxOccurs="1"
name="FreeBusyResponseArray" type="m:ArrayOfFreeBusyResponse" />
```

```
                              <xs:element minOccurs="0" maxOccurs="1"
name="SuggestionsResponse" type="m:SuggestionsResponseType" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:element name="GetUserAvailabilityResponse"
type="m:GetUserAvailabilityResponseType" />

            </xs:schema>

            <xs:schema id="types"
                        elementFormDefault="qualified"
                        version="Exchange2007_SP1"

      xmlns:t="http://schemas.microsoft.com/exchange/services/2006/type
s"

      targetNamespace="http://schemas.microsoft.com/exchange/services/2
006/types"

      xmlns:tns="http://schemas.microsoft.com/exchange/services/2006/ty
pes"
                        xmlns:xs="http://www.w3.org/2001/XMLSchema">

                  <xs:import
namespace="http://www.w3.org/XML/1998/namespace"/>

                  <!-- Enumeration of Exchange Server versions -->
                  <xs:simpleType name="ExchangeVersionType">
                        <xs:restriction base="xs:string">
                              <xs:enumeration value="Exchange2007" />
                              <xs:enumeration value="Exchange2007_SP1"
/>
                        </xs:restriction>
                  </xs:simpleType>

                  <!-- Used in the SOAP header of responses for
diagnostics purposes. -->
                  <xs:element name="ServerVersionInfo">
                        <xs:complexType>
                              <xs:attribute name="MajorVersion"
type="xs:int" use="optional"/>
                              <xs:attribute name="MinorVersion"
type="xs:int" use="optional"/>
                              <xs:attribute name="MajorBuildNumber"
type="xs:int" use="optional"/>
                              <xs:attribute name="MinorBuildNumber"
type="xs:int" use="optional"/>
                              <xs:attribute name="Version"
type="xs:string" use="optional"/>
                        </xs:complexType>
                  </xs:element>

                  <xs:simpleType name="LegacyFreeBusyType">
```

```
            <xs:restriction base="xs:string">
                  <xs:enumeration value="Free" />
                  <xs:enumeration value="Tentative" />
                  <xs:enumeration value="Busy" />
                  <xs:enumeration value="OOF" />
                  <xs:enumeration value="NoData" />
            </xs:restriction>
      </xs:simpleType>

      <!-- Days of the week and months-->

      <xs:simpleType name="DayOfWeekType">
            <xs:restriction base="xs:string">
                  <xs:enumeration value="Sunday" />
                  <xs:enumeration value="Monday" />
                  <xs:enumeration value="Tuesday" />
                  <xs:enumeration value="Wednesday" />
                  <xs:enumeration value="Thursday" />
                  <xs:enumeration value="Friday" />
                  <xs:enumeration value="Saturday" />
                  <xs:enumeration value="Day" />
                  <xs:enumeration value="Weekday" />
                  <xs:enumeration value="WeekendDay" />
            </xs:restriction>
      </xs:simpleType>

      <xs:simpleType name="DaysOfWeekType">
            <xs:list itemType="t:DayOfWeekType" />
      </xs:simpleType>

      <xs:simpleType name="MeetingAttendeeType">
            <xs:restriction base="xs:string">
                  <xs:enumeration value="Organizer"/>
                  <xs:enumeration value="Required"/>
                  <xs:enumeration value="Optional"/>
                  <xs:enumeration value="Room"/>
                  <xs:enumeration value="Resource"/>
            </xs:restriction>
      </xs:simpleType>

      <xs:complexType name="CalendarEventDetails">
            <xs:sequence>
                  <xs:element minOccurs="0" maxOccurs="1"
name="ID" type="xs:string" />
                  <xs:element minOccurs="0" maxOccurs="1"
name="Subject" type="xs:string" />
                  <xs:element minOccurs="0" maxOccurs="1"
name="Location" type="xs:string" />
                  <xs:element minOccurs="1" maxOccurs="1"
name="IsMeeting" type="xs:boolean" />
                  <xs:element minOccurs="1" maxOccurs="1"
name="IsRecurring" type="xs:boolean" />
                  <xs:element minOccurs="1" maxOccurs="1"
name="IsException" type="xs:boolean" />
```

```
                              <xs:element minOccurs="1" maxOccurs="1"
name="IsReminderSet" type="xs:boolean" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="IsPrivate" type="xs:boolean" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:complexType name="CalendarEvent">
                        <xs:sequence>
                              <xs:element minOccurs="1" maxOccurs="1"
name="StartTime" type="xs:dateTime" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="EndTime" type="xs:dateTime" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="BusyType" type="t:LegacyFreeBusyType" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="CalendarEventDetails" type="t:CalendarEventDetails" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:complexType name="ArrayOfCalendarEvent">
                        <xs:sequence>
                              <xs:element minOccurs="0"
maxOccurs="unbounded" name="CalendarEvent" type="t:CalendarEvent" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:complexType name="Duration">
                        <xs:sequence>
                              <xs:element minOccurs="1" maxOccurs="1"
name="StartTime" type="xs:dateTime" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="EndTime" type="xs:dateTime" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:complexType name="EmailAddress">
                        <xs:sequence>
                              <xs:element minOccurs="0" maxOccurs="1"
name="Name" type="xs:string" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="Address" type="xs:string" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="RoutingType" type="xs:string" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:element name="Mailbox" type="t:EmailAddress" />

                  <xs:simpleType name="FreeBusyViewType">
                        <xs:list>
                              <xs:simpleType>
                                    <xs:restriction base="xs:string">
```

```
                                        <xs:enumeration value="None"
/>
                                        <xs:enumeration
value="MergedOnly" />
                                        <xs:enumeration
value="FreeBusy" />
                                        <xs:enumeration
value="FreeBusyMerged" />
                                        <xs:enumeration
value="Detailed" />
                                        <xs:enumeration
value="DetailedMerged" />
                                  </xs:restriction>
                            </xs:simpleType>
                      </xs:list>
                </xs:simpleType>

                <xs:complexType name="FreeBusyViewOptionsType">
                      <xs:sequence>
                            <xs:element minOccurs="1" maxOccurs="1"
name="TimeWindow" type="t:Duration" />
                            <xs:element minOccurs="0" maxOccurs="1"
name="MergedFreeBusyIntervalInMinutes" type="xs:int" />
                            <xs:element minOccurs="0" maxOccurs="1"
name="RequestedView" type="t:FreeBusyViewType" />
                      </xs:sequence>
                </xs:complexType>

                <xs:element name="FreeBusyViewOptions"
type="t:FreeBusyViewOptionsType" />

                <xs:complexType name="WorkingPeriod">
                      <xs:sequence>
                            <xs:element minOccurs="1" maxOccurs="1"
name="DayOfWeek" type="t:DaysOfWeekType" />
                            <xs:element minOccurs="1" maxOccurs="1"
name="StartTimeInMinutes" type="xs:int" />
                            <xs:element minOccurs="1" maxOccurs="1"
name="EndTimeInMinutes" type="xs:int" />
                      </xs:sequence>
                </xs:complexType>

                <xs:complexType name="ArrayOfWorkingPeriod">
                      <xs:sequence>
                            <xs:element minOccurs="0"
maxOccurs="unbounded" name="WorkingPeriod" type="t:WorkingPeriod" />
                      </xs:sequence>
                </xs:complexType>

                <xs:complexType name="SerializableTimeZoneTime">
                      <xs:sequence>
                            <xs:element minOccurs="1" maxOccurs="1"
name="Bias" type="xs:int" />
```

```
                              <xs:element minOccurs="1" maxOccurs="1"
name="Time" type="xs:string" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="DayOrder" type="xs:short" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="Month" type="xs:short" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="DayOfWeek" type="t:DayOfWeekType" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="Year" type="xs:string" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:complexType name="SerializableTimeZone">
                        <xs:sequence>
                              <xs:element minOccurs="1" maxOccurs="1"
name="Bias" type="xs:int" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="StandardTime" type="t:SerializableTimeZoneTime" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="DaylightTime" type="t:SerializableTimeZoneTime" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:element name="TimeZone"
type="t:SerializableTimeZone" />

                  <xs:complexType name="WorkingHours">
                        <xs:sequence>
                              <xs:element minOccurs="1" maxOccurs="1"
name="TimeZone" type="t:SerializableTimeZone" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="WorkingPeriodArray" type="t:ArrayOfWorkingPeriod" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:complexType name="FreeBusyView">
                        <xs:sequence>
                              <xs:element minOccurs="1" maxOccurs="1"
name="FreeBusyViewType" type="t:FreeBusyViewType" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="MergedFreeBusy" type="xs:string" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="CalendarEventArray" type="t:ArrayOfCalendarEvent" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="WorkingHours" type="t:WorkingHours" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:complexType name="MailboxData">
                        <xs:sequence>
                              <xs:element minOccurs="1" maxOccurs="1"
name="Email" type="t:EmailAddress" />
```

```
                              <xs:element minOccurs="1" maxOccurs="1"
name="AttendeeType" type="t:MeetingAttendeeType" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="ExcludeConflicts" type="xs:boolean" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:complexType name="ArrayOfMailboxData">
                        <xs:sequence>
                              <xs:element minOccurs="0"
maxOccurs="unbounded" name="MailboxData" nillable="true"
type="t:MailboxData" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:simpleType name="SuggestionQuality">
                        <xs:restriction base="xs:string">
                              <xs:enumeration value="Excellent" />
                              <xs:enumeration value="Good" />
                              <xs:enumeration value="Fair" />
                              <xs:enumeration value="Poor" />
                        </xs:restriction>
                  </xs:simpleType>

                  <xs:complexType name="SuggestionsViewOptionsType">
                        <xs:sequence>
                              <xs:element minOccurs="0" maxOccurs="1"
name="GoodThreshold" type="xs:int" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="MaximumResultsByDay" type="xs:int" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="MaximumNonWorkHourResultsByDay" type="xs:int" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="MeetingDurationInMinutes" type="xs:int" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="MinimumSuggestionQuality" type="t:SuggestionQuality" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="DetailedSuggestionsWindow" type="t:Duration" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="CurrentMeetingTime" type="xs:dateTime" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="GlobalObjectId" type="xs:string" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:element name="SuggestionsViewOptions"
type="t:SuggestionsViewOptionsType" />

                  <xs:complexType name="ArrayOfAttendeeConflictData">
                        <xs:choice minOccurs="0" maxOccurs="unbounded">
                              <xs:element minOccurs="1" maxOccurs="1"
name="UnknownAttendeeConflictData" nillable="true"
type="t:UnknownAttendeeConflictData" />
```

```
                              <xs:element minOccurs="1" maxOccurs="1"
name="IndividualAttendeeConflictData" nillable="true"
type="t:IndividualAttendeeConflictData" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="TooBigGroupAttendeeConflictData" nillable="true"
type="t:TooBigGroupAttendeeConflictData" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="GroupAttendeeConflictData" nillable="true"
type="t:GroupAttendeeConflictData" />
                        </xs:choice>
                  </xs:complexType>

                  <xs:complexType name="AttendeeConflictData"
abstract="true"/>

                  <xs:complexType name="UnknownAttendeeConflictData">
                        <xs:complexContent mixed="false">
                              <xs:extension
base="t:AttendeeConflictData" />
                        </xs:complexContent>
                  </xs:complexType>

                  <xs:complexType
name="TooBigGroupAttendeeConflictData">
                        <xs:complexContent mixed="false">
                              <xs:extension
base="t:AttendeeConflictData" />
                        </xs:complexContent>
                  </xs:complexType>

                  <xs:complexType
name="IndividualAttendeeConflictData">
                        <xs:complexContent mixed="false">
                              <xs:extension
base="t:AttendeeConflictData">
                                    <xs:sequence>
                                          <xs:element minOccurs="1"
maxOccurs="1" name="BusyType" type="t:LegacyFreeBusyType" />
                                    </xs:sequence>
                              </xs:extension>
                        </xs:complexContent>
                  </xs:complexType>

                  <xs:complexType name="GroupAttendeeConflictData">
                        <xs:complexContent mixed="false">
                              <xs:extension
base="t:AttendeeConflictData">
                                    <xs:sequence>
                                          <xs:element minOccurs="1"
maxOccurs="1" name="NumberOfMembers" type="xs:int" />
                                          <xs:element minOccurs="1"
maxOccurs="1" name="NumberOfMembersAvailable" type="xs:int" />
                                          <xs:element minOccurs="1"
maxOccurs="1" name="NumberOfMembersWithConflict" type="xs:int" />
```

```
                                          <xs:element minOccurs="1"
maxOccurs="1" name="NumberOfMembersWithNoData" type="xs:int" />
                                    </xs:sequence>
                              </xs:extension>
                        </xs:complexContent>
                  </xs:complexType>

                  <xs:complexType name="Suggestion">
                        <xs:sequence>
                              <xs:element minOccurs="1" maxOccurs="1"
name="MeetingTime" type="xs:dateTime" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="IsWorkTime" type="xs:boolean" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="SuggestionQuality" type="t:SuggestionQuality" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="AttendeeConflictDataArray" type="t:ArrayOfAttendeeConflictData"
/>
                        </xs:sequence>
                  </xs:complexType>

                  <xs:complexType name="ArrayOfSuggestion">
                        <xs:sequence>
                              <xs:element minOccurs="0"
maxOccurs="unbounded" name="Suggestion" type="t:Suggestion" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:complexType name="SuggestionDayResult">
                        <xs:sequence>
                              <xs:element minOccurs="1" maxOccurs="1"
name="Date" type="xs:dateTime" />
                              <xs:element minOccurs="1" maxOccurs="1"
name="DayQuality" type="t:SuggestionQuality" />
                              <xs:element minOccurs="0" maxOccurs="1"
name="SuggestionArray" type="t:ArrayOfSuggestion" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:complexType name="ArrayOfSuggestionDayResult">
                        <xs:sequence>
                              <xs:element minOccurs="0"
maxOccurs="unbounded" name="SuggestionDayResult"
type="t:SuggestionDayResult" />
                        </xs:sequence>
                  </xs:complexType>

                  <xs:simpleType name="ExternalAudience">
                        <xs:restriction base="xs:string">
                              <xs:enumeration value="None" />
                              <xs:enumeration value="Known" />
                              <xs:enumeration value="All" />
                        </xs:restriction>
                  </xs:simpleType>
```

```
                  <xs:simpleType name="ResponseClassType">
                        <xs:restriction base="xs:string">
                              <xs:enumeration value="Success" />
                              <xs:enumeration value="Warning" />
                              <xs:enumeration value="Error" />
                        </xs:restriction>
                  </xs:simpleType>

                  <!-- Value used in Message Xml -->
                  <xs:complexType name="Value">
                        <xs:simpleContent>
                              <xs:extension base="xs:string">
                                    <xs:attribute name="Name"
type="xs:string" use="required" />
                              </xs:extension>
                        </xs:simpleContent>
                  </xs:complexType>

                  <xs:element name="Value" type="t:Value"/>

            </xs:schema>
      </wsdl:types>

      <!-- Availability Service messages -->

      <wsdl:message name="GetUserAvailabilitySoapIn">
            <wsdl:part name="GetUserAvailabilityRequest"
element="tns:GetUserAvailabilityRequest" />
      </wsdl:message>
      <wsdl:message name="GetUserAvailabilitySoapOut">
            <wsdl:part name="GetUserAvailabilityResult"
element="tns:GetUserAvailabilityResponse" />
            <wsdl:part name="ServerVersion"
element="t:ServerVersionInfo"/>
      </wsdl:message>

      <wsdl:portType name="ExchangeServicePortType">
            <wsdl:operation name="GetUserAvailability">
                  <wsdl:input message="tns:GetUserAvailabilitySoapIn"
/>
                  <wsdl:output message="tns:GetUserAvailabilitySoapOut"
/>
            </wsdl:operation>
      </wsdl:portType>

      <wsdl:binding name="ExchangeServiceBinding"
type="tns:ExchangeServicePortType">
            <wsdl:documentation>
                  <wsi:Claim conformsTo="http://ws-
i.org/profiles/basic/1.0" xmlns:wsi="http://ws-
i.org/schemas/conformanceClaim/" />
            </wsdl:documentation>
```

```
            <soap:binding
  transport="http://schemas.xmlsoap.org/soap/http" style="document" />
            <wsdl:operation name="GetUserAvailability">
                  <soap:operation
  soapAction="http://schemas.microsoft.com/exchange/services/2006/message
  s/GetUserAvailability" />
                  <wsdl:input>
                        <soap:body parts="GetUserAvailabilityRequest"
  use="literal" />
                  </wsdl:input>
                  <wsdl:output>
                        <soap:body parts="GetUserAvailabilityResult"
  use="literal" />
                        <soap:header
  message="tns:GetUserAvailabilitySoapOut" part="ServerVersion"
  use="literal"/>
                  </wsdl:output>
            </wsdl:operation>
      </wsdl:binding>
</wsdl:definitions>
```

7 Appendix B: Office/Exchange Behavior

The information in this specification is applicable to the following versions:

- Office 2007 with Service Pack 1 applied
- Exchange 2007 with Service Pack 1 applied

Exceptions, if any, are noted below. Unless otherwise specified, any statement of optional behavior in this specification prescribed using the terms SHOULD or SHOULD NOT implies Windows behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies Windows does not follow the prescription.

<1> Section 1.5: Outlook 2007 MUST use Windows Integrated Authentication to request Free/Busy information from Exchange 2007.

<2> Section 2.2.2.2: Free/Busy example:

```
<FreeBusyViewOptions
  xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
  <TimeWindow>
    <StartTime>2008-01-30T00:00:00</StartTime>
    <EndTime>2008-01-31T00:00:00</EndTime>
  </TimeWindow>
  <MergedFreeBusyIntervalInMinutes>60</MergedFreeBusyIntervalInMinutes>
  <RequestedView>FreeBusy</RequestedView>
</FreeBusyViewOptions>
</GetUserAvailabilityRequest>
And the CalendarEventArray in the response is
```

```
<CalendarEventArray
  xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
  <CalendarEvent>
    <StartTime>2008-01-30T12:00:00</StartTime>
    <EndTime>2008-01-30T14:00:00</EndTime>
    <BusyType>OOF</BusyType>
  </CalendarEvent>
  <CalendarEvent>
    <StartTime>2008-01-30T13:30:00</StartTime>
    <EndTime>2008-01-30T14:30:00</EndTime>
    <BusyType>Busy</BusyType>
  </CalendarEvent>
</CalendarEventArray>
```

The corresponding MergedFreeBusy string will be:

000000000000332000000000

Between 1:30 and 2 P.M. the mailbox has 2 overlapping appointments, 1 marked OOF and the other marked Busy. The merged Free/Busy string for that slot must be marked OOF.

<3> Section 2.2.2.2: The Availability Service supports this by doing an access check with the requestor's credentials against the permissions that have been set on the mailbox owner's Calendar folder. The following is how the access level returned from this check is treated.

RequestedView (from the GetUserAvailabilityRequest)	Allowed view based on Access level		
	Detailed	FreeBusy	No Access
None	-	-	-
MergedOnly	Merged	Merged	Error (InvalidAccessLevelException)
FreeBusy	FreeBusy	FreeBusy	Error (InvalidAccessLevelException)
FreeBusyMerged	FreeBusyMerged	FreeBusyMerged	Error (InvalidAccessLevelException)

Detailed	Detailed	FreeBusy	Error (InvalidAccessLevelException)
DetailedMerged	DetailedMerged	FreeBusyMerged	Error (InvalidAccessLevelException)

<4> Section 2.2.8.1: When a user creates a meeting request, adds attendees and switches to the scheduling assistant to view the attendees' Free/Busy status, Outlook 2007 issues a request to the Availability Service.

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