Message Tracking Web Service Protocol

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## Revision Summary

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1 Introduction

The Message Tracking Web Service Protocol enables clients to find and return information about messages delivered by a server.

Sections 1.5, 1.8, 1.9, 2, and 3 of this specification are normative. All other sections and examples in this specification are informative.

1.1 Glossary

This document uses the following terms:

**Augmented Backus-Naur Form (ABNF):** A modified version of Backus-Naur Form (BNF), commonly used by Internet specifications. ABNF notation balances compactness and simplicity with reasonable representational power. ABNF differs from standard BNF in its definitions and uses of naming rules, repetition, alternatives, order-independence, and value ranges. For more information, see [RFC5234].

**blind carbon copy (Bcc) recipient:** An addressee on a Message object that is not visible to recipients of the Message object.

**distribution list:** A collection of users, computers, contacts, or other groups that is used only for email distribution, and addressed as a single recipient.

**email address:** A string that identifies a user and enables the user to receive Internet messages.

**endpoint:** A communication port that is exposed by an application server for a specific shared service and to which messages can be addressed.

**Hypertext Transfer Protocol (HTTP):** An application-level protocol for distributed, collaborative, hypermedia information systems (text, graphic images, sound, video, and other multimedia files) on the World Wide Web.

**Hypertext Transfer Protocol Secure (HTTPS):** An extension of HTTP that securely encrypts and decrypts web page requests. In some older protocols, "Hypertext Transfer Protocol over Secure Sockets Layer" is still used (Secure Sockets Layer has been deprecated). For more information, see [SSL3] and [RFC5246].

**mailbox:** A message store that contains email, calendar items, and other Message objects for a single recipient.

**Simple Mail Transfer Protocol (SMTP):** A member of the TCP/IP suite of protocols that is used to transport Internet messages, as described in [RFC5321].

**SOAP action:** The HTTP request header field used to indicate the intent of the SOAP request, using a URI value. See [SOAP1.1] section 6.1.1 for more information.

**SOAP message:** An XML document consisting of a mandatory SOAP envelope, an optional SOAP header, and a mandatory SOAP body. See [SOAP1.2-1/2007] section 5 for more information.

**Uniform Resource Locator (URL):** A string of characters in a standardized format that identifies a document or resource on the World Wide Web. The format is as specified in [RFC1738].

**web server:** A server computer that hosts websites and responds to requests from applications.

**Web Services Description Language (WSDL):** An XML format for describing network services as a set of endpoints that operate on messages that contain either document-oriented or procedure-oriented information. The operations and messages are described abstractly and are bound to a concrete network protocol and message format in order to define an endpoint.
Related concrete endpoints are combined into abstract endpoints, which describe a network service. WSDL is extensible, which allows the description of endpoints and their messages regardless of the message formats or network protocols that are used.

**WSDL message**: An abstract, typed definition of the data that is communicated during a WSDL operation [WSDL]. Also, an element that describes the data being exchanged between web service providers and clients.

**WSDL port type**: A named set of logically-related, abstract Web Services Description Language (WSDL) operations and messages.

**XML**: The Extensible Markup Language, as described in [XML1.0].

**XML namespace**: A collection of names that is used to identify elements, types, and attributes in XML documents identified in a URI reference [RFC3986]. A combination of XML namespace and local name allows XML documents to use elements, types, and attributes that have the same names but come from different sources. For more information, see [XMLNS-2ED].

**XML namespace prefix**: An abbreviated form of an XML namespace, as described in [XML].

**XML schema**: A description of a type of XML document that is typically expressed in terms of constraints on the structure and content of documents of that type, in addition to the basic syntax constraints that are imposed by XML itself. An XML schema provides a view of a document type at a relatively high level of abstraction.

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

### 1.2 References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the Errata.

#### 1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information.

[MS-OXWSCDATA] Microsoft Corporation, "Common Web Service Data Types".


1.3 Overview

The Message Tracking Web Service Protocol provides clients with message delivery information about the server. Clients can use this protocol to search for a particular message on the server and then retrieve information from the resulting report.

1.4 Relationship to Other Protocols

A client that implements this protocol can use the Autodiscover Publishing and Lookup SOAP-Based Web Service Protocol, as described in [MS-OXWSADISC], or the Autodiscover Publishing and Lookup Protocol, as described in [MS-OXDSCLI], to identify the target endpoint to use for each operation.

This protocol uses the SOAP Protocol, as described in [SOAP1.1], to specify the structure information exchanged between the client and server. This protocol uses the XML Protocol, as described in [XMLSCHEMA1] and [XMLSCHEMA2], to describe the message content sent to and from the server.

This protocol uses SOAP over HTTP, as described in [RFC2616], and SOAP over HTTPS, as described in [RFC2818], as shown in the following layering diagram.

![Layering Diagram]

Figure 1: This protocol in relation to other protocols

For conceptual background information and overviews of the relationships and interactions between this and other protocols, see [MS-OXPROTO].
1.5 Prerequisites/Preconditions

The endpoint URL that is returned by either the Autodiscover Publishing Lookup SOAP-Based Web Service Protocol, as described in [MS-OXWSADISC], or the Autodiscover Publishing and Lookup Protocol, as described in [MS-OXDSCML], is required to form the HTTP request to the web server that hosts this protocol. The operations that this protocol defines cannot be accessed unless the correct endpoint is identified in the HTTP web requests that target this protocol.

1.6 Applicability Statement

This protocol is applicable to client applications that track message delivery.

1.7 Versioning and Capability Negotiation

This document covers versioning issues in the following areas:

- **Supported Transports:** This protocol uses multiple transports with SOAP 1.1, as specified in section 2.1.

- **Protocol Versions:** This protocol has only one WSDL port type version. The WSDL version of the request is identified by using the `t:RequestServerVersion` element, as described in [MS-OXWSCDATA] section 2.2.3.9, and the version of the server responding to the request is identified by using the `t:ServerVersionInfo` element, as described in [MS-OXWSCDATA] section 2.2.3.10.

- **Security and Authentication Methods:** This protocol relies on the web server that is hosting it to perform authentication.

- **Localization:** This protocol includes text strings in various messages. Localization considerations for such strings are specified in section 3.1.4.

- **Capability Negotiation:** This protocol does not support version negotiation.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.
2 Messages

In the following sections, the schema definition might differ from the processing rules imposed by the protocol. The WSDL in this specification provides a base description of the protocol. The schema in this specification provides a base description of the message syntax. The text that specifies the WSDL and schema might specify restrictions that reflect actual protocol behavior. For example, the schema definition might allow for an element to be empty, null, or not present but the behavior of the protocol as specified restricts the same elements to being non-empty, not null, or present.

2.1 Transport

The SOAP version supported is SOAP 1.1. For details, see [SOAP1.1].

This protocol relies on the web server that hosts the application to perform authentication. The protocol SHOULD use secure communications by means of HTTPS, as defined in [RFC2818]. The protocol MAY use HTTP, as described in [RFC2616], for transport.<1>

2.2 Common Message Syntax

This section contains common definitions that are used by this protocol. The syntax of the definitions uses XML schema as defined in [XMLSCHEMA1] and [XMLSCHEMA2], and WSDL as defined in [WSDL].

2.2.1 Namespaces

This specification defines and references various XML namespaces by using the mechanisms specified in [XMLNS]. Although this specification associates a specific XML namespace prefix for each XML namespace that is used, the choice of any particular XML namespace prefix is implementation-specific and not significant for interoperability.

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<td>xs</td>
<td><a href="http://www.w3.org/2001/XMLSchema">http://www.w3.org/2001/XMLSchema</a></td>
<td>[XMLSCHEMA1]</td>
</tr>
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</table>

2.2.2 Messages

This specification does not define any common WSDL message definitions.

2.2.3 Elements

This specification does not define any common XML schema element definitions.
2.2.4 Complex Types

The following table summarizes the set of common XML schema complex type definitions that are defined by this specification. XML schema complex type definitions that are specific to a particular operation are defined with the operation.

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<td>Specifies a name/value pair of string that is used to create properties</td>
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<tr>
<td></td>
<td>for message tracking reports.</td>
</tr>
<tr>
<td>ArrayOfTrackingPropertiesType</td>
<td>Specifies a list of one or more tracking properties.</td>
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2.2.4.1 t:TrackingPropertyType Complex Type

The TrackingPropertyType complex type specifies a name/value pair of strings that is used to create properties for message tracking reports.<2>

```xml
<xs:complexType name="TrackingPropertyType">
  <xs:sequence>
    <xs:element name="Name" type="xs:string"/>
    <xs:element name="Value" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

The following table lists and describes the child elements of the TrackingPropertyType complex type.

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<th>Description</th>
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<td>xs:string</td>
<td>(XMLSCHEMA2) Defines a name for a particular message tracking report property.</td>
</tr>
<tr>
<td>Value</td>
<td>xs:string</td>
<td>Defines a value for the message tracking report property.</td>
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The following table lists and describes the valid values of the TrackingPropertyType complex type.

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<td>ExpandTree</td>
<td>unlimited</td>
<td>Used in FindMessageTrackingReport operation.</td>
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<td></td>
<td></td>
<td></td>
<td>Specifies whether to expand recipient tree before searching the recipients.</td>
</tr>
<tr>
<td>SearchAsRecip</td>
<td>unlimited</td>
<td>Used in FindMessageTrackingReport</td>
<td>Specifies whether to</td>
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</tr>
<tr>
<td>-----------------------------</td>
<td>---------</td>
<td>----------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>search starting from</td>
<td>search starting from recipients.</td>
</tr>
<tr>
<td>GetAdditionRecords</td>
<td>unlimited</td>
<td>Used in GetMessageTrackingReport operation.</td>
<td>Specifies whether to get additional records.</td>
</tr>
<tr>
<td>SearchForModerationResult</td>
<td>unlimited</td>
<td>Used in FindMessageTrackingReport operation.</td>
<td>Specifies whether to get moderation results.</td>
</tr>
</tbody>
</table>

### 2.2.4.2 t:ArrayOfTrackingPropertiesType Complex Type

The **ArrayOfTrackingPropertiesType** complex type specifies a list of one or more tracking properties.

```
<xs:complexType name="ArrayOfTrackingPropertiesType">
  <xs:choice maxOccurs="unbounded" minOccurs="0">
    <xs:element name="TrackingPropertyType" type="t:TrackingPropertyType" />
  </xs:choice>
</xs:complexType>
```

The following table lists and describes the child elements of the **ArrayOfTrackingPropertiesType** complex type.

<table>
<thead>
<tr>
<th>Element name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TrackingPropertyType</td>
<td>t:TrackingPropertyType (section 2.2.4.1)</td>
<td>Specifies a name/value pair of strings that is used to create properties for message tracking reports.</td>
</tr>
</tbody>
</table>

### 2.2.5 Simple Types

This specification does not define any common **XML schema** simple type definitions.

### 2.2.6 Attributes

This specification does not define any common **XML schema** attribute definitions.
2.2.7 Groups
This specification does not define any common XML schema group definitions.

2.2.8 Attribute Groups
This specification does not define any common XML schema attribute group definitions.
3 Protocol 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 that are returned by the transport are passed directly back to the higher-layer protocol or application.

3.1 ExchangeServicePortType Server Details

The Message Tracking Web Service Protocol defines a single port type with two operations. These operations enable client implementations to find and get message tracking reports.

3.1.1 Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This document does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this document.

The Message Tracking Web Service Protocol is used to find and get message tracking reports on a primary account's mailbox on the server. The server maintains the reports and retrieves them as requested.

The client is not required to maintain the state of message tracking reports on the server and can retrieve the current report at any time. If more than one client is receiving a particular report, there is no requirement that the server lock the existing set of reports.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Message Processing Events and Sequencing Rules

The following table summarizes the list of WSDL operations as defined by this specification.

<table>
<thead>
<tr>
<th>Operation name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FindMessageTrackingReport</td>
<td>Finds messages that meet the specified criteria.</td>
</tr>
<tr>
<td>GetMessageTrackingReport</td>
<td>Gets tracking information about the specified messages.</td>
</tr>
</tbody>
</table>

3.1.4.1 FindMessageTrackingReport Operation

The FindMessageTrackingReport operation finds messages that meet the specified criteria.

The following is the WSDL port type specification for this operation.
The following is the WSDL binding specification for this operation.

```xml
<wsdl:operation name="FindMessageTrackingReport">
  <wsdl:input>
    <soap:body parts="request" use="literal"/>
    <soap:header message="tns:FindMessageTrackingReportSoapIn" part="RequestVersion" use="literal"/>
  </wsdl:input>
  <wsdl:output>
    <soap:body parts="FindMessageTrackingReportResult" use="literal"/>
  </wsdl:output>
</wsdl:operation>
```

For any valid FindMessageTrackingReport operation request, the server MUST return a FindMessageTrackingReportResponse element with the ResponseClass attribute set to "Success", and the ResponseCode element MUST be set to "NoError". If the sender in the FindMessageTrackingReport operation request has not sent any emails or is not found, the FindMessageTrackingReportResponse element MUST only contain an ExecutedSearchScope element and an empty MessageTrackingSearchResults element.

### 3.1.4.1.1 Messages

The following table lists the WSDL message definitions that are specific to the FindMessageTrackingReport operation.

<table>
<thead>
<tr>
<th>Message name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FindMessageTrackingReportSoapIn</td>
<td>Specifies the SOAP message that requests the report.</td>
</tr>
<tr>
<td>FindMessageTrackingReportSoapOut</td>
<td>Specifies the SOAP message that is returned by the server in response.</td>
</tr>
</tbody>
</table>

#### 3.1.4.1.1.1 tns:FindMessageTrackingReportSoapIn Message

The FindMessageTrackingReportSoapIn WSDL message specifies the FindMessageTrackingReport operation request to find a message tracking report on the server.

```xml
<wsdl:message name="FindMessageTrackingReportSoapIn">
  <wsdl:part name="request" element="tns:FindMessageTrackingReport"/>
  <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
</wsdl:message>
```

The parts of the **FindMessageTrackingReportSoapIn** WSDL message are listed and described in the following table.

<table>
<thead>
<tr>
<th>Part name</th>
<th>Element/type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>request</td>
<td>tns:FindMessageTrackingReport (section 3.1.4.1.2.1)</td>
<td>Specifies the request.</td>
</tr>
<tr>
<td>RequestVersion</td>
<td>t:RequestServerVersion ([MS-OXWSCDATA] section 2.2.3.9)</td>
<td>Specifies the schema version for the FindMessageTrackingReport operation request (section 3.1.4.1).</td>
</tr>
</tbody>
</table>

### 3.1.4.1.2 tns:FindMessageTrackingReportSoapOut Message

The **FindMessageTrackingReportSoapOut** WSDL message specifies the server response to the **FindMessageTrackingReport** operation request to find a message tracking report on the server.

```xml
<wsdl:message name="FindMessageTrackingReportSoapOut">
  <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
```


The parts of the **FindMessageTrackingReportSoapOut** WSDL message are described and described in the following table.

<table>
<thead>
<tr>
<th>Part name</th>
<th>Element/type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FindMessageTrackingReportResult</td>
<td>tns:FindMessageTrackingReportResponse (section 3.1.4.1.2.2)</td>
<td>Specifies the response message.</td>
</tr>
<tr>
<td>ServerVersion</td>
<td>t:ServerVersionInfo ([MS-OXWSCDATA] section 2.2.3.10)</td>
<td>Specifies the server version for the response.</td>
</tr>
</tbody>
</table>

### 3.1.4.1.2 Elements

The following table lists the **XML schema** element definitions that are specific to the **FindMessageTrackingReport** operation.

<table>
<thead>
<tr>
<th>Element name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FindMessageTrackingReport</td>
<td>Specifies a request to find a message tracking report.</td>
</tr>
<tr>
<td>FindMessageTrackingReportResponse</td>
<td>Specifies the response body content from a request to find a message tracking report.</td>
</tr>
</tbody>
</table>

### 3.1.4.1.2.1 FindMessageTrackingReport Element
The **FindMessageTrackingReport** element specifies a request that includes the search criteria for identifying a message to track.

```xml
<xs:element name="FindMessageTrackingReport"
    type="m:FindMessageTrackingReportRequestType" />
```

### 3.1.4.1.2.2 FindMessageTrackingReportResponse Element

The **FindMessageTrackingReportResponse** element specifies the response to a **FindMessageTrackingReport** operation request (section 3.1.4.1).

```xml
<xs:element name="FindMessageTrackingReportResponse"
    type="m:FindMessageTrackingReportResponseMessageType" />
```

### 3.1.4.1.3 Complex Types

The following table lists the **XML schema** complex type definitions that are specific to the **FindMessageTrackingReport** operation.

<table>
<thead>
<tr>
<th>Complex type name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FindMessageTrackingReportRequestType</td>
<td>Specifies the criteria for finding a tracking report.</td>
</tr>
<tr>
<td>FindMessageTrackingReportResponseMessageType</td>
<td>Specifies the response for the <strong>FindMessageTrackingReport</strong> operation.</td>
</tr>
<tr>
<td>ArrayOfFindMessageTrackingSearchResultType</td>
<td>Specifies an array of search results.</td>
</tr>
<tr>
<td>FindMessageTrackingSearchResultType</td>
<td>Specifies information about the message that was found by using the <strong>FindMessageTrackingReport</strong> operation.</td>
</tr>
</tbody>
</table>

#### 3.1.4.1.3.1 m:FindMessageTrackingReportRequestType Complex Type

The **FindMessageTrackingReportRequestType** complex type specifies the criteria for finding a tracking report. The **FindMessageTrackingReportRequestType** complex type extends the **BaseRequestType** complex type ([MS-OXWSCDATA] section 2.2.4.17).

```xml
<xs:complexType name="FindMessageTrackingReportRequestType">
    <xs:complexContent>
        <xs:extension base="m:BaseRequestType">
            <xs:all>
                <xs:element name="Scope"
                    type="t:NonEmptyStringType" />
                <xs:element name="Domain"
                    type="t:NonEmptyStringType" />
                <xs:element name="Sender"
                    type="t:EmailAddressType"
                    minOccurs="0" />
            </xs:all>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
```
The following table lists and describes the child elements of the `FindMessageTrackingReportRequestType` complex type.

<table>
<thead>
<tr>
<th>Element name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope</td>
<td><code>t:NonEmptyStringType</code> ([MS-OXWSCDATA] section 2.2.5.20)</td>
<td>Specifies where to perform the search. &lt;4&gt;</td>
</tr>
<tr>
<td>Domain</td>
<td><code>t:NonEmptyStringType</code></td>
<td>Specifies the domain to search for.</td>
</tr>
<tr>
<td>Sender</td>
<td><code>t:EmailAddressType</code> ([MS-OXWSCDATA] section 2.2.4.31)</td>
<td>Specifies the email address of the person who is sending the message.</td>
</tr>
<tr>
<td>PurportedSender</td>
<td><code>t:EmailAddressType</code></td>
<td>Specifies the email address of the person who is purportedly sending the message. &lt;5&gt;</td>
</tr>
<tr>
<td>Recipient</td>
<td><code>t:EmailAddressType</code></td>
<td>Specifies the email addresses of the recipient.</td>
</tr>
<tr>
<td>Element name</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Subject</td>
<td>xs:string ([XMLSCHEMA2])</td>
<td>Specifies the subject filter to search for.</td>
</tr>
<tr>
<td>StartDateTime</td>
<td>xs:dateTime ([XMLSCHEMA2])</td>
<td>Specifies the start date and time for the search period. Only messages sent after this date and time will be found and returned.</td>
</tr>
<tr>
<td>EndDateTime</td>
<td>xs:dateTime</td>
<td>Specifies the end date and time for the search period. Only messages sent before this date and time will be found and returned.</td>
</tr>
<tr>
<td>MessageId</td>
<td>t:NonEmptyStringType</td>
<td>Specifies message identifier to search for.</td>
</tr>
<tr>
<td>FederatedDeliveryMailbox</td>
<td>t:EmailAddressType</td>
<td>Specifies the mailbox to which a cross-premise message was sent.</td>
</tr>
<tr>
<td>DiagnosticsLevel</td>
<td>xs:string</td>
<td>Specifies how detailed the tracing report should be.</td>
</tr>
<tr>
<td>ServerHint</td>
<td>xs:string</td>
<td>Specifies the starting point for tracking a message in a remote site or forest.</td>
</tr>
<tr>
<td>Properties</td>
<td>t:ArrayOfTrackingPropertiesType (section 2.2.4.2)</td>
<td>Specifies a list of one or more tracking properties.</td>
</tr>
</tbody>
</table>

### 3.1.4.1.3.2 m:FindMessageTrackingReportResponseMessageType Complex Type

The `FindMessageTrackingReportResponseMessageType` complex type specifies the response for the `FindMessageTrackingReport` operation (section 3.1.4.1). The `FindMessageTrackingReportResponseMessageType` complex type extends the `ResponseMessageType` complex type ([MS-OXWSCDATA] section 2.2.4.66).

```xml
<xs:complexType name="FindMessageTrackingReportResponseMessageType">
  <xs:complexContent>
    <xs:extension base="m:ResponseMessageType">
      <xs:sequence>
        <xs:element name="Diagnostics" type="t:ArrayOfStringsType" minOccurs="0" />
        <xs:element name="MessageTrackingSearchResults" type="t:ArrayOfFindMessageTrackingSearchResultType" minOccurs="0" />
        <xs:element name="ExecutedSearchScope" type="xs:string" minOccurs="0" />
        <xs:element name="Errors" type="t:ArrayOfArraysOfTrackingPropertiesType" minOccurs="0" />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```
The following table lists and describes the child elements of the `FindMessageTrackingReportResponseMessageType` complex type.

<table>
<thead>
<tr>
<th>Element name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostics</td>
<td>t:ArrayOfStringsType (([MS-OXWSCDATA] section 2.2.4.13)</td>
<td>Specifies timing and performance information that will be used to produce various statistical reports.</td>
</tr>
<tr>
<td>MessageTrackingSearchResults</td>
<td>t:ArrayOfFindMessageTrackingSearchResultType (section 3.1.4.1.3.3)</td>
<td>Specifies an array of matching records.</td>
</tr>
<tr>
<td>ExecutedSearchScope</td>
<td>xs:string ([XMLSCHEMA2])</td>
<td>Specifies the scope of the search that was performed to get the search results.</td>
</tr>
<tr>
<td>Errors</td>
<td>t:ArrayOfArraysOfTrackingPropertiesType (section 3.1.4.2.3.6)</td>
<td>Specifies a property bag for storing errors that are returned through the web service.</td>
</tr>
<tr>
<td>Properties</td>
<td>t:ArrayOfTrackingPropertiesType (section 2.2.4.2)</td>
<td>Specifies a list of one or more tracking properties.</td>
</tr>
</tbody>
</table>

### 3.1.4.1.3.3  t:ArrayOfFindMessageTrackingSearchResultType Complex Type

The `ArrayOfFindMessageTrackingSearchResultType` complex type specifies an array of search results.

```xml
<xs:complexType name="ArrayOfFindMessageTrackingSearchResultType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="MessageTrackingSearchResult" type="t:FindMessageTrackingSearchResultType"/>
  </xs:choice>
</xs:complexType>
```
The following table lists and describes the child elements of the ArrayOfFindMessageTrackingSearchResultType complex type.

<table>
<thead>
<tr>
<th>Element name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MessageTrackingSearchResult</td>
<td>t:FindMessageTrackingSearchResultType</td>
<td>Specifies a message that was found by using the FindMessageTrackingReport operation (section 3.1.4.1).</td>
</tr>
</tbody>
</table>

### 3.1.4.1.3.4 t:FindMessageTrackingSearchResultType Complex Type

The FindMessageTrackingSearchResultType complex type specifies information about the message that was found by using the FindMessageTrackingReport operation (section 3.1.4.1).

```xml
<xs:complexType name="FindMessageTrackingSearchResultType">
    <xs:all>
        <xs:element name="Subject" type="xs:string"/>
        <xs:element name="Sender" type="t:EmailAddressType"/>
        <xs:element name="PurportedSender" type="t:EmailAddressType" minOccurs="0"/>
        <xs:element name="Recipients" type="t:ArrayOfRecipientsType"/>
        <xs:element name="SubmittedTime" type="xs:dateTime"/>
        <xs:element name="MessageTrackingReportId" type="t:NonEmptyStringType"/>
        <xs:element name="PreviousHopServer" type="t:NonEmptyStringType" minOccurs="0"/>
        <xs:element name="FirstHopServer" type="t:NonEmptyStringType" minOccurs="0"/>
        <xs:element name="Properties" type="t:ArrayOfTrackingPropertiesType" minOccurs="0"/>
    </xs:all>
</xs:complexType>
```

The following table lists and describes the child elements of the FindMessageTrackingSearchResultType complex type.

<table>
<thead>
<tr>
<th>Element name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>xs:string ([XMLSCHEMA2])</td>
<td>Specifies the subject of the</td>
</tr>
<tr>
<td>Element name</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Sender</td>
<td>t:EmailAddressType ([MS-OXWSCDATA] section 2.2.4.31)</td>
<td>Specifies the email address of the sender for the message that was found.</td>
</tr>
<tr>
<td>PurportedSender</td>
<td>t:EmailAddressType</td>
<td>Specifies the email address of the person who is purportedly sending the message.</td>
</tr>
<tr>
<td>Recipients</td>
<td>t:ArrayOfRecipientsType ([MS-OXWSCDATA] section 2.2.4.11)</td>
<td>Specifies the email addresses of the recipients for the message that was found.</td>
</tr>
<tr>
<td>SubmittedTime</td>
<td>xs:dateTime ([XMLSCHEMA2])</td>
<td>Specifies the time that the message entered the server.</td>
</tr>
<tr>
<td>MessageTrackingReportId</td>
<td>t:NonEmptyStringType ([MS-OXWSCDATA] section 2.2.5.20)</td>
<td>Specifies the message by its message ID, the organization where the message was found, the server on which the message was submitted, and an internal ID that uniquely identifies the message.</td>
</tr>
<tr>
<td>1. PreviousHopServer</td>
<td>t:NonEmptyStringType</td>
<td>Specifies the previous server name (if available) that submitted the message.</td>
</tr>
<tr>
<td>FirstHopServer</td>
<td>t:NonEmptyStringType</td>
<td>Specifies the name of the server in the forest that first accepted the message.</td>
</tr>
<tr>
<td>Properties</td>
<td>t:ArrayOfTrackingPropertiesType (section 2.2.4.2)</td>
<td>Specifies a list of one or more tracking properties.</td>
</tr>
</tbody>
</table>

The following Augmented Backus-Naur Form (ABNF) specifies the string structure of MessageTrackingReportId element.

```
MessageTrackingReportId = messageId %x2C server %x2C internalId %x2C senderRecip %x2C domain
messageId = messageIdTag %x3D messageIdValue
server = serverTag %x3D serverValue
internalId = internalIdTag %x3D internalIdValue
senderRecip = senderTag / recipientTag %x3D senderRecipValue
domain = domainTag %x3D domainValue
messageIdTag = %x4D.65.73.73.61.67.65.2D.49.64
serverTag = %x53.65.72.76.65.72
internalIdTag = %x49.6E.74.65.72.6E.61.6C.2D.49.64
senderTag = %x53.65.6E.64.65.72
recipientTag = %x52.65.69.70.69.65.6E.74
domain = %x44.6F.6D.61.69.6E
```

The `messageIdValue` rule specifies the uniquely identifier of the message.
The `serverValue` rule specifies the server on which the message was submitted.
The `internalIdValue` rule specifies the internal ID that uniquely identifies the message.
The `senderRecipValue` rule specifies the GUID of the user who is doing the tracking.
The `domainValue` rule specifies the domain/organization where the message was found.
3.1.4.1.4 Simple Types
None.

3.1.4.1.5 Attributes
None.

3.1.4.1.6 Groups
None.

3.1.4.1.7 Attribute Groups
None.

3.1.4.2 GetMessageTrackingReport Operation
The GetMessageTrackingReport operation gets tracking information about the specified messages.

The following is the WSDL port type specification for this operation.

```xml
<wsdl:operation name="GetMessageTrackingReport"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
<wsdl:input message="tns:GetMessageTrackingReportSoapIn" />
<wsdl:output message="tns:GetMessageTrackingReportSoapOut" />
</wsdl:operation>
```

The following is the WSDL binding specification for this operation.

```xml
<wsdl:operation name="GetMessageTrackingReport">
<soap:operation
<wsdl:input>
<soap:body parts="request" use="literal"/>
<soap:header message="tns:GetMessageTrackingReportSoapIn" part="RequestVersion"
use="literal"/>
</wsdl:input>
<wsdl:output>
<soap:body parts="GetMessageTrackingReportResult" use="literal"/>
<soap:header message="tns:GetMessageTrackingReportSoapOut" part="ServerVersion"
use="literal"/>
</wsdl:output>
</wsdl:operation>
```

For a successful GetMessageTrackingReport operation request, the server MUST return a GetMessageTrackingReportResponse element with the ResponseClass attribute set to "Success", and the ResponseCode element MUST be set to "NoError".

If the GetMessageTrackingReport operation request asks for a RecipientPath report and provides a recipient to whom the tracking email was not sent, the server MUST return a GetMessageTrackingReportResponse element with MessageTrackingReport only including SubmitTime as "0001-01-01T00:00:00" and an empty RecipientTrackingEvents element.

3.1.4.2.1 Messages
The following table lists the XML schema message definitions that are specific to the GetMessageTrackingReport operation.
### 3.1.4.2.1.1  tns:GetMessageTrackingReportSoapIn Message

The **GetMessageTrackingReportSoapIn** WSDL message specifies the **GetMessageTrackingReport** operation request to retrieve a message tracking report from the server.

```xml
<wSDL:message name="GetMessageTrackingReportSoapIn">
  <wSDL:part name="request" element="tns:GetMessageTrackingReport"/>
  <wSDL:part name="RequestVersion" element="t:RequestServerVersion"/>
</wSDL:message>
```


The parts of the **GetMessageTrackingReportSoapIn** WSDL message are listed and described in the following table.

<table>
<thead>
<tr>
<th>Part name</th>
<th>Element/type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>request</td>
<td>tns:GetMessageTrackingReport (section 3.1.4.1.2.1)</td>
<td>Specifies the request.</td>
</tr>
<tr>
<td>RequestVersion</td>
<td>t:RequestServerVersion ([MS-OXWSCDATA] section 2.2.3.9)</td>
<td>Specifies the schema version for the request.</td>
</tr>
</tbody>
</table>

### 3.1.4.2.1.2  tns:GetMessageTrackingReportSoapOut Message

The **GetMessageTrackingReportSoapOut** WSDL message specifies the server response to the **GetMessageTrackingReport** operation request to retrieve a message tracking report from the server.

```xml
<wSDL:message name="GetMessageTrackingReportSoapOut">
  <wSDL:part name="GetMessageTrackingReportResult" element="tns:GetMessageTrackingReportResponse"/>
  <wSDL:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wSDL:message>
```


The parts of the **GetMessageTrackingReportSoapOut** WSDL message are listed and described in the following table.

<table>
<thead>
<tr>
<th>Part name</th>
<th>Element/</th>
<th>Description</th>
</tr>
</thead>
</table>
| GetMessageTrackingReportResult | tns:GetMessageTrackingReportResponse | Specifies the
### 3.1.4.2.2 Elements

The following table lists the XML schema element definitions that are specific to the GetMessageTrackingReport operation.

<table>
<thead>
<tr>
<th>Element name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>getMessageTrackingReport</td>
<td>Specifies a request for a tracking report.</td>
</tr>
<tr>
<td>getMessageTrackingReportResponse</td>
<td>Specifies the content of a response to a request for a tracking report.</td>
</tr>
</tbody>
</table>

#### 3.1.4.2.2.1 GetMessageTrackingReport Element

The `GetMessageTrackingReport` element specifies the request to get a tracking report.

```xml
<xs:element name="GetMessageTrackingReport" type="m:GetMessageTrackingReportRequestType"/>
```

#### 3.1.4.2.2.2 GetMessageTrackingReportResponse Element


```xml
<xs:element name="GetMessageTrackingReportResponse" type="m:GetMessageTrackingReportResponseMessageType"/>
```

### 3.1.4.2.3 Complex Types

The following table lists the XML schema complex type definitions that are specific to the GetMessageTrackingReport operation.

<table>
<thead>
<tr>
<th>Complex type name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>getMessageTrackingReportRequestType</td>
<td>Specifies details for the type of tracking report to retrieve.</td>
</tr>
<tr>
<td>getMessageTrackingReportResponseMessageType</td>
<td>Specifies the response for getting a tracking report.</td>
</tr>
<tr>
<td>ArrayOfRecipientTrackingEventType</td>
<td>Specifies an array of one or more events for a message.</td>
</tr>
<tr>
<td>MessageTrackingReportType</td>
<td>Specifies the information to be included in the tracking report.</td>
</tr>
</tbody>
</table>
RecipientTrackingEventType | Specifies details for a specific event in the tracking report.
---|---
ArrayOfArraysOfTrackingPropertiesType | Specifies a property bag for storing errors that are returned through the web service.

### 3.1.4.2.3.1 m:GetMessageTrackingReportRequestType Complex Type

The **m:GetMessageTrackingReportRequestType** complex type specifies details for the type of report to retrieve. The **m:GetMessageTrackingReportRequestType** complex type extends the **BaseRequestType** complex type ([MS-OXWSCDATA] section 2.2.4.17).

```
<xs:complexType name="m:GetMessageTrackingReportRequestType">
  <xs:complexContent>
    <xs:extension base="m:BaseRequestType">
      <xs:all>
        <xs:element name="Scope" type="t:NonEmptyStringType"/>
        <xs:element name="ReportTemplate" type="t:MessageTrackingReportTemplateType"/>
        <xs:element name="RecipientFilter" type="t:EmailAddressType" minOccurs="0"/>
        <xs:element name="MessageTrackingReportId" type="t:NonEmptyStringType"/>
        <xs:element name="ReturnQueueEvents" type="xs:boolean" minOccurs="0"/>
        <xs:element name="DiagnosticsLevel" type="xs:string" minOccurs="0"/>
        <xs:element name="Properties" type="t:ArrayOfTrackingPropertiesType" minOccurs="0"/>
      </xs:all>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

The following table lists and describes the child elements of the **m:GetMessageTrackingReportRequestType** complex type.

<table>
<thead>
<tr>
<th>Element name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope</td>
<td>t:NonEmptyStringType ([MS-OXWSCDATA] section 2.2.5.20)</td>
<td>Specifies where to perform the search. [14]</td>
</tr>
<tr>
<td>ReportTemplate</td>
<td>t:MessageTrackingReportTemplateType (section 3.1.4.2.1.1)</td>
<td>Specifies the type of tracking report to retrieve.</td>
</tr>
</tbody>
</table>
Element name | Type | Description
--- | --- | ---
RecipientFilter | t:EmailAddressType | Specifies a recipient address to use with the specified tracking report. If the ReportTemplate element is set to "RecipientPath", this element MUST be present.
MessageTrackingReportId | t:NonEmptyStringType | Specifies an identity string that was obtained from the FindMessageTrackingReport operation (section 3.1.4.1).
ReturnQueueEvents | xs:boolean | Specifies that the person who is running the task has a privileged role.
DiagnosticsLevel | xs:string | Specifies timing and performance information that will be used to derive the tracking report.
Properties | t:ArrayOfTrackingPropertiesType | Specifies a list of one or more tracking properties.

The following table lists and describes the values of the DiagnosticsLevel element.

<table>
<thead>
<tr>
<th>Value name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Diagnostics logging is disabled.</td>
</tr>
<tr>
<td>Basic</td>
<td>Basic diagnostics are collected and returned in web response.</td>
</tr>
<tr>
<td>Verbose</td>
<td>Basic diagnostics plus verbose logging (Such as the result that was returned through web service). The traces are returned in web response.</td>
</tr>
<tr>
<td>Etw</td>
<td>Turn on event tracing for windows, in addition to Verbose diagnostics. The verbose traces are returned in the web response. The event tracing for windows are written locally on the server and will not be returned in the web response.</td>
</tr>
</tbody>
</table>

The values of the DiagnosticsLevel element are case sensitive. If the value is set as the any value except above 4 values, the server will treat it as None.

3.1.4.2.3.2 m:GetMessageTrackingReportResponseMessageType Complex Type

The GetMessageTrackingReportResponseMessageType complex type specifies the response for getting a tracking report. The GetMessageTrackingReportResponseMessageType complex type extends the ResponseMessageType complex type ([MS-OXWSCDATA] section 2.2.4.66).

```xml
<xs:complexType name="GetMessageTrackingReportResponseMessageType">
  <xs:complexContent>
    <xs:extension base="m:ResponseMessageType">
      <xs:sequence>
        <xs:element name="MessageTrackingReport" type="t:MessageTrackingReportType" minOccurs="0"/>
        <xs:element name="Diagnostics" type="t:ArrayOfStringsType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```
The following table lists and describes the child elements of the `GetMessageTrackingReportResponseMessageType` complex type.

<table>
<thead>
<tr>
<th>Element name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MessageTrackingReport</td>
<td><code>t:MessageTrackingReportType</code> (section 3.1.4.2.3.4)</td>
<td>Specifies the tracking report that was requested.</td>
</tr>
<tr>
<td>Diagnostics</td>
<td><code>t:ArrayOfStringsType</code> ([MS-OXWSCDATA] section 2.2.4.13)</td>
<td>Specifies timing and performance information that will be used to derive the tracking report.</td>
</tr>
<tr>
<td>Errors</td>
<td><code>t:ArrayOfArraysOfTrackingPropertiesType</code> (section 3.1.4.2.3.6)</td>
<td>Specifies possible issues that will be used to derive the tracking report.</td>
</tr>
<tr>
<td>Properties</td>
<td><code>t:ArrayOfTrackingPropertiesType</code> (section 2.2.4.2)</td>
<td>Specifies a list of one or more tracking properties.</td>
</tr>
</tbody>
</table>

3.1.4.2.3.3  `t:ArrayOfRecipientTrackingEventType` Complex Type

The `ArrayOfRecipientTrackingEventType` complex type specifies an array of one or more events for a message.

```xml
<xs:complexType name="ArrayOfRecipientTrackingEventType">  
  <xs:choice minOccurs="0" maxOccurs="unbounded">  
    <xs:element name="RecipientTrackingEvent" type="t:RecipientTrackingEventType" />  
  </xs:choice>  
</xs:complexType>
```

The following table lists and describes the child elements of the `ArrayOfRecipientTrackingEventType` complex type.

<table>
<thead>
<tr>
<th>Element name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecipientTrackingEvent</td>
<td><code>t:RecipientTrackingEventType</code> (section</td>
<td>Specifies an event for a</td>
</tr>
</tbody>
</table>
3.1.4.2.3.4  t:MessageTrackingReportType Complex Type

The MessageTrackingReportType complex type specifies the information to be included in a tracking report.

```xml
<xsd:complexType name="MessageTrackingReportType">
  <xsd:all>
    <xsd:element name="Sender" type="t:EmailAddressType" minOccurs="0"/>
    <xsd:element name="PurportedSender" type="t:EmailAddressType" maxOccurs="0"/>
    <xsd:element name="Subject" type="xs:string" minOccurs="0"/>
    <xsd:element name="SubmitTime" type="xs:dateTime" minOccurs="0"/>
    <xsd:element name="OriginalRecipients" type="t:ArrayOfEmailAddressesType" minOccurs="0"/>
    <xsd:element name="RecipientTrackingEvents" type="t:ArrayOfRecipientTrackingEventType"/>
    <xsd:element name="Properties" type="t:ArrayOfTrackingPropertiesType" minOccurs="0"/>
  </xsd:all>
</xsd:complexType>
```

The following table lists and describes the child elements of the MessageTrackingReportType complex type.

<table>
<thead>
<tr>
<th>Element name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sender</td>
<td>t:EmailAddressType ([MS-OXWSCDATA] section 2.2.4.31)</td>
<td>Specifies the email address for the sender of a message.</td>
</tr>
<tr>
<td>PurportedSender</td>
<td>t:EmailAddressType</td>
<td>Specifies the email address of the person who is purportedly sending the message. [19]</td>
</tr>
<tr>
<td>Subject</td>
<td>xs:string ([XMLSCHEMA2])</td>
<td>Specifies the subject of the message.</td>
</tr>
<tr>
<td>SubmitTime</td>
<td>xs:dateTime ([XMLSCHEMA2])</td>
<td>Specifies the time at which the message was sent to the server.</td>
</tr>
<tr>
<td>OriginalRecipients</td>
<td>t:ArrayOfEmailAddressesType ([MS-]</td>
<td>Specifies the email addresses of</td>
</tr>
<tr>
<td>Element name</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>OXWSCDATA] section 2.2.4.7)</td>
<td>the message recipients.</td>
<td></td>
</tr>
<tr>
<td>RecipientTrackingEvents</td>
<td>t:ArrayOfRecipientTrackingEventType</td>
<td>Specifies the type of events to report.</td>
</tr>
<tr>
<td>(section 3.1.4.2.3.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Properties</td>
<td>t:ArrayOfTrackingPropertiesType</td>
<td>Specifies a list of one or more tracking properties.</td>
</tr>
<tr>
<td>(section 2.2.4.2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3.1.4.2.3.5 t:RecipientTrackingEventType Complex Type

The **RecipientTrackingEventType** complex type specifies details for a particular event in a tracking report.

```xml
<xs:complexType name="RecipientTrackingEventType">
  <xs:all>
    <xs:element name="Date" type="xs:dateTime" />
    <xs:element name="Recipient" type="t:EmailAddressType" />
    <xs:element name="DeliveryStatus" type="xs:string" />
    <xs:element name="EventDescription" type="xs:string" />
    <xs:element name="EventData" type="t:ArrayOfStringsType" minOccurs="0" />
    <xs:element name="Server" type="t:NonEmptyStringType" />
    <xs:element name="InternalId" type="xs:nonNegativeInteger" />
    <xs:element name="BccRecipient" type="xs:boolean" minOccurs="0" />
    <xs:element name="HiddenRecipient" type="xs:boolean" minOccurs="0" />
    <xs:element name="UniquePathId" type="t:NonEmptyStringType" minOccurs="0" />
    <xs:element name="RootAddress" type="t:NonEmptyStringType" minOccurs="0" />
    <xs:element name="Properties" type="t:ArrayOfTrackingPropertiesType" minOccurs="0" />
  </xs:all>
</xs:complexType>
```
The following table lists and describes the child elements of the **RecipientTrackingEventType** complex type.

<table>
<thead>
<tr>
<th>Element name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>xs:dateTime ([XMLSCHEMA2])</td>
<td>Specifies the time at which a particular event occurred.</td>
</tr>
<tr>
<td>Recipient</td>
<td>t:EmailAddressType ([MS-OXWSCDATA] section 2.2.4.31)</td>
<td>Specifies the recipient for whom the event occurred.</td>
</tr>
<tr>
<td>DeliveryStatus</td>
<td>xs:string ([XMLSCHEMA2])</td>
<td>Specifies the status for the message. &lt;21&gt;</td>
</tr>
<tr>
<td>EventDescription</td>
<td>xs:string</td>
<td>Specifies the processing step for the event. &lt;22&gt;</td>
</tr>
<tr>
<td>EventData</td>
<td>t:ArrayOfStringsType ([MS-OXWSCDATA] section 2.2.4.13)</td>
<td>Specifies data that is associated with the processing step for the event.</td>
</tr>
<tr>
<td>Server</td>
<td>t:NonEmptyStringType ([MS-OXWSCDATA] section 2.2.5.20)</td>
<td>Specifies the server where the event occurred.</td>
</tr>
<tr>
<td>InternalId</td>
<td>xs:nonNegativeInteger ([XMLSCHEMA2])</td>
<td>Specifies an integer value for the event.</td>
</tr>
<tr>
<td>BccRecipient</td>
<td>xs: boolean ([XMLSCHEMA2])</td>
<td>Specifies that the recipient was addressed as a blind carbon copy (Bcc) recipient.</td>
</tr>
<tr>
<td>HiddenRecipient</td>
<td>xs:boolean</td>
<td>Specifies that the recipient was added by an organization policy that should be hidden from unprivileged users.</td>
</tr>
<tr>
<td>UniquePathId</td>
<td>t:NonEmptyStringType</td>
<td>Specifies a string that is different for each path.</td>
</tr>
<tr>
<td>RootAddress</td>
<td>t:NonEmptyStringType</td>
<td>Specifies the first address that starts the event for a RecipientTrackingEventType event. &lt;23&gt;</td>
</tr>
<tr>
<td>Properties</td>
<td>t:ArrayOfTrackingPropertiesType (section 2.2.4.2)</td>
<td>Specifies a list of one or more tracking properties. &lt;24&gt;</td>
</tr>
</tbody>
</table>

### 3.1.4.2.3.6 t:ArrayOfArraysOfTrackingPropertiesType Complex Type

The **ArrayOfArraysOfTrackingPropertiesType** complex type specifies a property bag for storing errors that are returned through the web service. <25>

```xml
<xs:complexType name="ArrayOfArraysOfTrackingPropertiesType">
  <xs:choice maxOccurs="unbounded" minOccurs="0">
    <xs:element name="ArrayOfTrackingPropertiesType" type="t:ArrayOfTrackingPropertiesType" />
  </xs:choice>
</xs:complexType>
```

The following table lists and describes the child elements of the **ArrayOfArraysOfTrackingPropertiesType** complex type.
### 3.1.4.2.4 Simple Types

The following table lists the XML schema simple type definitions that are specific to the `GetMessageTrackingReport` operation.

<table>
<thead>
<tr>
<th>Simple type name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MessageTrackingReportTemplateType</td>
<td>Specifies the type of report to display.</td>
</tr>
<tr>
<td>MessageTrackingDeliveryStatusType</td>
<td>Specifies the message delivery status.</td>
</tr>
<tr>
<td>MessageTrackingEventDescriptionType</td>
<td>Specifies the status of the message for an event in the tracking report.</td>
</tr>
<tr>
<td>MessageTrackingScopeType</td>
<td>Specifies where to search for tracking reports.</td>
</tr>
</tbody>
</table>

#### 3.1.4.2.4.1 t:MessageTrackingReportTemplateType Simple Type

The `MessageTrackingReportTemplateType` simple type specifies the type of report to display.

```xml
<xs:simpleType name="MessageTrackingReportTemplateType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Summary"/>
    <xs:enumeration value="RecipientPath"/>
  </xs:restriction>
</xs:simpleType>
```

The following table lists and describes the enumeration values that are defined by the `MessageTrackingReportTemplateType` simple type.

<table>
<thead>
<tr>
<th>Value name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary</td>
<td>Specifies that the report will display all the recipients of the message and the message delivery status for each recipient.</td>
</tr>
<tr>
<td>RecipientPath</td>
<td>Specifies that for a single recipient, the report will display a full history of all events that have occurred for that recipient.</td>
</tr>
</tbody>
</table>

#### 3.1.4.2.4.2 t:MessageTrackingDeliveryStatusType Simple Type

The `MessageTrackingDeliveryStatusType` simple type specifies the status for message delivery.
The following table lists and describes the enumeration values that are defined by the `MessageTrackingDeliveryStatusType` simple type.

<table>
<thead>
<tr>
<th>Value name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsuccessful</td>
<td>Specifies that a particular message was not delivered.</td>
</tr>
<tr>
<td>Pending</td>
<td>Specifies that the message is waiting for approval from a moderator.</td>
</tr>
<tr>
<td>Delivered</td>
<td>Specifies that the message was delivered to all of the specified recipients.</td>
</tr>
<tr>
<td>Transferred</td>
<td>Specifies that the message was transferred to a server outside the search scope.</td>
</tr>
<tr>
<td>Read</td>
<td>Specifies that the message was delivered and read by the recipients.</td>
</tr>
</tbody>
</table>

### 3.1.4.2.4.3 `MessageTrackingEventDescriptionType` Simple Type

The `MessageTrackingEventDescriptionType` element specifies the status of the message for an event in the tracking report.<27>
The following table lists and describes the enumeration values that are defined by the `MessageTrackingEventDescriptionType` simple type.
<table>
<thead>
<tr>
<th>Value name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submitted</td>
<td>Specifies that a particular message was submitted by the client.</td>
</tr>
<tr>
<td>Resolved</td>
<td>Specifies that the recipients for the message were successfully resolved.</td>
</tr>
<tr>
<td>Expanded</td>
<td>Specifies that a distribution list was expanded to deliver the message to the members of the list.</td>
</tr>
<tr>
<td>Delivered</td>
<td>Specifies that the message was delivered to each recipient's mailbox.</td>
</tr>
<tr>
<td>MovedToFolderByInboxRule</td>
<td>Specifies that the message was delivered to a different folder because of an Inbox rule.</td>
</tr>
<tr>
<td>RulesCc</td>
<td>Specifies that another recipient was copied on the message because of a transport rule.</td>
</tr>
<tr>
<td>FailedGeneral</td>
<td>Specifies that the message failed during delivery.</td>
</tr>
<tr>
<td>FailedModeration</td>
<td>Specifies that the delivery of the message failed because it was rejected by the moderator.</td>
</tr>
<tr>
<td>FailedTransportRules</td>
<td>Specifies that the delivery of the message failed because of a transport rule.</td>
</tr>
<tr>
<td>SmtpSend</td>
<td>Specifies that the message was sent over SMTP to the Internet and cannot be tracked further.</td>
</tr>
<tr>
<td>SmtpSendCrossSite</td>
<td>Specifies that the message was sent to a hub in a different site.</td>
</tr>
<tr>
<td>SmtpSendCrossForest</td>
<td>Specifies that the message was sent to a hub in a different trusted forest.</td>
</tr>
<tr>
<td>SmtpReceive</td>
<td>Specifies that the hub received a message over SMTP from a server on the Internet, or from a server that does not support tracking.</td>
</tr>
<tr>
<td>Forwarded</td>
<td>Specifies that the message was forwarded to another recipient.</td>
</tr>
<tr>
<td>Pending</td>
<td>Specifies that the message has not been delivered yet.</td>
</tr>
<tr>
<td>PendingModeration</td>
<td>Specifies that the message was sent to a moderator and is waiting for an approval message.</td>
</tr>
<tr>
<td>ApprovedModeration</td>
<td>Specifies that the message was approved by the moderator.</td>
</tr>
<tr>
<td>QueueRetry</td>
<td>Specifies that the message is in a transport queue and that the EventData XML element contains a string that represents the next time that the message will be retried.</td>
</tr>
<tr>
<td>QueueRetryNoRetryTime</td>
<td>Specifies that the message is in a transport queue and that the retry time could not be retrieved.</td>
</tr>
<tr>
<td>MessageDefer</td>
<td>Specifies that the delivery of the message has been deferred for an unknown reason.</td>
</tr>
<tr>
<td>TransferredToForeignOrg</td>
<td>Specifies that the message was transferred to another organization or to a server in the organization that does not support tracking.</td>
</tr>
<tr>
<td>TransferredToPartnerOrg</td>
<td>Specifies that the message was transferred to a cross-premise organization.</td>
</tr>
<tr>
<td>TransferredToLegacyExchangeServer</td>
<td>Specifies that the message was transferred to an earlier version of the server, or to another server with a different schema.</td>
</tr>
<tr>
<td>Value name</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>DelayedAfterTransferToPartnerOrg</td>
<td>Specifies that the delivery of the message has been delayed during the transfer to a trusted organization.</td>
</tr>
<tr>
<td>Read</td>
<td>Specifies that the message is marked as read.</td>
</tr>
<tr>
<td>NotRead</td>
<td>Specifies that the message is marked as not read.</td>
</tr>
</tbody>
</table>

### 3.1.4.2.4 \texttt{t:MessageTrackingScopeType} Simple Type

The \texttt{MessageTrackingScopeType} simple type specifies where to search for tracking reports.  

```xml
<xs:simpleType name="MessageTrackingScopeType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Organization"/>
    <xs:enumeration value="Forest"/>
    <xs:enumeration value="Site"/>
  </xs:restriction>
</xs:simpleType>
```

The following table lists and describes the enumeration values that are defined by the \texttt{MessageTrackingScopeType} simple type.

<table>
<thead>
<tr>
<th>Value name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>Specifies that a particular search will cover all forests in the organization.</td>
</tr>
<tr>
<td>Forest</td>
<td>Specifies that the search will cover all servers in the forest.</td>
</tr>
<tr>
<td>Site</td>
<td>Specifies that the search will cover the local site of the server that executes it.</td>
</tr>
</tbody>
</table>

### 3.1.4.2.5 Attributes

None.

### 3.1.4.2.6 Groups

None.

### 3.1.4.2.7 Attribute Groups

None.

### 3.1.5 Timer Events

None.
3.1.6 Other Local Events

None.
4 Protocol Examples

None.
5 Security

5.1 Security Considerations for Implementers
None.

5.2 Index of Security Parameters
None.
6 Appendix A: Full WSDL

The XML files that are listed in the following table are required in order to implement the functionality described in this document.

<table>
<thead>
<tr>
<th>File name</th>
<th>Description</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS-OXWSMTRK.wsdl</td>
<td>Contains the WSDL for the implementation of this protocol.</td>
<td>6</td>
</tr>
<tr>
<td>MS-OXWSMTRK-messages.xsd</td>
<td>Contains the XML schema message definitions that are used in this protocol.</td>
<td>7.1</td>
</tr>
<tr>
<td>MS-OXWSMTRK-types.xsd</td>
<td>Contains the XML schema type definitions that are used in this protocol.</td>
<td>7.2</td>
</tr>
</tbody>
</table>

These files have to be placed in a common folder in order for the WSDL to validate and operate. Also, any schema files that are included in or imported into the MS-OXWSMTRK-types.xsd or MS-OXWSMTRK-messages.xsd schemas have to be placed in the common folder along with the files listed in the table.

This section contains the contents of the MS-OXWSMTRK.wsdl file.

```xml
<?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/messages"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/
xmlns:xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsi="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/messages">
  <wsdl:types>
    <xs:schema id="messages" elementFormDefault="qualified" version="Exchange2016"
xmlns:xml="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:tns="http://schemas.microsoft.com/exchange/services/2006/messages"
xsi:schemaLocation="MS-OXWSMTRK-messages.xsd" />
    <!-- Add global elements and types from messages.xsd -->
  </xs:schema>
  <xs:schema id="types" elementFormDefault="qualified" version="Exchange2016"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:tns="http://schemas.microsoft.com/exchange/services/2006/types"
xsi:schemaLocation="http://www.w3.org/2001/XMLSchema"/>
  <!-- Add global elements and types from types.xsd -->
</xs:schema>
</wsdl:types>
<wsdl:message name="FindMessageTrackingReportSoapIn">
  <wsdl:part name="request" element="tns:FindMessageTrackingReport"/>
  <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
</wsdl:message>
<wsdl:message name="FindMessageTrackingReportSoapOut">
  <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
<wsdl:message name="GetMessageTrackingReportSoapIn">
  <wsdl:part name="request" element="tns:GetMessageTrackingReport"/>
</wsdl:message>
<wsdl:message name="GetMessageTrackingReportSoapOut">
</wsdl:message>
</wsdl:definitions>
```
<wsdl:message name="GetMessageTrackingReportSoapOut">
  <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>

<wsdl:portType name="ExchangeServicePortType">
  <wsdl:operation name="FindMessageTrackingReport">
    <wsdl:input message="tns:FindMessageTrackingReportSoapIn"/>
    <wsdl:output message="tns:FindMessageTrackingReportSoapOut"/>
  </wsdl:operation>

  <wsdl:operation name="GetMessageTrackingReport">
    <wsdl:input message="tns:GetMessageTrackingReportSoapIn"/>
    <wsdl:output message="tns:GetMessageTrackingReportSoapOut"/>
  </wsdl:operation>
</wsdl:portType>

<wsdl:binding name="ExchangeServiceBinding" type="tns:ExchangeServicePortType">
  <wsdl:operation name="FindMessageTrackingReport">
    <soap:input>
      <soap:body parts="request" use="literal"/>
    </soap:input>
    <soap:output>
      <soap:body parts="FindMessageTrackingReportResult" use="literal"/>
    </soap:output>
  </wsdl:operation>

  <wsdl:operation name="GetMessageTrackingReport">
    <soap:input>
      <soap:body parts="request" use="literal"/>
    </soap:input>
    <soap:output>
      <soap:body parts="GetMessageTrackingReportResult" use="literal"/>
    </soap:output>
  </wsdl:operation>
</wsdl:binding>
</wsdl:definitions>
7 Appendix B: Full XML Schema

For ease of implementation, the following sections provide the full XML schema for this protocol.

<table>
<thead>
<tr>
<th>Schema name</th>
<th>Prefix</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Messages schema</td>
<td>m:</td>
<td>7.1</td>
</tr>
<tr>
<td>Types schema</td>
<td>t:</td>
<td>7.2</td>
</tr>
</tbody>
</table>

These files have to be placed in a common folder in order for the WSDL to validate and operate. Also, any schema files that are included in or imported into the MS-OXWSMTRK-types.xsd or MS-OXWSMTRK-messages.xsd schemas have to be placed in the common folder along with the files listed in the table.

7.1 Messages Schema

This section contains the contents of the MS-OXWSMTRK-messages.xsd file and information about additional files that this schema file requires to operate correctly.

MS-OXWSMTRK-messages.xsd includes the file listed in the following table. To operate correctly, this file has to be present in the folder that contains the WSDL, types schema, and messages schema files for this protocol.

<table>
<thead>
<tr>
<th>File name</th>
<th>Defining specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS-OXWSCDATA-messages.xsd</td>
<td>[MS-OXWSCDATA] section 7.1</td>
</tr>
</tbody>
</table>

```xml
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:m="http://schemas.microsoft.com/exchange/services/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"
elementFormDefault="qualified" version="Exchange2016" id="messages">
  <xs:include schemaLocation="MS-OXWSCDATA-messages.xsd"/>
  <xs:import namespace="http://schemas.microsoft.com/exchange/services/2006/types"
schemaLocation="MS-OXWSMTRK-types.xsd"/>
  <xs:complexType name="FindMessageTrackingReportRequestType">
    <xs:complexContent>
      <xs:extension base="m:BaseRequestType">
        <xs:all>
          <xs:element name="Scope" type="t:NonEmptyStringType"/>
          <xs:element name="Domain" type="t:NonEmptyStringType"/>
          <xs:element name="Sender" type="t:EmailAddressType" minOccurs="0"/>
          <xs:element name="PurportedSender" type="t:EmailAddressType" minOccurs="0"/>
          <xs:element name="Recipient" type="t:EmailAddressType" minOccurs="0"/>
          <xs:element name="Subject" type="xs:string" minOccurs="0"/>
          <xs:element name="StartDateTime" type="xs:dateTime" minOccurs="0"/>
          <xs:element name="EndDateTime" type="xs:dateTime" minOccurs="0"/>
          <xs:element name="MessageId" type="t:NonEmptyStringType" minOccurs="0"/>
          <xs:element name="FederatedDeliveryMailbox" type="t:EmailAddressType"
minOccurs="0"/>
          <xs:element name="DiagnosticsLevel" type="xs:string" minOccurs="0"/>
          <xs:element name="ServerHint" type="xs:string" minOccurs="0"/>
          <xs:element name="Properties" type="t:ArrayOfTrackingPropertiesType"
minOccurs="0"/>
        </xs:all>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="FindMessageTrackingReport" type="m:FindMessageTrackingReportRequestType"/>
</xs:schema>
```
<xs:complexType name="FindMessageTrackingReportResponseMessageType">
    <xs:complexContent>
        <xs:extension base="m:ResponseMessageType">
            <xs:sequence>
                <xs:element name="Diagnostics" type="t:ArrayOfStringsType" minOccurs="0"/>
                <xs:element name="MessageTrackingSearchResults" type="t:ArrayOfFindMessageTrackingSearchResultType" minOccurs="0"/>
                <xs:element name="ExecutedSearchScope" type="xs:string" minOccurs="0"/>
                <xs:element name="Errors" type="t:ArrayOfArraysOfTrackingPropertiesType" minOccurs="0"/>
                <xs:element name="Properties" type="t:ArrayOfTrackingPropertiesType" minOccurs="0"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>

<xs:element name="FindMessageTrackingReportResponse" type="m:FindMessageTrackingReportResponseMessageType"/>

<xs:complexType name="GetMessageTrackingReportRequestType">
    <xs:complexContent>
        <xs:extension base="m:BaseRequestType">
            <xs:all>
                <xs:element name="Scope" type="t:NonEmptyStringType"/>
                <xs:element name="ReportTemplate" type="t:MessageTrackingReportTemplateType"/>
                <xs:element name="RecipientFilter" type="t:EmailAddressType" minOccurs="0"/>
                <xs:element name="MessageTrackingReportId" type="t:NonEmptyStringType"/>
                <xs:element name="ReturnQueueEvents" type="xs:boolean" minOccurs="0"/>
                <xs:element name="DiagnosticsLevel" type="xs:string" minOccurs="0"/>
                <xs:element name="Properties" type="t:ArrayOfTrackingPropertiesType" minOccurs="0"/>
            </xs:all>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>

<xs:element name="GetMessageTrackingReport" type="m:GetMessageTrackingReportRequestType"/>

<xs:complexType name="GetMessageTrackingReportResponseMessageType">
    <xs:complexContent>
        <xs:extension base="m:ResponseMessageType">
            <xs:sequence>
                <xs:element name="MessageTrackingReport" type="t:MessageTrackingReportType" minOccurs="0"/>
                <xs:element name="Diagnostics" type="t:ArrayOfStringsType" minOccurs="0"/>
                <xs:element name="Errors" type="t:ArrayOfArraysOfTrackingPropertiesType" minOccurs="0"/>
                <xs:element name="Properties" type="t:ArrayOfTrackingPropertiesType" minOccurs="0"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>

<xs:element name="GetMessageTrackingReportResponse" type="m:GetMessageTrackingReportResponseMessageType"/>
</xs:schema>

7.2 Types Schema

This section contains the contents of the MS-OXWSMTRK-typed.xsd file and information about additional files that this schema file requires to operate correctly.

MS-OXWSMTRK-typed.xsd includes the file listed in the following table. To operate correctly, this file has to be present in the folder that contains the WSDL, types schema, and messages schema files for this protocol.
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:tns="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/types"
<xs:complexType name="ArrayOfFindMessageTrackingSearchResultType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="MessageTrackingSearchResult" type="t:FindMessageTrackingSearchResultType"/>
  </xs:choice>
</xs:complexType>
<xs:complexType name="FindMessageTrackingSearchResultType">
  <xs:all>
    <xs:element name="Subject" type="xs:string"/>
    <xs:element name="Sender" type="t:EmailAddressType"/>
    <xs:element name="PurportedSender" type="t:EmailAddressType" minOccurs="0"/>
    <xs:element name="Recipients" type="t:ArrayOfRecipientsType"/>
    <xs:element name="SubmittedTime" type="xs:dateTime"/>
    <xs:element name="MessageTrackingReportId" type="t:NonEmptyStringType"/>
    <xs:element name="PreviousHopServer" type="t:NonEmptyStringType" minOccurs="0"/>
    <xs:element name="FirstHopServer" type="t:NonEmptyStringType" minOccurs="0"/>
    <xs:element name="Properties" type="t:ArrayOfTrackingPropertiesType" minOccurs="0"/>
  </xs:all>
</xs:complexType>
<xs:complexType name="MessageTrackingReportTemplateType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Summary"/>
    <xs:enumeration value="RecipientPath"/>
  </xs:restriction>
</xs:complexType>
<xs:complexType name="RecipientTrackingEventType">
  <xs:all>
    <xs:element name="Date" type="xs:dateTime"/>
    <xs:element name="Recipient" type="t:EmailAddressType"/>
    <xs:element name="DeliveryStatus" type="xs:string"/>
    <xs:element name="EventDescription" type="xs:string"/>
    <xs:element name="EventData" type="t:ArrayOfStringsType" minOccurs="0"/>
    <xs:element name="Server" type="t:NonEmptyStringType"/>
    <xs:element name="InternalId" type="xs:nonNegativeInteger"/>
    <xs:element name="BccRecipient" type="xs:boolean" minOccurs="0"/>
    <xs:element name="HiddenRecipient" type="xs:boolean" minOccurs="0"/>
    <xs:element name="UniquePathId" type="t:NonEmptyStringType" minOccurs="0"/>
    <xs:element name="RootAddress" type="t:NonEmptyStringType" minOccurs="0"/>
    <xs:element name="Properties" type="t:ArrayOfTrackingPropertiesType" minOccurs="0"/>
  </xs:all>
</xs:complexType>
<xs:complexType name="MessageTrackingReportType">
  <xs:all>
    <xs:element name="Sender" type="t:EmailAddressType" minOccurs="0"/>
    <xs:element name="PurportedSender" type="t:EmailAddressType" minOccurs="0"/>
    <xs:element name="Subject" type="xs:string" minOccurs="0"/>
    <xs:element name="SubmitTime" type="xs:dateTime" minOccurs="0"/>
    <xs:element name="OriginalRecipients" type="t:ArrayOfEmailAddressesType" minOccurs="0"/>
    <xs:element name="RecipientTrackingEvents" type="t:ArrayOfRecipientTrackingEventType"/>
    <xs:element name="Properties" type="t:ArrayOfTrackingPropertiesType" minOccurs="0"/>
  </xs:all>
</xs:complexType>
<xs:complexType name="TrackingPropertyType">
  <xs:sequence>
    <xs:element name="Name" type="xs:string"/>
    <xs:element name="Value" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:sequence>
  <xs:complexType name="ArrayOfTrackingPropertiesType">
    <xs:choice minOccurs="0" maxOccurs="unbounded">
      <xs:element name="TrackingPropertyType" type="t:TrackingPropertyType"/>
    </xs:choice>
  </xs:complexType>
</xs:sequence>

<xs:complexType name="ArrayOfArraysOfTrackingPropertiesType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="ArrayOfTrackingPropertiesType" type="t:ArrayOfTrackingPropertiesType"/>
  </xs:choice>
</xs:complexType>

<xs:complexType name="ArrayOfRecipientTrackingEventType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="RecipientTrackingEvent" type="t:RecipientTrackingEventType"/>
  </xs:choice>
</xs:complexType>
</xs:schema>
8 Appendix C: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include updates to those products.

- Microsoft Exchange Server 2010
- Microsoft Exchange Server 2013
- Microsoft Exchange Server 2016
- Microsoft Exchange Server 2019

Exceptions, if any, are noted in this section. If an update version, service pack or Knowledge Base (KB) number appears with a product name, the behavior changed in that update. The new behavior also applies to subsequent updates unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification that is prescribed using the terms "SHOULD" or "SHOULD NOT" implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term "MAY" implies that the product does not follow the prescription.

<1> Section 2.1: Microsoft Exchange Server 2010 Service Pack 1 (SP1) uses HTTP for transport.

<2> Section 2.2.4.1: Exchange 2010 does not include the TrackingPropertyType complex type.

<3> Section 2.2.4.2: Exchange 2010 does not include the ArrayOfTrackingPropertiesType complex type.

<4> Section 3.1.4.1.3.1: In Exchange 2010, the type for the Scope element is MessageTrackingScopeType.

<5> Section 3.1.4.1.3.1: Exchange 2010 does not include the PurportedSender element.

<6> Section 3.1.4.1.3.1: Exchange 2010 does not include the ServerHint element.

<7> Section 3.1.4.1.3.1: Exchange 2010 does not include the Properties element.

<8> Section 3.1.4.1.3.2: Exchange 2010 does not include the ExecuteSearchScope element.

<9> Section 3.1.4.1.3.2: Exchange 2010 does not include the Errors element.

<10> Section 3.1.4.1.3.2: Exchange 2010 does not include the Properties element.

<11> Section 3.1.4.1.3.4: Exchange 2010 does not include the PurportedSender element.

<12> Section 3.1.4.1.3.4: Exchange 2010 does not include the FirstHopServer element.

<13> Section 3.1.4.1.3.4: Exchange 2010 does not include the Properties element.

<14> Section 3.1.4.2.3.1: In Exchange 2010, the Scope element is of type MessageTrackingScopeType.

<15> Section 3.1.4.2.3.1: Exchange 2010 does not include the Properties element.

<16> Section 3.1.4.2.3.2: In Exchange 2010, the MessageTrackingReport element does not have a value for the minOccurs attribute.

<17> Section 3.1.4.2.3.2: Exchange 2010 does not include the Errors element.
<18> **Section 3.1.4.2.3.2**: Exchange 2010 does not include the **Properties** element.

<19> **Section 3.1.4.2.3.4**: Exchange 2010 does not include the **PurportedSender** element.

<20> **Section 3.1.4.2.3.4**: Exchange 2010 does not include the **Properties** element.

<21> **Section 3.1.4.2.3.5**: In Exchange 2010, the **DeliveryStatus** element is of type **MessageTrackingDeliveryStatusType**.

<22> **Section 3.1.4.2.3.5**: In Exchange 2010, the **EventDescription** element is of type **MessageTrackingEventDescriptionType**.

<23> **Section 3.1.4.2.3.5**: Exchange 2010 does not include the **RootAddress** element.

<24> **Section 3.1.4.2.3.5**: Exchange 2010 does not include the **Properties** element.

<25> **Section 3.1.4.2.3.6**: Exchange 2010 does not include the **ArrayOfArraysOfTrackingPropertiesType** complex type.

<26> **Section 3.1.4.2.4.2**: Only the initial release version of Exchange 2010 supports the **MessageTrackingDeliveryStatusType** simple type.

<27> **Section 3.1.4.2.4.3**: Only the initial release version of Exchange 2010 supports the **MessageTrackingEventDescriptionType** simple type.

<28> **Section 3.1.4.2.4.4**: Only the initial release version of Exchange 2010 supports the **MessageTrackingScopeType** simple type.
9 Change Tracking

No table of changes is available. The document is either new or has had no changes since its last release.
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