# OpenTravel Alliance Message Specifications – Publication 2001A

# [Draft Copy - for OTA Public Review]

## Specifications Document


### Abstract

This document presents the specifications for the exchange of messages in the travel industry, covering airlines, car rentals, hotels, and other travel services. It uses the Extensible Markup Language (XML) for the exchange of these messages transmitted under Internet protocols.

Part I of this document describes the base technical architecture used by the OpenTravel Alliance for message exchanges, including transport protocols, identification and connections to trading partners, security and privacy, and infrastructure required to identify the message content and route it to the proper application handler.

Part II of this document addresses the travel business content and exchanges of a customer profile, and identifies the message sets supported by this publication.



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## OpenTravel Alliance Message Specifications – Version 2



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## Executive summary

The OpenTravel Alliance Message Specification, Publication 2001A (OTA Version 2) is a revision of the OTA version 1 Customer Profile Specification. The catalyst for this revision came from the agreement for cooperation and collaboration between two Standards Developer Organizations (SDOs), the OpenTravel Alliance (OTA) and the Hospitality Industry Technology Integration Standards (HITIS) project sponsored by the American Hotel & Motel Association, (AH&MA). Bringing the two groups together has enabled this specification to profit from the best of both organizations, building upon their collective experience in the hospitality and travel industries.

This specification also benefits from the work of other standards developer organizations; specifically, the ebXML initiative sponsored by UN/CEFACT and OASIS (www.ebxml.org), and the work of the World Wide Web Consortium (W3C) and their advancement of XML Schema to Candidate Recommendation status (2000-10-24).

This document is separated into two parts: OTA Infrastructure and the revised Profile Specification, which is the first of the business content specifications that OTA intends to develop.

**Part I - OTA Infrastructure**
The OTA Infrastructure section defines the messaging components and how to securely and reliably exchange messages between trading partners. This definition establishes guidelines for OTA's message sets for the exchange of OTA Version 2 profiles as well as future versions of messages in the travel industry.

The OTA specification uses the eXtensible Markup Language (XML) that allows for the exchange of structured data as well as processing instructions over the Internet or other means of transport. With XML, OTA defined a common vocabulary of data items in terms of elements, attributes, or reusable entities. Logical groups of data elements are represented by schema fragments that provide formal specification of semantics and data typing that allows the schema fragments to be combined into message structures as needed.

With the recent promotion of XML Schema as a Recommendation from the World Wide Web Consortium (W3C) on 2001-05-02, OTA has developed schema files for the messaging components and profile content data found in this specification, making it available for implementation.

Parties may also choose to validate messages using a document type definition (DTD) that defines the hierarchical arrangement of data items according to a set of rules. In either case, separate DTD or schema specifies basic error conditions and administrative messages independent of the versioned specifications.

- OTA version 2 Infrastructure specifies that parties send messages as pairs of requests with corresponding responses, and defines both synchronous and asynchronous messaging capability.
- OTA version 2 Infrastructure uses the ebXML Header and a modifed version of the Manifest part of that header document, that identifies the version of the message and the operation to be performed as metadata about the document(s) in the payload.
- OTA infrastructure defines four basic message functions: (1) Create, (2) Read, (3) Update, and (4) Delete with examples given using the customer profile as a payload document. The Create, Read and Delete functions address the profile record as a whole. The complex update process used in OTA version 1 to address individual parts of the profile record has been revised to adopt an alternative

 

representation using XPath to reference a specific element in a source document to modify a part of the contents, or to perform a replace operation.

- The specification merges the vocabulary of tag-naming conventions established by both standards developer organizations as defined in their respective version 1 (or 1.1), and drops the requirement to include the version and hierarchy of the elements in each tag.

**Security Features**
OTA version 2 retains security features defined in version 1 providing authentication of parties, confidentiality, and integrity of messages, and a control section for these security features, which has been separated from the business content of each message.

**Part II - Profile Specification**

The Profile Specification provides a common customer or company profile that can be exchanged among travel services over the Internet. The specification provides a uniform vocabulary that captures and exchanges data on about the identity of a person or a company, and their contacts and affiliations including loyalty programs, forms of payment, travel documents, and detailed travel preferences.

A key feature of the profile allows for the definition of collections of travel preferences in terms of specific travel plans and experiences, and includes preferences for various travel services (air, hotel, car rental, other) as well as common preferences across services. The specification allows for straightforward preferences as well as collections meeting complex conditions, including choices to avoid. It also allows for identification of related persons, such as family members, companions, or fellow business colleagues, to be linked to profiles, as well as identification of a travel arranger or other organization, such as a travel club or employer, that is related to the traveler in the context of the message. A link is provided to these entities by means of a globally unique identifier, comprised of an identifying string in combination with a URL that specifies the location of the identifier.

**Privacy Requirements**
The OTA version 2 specification retains the strict privacy requirements defined in OTA version 1 that allow both customers and companies to indicate which data to share with other parties. The privacy attributes in OTA version 2 can be used to determine whether this information may be shared for the synchronization of system information such as keeping all copies of the profile on remote sites identical with the original, or shared for marketing purposes.

 

# Acknowledgments

This specification is based upon the original work done by the people who contributed to the OTA Version 1 specification, as compiled by the editor, Alan Kotok, Director of Education, DISA.

As OTA began the process of revising version 1 to accommodate the merger between the two standards developer organizations, others joined to pick up where their predecessors left off. The names and organizations of people who took part in meetings and conference calls, or provided input to the specification during the period from September, 2000 to December, 2000 are listed on the following page.

A few dedicated people should be mentioned for bringing forward continuity from Version 1 during the transition to Version 2. These people include: George Smith of ConXtra, Jim deBettencourt of McCord Travel Management, and Mary Manzer of United Airlines.

Special thanks go to David Marshall, VM Systems, Inc., for dutifully documenting the recommendations of the OTA/HITIS Profile Integration and OTA Architecture teams, and developing them into substantial proposals over the course of the integration process. Thanks also to Michael Guidone, Pegasus Solutions, for his efforts, along with David Marshall, in working out the recommendations for an alternative method of partial update.

Thanks go to OTA Architecture Chair, Michael Townsie, Galileo, and especially to Architecture Co-Chair, Ron Kleinman, Sun Microsystems, for guiding OTA into alignment with the ebXML specifications and representing OTA's interests to that organization.

Appreciation is extended to Matt Guthrie, Hospitality Solutions International, for his assistance in the merger of the data elements in the two profiles, and his insight in the design model of the Customer Profile specification, and to Adam Athimuthu, Bass Hotels & Resorts, for contributing his experience in implementing the HITIS standards to the development efforts.

Thanks also go to Mark Hoare and Paul McGrath of Pegasus Solutions, Ron Kleinman of Sun Microsystems, and Jim Martin and Scott Gibson of Cendant Corporation, for hosting the meetings that took place. Their hospitality made the task of getting the two groups together much easier and enabled the process of assimilating the two standards into one.

OTA created the sample messages using XML Spy. (http://www.xmlspy.com) and the document type definitions (DTD's) the XML Schema definition fragments and the element hierarchy charts seen throughout the document using XML Authority by Extensibility (http://www.extensibility.com), a division of Tibco Corporation.

Gloria Gordon Zimmer, Editor

 

The following is a list of names and organizations of people who took part in meetings and conference calls and contributed to the development of this specification.

| Participants | Company Name |
|---|---|
| John Turato | Avis Rent-A-Car System, Inc. |
| Adam Athimuthu | Bass Hotels & Resorts |
| Mike Kistner | Best Western International, Inc. |
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| Tim Cochran | DISA |
| Gloria Zimmer | DISA |
| Michael Townsie | Galileo International |
| Rahim Amlani | GetThere, Inc. |
| Sean Handel | GetThere, Inc. |
| David Mussa | GetThere, Inc. |
| Tal Petty | Goldenware Travel Technologies |
| Virginia Suliman | Hilton Hotels |
| Matt Guthrie | Hospitality Solutions International |
| Steve Reynolds | Innovata, LLC |
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| Ron Kleinman | Sun Microsystems, Inc. |
| Mary Manzer | United Airlines |
| David Marshall | VM Systems, Inc. |
| Allan Chan | Worldres |

 

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# OpenTravel Alliance Message Specification

# Publication 2001A

# Specifications Document

## [Draft Copy - for Public Review]

### Part I - OTA Infrastructure

# 1. Introduction

## 1.1 About the OpenTravel Alliance

The OpenTravel Alliance (OTA), which began in May 1999, is a consortium of suppliers in all sectors of the travel industry, including air, car rental, hotel, travel agencies, and tour operators, as well as related companies that provide distribution and technology support to the industry. The OpenTravel Alliance now has over 125 members representing influential names in all sectors of the travel industry. The Alliance is comprised of five working groups – air, car, hotel, leisure supplier, and non-supplier – together with an interoperability committee to coordinate their efforts.

OTA defines open messages in eXtensible Markup Language (XML) that makes it possible to exchange business data seamlessly among different systems, companies, and industries over the World Wide Web. This specification defines the infrastructure on which OTA will build additional messages and functions, and represents the revision of OTA's first product, a common customer profile for the travel industry.

Companies in the travel industry recognize the importance of information management, both in terms of day-to-day operations and as a strategic tool. The travel industry pioneered online booking and registration systems, and in many respects, sets the expectation level for other industries in terms of responsiveness, reliability, and security of transaction processing. With the coming of the Internet and its ability to link millions of customers and companies in real-time computer communications, customer expectations for online services have increased further, and the travel industry seeks to continue to meet and exceed these expectations. Also, in keeping with the tradition of the Internet, even in its brief history, OTA specifications are open documents and will remain freely available to all industry participants.

OTA specifications provide a framework for companies in the travel industry to create new relationships with customers as well as create new partnerships with fellow companies in the business. As specifications for the industry, these documents provide a means by which companies can improve their interaction with trading partners as well as their level of service for customers. Lowering the demands for customized interfaces between trading partners will allow companies to concentrate their resources on developing innovative ways to communicate with their customers and provide increased levels of service to them.

The OpenTravel Alliance has a white paper that provides a detailed description and rationale for Internet-based exchanges and the value they bring to customers, travel suppliers, and companies in the distribution network. Readers may view the document on the public OTA web site at http://www.opentravel.org/ . Note, however, that during the work leading to this specification many applications of it have been found in areas other than distribution of travel inventory.

## 1.2 Collaboration between Standards Developer Organizations (SDO's)

A word about the philosophies of the two Standards Developer Organizations that contributed to this product: readers will note that OTA uses the term *specification* rather than *standard*. OTA reserves the word standard for documents that undergo a rigorous, lengthy development and review process, such as those from International Organization of Standards (French acronym ISO) or American National Standards Institute (ANSI). This document, therefore, is called a specification, which takes broad standards such as the Extensible Markup Language (XML) and

 

applies them in particular industries or to particular problems. Several ISO standards used in the development of this specification are referenced in the text and listed in the Appendix.

As a specification, this document focuses on travel industry requirements and while developed in an open consensus process, does not represent itself as meeting the stringent requirements of standards.

An OTA specification, having gone through its own review process and recommended for adoption and broad implementation by the travel industry may be submitted as an ANSI standard as a result of an Agreement with the American Hotel & Motel Association (AH&MA), signed October 18, 2000. This agreement allows the AH&MA, an ANSI-accredited standards developer organization, to submit a specification for approval as an ANSI standard. That process, monitored by the American National Standards Institute, involves the publication of an intended standard for a period of commentary and consists of a canvass of those parties who would be materially affected by the standard.

AH&MA, founded in 1910, is a federation of state lodging associations throughout the United States, with some 11,000 property members worldwide, representing more than 1.4 million rooms. AH&MA provides operations, technical, educational, marketing, and communications services plus governmental affairs representation to the lodging industry.

### 1.3 Design goals and decisions

OTA specifications are designed using the following guidelines:

*Openness* - OTA specifications are publicly available to all organizations seeking to develop new or enhanced systems for improving travel services. Likewise membership in OTA for the purpose of developing these specifications is open to all organizations.

*Support of exchanges among a broad number of parties* - OTA specifications support communications among industry participants, including but not limited to:

- Travelers
- Airlines
- Car rental agencies
- Hotels
- Passenger rail services
- Leisure travel providers, such as cruise lines and tour services
- Travel arrangers
- Global distribution systems

*Flexibility* - OTA specifications provide travel service providers and their representatives with the flexibility they need to rapidly develop, test, and deploy new services. These specifications outline the minimum functionality necessary to provide reliable interactions between systems.

*Extensibility* OTA realizes that trading partners, using the minimum functionality defined in the specifications, may have a need for extensions to include proprietary data between them. OTA has defined a mechanism by which the specifications take advantage of the 'eXtensible' in XML to allow for these extensions to take place. Specific locations have been designated in logical

 

places throughout OTA specifications for trading partners to add their own data. Trading partners are encouraged to submit extensions used regularly between multiple trading partners for consideration for future revisions of OTA specifications.

*Security* - OTA recognizes the need to protect the information from unauthorized access as well as the need to give the individual customer or company control over the creation, update, and exchange of data with other parties.

*Platform independence* - This specification is intended to be implemented on any equipment or software that can support the common standards used in the specification.

*International scope* - OTA wrote this specification in English but intends to extend later versions to provide representation in character sets supporting the Unicode standard; as the eXtensible Markup Language (XML) used as the basis for this specification already supports Unicode. Wherever possible OTA designed the data elements in this specification to meet as many global conventions as possible.

*Future Versions* - OTA plans to add more services and functionality to its specifications in a way that minimizes incompatibility for those implementing this or future versions. However, this version of the specification incorporates significant changes, including incorporation of a modified Header envelope adapted from the ebXML specifications, and migration to the W3C XML-Schema candidate recommendation, that may not be retroactively compatible to OTA version 1. The OTA work groups that developed the version 1 specification realized this transition would take place, and designed the earlier version in such a way as to allow for migration to subsequent versions, intending to ease the burden for those implementing version 1.

### 1.4 Relationships with other industry systems

*Electronic Data Interchange (EDI)* - EDI is the computer-to-computer exchange of structured data between organizations according to a standard format. EDI can use any transport protocol that allows for exchanges of data between systems and organizations, but it generally uses standard formats such as X12 and UN/EDIFACT that pre-date the Web and Internet. While OTA specifications enable data exchanges among individuals and organizations, and create a common vocabulary of data elements and tags, they do not follow the established EDI standards.

*Global Distribution Systems* - GDSs centralize, consolidate and deliver travel supplier information for the online booking of reservations. Travel agencies are the primary users of GDSs, but direct-to-customer GDS services have recently become available over the Web. GDSs currently present information only on the companies and information that subscribe to their services and supply data to them. OTA's work can be expected to make it easier for GDSs to extend the range of the content they offer. OTA specifications offer the exchange of messages with profile data for implementation by any travel supplier or data service that adheres to these specifications based on open standards.

### 1.5 Relationships with other standards

*Extensible Markup Language (XML)* - OTA specifications use XML to represent the data used for travel transactions, as required by XML Recommendation 1.0 of the World Wide Web Consortium.

 

*World Wide Web* - The World Wide Web (WWW or the Web) is a collection of interconnected documents on the Internet that adhere to the accepted conventions for the identification and display of those documents. Most implementations of OTA specifications will use Web-related protocols to exchange XML messages as specified in this document.

*XML Schema* - OTA version 2 embraces the Candidate Recommendation of the World Wide Web Consortium (W3C) for XML schema (2000-10-24) and follows its conventions as guidelines for the implementation of XML messages

*Hotel industry specifications* - In the hotel industry, two organizations have defined common data elements for transactions among trading partners: the Hotel Electronic Distribution Network Association (HEDNA) and the Hospitality Industry Technology Integration Standards (HITIS). The HITIS standards used the work of the Windows Hospitality Interface Specifications (WHIS) for their base documents in the development of their standards. HEDNA made its descriptive content specifications available to both organizations, and OTA relied upon the work of WHIS and HEDNA in the development of OTA version 1. This version 2 specification represents the merger of the HITIS Profile Synchronization standard with OTA version 1 into one document. As a result, the portions of the HITIS standards that incorporate elements of HEDNA's work will remain compatible with this version of the profile.

### 1.6 Status of this document

This document is a draft publication of the OTA version 2 specification released for public review on May 15, 2001. It is anticipated that this document will undergo a period of commentary and resolution of comments may result in revisions prior to final publication. Individuals and companies implementing the specification or who would otherwise like to give their comments on the document should address them by e-mail to OTAcomments@disa.org .

OTA also welcomes comments by fax to +1 703-548-1264 or by mail to:

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# 2. Overview of OTA Version 2

This version of the Open Travel Alliance specification revises the overall message structure and basic technical architecture introduced in OTA Version 1. The progress made in the area of XML guidelines from standards organizations, such as W3C and ebXML, have enabled the revision of OTA Version 1 to conform with broad cross-industry practices that will ensure interoperability between multiple systems that exchange travel-related information.

Many of the changes that have occurred in these OTA specifications such as versioning, error handling, and header structure have been adopted directly from these organizations. Although these issues are not limited to the travel industry, this specification addresses them because of the business need for these functions to be defined in order for implementations within the travel industry to establish a baseline from which trading partners can begin their message exchange.

From a travel industry perspective, this version also addresses the detailed contents of a customer profile. See Part II–Profile Specifications.

## 2.1. Trading Partner Model

In order for individuals or organizations to begin exchanging data, each trading partner must first engage in a dialogue to learn the counterpart's support for various transport protocols, security, and required fields. In the Version 2 specification, OTA has focused on messages that support a simple trading partner model, or exclusive trading partner agreement.

Support for exclusive trading partner relationships involves linking one requestor to one supplier. The OTA has specified Non-Versioned discovery messages that can be sent from partner to partner to assess capabilities, and has structured the Version 2 messages to be used to exchange information.

OTA does not define any type of directory services that can be used to establish exclusive relationships at this time. While OTA supports dynamic discovery, it does not define any type of electronic contract document nor attempt to certify the acceptance of a trading partner relationship in either a predefined or dynamic situation.

As of the publication of OTA Version 2 specification (late 2000) the means of dynamically discovering the characteristics of multiple trading partners has not been fully examined. OTA plans to address this issue in future versions in conjunction with other standards organizations as they bring forward their collective bodies of knowledge.[1]

## 2.2. Technical Architecture

The technical architecture chapter presents the role and function of the various components of the messages that support the exchanges between trading partners defined in this specification. The chapter also discusses the use of basic technologies such as transport protocols, features inherent in the use of MIME for messaging services and defines important security features of the specification. This specification supports the message choreography of the connection to one trading partner per message, but supports multiple payloads that may include different operations or batch operations in one message.

[1] We thank Jim deBettencourt of McCord Travel Management for his contributions to this part of the document.

OTA has defined certain guidelines for the use of XML technology, including conventions for message composition and grammar as well as tag names, the use of DTDs for purposes of validation, and the use of XML Schema to provide a formal data typing capability.

### 2.3. Message Structure

OTA version 2 transactions use a request and response model that provides a matched pair of messages to help account for and manage the data flow. OTA messages use the message structure from the ebXML Header envelope that effectively separates the routing and packaging information from the payload content of the message. The structure also requires a Control section separate from the root Action Verb of the payload, (previously identified by the root tag name, Content, in OTA version 1) to separate security details and connection with the trading partner from the business content. (In future versions of the specification the Control section may be eliminated in favor of analogous structures available within the ebXML Header section.)

### 2.4. Error and Non-Versioned Message Operations

Some of the exchanges between trading partners will contain messages for administrative purposes rather than business context. These messages are intended to discover the versions supported by trading partners and for transmitting certain errors. Because this set of messages transcends individual versions, OTA has established a separate category and syntax for these messages that operates independently of the versioned content. Chapter 5 of this specification covers non-versioned messages.

The specification also makes a distinction between error responses in versioned messages – those that arise from business interactions with the processing application, from error messages resulting from the transport layer or infrastructure of the messaging process that do not carry version numbers.

### 2.5. Security and Privacy

Because of the sensitivity of the data contained in customer information in the travel industry, OTA version 2 gives special attention to issues of authentication, confidentiality, and message integrity. It also gives recommendations for non-repudiation of transactions in anticipation of standards that apply more directly to this issue. Chapter 6 of this specification addresses the security issues.

Part II of this document, Profile, focuses on specific privacy protections that require the customer to give explicit permission to share the profile data, even for routine synchronization of updates.

### 2.6. Definitions and Conventions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in IETF document RFC 2119. For further information and the Abstract of the document, RFC 2119, see Volume 2, Appendices.

This text makes every attempt to accurately reflect the DTDs and XML Schema listed in the Appendices. In the case of a conflict between the document text, the DTD and the XML Schema, the XML Schema takes precedence.

# 3. Technical Architecture

As cross-industry XML standards organizations begin to complete development efforts that will define how Web-based commerce is exchanged, OTA has adopted portions of these efforts and thus reestablished some conventions for message definition and exchange. This section outlines the changes and guiding decisions for the OTA version 2 message structure.

## 3.1. Reference Model[2]

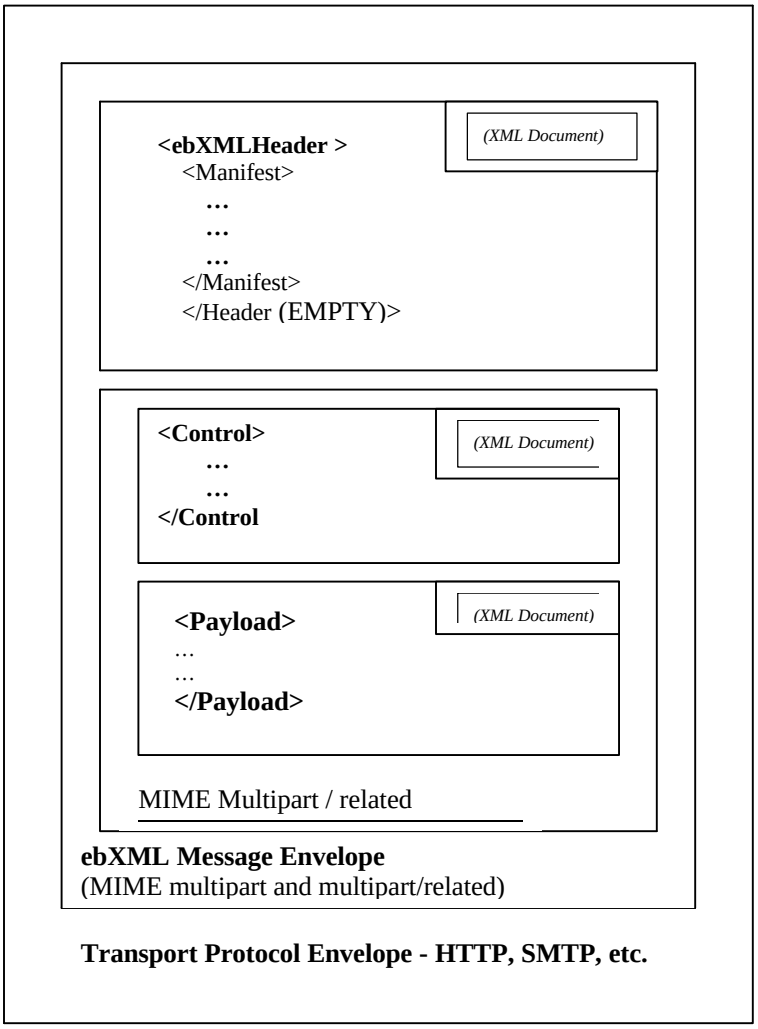



**Figure 1. OTA version 2 reference model**

The reference model for the OTA architecture can be viewed as a logical series of envelopes. Beginning at the bottom, the transport layer determines the communication protocol that governs the flow of messages. Inside the transport layer, OTA has adopted the ebXML Message Envelope which is a MIME multipart/related wrapper that provides an overall container and several non-travel-specific elements such as the transaction choreography and security of the messages.

[2] Much of the content in this section is adapted from the ebXML Transport, Routing and Packaging specification v0.8 (see http://www.ebxml.org)

The message envelope MUST contain two MIME headers:

- Content-Type
- Content-Length

The MIME Content-Type MUST be multipart/related for all OTA message envelopes. For example:

```
Content-Type: multipart/related;
```

The MIME Content-Type contains three attributes:

- Type
- Boundary
- Version

The MIME type attribute is used to identify the message envelope as an ebXML compliant structure. It conforms to MIME XML Media Type [XMLMedia] and MUST be set to "`application/vnd.eb+xml`".
For example:

```
type="application/vnd.eb+xml"
```

The MIME boundary attribute is used to identify the body part separator used to identify the start and end points of each body part contained in the message. TheMIME boundary SHOULD be chosen carefully in order to ensure that it does not occur within the content area of a body part see [RFC 2045] for guidance on how to do this.
For example:

```
Boundary:="----vmguys.com321----------"
```

The MIME version attribute is used to identify the particular ebXML Message Envelope being used. All message headers SHOULD use "`0.8`"[3].
For example:

```
version="0.8"
```

The MIME Content-Length header is a decimal value used to identify the total number of OCTETS contained in all constituent message body parts, including boundary body parts.

The value of the Content-Length MIME header is computed by counting the total number of OCTETS starting with the first OCTET after the CRLF following the first MIME header and ending with the OCTET immediately before the MIME object's last boundary string.
For example:

```
Content-Length: 8941
```

[3] Although OTA version 2 is not 100% compatible with ebXML 0.8 it is very close from a packaging perspective.

An example of a compliant ebXML/OTA Message envelope header appears below:

```
Content-Type: multipart/related; type="application/vnd.eb+xml";
boundary:=------vmguys.com321---------
Content-Length: 8941
```

The MIME message envelope encapsulates a minimum of three XML documents; the ebXML Header document, one Control document, and one or more payload documents, which defines the messages exchanged among trading partners based on an established set of elements and attributes prescribed by OTA.

The ebXMLHeader document is always the first within the message envelope container, and it is preceded by a MIME header envelope containing the following three MIME headers:

- Content-ID
- Content-Length
- Content-Type

The Content-ID MIME header identifies this instance of an ebXML/OTA message header body part. The value for Content-ID SHOULD be a unique identifier, in accordance with RFC 2045. For example:

```
Content-ID: 2000-1212-095613-1233000@vmguys.realm
```

The MIME Content-Length header is a decimal value used to identify the total number of OCTETS contained in the ebXML header MIME body part. For example:

```
Content-Length: 785
```

The MIME Content-Type for an ebXML header is identified with the value "application/vnd.eb+xml". Content-Type MUST contain two attributes:

- version
- charset

The MIME version attribute indicates the version of the ebXML specification to which the header document conforms. Although not strictly conforming, OTA recommends the value "0.8" be used. For example:

```
version="0.8"
```

The MIME charset attribute identifies the character set used to create the ebXML Header document. The MIME charset SHALL be equivalent to the encoding attribute of the ebXML Header document. For maximum interoperability it is RECOMMENDED that UTF-8 be used. Note: this is not the default for MIME.
For example:

```
charset="UTF-8"
```

An example ebXML header document follows:

```
Content-ID: ebxmlheader-123@vmguys.com/OTAEngine
Content-Length: 781
Content-Type: application/vnd.eb+xml; version="0.8";
charset="UTF-8"

<?xml version="1.0" encoding="UTF-8"?>
<ebXMLHeader>
     <Manifest>
          …
     </Manifest>
     <Header/>
</ebXMLHeader>
```

The XML payload document is the level in the OTA reference model that contains actionable OTA messages. These include authentication flows, infrastructure verbs that define non-travel specific elements and attributes, and travel verbs, elements and attributes.

Infrastructure verbs are actions such as the typical Create-Read-Update-Delete (CRUD) semantics, as well as sub-actions for more complex operations. These verbs do not represent travel-specific actions by themselves, but serve as a framework to act upon travel-specific content. The four main infrastructure verbs do not operate alone, but in conjunction with the request and response model described in Chapter 4, Message Structure.

Travel verbs define verbs and actions that are travel-specific (e.g., availability query), and pertain to travel industry business operations. The OTA Version 2 Profile specification does not contain any travel-specific verbs, but future messages to be defined by OTA will contain travel verbs. Travel-specific actions may or may not use the infrastructure verbs.

The payload document(s) contains the OTA travel elements and attributes that make up the business content of the messages. Section 2, Profile, describes the content of the payload in detail. Business content documents utilize both travel verbs and infrastructure verbs as their root element.

OTA version 2 defines the XML infrastructure protocol and business content, in accordance with the logical view of the architecture as described above. This chapter discusses each of the layers in the architectural model in further detail.

### 3.2. Transport Protocols[4]

OTA messages are defined above any specific transport protocol and do not contain any invocation semantics specific to transport. However, as a practical matter, the Hypertext Transport Protocol (HTTP) is the underlying reference transport protocol. HTTP is used to establish initial communication between two parties in the absence of any other prior arrangement. As such, OTA messages MUST be able to flow on HTTP as a base and all OTA implementations MUST support exchange of versionless discovery messages via HTTP 1.1. One of the benefits of requiring HTTP for an initial message exchange enables the use of an HTTP-based URL, for example, as a reference to the location of a profile.

[4] We thank Jim DeBettencourt of McCord Travel Management and David Marshall, VM Systems for their help in preparing this section of the chapter.

OTA Architecture however, does not preclude OTA standard messages from flowing over other transport protocols, such as File Transfer Protocol (FTP), Simple Mail Transfer Protocol (SMTP) or Internet Inter-ORB (Object Reference Broker) Protocol (IIOP). Through a prearranged agreement, two parties may begin transfer of messages on another protocol, and even if using HTTP as a way to make initial contact, parties may agree to change to another protocol after initial registration.

Specifics of transport protocols other than HTTP are negotiated outside of the OTA and beyond the realm of this version of the OTA version 2 architecture. OTA RECOMMENDS that each trading partner communicate the required transport protocol parameters to all of their other trading partners, and the remainder of the section provides guidance on discovering these requirements.

Trading partners can chose from a number of different Internet-based communications protocols that can support the exchange of OTA documents and requests/responses. Selection of a specific protocol depends upon the needs of the trading partners involved, and with any selection a variety of additional implementation issues will inevitably arise.

Parties implementing message exchanges will face the initial hurdle of understanding specific performance and message handling characteristics of the chosen protocol. For example, selection of HTTP, or even secure HTTP (HTTPS) protocol if security issues are important, still requires specifying the methods by which data are transferred to a server or host system. HTTP supports both a GET and a POST method for sending data to a server, but each method also has specific limitations and restrictions.

The HTTP GET method sends data to the server as name-value pairs, and requires URL encoding of any values to eliminate characters not understood by an HTTP server. HTTP POST returns a message to the originating client in the body of an HTML document, possibly the location for the response if originally an OTA request message was sent to the server.

Use of FTP-based message exchanges has other specific requirements. FTP requires some type of file naming convention be developed for files sent or received from a server, or placed in any FTP output area. And, as discussed below, selection of a specific message exchange protocol could have significant impact on the appropriate message security and coordination method (e.g. versioned versus non-versioned OTA messages) appropriate to a trading partner exchange.

Finally, each protocol adds a certain level of complexity to the overall error management tasks. Protocol, network, and server error messages and their handling can become a significant complication to the basic exchange of OTA messages among trading partners. In other words, actual implementation of a message exchange can be best viewed as a series of decisions on OTA message types, transport procedures, and security and error management that may easily differ from one trading partner exchange to another.

As cross-industry standard directories, such as the proposed Directory Services Markup Language (DSML), stabilize and provide the required capabilities, the OTA may adopt a distributed vendor directory model to allow for ad hoc communications between trading partners without requiring extensive manual processes. DSML (http://www.dsml.org/) is an initiative to represent directory services in XML, begun by Bowstreet (an XML software company) but now supported by leading companies in the industry: AOL/Netscape, IBM, Microsoft, Novell, Oracle, and Sun Microsystems. As of December 1999 DSML has been submitted to standards bodies for their consideration.

OTA may consider adopting the Internet-based Universal Description, Discovery, and Integration (UDDI) specification in order to enable trading partners to quickly, easily and dynamically find each other, negotiate protocols outside the OTA non-versioned message structure, and transact business between them. As of November 16, 2000, the UDDI Project, a broad coalition of business and technology companies, has announced the initial public beta testing of the UDDI Business Registry. The UDDI Business Registry is located at: http://www.uddi.org/.

Additionally, the ebXML technical architecture defines registry and repository services explicitly for purposes of trading partner and trading partner capability discovery. Once the ebXML Registry and Repository working group has published a specification, this is another technology that may be considered.

### 3.3. Use of XML Technology

OTA version 2 messages MUST meet the requirements of well-formed XML documents, as specified in XML Recommendation 1.0, published by the W3C. The document is available from the W3C online at http://www.w3.org/TR/1998/REC-xml-19980210 .

OTA version 1 messages SHOULD begin with the XML declaration indicating use of XML version 1.0. That declaration reads:

```
<?xml version ="1.0"?>
```

OTA version 1 was based solely on validation to document type definitions (DTDs). With the recommendation from W3C (2000-10-24) for the advancement of XML Schema to Candidate Recommendation status, OTA recognizes that the use of schema will provide a formal, non-ambiguous data typing capability to the specifications, allowing trading partners to make use of schema fragments within their own implementations if they choose to do so. As XML Schema evolves as a standard, it will eventually be accommodated by XML tools that will provide capabilities for validation. As a result, this OTA version 2 publication includes both a DTD for validation and schema files for use by trading partners who may prefer the use of schema for messages exchanged between them. The DTDs and Schemas can be found in Volume 2, Appendices.

Until such time as the capability for validation to schema becomes generally available, valid OTA version 2 messages MUST continue to meet the grammar rules specified in the document type definitions or DTDs. An example of a document type declaration is:

```
<!DOCTYPE OTA_CreateProfileRQ SYSTEM "OTA_CreateProfileRQ.dtd">
```

Valid messages SHOULD include a DOCTYPE declaration that follows the XML declaration, and that DOCTYPE declaration MAY include a document type definition (DTD) or a schema definition as agreed between trading partners. While OTA does not require that every message be validated during real-time transaction processing, such messages must meet the requirements of being able to be validated.

Both the XML and DOCTYPE declarations precede the root element of the payload document.

OTA non-versioned messages MUST refer to a DTD in order to be validated. See Chapter 5 - Errors and Non-Versioned Messages.

### 3.3.1.Message Composition and Grammar

This section defines the rules for the order and structure of the OTA travel-specific business messages. The rules for grammar composition define a consistent vocabulary that includes both infrastructure and travel-specific verbs, as described in the reference model above, and tag names that follow certain guidelines for naming conventions.

Most versioned OTA messages will have at least two payload documents: a Control document and one or more payload document(s) that begins with the root tag of the verb defining the action to be performed. The Control document consists of information about the connection with the trading partner, and infrastructure protocol information such as authentication security and session information.

One advantage of having a Control document and one or more individual payload documents is that the Control document will be affected by the work of standards organizations such as ebXML. Information in the Control document is generic and not travel specific, and this data will be more likely to change as XML standards develop further.

The payload document(s) contains the travel-specific information. A payload document is a Request or a Response message, and the root element of the payload MUST consist of the Action verb. This action verb is identified in the ebXMLHeader `<DocumentReference>` element within the **`<Manifest>`** element by the attribute ***`xlink:role`*** which identifies the URL, as well as the action to be performed by the message. Both the root element tag name and the action that appends the URL entered in the ***`xlink:role`*** attribute must be identical strings in order for the parser to be able to route the payload document and to the appropriate application handler for processing. Chapter 4, Message Structure, gives examples of the Manifest and Action verb construction.

### 3.3.2.Guidelines for tag naming conventions

A key part of the XML grammar is consistent naming conventions for tags that represent the infrastructure and business-related elements. Tag name writers MUST follow these rules unless business requirements require other naming conventions.

- Use mixed case tag names, with the leading character of each word in upper case and the remainder in lower case.
  Example: `<PaymentForm>`

- Acronyms are discouraged, but where needed, use all upper case.
  Example: `<PropertyURL>`

- Where acronyms or single-letter words cause two upper case characters to be adjacent, separate them with an underscore ( _ ) .
  Example: `<PO_Box>`

- Illegal characters cannot be used (e.g.: forward slash, etc.). Recommended characters in a tag name are basically limited to letters and underscores.
  Example: (not allowed) `<Date/Time>`

- The use of periods, which appeared in OTA version 1 to indicate the version and hierarchy, is discouraged.

Tag writers SHOULD use these guidelines when constructing tag names.

- Use the same tag names with elements in a similar child structure

  Example:
  ```
  <ContactAddress>
      <HomeAddress>
      <WorkAddress>
  ```

- Use plural tag names only for collections.

  Example:
  ```
  <CreditCards>
      <CreditCard>
  ```

- Element and attribute names should not exceed 25 characters. Tag names should be spelled out except where they exceed 25 characters, then standardized abbreviations should be applied, using the abbreviations in OTA Version 1 as a baseline.

  Example: `<ShareSyncInd>`

- Element and attribute names should incorporate the proposed list of suffixes for tag names as recommended by ebXML. The ebXML Data Element Representation Classes are the following (includes ebXML definition):

| | |
|---|---|
| Amount | A number of monetary units specified in a currency where the unit of currency is explicit or it may be implied. |
| Code | A character string that represents a member of a set of values. |
| Boolean | An enumerated list of two, and only two, values which indicates a condition such as on/off; true/false etc. (It was the general consensus to use ‘Flag’ as a term to indicate a Boolean value.) |
| Date | A day within a particular calendar year. Note: Reference ISO 8601. |
| Time | The time within any day in public use locally, independent of a particular day. Reference ISO 8601:1988. |
| DateTime | A particular point in the progression of time. Note: This may incorporate dependent on the level of precision, the concept of date, |
| Identifier | (standard abbreviation Id, meaning a unique identifier) A character string used to identify and distinguish uniquely, one instance of an object within an identification scheme. |
| Name | A word or phrase that constitutes the distinctive designation of a person, object, place, event, concept etc. |
| Quantity | A number of non-monetary units. It is normally associated with a unit of measure. |
| Number | A numeric value which is often used to imply a sequence or a member of a series. |
| Rate | A ratio of two measures. |
| Text | A character string generally in the form of words. |
| Measure | A numeric value that is always associated with a unit of measure. |

- OTA suggests the additional tag naming convention of ‘Type’ to be used for an enumeration.

| | |
|---|---|
| Type | An enumerated list of values from which only one value can be chosen at a time. |

Simple and Complex data types:

- A simple data type can be considered one of the basic data element representation types where only one tag is used and the data type is represented by the data within the tag (or an attribute within the element represented by the tag).

  Example: `<CreateDateTime>2000-07-28T17:12:00Z</CreateDateTime>`

- A complex data type is comprised of multiple simple types nested within the complex type. A complex data type could be considered an 'object'. The W3C data type timeDuration which consists of any two of three values, `<startInstant>, <duration>,` and `endInstant>` is an example of a complex data type.

  Example:
```
<timeDuration>
    <startInstant>1999-05-31T13:20:00</startInstant>
    <duration>+00000002T474000</duration>
</timeDuration>
```

OTA has designed its tag names to make them human-readable, which offers an advantage over traditional EDI coding that requires machine interpretation of even simple transactions or messages. With OTA's tags, parties can read the messages directly to see their content, which will make them accessible to many more trading partners than before, using no more than an XML-enabled Web browser.

### 3.3.3.Element/Attribute Guidelines

OTA has adopted guidelines for the use of attributes vs. elements, with the intention to reduce overall message size and avoid the potential of naming collisions. For a given data element, the preferred method is to represent that data-element as an attribute. The data-element is represented as an element if and only if:

- it is not atomic (i.e. It has attributes or child elements of its own) OR
- the anticipated length of the attribute value is greater than 64 characters OR
- presence or absence of the attribute represents a semantic 'choice' or branch within the schema OR
- the data element repeats (i.e. may have more than one instance)

## 3.4. OTA Infrastructure

This section describes a consistent approach for basic functions, including versioning, the maintenance of event logs, and the unique identification of a trading partner or specific record.

### 3.4.1.Versioning

To provide for both implementation stability and managed growth, OTA has adopted a practice of separating the infrastructure version from the version numbers of indivdual messages. Infrastructure changes, such as the addition of Header elements or changes in the method used to connect to trading partners and initiate authentication or security-related functions are included in an Infrastructure version. This specification, 2001A, documents the OTA infrastructure service interface in Chapter 4, Message Structure, which supports a modified version of the ebXML 0.21c header and the Version 2 Control document. That infrastructure is not anticipated to change until OTA adopts the Messaging Specification published by ebXML in its entirety.

In order to isolate and contain the scope of change with the addition of new business content and messages, when OTA releases a specification each new message introduced will be versioned starting with the number 1. This places the versioning of the messages at the level of message interaction, or the action verb that is the root of the payload document. When changes to a schema or the addition of content elements in a business function of OTA messages occur, the message version number is incremented by one whole number.

The *Version* attribute in the `<Schema>` element within the `<Manifest>` indicates the version of the referenced document transmitted in the payload. The identification of such metadata about the version at this level allows a trading partner to immediately identify whether its system can accept the document(s) and process them appropriately. It is no longer necessary to parse the entire documents in order to return an error message about version compatibility.

OTA will identify their publications by the year of publication, and sequential publications within a calendar year further identified by the letter A, B, C, or D, etc. For example, the first specification published in the year 2001 will be 2001A, and the second publication 2001B, etc. The publication will list all messages supported in the version, which may include new messages or revisions of existing messages. New messages will be published as version 1, and revised message sets will be incremented by N+1. With each publication, a list of valid enumerations supported for the *Type* attribute will be included.

Vendors and operators of OTA implementations, upon examining a specification, may discover content and messages that have been added or upgraded that are of interest to them and identify others that are irrelevant to their business functions.

### 3.4.2.Logging

Organizations offering OTA transactions SHOULD provide logging capability, regardless of the type of transaction in the business message (e.g., travel verbs, infrastructure verbs), and trading partners MAY exchange event logs to provide audit trails.

Because of the lack of widely used standards or conventions for defining event logs, OTA does not require use of a specific log format, nor does the message architecture preclude any logging capability.

### 3.4.3.Unique Identifier on Profiles

Each record that identifies a unique account of travel information, such as a profile or reservation record, MUST have a unique identifier assigned by the system that creates it with the tag name `<UniqueId>.` The unique identifier on the record MUST contain both a *Type* and an *Id* attribute. It MAY optionally include a *URL* and an *Instance* attribute. The syntax for a `<UniqueId>` is formally defined in the following DTD fragment:

```
<!ELEMENT UniqueId EMPTY>
<!ATTLIST UniqueId
      URL      CDATA #IMPLIED
      Type     (Profile)#REQUIRED
      Id       CDATA #REQUIRED
      Instance CDATA #IMPLIED
>
```

- *URL* - This optional attribute is what makes a `<UniqueId>` instance globally unique outside the context of a single bilateral conversation between known trading partners. OTA recommends that the URL referenced by the URL identifying the public HTTP v1.1 OTA discovery message implementation for each trading partner. ***Note***: In the absence of having a public URL, the reference for this attribute could be determined by bilateral agreement.

- *Type* - This enumerated attribute references the type of object this `<UniqueId>` refers to, and gives this element its generality. By convention, the *Type* attribute value is the same as the OTA element tag name for the referenced object, for example, "Profile". As additional message types are defined in future versions of OTA specifications, the *Type* attribute enumeration will expand to include additional tag names values where a `<UniqueId>` applies.

- *Id* - This represents a unique identifying value assigned by the creating system, using the XML data type ID. The *Id* attribute might, for example, reference a primary-key value within a database behind the creating system's implementation.

- *Instance* - This optional attribute represents the record as it exists at a point in time. An *Instance* is used in update messages where the sender must assure the server that the update sent refers to the most recent modification level of the object being updated.

Possible implementation strategies for *Instance* values are:

- a timestamp
- a monotonically increasing sequence (incremented on each update)
- an md5 sum of the binary representation of the object in its persistent store

#### 3.4.3.1. Examples of unique identifiers

A valid unique identifier MAY contain only the *Type* and *Id* (a unique string assigned by the system that created it) attributes:

```
<UniqueId Type="Profile" Id="1234567"/>
```

To ensure that a unique identifier is globally unique (in the universal namespace) add a *URL* attribute which includes a fully-qualified domain-name:

```
<UniqueId URL="http://vmguys.com/OTAengine/" Type="Profile"
Id="1234567"/>
```

This *Id* is assured of being globally unique in any namespace as the URL points to a vendor's version discovery implementation which, in turn, relies on the unique domain name for the vendor assigned via the INTERNIC. OTA has considered the potential effect a name change would have on globally unique identifiers, and noted that a change in URL or primary domain name should not present an issue unless another business entity assumes the previous URL unaltered.

#### 3.4.3.2. Rationale

The following table summarizes the equivalence relationships between the <v1.UniqueId> element, its children and their attributes and the OTA version 2 <UniqueId>:

| *V1 Element / Attribute* | *V2 Element /Attribute* | *Notes* |
|---|---|---|
| v1.UniqueId.TradingPartner.CompanyCode | UniqueId.URL | Used to help increase the likelihood of a unique id being truly unique. The introduction of a URL in v2 guarantees this. |
| v1.UniqueId.TradingPartner.CompanyCode.CodeContext | N/A | The codeContext was a qualifier to identify CompanyCode. In v2 this is implicit in the use of a URL and therefore not needed. |
| v1.ResourceId | UniqueId.Id | The unique id value assigned by the creating system |
| v1.ResourceId.ResourceContext | N/A | In v1 ResourceContext was used to increase the chances of uniqueness. No longer required in v2. |

This approach to unique naming takes into consideration the following benefits:

- provides a simpler, more succinct representation
- guaranteed to be a globally unique identifier within the universal namespace (with the introduction of the URL attribute)
- becomes applicable and reusable in other OTA specifications

### 3.5. Infrastructure Verbs

Defining certain actions at the infrastructure level reduces the need for reconciling verb conflicts that may arise from business-specific verbs. Infrastructure verbs are the root elements of a payload document. The basic operations include Create, Read, Update, and Delete – memorably abbreviated CRUD. These four verbs provide consistent conventions for basic actions affecting both infrastructure and business elements in OTA specifications.

The Create, Read, and Delete actions MUST apply only to entire records. Updates allow for addressing one or more individual elements, and making changes to part(s) of a record.

#### 3.5.1.Create verb

The Create infrastructure verb defines an operation that generates a new record with a unique identifier. The sequence follows these steps:

- Requestor sends a Create request along with the initial data, and optionally a unique identifier.
- Receiver creates a new record and assigns a unique identifier (e.g.: a Profile Id or Reservation Id).
- Receiver responds with a message providing a unique identifier for the new record created and optionally, any data entered by the requestor.

Example 1 - Create request message[5]

```
<OTA_CreateProfileRQ EchoToken="12345" TimeStamp="20001217T182248Z">
   <UniqueId Type="Profile"/>
   <Profile>
      <Customer Gender="Male">
         <PersonName>
            <GivenName>John</GivenName>
            <SurName>Smith</SurName>
         </PersonName>
            .....
      </Customer>
   </Profile>
</OTA_CreateProfileRQ>
```

Example 2 - Create response message

```
<OTA_CreateProfileRS EchoToken="12345" TimeStamp="20001217T182259Z"
   <Success />
   <UniqueId
      URL="http://www.basshotels.com/OTAProcessor"
      Type="Profile"
      Id="1234567"/>
</OTA_CreateProfileRS>
```

### 3.5.2.Read verb

The Read infrastructure verb defines an operation that opens an existing record and transmits information contained in that record. The Read operation enables the user to identify a particular record and retrieve its entire contents. The basic operation has the following steps:

- Requestor queries the database where the record resides by sending a Read request message with the profile's unique identifier
- Receiver returns the record to the requestor

The use of the revised OTA <UniqueId> element allows for a generalized read transaction message. With the object type specified via the *Type* attribute, the action type is identified within a general read request.

Example 3 - OTA_ReadRQ message

```
   <OTA_ReadRQ ReqRespVersion="2">
      <UniqueId
         URL="http://vmguys.com/OTAEngine/"
         Type="Profile"
         Id="0507-12345"/>
   </OTA_ReadRQ>
```

[5] We thank Adam Athimuthu for creating the sample Create" " messages.

- *ReqRespVersion* - The optional "Request Response Version" attribute allows the sender to indicate the version desired for the response message. For example, the OTA_ReadRQ message sample above indicates a request to return a version 2 OTA Customer Profile.

This request applies to all types of actions in addition to profiles. The type of the generated response depends, of course, on the *Type* specified in the request; for example, the `<OTA_ReadRQ>` shown in the example would generate a `<OTA_ReadProfileRS>` message that contains a version 2 OTA Profile as a response, as in the example below.

This generalization significantly reduces the maintenance burden for individual infrastructure verbs, with effectively zero loss in semantics.

This revision affects the original non-versioned version discovery messages published in the OTA version 1 specification, but with minor adjustments implementors of OTA specifications are able to take advantage of the significant long-term benefits that generalization provides.[6]

Example 4 - Read response message

```
<OTA_ReadProfileRS>
   <UniqueId
      URL="http://vmguys.com/OTAEngine/"
      Type="Profile"
      Id="0507-12345"/>
      Instance="20000531172200"
   <Profile>
      ...
      ...
   </Profile>
</OTA_ReadProfileRS>
```

An *Instance* value returned in a Read response, if not implemented as a timestamp, may specify the same instance value to all requestors until the record is changed by a subsequent action to the record, such as an update.

### 3.5.3.Update verb

The Update infrastructure verb defines an operation that opens an existing record, identifies the information that needs changing, then transmits data corresponding to the appropriate elements in the tree, and adds or replaces those data in the record.

Because Update operations are more complex and can affect parts of the record rather than the entire record, handling update messages can generally be more difficult.[7] As a result, two approaches to updating records are defined in this OTA version 2 specification.

The goals considered in the design of the Update operation include:

- Minimizing the size of a payload on the wire to represent an update transaction

[6] See Chapter 5 - Errors and Non-Versioned Messages

[7] We thank David Marshall, VM Systems, Inc. and Michael Guidone, Pegasus Solutions, for drafting the approach to performing the Update process presented here.

- Defining an explicit representation about what has changed
- Defining a representation with a clear and simple conceptual model
- Creating a representation that is content-independent and general-purpose in nature so as to be reusable throughout future OTA specifications
- Providing a simple-to-implement "replace" option to allow developers to get simpler implementations running quickly - at the expense of the first 2 goals (representation of change and size of message) above.

Because data to be modified may be stored in a database and not in an XML document format, it may not be possible to reconstruct the original document that transmitted the data. Therefore, it is RECOMMENDED that implementors utilizing the partial update process perform a Read request to obtain the structure of the XML tree prior to constructing an Update request.

#### 3.5.3.1. Representing change in XML

Representing change is not a problem unique to the OTA. The approach presented in this specification includes current use of the following:

- library utilities that can compare before and after images of a particular XML document and then generate a succinct representation of the differences (conceptually similar to a GNU *diff* utility)
- a representation for differences that is both human readable and understandable by automated tools
- library utilities that can take an XML document, apply a differences document and generate the same after image (conceptually similar to a GNU *patch* utility)

Applying an Update action involves a tree-to-tree comparison, similar to well-known operations outside the XML arena. This specification assumes that prior to sending an `<OTA_UpdateRQ>` message, the sender has used standard libraries to generate the differences between the 'before' and desired 'after' images of the XML document. Implementors may wish to consult documentation of algorithms for tree-to-tree comparison and correction in computer science publications[8], to provide the background for understanding this XML-specific approach.

#### 3.5.3.2. Position Representation with XPath

The general concept of an OTA generic update request is to send a `<Position>` element followed by one or more operations to be applied at that position. XPath is a well-known W3C recommendation for representing a node in an XML document. The two best known applications of XPath are within XSL and Xlink (themselves XML recommendations).

Within the OTA update representation, XPath is used to reference a specific element within a source document. This XPath is encoded within the *XPath* attribute in the `<Position>` element. In OTA update messages, the *XPath* attribute within any given `<Position>` will always refer to an element, and this explanation therefore is restricted to that proper subset of XPath notation which refers to elements. The representation of `<Position>` followed by one or

[8] For an excellent paper outlining the commonalties and differences between the best known algorithms see: "Tree-to-tree Correction for Document Trees", Technical Report 95-372 by David T. Barnard, Gwen Clarke and Nicholas Duncan (available from Queen's University, Kingston Ontario at: ftp://ftp.qucis.queensu.ca/pub/reports/1995-372.ps )

more operations is used, as updates will often consist of more than one operation to be performed at the same position. This representation will often be shorter than the alternative of embedding an XPath position explicitly within each operation.

It is important to note that when processing a differences document, insertion or deletion of nodes may invalidate subsequent XPath references. This is addressed in the section "Order of Representation and Application" (See Section 3.5.6.5).

#### 3.5.3.3. Operands

In keeping with the design goals of minimal representation and explicit representation of change, changes are represented as occurring at four different levels, using the following operands:

- *Attribute* - performs an operation on the attribute *name* of the currently selected Element
- *Element* - performs an operation on the structure (i.e. content or children) of the currently selected element (but not its attributes)
- *Subtree* - allows for the grafting or pruning of an element which has its own children
- *Root* - this special attribute is ONLY used for a simple 'replace' alternative where an updated representation of the entire object is sent as opposed to sending the incremental differences

In the case of `<Element>` and `<Subtree>` operands, insert operations are performed on children of the selected Element (selection is made via the `<Position>` *Xpath* attribute). Children are always specified via the *Child* attribute, which is a zero-relative integer where children positions are specified left-to-right, with position zero indicating the leftmost child.

#### 3.5.3.4. Operations

Operations are specified on an operand via the Operation attribute. Operations are "*insert*", "*modify*" and "*delete*", though the "*modify*" operation is not applicable to the operand `<Subtree>`. The operand `<Root>` is the only operand to have the special "*replace*" operation.

The following table describes the result of each operation on its associated operand:

| ***Operand*** | ***Operation*** | ***Description*** |
|---|---|---|
| `Attribute` | `insert` | The attribute *name* with value *value* will be added to selected element |
| `Attribute` | `modify` | The value of the attribute *name* will be changed to *value* on the selected element |
| `Attribute` | `delete` | The attribute *name* will be deleted from the selected element |
| `Element` | `insert` | A child element will be inserted beneath the currently selected element. This child will be inserted at zero-relative position *Child* (see also Subtree insert) |
| `Element` | `modify` | The value of the currently selected element will be modified to the value specified. The text content of an element is removed by using a modify operation with a null replacement value. |
| `Element` | `delete` | The currently selected element is deleted. If this element |

| | | |
|---|---|---|
| | | has children of its own, these children will become children of their grandparent in the tree, with their position being equivalent to an insertion at the point previously occupied by the current element. Use Subtree delete to remove an Element and all its children from its currently selected parent |
| Subtree | insert | The subtree will be inserted beneath the currently selected element. This subtree will be inserted as a child at position *child* (see also Element insert) |
| Subtree | delete | The subtree beginning at the currently selected element will be deleted (use Element delete if an element is to be removed, but its children preserved) |
| Root | replace | A replacement representation of the entire document object follows. This operation allows implementors to avoid the complexity of the difference representation and send a full 'after' image of the updated document object |

Although it is possible to replace the entire tree by performing a <Subtree> *delete* operation on the root, it is not possible to then insert a new subtree as a replacement. The <Root> *replace* operation is provided for this purpose.

The syntax for an <OTA_UpdateRQ> is formally defined in the following DTD fragment:

```
<!ELEMENT OTA_UpdateRQ (UniqueId,Position+)>
<!ELEMENT Position ((Attribute*,Element*,Subtree*)|Root)>
<!ATTLIST Position
      XPath CDATA #REQUIRED
>
<!ELEMENT Attribute EMPTY>
<!ATTLIST Attribute
      Operation (insert|modify|delete)#REQUIRED
      Name CDATA #REQUIRED
      Value CDATA #IMPLIED
>
<!ELEMENT Element ANY>
<!ATTLIST Element
      Operation (insert|modify|delete)#REQUIRED
      Child CDATA #IMPLIED
>
<!ELEMENT Subtree ANY>
<!ATTLIST Subtree
      Operation (insert|delete)#REQUIRED
      Child CDATA #IMPLIED
>
<!ELEMENT Root ANY>
<!ATTLIST Root
      Operation (replace)#REQUIRED
>
```

#### 3.5.3.5. Order of Representation and Application

The XPath notation is used to determine the position in an XML document where operations are to be applied. As that position is specified via XPaths, it is entirely possible that application of an operation will invalidate subsequent XPath expressions if care is not taken explicitly in the order of presentation.

An XML document is inherently a tree, and when considering an XML document, the most natural order for presentation is a depth-first pre-order traversal (this is the way in which an XML document is represented in XML notation). Unfortunately, that order is the one that is most likely to invalidate XPaths when applying differences in order.

Therefore, for purposes of representing differences in an update message, positions and operations are presented in an order which favors a post-order traversal[9]. This ensures that differences may be applied sequentially to a source document to transform it into a target without invalidating the XPath of any subsequent unprocessed difference.

A brief illustration will help make this point clearer. Assuming the following abstract source document:

```
<A>
   <B>
      <C/>
      <D>
         <E/>
      </D>
   </B>
   <F>
      <G>
         <H/>
      </G>
      <I>
         <J/>
      </I>
   </F>
</A>
```

The depth-first pre-order traversal presents elements in the following sequence:
`<A><B><C><D><E><F><G><H><I><J>`

However, a post-order traversal presents elements in the following alternate sequence:
`<C><E><D><B><H><G><J><I><F><A>`

When considering tree-traversals in the context of XML, perhaps the easiest way to think of it is as follows:

- depth-first pre-order traversal presents elements in the order that opening tags occur
- post-order traversal presents elements in the order that element closure occurs (i.e. follow the closing tags)

An additional requirement for order is placed on repeating sequences of elements, as follows:

[9] It should be noted that the fastest known algorithms for tree-to-tree correction operate on a post-order traversal

When operation(s) are to be performed on more than one element in a repeating sequence the `<Position>` for those elements in the sequence must be presented from right-to- left, i.e. from the largest index to the smallest.

By presenting and applying differences using a post-order traversal representation (and reverse index order for repeating sequences) operations applied to the current position cannot break the XPath to a subsequent position as later operations are deeper within the tree (closer to the root) down any given branch.

#### 3.5.3.6. Update Examples

Given the difference representation above, the following examples illustrate this technique. These examples illustrate a chain of updates, showing before and after images at each step. All these changes are designed to be incremental, that is, the "after" image from the previous update becomes the "before" image for the next update.

Example 5 - Initial Document "Before" Image

```
<Profile>
   <Customer>
      <PersonName NameType="Default">
         <NameTitle>Mr.</NameTitle>
         <GivenName>George</GivenName>
         <MiddleName>A.</MiddleName>
         <SurName>Smith</SurName>
      </PersonName>
      <TelephoneInfo PhoneTech="Voice" PhoneUse="Work" >
         <Telephone>
            <AreaCityCode>206</AreaCityCode>
            <PhoneNumber>813-8698</PhoneNumber>
         </Telephone>
      </TelephoneInfo>
      <PaymentForm>
         ...
      </PaymentForm>
      <Address>
            <StreetNmbr POBox="4321-01">1200 Yakima St</StreetNmbr>
            <BldgRoom>Suite 800</BldgRoom>
            <CityName>Seattle</CityName>
            <StateProv PostalCode="98108">WA</StateProv>
            <CountryName>USA</CountryName>
      </Address>
   </Customer>
</Profile>
```

Example 6 - Update of AreaCode using <`Root Operation="replace"/`>

Note that the operation `"modify"` replaces the PCDATA within the element. In order to delete the data, the update request is sent with empty content in the element. (A `"delete"` operation deletes the entire element.)

Example 7 - Update of RelatedTraveler using <Subtree Operation="insert"/>

```
<OTA_UpdateRQ ReqRespVersion="2">
   <UniqueId   URL=" http://vmguys.com/OTAEngine/"
               Type="Profile"
               Id="12345678"
               Instance="8"/>
   <Position XPath="/Profile/Customer">
      <Subtree Operation="insert" Child="4">
         <RelatedTraveler Relation="Child" >
            <PersonName>
               <GivenName>Devin</GivenName>
               <MiddleName>R.</MiddleName>
               <SurName>Smith</SurName>
            </PersonName>
         </RelatedTraveler>
      </Subtree>
      <Subtree Operation="insert" Child="5">
         <RelatedTraveler Relation="Child" >
            <PersonName>
               <GivenName>Amy</GivenName>
               <MiddleName>E.</MiddleName>
               <SurName>Smith</SurName>
            </PersonName>
         </RelatedTraveler>
      </Subtree>
      <Subtree Operation="insert" Child="6">
         <RelatedTraveler Relation="Child" >
            <PersonName>
               <GivenName>Alfred</GivenName>
               <MiddleName>E.</MiddleName>
               <SurName>Newman</SurName>
            </PersonName>
         </RelatedTraveler>
      </Subtree>
   </Position>
</OTA_UpdateRQ>
```

Example 8 - Documents image after <Subtree Operation="insert"/> applied

```
<Profile>
   <Customer>
      <PersonName NameType="Default">
         <NameTitle>Mr.</NameTitle>
         <GivenName>George</GivenName>
         <MiddleName>A.</MiddleName>
         <SurName>Smith</SurName>
      </PersonName>
      <TelephoneInfo PhoneTech="Voice" PhoneUse="Work"
         <Telephone>
            <AreaCityCode>253</AreaCityCode>
            <PhoneNumber>813-8698</PhoneNumber>
         </Telephone>
      </TelephoneInfo>
      <PaymentForm>
         ...
```

```
      </PaymentForm>
      <Address>
         <StreetNmbr POBox="4321-01">1200 Yakima St</StreetNmbr>
         <BldgRoom>Suite 800</BldgRoom>
         <CityName>Seattle</CityName>
         <StateProv PostalCode="98108">WA</StateProv>
         <CountryName>USA</CountryName>
      </Address>
      <RelatedTraveler Relation="Child"
         <PersonName>
            <GivenName>Devin</GivenName>
            <MiddleName>R.</MiddleName>
            <SurName>Smith</SurName>
         </PersonName>
      </RelatedTraveler>
      <RelatedTraveler Relation="Child"
         <PersonName>
            <GivenName>Amy</GivenName>
            <MiddleName>E.</MiddleName>
            <SurName>Smith</SurName>
         </PersonName>
      </RelatedTraveler>
      <RelatedTraveler Relation="Child"
         <PersonName>
            <GivenName>Alfred</GivenName>
            <MiddleName>E.</MiddleName>
            <SurName>Newman</SurName>
         </PersonName>
      </RelatedTraveler>
   </Customer>
</Profile>
```

Example 9 - Update of document using <Subtree Operation="delete"/>

This operation will delete the first and third Related Travelers. (Note the required order of the operations):

```
<OTA_UpdateRQ ReqRespVersion="2">
   <UniqueId   URL="http://vmguys.com/OTAEngine/"
               Type="Profile"
               Id="12345678"
               Instance="9"/>

   <Position XPath="/Profile/Customer/RelatedTraveler[2]">
      <Subtree Operation="delete"/>
   </Position>
   <Position XPath="/Profile/Customer/RelatedTraveler[0]">
      <Subtree Operation="delete"/>
   </Position>
</OTA_UpdateRQ>
```

**Note:** Use of the <Delete> element removes a designated element from the tree. Any children of the element removed will move up to the grandparent of the element. If the desired result is the removal of the element and all of its children, the element <Subtree> paired with the operation "delete" should be used, as in the example above.

Example 10 - Document image after <Subtree Operation="delete"/> applied.

```
<Profile>
   <Customer>
      <PersonName NameType="Default">
         <NameTitle>Mr.</NameTitle>
         <GivenName>George</GivenName>
         <MiddleName>A.</MiddleName>
         <SurName>Smith</SurName>
      </PersonName>
      <TelephoneInfo PhoneTech="Voice" PhoneUse="Work" >
         <Telephone>
            <AreaCityCode>253</AreaCityCode>
            <PhoneNumber>813-8698</PhoneNumber>
         </Telephone>
      </TelephoneInfo>
      <PaymentForm>
         ...
      </PaymentForm>
      <AddressInfo>
         <Address>
            <StreetNmbr POBox="4321-01">1200 Yakima St</StreetNmbr>
            <BldgRoom>Suite 800</BldgRoom>
            <CityName>Seattle</CityName>
            <StateProv PostalCode="98108">WA</StateProv>
            <CountryName>USA</CountryName>
         </Address>
      </AddressInfo>
      <RelatedTraveler Relation="Child" >
            <PersonName>
               <GivenName>Amy</GivenName>
               <MiddleName>E.</MiddleName>
               <SurName>Smith</SurName>
            </PersonName>
      </RelatedTraveler>
   </Customer>
</Profile>
```

Example 11 - Update of document using <Attribute Operation="modify"/>

This operation will change the TelephoneInfo PhoneUse attribute.

```
<OTA_UpdateRQ ReqRespVersion="2">
   <UniqueId   URL="http://vmguys.com/OTAEngine/"
               Type="Profile"
               Id="12345678"
               Instance="10"/>

   <Position XPath="/Profile/Customer/TelephoneInfo">
      <Attribute Name="PhoneUse" Operation="modify" Value="Home"/>
   </Position>
</OTA_UpdateRQ>
```

Example 12 - Document image after <Attribute Operation="modify"/> applied

```
<Profile>
   <Customer>
      <PersonName NameType="Default">
         <NameTitle>Mr.</NameTitle>
         <GivenName>George</GivenName>
         <MiddleName>A.</MiddleName>
         <SurName>Smith</SurName>
      </PersonName>
      <TelephoneInfo PhoneTech="Voice" PhoneUse="Home">
         <Telephone>
            <AreaCityCode>253</AreaCityCode>
            <PhoneNumber>813-8698</PhoneNumber>
         </Telephone>
      </TelephoneInfo>
      <PaymentForm>
         ...
      </PaymentForm>
      <AddressInfo>
         <Address>
            <StreetNmbr PO_Box="4321-01">1200 Yakima St</StreetNmbr>
            <BldgRoom>Suite 800</BldgRoom>
            <CityName>Seattle</CityName>
            <StateProv PostalCode="98108">WA</StateProv>
            <CountryName>USA</CountryName>
         </Address>
      </AddressInfo>
      <RelatedTraveler Relation="Child">
            <PersonName>
               <GivenName>Amy</GivenName>
               <MiddleName>E.</MiddleName>
               <SurName>Smith</SurName>
            </PersonName>
      </RelatedTraveler>
   </Customer>
</Profile>
```

Example 13 - Update of document using <Attribute Operation="delete"/>

This operation will delete the PO_Box attribute of StreetNmbr.

```
<OTA_UpdateRQ ReqRespVersion="2">
   <UniqueId   URL="http://vmguys.com/OTAEngine/"
               Type="Profile"
               Id="12345678"
               Instance="11"/>

   <Position Xpath="/Profile/Customer/AddressInfo/Address/StreetNmbr">
      <Attribute Name="PO_Box" Operation="delete"/>
   </Position>
</OTA_UpdateRQ>
```

Example 14 - Document image after <Attribute Operation="delete"/> applied

```
<Profile>
   <Customer>
      <PersonName NameType="Default">
         <NameTitle>Mr.</NameTitle>
         <GivenName>George</GivenName>
         <MiddleName>A.</MiddleName>
         <SurName>Smith</SurName>
      </PersonName>
      <TelephoneInfo PhoneTech="Voice" PhoneUse="Home">
         <Telephone>
            <AreaCityCode>253</AreaCityCode>
            <PhoneNumber>813-8698</PhoneNumber>
         </Telephone>
      </TelephoneInfo>
      <PaymentForm>
         ...
      </PaymentForm>
      <AddressInfo>
         <Address>
            <StreetNmbr>1200 Yakima St</StreetNmbr>
            <BldgRoom>Suite 800</BldgRoom>
            <CityName>Seattle</CityName>
            <StateProv PostalCode="98108">WA</StateProv>
            <CountryName>USA</CountryName>
         </Address>
      </AddressInfo>
      <RelatedTraveler Relation="Child">
            <PersonName>
               <GivenName>Amy</GivenName>
               <MiddleName>E.</MiddleName>
               <SurName>Smith</SurName>
            </PersonName>
      </RelatedTraveler>
   </Customer>
</Profile>
```

Example 15 - Update of document using <Attribute Operation="insert"/>, <Element Operation="delete"/>, and <Element Operation="insert"/>

These compound operations will insert the Gender attribute on Customer, delete the MiddleName, and insert NameTitle on the Related Traveler:

```
<OTA_UpdateRQ EchoToken="12345" TimeStamp="20001217T182259Z"
ReqRespVersion="2">
   <UniqueId   URL="http://vmguys.com/OTAEngine/"
               Type="Profile"
               Id="12345678"
               Instance="12"/>

   <Position XPath="/Profile/Customer/PersonName/MiddleName">
      <Element Operation="delete"/>
   </Position>
   <Position
XPath="/Profile/Customer/RelatedTraveler/RelatedPerson/PersonName">
      <Element Operation="insert">
```

```
         <NameTitle>Ms.</NameTitle>
      </Element>
   </Position>
   <Position XPath="/Profile/Customer">
      <Attribute Name="Gender" Operation="insert" Value="Male"/>
   </Position>
</OTA_UpdateRQ>
```

Example 16 - Document image after <Attribute Operation="insert"/>, <Element Operation="delete"/>, and < Element Operation="insert"/> applied

```
<Profile>
   <Customer Gender="Male">
      <PersonName NameType="Default">
         <NameTitle>Mr.</NameTitle>
         <GivenName>George</GivenName>
         <SurName>Smith</SurName>
      </PersonName>
      <TelephoneInfo PhoneUse="Home">
         <Telephone PhoneTech="Voice" >
            <AreaCityCode>253</AreaCityCode>
            <PhoneNumber>813-8698</PhoneNumber>
         </Telephone>
      </TelephoneInfo>
      <PaymentForm>
         ...
      </PaymentForm>
      <Address>
         <StreetNmbr>1200 Yakima St</StreetNmbr>
         <BldgRoom>Suite 800</BldgRoom>
         <CityName>Seattle</CityName>
         <StateProv PostalCode="98108">WA</StateProv>
         <CountryName>USA</CountryName>
      </Address>
      <RelatedTraveler Relation="Child">
         <PersonName>
            <NameTitle>Ms.</NameTitle>
            <GivenName>Amy</GivenName>
            <MiddleName>E.</MiddleName>
            <SurName>Smith</SurName>
         </PersonName>
      </RelatedTraveler>
   </Customer>
</Profile>
```

#### 3.5.3.7. Validation of Update Messages

The update request message is a valid message within its own structure, but since it identifies only a portion of the content of an XML tree, it cannot be validated in the context of the business schema. Validation at the level of the business schema must occur after the update has been completed. Implementors may wish to validate the image of the document before changes have been applied and again after the changes have been applied in order to ascertain that the desired result has been obtained and is valid within the business context.

### 3.5.4.The Simple "Replace" verb

The Replace infrastructure verb defines an operation that updates an existing record by replacing the existing information with a complete overlay image of the document as it would appear after changes are applied. The Replace verb does not require a Read request to obtain an image of the current record prior to sending the message to replace it with the information being transmitted, although this may be desirable from the standpoint of good business practice.

The "replace" verb allows implementors greater flexibility in choosing how they wish to perform updates of information, since difference representation may be bypassed and a simple replacement image of the document object to be updated is sent. This reduces the complexity of handling updates for some implementations, but at the expense of size of the messages.

Example 17 - The following XML document fragment illustrates the "*replace"* type update:

```
<OTA_UpdateRQ ReqRespVersion="2">
   <UniqueId   URL="http://vmguys.com/OTAEngine/"
               Type="Profile"
               Id="12345678"
               Instance="7"/>
   <Position XPath="/Profile">
      <Root Operation="replace">
         <Profile>
            ...
            <!-- include entired updated 'after' image here -->
            ...
         </Profile>
      </Root>
   </Position>
</OTA_UpdateRQ>
```

### 3.5.5.The Delete verb

The Delete infrastructure verb defines an operation that identifies an existing record, and removes the entire record from the database. The use of the Delete verb depends upon the business rules of an organization. Alternative strategies, such as mapping a duplicate record to another by use of the UniqueId, may be considered.

The requestor MAY also verify the record before deleting it to ensure the correct record has been identified prior to deleting it. In this case, the use of the *Instance* attribute may also be useful in determining whether the record has been updated more recently than the information that is intended to be deleted. That choice, again, would be dictated by good business practices.

Steps in the Delete operation include:

- Requestor submits a Read request to view the record
- Receiver returns the record for the requestor to view
- Requestor submits a Delete request.
- Receiver removes the record and returns an acknowledgement

Example 18 - This example illustrates the Delete process, Read request

```
<?xml version="1.0" encoding="UTF-8"?>
<OTA_ReadRQ ReqRespVersion="2">
   <UniqueId>
      URL=http://vmguys.com/OTAEngine/
      Type="Profile"
      Id="0507-12345"
   </UniqueId>
</OTA_ReadRQ>
```

Example 19 - This example illustrates the Delete process, Read response

```
<?xml version="1.0" encoding="UTF-8"?>
<OTA_ReadProfileRS>
   <UniqueId>
      URL="http://vmguys.com/OTAEngine/"
      Type="Profile"
      Id="0507-12345"
      Instance="2"
   </UniqueId>
   <Profile>
   ...
   </Profile>
</OTA_ReadProfileRS>
```

Example 20 - This example illustrates the Delete request

```
<?xml version="1.0" encoding="UTF-8"?>
<OTA_DeleteRQ ReqRespVersion="2">
   <UniqueId>
      URL="http://vmguys.com/OTAEngine/"
      Type="Profile"
      Id="0507-12345"
      Instance="2"
   </UniqueId>
</OTA_DeleteRQ>
```

Example 21 - This example illustrates the Delete response

```
<?xml version="1.0" encoding="UTF-8"?>
<OTA_DeleteRS>
   <UniqueId>
      URL="http://vmguys.org/OTAEngine/"
      Type="Profile"
      Id="0507-12345"
      Instance="2"/>
   </UniqueId>
   <Success/>
</OTA_DeleteRS>
```

### 3.6. XML Extensions

Trading partners using the minimum functionality defined in OTA specifications, may have a need to include proprietary data within messages exchanged between them. By defining a specific element, <TPA_Extensions> of the data type, ANY, at sanctioned plug-in points for

bilaterally-agreed trading partner extensions, the OTA version 2 specification allows for extensibility within conforming implementations.

Trading partner extensions are formally noted by the use of the definition:

```
<!ELEMENT TPA_Extensions ANY>
```

Specific locations have been designated in logical places throughout OTA specifications for trading partners to add their own data. The OTA version 2 specification identifies extension points where the trading partners may add their own extensions within the framework of valid messages.

The customer profile element is redefined to include this extension as follows:

```
<!ELEMENT Profile (Accesses?, Customer, Preferences?,
Affiliation*, TPA_Extensions? )>
```

This same element is found at specific locations throughout the DTD/Schema. This reusability avoids namespace clutter and retains conformance with the OTA version 2 specification.

Trading partners will need to write their own schemas to cover items not included in the version 2 specification Trading partners are encouraged to submit extensions widely used between multiple trading partners for consideration to become part of future revisions of OTA specifications.

# 4. Message Structure

### 4.1. Header and Payload Documents

OTA endorses a modified version of the ebXML structure of a Header Document inside the ebXML Message Envelope (MIME multipart/related) wrapper. (See section 3.1 for a discussionof the use of MIME for an ebXML/OTA message envelope).

### 4.2. ebXML Header Document

[from Message Service Specification v0.8.doc]
The ebXML Header Envelope is the wrapper for an ebXMLHeader document that consists of two parts:

- Manifest - a single section that contains a list of references to the other parts of the message.
- Header - contains the information required by the recipient to process the message

**Manifest** - The OTA Version 2 message structure consists of ONE Manifest section. The Manifest SHALL be the first element contained in the ebXMLHeader Envelope. It identifies the payload document(s) contained in the Payload Container. The purpose of the Manifest is to make it easier to directly extract a particular document associated with the Message.

**Header** - OTA has chosen to ignore the Header portion of the ebXMLHeader and use the OTA Control section to define the trading partner information required for connectivity, which includes the identification of synchronous or asynchronous messaging, and a capability to indicate distribution of messages to third parties.

#### 4.2.1. Manifest element

[from Message Service Specification v0.8.doc]
The REQUIRED Manifest element is consists of zero or more DocumentReference elements. If the Manifest is an empty XML element, a payload MUST NOT be present.

#### 4.2.2.DocumentReference element

Each DocumentReference element identifies data associated with the message, whether included as part of the message, or remote resources accessible via a URL. The Document Reference is represented as an XLink simple link, an outbound link with exactly two participating resources.[10] The use of the XLink namespace and its element and attribute semantics provides a more precise definition of the Manifest element.

The DocumentReference element is a composite element, and in the format adopted for OTA's use in version 2 messaging, contains six attributes and one subordinate element as follows:

- ***xlink:type*** = "simple" Denotes the document reference type is a simple XLink and has a fixed **value.**
- ***xlink****:href* = Identifies the URL of the Content-ID in the MIME header of the message, as defined in [RFC2392]. *XLink:href* is a REQUIRED attribute.
- ***xlink:role*** = a URI reference to the request message type for a specific business process. For OTA, this identifies the action verb that is the root element of the payload document. *XLink:role* is a REQUIRED attribute.

[10] For complete explanation of XLinks, see http://www.w3.org/TR/xlink

- ***sequence*** = A one-relative sequence that defines the order of processing to be taken on a series of DocumentReference elements listed in the Manifest. *Sequence* is an optional attribute.
- ***docref*** = An optional attribute of XML data type ID used to cross-reference related pairs of documents to one another. The value of the *docref* is identical to the *xlink:href* attribute as it identifies the document within the DocumentReference.
- ***docxref*** = An optional attribute of XML data type IDREF used to cross-reference a related document to this document. The value of the *docxref* is identical to the *xlink:href* attribute of the related DocumentReference.

#### 4.2.2.1. Schema sub-element

The Schema element is a REQUIRED child element of DocumentReference that identifies the version and location of the validating schema of the referenced payload document.

- ***version*** = The *version* attribute indicates the version of the payload message identified in this DocumentReference. *Version* is a REQUIRED attribute. This attribute allows the document's schema or DTD to be reflected externally to the referenced document and enables trading partners to determine whether they support the referenced version before attempting to process the document. (See Chapter 4, Section 4.3.1, for a description of the versioning scheme of OTA specifications.)
- ***location*** = The *location* attribute identifies the location of the validating DTD or schema and allows the software agent processing the message to access it externally to the payload document.

The DTD fragment for the Manifest element adopted from the ebXML Header is as follows:

```
<!ELEMENT Manifest (DocumentReference*)>
<!ATTLIST Manifest
    xmlns:xlink CDATA #FIXED "http://www.w3.org/1999/xlink"
>
<!ELEMENT DocumentReference (Schema)>
<!ATTLIST DocumentReference
    xlink:type CDATA #FIXED "simple"
    xlink:href CDATA #REQUIRED
    xlink:role CDATA #REQUIRED
    sequence CDATA #IMPLIED
    docref ID #IMPLIED
    docxref IDREF #IMPLIED
    a-dtype NMTOKENS "sequence int"
>
<!ELEMENT Schema EMPTY>
<!ATTLIST Schema
    version CDATA #REQUIRED
    location CDATA #IMPLIED
>
```

### 4.3. ebXML Payload Envelope

If the OTA message contains a payload, OTA recommends the use of a single payload container to envelop it. OTA has adopted the ebXML Payload Envelope and follows these rules: If there is no payload within the OTA message then the payload container MUST not be present. The

contents of the payload container MUST be identified by the message Manifest element within the ebXML Header envelope (see Chapter 4, Section 4.2 above).

If the message Manifest is an empty XML element, the ebXML Payload Container MUST NOT be present in the Message. If an ebXML Payload Container is present, it MUST conform to MIME [RFC2045].

When one and only one payload document is present in the message (as in the case of OTA non-versioned messages) the payload document is preceded by a standard set of MIME headers (Content-ID, Content-Length and Content-Type), as defined in the ebXML Transport, Routing and Packing (TR&P) specification.

When two or more payload documents are present in the message all payload documents MUST be enveloped within a single MIME multipart/related container, each payload document representing a separate and distinct MIME part within that container. Each of these separate MIME parts shall have a standard set of MIME headers (Content-ID, Content-Length and Content-Type) whose definition and usage shall be as per the ebXML TR&P specification.

The use of a MIME envelope means that applications can identify the associated MIME type of each payload document. Since multiple documents are allowed within the payload envelope, there can be a mixture of encrypted and non-encrypted content, which are identified in the MIME header of each document.

The ebXML Payload Envelope is the wrapper for OTA documents and MUST contain at least two parts for all OTA versioned messages:

- **Control** - a single document that contains the elements needed to identify and authenticate the parties, and used for security of the connection, identifying whether the connection is to be maintained synchronously or asynchronously.
- **Payload Document(s)** - contains the travel content information required by the recipient to perform the operation requested and process the message. OTA payload documents begin with the Action Verb as the root element of the document.

By convention, within the `<Manifest>`, the Control document `<DocumentReference>` shall appear before any payload document `<DocumentReference>`s.

### 4.4. Control document

The OTA `<Control>` element contains the information required by the recipient to process the message, and is used in OTA Version 2 to replace the Header element in the ebXML structure, supplying a static message structure that trading partners implement while allowing the ebXML TPA Info structure to evolve.

The Control document MUST begin with the tag `<Control>` and end with the tag `</Control>`.

The Control document contains one mandatory element (a choice of Session or SendBy), as represented in the following DTD fragment:

```
<!ELEMENT Control ((Session | SendBy))>
<!ATTLIST Control
  %OTA_PayloadStdAttributes; >
```

The <Control> document MAY contain the following (optional) payload standard attributes as defined by the entity %PayloadStdAttributes;

- ***EchoToken*** **-** The EchoToken attribute is a sequence number [or other unique identifying string] for additional message identification assigned by the host system. When a request message includes an EchoToken, the corresponding response message MUST include an EchoToken with an identical value.

- ***Timestamp*** **-** A Timestamp attribute indicates the creation date and time of the message using the following format specified by ISO 8601: YYYY-MM-DDThh:mm:ss with time values using the 24-hour (military) clock. It is RECOMMENDED that the timestamp attribute be represented in UTC (Universal Coordinated Time).
  *Example:* 29 May 2001, 2:45:30 p.m. UTC, becomes 2001-05-29T14:45:30Z

  **Note*:*** Universal Time (UTC) notation has been chosen to take into consideration time zone anomalies, such as Arizona and Indiana that do not observe daylight savings time and a few countries have created time zones all their own (Iran, Liberia). The receiving system is tasked to convert the Timestamp into local time.

- ***Target*** **-** The Target attribute indicates if the message is a test or production message, with the default value of Production. Valid values: (Test | Production)

- ***Version*** **-** The version of the Control document indicated by an integer value. The default value for this version of OTA Infrastructure in "2".

- ***SequenceNmbr*** **-** The sequence number of the transaction as assigned by the sending system. Allows for an application to process messages in a certain order, or to request a resynchronization of messages in the event that a system has been offline and needs to retrieve messages that were missed.

The following is an example of the Control root tag with the following optional attributes:

```
<Control EchoToken = "4321" Timestamp = "2000-05-22T11:23:09"
Target = "Production" Version = "2" SequencNmbr = "1234567">
```

### 4.5. Session vs. SendBy elements

This OTA specification defines two security models: Session-based, and Non-Session-based. The Control document will contain the elements needed to identify and authenticate the parties, and MUST contain one of the following elements:

- **Session** - Indicates a session-based, or synchronous, transaction that allow for both single and multiple system log-ons over a period of time. At the tradeoff of increased complexity with the OTA message structure and message protocols, Session-based security enables an OTA trading partner to provide single-log-in functionality to clients across multiple systems within an enterprise.
- **SendBy** - Indicates a non-session-based, or asynchronous, transaction that allow only for single-system log-ons as an integrated part of an OTA message. SendBy-based security does not require the caller to hold any session information.

Additionally, the Control element MAY contain any of the following four elements:

- **Credential** - A Credential element is a security-related construct that may include information such as a password, or public key certificate. A Credential element may be used with either Session-based or SendBy messages.

- **Principal** - A Principal element is only used with Session-based security model. It is a construct that represents some identity, and a Principal MUST have an Identity attribute associated with it. A Principal MAY also have associated Credentials, and a URI.

- **ReplyTo:** - The ReplyTo element is not repeating, and must be filled out in order to have permission to push a message back to the requesting party or to push a message to a 3rd party. The ReplyTo element contains one mandatory attribute, OrigBodyReq, an abbreviation for "Original Body Requested", that indicates the body of the original request message should be included in the message pushed to the party of the ReplyTo. The following is an example:

```
<ReplyTo OrigBodyReq = "No"/>
```

- **CC_To:** - The CC_To element MAY be repeating, and indicates a single third party listener or multiple additional parties to whom the response message should be pushed. The CC_To element contains one mandatory attribute, OrigBodyReq, an abbreviation for Original Body Requested, that indicates the body of the original request message should be included in the message pushed to the parties that are copied on the reply message, as a means to identify the context of the original message. The following is an example:

```
<CC_To OrigBodyReq = "Yes"/>
```

Figure 4 shows the relationship of the Control element to the Session OR SendBy elements.

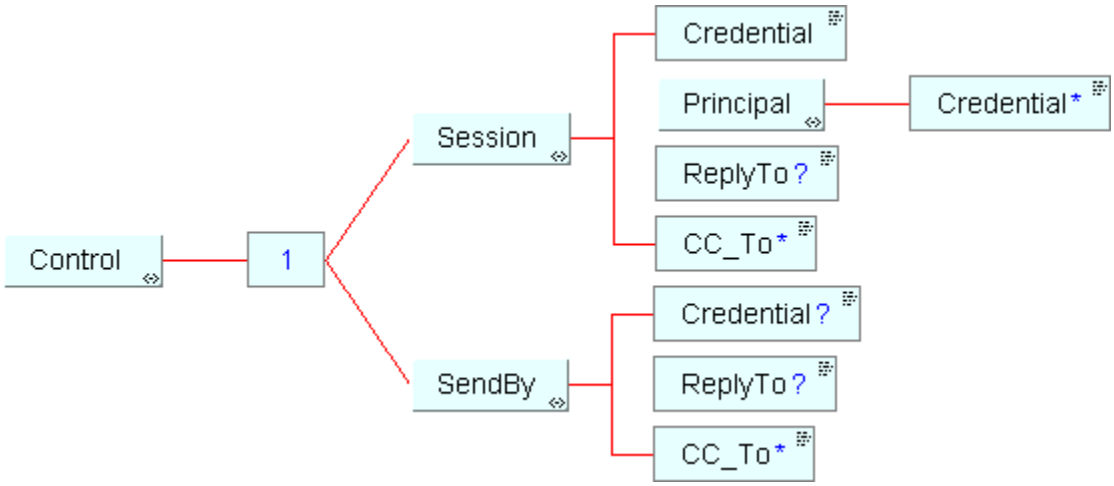



**Figure 4. Relationship of Control section to Session and SendBy elements**

### 4.6. Session-based Security model

Sessioned, or synchronous messages can be used for both single log-on, and for multiple log-ons over a period of time and, as a result, will have different authentication requirements from messages using the OTA Non-Session-based (SendBy, or asynchronous) security model.

A Session MUST have an Identity attribute. In fact, this is all that is required of an OTA Session.

An example of a minimum OTA Session is as follows:

```
<Control>
   <Session Identity="Tim3"/>
<Control>
```

An OTA Session typically also contains structures called “Principals” and “Credentials”. A Credential is a security-related construct that may include information such as a password, or public key certificate, with an optional Method attribute that identifies the type of encryption used for the Credential. A Session MAY contain multiple Credentials, but typically contains only one.

Further, a Session can contain a URI attribute, which essentially can be used by the authenticating trading partner for anything needed. The following example shows these constructs:

```
<Control>
   <Session Identity="Tim3" URI="122999_1156AM_5555-Our Web Portal">
      <Credential Method="Base64">676868777</Credential>
      <Credential Method="MD32">44422</Credential>
   </Session>
</Control>
```

A Principal is a construct that represents some identity, potentially associated Credentials, and a URI. A Principal MUST have an Identity associated with it. Session-based security allows for an OTA trading partner to authenticate a client against one or more authenticating systems, and return a Session to the Subject (client) that represents the authentication results. The Session structure enables this in two ways. Authenticating trading partners may simply imbed everything needed by back-end systems into the Session’s Credential(s), or by using multiple Principals within a Session, which may be useful to avoid Credential parsing upon every authenticated request.

An authenticating trading partner using Principals, will then generate, along with the described constructs above, Principals within a generated Session that represent authentication information for various (back-end) systems. In this case, the Identity and Credential(s) directly related to the Session would typically be used to identify the authenticated Subject.

Full authentication on several (back-end) systems, or even one system, may be a lengthy process to endure on every request (as prescribed by the non-Session-based, SendBy approach). Session-based authentication using multiple Principals in a Subject’s (client’s) Session facilitates implementing both a single login, and performance oriented designs where trading partner servers may optimize on holding or pooling system resources for authenticated clients.

A Principal MAY have associated Credentials, and MAY have an associated URI. The following example shows these constructs:

```
<Control>
   <Session Identity="Tim3" URI="Web Portal primary contact system">
      <Credential Method="Base64">676868777</Credential>
      <Credential Method="MD32">44422</Credential>
         <Principal Identity="TimC" URI="FFProgram1">
            <Credential Method="RAS32">FF569yt</Credential>
         </Principal>
      <Principal Identity="67ttt" URI="Vacation Program">
         <Credential Method="Clear Text">mypassword</Credential>
```

```
      </Principal>
      <ReplyTo OrigBodyReq="No">https://vmguys.com/OTAEngine/</ReplyTo>
      <CC_To/>
   </Session>
</Control>
```

It should be noted that Session-based security provides the ability to function without the optional Method attribute as shown in the above example, which is used to identify the encryption used for a specific Credential. OTA trading partners supporting Session-based security have the ability to keep this knowledge private, held within its process and not returned to the client, providing increased security. Because a definitive set of credentialing methods is not available, however, OTA does not include a specific enumerated list of methods.

## 4.7. OTA Payload

Most OTA Version 2 messages will have one Manifest, one Control and one or more payload document sections. The payload MUST consist of an Action Verb as the root element, OR a Version 2 Success, Warnings or Errors collection as defined in Chapter 5. The OTA Action Verb, or operation element is identified in the Document Reference element of the Manifest.

With the exception of OTA non-versioned messages (which do not have a Control document) all payloads (Control and actionable document(s)) must be enveloped within a multipart/related MIME envelope called the payload envelope.

Each payload document within the payload envelope is preceded by MIME headers that contain the following information:

- **Content-ID -** The Content-ID MIME Header is used to uniquely identify an instance of a document in the payload. The value of the Content-ID is the same as the *xlink:href* attribute inside the Manifest of the ebXML Header, and points to a URI. The value for Content-ID SHOULD be a unique identifier, in accordance with MIME [RFC 2045]. For example:
  ```
  Content-ID: <2000-0722-161201-123456789@ebxmlhost.realm>
  ```

- **Content-Length -** The MIME Content-Length header is a decimal value used to identify the total number of OCTETS contained in the content portion of the Payload Container. The Content-Length appears at the highest level of the payload container only, and is not repeated for each document in the payload. For example:
  ```
  Content-Length: 5012
  ```

- **Content-Type -** The MIME Content-Type for an ebXML payload is determined by the implementor and is used to identify the type of data contained in the content portion of the ebXML Payload Container. The MIME Content-Type must conform to [RFC2045]. For example:
  ```
  Content-Type: application/xml
  ```

### 4.7.1. Authentication

Subjects (clients) must first attempt to become authenticated when using the Session-based security model. Subjects become authenticated by sending an OTA_AuthenticationRQ to a trading partner. As the Authentication request is a non-versioned message, no Control document is required in the message. An OTA_AuthenticationRQ is sent as a payload document. A single

Principal is provided within the request.

In the following example, the Principal indicates an ID of “Tim3”. The Credential is being passed with Clear Text encryption (in the clear), where the Subject uses some form of transport-level security (such as HTTPS).

```
<?xml version="1.0"?>
<!DOCTYPE AuthenticationRQ SYSTEM "AuthenticationRQ.dtd">
<AuthenticationRQ>
     <Principal Identity="Tim3">
          <Credential Method="Clear Text">SPOT
          </Credential>
     </Principal>
</AuthenticationRQ>
```

Given no errors, the OTA trading partner returns an AuthenticationRS message with a Success entity. A Session is returned in a Control document. In the example below, the OTA trading partner does not use any additional Principals with the returned Session (explained above). Again note that this does not necessarily mean that the authenticating trading partner does not authenticate against any back-end systems.

```
<?xml version="1.0"?>
<!DOCTYPE Control SYSTEM "Control.dtd">
<Control>
     <Session Identity="Tim3">
          <Credential Method="Base64">6785533</Credential>
     </Session>
</Control>

<?xml version="1.0"?>
<!DOCTYPE AuthenticationRS SYSTEM "AuthenticationRS.dtd">

<AuthenticationRS>
     <Success/>
</AuthenticationRS>
```

If the OTA trading partner does not support the Session-based security model a StandardError element is returned containing the “AuthenticationModel” ErrType attribute as follows:

```
<AuthenticationRS>
     <StandardError ErrType="AuthenticationModel"/>
</AuthenticationRS>
```

If the Subject’s provided Principal fails authentication, a StandardError element is returned containing the “Authentication” ErrType attribute as follows:

```
<AuthenticationRS>
     <StandardError ErrType="Authentication"/>
</AuthenticationRS>
```

#### 4.7.1.1. Session-based Authentication

In OTA security, the word "Subject is used to represent a client, or "caller" host system.

Once a Subject has become authenticated, the Session is passed, unaltered, to the target OTA trading partner on every business message.

The following examples show various Session structures that could be passed on business requests.

A. Session-based security with Session-level Identity, URI, and Credential with two Principals.

In this scenario, the Subject has previously become authenticated, which means it has obtained a Session. The Subject passes the Session along with a non-encrypted Content in an OTA message. The trading partner uses the Identity and URI attributes, along with the Credential element of the Session for its own purposes to be used for processing of subsequent message invocations from the authenticated Subject. Note that one of the Principals (generated by the authenticating Trading Partner) does not have a specified URI. Another Principal (also generated by the authenticating Trading Partner) is used to support a backend frequent flyer program and does have a specified URI.

```
<Control>
   <Session Identity="XYZ Co" URI="http://OTA.XYZ.COM">
      <Credential Method="RC4-SHA">foiu34iuhioaugho34uhgip
      </Credential>
      <Principal Identity="Scott9">
         <Credential Method="RC4SHA">3fff678sddd850</Credential>
      </Principal>
      <Principal Identity="SRH78" URI="FrequentFlyerProgram1">
         <Credential>7777477777sd88888</Credential>
      </Principal>
   </Session>
</Control>
```

B. Session with Session-level Identity, one Principal, and EncryptedContent

Here, the Subject has previously become authenticated, meaning it has obtained a Session. The Subject passes the Session along with an encrypted document in the payload of an OTA message. The trading partner has used only the Identity of the Session for its own purposes to be used for processing of subsequent message invocations from the authenticated Subject. Note that the Principal (generated by the authenticating trading partner) does not have a specified URI.

```
<Control>
   <Session Identity="XYZ Co">
      <Principal Identity="Scott9">
         <Credential Method="RC4SHA">3fff678sddd850</Credential>
      </Principal>
   </Session>
</Control>
```

#### 4.7.1.2. Authentication Timeout and Re-Authentication

All Sessions eventually time out (exceed a specified period of time with no activity) in the authenticating trading partner. An OTA service that supports Session-based security MAY return a standard error from any given business request indicating that the current Session has timed out, as in the following example:

```
<?xml version=”1.0” encoding=”UTF-8”?>
<StandardError ErrType="AuthenticationTimeout"/>
```

In this case, the Subject can attempt the authentication sequence as before by utilizing the AuthenticationRQ message as described earlier. As an alternative, the ReAuthenticationRQ message structure MAY be used. The ReAuthenticationRQ structure may be more suited for implementations that do not hold the original authenticating Principal information, or would like to avoid relying on transport-level encryption for reauthentication.

```
<?xml version="1.0"?>
<!DOCTYPE Control SYSTEM "Control.dtd">

<Control>
     <Session Identity="Tim3">
          <Credential Method="Base64">6785533</Credential>
     </Session>
</Control>
```

```
<?xml version="1.0"?>
<!DOCTYPE ReAuthenticationRQ SYSTEM "ReAuthenticationRQ.dtd">

<ReAuthenticationRQ/>
```

The returned successful results of the ReAuthenticationRQ are the same as that of the AuthenticationRQ message except for the response using the ReAuthenticationRS construct. Subjects SHOULD use the new, reauthenticated Session in following business messages.

If the OTA trading partner does not support the Session-based security model a StandardError SHOULD be returned containing the “AuthenticationModel” ErrType attribute:

```
<AuthenticationRS/>
     </StandardError ErrType="AuthenticationModel"/>
</AuthenticationRS>
```

If the Subject’s provided Session fails authentication, a StandardError is returned containing the “Authentication” ErrType attribute:

```
<AuthenticationRS/>
     </StandardError ErrType="Authentication"/>
</AuthenticationRS>
```

#### 4.7.1.3. Unauthentication

All Sessions eventually time out in the authenticating trading partner. However, Subjects should use the UnAuthenticationRQ message to logout or become unauthenticated when authentication to a trading partner is no longer required. To unauthenticate, the Session is passed in within the Control document.

```
<?xml version="1.0"?>
<!DOCTYPE Control SYSTEM "Control.dtd">

<Control>
     <Session Identity="Tim3">
          <Credential Method="Base64">6785533</Credential>
     </Session>
</Control>
```

```
<?xml version="1.0"?>
<!DOCTYPE UnAuthenticationRQ SYSTEM "UnAuthenticationRQ.dtd">

<UnAuthenticationRQ/>
```

If the OTA trading partner does not support the Session-based security model a StandardError is returned containing the “AuthenticationModel” ErrType attribute.

If the Subject’s provided Session has never been authenticated from the target trading partner, a StandardError is returned containing the “Authentication” ErrType attribute.

### 4.8. The Non-session-based (SendBy) Security Model

In the Non-Session-based, asynchronous security model, the SendBy element identifies the sender of the message and MAY include a Credential element. The Subject (client) generates the SendBy construct. However, the SendBy element SHOULD have an Identity attribute and MAY have a URI attribute. The Credential element SHOULD have a Method attribute.

If the OTA trading partner supports only the Session-based security model and NOT the SendBy method discussed above, a StandardError is returned containing the “AuthenticationModel” ErrType attribute.

Given below are examples for several scenarios with different combinations of SendBy sessions and single log-ons as well as credentials and identities.

A) Non-sessioned single log-in transaction with Identity, URI, and Credential in the Control document

B) Single log-in transaction with Identity, and URI

```
<Control>
   <SendBy Identity="XYZ Co" URI="http://OTA.XYZ.COM" />
</Control>
```

C) Non-sessioned single log-in transaction with Identity only

Here the sender, indicated by SendBy, sends only the Identity without any XML-based authentication including URI or Credential.

```
<Control>
   <SendBy Identity="XYZ Co" />
</Control>
```

### 4.9. Use of Encryption

The use of specific security-related elements and attributes in the Control document depend on the use of encryption in the payload.

If the trading partners decide to encrypt the payload document of the message, the encrypted content by definition will have scrambled content and therefore will NOT follow the content model of the validating schema or DTD. The receiver of the message will need to validate the contents after decryption.

The use of the ebXML MIME wrapper provides the identification security of the encrypted content and the method used for encryption. Currently, there are two proposals that may be adopted:

- the use of SMIME with a signature for the encryption of the payload
- The use of XML digital signatures for encrypting the header, but not encrypting the payload

Because the determination of the method for providing security and encryption in XML documents has not been finalized by ebXML[11], the OpenTravel Alliance does not officially define how encryption should take place and recommends that trading partners negotiate this level of security between them in the interim.

[11] As of the writing of this specification, the ebXML TR&P team are actively working on the definition of security infrastructure, including methods to digitally sign and encrypt payloads

# 5. Error and Non-Versioned Messages[12]

Some of the exchanges between trading partners will contain messages for administrative rather than business purposes, specifically for the discovery of versions supported by the trading partners and for transmitting errors that occur at the parser. Because this set of messages transcends individual versions, OTA has established a separate category and syntax for these messages that operate independently of the versioned content. Because the messages do not have a version they must be structurally stable yet have operational flexibility.

## 5.1. Non-Versioned Base Messages

The OTA XML infrastructure defines several messages that are not versioned and are fixed over time by definition. All OTA XML compliant business systems MUST support all of the non-versioned OTA messages. The infrastructure defines separate DTDs for the non-versioned OTA payload messages (`OTA_NVent.mod, OTA_StdErr.dtd, OTA_PayloadRQ.dtd, and OTA_PayloadRS.dtd`)[13] .

**Note:** A .mod file is an external parameter entity reference that is to be included in a DTD, but cannot necessarily stand alone. When incorporated in a DTD, the entirety of the external entity must be included.

## 5.2. Non-versioned message DTDs

Non-versioned messages MUST must use document type definitions (DTDs) separate from the DTDs used for versioned messages. Volume 2 - Appendices, lists the non-versioned DTDs specified in this section.

These DTDs are designed to be used individually (not combined), and as such the element and attribute names (or symbols) need only be unique within these DTD and the non-versioned OTA messages. Unlike versioned OTA messages, non-versioned OTA messages do not rely on a <`Control`> payload. As such, each of these payloads stands alone. However, the non-versioned OTA messages are anticipated to be encapsulated within an ebXML message envelope.

## 5.3. Non-versioned Standard Payload Attributes

Each OTA defined base payload will have three standard attributes defined on the root element. These attributes are the same standard attributes defined on the root element of other version 2 specific payloads, however as baseline payloads are versionless these attributes are defined via a separate and distinct entity to allow baseline payloads to remain unchanged should other payloads change in future versions. These standard attributes are defined via the following external entity declaration:

```
<!-- Copyright (C) 2000 Open Travel Alliance -->
<!-- Non-versioned messages, standard parameter entities OTA_nvent.mod
-->
<!ENTITY % OTA_PayloadStdAttributes
EchoToken CDATA #IMPLIED
```

[12] We thank David Marshall, VM Systems, Inc., and George Smith, ConXtra, for developing this part of the specification.

[13] Previously, the v1 non-versioned message DTD was published under the name "OTA_Nv.dtd". As OTA is changing the Non-Versioned DTD, the name is also being changed for reasons of clarity as well as structurally requiring multiple DTDs.

```
TimeStamp CDATA #IMPLIED
Target (Test | Production) 'Production'
Version CDATA #IMPLIED
SequenceNmbr CDATA #IMPLIED
```

The meaning and usage of each of these standard attributes is as follows:

- *EchoToken*: a sequence number for additional message identification assigned by the requesting host system. When a request message includes an *EchoToken*, the corresponding response message MUST include an *EchoToken* with an identical value.

- *TimeStamp*: indicates the creation date and time of the message in UTC using the following format specified by ISO 8601: YYYY-MM-DDThh:mm:ssZ with time values using the 24-hour (military) clock. e.g.: 20 November 2000, 1:59:38pm UTC becomes 2000-11-20T13:59:38Z

- *Target*: indicates if the message is a test or production message, with a default value of Production. Valid values: (Test | Production)

- *Version*: This optional attribute is not used in OTA non-versioned messages. For all OTA versioned messages, the version of the message indicated by an integer value.

- *SequenceNmbr* - This optional attribute is used to identify the sequence number of the transaction as assigned by the sending system. Allows for an application to process messages in a certain order, or to request a resynchronization of messages in the event that a system has been offline and needs to retrieve messages that were missed.

### 5.4. StandardError

The OTA XML infrastructure defines a non-versioned standard error message. The non-versioned error messages are designed to accommodate errors that result from the parser, or from validation, before reaching the server. The set of errors that can use this non-versioned standard error (for operational flexibility) is constrained by its limited structure (for structural stability).

```
<!-- Copyright (C) 2000 OpenTravel Alliance-->
<!-- Non-versioned messages, standard error OTA_stderr.dtd -->

<!ENTITY % OTA_NVent SYSTEM "OTA_nvent.mod">
%OTA_NVent;
<!ELEMENT StandardError (#PCDATA)>
<!ATTLIST StandardError %OTA_PayloadStdAttributes;
Status (NotProcessed | Incomplete | Complete | Unknown) 'NotProcessed'
Type CDATA #REQUIRED
DocURL CDATA #IMPLIED
>
```

The non-versioned standard error consists of three attributes (in addition to standard payload attributes) and optional additional information represented as parsed character data (PCDATA) returned by the trading partner's system. A StandardError element MUST contain a *Type* attribute. Attribute definitions are as follows:

***Status*** - If the Status attribute is not present the default meaning SHOULD be *"NotProcessed"*.

If the Status attribute is present, it SHOULD return one of the following responses:

- *NotProcessed*: The error occurred prior to processing of the request (or if during the processing of the request, before the intentions of the request were completed). This is an atomic failure.

- *Incomplete*: The error occurred during processing of the request. The request was partially completed. This is NOT an atomic failure.

- *Complete*: The error occurred after successful processing of the request. The requested process was completed.

- *Unknown*: The status of the request is unknown. The atomicity of the failure is also unknown.

***Type*** - The *Type* attribute MUST be present and is defined as CDATA[14] with a list of enumerated values recommended to indicate the error type. The validating DTD's can expect to accept values that have NOT been explicitly coded for and process them by already accepting a StandardError Type of '*Unknown*'. Examples of the types of error that may generate an *'Unknown'* response could be a character set that is not recognized, or a payload document that doesn't match the DocumentReference in the Manifest, etc.

The initial list of recommended values MUST contain:

- *Unknown*: indicates an unknown error. Additional information may be provided within the PCDATA.

- *Malformed*: indicates that the XML message was not well-formed. Additional information may be provided within the PCDATA.

- *Validation*: indicates that a well-formed XML message was sent, but did not pass the validation check. Additional information may be provided within PCDATA.

- *UnrecognizedRoot*: Indicates an unrecognized payload root element was received. Additional information may be provided within the PCDATA.

- *UnrecognizedVersion* - Indicates that the version attribute in the Schema element of the Manifest of the header is not recognized. Additional information, such as version number(s) supported, may be provided within the PCDATA.

***DocURL*** - If present, this URL refers to an online description of the error that occurred.

Any OTA message request MAY result in a response message that consists of a StandardError baseline payload. A StandardError response may be matched to the original request via the standard *EchoToken* attribute.

```
<StandardError EchoToken="12345" TimeStamp="2000-11-20T20:14:10Z"
   Status="NotProcessed" Type="UnrecognizedRoot"
</StandardError>
```

[14] Previously identified as an "evolving enumeration" in OTA version 1, the data type is designated as CDATA #REQUIRED as there is no way to formally specify an ambiguous enumeration in a DTD. Implementors should be careful to support the standard values specified here.

## 5.5. Versioned error messages

The OTA specification provides for error messages as part of the versioned messages, when those errors result from interactions with the trading partner's server. This section outlines specific requirements for the versioned error messages.

Typically, if a business message, such as updating a customer profile, fails for a business level reason, the business message itself should use the response message <xxxRS> that may declare a failure when it is returned. This response has meaning only in the context of the business message, based on the notion that a business content level error constitutes the response.

### 5.5.1. Versioned Standard Payload Attributes

The response message <xxxRS> contains the entity, %PayloadStdAttributes; on the root element. The meaning and usage of each of these standard attributes is as follows:

- *EchoToken*: a sequence number for additional message identification assigned by the requesting host system. When a request message includes an *EchoToken*, the corresponding response message MUST include an *EchoToken* with an identical value.

- *TimeStamp*: indicates the creation date and time of the message in UTC using the following format specified by ISO 8601: YYYY-MM-DDThh:mm:ssZ with time values using the 24-hour (military) clock. e.g.: 20 November 2000, 1:59:38pm UTC becomes 2000-11-20T13:59:38Z

- *Target*: indicates if the message is a test or production message, with a default value of Production. Valid values: (Test | Production)

- *Version*: This optional attribute is NOT used in OTA non-versioned messages. For all OTA versioned messages, the version of the message indicated by an integer value.

- *SequenceNmbr* - This optional attribute is used to identify the sequence number of the transaction as assigned by the sending system. Allows for an application to process messages in a certain order, or to request a resynchronization of messages in the event that a system has been offline and needs to retrieve messages that were missed.

Versioned error messages (and warnings), for any valid OTA payload response message provide a facility to help trading partners identify the outcome of a message.

**Note:** All OTA versioned message requests MAY result in a response message that consists of a non-versioned StandardError construct alone. When a <StandardError> is not returned, trading partners should be able to quickly determine whether the request succeeded, or had other errors identified by the application that processed the request.

Therefore, every <xxxRS> element MUST have an optional <Success/> element. The presence of the empty <Success/> element explicitly indicates that the OTA versioned message succeeded. In the absence of <Success/>, an implementation may return <Warnings> in the event of one or more business context errors, OR <Errors> in the event of a failure to process the message altogether.

### 5.5.2. Use of entity module for versioned message responses

Error and Warning elements share a common definition (with the exception of the tag name). These common elements and parameter entities provided for convenience when defining message response DTDs are defined in the standard module "*OTA_v2ent.mod*" shown below:

```
<!-- Copyright (C) 2000 OpenTravel Alliance -->
<!-- OTA v2 Specification - standard parameter entities -->

<!-- The following entity defines standard attributes -->
<!-- that appear on the root element for all OTA v2 payloads. -->
<!ENTITY % OTA_PayloadStdAttributes
    " EchoToken   CDATA #IMPLIED
      TimeStamp   CDATA #IMPLIED
      Target  (Test | Production)'Production'
      Version CDATA #IMPLIED
      SequenceNmbr CDATA #IMPLIED
>
<!-- The following parameter entities represent success and failure -->
<!-- in processing respectively. -->
<!ENTITY % OTA_SucceedDef "(Success|Warnings)">
<!ENTITY % OTA_FailureDef " Errors ">

<!ENTITY % ErrorAttr
" Type (Unknown|
              NoImplementation|
              BizRule|
              Authentication|
              AuthenticationTimeout|
              Authorization|
              ProtocolViolation|
              TransactionModel|
              AuthenticationModel|
              ReqFieldMissing) #REQUIRED
   Code       CDATA #IMPLIED
   DocURL     CDATA #IMPLIED
   Status     CDATA #IMPLIED
   Tag        CDATA #IMPLIED
   RecordId   CDATA #IMPLIED"
>
<!-- Standard way to indicate success processing an OTA message -->
<!ELEMENT Success EMPTY>

<!-- Indicates successful processing, but warnings occurred -->
<!ELEMENT Warnings (Warning+)>

<!-- Indicates errors occurred during processing -->
<!ELEMENT Errors (Error+)>

<!ELEMENT Warning (#PCDATA)>
<!ATTLIST Warning %ErrorAttr;>
<!ELEMENT Error (#PCDATA)>
<!ATTLIST Error %ErrorAttr;>
```

This module may be then included in other payload definition DTDs[15] . An example will help illustrate. In this hypothetical example, we define an <ExampleRS> payload:

```
<!-- Example Response message using standard parameters -->

<!ENTITY % OTA_v2ent SYSTEM "OTA_v2ent.mod">
%OTA_v2eent;

<!ELEMENT ExampleRS ((%OTASucceedDef;,Example)|%OTAFailureDef;)>
<!ATTLIST ExampleRS %OTA_PayloadStdAttributes;>

<!-- Import content for the <Example> element -->
<!ENTITY % ExampleDef SYSTEM "example.dtd">
%ExampleDef;
```

Note how the definition of the <Example> element, the central element in this <ExampleRS> response message, is imported from another reusable DTD ("*example.dtd*" in this case).

The attributes of a <Warning> or <Error> element are identical and defined in the Error Attributes entity, %ErrorAttr; as follows:

***Type*** - The Error element MUST contain the *Type* attribute that uses a recommended set of values to indicate the error type. The validating DTD can expect to accept values that it has NOT been explicitly coded for and process them in an acceptable way. This is facilitated by accepting the *Type* of "*Unknown*". The initial enumeration list MUST contain:

- *Unknown* - Indicates an unknown error. It is recommended that additional information be provided within the PCDATA, whenever possible.
- *NoImplementation* - Indicates that the target business system has no implementation for the intended request. Additional information may be provided within the PCDATA.
- *BizRule* - Indicates that the XML message has passed a low-level validation check, but that the business rules for the request, such as creating a record with a non-unique identifier, were not met. It is up to each implementation to determine when or if to use this error type or a more specific upper level content error. Additional information may be provided within the PCDATA.
- *AuthenticationModel* - Indicates the type of authentication requested is not recognized. Additional information may be provided within the PCDATA.
- *Authentication* - Indicates the message lacks adequate security credentials. Additional information may be provided within the PCDATA.
- *AuthenticationTimeout* - Indicates that the security credentials in the message have expired. Additional information may be provided within the PCDATA.
- *Authorization* - Indicates the sender lacks adequate security authorization to perform the request. Additional information may be provided within the PCDATA.

[15] N.B. This is the essence of the "schema fragment" method of isolating change within a network of DTD documents forming a specification. Carefully followed, this method allows once-and-only-once definition of all elements and entities.

- *ProtocolViolation* - Indicates that a request was sent within a message exchange that does not align to the message protocols. Additional information may be provided within the PCDATA.
- *TransactionModel* - Indicates that the target business system does not support the intended transaction-oriented operation. Additional information may be found within the PCDATA.
- *Authentication Model* - Indicates that the type of authentication requested is not supported. Additional information may be provided within the PCDATA.
- *ReqFieldMissing* - Indicates that an element of attribute that is required by the DTD or Schema (or required by agreement between trading partners) is missing from the message.

***Code*** - If present, this refers to a table of coded values exchanged between applications to identify errors or warnings.

***DocURL*** - If present, this URL refers to an online description of the error that occurred.

***Status*** - If present, recommended values are those enumerated in the non-versioned Standard Error message, `(NotProcessed | Incomplete | Complete | Unknown)` however, the data type is designated as CDATA for versioned messages responses, recognizing that trading partners may identify additional status conditions not included in the enumeration.

***Tag*** - If present, this attribute may identify an unknown or misspelled tag that caused an error in processing. It is recommended that the *Tag* attribute use XPath notation to identify the location of a tag in the event that more than one tag of the same name is present in the document. Alternatively, the tag name alone can be used to identify missing data [*Type=ReqFieldMissing*].

***RecordId*** - If present, this attribute allows for batch processing and the identification of the record that failed amongst a group of records.

The following is an example of a versioned error message in which a profile (identified by its UniqueId) was not found:

```
<OTA_ReadProfileRS
   EchoToken="12346" TimeStamp="2000-11-20T20:15:21Z" Version="2">
   <Errors>
      <Error Type="BizRule"> UniqueId 09782345768 not found</Error>
   </Errors>
</OTA_ReadProfileRS>
```

### 5.6. Version discovery messages

The OTA XML infrastructure supports version discovery message protocols in order for OTA businesses to transition through time with the standards, yet still communicate with multiple trading partners. To help with this transition, OTA businesses will likely need to support multiple versions of the OTA standards. As such, initially - and periodically - each OTA business will need to determine, for each trading partner, what version and protocol to use.

It is presumed that the version discovery messages are transported within an ebXML message envelope. The use of the OTA non-versioned discovery message assumes that the ebXML discovery has already taken place. From that perspective, the infrastructure of the envelope is transparent, and the level of discovery of the envelope is out of scope for this specification.

The OTA version discovery process consists of two questions:

1. What versions do you support?
2. Which payloads within a particular version do you support?

To answer this question, and to determine the payloads supported, trading partners MAY exchange a non-versioned OTA message, using the following simple payload for the request:

```
<?xml version=”1.0” encoding=”UTF-8”?>
<!DOCTYPE PayloadsSupportedRQ SYSTEM “OTA_payloadRQ.dtd”>
<PayloadsSupportedRQ/>
```

This request payload is formally defined via the following DTD:

```
<!-- Copyright (C) 2000 Open Travel Alliance -->
<!-- Non-versioned messages: OTA_payloadRQ.dtd -->

<!ENTITY % OTA_NVent SYSTEM "OTA_nvent.mod">
%OTA_NVent;

<!ELEMENT PayloadsSupportedRQ EMPTY>
<!ATTLIST PayloadsSupportedRQ
%OTA_PayloadStdAttributes;
>
```

The <PayloadsSupportedRS> response defines a list of one or more `<Payload>` elements detailing which payloads and versions an implementation supports. The response may return a nested collection of one or more payloads supported. This response is defined as follows:

```
<!-- Copyright (C) 2000 Open Travel Alliance -->
<!-- Non-versioned messages: OTA_payloadRS.dtd -->

<!ENTITY % OTA_NVent SYSTEM "OTA_nvent.mod">
%OTA_NVent;

<!ELEMENT PayloadsSupportedRS (Payload+)>
<!ATTLIST PayloadsSupportedRS
%OTA_PayloadStdAttributes;
>

<!ELEMENT Payload (#PCDATA)>
<!ATTLIST Payload
   XML_Root CDATA #REQUIRED
   Version CDATA #REQUIRED
   Protocol CDATA #REQUIRED
   Access CDATA #REQUIRED
   Params CDATA #IMPLIED
   DocURL CDATA #IMPLIED>
```

The Payload element has six attributes and optional element data (PCDATA) for additional information. The values of these <Payload> attributes are defined as follows:

- *XML_Root* - The root element tag name for a supported payload. This attribute identifies the root tag of the messages, or the action verb, that define which operations are supported. This is a REQUIRED attribute.
- *Version* - indicates the OTA version supported for this payload. This is a REQUIRED attribute.
- *Protocol* - indicates the communication protocol to be used to access the trading partner, using IETF defined protocol types. This is a REQUIRED attribute. (see example below*)*
- *Access* - indicates the access, path, ID or address to access the service that supports this payload type (for HTTP, FTP or SMTP based services, this represents a URL). This is a REQUIRED attribute.
- *Params* - this attribute is used to communicate protocol-specific additional information needed to access this version. This is an optional attribute.
- *DocURL* - refers to an online description of the support context and version. This is an optional attribute.

This approach reduces the need to grow the specification based on evolving protocols or access specification names. Trading partners may need, for other protocols, to encode additional options in either the Params attribute, or the optional element data.

An example of an <OTA_PayloadsSupportedRS> message follows:

```
<?xml version=”1.0” encoding=”UTF-8”?>
<!DOCTYPE PayloadsSupportedRS SYSTEM “OTA_payloadRS.dtd”>
<PayloadsSupportedRS>
    <Payload XML_Root="OTA_CreateProfileRQ"
      Version="2"
      Protocol="HTTPS 1.1 POST"
      Access="https://vmguys.com/OTAEngine/">
    <Payload XML_Root="OTA_CreateProfileRQ"
      Version="3"
      Protocol="HTTPS 1.1 POST"
      Access="https://vmguys.com/OTAEngine/">
    <Payload XML_Root="OTA_CreateProfileRQ"
      Version="2"
      Protocol="SMTP"
      Access="mailto:OTAEngine@vmguys.com">
    <Payload XML_Root="OTA_CreateProfileRQ"
      Version="3"
      Protocol="SMTP"
      Access="mailto:OTAEngine@vmguys.com">
    <Payload XML_Root="OTA_CreateProfileRQ"
      Version="2"
      Protocol="FTP"
      Access="ftp://ftp.vmguys.com/OTAEngine/">
    <Payload XML_Root="OTA_CreateProfileRQ"
      Version="2"
      Protocol="HTTPS 1.1 POST"
      Access="https://vmguys.com/OTAEngine/">
    <Payload XML_Root="OTA_CreateProfileRQ"
      Version="3"
      Protocol="HTTPS 1.1 POST"
      Access="https://vmguys.com/OTAEngine/">
```

```
      ...
      ...
      ...
</PayloadsSupportedRS>
```

With a response like the one above, a trading partner can choose the most appropriate OTA payload, version and protocol to use to interact with the target trading partner. As shown above, a particular implementation may support several versions and several protocol/access methods for a particular payload type.

NOTE: It is necessary that for purposes of exchanging non-versioned messages, all implementations MUST support the "HTTP 1.1 POST" method. It is assumed that trading partners will know the correct access address for each others implementation to be able to perform version discovery.

# 6. Security and Privacy

Earlier chapters on message structure and the use of MIME wrappers discussed specific ways of addressing security and privacy in messaging. This chapter discusses the requirements for security and privacy, and provides additional guidance for these features in OTA specifications.

## 6.1. Terminology

This document uses several recognized security-related terms, borrowed from the Java Authentication and Authorization Service:

- Subject: user of a computing service; users and computing services are subjects. A subject has a set of principals.
- Principal: name associated with the subject. The name may be a conventional name or a public key. Subjects may have different names based on the service they are using. Principals can become associated with a subject upon successful authentication.
- Authentication: represents the process where one subject verifies the identity of another.
- Credentials: security related attributes such as passwords, public key certificates.

## 6.2. Security and privacy requirements

Conducting electronic business transactions over the Internet in any line of business carries a number of risks, but dealing with personal information, as in the case of profiles, or travel reservations, requires special precautions. While the measures recommended in this specification can reduce the risks, even the best of security programs cannot guarantee risk-free transactions. Successful security will require a combination of technical steps as well as sound policies implemented by the companies sending and receiving these data.

The implications for protecting personal information go beyond good business practice. Government authorities in the USA, Canada, Europe, and Japan have begun instituting regulations to restrict the movement of personal data, particularly when the consent of the individuals is needed to share the data with business partners. Since the travel business is a global industry, OTA must recognize its responsibilities in meeting these regulations.

The recommendations on security in OTA version 2 address the following factors:

### 6.2.1. Authentication

The function of Authentication seeks to identify and credential the parties in the transaction to ensure that the party engaged in a transaction is really the party they claim to be and not an imposter seeking to engage in fraud.

### 6.2.2. Confidentiality

Supplying adequate confidentiality in the exchange of messages limits the possibility of eavesdropping and provides assurance to the parties conducting a transaction that sensitive information remains known only to the parties intending to share the information.

### 6.2.3. Integrity

Integrity of message delivery limits the possibility of distortion of a message by sabotage or non-malicious intent, such as network errors, and assures the parties engaged in the transaction that the data received by one party is the same as the data sent by the other party.

### 6.2.4. Non-repudiation

Electronic transactions need to have the same level of commitment as a signed paper document to hold parties accountable to that commitment. OTA recommends that the parties provide a record that the transaction actually took place, to ensure that it could not have been a forgery.

### 6.2.5. Privacy

Authorities in many jurisdictions around the world have regulations on the collection and dissemination of personal and company data. The OTA specifications have taken into consideration the rights of individuals and companies to provide data and to have control over the disposition of data after its collection by the travel companies. OTA specifications provide the means for travel companies to be able to provide assurance to individuals and companies that their data will be used only for the purposes originally indicated on the collection forms. It assures indicduals and companies, and that they will have the ability to restrict names or any other data from any sharing arrangements.

## 6.3. Security and privacy recommendations

This section discusses implementation of security and privacy, either by referencing detailed specifications or with recommended best practices.

### 6.3.1. Authentication

Chapter 4, Section 4.7.1 presents a recommended syntax for authenticating trading partners using the OTA specifications. Section 4.7.1.1B gives an example of the OTA message syntax, showing the relationship between authentication and encryption.

### 6.3.2. Confidentiality

To meet the needs of confidentiality OTA version 2 RECOMMENDS use of encryption to scramble the messages and protect the transfer of data against eavesdropping, as well as decryption by the recipient. The most common form of encryption/decryption with Web transactions is provided by the Secure Socket Layer (SSL) protocol developed by Netscape and now a component of the IETF transport layer security specifications. Because SSL operates at the transport layer, it encrypts the entire message, whether or not all the components of that message require it. As an option, the trading partner MAY encrypt the payload document in the message.

Trading partners need to resolve questions of encryption/decryption procedures before exchanging files with the OTA specifications. The non-versioned messages can be used for discovery but this section leaves open the potential for growth of this capability to include these topics. OTA expects that the Electronic Business XML (ebXML) initiative will address these questions, which OTA can implement in a future version.

### 6.3.3. Integrity

At this time, the World Wide Web Consortium is developing a digital signature recommendation based on XML that creates an encrypted hash message for verification. Once developed, it will provide a method of ensuring delivery of undistorted messages. OTA will review the development of the W3C digital signature for potential application.

The OTA version 2 specification uses a request and response model that returns some form of message to the sender, if only a simple acknowledgment. While not foolproof, this approach lets users and systems monitor the message flow and spot possible distortions or interruptions. If the parties have chosen to use encryption, it also provides a message integrity check, since the decryption routine performs a defacto hash function to correctly reassemble the content.

### 6.3.4. Non-repudiation

The combination of authentication and digital signature standards – in development by Internet and Web standards bodies – will provide powerful and effective tools to prevent non-repudiation of transactions. Until those standards become more widely available, trading partners SHOULD establish event logs to provide an audit trail for ascertaining that transactions took place.

### 6.3.5. Privacy

As with security, privacy connotes control over the information collected, and the OTA version 2 specification includes ways for the customer to determine the data they want shared with other parties. To address these concerns, OTA specifications provide a means by which the owner of the profile can determine the sharing of data overall, as well as for specific components of the profile. The OTA version 2 Profile specification assumes the customer or company does NOT want the data shared for any reason unless specifically authorized. As a result, when the data is provided for the profile, authorization MUST be given to share that data with other parties.

OTA specifications provide two attributes that address sharing of data. These attributes are present on Profile, the highest-level content element, which restricts sharing of data in the record as a whole.

The two privacy attributes included in OTA specifications are:

- *ShareAllSynchInd* - to permit sharing data for synchronization. Synchronization means updating records residing on other servers than the one that created it. Customers or companies may wish, for example, to have their profiles reside with vendors in which they exchange data in order to keep their respective records updated.

- *ShareAllMarketInd* - to permit sharing data for marketing purposes. Marketing purposes include providing the data to other vendors who can send related offers that cater to the interests of the customer or company.

Each of these attributes has values of YES and NO, with NO being the default, which means customers or companies must give their explicit permission -- change the value to YES -- in order to share the data.

Customers and companies can determine the data shared within a profile as well. The same two privacy attributes are present at other locations throughout the specification and allow control of privacy of specific data element groups that may include particularly sensitive information:

- *ShareSynchInd,* to permit sharing data for synchronization, as described above

- *ShareMarketInd,* to permit sharing data for marketing purposes

These attributes also have YES and NO values, but also the default INHERIT value, which means data lower in the hierarchy, inherit the value of ShareSynchInd or ShareMarketInd from higher levels in the tree. Therefore, if a customer says NO for sharing all of the data in the profile, it takes an explicit YES value to override that choice for individual elements.

OTA RECOMMENDS that travel service providers disclose their privacy policies and practices in accordance with the Standard for Internet Commerce, version 1.0, dated 14 December 1999. This standard outlines best practices for the conduct of business over the Web, but trading partners need to make themselves aware of legal requirements involving privacy in their jurisdictions as well. A copy of the relevant sections from this standard are included in the Appendix document.

Another standard involving privacy under development by the W3C is the Platform for Privacy Preferences or P3P; see http://www.w3.org/P3P/. This specification defines the semantics for an organization's privacy policies expressed in XML syntax. The specification allows organizations to indicate the types of data or precise data elements collected as well as policies for disclosure and sharing of that data. Because P3P uses XML syntax, it allows organizations to exchange this information electronically as well as making it available in human readable form. As of the date of this specification, W3C issued the second "last call" for comments for the P3P public working draft on October 18, 2000.

# OpenTravel Alliance Message Specification

# Publication 2001A

# Specifications Document

# [Draft Copy - for Public Review]

### Part II - Profile Specification

# 1. OTA Profile

## 1.1 Introduction

The OTA version 2 Profile specification defines the detailed business content of a customer profile from a travel industry perspective. This specification provides a set of common messages for transmitting customer profile data that customers provide to travel services to create these profiles, and for the exchange of profile information between travel services within the industry.

## 1.2 Profile Content and Scope

A profile includes basic information about a customer or a company for identification as well as financial transactions, memberships and contacts. The profile also defines collections of preferences for specific types of travel including key travel support services such as travel agencies and insurance. Profiles contain information about organizational affiliations, and identify certifications and alliances held by companies in their business relationships. No supplier pricing information is included, nor is data on the travel policies or requirements of an organization addressed in this specification.

The specification divides the business data into five main sections:

- *Customer* - information about the traveler needed to define and document the person's identity, means of contact, types of payment, and basic needs and interests for travel services.
- *Preferences* - general and specific conditions to meet the needs of a customer or a company for travel based on identifiable purposes, such as business trips, family vacations, golf outings, international trips, or the annual church retreat. The profile can also be used to indicate preferences for specific kinds of travel services, such as for air travel, hotel stays, car rentals, and other types of travel services as part of these collections.
- *Affiliations* - organizations with which the customer or company has a relationship and that convey travel benefits or privileges, such as employer, interest groups, membership organizations (e.g. AARP or AAA), travel arrangers, insurance companies, and vendor-sponsored travel clubs such as those provided by airlines. This section includes only data about the relationship to these organizations (e.g., employee identifier), not the policies of the companies themselves.
- *CompanyInfo* - information about a company or business entity, including addresses, telephones, and other forms of contact, types of payment forms, loyalty programs etc.
- *Agreements* - information about certifications and alliances which the company may hold, as well as information about commission arragements.

One additional section addresses the maintenance of the profile data:

- *Accesses* - a collection of elements that contains a chronicle of recent accesses to the profile, noting the create date and time and updates or subsequent actions performed on the profile record.

Each of the main sections has *elements* that represent one or more related fields for capturing data on specific logical components of the profile. Each of these elements may contain other elements or data, usually character strings of alpha or numeric characters.

In some cases the elements have identified specific properties or characteristics called *attributes*. A feature of attributes is the constraint of choices permitted defined by an enumeration of values. Many of the travel preferences, for example, allow for indicating a preference level of Preferred, Only, or Unacceptable, with the default value being 'Preferred' in the absence of another choice being explicitly indicated. These are the only choices available for the PreferLevel attributes; other values would not be permitted.

A document type declaration or DTD contains rules for the message structure including the content of the profile. It spells out the required order of the data and which items are required in messages. The schema files provide an additional layer of validation including the ability to assign data types othe than strings to certain data elements, such as datetimes and integers. OTA version 2 messages may reference a DTD or a schema in order to validate the messages against those rules. Please note that validity in this case applies only to the structure of the message; neither method of validation would catch an incorrect credit card number or misspelled name.

In the course of modeling the data, OTA identified several groups of elements or attributes that repeat throughout the profile. In the travel profile, OTA calls these repeating groups reusable objects, entered as *entities* in the DTD, and *includes* in XML schema. Entities reduce the size of the DTD and allow for a more modular structure, and provide the same advantage in schema.

For OTA version 2, XML Schema fragments have been created for the components of a profile. The use of schema fragments increases the ability to take advantage of reusable objects, particularly in those cases where customer information is likely to be reused throughout other OTA specifications. For example, information about membership in a loyalty program defined in the profile could be used to indicate the use of that program for a hotel stay, or airline reservation, using the same schema fragment. Schema fragments are defined for the entities identified in the DTD(s); other schema fragments can be extrapolated from the schema for the profile as a whole.

The Appendix document lists the DTDs and schemas used in OTA version 2, but they are also available in machine-readable form from the OTA web site: http://www.opentravel.org/.

### 1.3 Profile Message flow and operations

A payload document that carries the profile information identifies the message as a request (RQ) or response (RS) which specifies the action required by the receiver to process the message, as well as providing the business data exchanged between trading partners. Payload documents are also used to identify the Authentication, ReAuthentication, and UnAuthentication actions described in OTA Infrastructure, Chapter 4, Message Structure.

> ***XLink:role*** **-** The *xlink:role* attribute in the `<DocumentReference>` element of the Manifest identifies the business purpose of the referenced document. Its presence in the Manifest allows the actionable item to be determined without retrieving the referenced document. For OTA's purposes, the value entered for the *xlink:role* attribute MAY consist of the URI, but MUST consist of the OTA action verb, which is the root element of the payload document. Strict adherence to the syntax of the strings that define OTA action verbs should be observed, as parsers will use these strings to identify the action to be performed on the document.
>
> With the publication of a set of messages, OTA enumerates the list of actions that can be performed upon specific business content e.g.: `<OTA_CreateProfileRQ>`, a request to

create a profile. Additions to the enumerated list are anticipated as additional content and travel verbs become a part of the OpenTravel Alliance vocabulary.

The messages supported by this publication of the OTA version 2 Profile specification include the basic actions of creating, reading, updating a record partially, or replacing a record in its entirety, and deleting of records. These four request/response pairs underpin the role and function of the message exchanges for customer profiles between trading partners. The Create, Read, Replace and Delete verbs involve entire profile records, while the Update verb addresses parts of a profile.

### 1.3.1 Profile Messages Supported

The syntax of the action verbs to be used as root elements of a payload document used to exchange profile data are enumerated as follows:

- **OTA_CreateProfileRQ** - Identifies the initial creation of a profile.
- **OTA_CreateProfileRS** - Indicates the status of success in the creation of a profile.
- **OTA_ReadRQ** - Identifies a request to read a profile record when combined with the UniqueId of *Type*=Profile.
- **OTA_ReadProfileRS** - Returns a customer profile in response to a Read request of *Type*=Profile.
- **OTA_UpdateRQ -** Identifies a request to update a customer profile record when combined with the UniqueId of *Type*=Profile. The specific action(s) to be applied to the profile record are indicated by the children of the `<Position>` element, as described in Part I - Section 3.5.4, Update verb.
- **OTA_UpdateRS** - Indicates the status of success in the updating of a profile.
- **OTA_DeleteRQ** - Identifies a request to delete a customer profile record when combined with the UniqueId of *Type*=Profile.
- **OTA_DeleteRS**- Indicates the status of success in deleting the profile record.

### 1.3.2 Create verb

The Create infrastructure verb defines an operation that generates a new record. When used to create a profile, it identifies and populates a profile record, assigning it a unique identifier. The sequence follows these steps:

- Requestor sends a Create request of *Type*= Profile and optionally, a unique identifier, along with the initial profile data.
- Receiver creates a new profile and assigns a unique identifier.
- Receiver responds with a message providing a unique identifier for the profile created and optionally, the data entered by the requestor.

The requestor can complete as much of the profile record as desired when submitting the create request.

- If the ProfileType = Customer then at least one of the following elements: PersonName, Telephone, or Email, MUST be present.

- If the profile is being created for a company or business entity, the CompanyName element in the CompanyInfo section MUST be filled out.

To create a profile, the requestor sends a message with the root element `<OTA_CreateProfileRQ>.` The `<UniqueID>` element MUST indicate the *`Type`* `= Profile` and optionally, a unique identifier in the *Id*= field if one is created by the requesting system. The message includes, at a minimum, the data required by the specification or trading partner to open a profile.

The trading partner returns a response with a root element `<OTA_CreateProfileRS>` and an identifier for the profile, usually generated by the responding system. The requestor can then add data using the Update process, which allows for updating specific parts of the profile record or by replacing the entire profile record, as agreed upon between trading partners.

### 1.3.3 Read verb

To read the profile, the requestor sends a message with the root element `<OTA_ReadRQ>` accompanied by a `<UniqueID>` element containing the identifier for the record, and *`Type`* `= Profile.` The trading partner returns a message with the root element `<OTA_ReadProfileRS>` and the current data in the profile.

### 1.3.4 Update verb

Updating the profile, because it allows for changing parts of the record, is a more complex process. Since OTA version 2001A messages will support updates from multiple sources, as well as single operations per message, the OTA Infrastructure specification incorporates a mechanism to inhibit potential corruption of data. To meet this objective, the process involves performing a read action that facilitates comparing before and after images of a profile, followed by an update message. This approach for updates is also used by GDSs.

The process can be viewed as consisting of four steps:

- Requestor sends a Read request of *Type*="Profile" along with the unique identifier for the profile.
- Receiver responds with a copy of the current profile stored in the database.
- Requestor sends an Update message that identifies the position of the changes to be made, followed by one or more operations to be applied at that position.
- Receiver responds with a message indicating the success of the operation or the appropriate errors or warnings if the operation(s) were not completed successfully.

While the above steps may seem straightforward in concept, implementors should follow the steps outlined in Part I – OTA Infrastructure, Chapter 3, Section 3.5.4. - Update Verb.

To read the profile, the requestor sends a message with the root element `<OTA_ReadRQ>` of *`Type`* `= Profile` and the identifier for the record, that triggers a return message with the `<OTA_ReadProfileRS>` element and the current contents of the profile. The requestor then sends a message with the root element `<OTA_UpdateRQ>` tag, with one or more operations from the choice of `"insert", "modify",` or `"delete",` to make the requested change. The message identifying the operations also contains the content affected by the update. The

response message has the root element <OTA_UpdateRS> tag and indicates the success (or Warnings or Errors, if not successful) of the operation.

### 1.3.5 Replace sub-action verb

Updating specific parts of a profile is a more complex process that replacing a profile record in its entirety. For purposes of simplification, implementors may find it expedient to send an entire profile record instead of attempting to determine the XPath location for a modification.

Use of the Replace operation does not require a read action prior to sending the message to replace the contents of the profile, unless business practices require it. To replace the profile, the requestor sends a message with the root element <OTA_UpdateRQ> with the child element named <Root> that contains the attribute *Operation* ="replace" along with the identifier for the record. The response message is a <OTA_UpdateRS> that indicates the relative success of the operation.

### 1.3.6 Delete verb

Deleting a profile record is a process that removes the entire profile record from the database. It may be preceded by a Read request to view the record and verify the identification of the profile to be deleted, or if the record can be identified with relative certainty, and business practices allow, the Delete action can be performed without reading the profile record first.

To delete a profile using the process of verifying the record prior to deleting it, the requestor sends a message with the root element <OTA_ReadRQ> of *Type* = Profile and the identifier for the record, that returns a message with the <OTA_ReadProfileRS> root element and the current contents of the record. The requestor then sends a <OTA_DeleteRQ> message of *Type* = Profile and the identifier of the profile. It is recommended that the Instance= attribute be filled in with a value to ensure that the latest update of the profile record is known to all parties. The response to the delete request is an <OTA_DeleteRS> message confirming deletion of the record along with the profile's identifier to verify which record was deleted.

## 1.4 Transmitting empty data elements

This specification makes only a minimum of data items mandatory in order to meet the widest possible array of business needs, and as a result it is technically possible to transmit empty elements and still meet XML validation requirements.

Empty elements can result from unrelated practices by companies using the profile. Systems may create placeholders, for example creating a <Preferences>, <Affiliations>, and/or <TPA_Extensions> element automatically under the Profile in anticipation of customers or companies providing data for those elements, or the inclusion of additional features anticipated between trading partners. But in this scenario, some of these elements are not filled in, e.g.: Preferences, or Affiliations, companies can send these empty elements as part of their messages. Update operations may also remove child elements from a profile but leave empty parent elements in their wake.

Sending empty elements adds to the message transmission size, increases the need for bandwidth, and puts an extra processing burden on the receivers of the messages. Trading partners need to

establish policies and measures to minimize their occurrence. Because of the flexibility and the potential for sending empty elements, trading partners SHOULD transmit ONLY the data elements in the profile that are non-blank.

## 1.5 Elements and attributes in the Profile

In establishing the Profile data model, OTA defined data items to maximize the use of attributes, since the use of a data item as an attribute is unique within the namespace of the element. The use of attributes also reduces the size of the overall message, since an attribute name appears only once and does not require the use of both opening and closing tags surrounding the data.

The following criteria were used as guidelines for determining whether a data item should be an element or an attribute:

- Single occurrence, not a repeating element
- No child elements
- No attributes of its own
- Is not part of a 'choice' or branch within the schema
- Discrete code or limited text field (anticipated length not to exceed approximately 64 characters)

### 1.5.1 Elements and attributes tables

Each of the elements, element groups and their respective attributes of the data model of the OTA Profile, based on the Schema for `<Profile>`, are listed in the remainder of this section. The following is a key for the symbols, abbreviations, and terms used in the tables:

*Element* - name of the element used in XML tags

*Occurrence* -

R = Required, 1 occurrence allowed
? = Optional, 0 or 1 occurrences allowed
+ =Required, but multiples allowed
* = Optional, 0, 1, or more than one occurrence allowed

*Content* -

Element = another element
Text = Character data; see data type for details
Empty = No content in element, attributes used to convey meaning and provide data
Any = Any content allowed

*Data type* - applies to elements with content other than another element

string = Alphanumeric plus special punctuation and symbol characters
boolean = A value of Yes or No
timeInstant = Date and/or time format specified by W3C using ISO 8601
blank = Not applicable (element content)
integer = Any whole number - positive, negative, or zero.
decimal = Any number containing a fraction that is represented by a decimal point.

Please note that these data types are RECOMMENDED. The DTDs intended for validation of the XML exchanges use text string (CDATA) or enumeration data types. The XML Schema definitions allow more formal semantics of data typing, and should be used for reference to the datatypes assigned to the data, particularly when used for purposes of conversion into databases.

*Attributes* - gives the name of the attributes used with the element. Attribute tables will indicate the data type for the attribute, associated elements, default values, and descriptions. For attribute data types, Enumerations (abbreviated Enum in the charts) restrict the choices of values and one of the listed values MUST be used. For string attributes, any values listed are RECOMMENDED.

*Description* - provides a definition of the data element and includes references to specific code lists or standards, if used.

### 1.5.2 Privacy attributes

Two sets of attributes allow for customers and companies to indicate which data they would like to share for synchronization of their profiles at other locations and to receive marketing information. The specification calls for ShareAllSynchInd and ShareAllMarketInd attributes on the Profile element for permission to share all of the data in the profiles for synchronization and marketing purposes respectively. These attributes MUST have default values of No and require explicit approval from the customer to be changed to Yes.

The specification also gives the customer or company control over sharing of major elements within the profile. The ShareSynchInd and ShareMarketInd attributes on the major elements provide for the owner of the profile to indicate permission to share the data in these elements for synchronization or marketing. These attributes MUST have default values of Inherit for Inherited, which means the element inherits the permission value assigned to the next highest level. However, a value other than Inherit MUST over-ride the permission granted to the higher levels in the hierarchy for that given element.

For example, a value of No in ShareAllMarketInd in Profile will apply to the entire profile, unless it has been changed to Yes in ShareMarketInd for specific elements in the profile. Remember that with the default value of "Inherit" for Inherited, each subsequent element in the tree inherits the value of the next highest level, beginning with the root element, Profile.

In another example, the customer or company may indicate Yes in ShareAllSynchInd under the Profile element. If the customer or company wants to prevent the travel service provider holding the profile from sharing payment information, even for synchronization purposes, then the ShareSynchInd attribute for the PaymentForm element is set to a value of No.

Because the two attributes, ShareSynchInd and ShareMarketInd, occur frequently throughout the OTA version 2 specification, and they always appear together as a pair, they make up the Privacy entity, `%Ent.Privacy;`, which carries a default value of "Inherit". Note that the attributes in the Profile element, named ShareAllSynchInd and ShareAllMarketInd, have the default value of "No" which differ from the default value of the entity, "Inherit".

### 1.5.3 Reference Place Holder (RPH) attributes

This specification introduces the concept of a Reference Place Holder (RPH), an attribute that is used to identify a specific item in a collection of like items. For example, a Profile record may contain a series of payment forms, including credit cards, bank accounts or direct billing

arrangements that a customer may use to pay for a travel experience; loyalty programs to which the customer belongs; or a list of contact persons that may include family members to be contacted in case of an emergency, travel arrangers who typically arrange for travel services on behalf of the customer, etc.

In a given travel situation, one of those payment forms may be used to pay for travel services; one or more contacts may be designated as an emergency contact during the trip; one or more loyalty programs could be used to accrue points for a travel service received in the course of travel.

The use of an RPH enables a reference to the location where information about an object is stored, so that the data does not have to be repeated in more than one place in a message transaction. Every time a collection of like elements is passed in a message to be stored in a database, they are numbered, or indexed, and assigned an RPH. The index (RPH) values MUST remain the same on multiple systems sharing the data. RPH values do not change and may not be re-used. The index number, or RPH of an item in a collection does not change when an item in that collection is deleted.

An RPH is a serial sequence number that may also serve as a unique ID to an element within a collection. RPH's are not restricted to a single use, but can be maintained after the message transaction in a flat file reference. If implementors choose to do so, an RPH can be used as a key in database.

The RPH in the Preferences collection of the Profile is a reference placeholder that refers to the index of the customer (or company) preference of a payment form, or loyalty program membership (in the Customer data) to be used in the context of the travel experience. Future use of RPHs in OTA specifications can be anticipated for attaching payment forms or loyalty programs to reservations for travel services, identifying contacts for customers or companies, etc.

Thus RPHs used in this context are locations of the source of data that are cross-referenced to one another. One is the RPH attribute of the object that houses the data and indexes the collection, and the other is the RPH used within the context of a message, such as a travel preference attached to a reservation request, as described above.

**CUSTOMER PROFILE SECTION:**

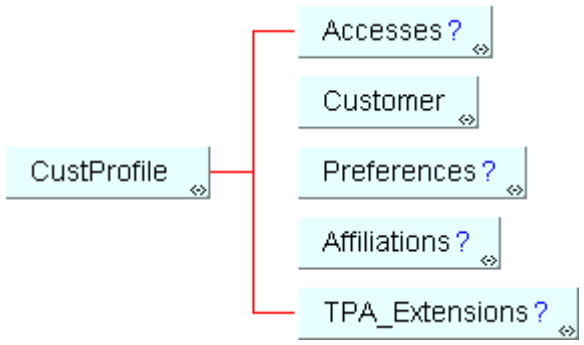



**Figure 1: Profile element**

## 1.6 Profile element

The Profile element is the root element of the business content of the profile. A Profile, along with the UniqueID and the profile identifier attributes: "URL", "Type", "Id", and "Instance" make up the OTA version 2 messages transmitted under the root tag that identifies the action to be performed. The attributes on the Profile element include the two privacy attributes described above, and the ProfileType. These attributes are required.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **Profile** | R | Element | | ShareAllSynchInd, ShareAllMarketInd, ProfileType | Top-level element for customer profile |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| ShareAllSynchInd | Profile | Enum | No | Yes, No | Permission for sharing all data in profile for synchronization of profiles held by other travel service providers |
| ShareAllMarketInd | Profile | Enum | No | Yes, No | Permission for sharing all data in profile for marketing information |
| ProfileType | Profile | Enum | | (see below) | Indicates type of customer or company profile; |

### 1.6.1 Profile data

#### Profile

Attributes:

**ShareAllSynchInd : (Yes | No | Inherit) = No**

Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default at the Profile level = No. Note: For all child elements of Profile, the default value of the ShareSynchInd attribute is Inherit.

**ShareAllMarketInd : (Yes | No | Inherit) = Inherit**

Permission for sharing access data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default at the Profile level = No. Note: For all other child elements of Profile, the default value of the ShareMarketInd attribute is Inherit.

**ProfileType : (Yes | No | Inherit) = Inherit**

Indicates type of customer or company profile. Enumerated values: (Customer | GDS | Corporation | Trvl_Agnt | Wholesaler | Group | Tour Operator | CRO | RepCompany | InternetBroker | Airline | Hotel | CarRental | CruiseLine). This attribute is required.

#### Profile DTD fragment

```
<!ELEMENT Profile (Accesses?, Customer, Preferences?, Affiliations?, TPA_Extensions?)>
<!ATTLIST Profile
    ShareAllSynchInd (Yes | No) "No"
    ShareAllMarketInd (Yes | No) "No"
    ProfileType (Customer | GDS | Corporation | Trvl_Agnt | Wholesaler | Group | TourOperator | CRO
| RepCompany | InternetBroker | Airline | Hotel | CarRental | CruiseLIne) #REQUIRED
 >
```

**ACCESSES SECTION:**

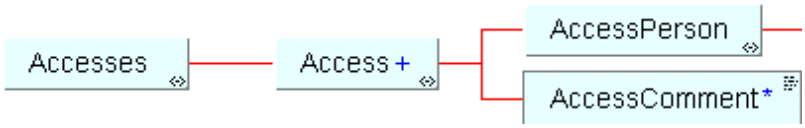



**Figure 2:Accesses**

### 1.7 Accesses

The Profile element includes the optional Accesses element that allows for tracking the creation date and time, and actions taken on the profile that may include the name of the person who accessed the profile and any additional comments entered by that person.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **Accesses** | ? | Element | | % Privacy CreateDateTime | Element to capture creation and last update data |
| Access | * | Element | String | ActionType, ActionDateTime, ActionSystemId | Describes the action taken on the record |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| % Privacy | Accesses | Enum | Inherit | Yes, No, Inherit | Entity that contains attributes for determining permission to share data in the element for synchronization of profiles held by other travel service providers and for marketing information. |
| CreateDateTime | Accesses | String | | | Month, day, year and optionally, Hour, minute, second of day the profile originated, in ISO 8601 format |

#### 1.7.1 Access data

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **Access** | * | **Element** | **String** | ActionType, ActionDateTime, ActionSystemId | An action taken on the profile record. |
| AccessPerson | ? | Text | String | | Name of individual who originated record |
| AccessComment | * | Text | String | | Free text description added by the person accessing the profile record. |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| ActionType | Access | Enum | | (see below) | Type of action taken on the profile (Create \| Read \| Update\| Delete) |
| ActionDateTime | Access | time Instant | | | Timestamp of the action taken on the profile in ISO 8601 format. |
| ActionSystemId | Access | String | | | Identifier assigned to server that accessed this profile |

### 1.7.2 Access data

#### Accesses

A record of the creation and recent accesses to the profile.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing access information for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing access data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**CreateDateTime : CDATA (xsd:timeInstant)**
Date and time this Profile record was created.

#### Accesses DTD fragment

```
<!ELEMENT Accesses (Access+ )>
<!ELEMENT Access (AccessPerson?, AccessComment* )>
<!ATTLIST Accesses
    %Ent.Privacy;
    CreateDateTime CDATA #IMPLIED
>
```

#### Access

Record of an action taken on the profile record.

Attributes:

**ActionType : (Create | Read | Update | Delete)**
Defines the type of action performed on the Customer Profile record. Enumerated values: Create, Read, Update, Delete

**ActionDateTime : CDATA (xsd:timeInstant)**
Date and time that an action was performed on the profile.

**ActionSystemId : CDATA**
The identifier of the system that performed the action on the profile record.

#### Access DTD fragment

```
<!ELEMENT Access (AccessPerson?, AccessComment*)>
<!ATTLIST Access
 ActionType (Create | Read | Update | Delete) #IMPLIED
 ActionDateTime CDATA #IMPLIED
 ActionSystemId CDATA #IMPLIED
>
```

#### AccessPerson

Name of individual who originated or last updated record.

```
<!ELEMENT AccessPerson (#PCDATA)>
>
```

#### AccessComment

Text description supplementing data from the LastAction and AccessPerson elements.

```
<!ELEMENT AccessComment (#PCDATA)>
```

**CUSTOMER SECTION:**

## 1.8 Customer information

The Customer element and `<Customer>` tag covers the basic data about the customer including name and address, forms of contact, travel documents, forms of payment used, and references to related travelers, such as family members or business associates.

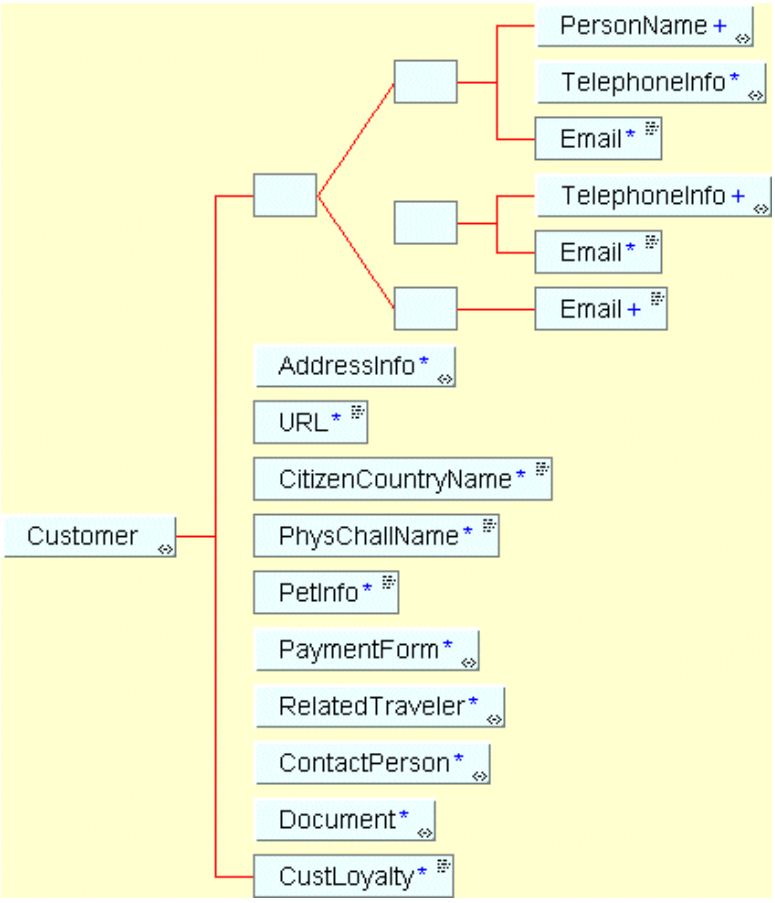
### 1.8.1 Required customer data

The specification defines a minimum set of data required for a profile, with that data located in the Customer section. Each profile MUST have entries in at least one of the following elements:

- PersonName, tag `<PersonName>`
- Telephone, tag `<TelephoneInfo>`
- Email, tag `<Email>`

PersonName and Telephone use the PersonName and Telephone objects that appear in several places throughout the profile, and are therefore, entities `%Ent.PersonName;` and `%Ent.Telephone;`. In the PersonName entity, the `<Surname>` element is MANDATORY. Likewise, if used, the Telephone entity and thus the TelephoneInfo element, MUST have entries in the AreaCityCode and PhoneNumber elements.

**Figure 3. Customer elements**



### 1.8.2 Customer elements and attributes

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **Customer** | R | Element | | Gender, Deceased, LockoutType, % Privacy, BirthDate, Currency | Contains basic data on the customer's identity, finances, location, |
| PersonName | * | Element, % PersonName | | DefaultInd, %Privacy, NameType | Names of the individual, includes former, nicknames, and alternate names |
| TelephoneInfo | * | Element, % Telephone | | DefaultInd, %Privacy, PhoneUseType | Information about the telephone numbers of the individual in the profile. |
| Email | * | Text | String | DefaultInd, %Privacy, EmailType | Electronic mail addresses, in IETF specified format |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| Gender | Customer | Enum | | Male, Female | |
| Deceased | Customer | Enum | No | Yes, No | Notes if individual has died |
| LockoutType | Customer<br>%Privacy | String | | Emergency, Incident, etc. | Indicates reason for locking out record |
| BirthDate | Customer | Date | | | Indicates self-professed date of birth, in ISO 8601 prescribed format |
| Currency | Customer | Decimal | | | Type of funds preferred for reviewing monetary values, ISO 4217 codes |
| DefaultInd | Shared | Enum | | Yes, No | The value that the receiving system should assume if the user specifies no overriding value or action. |

#### 1.8.2.1 Customer

**Customer**

Attributes:

**Gender : (Male | Female)**
Identifies the gender of the person identified in this profile. Values: Male | Female.

**Deceased : (Yes | No)**
Indicates if individual in this profile has died.

**LockoutType : CDATA**
Indicates the reason for locking out record, such as Emergency, Incident, etc.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**BirthDate : CDATA (xsd:timeInstant)**
Indicates self-professed date of birth, in ISO 8601 prescribed format, using the date only.

**Currency : CDATA**
Type of funds preferred for reviewing monetary values, ISO 4217 codes.

### Customer DTD fragment

```
<!ELEMENT Customer (((PersonName+,  TelephoneInfo*, Email*) | , (TelephoneInfo+, Email*) |
(Email+)), AddressInfo*, URL*, CitizenCountryName*, PhysChallName*, PetInfo*, PaymentForm*,
RelatedTraveler*, ContactPerson*, Document*, CustLoyalty*)>
<!ATTLIST Customer
    Gender (Male | Female) #IMPLIED
    Deceased (Yes | No) #IMPLIED
    LockoutType CDATA #IMPLIED
    %Ent.Privacy;
    BirthDate CDATA #IMPLIED
    Currency CDATA #IMPLIED
>
```

#### 1.8.2.2 Person Name

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **PersonName** | * | Element, % PersonName | | DefaultInd, %Privacy, NameType | Names of the individual, includes former, nicknames, and alternate names |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd | PersonName | Enum | | Yes, No | |
| %Privacy | | | | | |
| NameType | PersonName | String | | Default, Former, Nickname, Alternate | Describes purpose of the name associated with the person |

### %ENTITY PersonName

Attributes:

**DefaultInd : (Yes | No)**
Indicates that the receiving system should assume the default value if the user specifies no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**NameType : CDATA**
Type of name of the individual, such as former, nickname, alternate or alias names.

### PersonName DTD fragment

```
<!ELEMENT PersonName ( NamePrefix*, GivenName?, MiddleName*, Surname,
NameSuffix*, NameTitle*)>
```

```
<!ATTLIST PersonName
    DefaultInd (Yes | No) #IMPLIED
    %Ent. Privacy;
    NameType CDATA #IMPLIED
>
```

**NamePrefix**

Salutation or honorific (e.g., Mr., Mrs., Ms., Miss, Dr., etc.).

```
<!ELEMENT NamePrefix (#PCDATA)>
>
```

**GivenName**

Given name, first name or names.

```
<!ELEMENT GivenName (#PCDATA)>
>
```

**MiddleName**

Middle name or names.

```
<!ELEMENT MiddleName (#PCDATA)>
>
```

**Surname**

Family name, last name (REQUIRED ELEMENT).

```
<!ELEMENT Surname (#PCDATA)>
>
```

**NameSuffix**

Suffix that follows the surname (e.g., Jr., Sr., III, Ret., Esq., etc.).

```
<!ELEMENT NameSuffix (#PCDATA)>
>
```

**NameTitle**

Degree or honors, (e.g.: Ph.D., M.D., etc.) often used with a person's name.

```
<!ELEMENT NameTitle (#PCDATA)>
```

### 1.8.2.3 Customer Telephone

The TelephoneInfo element is used to store the telephone numbers of the customer identified in the profile, including home, business, mobile phone or other telephone number, defining the association with the individual in the context of the use of the phone.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **TelephoneInfo** | * | Element, % Telephone | | DefaultInd, %Privacy, PhoneUseType | Telephone numbers of the individual in the profile |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd | TelephoneInfo | Enum | | Yes, No | |
| %Privacy | | | | | |
| PhoneUseType | TelephoneInfo | String | | Work, Home, Day, Night | Describes the general use or preferred time of day for telephone number listed |

**TelephoneInfo**

Information about the telephone numbers of the individual or company in the profile.

Attributes:

**DefaultInd : (Yes | No)**
The value that the receiving system should assume if the user specifies no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**PhoneUseType : CDATA**
Describes the type of telephone number, in the context of its general use, such as Home, Business, Emergency Contact, Travel Arranger, Day, Evening, etc.

### TelephoneInfo_DTD fragment

```
<!ELEMENT TelephoneInfo (%Ent.Telephone;)>
<!ATTLIST TelephoneInfo
 DefaultInd (Yes | No) #IMPLIED
 %Ent.Privacy;
 PhoneUseType CDATA #IMPLIED
>
```

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PhoneTechType | Telephone | String | | Voice, Data, Fax, Pager, Cell, TTY | Indicates type of technology associated with this telephone number |

### %ENTITY Telephone

Telephone numbers for the parties in the profile.

Attributes:

**PhoneTechType : CDATA**
Indicates type of technology associated with this telephone number, such as Voice, Data, Fax, Pager, Cell, TTY.

**CountryAccessCode : CDATA**
Code assigned by telecommunications authorities for international country access identifier.

**AreaCityCode : CDATA**
Code assigned for telephones in a specific region, city, or area.

**PhoneNumber : CDATA**
Telephone number assigned to a single location.

**Extension : CDATA**
Extension to reach a specific party at the phone number.

**PIN : CDATA**
Additional codes used for pager or telephone access rights.

### Telephone DTD fragment

```
<!ELEMENT Telephone EMPTY>
<!ATTLIST Telephone
    PhoneTechType CDATA #IMPLIED
    CountryAccessCode CDATA #IMPLIED
    AreaCityCode CDATA #REQUIRED
    PhoneNumber CDATA #REQUIRED
    Extension CDATA #IMPLIED
    PIN CDATA #IMPLIED>
```

## 1.8.2.4 Customer Email

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **Email** | * | Text | String | DefaultInd, ShareSynchInd, ShareMarketInd, EmailType | Electronic mail addresses, in IETF specified format |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd %Privacy | Email | Enum | | Yes, No | |
| EmailType | Email | String | | Personal, Business, ListServe, etc. | Describes purpose of the email address associated with the person |

### Email

Electronic mail addresses, in IETF specified format.

Attributes:

**DefaultInd : (Yes | No)**
Indicates that the receiving system should assume the default value if the user specifies no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**EmailType : CDATA**
Defines the purpose of the Email address, such as personal, business, listserve, etc.

### Email DTD fragment

```
<!ELEMENT Email (#PCDATA)>
<!ATTLIST Email
DefaultInd (Yes | No) #IMPLIED
 %Ent.Privacy;
 EmailType CDATA #IMPLIED
>
```

#### 1.8.2.5 Customer Address

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **AddressInfo** | * | Element, % Address | | DefaultInd %Privacy, AddressType | Precise location of the individual in the profile for mailing and delivery |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd %Privacy | Address | Enum | | Yes, No | |
| AddressType | Address | Enum | | Home \| Business \| Delivery \| Mailing \| Billing \| CreditCard \| Other | Describes the purpose of the address |

## AddressInfo

Information about the physical addesses contained in the profile.

Attributes:

**DefaultInd : (Yes | No)**
Indicates that the receiving system should assume the default value if the user specifies no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**AddressType : CDATA**
Defines what the purpose of the address is, such as home, business, mailing, delivery, shipping/receiving address, etc.

## AddressInfo DTD fragment

```
<!ELEMENT AddressInfo (%Ent.Address;)>
<!ATTLIST AddressInfo
   DefaultInd (Yes | No) #IMPLIED
   %Ent.Privacy;
   AddressType (Home | Business | Delivery | Mailing | Billing | CreditCard | Other) #IMPLIED
>
```

## %ENTITY Address

Defines a physical address of parties to the profile. May also be used as a postal address.

## Address_DTD fragment

```
<!ELEMENT Address (StreetNmbr?, BldgRoom*, AddressLine*, CityName?, StateProv?,
CountryName?,)>
```

## StreetNmbr

Street name; number on street.

Attributes:

**PO_Box : CDATA**
Box, drawer, or route location reserved for postal delivery.

```
<!ELEMENT StreetNmbr (#PCDATA)>
<!ATTLIST StreetNmbr
    POBox CDATA #IMPLIED
>
```

## BldgRoom

Building name; room, apartment, or suite number.

```
<!ELEMENT BldgRoom (#PCDATA)>
>
```

## AddressLine

Additional line of an address as needed to define a physical location. May be repeated.

Attributes:

**ParsedInd : (Yes | No)**
Indicates if the data in the AddressLine field is parsed. Systems should use the AddressLine element to send unparsed data, as the AddressLine element is repeatable.

```
<!ELEMENT AddressLine (#PCDATA)>
<!ATTLIST AddressLine
 ParsedInd (Yes | No) #IMPLIED
>
```

### CityName

Name of city or town.

Attributes:

**PostalCode : CDATA**

Identifier for location assigned by postal authorities.

```
<!ELEMENT CityName (#PCDATA)>
<!ATTLIST CityName
    PostalCode CDATA #IMPLIED
>
```

### StateProv

State, province, or region name or code that identifies a location.

Attributes:

**StateCode : CDATA**

The postal service standard code or abbreviation for the state, province or region.

```
<!ELEMENT StateProv (#PCDATA)>
<!ATTLIST StateProv
    StateCode CDATA #IMPLIED
>
```

### CountryName

The name of the country specified in the address.

Attributes:

**CountryCode : CDATA**

ISO 3166 code for country in address.

```
<!ELEMENT CountryName (#PCDATA)>
<!ATTLIST CountryName
    CountryCode CDATA #IMPLIED
>
```

#### 1.8.2.6 Additional Customer Elements

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| URL | * | Text | String | DefaultInd, %Privacy URL_Type | Web site addresses, in IETF specified format |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd | URL | Enum | | Yes, No | |
| %Privacy URL_Type | URL | String | | Personal, Business, ListServe, etc. | Describes purpose of the URL, business, personal, etc. |

### URL

Web site address, in IETF specified format.

Attributes:

**DefaultInd : (Yes | No)**

Indicates that the receiving system should assume the default value if the user specifies no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**

Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**URL_Type : CDATA**
Defines the purpose of the URL address, such as personal, business, public, etc.

## URL DTD fragment

```
<!ELEMENT URL (#PCDATA)>
<!ATTLIST URL
DefaultInd (Yes | No) #IMPLIED
 %Ent.Privacy;
 URL_Type CDATA #IMPLIED
>
```

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| CitizenCountryName | * | Text | String | CountryCode DefaultInd, | Self-professed country or countries that customer claims for citizenship, |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd | CitizenCountryName | Enum | | Yes, No | |
| CountryCode | CitizenCountryName | String | | | ISO 3166 codes |

## CitizenCountryName

Name of the (self-professed) country or countries that customer claims for citizenship.

Attributes:

**DefaultInd : (Yes | No)**
Indicates that the receiving system should assume the default value if the user specifies no overriding value or action.

**CountryCode : CDATA**
ISO 3166 code for country in address.

## CitizenCountryName DTD fragment

```
<!ELEMENT CitizenCountryName (#PCDATA)>
<!ATTLIST CitizenCountryName
 DefaultInd (Yes | No) #IMPLIED
CountryCode CDATA #IMPLIED
>
```

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| PhysChallName | * | Text | String | | Any special physical conditions that can affect travel choices, including allergies |

## PhysChallName

Any special physical conditions that can affect travel choices, including allergies.

## PhysChallName DTD fragment

```
<!ELEMENT PhysChallName (#PCDATA)>
```

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| PetInfo | * | Text | String | | Information about pets that may accompany customer while traveling |

**PetInfo**

Information about pets that may accompany customer while traveling.

**PetInfo DTD fragment**

```
<!ELEMENT PetInfo (#PCDATA)>
```

### 1.8.3 Payment Form and Loyalty Program elements

Several places in the profile use data on payment methods and loyalty programs, such as frequent flyer or frequent guest programs. Unlike reusable objects, such as PersonName, where only the structure gets re-used, in these cases the data as well as the structure have the potential for repeating in a number places in the profile as well as in other messages, such as reservations. As a result, the OTA profile specification holds information about payment data in the PaymentForm element and information about loyalty program data in the Loyalty element, so that the customer's entries only need to appear once.

Each of the items that identify a payment form or loyalty program membership are assigned a Reference Place Holder (RPH) attribute that uniquely identifies the element within a collection of payment forms or loyalty programs. When it is necessary to refer to the data stored in the Customer section of the profile from other sections of the profile record, a reference is made to the RPH or index number of that item. Future use of RPHs in OTA specifications can be anticipated for attaching payment forms or loyalty programs to reservations for travel services, etc. In that way, sach of these elements can be referenced in other parts of the profile, such as in the Preferences collection, rather than repeated.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **PaymentForm** | * | Element | | DefaultInd, %Privacy CostCenterId, RPH | Ways of providing funds for travel by the individual |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd | PaymentForm | Enum | | Yes, No | |
| %Privacy | | | | | |
| CostCenterId | PaymentForm | String | | | Code for allocating cost of travel to company accounts |
| RPH | PaymentForm | Integer | | | Reference number to identify payment form data |

## PaymentForm

Attributes:

**DefaultInd : (Yes | No)**
Indicates that the receiving system should assume the default value if the user specifies no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**CostCenterId : CDATA**
Code for allocating cost of travel to company accounts.

**RPH : CDATA**
A Reference Place Holder that serves as an index to the collection of payment forms stored in the customer's profile record. The RPH may be used to reference a method of payment from outside the profile.

## PaymentForm DTD fragment

```
<!ELEMENT PaymentForm (CreditCard*, BankAcct*, DirectBill*)>
<!ATTLIST PaymentForm
    %Ent.Privacy;
    CostCenterId CDATA #IMPLIED
    RPH CDATA #IMPLIED >
```

### 1.8.3.1 CreditCard elements and attributes

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **CreditCard** | * | Element | | %Privacy CardType, CreditCardCode CardNumber, SeriesCode, EffectiveDate ExpireDate , | Payment accounts authorizing purchases represented by plastic cards often with magnetic strips with data for identification |
| CardHolderName | ? | Text | String | IssuingBankId | Name string of individual as embossed on the card |
| CardIssuerName | ? | Text | String | | Company or organization that issued the card |
| CardAddress | ? | Entity: Address | Element | | Mailing or delivery address that defines location to where invoices are sent. |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| %Privacy | | | | | |
| CardType | CreditCard | Enum | | Credit \| Debit \| CentralBill | Type of magnetic-striped card |

| | | | |
|---|---|---|---|
| CreditCardCode | CreditCard | String | Code indicating type of credit card (MC, AMEX, Visa, etc.) |
| CardNumber | CreditCard | | Identifier embossed on card |
| SeriesCode | CreditCard | String | Verification digits sometimes printed (but not embossed) on the card |
| EffectiveDate | CreditCard | Date | Date the card becomes valid in ISO 8601 format |
| ExpireDate | CreditCard | Date | Last date of use for the card in ISO 8601 format |

## CreditCard

Payment accounts authorizing purchases represented by plastic cards with magnetic strips with data for identification.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**CardType : (Credit | Debit | CentralBill)**
Indicates the type of magnetic striped card. Values: (Credit | Debit | CentralBill)

**CreditCardCode**
Code indicating the type of credit card. (e.g., MasterCard, American Express, Visa, etc.), or the type of central bill/debit card.

**CardNumber : CDATA**
Credit card number embossed on the card.

**SeriesCode : CDATA**
Verification digits printed on the card following the embossed number.

**EffectiveDate: CDATA**
Date the card becomes valid for use in ISO 8601 prescribed format.

**ExpireDate : CDATA**
Date the card expires and can no longer be used in ISO 8601 prescribed format.

## CreditCard_DTD fragment

```
<!ELEMENT CreditCard (CardHolderName?, CardIssuerName?, %Ent.Address;?)>
<!ATTLIST CreditCard
    %Ent.Privacy;
    CardType (Credit | Debit | CentralBill) #IMPLIED
    CreditCardCode CDATA #IMPLIED
    CardNumber CDATA #REQUIRED
    SeriesCode CDATA #IMPLIED
    EffectiveDate CDATA #IMPLIED
    ExpireDate CDATA #REQUIRED>
```

## CardHolderName

Name of individual cardholder as embossed on the credit/debit card.

## CardHolderName_DTD fragment

```
<!ELEMENT CardHolderName (#PCDATA)>
```

### CardIssuerName

Name of bank or organization issuing the card. e.g.: alumni association, bank, fraternal organization, etc.

**IssuingBankId : CDATA**

Code of bank issuing the card.

```
<!ELEMENT CardIssuerName (#PCDATA)>
<!ATTLIST CardIssuerName
    IssuingBankId CDATA #IMPLIED
>
```

### ENTITY %Address

Mailing or delivery address that defines the location where invoices are sent.

#### 1.8.3.2 Bank Account elements and attributes

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **BankAcct** | * | Element | | %Privacy BankId, AcctType, BankAcctNumber, | Customer bank accounts for payments, either for paper checks or electronic funds transfers |
| BankAcctName | * | Text | String | | Names of the individuals as they appear on the bank account. |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| &Privacy | | | | | |
| BankId | BankAcct | String | | | Code assigned by authorities to financial institutions; sometimes called bank routing number |
| AcctType | BankAcct | String | | Checking, Savings, Investment | Describes the bank account used for financing travel |
| BankAcctNumber | BankAcct | String | | | Identifying number for the bank account. |

## BankAcct

Customer bank accounts for payments, either for paper checks or electronic funds transfers.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**BankId : CDATA**
Code assigned by authorities to financial institutions; sometimes called bank routing number.

**AcctType : CDATA**
Describes the bank account used for financing travel, such as: Checking, Savings, Investment, etc.

**BankAcctNumber : CDATA**
Identifier for the account assigned by the bank.

## BankAcct_DTD fragment

```
<!ELEMENT BankAcct (BankAcctName* )>
<!ATTLIST BankAcct
    %Ent.Privacy;
    BankId CDATA #IMPLIED
    AcctType CDATA #IMPLIED
    BankAcctNumber CDATA #IMPLIED
>
```

## BankAcctName

Names of the individuals as listed on the bank account.

```
<!ELEMENT BankAcctName (#PCDATA)>
```

### 1.8.3.3 Direct Bill elements and attributes

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **DirectBill** | * | Element | | %Privacy. DirectBill_Id | Company name and location for sending invoice for remittances for travel services. |
| %CompanyName | R | Entity | String | | Name of organization to where invoices are sent |
| %Address | R | Entity | | | Precise mailing or delivery location to where invoices are sent |

| Attribute Name | Element | Data Type | Default Values | Description |
|---|---|---|---|---|
| &Privacy DirectBill_Id | DirectBill | String | | Identifier of the organization to be billed for trvel services |

### DirectBill

Company name and location for sending invoice for remittances for travel services.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**DirectBill_Id : CDATA**
Identifier for the organization to be billed directly for travel services.

### DirectBill_DTD fragment

```
<!ELEMENT DirectBill (%Ent.CompanyName;, %Ent.Address;)>
 <!ATTLIST DirectBill
    %Ent.Privacy;
    DirectBill_Id CDATA #REQUIRED
>
```

### ENTITY %CompanyName

Uses the CompanyName entity to indicate the name of organization to which invoices are sent.

### ENTITY %Address

Uses the Address entity to define the mailing or delivery location where invoices are sent.

#### 1.8.3.4 Voucher

The Voucher element, a child element of PaymentForm, is used to identify a series of vouchers or coupons used for payment of travel services. The Voucher element is not likely to be used for a customer's personal profile record.

See the CompanyInfo section for a complete definition of the Voucher element.

#### 1.8.3.5 Company Name entity

### CompanyName

Identifies a company by name and/or company code that may be associated with a membership or loyalty program, organization or travel service provider for the customer.

Attributes:

**Company Code : CDATA**
Identifies a company by the company code.

**CodeContext : CDATA**
Identifies the context of the identifying code, such as DUNS or IATA, ISO, etc.

### %ENTITY CompanyName

```
<!ELEMENT CompanyName (#PCDATA)>
<!ATTLIST CompanyName
    CompanyCode CDATA #IMPLIED
    CodeContext CDATA #IMPLIED
>
```

### 1.8.3.6 Related Traveler elements and attributes

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **RelatedTraveler** | * | Element | | %Privacy, Relation | Other traveler profiles associated with the individual |
| UniqueId | R | % UniqueId | | | Unique identifier assigned to individual related to the customer in the profile |
| %PersonName | ? | %PersonName | | | Name of individual related to traveler |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| %Privacy | | | | | |
| Relation | RelatedPerson | String | | Spouse, Child, FamilyMember, Business, InterestGroup, Medical, Security, Other | Relationship of the other person associated with the traveler |

#### RelatedTraveler

Additional traveler profile associated with the individual in this profile.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**Relation : CDATA**
Indicates type of the relationship with the person in the profile, such as Spouse, Child, Family, Business Associate, Interest Group, Medical, Security, Other, etc.

#### RelatedTraveler DTD fragment

```
<!ELEMENT RelatedTraveler (%Ent.UniqueId;, %Ent.PersonName;)>
<!ATTLIST RelatedTraveler
    %Ent.Privacy;
    Relation CDATA #IMPLIED
>
```

### 1.8.3.7 UniqueId entity

The UniqueId element, used to identify a Profile record, can also be used to identify an individual related to the primary entity in a profile. The UniqueId may identify a profile for a related person.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| UniqueId | R | % UniqueId | | Type, Id, URL, Instance | Unique identifier assigned to an individual customer profile |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| Type | UniqueId | Enum | | Profile | Identifies the type of object defined by the UniqueId element |
| Id | UniqueId | ID | | | Unique identifying value, based on the system that created the ID. |
| URL | UniqueId | String | | | Location associated with the record identified by the UniqueID |
| Instance | UniqueId | String | | | A record of data that captured at a specific point in time. Values may be a timestamp, increasing sequence, etc. |

### %ENTITY UniqueId

The UniqueId ENTITY is a globally unique identifier assigned to a profile record.

Attributes:

**Type : CDATA**
A reference to the type of object defined by the UniqueId element. By convention, the Type attribute value is the same as the element tag name for the referenced object, for example, "Profile".

**Id : ID**
A unique identifying value assigned by the creating system, using the XML data type ID. The Id attribute may be used to reference a primary-key value within a database or in a particular implementation.

**URL : CDATA**
URL that identifies the location of the record identified by the UniqueID. The URL referenced is recommended to be the public URL used for an OTA discovery message between trading partners.

**Instance : CDATA**
A snapshot of a record as it exists at a point in time, indicated by a value such as a timestamp, monotonically increasing sequence, etc.. An Instance is used in update messages where the sender must assure the server that the update sent refers to the most recent modification level of the object being updated.

### UniqueId DTD fragment

```
<!ELEMENT UniqueId EMPTY>
<!ATTLIST UniqueId
    URL CDATA #IMPLIED
    Type CDATA #REQUIRED
    Id ID #IMPLIED
    Instance CDATA #IMPLIED
>
```

#### 1.8.3.8 Contact Person elements and attributes

The Contact Person element identifies a person whom travel services should contact on behalf of the customer. This may be a travel agent, employer, relative or other person not traveling with the customer, and if so indicated may be contacted in case of emergency.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **ContactPerson** | * | Element | | DefaultInd %Privacy ContactType, | Persons who travel services should contact on behalf of the individual in the profile |

| | | | | | |
|---|---|---|---|---|---|
| | | | | Relation EmergencyFlag, RPH | |
| % PersonName | ? | Element | | | Names of individuals to contact |
| ContactTelephone | * | Element % Telephone | | PhoneTech PhoneUse, | Telephone numbers, including, fax or pager, of persons to contact |
| ContactAddress | * | Element % Address | | ContactType, | Addresses of persons to contact |
| ContactEmail | * | Text | String | DefaultInd, EmailType | Email addresses of contact person or entity |
| ContactURL | * | Text | String | DefaultInd, URL_Type | Web site addresses of contact person or entity |
| % CompanyName | * | Element: | | DefaultInd | Company associated with the contact. |
| EmployeeInfo | * | Element | String | EmployeeId, EmployeeLevel, EmployeeTitle, EmployeeStatus Type | Employment information about the contact person. |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd | ContactPerson | Enum | | Yes \| No | |
| %Privacy | | | | | |
| ContactType | ContactPerson | String | | Home, Work, Affiliation, Arranger, etc. | Type of contact for the individual in the profile |
| Relation | ContactPerson | | | | Indicates type relationship with the person in the profile. |
| EmergencyFlag | ContactPerson | Enum | | Yes \| No | Indicates whether this contact should be used in an emergency. |
| RPH | ContactPerson | Integer | | | Reference number for a contact stored in the profile |

## ContactPerson

Person or entity with whom travel services should communicate when it is necessary to interact with a contact on behalf of the customer.

Attributes:

**DefaultInd : (Yes | No)**
Indicates the default among a choice of more than one. The receiving system should assume this default value if the user specifies no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ContactType : CDATA**
Type of contact in the context of use for the travel experience; such as permanent, temporary, affiliation, travel arranger, etc.

**Relation : CDATA**
Indicates type of the relationship with the person in the profile, such as Spouse, Children, Family, Business, InterestGroup, Medical, Security, Other.

**EmergencyFlag : (Yes | No)**
Indicates if this contact should be used in the case of an emergency.

**RPH : CDATA**
A Reference Place Holder that serves as an index to the collection of contacts stored in the customer's profile record. The RPH may be used to reference a contact from outside the profile, e.g.: in a reservation.

## ContactPerson DTD fragment

```
<!ELEMENT ContactPerson (%Ent.PersonName;, TelephoneInfo*, AddressInfo*, Email*, URL*,
%Ent.CompanyName;*, EmployeeInfo*)>
<!ATTLIST ContactPerson
    DefaultInd (Yes | No) #IMPLIED
    %Ent.Privacy;
    ContactType CDATA #IMPLIED
    Relation CDATA #IMPLIED
    EmergencyFlag CDATA #IMPLIED
    RPH CDATA #IMPLIED
>
```

## TelephoneInfo

Telephone numbers, including, fax or pager, of contact person.

Attributes:

**DefaultInd : (Yes | No)**
Indicates the default among a choice of more than one. The receiving system should assume this default value if the user specifies no overriding value or action.

**ENTITY %Ent.Privacy;**
The Privacy ENTITY contains attributes for determining permission to share data in the element for synchronization of profiles held by other travel service providers and for marketing information.

**PhoneUseType : CDATA**
Describes the type of telephone number, by its general use or time of day such as Home, Business, Day, Evening, Emergency Contact, Travel Arranger, etc.

## TelephoneInfo_DTD fragment

```
<!ELEMENT TelephoneInfo (%Ent.Telephone;)>
<!ATTLIST TelephoneInfo
 DefaultInd (Yes | No) #IMPLIED
 %Ent.Privacy;
 PhoneUseType CDATA #IMPLIED
>
```

## AddressInfo

Information about the physical or mailing addess of the contact person.

Attributes:

**DefaultInd : (Yes | No)**
Indicates that the receiving system should assume the default value if the user specifies no overriding value or action.

**ENTITY %Ent.Privacy;**
The Privacy ENTITY contains attributes for determining permission to share data in the element for synchronization of profiles held by other travel service providers and for marketing information.

**AddressType : CDATA**
Defines what the purpose of the address is, such as home, business, mailing, delivery, shipping/receiving address, etc.

## AddressInfo DTD fragment

```
<!ELEMENT AddressInfo (%Ent.Address;)>
<!ATTLIST AddressInfo
   DefaultInd (Yes | No) #IMPLIED
   %Ent.Privacy;
   AddressType (Home | Business | Delivery | Mailing | Billing | CreditCard | Other) #IMPLIED
   >
```

## Email

Electronic mail addresses of the contact person.

Attributes:

**DefaultInd : (Yes | No)**
Indicates that the receiving system should assume the default value if the user specifies no overriding value or action.

**ENTITY %Ent.Privacy;**
The Privacy ENTITY contains attributes for determining permission to share data in the element for synchronization of profiles held by other travel service providers and for marketing information.

**EmailType : CDATA**
Defines the purpose of the Email address, such as personal, business, listserve, etc.

## Email DTD fragment

```
<!ELEMENT Email (#PCDATA)>
<!ATTLIST Email
DefaultInd (Yes | No) #IMPLIED
 %Ent.Privacy;
 EmailType CDATA #IMPLIED
>
```

## URL

Web site address of the contact person, in IETF specified format.

Attributes:

**DefaultInd : (Yes | No)**
Indicates that the receiving system should assume the default value if the user specifies no overriding value or action.

**ENTITY %Ent.Privacy;**
The Privacy ENTITY contains attributes for determining permission to share data in the element for synchronization of profiles held by other travel service providers and for marketing information.

**URL_Type : CDATA**
Defines the purpose of the URL address, such as personal, business, public, etc.

## URL DTD fragment

```
<!ELEMENT URL (#PCDATA)>
<!ATTLIST URL
DefaultInd (Yes | No) #IMPLIED
 %Ent.Privacy;
 URL_Type CDATA #IMPLIED
>
```

## ENTITY %CompanyName

Identifies a company or organization associated with the contact.

### EmployeeInfo

Employment information about the contact person. The PCDATA field of EmployeeInfo can be used to record the exact name of the employee if it differs from that of the individual identified as a customer's contact person.

Attributes:

**EmployeeId : CDATA**
Identifier assigned to the person by the employer.

**EmployeeLevel : CDATA**
Level in employer organization (e.g. seniority) that conveys privileges.

**EmployeeTitle : CDATA**
Title of employee in employer company that conveys rank or privileges.

**EmployeeStatusType : (Active | Retired | Leave | Terminated)**
Status of employment. Values: Active, Retired, Leave, Terminated.

### EmployeeInfo DTD fragment

```
<!ELEMENT EmployeeInfo (#PCDATA)>
<!ATTLIST EmployeeInfo
    EmployeeId CDATA #IMPLIED
    EmployeeLevel CDATA #IMPLIED
    EmployeeTitle CDATA #IMPLIED
    EmployeeStatusType (Active | Retired | Leave | Terminated) #IMPLIED
>
```

#### 1.8.3.9 Document elements and attributes

Information about documents used for travel, such as passports or driver's licenses, can be stored in the customer section of the profile, and used when needed for travel services.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **Document** | * | Element | | %Privacy, DocId, DocType, Gender, BirthDate, EffectiveDate, ExpireDate | Government-issued documents for travel |
| DocHolderName | ? | Entity: PersonName | | | Name of person given on the document |
| DocIssueAuthority | ? | Text | String | | Government authority issuing document. If a national document use ISO 3166 code |
| DocIssueLocation | ? | Text | String | | City, state/province document in which the document was issued |
| DocLimitations | * | Text | String | | Limitations on travel documents, such as visas for specific purposes or corrective lenses for driver’s license |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| % Privacy | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| DocId | Document | String | | | Unique number assigned by authorities to document |
| DocType | Document | String | | Passport, Visa, Driver, VoterReg, BirthCert, SocialSecurity, MilitaryID, GovtID, Other | Indicates the kind of travel documents held by the person |
| Gender | Document | Text | Enum | Male, Female | Gender can be used to identify documents |
| BirthDate | Document | Date | | | Birth date of customer, as recorded on the document. |
| EffectiveDate | Document | Date | | | Indicates the date on which the document takes effect (such as date of visa issuance), in ISO 8601 format |
| ExpireDate | Document | Date | | | Indicates the date after which the document is no longer valid, in ISO 8601 format |

## Document

A government-issued document used for travel.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**DocId : CDATA**
Unique identifying number assigned by authorities to document.

**DocType : CDATA**
Indicates the kind of travel documents held by the person, such as: Passport, Visa, Driver, VoterReg, BirthCert, SocialSecurity, MilitaryID, GovtID, Other.

**Gender : (Male | Female)**
Identifies the gender of person identified by the document. Values: Male | Female.

**BirthDate : CDATA**
Indicates date of birth as indicated in the document, in ISO 8601 prescribed format.

**EffectiveDate : CDATA**
Indicates the date on which the document takes effect (such as date of visa issuance), in ISO 8601 format.

**ExpireDate : CDATA**
Indicates the date after which the document is no longer valid, in ISO 8601 format.

## Document DTD fragment

```
<!ELEMENT Document (DocHolderName?, DocIssueAuthority?, DocIssueLocation?,
DocLimitations*)>
<!ATTLIST Document
    %Ent.Privacy;
    DocId CDATA #IMPLIED
    DocType CDATA #IMPLIED
    Gender (Male | Female) #IMPLIED
```

```
        BirthDate CDATA #IMPLIED
        EffectiveDate CDATA #IMPLIED
        ExpireDate CDATA #IMPLIED
    >
```

**DocHolderName**

Name of person as given on the document.

**DocHolderName DTD fragment**

```
<!ELEMENT DocHolderName (#PCDATA)
>
```

**DocIssueAuthority**

Government authority issuing document. If a national document, use ISO 3166 code to indicate the code of the country issuing the document.

**DocIssueAuthority DTD fragment**

```
<!ELEMENT DocIssueAuthority (#PCDATA)
>
```

**DocIssueLocation**

City, state/province, and/or country in which the document was issued.

**DocIssueLocation DTD fragment**

```
<!ELEMENT DocIssueLocation (#PCDATA)
>
```

**DocLimitations**

Limitations on travel documents, such as visas for specific purposes, restrictions for entry int ocertain countires, or corrective lenses for driver's license.

**DocLimitations DTD fragment**

```
<!ELEMENT DocLimitations (#PCDATA)>
```

### 1.8.3.10 CustLoyalty elements and attributes

The CustLoyalty element identifies membership in a program rewarding frequent use by accumulating credits for services provided by vendors. Since a customer may have multiple memberships in such programs, the CustLoyalty element uses an RPH attribute to index a specific loyalty program among a collection. When used for travel services, the RPH can be used to reference a specific program stored in the profile

| Element | Occur c. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **CustLoyalty** | * | | String | ProgramCode %Privacy Membership Id SingleVendorInd LoyalLevel, SignupDate, EffectiveDate, ExpireDate, RPH | Name of the loyalty program. |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| ProgramCode | CustLoyalty | String | | | Identifying code for the loyalty program |
| MembershipId | %Privacy CustLoyalty | String | | | Unique number assigned to the individual by the loyalty program |
| SingleVendorInd | CustLoyalty | Enum | | SingleVndr, Alliance | Indicates if program is affiliated with a group of related offers accumulating credits |
| LoyalLevel | CustLoyalty | String | | | Indicates special privileges in program assigned to individual |
| SignupDate | CustLoyalty | String | | | Indicates when the member signed up for the loyalty program. |
| EffectiveDate | CustLoyalty | String | | | Indicates when privileges of membership in the loyalty program starts. |
| ExpireDate | CustLoyalty | String | | | Indicates when membership in the loyalty program expires. |
| RPH | CustLoyalty | Integer | | | Reference number for loyalty program |

## CustLoyalty

Customer membership in loyalty programs such as frequent guest, frequent flier programs, etc.

Attributes:

**ProgramCode : CDATA**
The code of the loyalty or membership program.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**MembershipId : CDATA**
Unique identifier of the member in the program. ie: membership number, account number, etc.

**SingleVendorInd : (SingleVndr | Alliance)**
Indicates if program is affiliated with a group of related offers for accumulation of credits or points. Values: SingleVndr or Alliance.

**LoyalLevel : CDATA**
Indicates the status or level within the program, ie: VIP, Platinum, etc. This may carry certain privleges or represent a particular amount of credit awarded to the individual program member.

**SignupDate : CDATA**
Indicates when the member signed up for the loyalty program.

**EffectiveDate : CDATA**
Indicates when privileges of membership in the loyalty program starts.

**ExpireDate : CDATA**
Indicates when membership in the loyalty program expires.

**RPH : CDATA (xsd:integer)**
Reference number to be used to identify this loyalty program.

## CustLoyalty DTD fragment

```
<!ELEMENT CustLoyalty (#PCDATA)>
<!ATTLIST CustLoyalty
    ProgramCode CDATA #IMPLIED
    %Ent.Privacy;
    MembershipId CDATA #IMPLIED
    SingleVendorInd (SingleVndr | Alliance) #IMPLIED
    LoyalLevel CDATA #IMPLIED
    SignupDate CDATA #IMPLIED
    EffectiveDate CDATA #IMPLIED
    ExpireDate CDATA #IMPLIED
    RPH CDATA #IMPLIED
>
```

## 1.9 Travel Preferences

The Preferences section identifies the needs of travelers in various forms. It allows for the customer or company to gather these requirements into specified collections of preferences, and to designate a default group as well as name the groups for various kinds of travel experiences -- e.g., business, international, golf outings, overnight, family vacations, etc.. The Preferences section also provides for preferences related to individual travel services -- airlines, hotels, car rental agencies, and others. The Others category allows for extending the services into areas not yet defined.

The preference collections, element <`PrefCollection`>, allow the identification of common preferences as well as those associated with specific travel services. Profiles MAY have one or more of these collections. If a profile includes travel preferences, it SHOULD have services from one or more of the following element groups: `<CommonPref>`, `<AirlinesPref>`, `<VehicleRentalPref>`, `<HotelPref>`, `<OtherSrvcPref>` (other services) or `<TPA_Extensions>`.

The use of preference collections is a feature that enables travel services to be specified for each kind of travel identified. For example, a traveler may have requirements for onboard services on longer overseas flights that he or she would not need for shorter domestic flights. In this scenario, the collections could be defined for international and domestic travel, separate airline services identified in each collection. Travel to different destinations can require defining different collections. A petroleum engineer would likely need a different type of rental car when visiting wells in Alaska than when visiting the corporate headquarters in Houston.

OTA originally developed the hotel elements in OTA Customer Profile version 1 from the Windows Hospitality Interface Specifications (WHIS) and Hotel Electronic Distribution Network Association (HEDNA) element lists, as well as contributions from Hyatt and Cendant chains. This publication of Customer Profile, version 2, represents the integration of the HITIS Profile Synchronization standard with OTA into version 2. OTA work groups from the airline and car rental industries developed their respective elements over several months of effort. Their elements have been included in the modifications to the OTA model.

**PREFERENCES SECTION:**

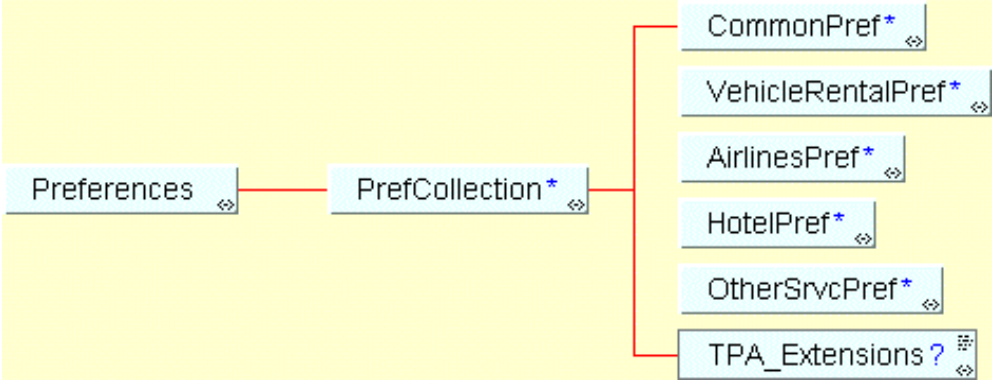



**Figure 4: Preferences elements**

| Element | Occurc | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **Preferences** | ? | Element | | ShareSynchInd, ShareMarketInd | Preferences related to travel experiences |
| **PrefCollection** | * | Element | | ShareSynchInd, ShareMarketInd, TravelType | Unique aggregation of travel needs |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| TravelType | PrefCollection | String | | Base (non-travel), Business, Leisure, International, Domestic, Other, etc. | Identifies the category of travel for a group of preferences |

## Preferences

The Preferences element identifies needs or preferences for a travel experience. Preferences can be gathered into collections for specific travel situations. Each group of preferences is named to identify the type of travel experience it applies to, and a default group can be designated.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

## Preferences DTD fragment

```
<!ELEMENT Preferences (PrefCollection*)>
<!ATTLIST Preferences
    %Ent.Privacy;
>
```

## PrefCollection

The element PrefCollection allows customers or companies to identify a group of preferences. Those preferences can be associated with specific travel services (airlines, car rentals, hotels) or common to all travel or non-travel experiences.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**TravelType : CDATA**
Category of travel for this group of preferences, such as Base (non-travel), Business, Leisure, International, Domestic, Other.

## PrefCollection DTD fragment

```
<!ELEMENT PrefCollection (CommonPref*, VehicleRentalPref*, AirlinesPref*, HotelPref*,
OtherSrvcPref*)>
<!ATTLIST PrefCollection
    %Ent.Privacy;
    TravelType CDATA #IMPLIED
>
```

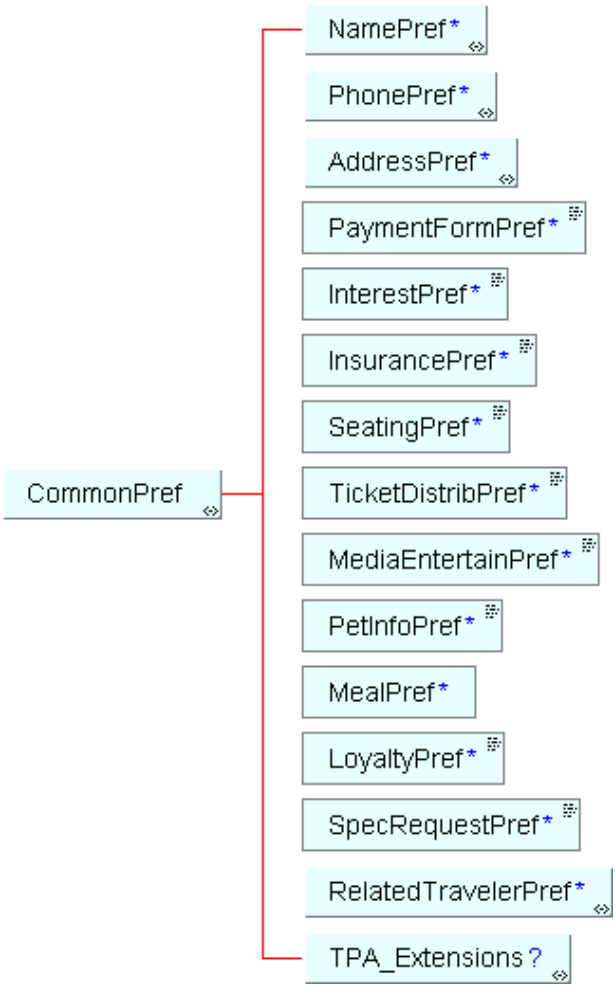
## 1.10 Common Preference elements and attributes

Common preferences, element `<CommonPref>`, represent those items that travel customers or companies would like associated with specific preference collections but are independent of travel services, such as airlines or hotels. These common preferences include name and contact information, related travelers, forms of payment, personal interests, loyalty programs, food and beverage needs, media and entertainment choices, pet information, and other special needs.

Data elements such as name, address, and telephone are also entered under customer information (in the Customer element). If, for example a traveler has a different name associated with this collection, such as an author's pen name used for book tours or, using the same analogy, a publisher's address and telephone rather than the author's, customers can capture those requirements with this structure. While all of the elements are OPTIONAL, any occurrence of these elements MUST occur in the designated order.

This specification structures the preferences from more general needs higher in the hierarchy to more specific requirements lower in the tree. As a rule, the lower the preferences appear in the hierarchy, the more precedence they take. For example, a loyalty program identified under car rental will take precedence for car rental preferences over loyalty programs identified under common preferences.

**Figure 5: Common Preferences**



| Element | Occurc | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **CommonPref** | ? | Element | | %Privacy, SmokingInd, PrimaryLanguage, AltLanguage | Travel needs associated with a collection but independent of specific travel services |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| % Privacy | CommonPref | | | | |
| SmokingInd | CommonPref | Enum | | Yes \| No | Indicates smoking preference |
| PrimaryLanguage | CommonPref | String | | | Preferred language, using ISO 639 codes |
| AltLanguage | CommonPref | | | | Alternate language, using ISO 639 codes |

## CommonPref

Travel needs associated with a collection but independent of specific travel services.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**SmokingInd : (Yes | No)**
Indicates preference of smoking or no smoking. Values: Yes | No.

**PrimaryLanguage : CDATA**
Identifies the primary language preference for the form of travel represented in this collection. The human language is identified by ISO 639 codes.

**AltLanguage : CDATA**
Identifies the alternate language preferred for the form of travel specified in this collection. The human language is identified by ISO 639 codes.

## CommonPref DTD fragment

```
<!ELEMENT CommonPref (NamePref*, PhonePref*, AddressPref*, PaymentFormPref*,
InterestPref*, InsurancePref*, SeatingPref*, TicketDistribPref*, MediaEntertainPref*, PetInfoPref*,
MealPref*, LoyaltyPref*, SpecRequestPref*, RelatedTravelerPref*, TPA_Extensions?)>
<!ATTLIST CommonPref
    %Ent.Privacy;
    SmokingInd (Yes | No) #IMPLIED
    PrimaryLanguage CDATA #IMPLIED
    AltLanguage CDATA #IMPLIED
```

### 1.10.1.1 Name Preferences

Travelers may store more than one name in their customer profile, which allows them to use different names for travel situations. An author may use a 'pen name', or a famous person may use an assumed name that allows them to travel anonymously. The NamePref element allows for different names to be used by specifying a preference in different travel collections.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **NamePref** | * | Element, % PersonName | | PreferLevel | Name(s) to be used with this collection of preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the name indicated |

### NamePref

Preferred name of traveler from profile to be used with this collection of preferences.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the payment form identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### NamePref DTD fragment

```
<!ELEMENT NamePref (%Ent.UniqueId;, %Ent.PersonName;)>
<!ATTLIST NamePref
   PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
>
```

### %ENTITY PersonName

#### 1.10.1.2 Telephone Preferences

The collection of telephone preferences allows for specific telephone numbers to be designated as a preference in different travel collections.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **PhonePref** | * | Element, % Telephone | | %Privacy, PhoneUseType | Telephone number(s) to be used with this collection of preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| %Privacy | PhonePref | | | | |
| PhoneUseType | PhonePref | String | | | Type of telephone number to be used for this preference colection. |

### PhonePref

Preferred telephones (including fax and pager) to be used for this collection of preferences.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**

Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**PhoneUseType : CDATA**
Describes the type of telephone number, in the context of its general use, such as Home, Business, Emergency Contact, Travel Arranger, Day, Evening, etc.

### PhonePref DTD fragment

```
<!ELEMENT PhonePref (%Ent.Telephone;)>
<!ATTLIST PhonePref
    %Ent.Privacy;
    PhoneUseType CDATA #IMPLIED>
```

#### 1.10.1.3 Address Preferences

The collection of address preferences allows for certain addresses to be designated in different collections, such as a company address for business travel and a home address for leisure travel.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **AddressPref** | * | Element, % Address | | %Privacy, AddressType | Address(es) to be used with this collection of preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| %Privacy | Address | | | | |
| AddressType | Address | Enum | | Home \| Business \| Delivery \| Mailing \| Billing \| CreditCard \| Other | Describes the purpose of the address |

### AddressPref

Preferred address(es) to be used with this collection of preferences.

Public Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**AddressType : CDATA**
Defines what the purpose of the address is, such as home, business, mailing, delivery, shipping/receiving address, etc.

### AddressPref DTD fragment

```
<!ELEMENT AddressPref (%Ent.Address;)>
<!ATTLIST AddressPref
    %Ent.Privacy;
    AddressType (Home | Business | Delivery | Mailing | Billing | CreditCard | Other) #IMPLIED
>
```

#### 1.10.1.4 Payment Form Preferences

The collection of PaymentForm preferences allows for specific types of payment to be assigned to different preference collections, such as a corporate credit card for business travel and a personal bank account or credit card for leisure travel.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **PaymentForm Pref** | * | Text | String | PreferLevel, RPH | Form(s) of payment to be used with this collection of preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the payment form indicated |
| RPH | PaymentForm Pref | Integer | | | Reference number of the payment form to be used with the indicated preference |

### PaymentFormPref

Indicates preferences for the form of payment to be used for travel associated with this collection.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the payment form identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**RPH : CDATA**

Index number to be used to reference the payment form to be used in this travel collection. Identifies a specific form of payment defined under Customer.

### PaymentFormPref DTD fragment

```
<!ELEMENT PaymentFormPref (#PCDATA)>
<!ATTLIST PaymentFormPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
  RPH CDATA #IMPLIED
>
```

#### 1.10.1.5 Interest Preferences

The Interest preferences allows for designation of specific interests to be assigned to different preference collections, such as tickets to Broadway shows for travel to NewYork City, or preferences for types of recreational activities for leisure travel.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **InterestPref** | * | Text | String | PreferLevel, | Traveler interests to be used with this collection of preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| PreferLevel | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the interest indicated |

### InterestPref

Personal or special interests (i.e., hobbies, recereational activities, etc.) that enter into travel decisions, and are used as a preference for a given travel experience.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the interest identified. Values: (Only | Unacceptable | Preferred). If Only, use only this interest preference for the travel situation; if Unacceptable, do NOT use this interest preference in the given situation. The default value is "preferred".

### InterestPref DTD fragment

```
<!ELEMENT InterestPref (#PCDATA)>
<!ATTLIST InterestPref
   PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
>
```

#### 1.10.1.6 Insurance Preferences

The Insurance preferences allows for designation of types of travel insurance to be procured in conjunction with different preference collections, such as additional medical coverage or transportation home from overseas travel, or insurance against loss of investment for a large travel purchase such as a cruise package.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **InsurancePref** | * | Text | String | PreferLevel, InsuranceRPH | Insurance policies to be used with this collection of preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | Insurance Pref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the interest indicated |
| Insurance RPH | Insurance Pref | Integer | | | Reference number of the insurance policy to be used with the indicated preference |

### InsurancePref

Indicates preferences for the type of insurance policy to be used for travel associated with this collection.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the insurance policy identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**InsuranceRPH : CDATA**

Index number to be used for reference the insurance policy to be used in this travel collection.

### InsurancePref DTD fragment

```
<!ELEMENT InsurancePref (#PCDATA)>
```

```
<!ATTLIST InsurancePref
   PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
   InsuranceRPH CDATA #IMPLIED
>
```

### 1.10.1.7 Seating Preferences

The SeatingPref entity allows for designation of preferences for seat selection for airlines, rail transportation, or other modes of travel involving seat assignment. For example, a customer may prefer to have a window seat on a night flight, but an aisle seat on a short, domestic flight, or may wish to exclude seats that face backward regardless of the mode of transportation.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **SeatingPref** | * | Text | String | PreferLevel, SeatDirection, SeatLocation, SeatPosition, SeatRow | Seating preferences to be used with this collection of preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | SeatingPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the seating indicated |
| SeatDirection | SeatingPref | Sting | | | Direction seat faces, e.g.: forward, backward, etc. |
| SeatLocation | SeatingPref | Sting | | | Place seat occupies relative to seating arrangement |
| SeatPosition | SeatingPref | Sting | | | Position of seat relative to location, e.g.: aisle, center, window, etc. |
| SeatRow | SeatingPref | Sting | | | Indicates a specific row as a seating preference |

#### %ENTITY SeatingPref

Indicates the customer's preference for seating arrangements.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the seating arrangements indicated. Values: (Only | Unacceptable | Preferred). If Only, use only this seating preference for the travel situation; if Unacceptable, do NOT use this seating preference in the given situation. The default value is "preferred".

**SeatDirection : CDATA**
Direction seat faces during travel, when conveyance allows.

**SeatLocation : CDATA**
Location of seat in cabin of conveyance. Suggested values include: Forward, Middle, Aft, ExitRow, Bulkhead, Right or Left Side, etc.

**SeatPosition : CDATA**
Preferred position of seat in a row, such as Aisle, Middle, Center, Window, etc.

**SeatRow : CDATA**
Preferred row for seating; indicates specific row number and/or seat identifier.

#### SeatingPref DTD fragment

```
<!ELEMENT SeatingPref (#PCDATA)>
```

```
<!ATTLIST SeatingPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    SeatDirection CDATA #REQUIRED
    SeatLocation CDATA #REQUIRED
    SeatPosition CDATA #REQUIRED
    SeatRow CDATA #REQUIRED
>
```

#### 1.10.1.8 Ticket Distribution

The designation of preferences for ticket distribution specifies preferred methods of receiving tickets for travel-related services, such as use of courier, regular mail, or electronic ticketing, and provides the ability for a customer or company to specify the time frame for delivery of tickets.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **TicketDistribPref** | * | Text | String | PreferLevel, DistribType, TicketTime | Ticketing information to be used with this collection of preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | TicketDistribPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the type of ticket distribution |
| DistribType | TicketDistribPref | Sting | | | Method of distribution; e.g.: mail, courier, electronic, etc. |
| TicketTime | TicketDistribPref | Sting | | | Desired ticket turnaround, ie: delivery time |

**TicketDistribPref**

Indicates preferences for the type of ticket distribution to be used for the travel service product.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the type of ticket distribution identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**DistribType : CDATA**
Ticket distribution method; such as Fax, Email, Courier, Mail, Airport_Pickup, City_Office, Hotel_Desk, WillCall, etc.

**TicketTime : CDATA**
Ticket turnaround time desired, amount of time requested to deliver tickets.

**TicketDistribPref DTD fragment**

```
<!ELEMENT TicketDistribPref (#PCDATA)>
<!ATTLIST TicketDistribPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    DistribType CDATA #IMPLIED
    TicketTime CDATA #IMPLIED
>
```

#### 1.10.1.9 Media and Entertainment

The designation of media and entertainment preferences specifies certain entertainment or media-related services sought as part of a travel situation, which might include a preference for flights that offer movies or stereo entertainment, or hotels that offer Cable TV, etc.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **MediaEntertainPref** | * | Text | String | PreferLevel, | Media and entertainment information preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | MediaEntertainPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the media and entertainment preferences indicated |

### MediaEntertainPref

Identifies the media and entertainment preferences for a given travel situation, such as: books, magazines, movies, newspapers, radio, television, cinema, games, online, etc. This element could be used to indicate a preference for online connectivity, such as internet or modum dial-up connections when applicable to a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the media and entertainment identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### MediaEntertainPref DTD fragment

```
<!ELEMENT MediaEntertainPref (#PCDATA)>
<!ATTLIST MediaEntertainPref
   PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
>
```

#### 1.10.1.10 Pet Information Preferences

The inclusion of pet information allows a customer to specify preferences for traveling with a pet, such as hotel accomodations that allow pets, boarding facilities, containers for shipping pets, etc.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **PetInfoPref** | * | Text | String | PreferLevel, | Pet information to be used with this collection of preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | PetInfoPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the pet information supplied |

### PetInfoPref

Indicates the preferences for information about pets that accompany the customer in a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the pet information identified. Values: (Only | Unacceptable | Preferred). If Only, use only this pet information preference for the travel situation; if Unacceptable, do NOT use this pet information preference in the given situation. The default value is "preferred".

### PetInfoPref DTD fragment

```
<!ELEMENT PetInfoPref (#PCDATA)>
<!ATTLIST PetInfoPref
   PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
>
```

#### 1.10.1.11 Food and Beverage Preferences

The Meal Preference entity allows a customer to indicate preferences for food and beverages, including dietary restrictions such as vegetarian or low fat meals, or favorite dining expreiences, such as all-American or ethnic restaurants.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **MealPref** | * | Text | String | PreferLevel, MealType, FavoriteFood, Beverage | Food and beverage preferences to be used with this collection |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | MealPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the type of ticket distribution |
| MealType | MealPref | Sting | | | Type of meal required, vegetarian, kosher, low fat, etc. |
| FavoriteFood | MealPref | Sting | | | Dining preferences used with this collection |
| Beverage | MealPref | String | | | Type of drink(s) preferred |

### %ENTITY MealPref

Indicates the customer's preference for meals, favorite foods, and beverages.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the meal or beverage type identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**MealType : CDATA**
Identifies a type of meal preferred or dietary restrictions to be used for a given travel situation, such as vegetarian, or low-sodium meals.

**FavoriteFood : CDATA**
Indicates the customer's dining preferences, NOT dietary restrictions, to be used for a given travel situation.

**Beverage : CDATA**
Indicates the type of drink(s) preferred for a given type of travel situation.

#### 1.10.1.12 Loyalty Program Preferences

Preferences for loyalty programs allows for a customer to designate a specific loyalty program for different travel situations, such as an airline loyalty program for a travel collection that includes an airline segment, another loyalty program for a trip made exclusively in a rental car, etc.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **LoyaltyPref** | * | Text | String | PreferLevel, LoyaltyRPH | Loyalty programs to be used with this collection of preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | LoyaltyPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the interest indicated |
| LoyaltyRPH | LoyaltyPref | Integer | | | Reference number of the loyalty program to be used with the indicated preference |

**LoyaltyPref**

Preferred loyalty program to be used for a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the loyalty program identified. Values: (Only | Unacceptable | Preferred). If Only, use only this loyalty program preference for the travel situation; if Unacceptable, do NOT use this loyalty program preference in the given situation. The default value is "preferred".

**LoyaltyRPH : CDATA (xsd:integer)**

Index number to be used for reference the loyalty program to be used in this travel collection.

**LoyaltyPref DTD fragment**

```
<!ELEMENT LoyaltyPref (#PCDATA)>
<!ATTLIST LoyaltyPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
  LoyaltyRPH CDATA #IMPLIED>
```

#### 1.10.1.13 Special Request Preferences

The special request preference element allows a special request to be associated with a given travel experience.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **SpecRequest Pref** | * | Text | String | PreferLevel, | Special request to be used with this preference collection |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | SpecRequest Pref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the special request |

### SpecRequestPref

Indicates a preference for special service requests in a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the special request identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### SpecRequestPref DTD fragment

```
<!ELEMENT SpecRequestPref (#PCDATA)>
<!ATTLIST SpecRequestPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
 >
```

#### 1.10.1.14 Related Traveler Preferences

The RelatedTravelerPref element allows a customer or company to designate a preference to be accompanied by another traveler on a given travel experience.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **RelatedTravelerPref** | * | Element,<br>% UniqueId,<br>% PersonName | | PreferLevel | Name(s) of related travelers to be used with this collection of preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | RelatedTravelerPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the related traveler |

### RelatedTravelerPref

Indicates a preference for a related traveler identified in the customer profile to be used in a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the special request identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### RelatedTravelerPref DTD fragment

```
<!ELEMENT RelatedTravelerPref (%Ent.UniqueId;, %Ent.PersonName)>
<!ATTLIST RelatedTravelerPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED>
```

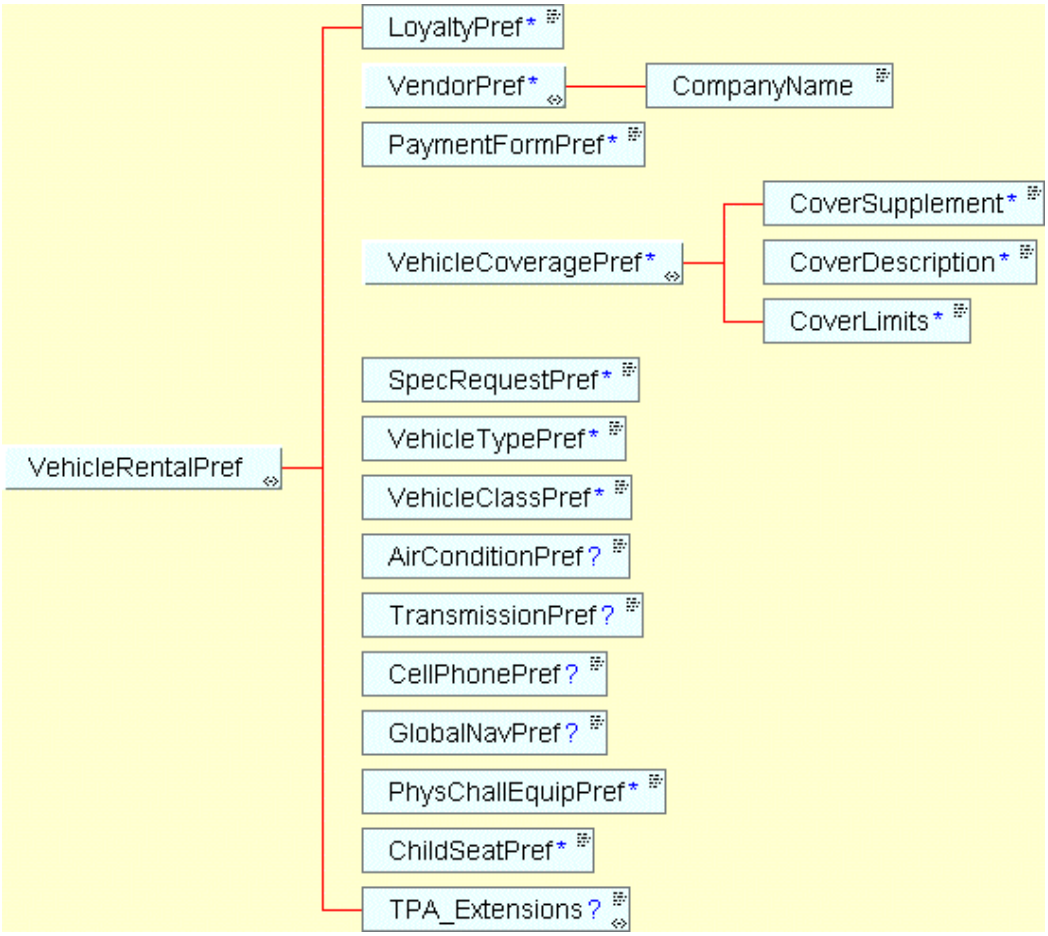
## 1.11 Vehicle Rental Preferences

Vehicle rental preferences can be specified for customers or companies to indicate their preferences for types of vehicles to be rented in specific travel situations. Companies may wish to specify certain class or types of cars that their employees are allowed to rent, or indicate special business needs for trucks for hauling goods, etc. Personal travelers may wish to indicate preferences for types of vehicles such as vans or SUVs for family vacations, or smaller, more sporty models when travelling alone. A customer may prefer to have a convertible or sun roof in a warm destination, but request a ski rack when vacationing in the wintertime.

The Vehicle Rental Preferences section, tag `<VehicleRentalPref>`, has entries for specific features on rental cars including vehicle type (major category such as car, truck, SUV) and vehicle class (more precise kind of vehicle), air conditioning, transmission, cell phone, global navigation equipment, physically challenged needs, and requirements for child seats. In addition, the specification captures preferences for vendors and loyalty programs, insurance coverage, forms of payment for rental cars, and other special requirements.

While each of the elements in the Vehicle Rental Preferences collection is OPTIONAL, if any of these elements appear in an OTA message, they MUST appear in the designated order.

**Figure 6: Vehicle Rental Preferences**



### 1.11.1 Vehicle Rental Preferences Collection

| Element | Occurc | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **VehicleRentalPref** | ? | Element | | PreferLevel, %Privacy, SmokingInd, CarRenterType GasPrePay | Vehicle Rental Preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | VehicleRentalPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the car rental collection |
| % Privacy | | | | | |
| SmokingInd | VehicleRentalPref | Enum | | Yes \| No | Indicates smoking preference |
| CarRenterType | VehicleRentalPref | String | | | Category of Vehicle renters - TBD |
| GasPrePay | VehicleRentalPref | Enum | | Yes \| No | Indicates preference to pre-pay for gasoline with rental. |

#### VehicleRentalPref

Preferences for car rentals associated with this collection

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Indicates the customer's level of preference for the car rental preferences identified in this collection. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**SmokingInd : (Yes | No)**
Indicates the customer's preference for smoking. Values: (Yes | No).

**CarRenterType : CDATA**
Categories of renters - TBD.

**GasPrePayInd : (Yes | No)**
Indicates customer's preference of option to pre-pay for gasoline with rental.

#### VehicleRentalPref DTD fragment

```
<!ELEMENT VehicleRentalPref (LoyaltyPref*, VendorPref*, PaymentFormPref*, VehicleCoveragePref*,
SpecRequestPref*, VehicleTypePref*, VehicleClassPref*, AirConditionPref?, TransmissionPref?,
CellPhonePref?, GlobalNavPref?, PhysChallEquipPref*, ChildSeatPref*, TPA_Extensions?)>
<!ATTLIST VehicleRentalPref
    %Ent.Privacy;
    PreferLevel (Only | Unacceptable | Preferred) "Preferred"
    SmokingInd (Yes | No) #IMPLIED
    CarRenterType CDATA #IMPLIED
    GasPrePayInd (Yes | No) #IMPLIED>
```

#### 1.11.1.1 Vehicle Loyalty Preferences

Indicates a preference for the loyalty program to be used for vehicle rental. The RPH (Reference Place Holder) attribute designates a specific loyalty program from a collection stored in the profile. The same LoyaltyPref element is used in all preference collections.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **LoyaltyPref** | * | Text | String | PreferLevel, LoyaltyRPH | Loyalty programs to be used with this collection of preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | LoyaltyPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the interest indicated |
| LoyaltyRPH | LoyaltyPref | Integer | | | Reference number of the loyalty program to be used with the indicated preference |

**LoyaltyPref**

Preferred loyalty program to be used for car rental services in a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Indicates the level of preference for the car rental loyalty program identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**LoyaltyRPH : CDATA (xsd:integer)**

Index number to be used for reference the loyalty program to be used in this travel collection.

**LoyaltyPref DTD fragment**

```
<!ELEMENT LoyaltyPref (#PCDATA)>
<!ATTLIST LoyaltyPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred"
    LoyaltyRPH CDATA #IMPLIED
>
```

#### 1.11.1.2 Vehicle Vendor Preferences

Vendor Preferences indicates a preference for a specific car rental agency when used in a travel collection. The VendorPref element uses the Company Name entity to identify the preferred company by name and by vendor code. The same VendorPref element is used in all collections.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **VendorPref** | * | Text | String | PreferLevel, | Car rental vendor to be used with this preference collection |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | VendorPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the interest indicated |

### VendorPref

Indicates the preferred company to be used for a car rental.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Indicates the level of preference for the car rental vendor identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### VendorPref DTD fragment

```
<!ELEMENT VendorPref (%Ent.CompanyName;)>
<!ATTLIST VendorPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred"
>
```

#### 1.11.1.3 PaymentForm Preferences

A preference for a payment indicates a specific type of payment, such as a credit card or direct bill, to be assigned to the car rental preference collection. The RPH (Reference Place Holder) attribute designates a specific payment form in a collection stored in the profile. The same PaymentFormPref element is used in all preference collections.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **PaymentForm Pref** | * | Text | String | PreferLevel, RPH | Form(s) of payment to be used with this vehicle rental |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the payment form indicated |
| RPH | PaymentForm Pref | Integer | | | Reference number of the payment form to be used with the indicated preference |

### PaymentFormPref

Indicates preferences for the form of payment to be used for car rental services associated with this collection.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the payment form identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**RPH : CDATA (xsd:integer)**

Reference to the payment form to be used in this travel collection. Identifies a specific form of payment defined under Customer.

### PaymentFormPref DTD fragment

```
<!ELEMENT PaymentFormPref (#PCDATA)>
<!ATTLIST PaymentFormPref
```

```
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    RPH CDATA #IMPLIED
>
```

#### 1.11.1.4 Vehicle Insurance Coverage

A preference for a specific type of vehicle insurance coverage to be used when renting a car in a given travel situation, along with preferences for supplemental insurance or limitations.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **VehicleCoveragePref** | * | Element | | %Privacy, CoverageType, CoverageCode | Insurance coverage specified for this collection |
| CoverSupplement | ? | Text | String | | Supplemental insurance to be used for vehicle rental |
| CoverDescription | ? | Text | String | | Description of insurance coverage used for rental |
| CoverLimits | * | Text | String | | Limitations on insurance coverage for rental vehicles |

| Attribute Name | Element | Data Type | Default Values | Description |
|---|---|---|---|---|
| % Privacy | | | | |
| CoverageType | VehicleCoveragePref | String | | Category of vehicle insurance coverage |
| CoverageCode | VehicleCoveragePref | String | | Industry code for type of insurance coverage |

### VehicleCoveragePref

Insurance coverage needed for car rentals associated with this collection.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**CoverageType : CDATA**
Categories of insurance preferred by the customer, such as; Effects, Personal, Baggage, VehicleDamage, Liability, Theft, YoungDriver

**CoverageCode : CDATA**
Industry code for type of insurance coverage.

### VehicleCoveragePref DTD fragment

```
<!ELEMENT VehicleCoveragePref (CoverSupplement*, CoverDescription*, CoverLimits*)>
<!ATTLIST VehicleCoveragePref
    %Ent.Privacy;
    CoverageType CDATA #IMPLIED
    CoverageCode CDATA #IMPLIED
>
```

### CoverSupplement

Supplemental insurance coverage for rental cars.

### CoverSupplement DTD fragment

```
<!ELEMENT CoverSupplement (#PCDATA)>
```

### CoverDescription

Description of insurance coverage for rental cars.

### CoverDescription DTD fragment

```
<!ELEMENT CoverDescription (#PCDATA)>
```

### CoverLimits

Limitations on car rental insurance coverage, such as minimums, maximums or per occurrence.

### CoverLimits DTD fragment

```
<!ELEMENT CoverLimits (#PCDATA)>
```

#### 1.11.1.5 Vehicle Special Requests

The special request preference element allows the customer to designate a special request to be associated with the vehicle rental.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **SpecRequestPref** | * | Text | String | PreferLevel, | Special request to be used with this preference collection |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | SpecRequestPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the special request |

### SpecRequestPref

Indicates a preference for special needs or requirements for car rental services.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the customer's level of preference for the special request identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### SpecRequestPref DTD fragment

```
<!ELEMENT SpecRequestPref (#PCDATA)>
<!ATTLIST SpecRequestPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
 >
```

#### 1.11.1.6 Vehicle Type Preferences

The vehicle type preference element allows the customer to designate a major category of vehicle preferred for rental.

### VehicleTypePref

Major category of vehicle, e.g., car, truck, van, SUV, etc.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Indicates the customer's level of preference for the car rental vehicle type identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred"..

**VehicleType : CDATA**

Car, Van, SUV, Truck, Motorcycle, Limo, StationWagon, PickUp, MotorHome, Other

### VehicleTypePref DTD fragment

```
<!ELEMENT VehicleTypePref (#PCDATA)>
<!ATTLIST VehicleTypePref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    VehicleType CDATA #IMPLIED
>
```

#### 1.11.1.7 Vehicle Class Preferences

The vehicle class preference element allows the customer to designate specific detail about a vehicle type preferred for rental.

### VehicleClassPref

Detailed type of vehicle, such as Mini, Subcompact, Economy, Compact, Midsize, Intermediate, Standard, Full_Size, Luxury, Premium, Convertible, Minivan, etc.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Indicates the level of preference for the car rental vehicle class identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**VehicleClass : CDATA**

Additional modifier of vehicle class, such as; 12_Passenger_Van, Moving_Van, 15_Passenger Van, Cargo_Van, 12_Foot_Truck, 15_Foot_Truck, 20_Foot_Truck, 24_Foot_Truck, 26_Foot_Truck, Moped, Stretch, Regular, Unique, Exotic, Other

### VehicleClassPref DTD fragment

```
<!ELEMENT VehicleClassPref (#PCDATA)>
<!ATTLIST VehicleClassPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    VehicleClass CDATA #IMPLIED
>
```

#### 1.11.1.8 Air Conditioning Preferences

### AirConditionPref

Indicates preference for air conditioning in a rented car.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Indicates the level of preference for the car rental air conditioning equipment identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### AirConditionPref DTD fragment

```
<!ELEMENT AirConditionPref (#PCDATA)>
<!ATTLIST AirConditionPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED>
```

#### 1.11.1.9 Transmission Preferences

### TransmissionPref

Describes the type of transmission preferred in a rented car, e.g. manual or automatic.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Indicates the level of preference for the type of car transmission identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### TransmissionPref DTD fragment

```
<!ELEMENT TransmissionPref (#PCDATA)>
<!ATTLIST TransmissionPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
>
```

#### 1.11.1.10 Cell Phone or Mobile Phone Preferences

### CellPhonePref

Indicates the preference for a cellular phone in a rented car.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Indicates the level of preference for the car rental cell phone equipment identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### CellPhonePref DTD fragment

```
<!ELEMENT CellPhonePref (#PCDATA)>
<!ATTLIST CellPhonePref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED>
>
```

#### 1.11.1.11 Global Navigation Equipment Preferences

### GlobalNavPref

Indicates a preference for a global navigation system in a rented car.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Indicates the customer's level of preference for the car rental global navigation equipment identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### GlobalNavPref DTD fragment

```
<!ELEMENT GlobalNavPref (#PCDATA)>
<!ATTLIST GlobalNavPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED>
```

#### 1.11.1.12 Physically Challenged Vehicle Rental Equipment

### PhysChallEquipPref

Describes equipment needed for drivers with special physical challenges.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Indicates the customer's level of preference for the car rental physically challenged equipment identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### PhysChallEquipPref DTD fragment

```
<!ELEMENT PhysChallEquipPref (#PCDATA)>
<!ATTLIST PhysChallEquipPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
>
```

#### 1.11.1.13 Child Seat Equipment Preferences

### ChildSeatPref

Indicates requirements for child seats in a rented car.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Indicates the level of preference for the car rental child seat type identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**ChildSeatType : CDATA**

Type of child seat needed in a rented car, e.g.: Infant, Child, Booster, etc.

**Quantity : CDATA**

Number of child seats of the type indicated in ChildSeatType attribute.

### ChildSeatPref DTD fragment

```
<!ELEMENT ChildSeatPref (#PCDATA)>
<!ATTLIST ChildSeatPref
    ChildSeatType CDATA #IMPLIED
    Quantity CDATA #IMPLIED
>
```

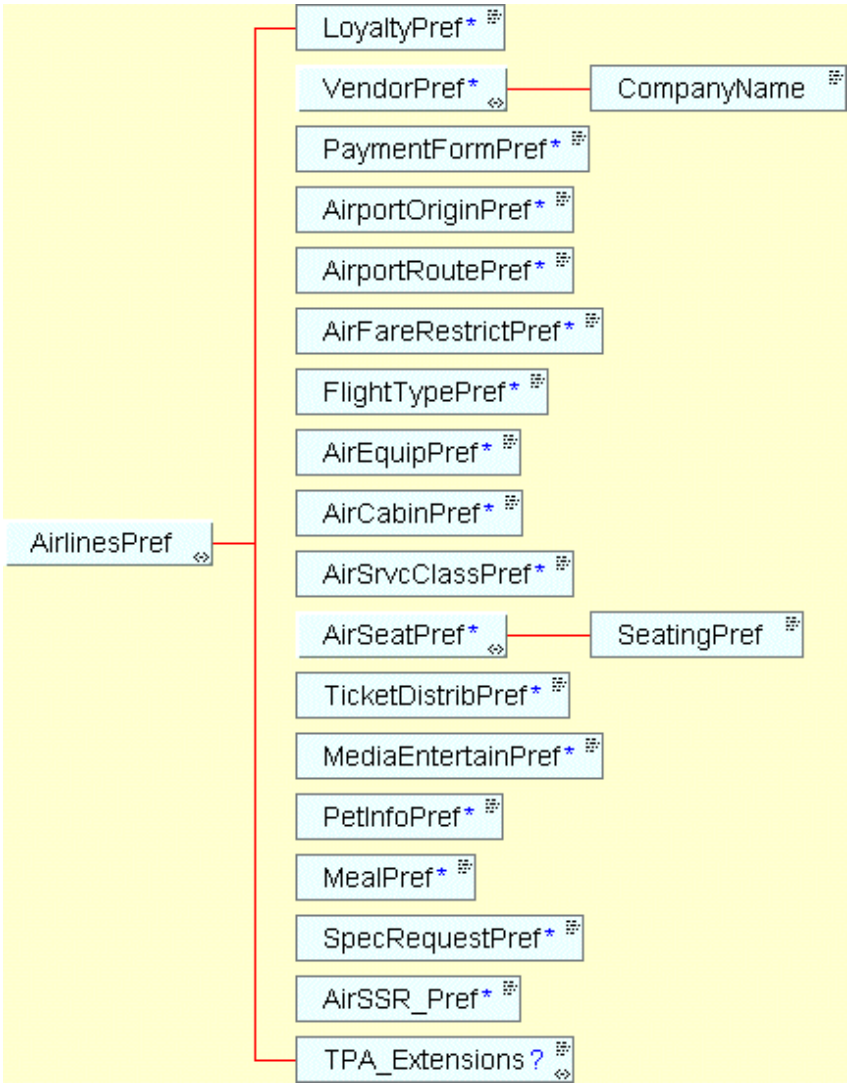
 

## 1.12 Air Travel Preferences

In the Airline Preferences section, tag `<AirlinesPref>`, customers or companies can indicate a collection of features relating to air travel to include in their profiles. The specification captures several airline specific data items including preferred airport for originating flights and connections, acceptable fare restrictions, and need for non-stop versus connecting flights. As a part of the air travel preferences, the customer has the ability to indicate preferred vendors and loyalty programs for air travel, forms of payment used, media and entertainment choices, meal types required, pet information, and special service requests (both free text fields and airline industry standard codes). This section also indicates preferred aircraft equipment, choices for airline seating, such as passenger cabin and service class, and preferences for position of seat in a row, and location of seat in the cabin, by reusing the `<SeatingPref>` object defined in the Common Preferences section.

While each of the elements in the AirlinesPref collection is OPTIONAL, if any of these elements appear in an OTA message, they MUST appear in the designated order.

**Figure 7: Airlines Preferences**



### 1.12.1 Airline Preferences Collection

| Element | Occurc | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **AirlinesPref** | ? | Element | | PreferLevel, ShareSynchInd, ShareMarketInd, SmokingInd, AirPassengerType AirTicketType | Air Travel Preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | AirlinesPref<br><br>% Privacy | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the special request |
| SmokingInd | CommonPref | Enum | | Yes \| No | Indicates smoking preference |
| AirPassenger Type | CommonPref | String | | | Category of airline passenger, using standard ATPCO codes |
| AirTicketTyp e | CommonPref | | | Paper \| Electronic | Type of airline ticket preferred for this collection. |

#### AirlinesPref

Identifies a collection of preferences for air travel.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the airline travel preferences identified in this collection. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**SmokingInd : (Yes | No)**
Indicates the customer's preference for smoking accommodations. Values: (Yes | No).

**AirPassengerType : CDATA**
Category of airline passenger, using standard ATPCO codes.

**AirTicketType : (Electronic | Paper)**
Type of airline ticket preferred for this collection. Values: (Paper | Electronic).

#### AirlinesPref DTDfragment

```
<!ELEMENT AirlinesPref (LoyaltyPref*, VendorPref*, PaymentFormPref*, AirportOriginPref*,
AirportRoutePref*, AirFareRestrictPref*, FlightTypePref*, AirEquipPref*, AirCabinPref*,
AirSrvcClassPref*, AirSeatPref*, TicketDistribPref*, MediaEntertainPref*, PetInfoPref*, MealPref*,
SpecRequestPref*, AirSSR_Pref*, TPA_Extensions?)>
<!ATTLIST AirlinesPref
  %Ent.Privacy;
  PreferLevel (Only | Unacceptable | Preferred) "Preferred"
  SmokingInd (Yes | No) #IMPLIED
  AirPassengerType CDATA #IMPLIED
  AirTicketType (Electronic | Paper) #IMPLIED
>
```

#### 1.12.1.1 Airlines Loyalty Program Preferences

Indicates a preference for the loyalty program to be used for air travel. The RPH (Reference Place Holder) attribute designates a specific loyalty program from a collection stored in the profile. The same LoyaltyPref element is used in all preference collections.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **LoyaltyPref** | * | Text | String | PreferLevel, LoyaltyRPH | Loyalty programs to be used with this preference collection |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | LoyaltyPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the interest indicated |
| LoyaltyRPH | LoyaltyPref | Integer | | | Reference number of the loyalty program to be used with the indicated preference |

**LoyaltyPref**

Identifies preferences for an airline loyalty program to be used for a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the customer's level of preference for the airline loyalty program identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**LoyaltyRPH : CDATA (xsd:integer)**

Index number to be used for reference the loyalty program to be used in this travel collection.

**LoyaltyPref DTD fragment**

```
<!ELEMENT LoyaltyPref (#PCDATA)>
<!ATTLIST LoyaltyPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred"
    LoyaltyRPH CDATA #IMPLIED
>
```

#### 1.12.1.2 Airline Vendor Preferences

A vendor preferences dsignates a specific airline to be used in a travel collection. The VendorPref element uses the Company Name entity to identify the preferred company by name and by vendor code. The same VendorPref element is used in all preference collections.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **VendorPref** | * | Text | String | PreferLevel, | Airline to be used with this preference collection |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | VendorPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the interest indicated |

### VendorPref

Identifies preferences for an airline company to be used for a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the airline identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### VendorPref DTD fragment

```
<!ELEMENT VendorPref (%Ent.CompanyName;)>
<!ATTLIST VendorPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred"
>
```

#### 1.12.1.3 Airline Payment Form Preferences

This preference indicates a specific form of payment, such as a credit card, assigned to an airlines preference collection. The RPH (Reference Place Holder) attribute designates a specific payment form in a collection stored in the profile. The same PaymentFormPref element is used in all preference collections.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **PaymentFormPref** | * | Text | String | PreferLevel, RPH | Form(s) of payment to be used for this airline travel. |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the payment form indicated |
| RPH | PaymentFormPref | Integer | | | Reference number of the payment form to be used with the indicated preference |

### PaymentForm

Indicates preferences for the means of paying for air travel associated with a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the payment form identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**RPH : CDATA (xsd:integer)**

Reference to the payment form to be used in this travel collection. Identifies a specific form of payment defined under Customer.

### PaymentForm DTD fragment

```
<!ELEMENT PaymentFormPref (#PCDATA)>
<!ATTLIST PaymentFormPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
  RPH CDATA #IMPLIED
>
```

### 1.12.1.4 Airport Origin Preferences

#### AirportOriginPref

Departure airport preferences, IATA airport codes.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the customer's level of preference for the airport identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

#### AirportOriginPref DTD fragment

```
<!ELEMENT AirportOriginPref (#PCDATA)>
<!ATTLIST AirportOriginPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
>
```

### 1.12.1.5 Airport Route Preferences

#### AirportRoutePref

Indicates the customer's preference for connecting airports, using IATA airport codes.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the airport routing identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

#### AirportRoutePref DTD fragment

```
<!ELEMENT AirportRoutePref (#PCDATA)>
<!ATTLIST AirportRoutePref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
>
```

### 1.12.1.6 Air Fare Restrictions Preferences

#### AirFareRestrictPref

Identifies preferences for airfare restrictions accepted or not acceptable for a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the type of fare restriction identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**FareRestrictType : CDATA**

Type of fare restriction: None, Advance, SatStopOver, StandBy, etc.

#### AirFareRestrictPref DTD fragment

```
<!ELEMENT AirFareRestrictPref (#PCDATA)>
<!ATTLIST AirFareRestrictPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    FareRestrictType CDATA #IMPLIED
>
```

#### 1.12.1.7 Flight Type Preferences

Allows a customer to indicate a type of flight preferred: e.g.: NonStop, Direct, Connection, etc.

### FlightTypePref

Indicates preferences for certain types of flights, such as connections or stopovers, when used for a specific travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the customer's level of preference for the flight type identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### FlightTypePref DTD fragment

```
<!ELEMENT FlightTypePref (#PCDATA)>
<!ATTLIST FlightTypePref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred">
```

#### 1.12.1.8 Airline Equipment Preferences

### AirEquipPref

Identifies the type of make/model of aircraft preferred in a travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the type of aircraft identified. Values: (Only | Unacceptable). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**AirEquipType : CDATA**
Identifies the type of make/model of aircraft equipment preferred for this travel collection.

### AirEquipPref DTD fragment

```
<!ELEMENT AirEquipPref (#PCDATA)>
<!ATTLIST AirEquipPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    AirEquipType CDATA #IMPLIED>
```

#### 1.12.1.9 Airline Cabin Preferences

### AirCabinPref

Indicates preferences for choice of airline cabin for a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the airline cabin type identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**CabinType : CDATA**
Identifies the type of airline cabin, e.g.: First, Business, Coach, etc.

### AirCabinPref DTD fragment

```
<!ELEMENT AirCabinPref (#PCDATA)>
<!ATTLIST AirCabinPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    CabinType CDATA #IMPLIED>
```

#### 1.12.1.10 Airline Service Class Preferences

### AirSrvcClassPref

Indicates preference for type of service class for air travel booking in a given situation, such as First Class, Economy, Super-Saver, etc.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the airline service class identified. Values: (Only | Unacceptable | Preferred). The default value is "preferred".

**ServiceClassCode : CDATA**
Identifies the type of service class preferred for airline travel, using standard industry codes for service classes.

### AirSrvcClassPref DTD fragment

```
<!ELEMENT AirSrvcClassPref (#PCDATA)>
<!ATTLIST AirSrvcClassPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    ServiceClassCode CDATA #IMPLIED>
```

#### 1.12.1.11 Airline Seating Preferences

### AirSeatPref

Indicates preferences for seating arrangements for air travel.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the customer's level of preference for the airline seating identified. Values: (Only | Unacceptable | Preferred). The default value is "preferred".

### AirSeatPref DTD fragment

```
<!ELEMENT AirSeatPref (%Ent.SeatingPref;*)>
<!ATTLIST AirSeatPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED>
```

#### 1.12.1.12 Airline Ticket Distribution Preferences

### TicketDistributionPref

Indicates preferences for the type of ticket distribution to be used for the travel service product.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the type of ticket distribution identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**DistribType : CDATA**
Ticket distribution method; such as Fax, Email, Courier, Mail, Airport_Pickup, City_Office, Hotel_Desk, WillCall, etc.

**TicketTime : CDATA**
Ticket turnaround time desired, amount of time requested to deliver tickets.

### TicketDistributionPref DTD fragment

```
<!ELEMENT TicketDistribPref (#PCDATA)>
<!ATTLIST TicketDistribPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    DistribType CDATA #IMPLIED
    TicketTime CDATA #IMPLIED>
```

#### 1.12.1.13 Airline Entertainment Preferences

### MediaEntertainPref

Identifies the media and entertainment preferences for a given travel situation, such as: books, magazines, movies, newspapers, radio, television, cinema, games, online, etc.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the media and entertainment identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### MediaEntertainPref DTD fragment

```
<!ELEMENT MediaEntertainPref (#PCDATA)>
<!ATTLIST MediaEntertainPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED>
```

#### 1.12.1.14 Airline Pet Information Preferences

### PetInfoPref

Indicates the preferences for information about pets that accompany the customer in a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the pet information identified. Values: (Only | Unacceptable | Preferred). If Only, use only this pet information preference for the travel situation; if Unacceptable, do NOT use this pet information preference in the given situation. The default value is "preferred".

### PetInfoPref DTD fragment

```
<!ELEMENT PetInfoPref (#PCDATA)>
<!ATTLIST PetInfoPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED>
```

#### 1.12.1.15 Airline Meal Preferences

### AirlineMealPref

Identifies preferences for the type of airline meal preferred in a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the airline meal information identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### MealPref DTD fragment

```
<!ELEMENT MealPref (#PCDATA)>
<!ATTLIST MealPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred"
  MealType CDATA #IMPLIED
  FavoriteFood CDATA #IMPLIED
  Beverage CDATA #IMPLIED
>
```

### 1.12.1.16 Airline Special Requests

The special request preference element allows the customer to designate a special request to be associated with airline travel.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **SpecRequest Pref** | * | Text | String | PreferLevel, | Special request to be used with this preference collection |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | SpecRequest Pref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the special request |

#### SpecRequestPref

Identifies a special request associated with airline travel.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the special request identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

#### SpecRequestPref DTD fragment

```
<!ELEMENT SpecRequestPref (#PCDATA)>
<!ATTLIST SpecRequestPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
 >
```

### 1.12.1.17 Airline Special Service Requests

#### AirSSR_Pref

Identifies preferences for special services required for air travel, using standard industry (SSR-OSI) code list.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the air travel special service request identified by the SSR_OSI code. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**SSR_Code : CDATA**

Code of the special service request to be used for this air travel situation. Refers to standard industry (SSR-OSI) code list.

#### AirSSR_Pref DTD fragment

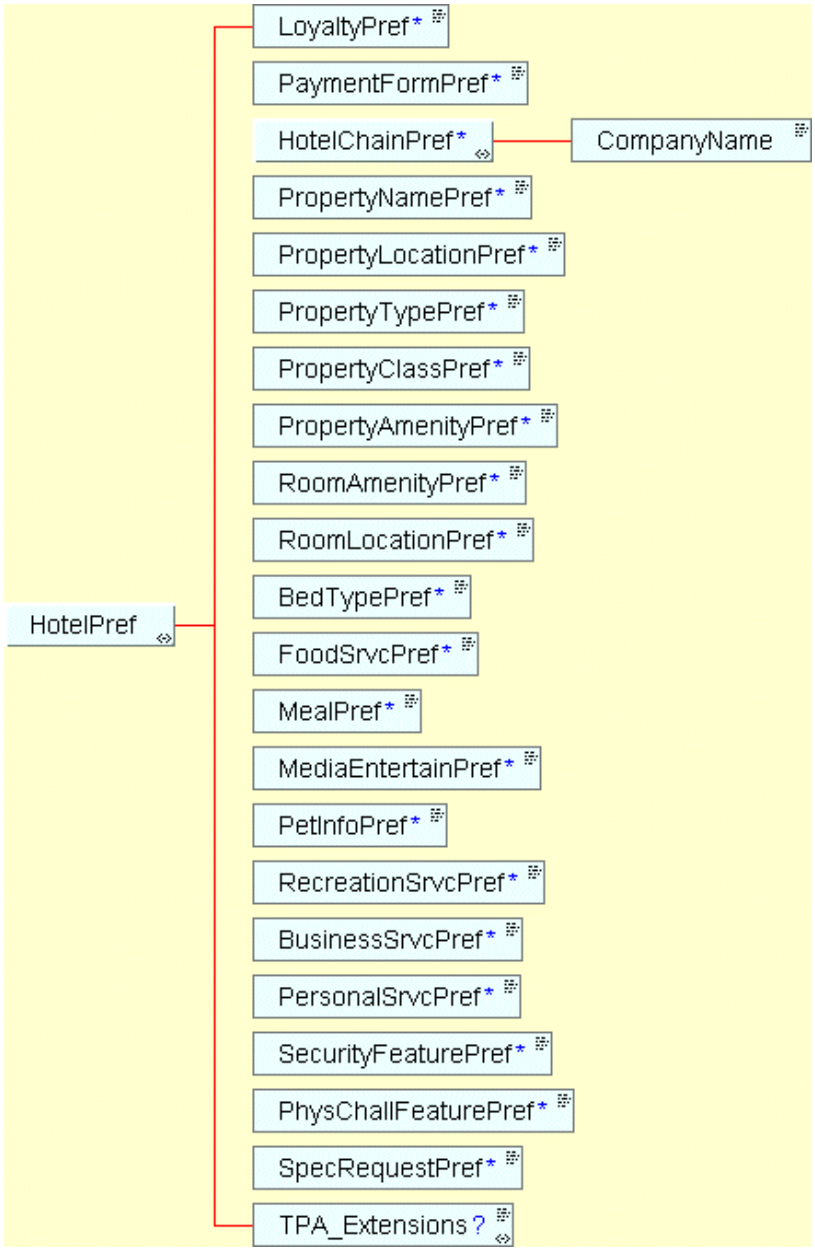
```
<!ELEMENT AirSSR_Pref (#PCDATA)>
<!ATTLIST AirSSR_Pref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    SSR_Code CDATA #IMPLIED
>
```

## 1.13 Hotel Preferences

In the Hotel Preferences section, tag `<HotelPref>`, customers or companies can select their preferences for various amenities of hotel properties and rooms. Travelers may identify preferred hotel chains, properties, and loyalty programs, as well as the desired location, property type, property class, and room location. Customers can indicate their preferences for services provided by hotel properties, such as recreational and business services, as well as in-room amenities, including type of bed. Travelers may identify dietary restrictions and dining preferences, as well as indicate food services preferred in hotel properties. The specification allows for identification of media and entertainment preferences during hotel visits, as well as personal services and other special requests. Customers may indicate preferences for security features and requirements for features to meet the needs of physically challenged guests.

**Figure 8: Hotel Preferences**



### 1.13.1 Hotel Preferences Collection

| Element | Occurc | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **HotelPref** | ? | Element | | PreferLevel, ShareSynchInd, ShareMarketInd, RatePlanCode, SmokingInd, HotelGuestType | Hotel Preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | HotelPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the car rental collection |
| | % Privacy | | | | |
| RatePlanCode | HotelPref | String | | | |
| SmokingInd | HotelPref | Enum | | Yes \| No | Indicates smoking preference |
| HotelGuestType | HotelPref | String | | | Category of hotel guests -TBD |

#### HotelPref

Hotel preferences used for this collection.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the collection of hotel preferences identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**RatePlanCode : CDATA**
RatePlanCode identifying preferred hotel rate plan for this travel situation.

**SmokingInd : (Yes | No)**
Indicates the customer's preference for smoking accommodations. Values: (Yes | No).

**HotelGuestType : CDATA**
Categories of hotel guests, TBD.

#### HotelPref DTD fragment

```
<!ELEMENT HotelPref (LoyaltyPref*, PaymentFormPref*, HotelChainPref*, PropertyNamePref*,
PropertyLocationPref*, PropertyTypePref*, PropertyClassPref*, PropertyAmenityPref*,
RoomAmenityPref*, RoomLocationPref*, BedTypePref*, FoodSrvcPref*, MealPref*,
MediaEntertainPref*, PetInfoPref*, RecreationSrvcPref*, BusinessSrvcPref*, PersonalSrvcPref*,
SecurityFeaturePref*, PhysChallFeaturePref*, SpecRequestPref*, TPA_Extensions?)>
<!ATTLIST HotelPref PreferLevel (Only | Unacceptable | Preferred) "Preferred"
    %Ent.Privacy;
    RatePlanCode CDATA #IMPLIED
    SmokingInd (Yes | No) #IMPLIED
    HotelGuestType CDATA #IMPLIED
>
```

#### 1.13.1.1 Hotel Loyalty Preferences

Indicates a preference for the loyalty program to be used for hotel accommodations. The RPH (Reference Place Holder) attribute designates a specific loyalty program from a collection stored in the profile. The same LoyaltyPref element is used in all preference collections.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **LoyaltyPref** | * | Text | String | PreferLevel, LoyaltyRPH | Loyalty programs to be used with this preference collection |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | LoyaltyPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the interest indicated |
| LoyaltyRPH | LoyaltyPref | Integer | | | Reference number of the loyalty program to be used with the indicated preference |

**LoyaltyPref**

Preferred loyalty program to be used for hotel services in a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the loyalty program identified. Values: (Only | Unacceptable | Preferred). If Only, use only this loyalty program preference for the travel situation; if Unacceptable, do NOT use this loyalty program preference in the given situation. The default value is "preferred".

**LoyaltyRPH : CDATA (xsd:integer)**

Reference to the loyalty program to be used in this travel collection.

**LoyaltyPref DTD fragment**

```
<!ELEMENT LoyaltyPref (#PCDATA)>
<!ATTLIST LoyaltyPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred"
    LoyaltyRPH CDATA #IMPLIED>
```

#### 1.13.1.2 Hotel Payment Form Preferences

This preference indicates a specific type of payment, such as a credit card, to be assigned to a hotel preference collection. The RPH (Reference Place Holder) attribute designates a specific payment form in a collection stored in the profile. The PaymentFormPref element is used in all preference collections.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **PaymentFormPref** | * | Text | String | PreferLevel, RPH | Form(s) of payment to be used with this hotel stay |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| PreferLevel | | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the payment form indicated |
| RPH | PaymentFormPref | Integer | | | Reference number of the payment form to be used with the indicated preference |

### PaymentForm

Indicates preferences for the form of payment to be used for hotel payment associated with this collection.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the payment form identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**RPH : CDATA**

Reference to the payment form to be used in this travel collection. Identifies a specific form of payment defined under Customer.

### PaymentFormPref DTD fragment

```
<!ELEMENT PaymentFormPref (#PCDATA)>
<!ATTLIST PaymentFormPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
  RPH CDATA #IMPLIED
>
```

#### 1.13.1.3 Hotel Chain Preferences

### HotelChainPref

Company identifiers for hotel chains associated with this collection of preferences.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the hotel chain identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### HotelChainPref DTD fragment

```
<!ELEMENT HotelChainPref (%Ent.CompanyName;)?>
<!ATTLIST HotelChainPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
>
```

#### 1.13.1.4 Hotel Property Preferences

### PropertyNamePref

Name of preferred hotel properties associated with this collection.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the hotel property identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### PropertyNamePref DTD fragment

```
<!ELEMENT PropertyNamePref (#PCDATA)>
<!ATTLIST PropertyNamePref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
>
```

#### 1.13.1.5 Hotel Location Preferences

### PropertyLocationPref

Indicates preferences for hotel property locations.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the hotel location type identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**PropertyLocationType : CDATA**

Type of property location, based on HEDNA property location types.

### PropertyLocationPref DTD fragment

```
<!ELEMENT PropertyLocationPref (#PCDATA)>
<!ATTLIST PropertyLocationPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred"
  PropertyLocationType CDATA #IMPLIED
>
```

#### 1.13.1.6 Hotel Property Type Preferences

### PropertyTypePref

Indicates preferences for hotel property types.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the hotel property type identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**PropertyType : CDATA**

Category of hotel property, as defined in the HEDNA list of hotel properties, All-Suite, All-Inclusive Resort, Apartment, Bed&Breakfast, Cabin/Bungalow, Corporate, Hostel, Inn, Health Spa, Holiday Resort, Hotel, Lodge, Condominium, Conference Center, Chalet, Campground, Guest House Limited Service, Guest Farm, Meeting Resort, Monastery, Motel, Ranch, Self-Catering Accommodation, Vacation Home, Villas, Wildlife Reserve.

### PropertyTypePref DTD fragment

```
<!ELEMENT PropertyTypePref (#PCDATA)>
<!ATTLIST PropertyTypePref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    PropertyType CDATA #IMPLIED
  >
```

#### 1.13.1.7 Hotel Property Class Preferences

### PropertyClassPref

Indicates preferences for class of hotel property.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the hotel property class identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**PropertyClassType : CDATA**

Type of hotel property class, indicating general quality level preferred. Based on HEDNA list of property classes. Luxury, Moderate, Deluxe, Economy, 1st Class, Budget, Tourist, etc.

### PropertyClassPref DTD fragment

```
<!ELEMENT PropertyClassPref (#PCDATA)>
<!ATTLIST PropertyClassPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    PropertyClassType CDATA #IMPLIED
  >
```

#### 1.13.1.8 Hotel Property Amenity Preferences

### PropertyAmenityPref

Indicates preferences for hotel property amenities.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the hotel property amenity identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**PropertyAmenityType : CDATA**

Type of features and service offered by a hotel property, based on specified list of property amenities.

### PropertyAmenityPref DTD fragment

```
<!ELEMENT PropertyAmenityPref (#PCDATA)>
<!ATTLIST PropertyAmenityPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    PropertyAmenityType CDATA #IMPLIED
  >
```

#### 1.13.1.9 Hotel Room Amenity Preferences

### RoomAmenityPref

Indicates preferences for hotel room amenities.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the customer's level of preference for the hotel room amenity identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**RoomAmenityType : CDATA**

Special features of hotel rooms, based on specific list of hotel room amenities.

### RoomAmenityPref DTD fragment

```
<!ELEMENT RoomAmenityPref (#PCDATA)>
<!ATTLIST RoomAmenityPref
      PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
      RoomAmenityType CDATA #IMPLIED
  >
```

#### 1.13.1.10 Hotel Room Location Preferences

### RoomLocationPref

Indicates preferences for hotel room locations.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the hotel room location identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**RoomLocationType : CDATA**

Location or type of room in property e.g.: Higher Floor, Lower Floor, Quiet Room, Near Elevator, etc.

### RoomLocationPref DTD fragment

```
<!ELEMENT RoomLocationPref (#PCDATA)>
<!ATTLIST RoomLocationPref
      PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
      RoomLocationType CDATA #IMPLIED
  >
```

#### 1.13.1.11 Hotel Bed Type Preferences

### BedTypePref

Indicates preferences for the size and features of hotel bed types.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the level of preference for the hotel bed type identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**BedType : CDATA**

Type of bed indicated; King, Queen, Double, Double/Twin, etc.

### BedTypePref DTD fragment

```
<!ELEMENT BedTypePref (#PCDATA)>
<!ATTLIST BedTypePref
      PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
      BedType CDATA #IMPLIED>
```

#### 1.13.1.12 Hotel Food Service Preferences

### FoodSrvcPref

Indicates preferences for type of restaurant facilities in a hotel.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the hotel food service identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**FoodSrvcType : CDATA**
Type of food services offered at a hotel property. Based on the HEDNA list of restaurant services. Full Service Restaurant, Coffee Shop, Buffet, Bar/Lounge, Snack Bar, Ice Cream/Dessert Shop, Fast Food.

### FoodSrvcPref DTD fragment

```
<!ELEMENT HotelFoodSrvcPref (#PCDATA)>
<!ATTLIST HotelFoodSrvcPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    FoodSrvcType CDATA #IMPLIED>
```

#### 1.13.1.13 Hotel Meal Type Preferences

### MealPref

Identifies preferences for the type of meal preferred at a hotel in a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the hotel meal information identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### MealPref DTD fragment

```
<!ELEMENT MealPref (#PCDATA)>
<!ATTLIST MealPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred"
    MealType CDATA #IMPLIED
    FavoriteFood CDATA #IMPLIED
    Beverage CDATA #IMPLIED>
```

#### 1.13.1.14 Hotel Entertainment and Media Preferences

### MediaEntertainPref

Identifies the media and entertainment preferences for a given travel situation, such as: books, magazines, movies, newspapers, radio, television, cinema, games, online, etc. This element could be used to indicate a preference for online connectivity, such as internet or modum dial-up connections when applicable to a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the media and entertainment identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### MediaEntertainPref DTD fragment

```
<!ELEMENT MediaEntertainPref (#PCDATA)>
<!ATTLIST MediaEntertainPref
```

```
PreferLevel (Only | Unacceptable | Preferred) "Preferred" >
```

#### 1.13.1.15 Hotel Pet Information Preferences

### PetInfoPref

Indicates the preferences for information about pets that accompany the customer in a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the pet information supplied. Values: (Only | Unacceptable | Preferred). If Only, use only this pet information preference for the travel situation; if Unacceptable, do NOT use this pet information preference in the given situation. The default value is "preferred".

### PetInfoPref DTD fragment

```
<!ELEMENT PetInfoPref (#PCDATA)>
<!ATTLIST PetInfoPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred">
```

#### 1.13.1.16 Hotel Recreational Services Preferences

### RecreationSrvcPref

Indicates preferences for type of recreational services in a hotel.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the customer's level of preference for the hotel recreational service identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**RecreationalSrvcType : CDATA**
Type of recreational services offered at a hotel property,

### RecreationSrvcPref DTD fragment

```
<!ELEMENT RecreationSrvcPref (#PCDATA)>
<!ATTLIST RecreationSrvcPref
      PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
      RecreationalSrvcType CDATA #IMPLIED
>
```

#### 1.13.1.17 Hotel Business Services Preferences

### BusinessSrvcPref

Indicates preferences for type of business services in a hotel.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the customer's level of preference for the hotel business service identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**BusinessSrvcType : CDATA**
Type of business related services offered in a hotel, such as; Business Center, Copy Machine, Copy Center, Fax Machine, Computers, Computers available for rent, Computer printing

available, Pager rental, Cell phone rental, Audio-Visual Equipment rental, Internet Connectivity, Computer modem hookups, Secretarial Services, Video Conferencing, etc.

### BusinessSrvcPref DTD fragment

```
<!ELEMENT BusinessSrvcPref (#PCDATA)>
<!ATTLIST BusinessSrvcPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    BusinessSrvcType CDATA #IMPLIED
>
```

#### 1.13.1.18 Hotel Personal Services Preferences

### PersonalSrvcPref

Indicates preferences for type of personal services in a hotel.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the customer's level of preference for the hotel personal service identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**PersonalSrvcType : CDATA**

Type of personal service offered by a hotel property, such as: Express Checkin, Express Checkout, Concierge Service, Laundry/Valet Service, Childcare, Currency Exchange /Banking, Safety Deposit Boxes, Language Translation, Beauty Shop/ Barber/Hairdresser available, Beauty treatments, Massage Service, etc.

### PersonalSrvcPref DTD fragment

```
<!ELEMENT PersonalSrvcPref (#PCDATA)>
<!ATTLIST PersonalSrvcPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
    PersonalSrvcType CDATA #IMPLIED
>
```

#### 1.13.1.19 Hotel Security Features Preferences

### SecurityFeaturePref

Indicates preferences for type of safety and security features in a hotel.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the customer's level of preference for the hotel security feature identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### SecurityFeaturePref DTD fragment

```
<!ELEMENT SecurityFeaturePref (#PCDATA)>
<!ATTLIST SecurityFeaturePref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
  >
```

#### 1.13.1.20 Hotel Physically Challenged Features Preferences

### PhysChallFeaturePref

Indicates preferences for type of features required to meet the needs of persons with physical challenges, such as handicapped parking, special pillows for allergies, etc.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Indicates the level of preference for the hotel physically challenged feature identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**PhysChallFeature : CDATA**
Type of physically challenged feature needed. Such as; Closed-caption TV, Knock lights, Rails in bathroom, Wheelchair accessible, Elevators, Disabled parking, Television amplifier, Safety Bars in shower, Raised toilet with grab bars, Bathtub seat, Walk-in shower, Visual alarm, etc.

### PhysChallFeaturePref DTD fragment

```
<!ELEMENT PhysChallFeaturePref (#PCDATA)>
<!ATTLIST PhysChallFeaturePref
      PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
      PhysChallFeature CDATA #IMPLIED
  >
```

#### 1.13.1.21 Hotel Special Request Preferences

The special request preference element allows a special request to be associated with hotel stays. This element may be repeated.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **SpecRequest Pref** | * | Text | String | PreferLevel, | Special request to be used with this preference collection |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | SpecRequest Pref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the special request |

### SpecRequestPref

Indicates preferences for special requests for other services needed for hotel stays.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the level of preference for the special request identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### SpecRequestPref DTD fragment

```
<!ELEMENT SpecRequestPref (#PCDATA)>
<!ATTLIST SpecRequestPref
   PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
  >
```

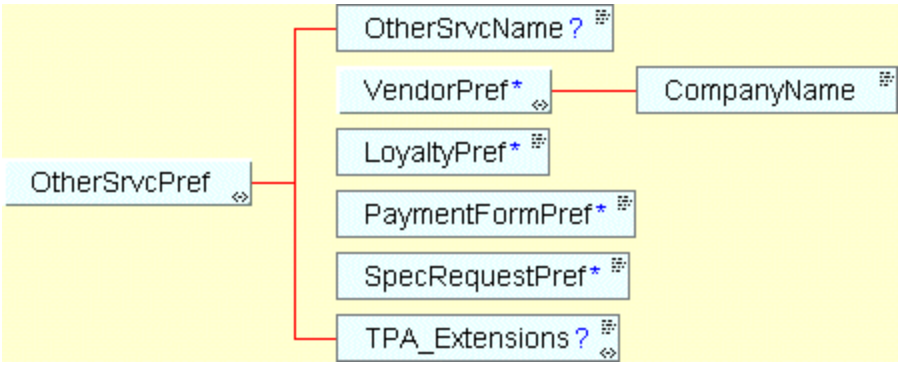
 

## 1.14 Preferences for Other Travel Services

This specification allows customers and companies to identify services for other, as yet undefined travel services. The Other Preferences section, tag <OtherSrvcPref>, includes items for the names and types of other services, as well as loyalty programs, forms of payment, and special requests related to these other services. Travel service vendors may wish to use this section to identify other travel services, such as golf outings, cruise industry preferences, etc., until such time as those industries develop specific profile information that is incorporated into OpenTravel Alliance specifications. Any number of other service preferences may be specified, along with the capability to add elements through the TPA_Extensions element that is part of each travel service collection and the Preferences collection as a whole.

While each of the elements in the Other Services Preferences section is OPTIONAL, if any of these elements appear in an OTA message, they MUST appear in the designated order.

**Figure 9: Other Preferences**




### 1.14.1 Other Travel Services Collection

| Element | Occurc | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **OtherSrvcPref** | * | Element | | PreferLevel, ShareSynchInd, ShareMarketInd, OtherServiceType | Other Travel Service Preferences |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | AirlinesPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the special request |
| % Privacy | | | | | |
| OtherService Type | OtherSrvcPref | | | | Category of other travel service user - TBD. |

### OtherSrvcPref

A collection to identify customer or company preferences for travel services outside the traditional industries of car rental companies, hotels, or airlines.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**
Identifies the customer's level of preference for this collection of travel services. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**OtherServiceType : CDATA**
Category of other travel service user - TBD.

### OtherSrvcPref DTD fragment

```
<!ELEMENT OtherSrvcPref (OtherSrvcName?, VendorPref*, LoyaltyPref*, PaymentFormPref*,
SpecRequestPref*, TPA_Extensions?)>
<!ATTLIST OtherSrvcPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred"
    %Ent.Privacy;
    OtherServiceType CDATA #IMPLIED>
```

#### 1.14.1.1 Other Travel Services

Specifies the name of the other travel services designated in a preference collection.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **OtherSrvcName** | ? | Text | String | | Name of other travel service specified in this collection. |

### OtherSrvcName

Name of other travel services identified in this collection of preferences.

### OtherSrvcName DTD fragment

```
<!ELEMENT OtherSrvcName (#PCDATA)
>
```

#### 1.14.1.2 Other Travel Services Vendor Preferences

Designates a travel services supplier to be used in a specific travel collection. The VendorPref element uses the Company Name entity to identify the preferred company by name and by vendor code. The VendorPref element can be used in all preference collections.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **VendorPref** | * | Text | String | PreferLevel, | Airline to be used with this preference collection |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | VendorPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the interest indicated |

### VendorPref

Identifies preferences for travel service supplier to be used for a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the customer's level of preference for the vendor identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

### VendorPref DTD fragment

```
<!ELEMENT VendorPref (%Ent.CompanyName;)>
<!ATTLIST VendorPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred"
>
```

#### 1.14.1.3 Other Loyalty Programs

Indicates a preference for the loyalty program to be used for other travel services specified. The RPH (Reference Place Holder) attribute designates a specific loyalty program from a collection stored in the profile. The LoyaltyPref element can be used in all preference collections.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **LoyaltyPref** | * | Text | String | PreferLevel, LoyaltyRPH | Loyalty programs to be used with this preference collection |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | LoyaltyPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the interest indicated |
| LoyaltyRPH | LoyaltyPref | Integer | | | Reference number of the loyalty program to be used with the indicated preference |

### LoyaltyPref

Preferred loyalty program to be used for other travel services in a given travel situation.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Indicates the customer's level of preference for the car rental loyalty program identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**LoyaltyRPH : CDATA (xsd:integer)**

Index number to be used for reference the loyalty program to be used in this travel collection.

### LoyaltyPref DTD fragment

```
<!ELEMENT LoyaltyPref (#PCDATA)>
<!ATTLIST LoyaltyPref
    PreferLevel (Only | Unacceptable | Preferred) "Preferred"
    LoyaltyRPH CDATA #IMPLIED
>
```

#### 1.14.1.4 Other Payment Form Preferences

This preference indicates a specific type of payment to be assigned to a travel preference collection. The RPH (Reference Place Holder) attribute designates a specific payment form in a collection stored in the profile. The PaymentFormPref element may be used in all collections.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **PaymentFormPref** | * | Text | String | PreferLevel, RPH | Form(s) of payment to be used with this travel service |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the payment form indicated |
| RPH | PaymentFormPref | Integer | | | Reference number of the payment form to be used with the indicated preference |

### PaymentForm

Indicates preferences for the form of payment to be used for other travel services associated with this collection.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the customer's level of preference for the payment form identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

**RPH : CDATA (xsd: integer)**

Reference to the payment form to be used in this travel collection. Identifies a specific form of payment defined under Customer and CompanyInfo.

### PaymentForm DTD fragment

```
<!ELEMENT PaymentFormPref (#PCDATA)>
<!ATTLIST PaymentFormPref
  PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
  RPH CDATA #IMPLIED
>
```

#### 1.14.1.5 Other Special Requests

The special request preference element allows the a special request to be associated with a travel service.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **SpecRequestPref** | * | Text | String | PreferLevel, | Special request to be used with this preference collection |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PreferLevel | SpecRequestPref | Enum | Preferred | Only \| Unacceptable \| Preferred | Indicated level of preference for the special request |

## SpecRequestPref

Indicates preferences for special requests for other services needed for other travel services.

Attributes:

**PreferLevel : (Only | Unacceptable | Preferred) = Preferred**

Identifies the customer's level of preference for the special request identified. Values: (Only | Unacceptable | Preferred). If Only, use only this preference for the travel situation; if Unacceptable, do NOT use this preference in the given situation. The default value is "preferred".

## SpecRequestPref DTD fragment

```
<!ELEMENT SpecRequestPref (#PCDATA)>
<!ATTLIST SpecRequestPref
   PreferLevel (Only | Unacceptable | Preferred) "Preferred" #IMPLIED
  >
```

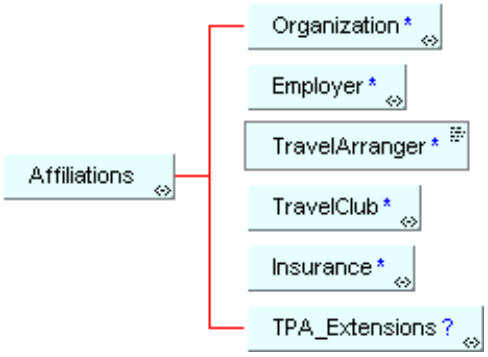
## 1.15 Affiliations

Affiliations are defined as organizations that offer travel services or benefits with which the customer has contact. These organizations include employers and membership organizations, such as AAA, AARP, or alumni associations that provide travel programs, discounts, and benefits. This section also covers vendor-sponsored travel clubs offering special lounges and related services travel services. These clubs include those provided by airlines at airports or Amtrak for its first class and Metroliner passengers. The structure of information stored about travel arrangers is identical to that of the customer contacts listed under the Customer section, therefore, travel arrangers are identifed by a Reference Place Holder (RPH) attribute that provides a reference to the data stored in another location in the Customer Profile.

Affiliations with insurance companies provide information about insurance policies carried by the individual. Insurance policies stored in this section may be used for specific travel situations and are assigned a Reference Place Holder so that they may be referenced from within a travel preference collection. In the section on car rental preferences, insurance refers to insurance coverage needed for car rentals.

In the Affiliations section, tag `<Affiliations>`, customers can have multiple Organizations, Employers, Insurance, Travel Arrangers, and Travel Clubs included in their profile information. While each of these elements is OPTIONAL, if any of these elements appear in an OTA message, they MUST appear in the designated order.

**Figure 10: Affiliations**




### 1.15.1 Affiliations Elements

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **Affiliations** | ? | Element | | ShareSynchInd, ShareMarketInd | Companies or organizations connected with the customer that affect travel decisions |
| Organization | * | Element | | DefaultInd, ShareSynchInd, ShareMarketInd, OfficeType, ExpireDate | Membership organization that has travel benefits, programs, or discounts |

| | | | | |
|---|---|---|---|---|
| Employer | * | Element | DefaultInd, ShareSynchInd, ShareMarketInd, OfficeType, ExpireDate | Company or organization that employs the customer |
| TravelArranger | * | Element | DefaultInd, ShareSynchInd, ShareMarketInd TravelArrangerType, ContactRPH | Individuals or companies affiliated with the customer that are responsible for making travel plans |
| TravelClub | * | Element | ShareSynchInd, ShareMarketInd ExpireDate | Special-privilege club room and related services offered by travel vendors |
| Insurance | * | Element | ShareSynchInd, ShareMarketInd InsuranceType, PolicyNumber, EffectiveDate, ExpireDate, RPH | Insurance for travel carried by customer |

### Affiliations

Defines the organizations that provide travel services and benefit with which the customer has contact.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

### Affiliations DTD fragment

```
<!ELEMENT Affiliations (Organization*, Employer*, TravelArranger*, TravelClub*, Insurance*, TPA_Extensions?)>
<!ATTLIST Affiliations
    %Ent.Privacy;
>
```

## 1.15.2 Affiliated Organization

### Organization

Membership organization that has travel benefits, programs or discounts.

Attributes:

**DefaultInd : (Yes | No)**
Indicates if this is a default choice in the absence of the user specifying no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**OfficeType : CDATA**
Main office, field office, or division of the organization.
**ExpireDate : CDATA (xsd: timeInstant)**
Date when membership in organization ends, in ISO 8601 format. Date only.

### Organization DTD fragment

```
<!ELEMENT Organization (OrgMemberName?, OrgName?, RelatedOrgName*,
TravelArranger*)>
<!ATTLIST Organization
    DefaultInd (Yes | No) #IMPLIED
    %Ent.Privacy;
    OfficeType CDATA #IMPLIED
    ExpireDate CDATA #IMPLIED
>
```

#### 1.15.2.1 Organization Member

### OrgMemberName

Name of the member of the organization, as listed among the options of customer names. Uses the PersonName entity.

Attributes:

**OrgMemberId : CDATA**
Identifier assigned to the person by the organization.
**OrgLevel : CDATA**
Level in organization (e.g. seniority) that conveys privileges.
**OrgMemberTitle : CDATA**
Rank in organization or title of member. May convey privileges, e.g.: Chairman, President, etc.

### OrgMemberName DTD fragment

```
<!ELEMENT OrgMemberName (%Ent.PersonName;)>
<!ATTLIST OrgMemberName
    OrgMemberId CDATA #IMPLIED
    OrgLevel CDATA #IMPLIED
    OrgMemberTitle CDATA #IMPLIED
>
```

#### 1.15.2.2 Organization Name

### OrgName

Name of the organization.

### OrgName DTD fragment

```
<!ELEMENT OrgName (%Ent.CompanyName;)>
```

#### 1.15.2.3 Related Organization

### RelatedOrgName

Identifies a subsidiary, or entity related to the organization.

### RelatedOrgName DTD fragment

```
<!ELEMENT RelatedOrgName (#PCDATA)>
```

#### 1.15.2.4 Organization's Travel Service Vendor

Identifies the travel agency or travel arranger used by the organization.

### TravelArranger

Identifies travel arrangers that the organization uses to provide travel services.

### OrgTravelSrvcVendor

Identifies travel service suppliers to organization providing benefits, privileges, or discounts.

## 1.15.3 Affiliated Employer

### Employer

Company or organization that employs the customer.

Attributes:

**DefaultInd : (Yes | No)**
Indicates if this is a default choice in the absence of the user specifying no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**OfficeType : CDATA**
Main office, field office, or division of the organization.

**ExpireDate : CDATA (xsd:timeInstant)**
Date when employment ends, in ISO 8601 format. Date only.

### Employer DTD fragment

```
<!ELEMENT Employer (%Ent.CompanyName;?, RelatedEmployer*, EmployeeInfo?,
InternalRefNmbr*, TravelArranger*, EmployerLoyalty*)>
<!ATTLIST Employer
    DefaultInd (Yes | No) #IMPLIED
    OfficeType CDATA #IMPLIED
    ExpireDate CDATA #IMPLIED
>
```

### 1.15.3.1 Employer Name

### Company Name

The Company Name entity is used to define the name of the customer's employer.

### %ENTITYCompanyName

```
<!ELEMENT CompanyName (#PCDATA)>
<!ATTLIST CompanyName
    CompanyCode CDATA #IMPLIED
    CodeContext CDATA #IMPLIED
>
```

### 1.15.3.2 Related Employer

### RelatedEmployer

A company such as division or subsidiary, that is related to the employer for which the customer works. The CompanyName entity is used to define the related employer.

### RelatedEmployer

```
<!ELEMENT RelatedEmployer (%Ent.CompanyName;)>
```

#### 1.15.3.3 Employee Information

### EmployeeInfo

Employment information about the customer or person employed by the identified employer. The PCDATA field of EmployeeInfo can be used to record the exact name of the employee if it differs from that of the customer defined in the profile.

Attributes:

**EmployeeId : CDATA**
Identifier assigned to the person by the employer.

**EmployeeLevel : CDATA**
Level in employer organization (e.g. seniority) that conveys privileges.

**EmployeeTitle : CDATA**
Title of employee in employer company that conveys rank or privileges.

**EmployeeStatusType : (Active | Retired | Leave | Terminated)**
Status of employment. Values: Active, Retired, Leave, Terminated.

### EmployeeInfo DTD fragment

```
<!ELEMENT EmployeeInfo (#PCDATA)>
<!ATTLIST EmployeeInfo
    EmployeeId CDATA #IMPLIED
    EmployeeLevel CDATA #IMPLIED
    EmployeeTitle CDATA #IMPLIED
    EmployeeStatusType (Active | Retired | Leave | Terminated) #IMPLIED
>
```

#### 1.15.3.4 Employer's Internal Reference Numbers

### InternalRefNmbr

Accounting code(s) assigned to travel for employer.

### InternalRefNmbr DTD fragment

```
<!ELEMENT InternalRefNmbr (#PCDATA)>
```

#### 1.15.3.5 Employer's Travel Arranger

Identifies the travel agency or travel arranger used by the employer.

### TravelArranger

Identifies travel arrangers which employer uses to provide travel services.

#### 1.15.3.6 Employer Loyalty Programs

### EmployerLoyalty

Loyalty programs with travel service vendors to which the employer subscribes. Loyalty RPH refers back to loyalty programs defined under Customer.

Attributes:

**LoyaltyRPH : CDATA (xsd:integer)**
Reference number used to identify this loyalty program.

### EmployerLoyalty DTD fragment

```
<!ELEMENT EmployerLoyalty (#PCDATA)>
<!ATTLIST EmployerLoyalty
    LoyaltyRPH CDATA #IMPLIED>
```

## 1.15.4 Affiliated Travel Arranger

### TravelArranger

Companies or individuals responsible for making travel plans or transactions either for the customer, company, or affiliated organizations. The ContactRPH is a reference to the contact information stored in the Customer and CompanyInfo section.

Public Attributes:

**DefaultInd : (Yes | No)**
Indicates if this is a default choice in the absence of the user specifying no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**TravelArrangerType : CDATA**
Type of service making travel plans or transactions, e.g.: travel agency, etc.

**ContactRPH : CDATA (xsd:integer)**
Reference number to the contact associated with the customer.

### TravelArranger DTD fragment

```
<!ELEMENT TravelArranger (%Ent.CompanyName;)>
<!ATTLIST TravelArranger
    DefaultInd (Yes | No) #IMPLIED
    %Ent.Privacy;
    TravelArrangerType CDATA #IMPLIED
    ContactRPH CDATA #IMPLIED>
```

## 1.15.5 Affiliated Travel Club

### TravelClub

Identifies a travel club that offers special privileges and related services.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ExpireDate : CDATA (xsd:time Instant)**
Date club membership ends, in ISO 8601 format. Date only.

### TravelClub DTD fragment

```
<!ELEMENT TravelClub (TravelClubName, ClubMemberName?)>
<!ATTLIST TravelClub
    %Ent.Privacy;
    ExpireDate CDATA #IMPLIED
>
```

#### 1.15.5.1 Travel Club Name

### TravelClubName

Name of the travel club.

### TravelClubName DTD fragment

```
<!ELEMENT TravelClubName (%CompanyName;)>
```

#### 1.15.5.2 Travel Club MemberName

### ClubMemberName

Name of individual registered with the travel club.

Attributes:

**ClubMemberId : CDATA**
Identifier assigned to person registered with the travel club.

### ClubMemberName DTD fragment

```
<!ELEMENTClubMemberName (%Ent.PersonName;)?>
<!ATTLIST MemberName
    ClubMemberId CDATA #IMPLIED
>
```

### 1.15.6 Affiliated Insurance Company

### Insurance

Insurance for travel carried by customer.

Public Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**InsuranceType : CDATA**
Type of insurance policy carried by the individual.

**PolicyNumber : CDATA**
Identifier assigned by insurance company to the policy held by the customer.

**EffectiveDate : CDATA (xsd:time Instant)**
Date insurance coverage begins in ISO 8601 format. Date only.

**ExpireDate : CDATA (xsd:time Instant)**
Date insurance coverage ends in ISO 8601 format. Date only.

**RPH : CDATA (xsd:integer)**
Reference place holder or index number assigned to reference this insurance policy from Preferences collection or other specifications.

### Insurance DTD fragment

```
<!ELEMENT Insurance (InsuredName?, InsuranceCompany?, Underwriter?)>
<!ATTLIST Insurance
    %Ent.Privacy;
    InsuranceType CDATA #IMPLIED
    PolicyNumber CDATA #REQUIRED
    EffectiveDate CDATA #IMPLIED
    ExpireDate CDATA #IMPLIED
    RPH CDATA #IMPLIED>
```

### 1.15.7 Insured Name

**InsuredName**

Name of the insured party as listed on the insurance policy.

**InsuredName**

```
<!ELEMENT InsuredName (%Ent.PersonName;)?
>
```

### 1.15.8 Insurance Company Name

**InsuranceCompany**

Identification of the insurance company providing coverage.

**InsuranceCompany DTD fragment**

```
<!ELEMENT InsuranceCompany (#PCDATA)?>
```

### 1.15.9 Insurance Underwriter

**Underwriter**

Underwriting company for insurance.

**Underwriter DTD fragment**

```
<!ELEMENT Underwriter (#PCDATA)>
```

## 1.16 Trading Partner Extensions

Trading partners using the functionality defined in this Customer Profile specification may have a need to include proprietary data within messages exchanged between them. The element, <TPA_Extensions> of the data type, ANY, allows for extensibility at specific places that may be negotiated between trading partners through bilateral agreements.

### 1.16.1 TPA_Extensions

The Customer Profile contains the <TPA_Extensions> element in logical places throughout the specification for trading partners to add their own data within the framework of valid messages.

**TPA_Extensions**

Extensions allowed to OTA specifications per bilateral agreement between trading partners.

**TPA_Extensions DTD fragment**

```
<!ELEMENT TPA_Extensions ANY>
```

Trading partners will need to write their own schemas to cover items not included within conforming implementations of the Profile DTD/schema. Trading partners are encouraged to submit extensions widely used between multiple trading partners for consideration to become part of future revisions of OTA specifications.

## 1.17 Company Information

When a Profile is created for a company or business entity, as opposed to a personal or customer profile, that company is identified by Company Name and by a Company Code. The code assigned to a company may be assigned by the system that creates the company profile, or it may use a code assigned by an external identification system, such as a DUNs number. The Code Context identifes the source of the code.

The Company Name entity is found throughout the OTA Profile as an identifier for a company in relationship to its use, such as a travel arranger, employer, company associated with a contact person, etc. It is used in the CompanyInfo section as the primary identifier of the company.

A profile about a company is usually contains information about a trading partner, or other company with whom there is a business relationship. The CompanyInfo section shares many of the same elements with the Customer section of the specification. Traditional information about the address, telephone numbers email addresses, web pages (URLs) and other mailing or contact information is found in the Company Info section of the profile.

Pertinent information about a business also includes information about where that company is licensed to do business. Local, state, or national jurisdictions may have restrictions on what type of business can be conducted, and who that business can be conducted with. Therefore, the CompanyInfo section provides information about the primary place where a company is licensed to do business, and the opportunity to list alternate business locales, such as branch offices.

Companies have various means of paying for travel services which may range from company credit cards, direct payments from a business account, arrangements to pay for invoices through credit accounts or direct billing, or even by issuing vouchers for which compensation for travel services is paid . The Company Info section uses the Payment Form elements that are found in the Customer section. As with the customer data, company information is protected at the highest level and at each individual element group level with the Privacy attributes that are an inherent part of the OTA Profile.

Companies, as well as customers, have contact persons. Each of those contact persons have the potential for having individual telephone numbers and email addresses, as well as separate mailing addresses, even if those addresses are mailstops within the same building. A company contact person could even serve as an emergency contact. For example, the CEO may be on a business trip and need a contact, such as his secretary, who would be knowledgeable about his family's whereabouts, and capable of dispersing critical information to them as well as to business associates and other parties that have a need to know.

Companies, like customers, organizations, employers, or travel clubs can have travel arrangers who take care of the travel arrangements for their employees. The CompanyInfo section provides a means to identify the travel arranger, whether a person or an outside company such as a travel agency, to be identified and associated with the company information.

Companies can offer loyalty programs to their employees as well as sponsor membership programs that offer services to travelers. The information about a program offered by a company differs from the information about a member of a loyalty program, therefore, the loyalty program element in company info is intended to store information about the program offerings from the company viewpoint.

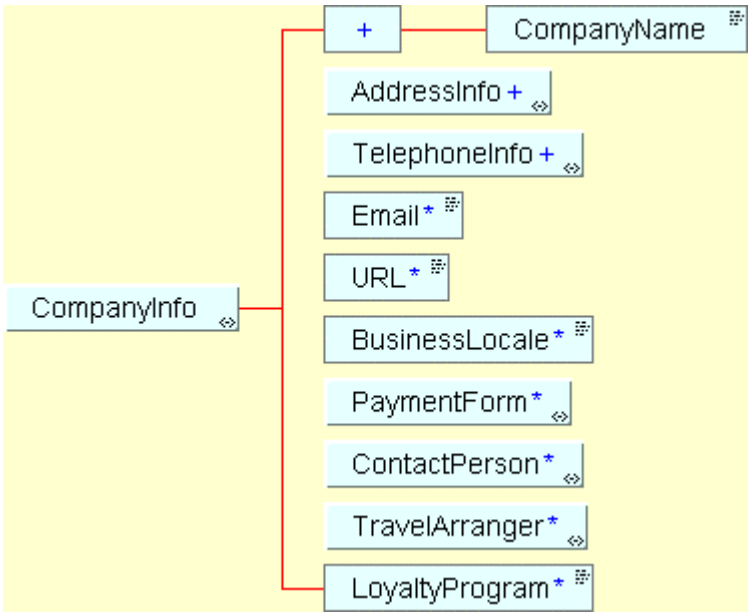
### 1.17.1 Required Company data

The specification defines a minimum set of data required for a company profile, with that data located in the CompanyInfo section. Each profile MUST have an entry in the following element:

- CompanyName, tag `<CompanyName>`

**Figure 11: CompanyInfo**




### 1.17.1.1 Company Name

**CompanyName**

Identifies a company by name and/or company code that may be associated with a membership or loyalty program, organization or travel service provider.

Attributes:

**Company Code : CDATA**
Identifies a company by the company code.

**CodeContext : CDATA**
Identifies the context of the identifying code, such as DUNS or IATA, ISO, etc.

**%ENTITY CompanyName**

```
<!ELEMENT CompanyName (#PCDATA)>
<!ATTLIST CompanyName
    CompanyCode CDATA #IMPLIED
    CodeContext CDATA #IMPLIED
>
```

### 1.17.1.2 Company Address

Identifies the address of the company. The AddressInfo element, which uses the %Address entity may be repeated to record more than one address, with the AddressType attribute indicating the type of address used. The AddressInfo element, as well as several other elements that define contact information for the company, contains the Privacy attributes, which can be used to control sharing of information for purposes of synchronization of data or for marketing purposes.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **AddressInfo** | * | Element, % Address | | DefaultInd %Privacy, AddressType | Precise location of the individual in the profile for mailing and delivery |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd %Privacy | Address | Enum | | Yes, No | |
| AddressType | Address | Enum | | Home \| Business \| Delivery \| Mailing \| Billing \| CreditCard \| Other | Describes the purpose of the address |

## AddressInfo

Information about the physical addesses contained in the profile.

Attributes:

**DefaultInd : (Yes | No)**

Indicates that the receiving system should assume the default value if the user specifies no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**

Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**

Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**AddressType : (Home | Business | Delivery | Mailing | Billing | CreditCard | Other)**

Defines what the purpose of the address is, such as main office, branch office, mailing, delivery, shipping/receiving address, etc.

## AddressInfo DTD fragment

```
<!ELEMENT AddressInfo (%Ent.Address;)>
<!ATTLIST AddressInfo
    DefaultInd (Yes | No) #IMPLIED
    %Ent.Privacy;
    AddressType (Home | Business | Delivery | Mailing | Billing | CreditCard | Other) #IMPLIED
    >
```

## %ENTITY Address

Defines a physical address of parties to the profile. May also be used as a postal address.

## Address_DTD fragment

```
<!ELEMENT Address (StreetNmbr?, BldgRoom*, AddressLine*, CityName?, StateProv?,
CountryName?,)>
```

## StreetNmbr

Street name; number on street.

Attributes:

**PO_Box : CDATA**

Box, drawer, or route location reserved for postal delivery.

```
<!ELEMENT StreetNmbr (#PCDATA)>
<!ATTLIST StreetNmbr
    POBox CDATA #IMPLIED>
```

### BldgRoom

Building name; room, apartment, or suite number.

```
<!ELEMENT BldgRoom (#PCDATA)>
>
```

### AddressLine

Additional line of an address as needed to define a physical location. May be repeated.

Attributes:

**ParsedInd : (Yes | No)**

Indicates if the data in the AddressLine field is parsed. Systems should use the AddressLine element to send unparsed data, as the AddressLine element is repeatable.

```
<!ELEMENT AddressLine (#PCDATA)>
<!ATTLIST AddressLine
 ParsedInd (Yes | No) #IMPLIED
>
```

### CityName

Name of city or town.

Attributes:

**PostalCode : CDATA**

Identifier for location assigned by postal authorities.

```
<!ELEMENT CityName (#PCDATA)>
<!ATTLIST CityName
    PostalCode CDATA #IMPLIED
>
```

### StateProv

State, province, or region name or code that identifies a location.

Attributes:

**StateCode : CDATA**

The postal service standard code or abbreviation for the state, province or region.

```
<!ELEMENT StateProv (#PCDATA)>
<!ATTLIST StateProv
    StateCode CDATA #IMPLIED
>
```

### CountryName

The name of the country specified in the address.

Attributes:

**CountryCode : CDATA**

ISO 3166 code for country in address.

```
<!ELEMENT CountryName (#PCDATA)>
<!ATTLIST CountryName
    CountryCode CDATA #IMPLIED
>
```

#### 1.17.1.3 Company Telephone

The TelephoneInfo element is used to store the company telephone numbers identified in the profile, including office, mobile phone or other telephone number, defining the association with the company in the context of the use of the phone.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **TelephoneInfo** | * | Element, % Telephone | | DefaultInd, %Privacy, PhoneUseType | Telephone numbers of the individual in the profile |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd %Privacy | TelephoneInfo | Enum | | Yes, No | |
| PhoneUseType | TelephoneInfo | String | | Office, Mobile, Day, Night | Describes the general use or preferred time of day for telephone number listed |

## TelephoneInfo

Information about the telephone numbers of the individual or company in the profile.

Attributes:

**DefaultInd : (Yes | No)**
The value that the receiving system should assume if the user specifies no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**PhoneUseType : CDATA**
Describes the type of telephone number, in the context of its general use, such as Home, Business, Emergency Contact, Travel Arranger, Day, Evening, etc.

## TelephoneInfo_DTD fragment

```
<!ELEMENT TelephoneInfo (%Ent.Telephone;)>
<!ATTLIST TelephoneInfo
 DefaultInd (Yes | No) #IMPLIED
 %Ent.Privacy;
 PhoneUseType CDATA #IMPLIED
>
```

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| PhoneTechType | Telephone | String | | Voice, Data, Fax, Pager, Cell, TTY | Indicates type of technology associated with this telephone number |

## %ENTITY Telephone

Telephone numbers for the parties in the profile.

Attributes:

**PhoneTechType : CDATA**
Indicates type of technology associated with this telephone number, such as Voice, Data, Fax, Pager, Cell, TTY.

**CountryAccessCode : CDATA**
Code assigned by telecommunications authorities for international country access identifier.

**AreaCityCode : CDATA**
Code assigned for telephones in a specific region, city, or area.

**PhoneNumber : CDATA**
Telephone number assigned to a single location.

**Extension : CDATA**
Extension to reach a specific party at the phone number.

**PIN : CDATA**
Additional codes used for pager or telephone access rights.

### Telephone DTD fragment

```
<!ELEMENT Telephone EMPTY>
<!ATTLIST Telephone
    PhoneTechType CDATA #IMPLIED
    CountryAccessCode CDATA #IMPLIED
    AreaCityCode CDATA #REQUIRED
    PhoneNumber CDATA #REQUIRED
    Extension CDATA #IMPLIED
    PIN CDATA #IMPLIED>
```

#### 1.17.1.4 Company Email

Identifies the company email address(es). Note that contact persons within a companymay be assigned their own individual e-mail addresses, therefore this element under CompanyInfo may be used for generic e-mail addresses such as "info@companyX" or "support@companyX", etc.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **Email** | * | Text | String | DefaultInd, ShareSynchInd, ShareMarketInd, EmailType | Electronic mail addresses, in IETF specified format |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd %Privacy | Email | Enum | | Yes, No | |
| EmailType | Email | String | | Personal, Business, ListServe, etc. | Describes purpose of the email address associated with the person |

### Email

Electronic mail addresses, in IETF specified format.

Attributes:

**DefaultInd : (Yes | No)**
Indicates that the receiving system should assume the default value if the user specifies no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**EmailType : CDATA**
Defines the purpose of the Email address, such as personal, business, listserve, etc.

### Email DTD fragment

```
<!ELEMENT Email (#PCDATA)>
<!ATTLIST Email
DefaultInd (Yes | No) #IMPLIED
 %Ent.Privacy;
 EmailType CDATA #IMPLIED
>
```

### 1.17.1.5 Company Web Sites

Identifies the company web site address(es). The URL element may be repeated to record more than one web site address, using IETF specified format.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| URL | * | Text | String | DefaultInd, %Privacy URL_Type | Web site addresses, in IETF specified format |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd | URL | Enum | | Yes, No | |
| %Privacy | | | | | |
| URL_Type | URL | String | | Personal, Business, ListServe, etc. | Describes purpose of the URL, business, personal, etc. |

#### URL

Web site address, in IETF specified format.

Attributes:

**DefaultInd : (Yes | No)**
Indicates that the receiving system should assume the default value if the user specifies no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**URL_Type : CDATA**
Defines the purpose of the URL address, such as personal, business, public, etc.

#### URL DTD fragment

```
<!ELEMENT URL (#PCDATA)>
<!ATTLIST URL
DefaultInd (Yes | No) #IMPLIED
 %Ent.Privacy;
 URL_Type CDATA #IMPLIED>
```

### 1.17.1.6 Business Locale

Identifies the address(es) where the company is lecensed to do business. Uses the address entity to specify any of the components of an address, such as city, county, state or country.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| BusinessLocale | * | Text | String | DefaultInd, | Location where a company is authorized to do business |
| %Address | | Entity | | | Identifies the address of the business, using the components of the Address entity. |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd | Business Locale | Enum | | Yes, No | Indicates the primary place of business when set to Yes. |

### BusinessLocale

The jurisdiction in which a company is authorized to do business. Uses the Address entity to indicate the location of the business.

Attribute:

**DefaultInd : (Yes | No)**

Indicates whether the business location is the default choice among several. The default business locale could be used to indicate the primary place of business or incorporation

### BusinessLocale DTD fragment

```
<!ELEMENT BusinessLocale (%Ent.Address;)>
<!ATTLIST BusinessLocale
    DefaultInd (Yes | No) #IMPLIED
>
```

## 1.17.2 Company Payment Forms

The CompanyInfo section of the profile provides a place to store data on the payment methods used by a company to pay for travel-related services. Company payment information may be used dynamically for payment of invoices in a direct billing situation, or for guarantees of reservations via company credit card, etc. Therefore, the OTA profile specification holds information about payment data in the PaymentForm element so that these entries only need to appear once, and can be referenced from other places in the profile or in message sets.

Each of the items that identify a payment form are assigned a Reference Place Holder (RPH) attribute that identifies the indivdual type of payment within a collection of payment forms. When it is necessary to refer to the data stored in the Company section of the profile from other sections of the profile record, a reference is made to the RPH or index number of that item.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **PaymentForm** | * | Element | | DefaultInd, %Privacy CostCenterId, RPH | Ways of providing funds for company travel |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd | PaymentForm | Enum | | Yes, No | |
| %Privacy | | | | | |
| CostCenterId | PaymentForm | String | | | Code for allocating cost of travel to company accounts |
| RPH | PaymentForm | Integer | | | Reference number to identify payment form data |

## PaymentForm

Attributes:

**DefaultInd : (Yes | No)**
Indicates that the receiving system should assume the default value if the user specifies no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**CostCenterId : CDATA**
Code for allocating cost of travel to company accounts.

**RPH : CDATA (xsd:integer)**
A Reference Place Holder that serves as an index to the collection of payment forms stored in the customer's profile record. The RPH may be used to reference a method of payment from outside the profile.

## PaymentForm DTD fragment

```
<!ELEMENT PaymentForm (CreditCard*, BankAcct*, DirectBill*)>
<!ATTLIST PaymentForm
    %Ent.Privacy;
    CostCenterId CDATA #IMPLIED
    RPH CDATA #IMPLIED >
```

### 1.17.2.1 Credit Cards

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **CreditCard** | * | Element | | %Privacy CardType, CreditCardCode CardNumber, SeriesCode, EffectiveDate ExpireDate , | Payment accounts authorizing purchases represented by plastic cards often with magnetic strips with data for identification |
| CardHolderName | ? | Text | String | IssuingBankId | Name string of individual as embossed on the card |
| CardIssuerName | ? | Text | String | | Company or organization that issued the card |
| %Address | ? | Entity | Element | | Address that defines the location where invoices are sent. |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| %Privacy | | | | | |
| CardType | CreditCard | Enum | | Credit \| Debit \| CentralBill | Type of magnetic-striped card |
| CreditCardCode | CreditCard | String | | | Code indicating type of credit card (MC, AMEX, Visa, etc.) |

| | | | |
|---|---|---|---|
| CardNumber | CreditCard | | Identifier embossed on card |
| SeriesCode | CreditCard | String | Verification digits sometimes printed (but not embossed) on the card |
| EffectiveDate | CreditCard | Date | Date the card becomes valid in ISO 8601 format |
| ExpireDate | CreditCard | Date | Last date of use for the card in ISO 8601 format |

## CreditCard

Payment accounts authorizing purchases represented by plastic cards with magnetic strips with data for identification.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**CardType : (Credit | Debit | CentralBill)**
Indicates the type of magnetic striped card. Values: (Credit | Debit | CentralBill)

**CreditCardCode: CDATA**
Code indicating the type of credit card. (e.g., MasterCard, American Express, Visa, etc.), or the type of central bill/debit card.

**CardNumber : CDATA**
Credit card number embossed on the card.

**SeriesCode : CDATA**
Verification digits printed on the card following the embossed number.

**EffectiveDate: CDATA (xsd:timeInstant)**
Date the card becomes valid for use in ISO 8601 prescribed format, using date only.

**ExpireDate : CDATA (xsd:timeInstant)**
Date the card expires and can no longer be used in ISO 8601 format, using date only.

## CreditCard_DTD fragment

```
<!ELEMENT CreditCard (CardHolderName?, CardIssuerName?, %Ent.Address;?)>
<!ATTLIST CreditCard
    %Ent.Privacy;
    CardType (Credit | Debit | CentralBill) #IMPLIED
    CreditCardCode CDATA #IMPLIED
    CardNumber CDATA #REQUIRED
    SeriesCode CDATA #IMPLIED
    EffectiveDate CDATA #IMPLIED
    ExpireDate CDATA #REQUIRED>
```

## CardHolderName

Name of individual cardholder as embossed on the credit/debit card.

## CardHolderName_DTD fragment

```
<!ELEMENT CardHolderName (#PCDATA)>
```

### CardIssuerName

Name of bank or organization issuing the card. e.g.: alumni association, bank, fraternal organization, etc.

**IssuingBankId : CDATA**

Code of bank issuing the card.

```
<!ELEMENT CardIssuerName (#PCDATA)>
<!ATTLIST CardIssuerName
    IssuingBankId CDATA #IMPLIED
>
```

### ENTITY %Address

Mailing or delivery address that defines the location where invoices are sent.

#### 1.17.2.2 Bank Accounts

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **BankAcct** | * | Element | | %Privacy BankId, AcctType, BankAcctNumber, | Customer bank accounts for payments, either for paper checks or electronic funds transfers |
| BankAcctName | * | Text | String | | Names of the company as it appears on the bank account. Could also be used to indicate persons authorized to issue checks on this account. |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| &Privacy | | | | | |
| BankId | BankAcct | String | | | Code assigned by authorities to financial institutions; sometimes called bank routing number |
| AcctType | BankAcct | String | | Checking, Savings, Investment | Describes the bank account used for financing travel |
| BankAcctNumber | BankAcct | String | | | Identifying number for the bank account. |

### BankAcct

Company bank accounts for payments, either for paper checks or electronic funds transfers.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**BankId : CDATA**
Code assigned by authorities to financial institutions; sometimes called bank routing number.

**AcctType : CDATA**
Describes the bank account used for financing travel, such as: Checking, Savings, Investment, etc.

**BankAcctNumber : CDATA**
Identifier for the account assigned by the bank.

### BankAcct_DTD fragment

```
<!ELEMENT BankAcct (BankAcctName* )>
<!ATTLIST BankAcct
    %Ent.Privacy;
    BankId CDATA #IMPLIED
    AcctType CDATA #IMPLIED
    BankAcctNumber CDATA #IMPLIED
>
```

### BankAcctName

Names of the company and/or individuals as listed on the bank account.

```
<!ELEMENT BankAcctName (#PCDATA)>
```

#### 1.17.2.3 Direct Billing

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **DirectBill** | * | Element | | %Privacy. DirectBill_Id | Company name and location for sending invoice for remittances for travel services. |
| %CompanyName | R | Entity | String | | Name of organization to where invoices are sent |
| %Address | R | Entity | | | Mailing or delivery location where invoices are sent |

| Attribute Name | Element | Data Type | Default Values | Description |
|---|---|---|---|---|
| &Privacy DirectBill_Id | DirectBill | String | | Identifier of the organization to be billed for trvel services |

### DirectBill

Company name and location for sending invoice for remittances for travel services.

Attributes:

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.
**DirectBill_Id : CDATA**
Identifier for the organization to be billed directly for travel services.

### DirectBill_DTD fragment

```
<!ELEMENT DirectBill (%Ent.CompanyName;, %Ent.Address;)>
<!ATTLIST DirectBill
    %Ent.Privacy;
    DirectBill_Id CDATA #REQUIRED
>
```

### ENTITY %CompanyName

Uses the CompanyName entity to indicate the name of organization to which invoices are sent.

### ENTITY %Address

Uses the Address entity to define the mailing or delivery location where invoices are sent.

#### 1.17.2.4 Voucher

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **Voucher** | * | Element | | EffectiveDate, ExpireDate, SeriesCode | Information about voucher program used to pay for travel services. |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| EffectiveDate | Voucher | Date | | ISO 8601 format | Date the voucher series is issued or becomes valid |
| ExpireDate | Voucher | Date | | ISO 8601 format | Last date that the voucher series is valid for use |
| SeriesCode | Voucher | String | | | Serial numbers printed on vouchers for validation |

### Voucher

A form of payment using a voucher or coupon.

Attributes:

**EffectiveDate : CDATA**
The date when a voucher becomes valid for use, if applicable.
**ExpireDate : CDATA**
The date when a voucher or series of coupons expires and is no longer valid.
**SeriesCode : CDATA**
Identification of a series of coupons or vouchers identified by serial number(s).

### Voucher DTD fragment

```
<!ELEMENT Voucher (#PCDATA)>
<!ATTLIST Voucher
    EffectiveDate CDATA #IMPLIED
    ExpireDate CDATA #IMPLIED
    SeriesCode CDATA #IMPLIED
>
```

#### 1.17.2.5 Contact Person

The Contact Person element identifies a person whom travel services should contact on behalf of the company. This may be an employee, or person that is amember of another company that provides travel arrangements for the company.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **ContactPerson** | * | Element | | DefaultInd %Privacy ContactType, Relation EmergencyFlag, RPH | Persons whom travel services should use as a company contact |
| % PersonName | ? | Element | | | Names of individuals to contact |
| TelephoneInfo | * | Element % Telephone | | PhoneTech PhoneUse, | Telephone numbers, including, fax or pager, of persons to contact |
| AddressInfo | * | Element % Address | | ContactType, | Addresses of persons to contact |
| Email | * | Text | String | DefaultInd, EmailType | Email addresses of contact person or entity |
| URL | * | Text | String | DefaultInd, URL_Type | Web site addresses of contact person or entity |
| % CompanyName | * | Element: | | DefaultInd | Company associated with the contact. |
| EmployeeInfo | * | Element | String | EmployeeId, EmployeeLevel, EmployeeTitle, EmployeeStatus Type | Employment information about the contact person. |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| DefaultInd | ContactPerson | Enum | | Yes \| No | |
| %Privacy | | | | | |
| ContactType | ContactPerson | String | | Employee, Travel Arranger, etc. | Type of company contact |
| Relation | ContactPerson | | | | Indicates the relationship of the contact person |
| EmergencyFlag | ContactPerson | Enum | | Yes \| No | Indicates whether this contact should be used in an emergency. |
| RPH | ContactPerson | Integer | | | Reference number for a contact stored in the profile |

## ContactPerson

Person or entity with whom travel services should communicate when it is necessary to interact with a contact on behalf of the company.

Attributes:

**DefaultInd : (Yes | No)**
Indicates the default among a choice of more than one. The receiving system should assume this default value if the user specifies no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ContactType : CDATA**
Type of contact in the context of use for the travel experience; such as permanent, temporary, affiliation, travel arranger, etc.

**Relation : CDATA**
Indicates type of the relationship with the person in the profile, such as Spouse, Children, Family, Business, InterestGroup, Medical, Security, Other.

**EmergencyFlag : (Yes | No)**
Indicates if this contact should be used in the case of an emergency.

**RPH : CDATA (xsd:integer)**
A Reference Place Holder that serves as an index to the collection of contacts stored in the customer's profile record. The RPH may be used to reference a contact from outside the profile, e.g.: in a reservation.

## ContactPerson DTD fragment

```
<!ELEMENT ContactPerson (%Ent.PersonName;, TelephoneInfo*, AddressInfo*, Email*, URL*,
%Ent.CompanyName;*, EmployeeInfo*)>
<!ATTLIST ContactPerson
    DefaultInd (Yes | No) #IMPLIED
    %Ent.Privacy;
    ContactType CDATA #IMPLIED
    Relation CDATA #IMPLIED
    EmergencyFlag CDATA #IMPLIED
    RPH CDATA #IMPLIED
>
```

The following elements are children of the ContactPerson element, described elsewhere in this specification, as well as under the ContactPerson element in the Customer section. EmployeeInfo is fully described, as this element may be used frequently for company contacts.

## TelephoneInfo

Telephone numbers, including, fax or pager, of contact person.

## AddressInfo

Information about the physical or mailing addess of the contact person.

## Email

Electronic mail addresses of the contact person.

## URL

Web site address of the contact person, in IETF specified format.

### ENTITY %CompanyName

Identifies a company or organization associated with the contact.

### EmployeeInfo

Employment information about the person employed by the company. The PCDATA field of EmployeeInfo can be used to record the exact name of the employee if it differs from that of the contact person identified for the company.

Attributes:

**EmployeeId : CDATA**
Identifier assigned to the person by the employer.

**EmployeeLevel : CDATA**
Level in employer organization (e.g. seniority) that conveys privileges.

**EmployeeTitle : CDATA**
Title of employee in employer company that conveys rank or privileges.

**EmployeeStatusType : (Active | Retired | Leave | Terminated)**
Status of employment. Values: Active, Retired, Leave, Terminated.

### EmployeeInfo DTD fragment

```
<!ELEMENT EmployeeInfo (#PCDATA)>
<!ATTLIST EmployeeInfo
   EmployeeId CDATA #IMPLIED
   EmployeeLevel CDATA #IMPLIED
   EmployeeTitle CDATA #IMPLIED
   EmployeeStatusType (Active | Retired | Leave | Terminated) #IMPLIED
>
```

## 1.17.3 Company Travel Arranger

### TravelArranger

Identifies a company or individual responsible for making travel plans or transactions for the company and its employees. The ContactRPH is a reference to the contact information stored in the Customer and CompanyInfo section.

Public Attributes:

**DefaultInd : (Yes | No)**
Indicates if this is a default choice in the absence of the user specifying no overriding value or action.

**ShareSynchInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for synchronization of profiles held by other travel service providers. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**ShareMarketInd : (Yes | No | Inherit) = Inherit**
Permission for sharing data for marketing information. Enumerated values: 'yes', 'no', 'inherit'. Default = Inherit.

**TravelArrangerType : CDATA**
Type of service making travel plans or transactions, e.g.: travel agency, etc.

**ContactRPH : CDATA (xsd:integer)**
Reference number to the contact associated with the customer.

### TravelArranger DTD fragment

```
<!ELEMENT TravelArranger (%Ent.CompanyName;)>
<!ATTLIST TravelArranger
   DefaultInd (Yes | No) #IMPLIED
   %Ent.Privacy;
   TravelArrangerType CDATA #IMPLIED
   ContactRPH CDATA #IMPLIED>
```

### 1.17.4 Loyalty Programs

The LoyaltyProgram element identifies membership programs offered by the company that rewards frequent use by its members. The programs offered by the company are identified by name and by program code, and identify levels of service that they offer to subscribers. The SingleVendorInd attribute indicates whether the program is a part of an alliance of other similar reward programs. The LoyaltyProgram element uses an RPH attribute to index a specific loyalty program among a collection.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **LoyaltyProgram** | * | | String | ProgramCode SingleVendorInd LoyaltyLevel, RPH | Name of the loyalty program. |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| ProgramCode | LoyaltyProgram | String | | | Identifying code for the loyalty program |
| SingleVendorInd | LoyaltyProgram | Enum | | SingleVndr, Alliance | Indicates if program is affiliated with a group of related offers accumulating credits |
| LoyaltyLevel | LoyaltyProgram | String | | | Indicates a level of special privileges offered by the program |
| RPH | LoyaltyProgram | Integer | | | Reference number for loyalty program |

#### LoyaltyProgram

Loyalty program offered by the company.

Attributes:

**ProgramCode : CDATA**
The code of the loyalty or membership program.

**SingleVendorInd : (SingleVndr | Alliance)**
Indicates if program is affiliated with a group of related offers for accumulation of credits or points. Values: SingleVndr or Alliance.

**LoyaltyLevel : CDATA**
Indicates the status or level offered by the program which carries certain privleges or represents a points or rewards available to members.

**RPH : CDATA (xsd:integer)**
Reference number to be used to identify this loyalty program.

#### LoyaltyProgram DTD fragment

```
<!ELEMENT LoyaltyProgram (#PCDATA)>
<!ATTLIST LoyaltyProgram
   ProgramCode CDATA #IMPLIED
   SingleVendorInd (SingleVndr | Alliance) #IMPLIED
   LoyaltyLevel CDATA #IMPLIED
   RPH CDATA #IMPLIED
>
```

## 1.18 Agreements

Profile information about a company often involves data about the business relationship, identifying information about trading partner agreements, methods or arrangements for earning commissions, or other affilations and relationships to which that company belongs. That information sometimes implies the roles and privileges inherent to the trading partner relationship.

A company profile is identified by the UniqueId element in the same manner as a personal, customer profile. The four attributes, consisting of the Id, Type, URL and optionally, an Instance of the profile record, apply similarly to the company profile. The Id is a unique number assigned to identify the business, often using the identification number of a certifying body, such as ARC, IATA, for a travel arranger, or a DUN's number for a corporation, etc., depending upon the nature of the business entity. The list of types is enumerated in the Profile Type attribute. With the exception of Customer, all profile types refer to a business entity.

Because such information may be confidential between companies, the privacy attributes determine whether such information about the company can be shared for synchronization as well as for marketing purposes with other trading partners. The Privacy attributes are set by default to "No" at the highest level, with all other levels inheriting from the root level. Permission to share data must overide the default at the specific element level.

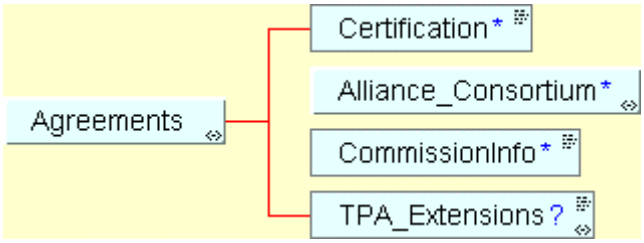
The Agreements section of the OTA Profile identifies the certifications or accreditations held by a company, as well as any relationships with other groups, such as alliances or consortiums.

The CommissionInfo element allows for the identification of commission plans by code and associates rates to those plans. However, sensitive information about arrangements for monetary transactions is protected by the privacy built into the Agreements section of the OTA Profile specification, and at level of the CommissionInfo element.

### 1.18.1 Agreements data

Each of the elements in the Agreements section is OPTIONAL, however, if any of these elements appear in an OTA message, they MUST appear in the designated order.

**Figure 12: Agreements**



### 1.18.2 Agreements Section

#### Agreements

Section of a business profile that contains information about trading partner agreements.

Public Attributes:

**%Ent.Privacy;**

The privacy entity provides a means to control the sharing of information about trading partner agreements for system synchronization or marketing purposes.

#### Agreements DTD fragment

```
<!ELEMENT Agreements (Certification*, Alliance_Consortium*, CommissionInfo*, TPA_Extensions?)>
<!ATTLIST Agreements
  %Ent.Privacy;>
```

### 1.18.3 Certifications

The Certification element provides information about certifications and accreditations held by the company. This element may be repeated for each certification recorded.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **Certification** | * | Element | | CertificationId, CertificationType, EffectiveDate, ExpireDate | Information about certifications held by the company |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| CertificationId | Certification | String | | | Identification number assigned by the certifying body |
| CertificationType | Certification | Enum | | SingleVndr \| Alliance | Indicates whether certification is part of an alliance |
| EffectiveDate | Certification | Date | | | Date the certification was issued |
| ExpireDate | Certification | Date | | | Date that certification expires |

#### Certification

Information about a certification or accreditation held by the company.

Public Attributes:

**CertificationId : CDATA**

The identification number assigned to a business entity. This number would presumably be the Id in the UniqueId.

**CertificationType : (SingleVndr | Alliance)**

An indication of whether a certification is part of a consortium or alliance partnership. Valid values: (Single Vendor | Alliance).

**EffectiveDate : CDATA**

The date when certification originated.

**ExpireDate : CDATA**

The date when the certification or accreditation expires and is no longer valid.

### Certification DTD fragment

```
<!ELEMENT Certification (#PCDATA)>
<!ATTLIST Certification
    CertificationId CDATA #IMPLIED
    CertificationType (SingleVndr | Alliance) #IMPLIED
    EffectiveDate CDATA #IMPLIED
    ExpireDate CDATA #IMPLIED>
```

## 1.18.4 Alliance and Consortium Memberships

The Alliance_Consortium element contains information about membership held by the company in an alliance or consortium.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **Alliance_ Consortium** | * | Element | | AllianceId EffectiveDate, ExpireDate, | Information about membership in an alliance or consortium |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| AllianceId | Alliance_ Consortium | String | | | Identification number for the membership in the group |
| EffectiveDate | Alliance_ Consortium | Date | | | Date the membership became effective in ISO 8601 format |
| ExpireDate | Alliance_ Consortium | Date | | | Date the membership expires in ISO 8601 format |

### Alliance_Consortium

Provides information about alliance partnerships and consortiums of members grouped together to obtain trading partners agreements for travel services and privileges.

Attributes:

**AllianceId : CDATA**
Identification of the alliance or partnership in which the business entity is a member.

**EffectiveDate : CDATA**
The date when membership in an alliance or consortium began.

**ExpireDate : CDATA**
The date when membership in the alliance or consortium ends.

### Alliance_Consortium DTD fragment

```
<!ELEMENT Alliance_Consortium (AllianceMember*)>
<!ATTLIST Alliance_Consortium
    AllianceId CDATA #IMPLIED
    EffectiveDate CDATA #IMPLIED
    ExpireDate CDATA #IMPLIED>
```

### AllianceMember

Identification of a company that participates in an alliance or consortium to which the primary business entity identified in this profile belongs. Uses the CompanyName entity.

Attribute:

**MemberCode : CDATA**
Identifies the alliance or consortium member by code.

### AllianceMember DTD fragment

```
<!ELEMENT AllianceMember (%Ent.CompanyName;)>
<!ATTLIST AllianceMember
    MemberCode CDATA #IMPLIED>
```

### 1.18.5 Commission Information

The CommissionInfo element identifies information about arrangements between companies for commissions to be paid.

| Element | Occurc. | Content | Data type | Attributes | Description |
|---|---|---|---|---|---|
| **Commission** | * | | String | %Privacy, CommissionPlanCode CommissionRate | Information about commission agreements |

| Attribute Name | Element | Data Type | Default | Values | Description |
|---|---|---|---|---|---|
| %Privacy | | | | | |
| CommissionPlan Code | Commission | String | | | Code that identifes the commission arrangement |
| CommissionRate | Commission | String | | | Rate or percentage that applies to this commission plan |

### CommissionInfo

Contains information about agreements for commission arrangements with the business entity.

Attributes:

**%Ent.Privacy; :**
The privacy entity provides a means to control the sharing of commission information for system synchronization or marketing purposes.

**CommissionPlanCode : CDATA**
Identifies a commission plan agreement between trading partners by plan code.

**CommissionRate : CDATA**
Identifies a rate for paying commissions; can be a decimal value based on percentage paid for the commission plan, or a flat rate.

### CommissionInfo DTD fragment

```
<!ELEMENT CommissionInfo (#PCDATA)>
<!ATTLIST CommissionInfo
    %Ent.Privacy;
    CommissionPlanCode CDATA #IMPLIED
    CommissionRate CDATA #IMPLIED>
```

### 1.18.6 TPA Extensions

Due to the proprietary nature of agreements between business relationships, the TPA_Extensons element is included in this section of the profile, and allows for companies to add selected information as needed.

### TPA_Extensions

```
<!ELEMENT TPA_Extensions ANY>
```