MESSAGEML

THE NEXT GENERATION OF ELECTRONIC MESSAGING

SmartMessage Specification
Preliminary DRAFT
Version 0.9g

About The MessageML Forum

The MessageML Forum is an industry organization established to develop and promote an open, industry wide standard for electronic messaging.

Disclaimers

This document is subject to change without notice and may be updated, replaced or made obsolete by other documents at any time.

The MessageML Forum disclaims any and all warranties, whether express or implied, including (without limitation) any implied warranties of merchantability or fitness for a particular purpose.

The descriptions contained herein do not imply the granting of licenses to make, use, sell, license or otherwise transfer any technology required to implement systems or components conforming to this specification. MessageML Forum, and its member companies, makes no representation on technology described in this specification regarding existing or future patent rights, copyrights, trademarks, trade secrets or other proprietary rights.

By submitting information to MessageML Forum, and its member companies, including but not limited to technical information, you agree that the submitted information does not contain any confidential or proprietary information, and that MessageML Forum may use the submitted information without any restrictions or limitations.

Revision History

Version	Date	Description
0.9a	3/14/2000	Initial working draft.
0.9b	3/21/2000	Major reorganization
0.9c	7/28/2000	Receipts
0.9d	9/10/2000	Forum name changed; documents cleanup
0.9e	9/21/2000	Receipts reorganized
0.9f	11/30/2000	Appendix C, example 7.1 clarified
0.9g	12/12/2000	Updated specification to reflect stylesheet versioning enhancements including SmartMessage and Informant stylesheet schema changes

Forthcoming Revisions

Description
2-way SmartResponses
Subscribe/unsubscribe URL
New endpoints: WAP, PDA, Extended
Differentiate From vs. Creator
File/binary attachments; out of band data
Stylesheet processing applets
Appropriate references; glossaary
Tighten up security
System Messages: endpoint config, account query, informant config, subscriber config

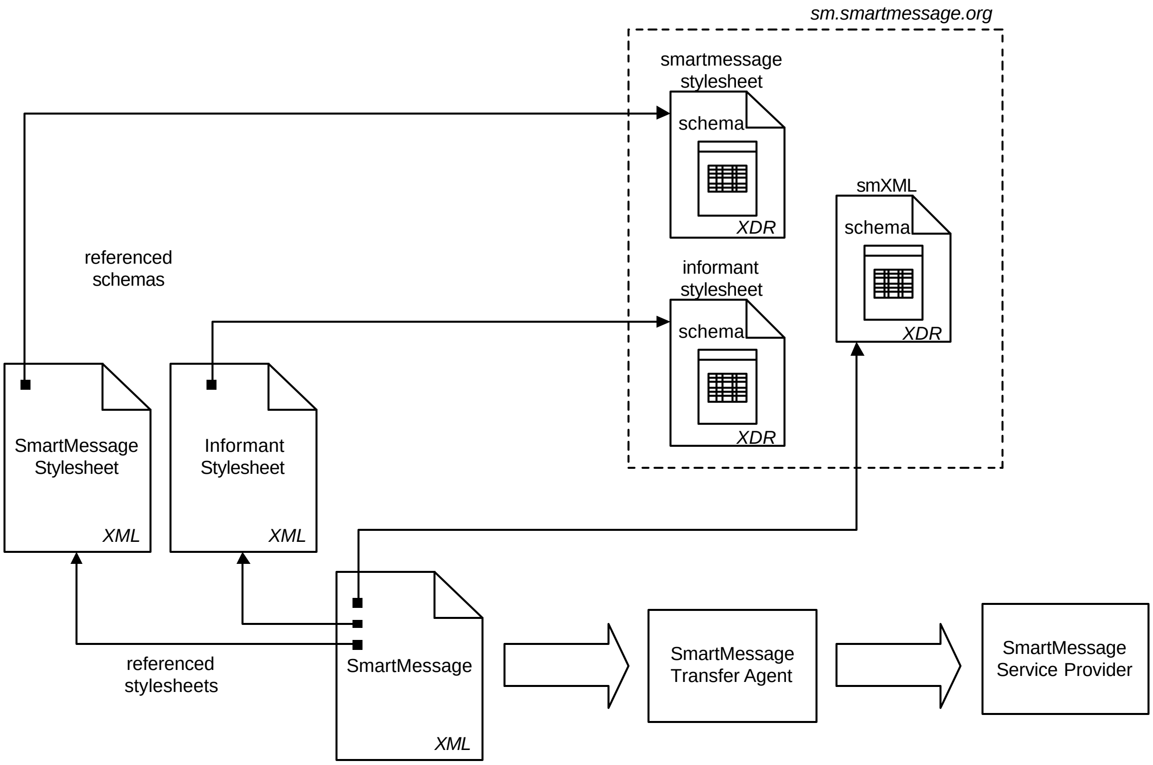
Working Group Contact Information

Jonathan Zuck	Chairman, MessageML Forum	jzuck@messageml.org
Craig Goren	CTO, Centerpost Corporation	cgoren@mail.centerpost.com

1 Introduction

The MessageML specification is a proposed standard for a new style of electronic messaging. It provides a design where message content drives the decision process. This means that even before a user reads a message, it has been prioritized and routed to a pre-defined communications device or application. The sender focuses on the content and MessageML provides the constructs to tag the content and properly transform it into a viewable format for delivery to the target communications device. MessageML is based upon e**X**tensible **M**arkup **L**anguage (XML), see W3C for more information (http://www.w3.org/XML/).

The following diagram illustrates the relationships between the elements comprising the MessageML design, the SmartMessage being central to the entire architecture.



A SmartMessage is an electronic message that provides a single, standard envelope to deliver its content to a host of communications devices and applications, referred to in this document as endpoints. These endpoints include mobile phones with messaging capability, wireless PDAs, pagers, fax machines, PC e-mail inboxes, instant messaging applications, and standard telephones. Thus, a SmartMessage sent to a pager would look the same as a SmartMessage sent as an e-mail in HTML format. The MessageML architecture separates the content from the presentation, and allows the sender to define how its message content should be displayed to the user on these various endpoints.

A SmartMessage also contains a robust set of self-descriptive attributes or meta data about its content. By examining this meta data, a process or recipient can determine how the message should be handled, for example, how the message should be prioritized, handles and delivered.

MessageML also incorporates message stylesheets which are applied to the message content to create communication device specific message formats. Again, by separating the content from the presentation a SmartMessage can transform it's contents to any other presentation format. This allows MessageML to interoperate and leverage other proprietary and XML-based communications formats. For example, a

SmartMessage could be sent to a WAP-enabled phone by transforming its contents to WML or a speech recognition dialog could be initiated over a telephone by transforming a SmartMessage into a VoiceXML document.

The end result is that it becomes easier for both the SmartMessage service provider and their recipients to manage, receive, route, and interact with electronic messages.

This document describes the MessageML architecture, format definitions and stylesheets, and discusses implementation samples. It also provides the necessary information to develop MessageML based applications and services. For additional information relating to MessageML visit http://www.messageml.org.

2 SmartMessage Architecture Overview

To better understand the architecture of SmartMessaging this section starts by describing a simple process flow, identifying the key elements and entities involved in the process and then provides more detail on the role of each in the process.

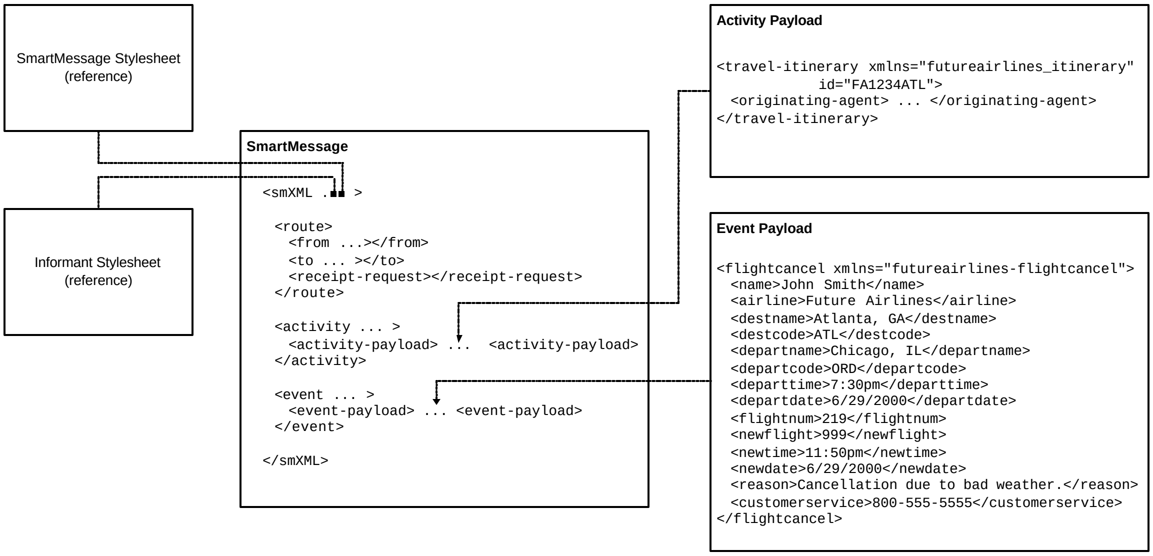
The following process flow describes a simple SmartMessage life cycle.

1. The Informant creates an Informant Stylesheet which defines metadata about the informant and it's valid sources or locations from where its associated SmartMessages can originate. This document is stored on the Informant's web server.
2. The Informant creates a SmartMessage Stylesheet for each type of activity it wishes to deliver to its recipients, for example, Travel Itinerary. Within this activity is a collection of event classes associated with that activity class, for example, Flight Cancellations, Itinerary Changes, etc. The informant defines what the message content or payload looks like for each event class by defining their XML schemas, which are embedded within the SmartMessage Stylesheet. XSL documents are also created and embedded into the SmartMessage Stylesheet to define how each event's payload should be displayed to the various endpoints. This document is also stored on the Informant's web server.
3. SmartMessage users hosted by a SmartMessage Service Provider sign up to receive SmartMessages from the Informant. Each user decides where the Informant's various SmartMessage event classes are to be delivered, specifically to which endpoints.
4. The Informant creates and sends a SmartMessage to a set of SmartMessage user accounts hosted by this SmartMessage Service Provider.
5. The SmartMessage Service Provider receives, processes and delivers the SmartMessage to the specified endpoint of each addressed user.

As evidenced from the above process flow, there are many different elements and entities involved in delivering a SmartMessage. The following sections describe these elements and entities in more detail.

2.1 SmartMessage XML Document

The SmartMessage document is the main element of the MessageML architecture. In simple terms, a SmartMessage is a well-formed XML document with a robust set of attributes that define and describe the embedded message content, which itself is a well-formed XML document. MessageML refers to its message content as its *payload*. The following diagram illustrates this relationship.



```
<smXML ... >

  <route>
    <from ...></from>
    <to ... ></to>
    <receipt-request></receipt-request>
  </route>

  <activity ... >
    <activity-payload> ...  <activity-payload>
  </activity>

  <event ... >
    <event-payload> ... <event-payload>
  </event>

</smXML>
```

```
<travel-itinerary xmlns="futureairlines_itinerary"
            id="FA1234ATL">
  <originating-agent> ... </originating-agent>
</travel-itinerary>
```

```
<flightcancel xmlns="futureairlines-flightcancel">
  <name>John Smith</name>
  <airline>Future Airlines</airline>
  <destname>Atlanta, GA</destname>
  <destcode>ATL</destcode>
  <departname>Chicago, IL</departname>
  <departcode>ORD</departcode>
  <departtime>7:30pm</departtime>
  <departdate>6/29/2000</departdate>
  <flightnum>219</flightnum>
  <newflight>999</newflight>
  <newtime>11:50pm</newtime>
  <newdate>6/29/2000</newdate>
  <reason>Cancellation due to bad weather.</reason>
  <customerservice>800-555-5555</customerservice>
</flightcancel>
```

The SmartMessage itself has no meaningful interpretation without some type of definition. This is needed so that the receiver of the message can make decisions about how to handle the message before they read it. For example, without opening or viewing the message how do you know whom the message is from? How do you know that it's a flight cancellation? How does the message then know to route itself to your wireless web phone? And lastly, how does the message know to display itself in the right format for your wireless web phone? MessageML provides the necessary constructs to answer these questions.

MessageML definitions are created prior to sending a SmartMessage and live in the Informant Stylesheet and SmartMessage Stylesheet. The SmartMessage has a reference to the appropriate Informant Stylesheet and SmartMessage Stylesheet. This association identifies the message with a specific Informant, activity class, event class, and validating XML schemas. These concepts will be discussed in later sections.

The Informant Stylesheet defines information about the Informant or sender of information and its valid transport sources or locations from where it will send its messages. For each source the allowable Internet access protocol is also defined.

The SmartMessage Stylesheet defines the message payload's meta-data and structure, as well as how it should be rendered using XSL for the various endpoints.

2.2 Informant Stylesheet

The main role of the Informant Stylesheet is to provide information about and authenticate the sender of the message. When a SmartMessage service provider receives a SmartMessage it can check the physical IP address, domain, or SMTP e-mail account from which it came. If the source address matches one of the entries in the Informant Stylesheet, it is considered authentic. Otherwise, the message is rejected.

The Informant Stylesheet also contains meta data about the Informant itself, such as its name, website address, industry category, and the like.

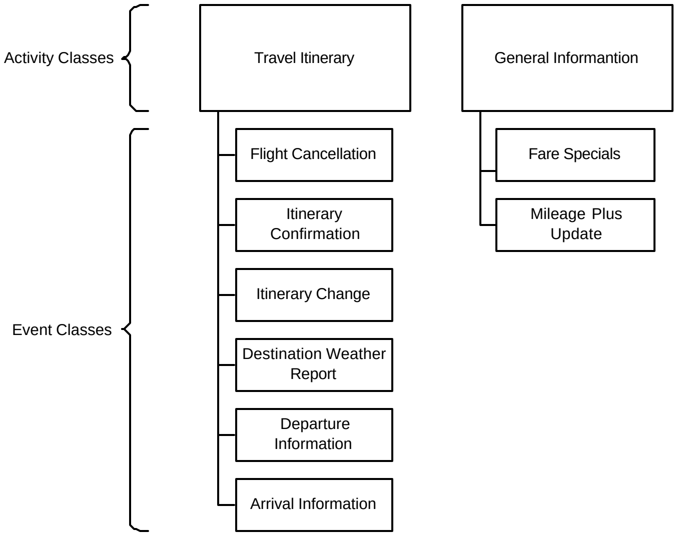
The Informant Stylesheet usually resides on the Informant's web server and is versioned by its filename and the version date. For example, the Informant Stylesheet http://smartmessage.messageml.org/stylesheets/informant/v1-1.xml describes version 1.1 of the document (see Document Publishing Guidelines section).

2.3 SmartMessage Stylesheet

The SmartMessage Stylesheet serves three main functions:

1) define activity and event class meta data and organization,
2) define the XML schemas of the activity and event class payloads (content), and
3) define the how the payload is rendered via XSL for specific endpoints.

An activity class is a grouping of events. For example, the activity class called Travel Itinerary would have several event classes associated with it. These may include flight cancellations, flight changes, rental car and hotel confirmations, and the like. An event class can only belong to one and only one activity class. The following diagram illustrates this relationship.



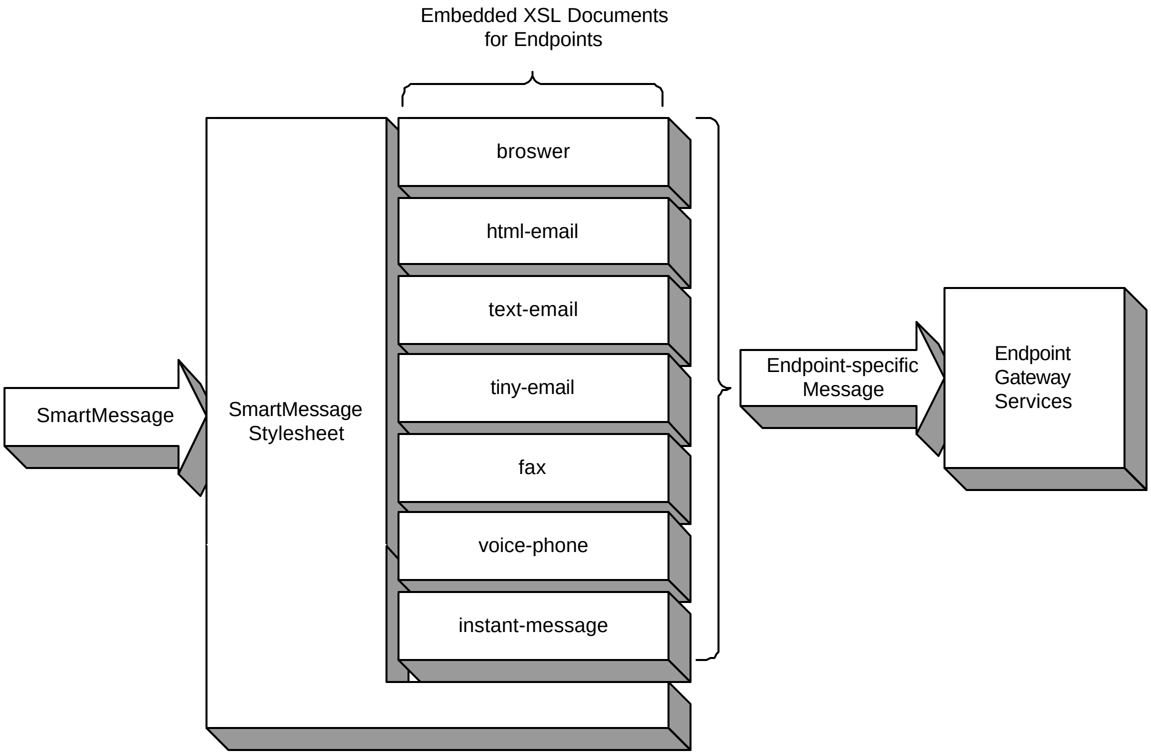
Activity and event classes also have meta data describing their duration and frequency. This information can be used to understand the timeliness of the message itself. Also, an event class has additional meta data about its purpose, sensitivity, reach, immediacy, and category. This information can be used to filter SmartMessages and specify routing rules and instructions. Although multiple activity/event class definitions can reside in the same SmartMessage Stylesheet, it is recommended that each SmartMessage Stylesheet contain one activity class and its related event classes (see Document Publishing Guidelines section for more information).

When an update is needed, all new SmartMessages would change their reference to point at the new SmartMessage Stylesheet version, with a newer version date. For example, new messages would change from itinerary-v1-0.xml to itinerary-v1-1.xml. This design maintains backward compatibility.

The XML schemas which define the structure of the SmartMessage payload are embedded within the SmartMessage Stylesheet in the <activity-payload-schema> and <event-payload-schema> elements. These schemas follow the XML Schema format as defined by the W3C (http://www.w3.org/XML/Schema). The activity payload describes information common to all its event classes, and event payload describes information specific to that event instance.

XSL templates define how a SmartMessage is rendered to a specific endpoint. The <activity-xsl-endpoint> and <event-xsl-endpoint> elements contain these XSL templates, which are embedded within the SmartMessage Stylesheet. A XSL template should be created for each endpoint device. The <activity-xsl-default> and <event-xsl-default> XSL templates are required and are used to render the SmartMessage's contents when an endpoint specific XSL template is not defined.

So how does this information get stored? Does the Informant need to send the Informant Stylesheet and SmartMessage Stylesheet prior to submitting a SmartMessage that refers to them? The answer is no. Since, these MessageML Stylesheets reside on the Informant's web server they will be retrieved at runtime for message processing. The SmartMessage processor can optimize this operation by caching these Stylesheets once the first instance of a SmartMessage referring to the Stylesheets is sent. The service provider can then present its users with this catalog of activities and event from which they can select prioritization and routing preferences. The following diagram illustrates this concept.



2.4 XML Schema

SmartMessage documents are validated against XML Schemas as defined by the W3C (http://www.w3.org/XML/Schema). Specifically, SmartMessage documents make use of Microsoft's implementation of XML Schemas (http://msdn.microsoft.com/xml/reference/schema/start.asp).

The following XML schemas are stored on MessageML.org's website and define a versioned standard of the SmartMessage specification.

Item	Location
SmartMessage Document	http://smartmessage.messageml.org/schemas/smartmessage/v1-1.xdr
SmartMessage Stylesheet	http:// smartmessage.messageml.org/schemas/stylesheets/smartmessage/v1-2.xdr
Informant Stylesheet	http:// smartmessage.messageml.org/schemas/stylesheets/informant/v1-2.xdr

These schemas should be referenced accordingly in the related SmartMessage documents in the XML namespace attribute. For example,

```
<smSmartMessageStylesheet
        xmlns="x-schema:http://smartmessage.messageml.org/schemas/stylesheets/smartmessage/v1-2.xdr"
        …

<smInformantStylesheet
      xmlns="x-schema: http://smartmessage.messageml.org/schemas/stylesheets/informant/v1-2.xdr"
      …

<smXML
      xmlns="x-schema: http://smartmessage.messageml.org/schemas/smartmessage/v1-1.xdr"
      …
```

2.5 Versioning

Versioning is maintained at all levels of the SmartMessage architecture, including the protocol, XML schemas and SmartMessage documents.

Documents are versioned through their file naming convention and their location or path which describes its purpose. The term "Class" can be thought of as the path and the term "Version" can be thought of as the filename. Documents are also versioned by the <version-date> field in the stylesheet. This field indicates the creation date of the document. XML schemas are maintained at following the locations.

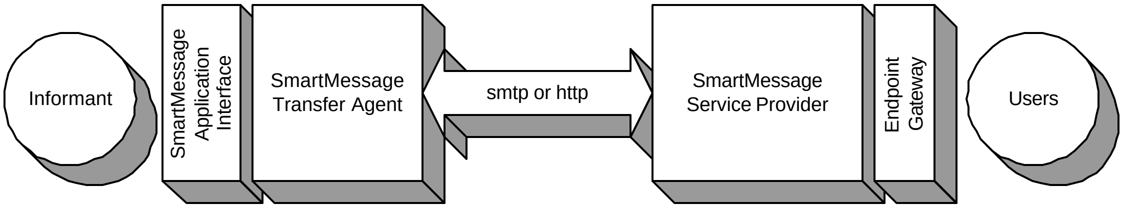
Class	Version	Description
http://smartmessage.messageml.org/schemas/stylesheets/smartmessage/	v1-2.xdr	SmartMessage Stylesheet XML schema
http://smartmessage.messageml.org/schemas/stylesheets/informant	v1-2.xdr	Informant Stylesheet XML schema
http://smartmessage.messageml.org/schemas/smartmessage/	v1-1.xdr	SmartMessage XML schema
http://smartmessage.messageml.org/stylesheets/informant/	v1-0.xml	Informant Stylesheet for MessageML.org
http://smartmessage.messageml.org/stylesheets/receipts/	v1-0.xml	Receipts SmartMessage Stylesheet

The SmartMessage protocol version is also specified on the SmartMessage document in the *protocol-version* attribute of the *smXML* element. The current version is 1.1.

It is important to note that the SmartMessage Stylesheet embeds several documents into a single document. This is done so that a set of documents can be easily versioned in their entirety. If for example these embedded documents were allowed to be referenced externally, then a change to one of the external documents would corrupt the versioning across the entire set. Thus, by consolidating the set of related document for a SmartMessage Stylesheet into one, better version control is attained.

2.6 Entities

The following diagram illustrates a high-level perspective of the entities involved in the SmartMessage architecture.


Informant
SmartMessage Application Interface
SmartMessage Transfer Agent
smtp or http
SmartMessage Service Provider
Endpoint Gateway
Users

- **Informant** – creates the SmartMessage from data on an information system. Informants also create and host a set of Smartmessage Stylesheets and Informant Stylesheets.

- **User** – receives SmartMessages through their SmartMessage account with a Smartmessage service provider.

- **SmartMessage Application Interface** – this provides an interface, either graphical or programmatic, to the SmartMessage Transfer Agent (SMTA). This component can be thought of as the user application and the SMTA as the reusable code object.

- **SmartMessage Transfer Agent** – (SMTA) this component sends and receives SmartMessages passing the message data to the SmartMessage Application. The SMTA sends SmartMessages through either the HTTP or STMP Internet access protocols.

- **SmartMessage Service Provider**– (SMSP) provides the technology infrastructure and platform required to process and route SmartMessages to end users or message recipients. This includes a web site to host the URL for HTTP access, mail servers for SMTP access, and a web application for Recipients to manage and configure their SmartMessage account.

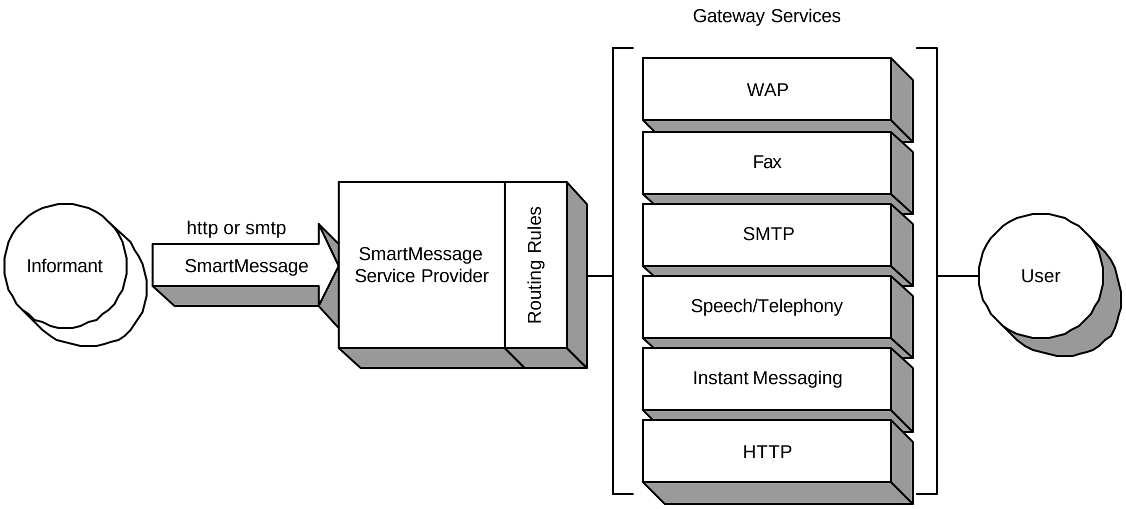
  Through a web application users register all their messaging or endpoint devices on which they receive messages, like mobile phones, PDAs, pagers, fax machines, e-mail inboxes, instant messaging, etc. The web application also serves as a message management tool providing a folio, or single repository, for a Recipient's SmartMessages.

  Also, the SMSP maintains an endpoint gateway infrastructure to route SmartMessages accordingly. By implementing a rules based processing module, SmartMessages can be routed based on user preferences.

2.7 Transports

MessageML documents are transmitted to a SmartMessage Service Provider over the Internet using the HTTP and SMTP protocols. By using these protocols, MessageML is able to utilize a wide base of already existing infrastructure for message communications.

Once processed, the SmartMessage Service Provider delivers the message to the recipient via its endpoint gateway services, which may use voice, fax, paging, SMTP, HTTP, or other protocols. The following diagram illustrates the interactions between SmartMessage entities.



- **HTTP** –Using the HTTP POST method an Informant can post a MessageML document to a web server (page) hosted by a SmartMessage service provider who in turn will process the message and route it to the specified recipients. Secure communications are accomplished via Secure Sockets Layer (SSL).

- **SMTP** – An Informant can send an MessageML document as an e-mail attachment to a specific SmartMessage account on a mail server hosted by a SmartMessage service provider. The service provider will process the attached MessageML document and route it to the specified recipients. Secure communications are accomplished via S/MIME.

2.8 Security and Authentication

The MessageML architecture handles secure messaging in three ways. The Informant via the SmartMessage Transfer Agent and SmartMessage Service Provider must support the following authentication and security methods.

- **Informant Stylesheet Authentication -** The SmartMessage references a specific Informant Stylesheet, which contains a list of valid transport sources from which a SmartMessage can be sent. An Informant may have many Informant Stylesheets with different combinations of valid transport sources to be used with different classes of SmartMessages.

- **Secure Sockets Layer (SSL) -** SmartMessages can be sent via HTTP using SSL encryption to guarantee secure transmission. When posting data to a web page the URL should use SSL. For example, https://… would be used instead of http://…

- **S/MIME -** SmartMessages can be sent as attachments to SMTP mail using S/MIME to add cryptographic security services to mail that is sent, and to interpret cryptographic security services in mail that is received. S/MIME needs to be enabled by the sender and supported by the receiver of the mail transaction.

2.9 SmartMessage Catalog

In addition to maintaining versioned XML schemas of standard MessageML documents, MessageML.org also manages specific categories of "standard" SmartMessages. These include areas such as receipts, query operations, configuration, web messages, and public communications.

Since MessageML.org is the single Informant for these types of standards messages, these standard SmartMessages always refer to MessageML.org's Informant Stylesheet (the *informant-stylesheet-class* and *informant-stylesheet-version* attributes). The following lists the Informant Stylesheet for MessageML.org.

```
<smInformantStylesheet
        xmlns="x-schema:http://smartmessage.messageml.org/schemas/stylesheets/informant/v1-2.xdr"
        informant-name="MessageML.org"
        informant-stylesheet-class="http://smartmessage.messageml.org/stylesheets/informant/"
        informant-stylesheet-version="v1-1.xml"
        version-date="2001-01-08T11:21:18"
        informant-description="MessageML.org"
        logo-url="http:// http://www.messageml.org/img/h_name.gif "
        home-url="http://www.messageml.org"
        informant-category="miscellaneous">
    <valid-transport-source transport-protocol="smtp" transport-source="*"/>
    <valid-transport-source transport-protocol="http" transport-source="*"/>
</smInformantStylesheet>
```

Specifications for these additional standard SmartMessage types can be found at www.MessageML.org.

2.10 Document Publishing Guidelines

MessageML.org suggests the following MessageML publishing guidelines for Informant Stylesheets and SmartMessage Stylesheets.

2.10.1 SmartMessage Stylesheets

It is suggested that a SmartMessage stylesheet only contain a single activity class and all its related event classes. The publishing location and naming convention is as follows.

    [informant webiste url]/stylesheets/[activity]/v[major version]-[minor version].xml where:

[informant website url]	is the URL of the Internet host
[activity]	is the activity class that the stylesheet defines
[major version]	number for major version number
[minor version]	number for minor version number

example: http://www.futureairlines.com/stylesheets/travel-itinerary/v1-0.xml

In this scenario the `smartmessage-stylesheet-class` would be `http://www.futureairlines.com/stylesheets/travel-itinerary/` and the `smartmessage-stylesheet-version` would be `v1-0.xml`.

2.10.2 Informant Stylesheets

Informant Stylesheets would follow a similar publishing location and name convention.

[informant webiste url]/stylesheets/informant/v[major version]-[minor version].xml

where:

[informant website url]	is the URL of the Internet host
[major version]	number for major version number
[minor version]	number for minor version number

example: http://www.futureairlines.com/stylesheets/informant/v1-0.xml

In this scenario the `informant-stylesheet-class` would be `http://www.futureairlines.com/stylesheets/informant/` and the `informant-stylesheet-version` would be `v1-0.xml`.

2.11 Future Considerations for SmartMessaging

Although some of MessageML's initial applications and services are targeted towards providing electronic messaging to Recipient endpoints devices, there is opportunity to apply the standard to a multitude of other applications.

- two way messaging communication between automated processes
- transformation to and from other XML formats to provide messaging interoperability with other XML technologies.
- communication routing applications for field service

3 MessageML Language Specification

The following describes the MessageML document formats for a SmartMessage, SmartMessage Stylesheet, and Informant Stylesheet. The XML schemas for these XML documents are provided in the appendix of this document.

3.1 MessageML Schemas and Namespace URI

Namespaces for each MessageML document utilize XML Schemas and are defined below.

SmartMessage XML document
x-schema:http://smartmessage.messageml.org/schemas/smartmessage/v1-1.xdr

SmartMessage Stylesheet
x-schema:http://smartmessage.messageml.org/schemas/stylesheets/smartmessage/v1-2.xdr

Informant Stylesheet
x-schema:http://smartmessage.messageml.org/schemas/stylesheets/informant/v1-2.xdr

An optional prefix may be used if further name resolution is required. For example,

```
<sm:smXML xmlns:sm="x-schema:http://smartmessage.messageml.org/schemas/smartmessage/v1-1.xdr
        protocol-version="1.1"
        smartmessage-id="G1234567890.futureairlines.com"
        smartmessage-date="2000-06-28T11:21:18"
        smartmessage-stylesheet-class="http://www.futureairlines.com/definitions/”
        smartmessage-stylesheet-version="smartmsgs-v1-0"
        informant-stylesheet-class="http://www.futureairlines.com/definitions/"
        informant-stylesheet-version=" informant-v1-0.xml">
    <sm:route>
        <sm:from from-address="smartmessage@futureairlines.com"/>
        <sm:to to-address="testuser@futureairlines.centerpost.com"/>
        <sm:receipt-request receipt-address="info@futureairlines.com"/>
    </sm:route>
    .
    .
    .
```

3.2 SmartMessage Definition

A SmartMessage is an XML document sent by an Informant to a SmartMessaging account hosted by a SmartMessage Service Provider. A SmartMessage carries Event content or a payload, such as a flight cancellation or shipment confirmation, and is associated with and updates an Activity, such as a travel itinerary or DVD order.

Meta-data, such as formatting information, is found by referencing the associated Informant stylesheet (which describes the informant) and the associated SmartMessage stylesheet (which describes the activity and event).

The following table summarizes the structure, elements and attributes of a SmartMessage document.

Element and Level	Opt	Multi	Attributes	Sample Value (underline=default)
smXML				
			protocol-version	1.1 (current version)
			smartmessage-id	123ABC456DEFfutureair.com (any globally unique ID)
			smartmessage-date	2000-03-17T15:10:33-6:00
			informant-stylesheet-class	http://sm.futureair.com/stylesheets/informant/
			informant-stylesheet-version	informant-v1-2.xml

			smartmessage-stylesheet-class	http://sm.futureair.com/, http://smartmessage.messageml.org/
			smartmessage-stylesheet-version	smartmessage-v2-3.xml
route				
from				
			from-address	informant@futureair.com
	X		reply-protocol	http, smtp
	X		reply-address	sm@futureair.com
to		X		
			to-address	customer@hotmail.com
	X		to-type	to, cc, bcc
	X		to-protocol	http, smtp
receipt-request	X	X		
	X		receipt-type	ack, nak, retry
	X		receipt-event	received, processed, delivery-status
	X		receipt-protocol	http, smtp
			receipt-address	receipts@futureair.com
activity				
			activity-class	Traveliteinerary, Order, BillingCycle,
			activity-id	(an ID to uniquely identify the activity instance)
			activity-url	http://www.futureair.com/flightitnerary.cgi?id=6576782345
			activity-title	March 29 Travel Itinierary
			activity-status	Flight reservations confirmed
			closed-date	(date activity was closed, blank if open, can be postdated)
activity-payload	X			(a well formed XML document w/a single root)
event				
			event-class	FlightCancellation, Shipment, PaymentReceived
			event-id	(uniqueID to define event in corresponsing activity)
			event-url	http://www.futureair.com/flightstatus.cgi?flight=FA234
			event-description	Flight FA234 has been cancelled
event-payload				(a well formed XML document w/a single root)

<smXML>

This is the root element of the SmartMessage document.

attributes	purpose
protocol-version	The SmartMessage protocol version. The SmartMessage XML parser uses this information to maintain version specific functionality.
smartmessage-id	A globally unique ID used to identify the SmartMessage.
smartmessage-date	The date and time of SmartMessage submission in ISO 8601 format. The format is YYYY-MM-DDThh:mm:ss-hh:mm (for example, 1997-07-16T19:20:30+01:00).
informant-stylesheet-class	The Internet location of the associated Informant Stylesheet. This is the complete URL of the website where the Informant stylesheet is stored. For example, "http://smartmessage.messageml.org/stylesheets/informant/". Note, the ending "/" must be present for the URL to be considered complete.
informant-stylesheet-version	The version of the Informant Stylesheet XML document, which contains the metadata about an Informant. This is a file located at the *informant-stylesheet-class*. For example, if the *informant-stylesheet-class* is "http://smartmessage.messageml.org/stylesheets/informant/" and the *informant-stylesheet-version* is "v1-0.xml", then the SmartMessage processor will resolved the complete location of the Informant stylesheet to "http://smartmessage.messageml.org/stylesheets/informant/v1-0.xml".
smartmessage-stylesheet-class	The Internet location of the associated SmartMessage Stylesheet. This is the complete URL of the website where the SmartMessage stylesheet is stored. For example, "http://smartmessage.messageml.org/stylesheets/receipts/". Note, the ending "/" must be present for the URL to be considered complete.
smartmessage-stylesheet-version	The version of the SmartMessage Stylesheet XML document, which contains the metadata about a SmartMessage. This is a file located at the *smartmessage-stylesheet-class*. For example, if the *smartmessage-stylesheet-class* is "http://smartmessage.messageml.org/stylesheets/receipts/" and the *smartmessage-stylesheet-version* is "v1-0.xml", then the SmartMessage processor will resolved the complete location of the Informant stylesheet to "http://smartmessage.messageml.org/stylesheets/receipts/v1-0.xml".

<route>

Describes information about SmartMessage recipients, the Informant and receipt requests. This is a container element.

<from>

Defines the sender of the SmartMessage and message reply options.

attributes	purpose
from-address	The Informant's address in *'name@domain'* format. This address is populated by the Informant to describe.
reply-address (optional)	The Informant's reply address. This will be different based on the value of the reply-protocol attribute. When *smtp* is specified for the reply-protocol, the address is the Informant's valid SMTP e-mail account in '*name@domain*' format. When *http* is specified for the reply-protocol, the address is a valid URL, which will receive the reply via the HTTP POST method.
reply-protocol (optional)	The protocol in which the reply will be sent. Valid values are *http* and *smtp*. Default value is *smtp*. If *smtp* is specificed an SMTP e-mail will be sent. If *http* is specified the reply will be posted via the HTTP POST method to the reply-address, which must be a valid URL.

<to>

Defines the recipients of the SmartMessage. This element occurs multiple times, once for each recipient of the SmartMessage.

attributes	purpose
to-type (optional)	The SMTP delivery method of the message. This specifies how the message should be addressed to the Recipient when *smtp* is specified for the to-protocol attribute of this element. Valid values are *to*, *cc*, *bcc*. Default value is *to*.
to-protocol (optional)	The protocol in which the SmartMessage will be sent. Valid values are *http* and *smtp*. Default value is *smtp*. If *smtp* is specificed an SMTP e-mail will be sent. If *http* is specified the message will be posted via the HTTP POST method to the to-address, which must be a valid URL.
to-address	When *smtp* is specified for the to-protocol, the address is the recipient's valid SmartMessage account in '*name@domain*' format. This address is returned to a recipient from the SmartMessage Service Provider when he completes the registration process. When *http* is specified for the to-protocol, the address is a valid URL, which will receive the SmartMessage via the HTTP POST method.

<receipt-request>

This element is optional and specifies that a receipt notification of the SmartMessage be sent back to the sender or Informant. The element may be defined multiple times, once for each type of receipt request. See MessageML Receipt Specification for more information.

attributes	purpose
receipt-type (optional)	Specifies the acknowledgement type of receipt to be sent to the receipt address. The SmartMessage can send a success (ack), failure (nak), or retry attempt (retry) receipt notifications. Valid values are *ack*, *nak*, and *retry*. Default value is *nak*.
receipt-event (optional)	Specifies the type of receipt to be sent to the receipt-address. The receipt-address can be notified when the SmartMessage is either received by the SmartMessage Processor, has been processed by the SmartMessage Processor, or has been delivered to the Recipient. Valid values are *received*, *processed*, *delivery-status*. Default value is *processed*. When *delivery-status* is specified the receipt-address will receive a receipt for every retry attempt (retry), as well as the final delivery outcome: ack or nak.
receipt-protocol (optional)	The protocol in which the receipt will be sent. Valid values are *http* and *smtp*. Default value is *smtp*. If *smtp* is specificed an SMTP e-mail will be sent with the receipt SmartMessage attached. If *http* is specified the receipt SmartMessage will be posted via the HTTP POST method to the receipt-address, which must be a valid URL including web page.
receipt-address (optional)	When *smtp* is specified for the receipt-protocol, the address is a valid SMTP e-mail account in '*name@domain*' format. When *http* is specified for the receipt-protocol, the address is a valid URL, which will receive the receipt via the HTTP POST method.

<activity>

Information about the activity associated with the SmartMessage (see SmartMessage Stylesheet section for more information). An activity is a categorization of events. For example, an activity may be "Travel Itinerary" with such related events as "Flight Cancellation", "Flight Arrival Time", etc.

attributes	purpose
activity-class	The class name of the activity. This activity class name must be defined by the Informant and must match a valid activity class (activity-class-name attribute) in the referenced SmartMessage Stylesheet (<smXML>\smartmessage-stylesheet-version). The matching activity-class-name in the SmartMessage Stylesheet contains metadata, the XML schema and endpoint specific XSL documents about the activity and more importantly defines the valid event classes for the activity class itself.
activity-id	A unique ID to identify the activity instance. Successive SmartMessages received with the same activity ID will be

	grouped by this ID. For example, multiple event classes like “Flight Arrival Time”, “Flight Cancellation”, etc. can be grouped under a single activity class called “01/01/200 Travel Itinerary” by associating the event classes with that ID.
activity-url	An associated URL to the activity. This may simply link back to the Informants web site or may contain query strings in the URL to link back to the recipient’s account page.
activity-title	A descriptive title of the activity.
activity-status	A short description of the activity status.
closed-date	Date the activity was closed in ISO 8601 format. This date can be post-dated. If this attribute is empty the activity is assumed to be open.

<activity-payload>

A well-formed XML document with a single root, embedded in the SmartMessage. This contains information related to the activity. This payload’s XML Schema is defined by the referenced SmartMessage Stylesheet (<smXML>\smartmessage-stylesheet-version).

For example:

```
<travel-itinerary xmlns=”travel”>
    <name>FutureAirlines Travel Itinerary<name>
    <description>Boston to Chicago with Hotel, Rental Car<description>
</travel-itinerary>
```

<event>

Information about the event associated with the activity specified in the <activity> element. An event is a specific instance of some type of SmartMessage occurrence, for example a specific flight delay announcement, etc.

attributes	purpose
event-class	The class name of the event. This event name must be defined by the Informant and match a defined event class (event-class-name attribute) in the referenced SmartMessage Stylesheet (<smXML>\smartmessage-stylesheet-version). This event-class must be also match a defined activity class in the SmartMessahe Stylesheet. For example an airline type Informant may define “Flight Arrival Time”, “Flight Cancellation”, etc. event classes under a “Travel Itinerary” activity-class. The matching event-class-name in the SmartMessage Stylesheet contains metadata, the XML schema and endpoint specific XSL documents about the event. The event-payload will contain the information specific to the SmartMessage’s instance of the event.
event-id	A unique ID to define the event in the corresponding activity. If another SmartMessage is sent with the same event ID then that SmartMessage will overwrite the existing instance.
event-url	An associated URL to the event. This may simply link back to the Informants web site or may contain query strings in the URL to provide more functionality.
event-description	A textual description of the event.

<event-payload>

A well-formed XML document with a single root containing information related to the event. This payload's XML Schema is defined by the referenced SmartMessage Stylesheet (<smXML>\smartmessage-stylesheet-version).

For example:

```
<flightcancel xmlns="flightcancel">
    <name>John Smith</name>
    <airline>FutureAirlines</airline>
    <destname>Atlanta, GA</destname>
    <destcode>ATL</destcode>
    <departname>Chicago, IL</departname>
    <departcode>ORD</departcode>
    <departtime>7:30pm</departtime>
    <departdate>6/29/2000</departdate>
    <flightnum>219</flightnum>
    <newflight>999</newflight>
    <newtime>11:50pm</newtime>
    <newdate>6/29/2000</newdate>
    <reason>Cancellation due to bad weather.</reason>
    <customerservice>800-555-5555</customerservice>
</flightcancel>
```

3.3 Informant Stylesheet Definition

An Informant stylesheet describes the metadata about the Informant, such as logo and description, and valid transport sources. The Informant stylesheet lives on one of the Informant's web servers. A SmartMessaging platform hosted by a SmartMessage provider caches these style sheets in its own database so it can refer to them quickly without incurring another roundtrip over the Internet.

The following table summarizes the structure, elements, and attributes of an Informant Stylesheet document.

Element	Opt	Multi	Attributes	Sample Value (underline=default)
smInformantStylesheet				
			informant-name	FutureAir
			informant-stylesheet-class	http://sm.futureair.com
			version-date	1997-07-16T19:20:30+01:00
			informant-stylesheet-version	Informant-v 1-2.xml
			informant-description	Amazon.com, earth's largest store, featuring over …
			logo-url	http://sm.amazon.com/Logo-v 2-3.jpg (should be 50x30 pixels)
			home-url	http://www.amazon.com/
			signup-url	http://www.amazon.com/sm-signup.asp
			informant-category	auctions, banking, career, community, credit-card, education, entertainment, general, health, information, investing, miscellaneous, personal, shopping, system, telemetry, travel
valid-transport-source		X		
			transport-protocol	smtp, http
			transport-source	*@amazon.com, 38.240.27.*, (wildcard * allowed)

<smInformantStylesheet>

This is the root element of this document.

attributes	purpose
informant-name	The name of the Informant.
informant-stylesheet-class	The Internet location of the Informant Stylesheet. This is the complete URL of the website where the Informant stylesheet is stored. For example, "http://smartmessage.messageml.org/stylesheets/informant/". Note, the ending "/" must be present for the URL to be considered complete. This attribute describes where the document is located on the Internet itself.
informant-stylesheet-version	The version of the Informant Stylesheet XML document. This is an XML file located at the *informant-stylesheet-class*. For example, if the *informant-stylesheet-class* is "http://smartmessage.messageml.org/stylesheets/informant/" and the *informant-stylesheet-version* is "v1-0.xml", then the SmartMessage processor will resolved the complete location of the Informant stylesheet to "http://smartmessage.messageml.org/stylesheets/informant/v1-0.xml"
version-date	The date and time of the version enables the system to determine the most recent version of the stylesheet. The version-date is inserted in ISO 8601 format, which is YYYY-MM-DDThh:mm:ss-hh:mm (for example, 1997-07-16T19:20:30+01:00).

informant-description	Description of the Informant. Possibly the informant’s branded slogan, etc.
logo-url	Informant’s logo in JPG formant – should be 50x30 pixels in dimension – specified in a URL format.
home-url	The URL of the home page of the Informant.
signup-url	A URL which provides a signup or user registration
informant-category	The category in which the informant belongs. Valid values are : *auctions*, *banking*, *career*, *community*, *credit-card*, *education*, *entertainment*, *general*, *health*, *information*, *investing*, *miscellaneous*, *personal*, *shopping*, system, *telemetry*, *travel*

<valid-transport-source>

This element describes the valid sources from where SmartMessages can originate for the specified Informant. Note that an Informant can create different version of its Informant Stylesheet to define different sets of valid transport sources. The element can occur multiple times, once for each valid transport.

attributes	purpose
transport-protocol	The protocol the Informant can send the SmartMessage from the source defined in the transport-source attribute. Valid values are *http* and *smtp*. Default value is *smtp*. If *smtp* is specified a SmartMessage can only be received by the specified transport-source in the form of *name@domain*. If *http* is specified a SmartMessage can only be received by the specified transport-source in the form of a valid IP address.
transport-source	Describes the valid sources for the associated transport-protocol. By associating itself with an Informant Stylesheet (<smXML>/informant-stylesheet-version) a SmartMessage can restrict its transport sources to a small, defined set of locations to prevent unauthorized submissions. For a transport-protocol of *smtp*, the format *name@domain* is used. The transport-source can be entered with a wildcard mask using an asterisk. For example, by specifying the source **@messageml.org* and protocol of *smtp* all user’s with a domain name of messageml.org in their SMTP e-mail account will be considered valid transport sources. For a transport-protocol of *http*, the format is a valid IP address. An * can be used as a wildcard for any octet within the IP address. For example, by specifying the source *123.456.789.** and protocol of *http* all user’s whose first three octets match 123.456.789 will be considered valid transport sources.

The following Informant Stylesheet example describes an Informant with multiple valid transport sources.

```
<smInformantStylesheet
    xmlns="x-schema: :http://smartmessage.messageml.org/schemas/stylesheets/informant/v1-2.xdr"
    informant-name="FutureAirlines"
    informant-stylesheet-class=http://www.futureairlines.com/definitions/
    informant-stylesheet-version="faInformantStylesheet.xml"
    version-date=”1997-07-16T19:20:30+01:00”
    informant-description="FutureAirlines - The way you should fly"
    logo-url="http://www.futureairlines.com/futureairlines.jpg"
    home-url="http://www.futureairlines.com"
    informant-category="travel">
        <valid-transport-source transport-source="*@futureairlines.com"/>
        <valid-transport-source transport-source="*@travelocity.com"/>
        <valid-transport-source transport-protocol="http" transport-source="123.456.789.*"/>
        <valid-transport-source transport-protocol="http" transport-source="321.654.*.*"/>
</smInformantStylesheet>
```

3.4 SmartMessage Stylesheet Definition

A SmartMessage stylesheet describes the metadata about a SmartMessage, such as how to format it on different types of endpoints. The SmartMessage stylesheet generally lives on one of the Informant's web servers, but Informants can also share a common stylesheet on a shared server like smartmessage.messageml.org.

A SmartMessaging platform should cache these stylesheets in its own database so it can refer to them quickly without hitting the Internet. A single SmartMessage Stylesheet XML document can contain metadata about several SmartMessage activities and events.

The following table summarizes the structure, elements, and attributes of a SmartMessage Stylesheet document.

Element	Opt	Multi	Attributes	Sample Value (underline=default)
smSmartMessageStylesheet				
			smartmessage-stylesheet-class	http://sm.amazon.com/, http://smartmessage.messageml.org/
			smartmessage-stylesheet-version	SmartMessage-v 2-3.xml
activity-class		X		
			activity-name	Order, BillingCycle, TravelIteinerary
			activity-duration	hours, days, weeks, months, years, ongoing
			activity-frequency	hourly, daily, weekly, monthly, once
activity-payload-schema	X			(a well formed XML Schema document w/a single root - embedded)
activity-xsl-default				(a well formed XSL document w/a single root - embedded)
activity-xsl-endpoint	X	X		(a well formed XSL document w/a single root - embedded)
			endpoint-type	browser, html-email, text-email, tiny-email, fax, voice-phone, instant-message
event-class		X		
			event-name	Shipment, PaymentReceived, FlightCancellation
			purpose	question, information, instruction
			sensitivity	private, normal, public
			reach	individual, group, broadcast
			immediacy	minutes, hours, days, weeks, months
			frequency	hourly, daily, weekly, monthly, once
			category	auctions, banking, career, community, credit-card, education, entertainment, general, health, information, investing, miscellaneous, personal, shopping, systems, telemetry, travel
event-payload-schema	X			(a well formed XML Schema document w/a single root - embedded)
event-xsl-default				(a well formed XSL document w/a single root - embedded)
event-xsl-endpoint	X	X		(a well formed XSL document w/a single root - embedded)
			endpoint-type	browser, html-email, text-email, tiny-email, fax, voice-phone, instant-message

<smSmartMessageStylesheet>

This is the root element of this document.

attributes	purpose
smartmessage-stylesheet-class	The Internet location of the SmartMessage Stylesheet. This is the complete URL of the website where the SmartMessage Stylesheet is stored. For example, "http://smartmessage.messageml.org/stylesheets/receipts/". Note, the ending "/" must be present for the URL to be considered complete. This attribute describes where the document is located on the Internet.
smartmessage-stylesheet-version	The version of the Smartmessage Stylesheet XML document. This is an XML file located at the *smartmessage-stylesheet-class*. For example, if the *smartmessage-stylesheet-class* is

	"http://smartmessage.messageml.org/stylesheets/receipts/" and the *smartmessage-stylesheet-version* is "v1-0.xml", then the SmartMessage processor will resolve the complete location of the Informant stylesheet to "http://smartmessage.messageml.org/stylesheets/receipts/v1-0.xml" This attribute describes where the document is located on the Internet.
version-date	The date and time of the version enables the system to determine the most recent version of the stylesheet. The version-date is inserted in ISO 8601 format, which is YYYY-MM-DDThh:mm:ss-hh:mm (for example, 1997-07-16T19:20:30+01:00).

<activity-class>

The activity class is a predefined category used to group event classes. The activity class is defined by the Informant for use in its own SmartMessages.

attributes	purpose
activity-name	The name of the activity class. The activity-class attribute of the <activity> element in the SmartMessage must refers to a defined activity class in this document (see SmartMessage Definition section).
activity-duration	Describes the activities duration or life. Valid values are *hours*, *days*, *weeks*, *months*, *years*, *ongoing*
event-frequency	Describes how frequently events may occur within this activity. Valid values are *hourly*, *daily*, *weekly*, *monthly*, *once*
display-name	The name that is displayed to the user for the activity. If this field is left blank, the activity-name will be displayed by default.

<activity-payload-schema>

A well-formed XML schema document with a single root embedded within the document. This embedded XML Schema defines the structure for activity payload.

<activity-xsl-default>

A well-formed XSL document with a single root embedded within the document. This embedded XSL document transforms the activity payload (XML data) into an endpoint-independent presentation format. This definition is meant to be a "catch all" for rendering activity payload to an endpoint, if an endpoint specific XSL document is not defined (see activity-xsl-endpoint). Thus, the XSL transformation must be generic enough to be viewed on any endpoint.

<activity-xsl-endpoint>

A well-formed XSL document with a single root embedded within the document. This embedded XSL transforms the activity payload (XML data) into an endpoint-dependent presentation format. The Informant can define this element for each supported endpoint device type. If an XSL is not defined for a valid endpoint device, then the <activity-xsl-default> will be used.

attributes	purpose
endpoint-type	Describes the endpoint type that the embedded XSL document transforms to. An Informant can create a separate XSL for a specific endpoint device to generate the appropriate endpoint user interface. Valid values are *browser*, *html-email*, *text-email*, *tiny-email*, *fax*, *voice-phone*, *instant-message*

<event-class>

Defines a classification of specific events related to an activity. For example, “Flight Cancellation” may be an event class defined under the activity class “Travel Itinerary.”

attributes	purpose
event-name	The name of the event class. The event-class attribute of the <event> element in the SmartMessage would refer to a defined event class in this document (see SmartMessage Definition section).
display-name	The name that is displayed to the user for the event. If this field is left blank, the event-name will be displayed by default.
purpose	Describes the purpose of the content with which the event is associated. Valid values are *question, information, instruction*. Default value is *information..*
sensitivity	Describes the sensitivity with which the event is associated. Valid values are *private*, *normal*, *public.* Default value is *normal.*
reach	Indicates whether the document was sent to a large public broadcast, to a specific group of individuals or to one individual. Valid values are *individual, group, broadcast.* Default value is *individual.*
immediacy	Sets the immediacy of the communication of this document payload. Dictates a measurement of how time sensitive is the document information. Information that is relatively ‘old’ after a few minutes should be set as ‘minutes’ immediacy (such as a traffic report) while information that is relative for a longer period of time is set to a higher value (such as a bill statement would be days or weeks). Valid values are *minutes*, *hours*, *days*, *weeks*, *months.* Default value is *days.*
frequency	Valid values are *hourly*, *daily*, *weekly*, *monthly*, *once.* Default value is *once.*

<event-payload-schema>

A well-formed XML schema document with a single root embedded within the document. This embedded XML schema defines the structure for event content.

<event-xsl-default>

A well-formed XSL document with a single root embedded within the document. This embedded XSL document transforms the event payload (XML data) into an endpoint-independent presentation format. This definition is meant to be a “catch all” for rendering the event payload to an endpoint, if an endpoint specific XSL document is not defined (see event-xsl-endpoint). Thus, the XSL transformation must be generic enough to be viewed on any endpoint.

<event-xsl-endpoint>

A well-formed XSL document with a single root embedded within the document. This embedded XSL doccument transforms the event payload (XML data) into an endpoint-dependent presentation format. The Informant can define this element for each supported endpoint device type. If an XSL is not defined for a valid endpoint device, then the <event-xsl-default> will be used.

attributes	purpose
endpoint-type	Describes the endpoint type that the embedded XSL document transforms to. An Informant can create a separate XSL for each endpoint device to generate the appropriate endpoint user interface. Valid values are *browser*, *html-email*, *text-email*, *tiny-email*, *fax*, *voice-phone*, *instant-message*

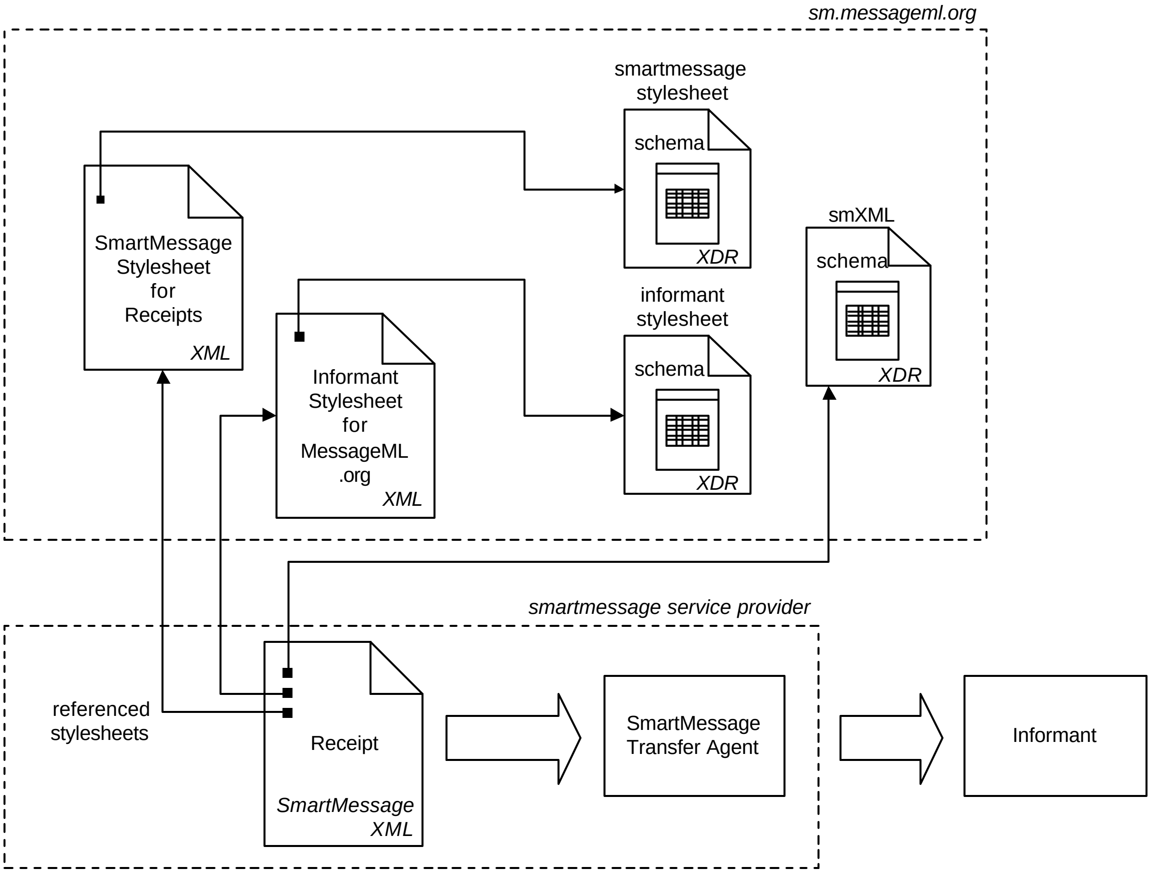
4 Receipts

This section describes the SmartMessage receipt specification, the standard SmartMessage used to provide message tracking status information. Receipts provide status updates as to the progress of a SmartMessage. The MessageML specification supports three types of receipts: received, processed, and delivery status. These receipt type are requested to be sent by creating the appropriate entry or entries under the receipt-request element in the original SmartMessage.

Since receipts are a standard SmartMessage type, their associated Informant Stylesheet and SmartMessage Stylesheet reside on the MessageML forum website at www.messageml.org. This ensures that receipts are transacted in a standard way across all implementations. The class and version location of the referring stylesheets are listed below.

Class	Version	Description
http://smartmessage.messageml.org/stylesheets/informant/	V1-1.xml	Informant Stylesheet for SmartMessage.org
http://smartmessage.messageml.org/stylesheets/receipts/	V1-1.xml	Receipts SmartMessage Stylesheet

The following diagram illustrates the relationship between the SmartMessage receipt and it's associated Informant Stylesheet and SmartMessage Stylesheet.



The three receipt types supported by MessageML are described below.

- **Received** - The SmartMessage enters this state when it has been received by a SmartMessage Service Provider (SMSP). At this point all destination SmartMessage accounts are validated against the SMSP's account database. Destination SmartMessage accounts not matching the Service Providers domain name are skipped and not included in receipt processing. The following table describes the valid receipt acknowledgements for a *received* receipt.

Type	Description
ack	The destination SmartMessage was successfully received by the SMSP for the specified SmartMessage account.
nak	The destination SmartMessage was *not* successfully received by the SMSP for the specified SmartMessage account. The error-code and error-description attributes and the extended-info element will contain more information.

- **Processed** - The SmartMessage enters this state when it has been successfully received and is ready to be processed by the SMSP who performs all the validity checks and routing rules. The following table describes the valid receipt acknowledgements for a *processed* receipt.

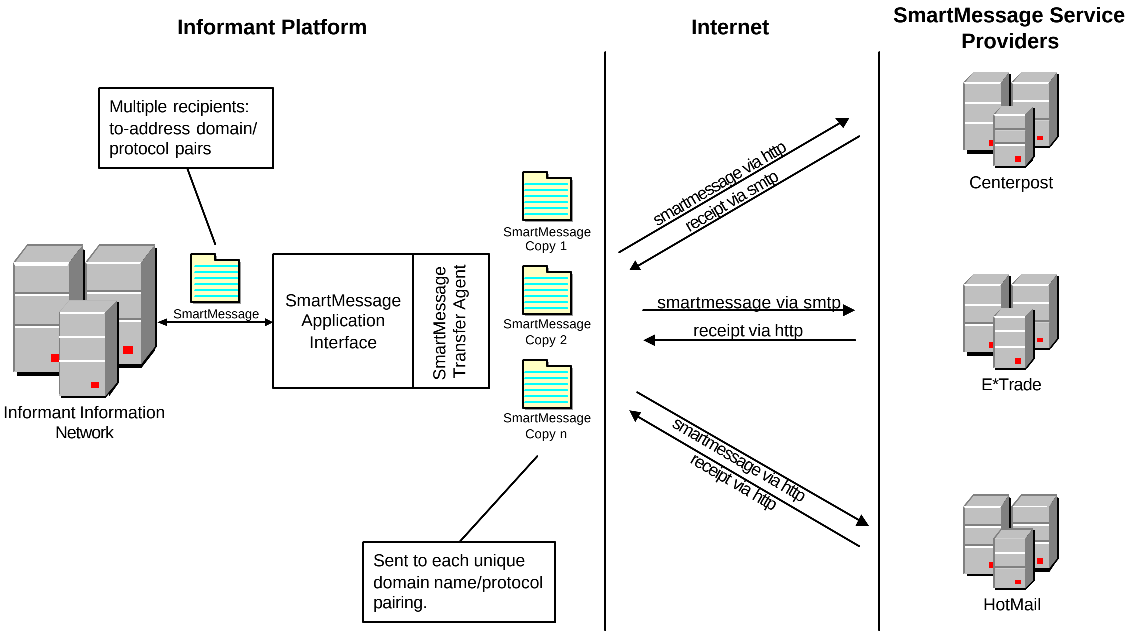
Type	Description
ack	The destination SmartMessage was successfully processed by the SMSP for the specified SmartMessage account.
nak	The destination SmartMessage was *not* successfully processed by the SMSP for the specified SmartMessage account. The error-info and the extended-info elements will contain more information.

- **Delivery Status** - The SmartMessage enters this state when it has been successfully processed and is ready to be delivered. A SmartMessage that cannot be delivered initially enters a message retry loop and continues to be resent until the retry interval or retry time period has expired. The following table describes the valid receipt acknowledgements for a *delivery-status* receipt.

Type	Description
ack	The destination SmartMessage was successfully delivered by the SMSP for the specified SmartMessage account.
nak	The destination SmartMessage was *not* successfully delivered by the SMSP for the specified SmartMessage account. The error-info and the extended-info elements will contain more information.
retry	The SmartMessage failed to be delivered and the SMSP is resending the message and will continue to retry sending the message until the retry interval or retry time has expired.

Receipts are delivered at a granular level. They are not grouped and relate to a single destination address receipt request.

The following diagram describes the message flow for receipts.



Process Flow

This process flow assumes all receipts types are specified.

1. Informant creates SmartMessage, specifying the desired receipt-requests, and passes it to the SmartMessage Application Interface (SMAI).
2. The SmartMessage Transfer Agent (SMTA) queries the SmartMessage and identifies all destination domain names to where the message will be sent.
3. The SMTA makes a copy of the SmartMessage for each destination host and submits the message using the protocol or protocols specified in the SmartMessage.
4. The SMTA handles any failed SMTP or HTTP attempts to reach the "to-address" destinations.
5. The SmartMessage Service Providers (SMSP) receives the message and validates that all the "to-address" accounts are valid to the SmartMessage Service Provider. Received receipts are delivered to the Informant's SMTA who processes them accordingly.
6. If the SmartMessage is received correctly, it is then processed. Processed receipts are sent to the Informant's SMTA who processes them accordingly.
7. Next, the message is delivered based on the SmartMessage user's predefined endpoint routing rules. Delivered receipts are sent to the Informant's SMTA who processes them accordingly. A per user receipt item will be included for each endpoint the message was delivered.

4.1 Received Event Payload Definition

Element	Opt	Multi	Attributes	Sample Value (underline=default)
receipt				
			receipt-event	received
			receipt-type	ack, nak
			receipt-date	ISO 8601 format (ex: 2000-03-17T15:10:33)
			smartmessage-id	(smartmessage-id from the original SmartMessage)
			to-address	user@domainname (from original SmartMessage)
error-info	X			
			error-class	http, https, smtp, smime, platform-specific
			error-code	(see Error Code section)
			error-description	(see Error Code section)

extended-info	X			

4.2 Processed Event Payload Definition

Element	Opt	Multi	Attributes	Sample Value (underline=default)
receipt				
			receipt-event	processed
			receipt-type	ack, nak
			receipt-date	ISO 8601 format (ex: 2000-03-17T15:10:33)
			smartmessage-id	(smartmessage-id from the original SmartMessage)
			to-address	user@domainname (from original SmartMessage)
error-info	X			
			error-class	http, https, smtp, smime, platform-specific
			error-code	(see Error Code section)
			error-description	(see Error Code section)
extended-info	X			

4.3 Delivery Status Event Payload Definition

Element	Opt	Multi	Attributes	Sample Value (underline=default)
receipt				
			receipt-event	received
			receipt-type	ack, nak
			receipt-date	ISO 8601 format (ex: 2000-03-17T15:10:33)
			smartmessage-id	(smartmessage-id from the original SmartMessage)
			to-address	user@domainname (from original SmartMessage)
			endpoint-type	browser, html-email, text-email, tiny -mail, fax, voice-phone, instant-message
			endpoint-address	endpoint specific (ex: fax number, email address, phone number, etc.
			last-attempt-date	(last delivery attempt) ISO 8601 format.
			will-retry-attempt	(number of retry attempt remaining)
			will-retry-until	(when retry attempts will stop) ISO 8601 format
			next-retry-attempt	(when the next retry attempt will occur) ISO 8601 format
error-info	X			
			error-class	http, https, smtp, smime, platform-specific
			error-code	(see Error Code section)
			error-description	(see Error Code section)
extended-info	X			

4.4 Error Codes

Error codes are contained the error-info element of the received, processed and delivery status event payloads.

Attribute	Values	Description
error-class		
	http	HTTP/1.1 Status Code. The error codes used are defined by W3C (http://www.w3.org/Protocols/rfc2616/rfc2616-sec10.html#sec10)
	https	same as above
	smtp	SMTP Reply Code. The error codes users are defined by RFC 1893 (http://www.ietf.org/rfc/rfc1893.txt?number=1893) and RFC 821, section 4.2 (http://ietf.org/rfc/rfc0821.txt?number=821)
	smime	S/MIME error code
	platform-specific	This class is designated for implementers of the SmartMessage specification. Its can be used to

		denote errors specific to a platform's implementation.
error-code	0=success, non-zero value based on error-class.	Error code associated with the error-class
error-description		(textual description of error)

4.5 Receipt SmartMessage Stylesheet

```
<smSmartMessageStylesheet
   xmlns="x-schema:http://sm.smartmessage.org/schemas/stylesheets/smartmessage/v1-1.xdr"
   smartmessage-stylesheet-class="http://sm.smartmessage.org/stylesheets/receipts/"
   smartmessage-stylesheet-version="v1-0.xml">

   <activity-class
      activity-name="Receipts"
      activity-duration="ongoing"
      event-frequency="once">

      <activity-xsl-default>
         <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
               xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
            <xsl_default:template match="/"/>
         </xsl_default:stylesheet>
      </activity-xsl-default>

      <event-class
         event-name="DeliveryStatus"
         purpose="information"
         sensitivity="normal"
         reach="individual"
         immediacy="days"
         frequency="daily"
         category="system">

         <event-payload-schema>
            <Schema name="deliverystatusreceipt.xdr"
               xmlns="urn:schemas-microsoft-com:xml-data"
               xmlns:dt="urn:schemas-microsoft-com:datatypes">
               <ElementType name="receipt" content="eltOnly" order="seq">
                  <AttributeType name="receipt-event" dt:type="enumeration"
                         dt:values="delivery-status" default="delivery-status"/>
                  <AttributeType name="receipt-type" dt:type="enumeration"
                         dt:values="ack nak retry" default="nak"/>
                  <AttributeType name="receipt-date" dt:type="dateTime"
                         required="yes"/>
                  <AttributeType name="smartmessage-id" dt:type="string"
                         required="yes"/>
                  <AttributeType name="to-address" dt:type="string" required="yes"/>
                  <AttributeType name="endpoint-type" dt:type="enumeration"
                         dt:values="browser html-email text-email tiny-email fax
                         voice-phone instant-message" required="yes"/>
                  <AttributeType name="endpoint-address" dt:type="string"
                         required="yes"/>
                  <AttributeType name="last-attempt-date" dt:type="dateTime"
                         required="yes"/>
                  <AttributeType name="will-retry-attempt" dt:type="int"
                         required="yes"/>
                  <AttributeType name="will-retry-until" dt:type="dateTime"
                         required="yes"/>
                  <AttributeType name="next-retry-attempt" dt:type="dateTime"
                         required="yes"/>
                  <attribute type="receipt-event"/>
                  <attribute type="receipt-type"/>
                  <attribute type="receipt-date"/>
                  <attribute type="smartmessage-id"/>
```

```
                        <attribute type="to-address"/>
                        <attribute type="endpoint-type"/>
                        <attribute type="endpoint-address"/>
                        <attribute type="last-attempt-date"/>
                        <attribute type="will-retry-attempt"/>
                        <attribute type="will-retry-until"/>
                        <attribute type="next-retry-attempt"/>
                        <element type="error-info" minOccurs="0" maxOccurs="1"/>
                        <element type="extended-info" minOccurs="0" maxOccurs="1"/>
                    </ElementType>
                    <ElementType name="error-info" content="eltOnly" order="seq">
                        <AttributeType name="error-class" dt:type="enumeration"
                                dt:values="http https smtp smime platform-specific"
                                default="smtp" required="yes"/>
                        <AttributeType name="error-code" dt:type="string" required="yes"/>
                        <AttributeType name="error-description" dt:type="string"
                                required="yes"/>
                        <attribute type="error-class"/>
                        <attribute type="error-code"/>
                        <attribute type="error-description"/>
                    </ElementType>
                    <ElementType name="extended-info" content="eltOnly" order="seq"/>
                </Schema>
            </event-payload-schema>
            <event-xsl-default>
                <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
                        xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
                    <xsl_default:template match="/">
                        <xsl_default:apply-templates select="receipt"/>
                    </xsl_default:template>
                    <xsl_default:template match="receipt">
Receipt Item
    receipt-event:          <xsl_default:value-of select="@receipt-event"/>
    receipt-type:           <xsl_default:value-of select="@receipt-type"/>
    receipt-date:           <xsl_default:value-of select="@receipt-date"/>
    smartmessage-id:        <xsl_default:value-of select="@smartmessage-id"/>
    to-address:             <xsl_default:value-of select="@to-address"/>
    endpoint-type:          <xsl_default:value-of select="@endpoint-type"/>
    endpoint-address:       <xsl_default:value-of select="@endpoint-address"/>
    last-attempt-date:      <xsl_default:value-of select="@last-attempt-date"/>
    will-retry-attempt:     <xsl_default:value-of select="@will-retry-attempt"/>
    will-retry-until:       <xsl_default:value-of select="@will-retry-until"/>
    next-retry-attempt:     <xsl_default:value-of select="@next-retry-attempt"/>
    error-class:            <xsl_default:value-of select="error-info/@error-class"/>
    error-code:             <xsl_default:value-of select="error-info/@error-code"/>
    error-description:      <xsl_default:value-of select="error-info/@error-description"/>

    Receipt Specific Data:
         <xsl_default:value-of select="extended-info"/>
                    </xsl_default:template>
                </xsl_default:stylesheet>
            </event-xsl-default>
        </event-class>

        <event-class
            event-name="Received"
            purpose="information"
            sensitivity="normal"
            reach="individual"
            immediacy="days"
            frequency="once"
            category="miscellaneous">

            <event-payload-schema>
                <Schema name="receivedreceipt.xdr"
                    xmlns="urn:schemas-microsoft-com:xml-data"
                    xmlns:dt="urn:schemas-microsoft-com:datatypes">
                    <ElementType name="receipt" content="eltOnly" order="seq">
                        <AttributeType name="receipt-event" dt:type="enumeration"
                                dt:values="received" default="received"/>
                        <AttributeType name="receipt-type" dt:type="enumeration"
```

```
                                dt:values="ack nak" default="nak"/>
                        <AttributeType name="receipt-date" dt:type="dateTime"
                                required="yes"/>
                        <AttributeType name="smartmessage-id" dt:type="string"
                                required="yes"/>
                        <AttributeType name="to-address" dt:type="string" required="yes"/>
                        <AttributeType name="error-code" dt:type="string" required="no"/>
                        <AttributeType name="error-description" dt:type="string"
                                required="no"/>
                        <attribute type="receipt-event"/>
                        <attribute type="receipt-type"/>
                        <attribute type="receipt-date"/>
                        <attribute type="smartmessage-id"/>
                        <attribute type="to-address"/>
                        <element type="error-info" minOccurs="0" maxOccurs="1"/>
                        <element type="extended-info" minOccurs="0" maxOccurs="1"/>
                    </ElementType>
                    <ElementType name="error-info" content="eltOnly" order="seq">
                        <AttributeType name="error-class" dt:type="enumeration"
                                dt:values="http https smtp smime platform-specific"
                                default="smtp" required="yes"/>
                        <AttributeType name="error-code" dt:type="string" required="yes"/>
                        <AttributeType name="error-description" dt:type="string"
                                required="yes"/>
                        <attribute type="error-class"/>
                        <attribute type="error-code"/>
                        <attribute type="error-description"/>
                    </ElementType>
                    <ElementType name="extended-info" content="eltOnly" order="seq"/>
                </Schema>
            </event-payload-schema>
            <event-xsl-default>
                <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
                    xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
                    <xsl_default:template match="/">
                        <xsl_default:apply-templates select="receipt"/>
                    </xsl_default:template>
                    <xsl_default:template match="receipt">
Receipt Item
    receipt-event:          <xsl_default:value-of select="@receipt-event"/>
    receipt-type:           <xsl_default:value-of select="@receipt-type"/>
    receipt-date:           <xsl_default:value-of select="@receipt-date"/>
    smartmessage-id:        <xsl_default:value-of select="@smartmessage-id"/>
    to-address:             <xsl_default:value-of select="@to-address"/>
    error-class:            <xsl_default:value-of select="error-info/@error-class"/>
    error-code:             <xsl_default:value-of select="error-info/@error-code"/>
    error-description:      <xsl_default:value-of select="error-info/@error-description"/>

    Receipt Specific Data:
         <xsl_default:value-of select="extended-info"/>
                    </xsl_default:template>
                </xsl_default:stylesheet>
            </event-xsl-default>
        </event-class>

        <event-class
            event-name="Processed"
            purpose="information"
            sensitivity="normal"
            reach="individual"
            immediacy="days"
            frequency="once"
            category="miscellaneous">

            <event-payload-schema>
                <Schema name="processedreceipt.xdr"
                    xmlns="urn:schemas-microsoft-com:xml-data"
                    xmlns:dt="urn:schemas-microsoft-com:datatypes">
                    <ElementType name="receipt" content="eltOnly" order="seq">
                        <AttributeType name="receipt-event" dt:type="enumeration"
                                dt:values="processed" default="processed"/>
                        <AttributeType name="receipt-type" dt:type="enumeration"
                                dt:values="ack nak" default="nak"/>
                        <AttributeType name="receipt-date" dt:type="dateTime"
                                required="yes"/>
                        <AttributeType name="smartmessage-id" dt:type="string"
                                required="yes"/>
                        <AttributeType name="to-address" dt:type="string" required="yes"/>
                        <AttributeType name="error-code" dt:type="string" required="no"/>
                        <AttributeType name="error-description" dt:type="string"
                                required="no"/>
                        <attribute type="receipt-event"/>
                        <attribute type="receipt-type"/>
                        <attribute type="receipt-date"/>
                        <attribute type="smartmessage-id"/>
                        <attribute type="to-address"/>
                        <element type="error-info" minOccurs="0" maxOccurs="1"/>
                        <element type="extended-info" minOccurs="0" maxOccurs="1"/>
                    </ElementType>
                    <ElementType name="error-info" content="eltOnly" order="seq">
                        <AttributeType name="error-class" dt:type="enumeration"
                                dt:values="http https smtp smime platform-specific"
                                default="smtp" required="yes"/>
                        <AttributeType name="error-code" dt:type="string" required="yes"/>
                        <AttributeType name="error-description" dt:type="string"
                                required="yes"/>
                        <attribute type="error-class"/>
                        <attribute type="error-code"/>
                        <attribute type="error-description"/>
                    </ElementType>
                    <ElementType name="extended-info" content="eltOnly" order="seq"/>
                </Schema>
            </event-payload-schema>
            <event-xsl-default>
                <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
                    xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
                    <xsl_default:template match="/">
                        <xsl_default:apply-templates select="receipt"/>
                    </xsl_default:template>
                    <xsl_default:template match="receipt">
Receipt Item
    receipt-event:      <xsl_default:value-of select="@receipt-event"/>
    receipt-type:       <xsl_default:value-of select="@receipt-type"/>
    receipt-date:       <xsl_default:value-of select="@receipt-date"/>
    smartmessage-id:    <xsl_default:value-of select="@smartmessage-id"/>
    to-address:         <xsl_default:value-of select="@to-address"/>
    error-class:        <xsl_default:value-of select="error-info/@error-class"/>
    error-code:         <xsl_default:value-of select="error-info/@error-code"/>
    error-description:  <xsl_default:value-of select="error-info/@error-description"/>

    Receipt Specific Data:
        <xsl_default:value-of select="extended-info"/>
                    </xsl_default:template>
                </xsl_default:stylesheet>
            </event-xsl-default>
        </event-class>
    </activity-class>
</smSmartMessageStylesheet>
```

5 Appendix A – SmartMessage Schemas

5.1 SmartMessage

```
<?xml version="1.0"?>
<!-- smartmessage schema -->

<Schema name="v1-1.xdr" xmlns="urn:schemas-microsoft-com:xml-data"
       xmlns:dt="urn:schemas-microsoft-com:datatypes">
   <ElementType name="smXML" content="eltOnly" order="seq">
       <AttributeType name="smartmessage-date" dt:type="dateTime" required="yes"/>
       <AttributeType name="smartmessage-stylesheet-class" dt:type="string"
          required="yes"/>
       <AttributeType name="informant-stylesheet-version" dt:type="string"
          required="yes"/>
       <AttributeType name="smartmessage-id" dt:type="string" required="yes"/>
       <AttributeType name="protocol-version" dt:type="string" required="yes"/>
       <AttributeType name="smartmessage-stylesheet-version" dt:type="string"
          required="yes"/>
       <AttributeType name="informant-stylesheet-class" dt:type="string"
          required="yes"/>
       <attribute type="smartmessage-date"/>
       <attribute type="smartmessage-stylesheet-class"/>
       <attribute type="informant-stylesheet-version"/>
       <attribute type="smartmessage-id"/>
       <attribute type="protocol-version"/>
       <attribute type="smartmessage-stylesheet-version"/>
       <attribute type="informant-stylesheet-class"/>
       <element type="route"/>
       <element type="activity"/>
       <element type="event"/>
   </ElementType>
   <ElementType name="route" content="eltOnly" order="seq">
       <element type="from"/>
       <element type="to" minOccurs="1" maxOccurs="*"/>
       <element type="receipt-request" minOccurs="0" maxOccurs="*"/>
   </ElementType>
   <ElementType name="from" content="empty">
       <AttributeType name="reply-address" dt:type="string"/>
       <AttributeType name="reply-protocol" dt:type="enumeration"
          dt:values="http smtp" default="smtp"/>
       <AttributeType name="from-address" dt:type="string" required="yes"/>
       <attribute type="reply-address"/>
       <attribute type="reply-protocol"/>
       <attribute type="from-address"/>
   </ElementType>
   <ElementType name="to" content="empty">
       <AttributeType name="to-type" dt:type="enumeration" dt:values="to cc bcc"
          default="to"/>
       <AttributeType name="to-protocol" dt:type="enumeration" dt:values="http smtp"
          default="smtp"/>
       <AttributeType name="to-address" dt:type="string" required="yes"/>
       <attribute type="to-type"/>
       <attribute type="to-protocol"/>
       <attribute type="to-address"/>
   </ElementType>
   <ElementType name="receipt-request" content="empty">
       <AttributeType name="receipt-type" dt:type="enumeration"
          dt:values="ack nak retry" default="nak"/>
       <AttributeType name="receipt-protocol" dt:type="enumeration"
```

```
          dt:values="http smtp" default="smtp"/>
      <AttributeType name="receipt-event" dt:type="string"/>
      <AttributeType name="receipt-address" dt:type="string" required="yes"/>
      <attribute type="receipt-type"/>
      <attribute type="receipt-protocol"/>
      <attribute type="receipt-event"/>
      <attribute type="receipt-address"/>
   </ElementType>
   <ElementType name="activity" content="eltOnly" order="seq">
      <AttributeType name="activity-title" dt:type="string" required="yes"/>
      <AttributeType name="activity-id" dt:type="string" required="yes"/>
      <AttributeType name="closed-date" dt:type="dateTime" required="yes"/>
      <AttributeType name="activity-class" dt:type="string" required="yes"/>
      <AttributeType name="activity-status" dt:type="string" required="yes"/>
      <AttributeType name="activity-url" dt:type="string" required="yes"/>
      <attribute type="activity-title"/>
      <attribute type="activity-id"/>
      <attribute type="closed-date"/>
      <attribute type="activity-class"/>
      <attribute type="activity-status"/>
      <attribute type="activity-url"/>
      <element type="activity-payload"/>
   </ElementType>
   <ElementType name="activity-payload" content="eltOnly" order="seq"/>
   <ElementType name="event" content="eltOnly" order="seq">
      <AttributeType name="event-description" dt:type="string" required="yes"/>
      <AttributeType name="event-class" dt:type="string" required="yes"/>
      <AttributeType name="event-id" dt:type="string" required="yes"/>
      <AttributeType name="event-url" dt:type="string" required="yes"/>
      <attribute type="event-description"/>
      <attribute type="event-class"/>
      <attribute type="event-id"/>
      <attribute type="event-url"/>
      <element type="event-payload"/>
   </ElementType>
   <ElementType name="event-payload" content="eltOnly" order="seq"/>
</Schema>
```

5.2 SmartMessage Stylesheet

```
<?xml version="1.0"?>
<!-- smartmessage stylesheet -->
<Schema name = "smv1-2.xdr"
    xmlns = "urn:schemas-microsoft-com:xml-data"
    xmlns:dt = "urn:schemas-microsoft-com:datatypes">
   <ElementType name = "smSmartMessageStylesheet" content = "eltOnly" order = "seq">
       <AttributeType name = "smartmessage-stylesheet-class" dt:type = "string"
              required = "yes"/>
       <AttributeType name = "smartmessage-stylesheet-version" dt:type = "string"
              required = "yes"/>
       <AttributeType name = "version-date" dt:type = "dateTime" required = "yes"/>
       <attribute type = "smartmessage-stylesheet-class"/>
       <attribute type = "smartmessage-stylesheet-version"/>
       <attribute type = "version-date"/>
       <element type = "activity-class" minOccurs = "1" maxOccurs = "*"/>
   </ElementType>

   <ElementType name = "activity-class" content = "eltOnly" order = "seq">
       <AttributeType name = "activity-name" dt:type = "string" required = "yes"/>
       <AttributeType name = "activity-duration" dt:type = "enumeration" dt:values =
              "hours days weeks months year ongoing" required = "yes"/>
       <AttributeType name = "event-frequency" dt:type = "enumeration" dt:values =
              "hours daily weekly monthly once" required = "yes"/>
       <AttributeType name = "display-name" dt:type = "string"/>
       <attribute type = "activity-name"/>
       <attribute type = "activity-duration"/>
       <attribute type = "event-frequency"/>
       <attribute type = "display-name"/>
       <element type = "activity-payload-schema" minOccurs = "0" maxOccurs = "1"/>
       <element type = "activity-xsl-default"/>
       <element type = "activity-xsl-endpoint" minOccurs = "0" maxOccurs = "*"/>
       <element type = "event-class" minOccurs = "1" maxOccurs = "*"/>
   </ElementType>

   <ElementType name = "activity-payload-schema" content = "eltOnly" order = "seq"/>
   <ElementType name = "activity-xsl-default" content = "eltOnly" order = "seq"/>
   <ElementType name = "activity-xsl-endpoint" content = "eltOnly" order = "seq">
       <AttributeType name = "endpoint-type" dt:type = "enumeration" dt:values =
              "browser html-email text-email tiny-email fax voice-phone instant-
              message" required = "yes"/>
       <attribute type = "endpoint-type"/>
   </ElementType>

   <ElementType name = "event-class" content = "eltOnly" order = "seq">
       <AttributeType name = "frequency" dt:type = "enumeration" dt:values = "hourly
              daily weekly monthly once" default = "once"/>
       <AttributeType name = "sensitivity" dt:type = "enumeration" dt:values =
              "private normal public" default = "normal"/>
       <AttributeType name = "reach" dt:type = "enumeration" dt:values = "broadcast
              group individual" default = "individual"/>
       <AttributeType name = "purpose" dt:type = "enumeration" dt:values = "question
              information instruction" default = "information"/>
       <AttributeType name = "immediacy" dt:type = "enumeration" dt:values = "minutes
              hours days weeks months" default = "days"/>
       <AttributeType name = "category" dt:type = "enumeration" dt:values = "auctions
              banking career community credit-card education entertainment general
              health information investing miscellaneous personal shopping system
              telemetry travel" default = "miscellaneous"/>
       <AttributeType name = "event-name" dt:type = "string" required = "yes"/>
```

```
        <AttributeType name = "display-name" dt:type = "string"/>
        <attribute type = "frequency"/>
        <attribute type = "sensitivity"/>
        <attribute type = "reach"/>
        <attribute type = "purpose"/>
        <attribute type = "immediacy"/>
        <attribute type = "category"/>
        <attribute type = "event-name"/>
        <attribute type = "display-name"/>
        <element type = "event-payload-schema" minOccurs = "0" maxOccurs = "1"/>
        <element type = "event-xsl-default"/>
        <element type = "event-xsl-endpoint" minOccurs = "0" maxOccurs = "*"/>
    </ElementType>

    <ElementType name = "event-payload-schema" content = "eltOnly" order = "seq"/>
    <ElementType name = "event-xsl-default" content = "eltOnly" order = "seq"/>
    <ElementType name = "event-xsl-endpoint" content = "eltOnly" order = "seq">
        <AttributeType name = "endpoint-type" dt:type = "enumeration" dt:values =
            "browser html-email text-email tiny-email fax voice-phone instant-message"
            required = "yes"/>
        <attribute type = "endpoint-type"/>
    </ElementType>

</Schema>
```

5.3 Informant Stylesheet

```
<?xml version="1.0"?>
<!-- informant stylesheet schema -->
<Schema name = "v1-2.xdr"
    xmlns = "urn:schemas-microsoft-com:xml-data"
    xmlns:dt = "urn:schemas-microsoft-com:datatypes">
   <ElementType name = "smInformantStylesheet" content = "eltOnly" order = "seq">
       <AttributeType name = "logo-url" dt:type = "string"/>
       <AttributeType name = "signup-url" dt:type = "string"/>
       <AttributeType name = "informant-stylesheet-version" dt:type = "string"
              required = "yes"/>
       <AttributeType name = "home-url" dt:type = "string"/>
       <AttributeType name = "informant-category" dt:type = "enumeration" dt:values =
              "auctions banking career community credit-card education entertainment
              general health information investing miscellaneous personal shopping
              system telemetry travel" required = "yes"/>
       <AttributeType name = "informant-description" dt:type = "string" required =
              "yes"/>
       <AttributeType name = "informant-stylesheet-class" dt:type = "string" required
              = "yes"/>
       <AttributeType name = "informant-name" dt:type = "string" required = "yes"/>
       <AttributeType name = "version-date" dt:type = "dateTime" required = "yes"/>
       <attribute type = "logo-url"/>
       <attribute type = "signup-url"/>
       <attribute type = "informant-stylesheet-version"/>
       <attribute type = "home-url"/>
       <attribute type = "informant-category"/>
       <attribute type = "informant-description"/>
       <attribute type = "informant-stylesheet-class"/>
       <attribute type = "informant-name"/>
       <attribute type = "version-date"/>
       <element type = "valid-transport-source" minOccurs = "1" maxOccurs = "*"/>
   </ElementType>

   <ElementType name = "valid-transport-source" content = "textOnly">
       <AttributeType name = "transport-protocol" dt:type = "enumeration" dt:values =
              "smtp http" default = "smtp"/>
       <AttributeType name = "transport-source" dt:type = "string" required = "yes"/>
       <attribute type = "transport-protocol"/>
       <attribute type = "transport-source"/>
   </ElementType>
</Schema>
```

6 Appendix B – Example SmartMessage Documents

The following samples walk through example SmartMessage document for a fictitious Informant, an airline called Future Airlines. This example and others can be downloaded at http://www.messageml.org.

6.1 SmartMessage

The Informant sends the SmartMessage document to the SmartMessage service provider, addressed to one or more of their recipients.

The root element contains various attributes that define the instance of the SmartMessage activity and event class. If the ID's of the activity or event are reused, then the new instance will overwrite the old. Also embedded in this element is the class (internet location and path) and version (file name) of the stylesheets the SmartMessage will use to validate its activity and event class references. There must be a match in activity and event class names contained in the SmartMessage and it's referenced SmartMessage Stylesheet.

```
<smXML xmlns="x-schema:http://smartmessage.messageml.org/schemas/smartmessage/v1-1.xdr"
        protocol-version="1.1"
        smartmessage-id="G1234567890.futureairlines.com"
        smartmessage-date="2000-06-28T11:21:18"
        smartmessage-stylesheet-class="http://www.futureairlines.com/”
        smartmessage-stylesheet-version="definitions/ smartmsgs-v1-0"
        informant-stylesheet-class="http://www.futureairlines.com/"
        informant-stylesheet-version="definitions/informant-v1-0.xml">
    .
    .
    .
```

The route element defines who the message is from (Informant), who it should be sent to (SmartMessage user account), and if a return receipt should be provided to the Informant.

```
    <route>
        <from from-address="smartmessage@futureairlines.com"/>
        <to to-address="testuser@futureairlines.centerpost.com"/>
        <receipt-request receipt-address="info@futureairlines.com"/>
    </route>
    .
    .
    .
```

The activity contains attributes that specify the activity-class and payload. The payload will be validated against the matching activity's XML schema defined in the SmartMessage Stylesheet.

```
    <activity activity-title="5/1/00 filght to Atlanta"
                activity-id="Trip123456789G"
                closed-date="2000-06-30T14:11:34"
                activity-class="Travel Itinerary"
                activity-status="Flight cancelled"
                activity-url="http://www.futureairlines.com/">
        <activity-payload>
            <travelitinerary>
                <name>Itinerary 4523 – ORD to ATL</name>
                <agency code=11AD>Carlson Travel</agency>
            </travelitinerary>
        </activity-payload>
    </activity>
    .
    .
    .
```

The event element contains attributes that specify the event-class and its payload. The payload will be validated against the matching event's XML schema defined in the SmartMessage Stylesheet.

```
    <event event-description="Flight 219 has been cancelled."
            event-class="Flight Cancellation"
            event-id="futureaircancel219G"
            event-url="http://www.futureairlines.com/flightcan?flight=FA219">
        <event-payload>
            <flightcancel xmlns="flightcancel">
                <name>John Smith</name>
                <airline>FutureAirlines</airline>
                <destname>Atlanta, GA</destname>
                <destcode>ATL</destcode>
                <departname>Chicago, IL</departname>
                <departcode>ORD</departcode>
                <departtime>7:30pm</departtime>
                <departdate>6/29/2000</departdate>
                <flightnum>219</flightnum>
                <newflight>999</newflight>
                <newtime>11:50pm</newtime>
                <newdate>6/29/2000</newdate>
                <reason>Cancellation due to labor dispute.</reason>
                <customerservice>800-555-5555</customerservice>
            </flightcancel>
        </event-payload>
    </event>
</smXML>
```

6.2 *Informant Stylesheet*

The Informant Stylesheet is used to validate the Informant and its sending locations and types, as well as provide descriptive attributes.

Also, embedded in this element is the class (internet location and path) and version (file name) of the stylesheet itself. These two attributes are self-referencing document location and file information (describe the class and version of the file itself).

```
<smInformantStylesheet
    xmlns="x-schema:http://smartmessage.messageml.org/schemas/stylesheets/informant/v1-2.xdr"
    informant-name="FutureAirlines"
    informant-stylesheet-class="http://www.futureairlines.com/definitions/"
    informant-stylesheet-version=" informant-v1-0.xml "
    version-date="2000-06-28T11:21:18"
    informant-description="FutureAirlines - The way you should fly"
    logo-url="http://www.futureairlines.com/informants/futureair/futureair.jpg"
    home-url="http://www.futureairlines.com"
    informant-category="travel">
    .
    .
    .
```

For this stylesheet, two SMTP and two HTTP locations are specified as valid sources from where SmartMessages can be sent by the Informant. If the SmartMessage's source does not match one of the listed sources, then it will be rejected.

```
    <valid-transport-source transport-source="*@smprovider.com"/>
    <valid-transport-source transport-source="*@smprovider2.com"/>
    <valid-transport-source transport-protocol="http" transport-source="123.456.*.*"/>
    <valid-transport-source transport-protocol="http" transport-source="321.654.987.*"/>
</smInformantStylesheet>
```

6.3 SmartMessage Stylesheet

The class (location) and version (file instance) of this MessageML Stylesheet are self-referencing attributes, describing the location and filename of the document itself. For example, if a SmartMessage Stylesheet was located at *http://www.futureairlines.com/stylesheets/travel-itnerary/ v1-0.xml* then the class attribute for that document would be *http://www.futureairlines.com/stylesheets/travel-itnerary/* and version attribute would be *v1-0.xml*.

```
<smSmartMessageStylesheet
    xmlns="x-schema:http:// smartmessage.messageml.org/schemas/stylesheets/smartmessage/v1-2.xdr"
    smartmessage-stylesheet-class="http://www.futureairlines.com/definitions/messages/"
    smartmessage-stylesheet-version="smartmsgs-v1-0.xml">
    version-date="2000-06-28T11:21:18"
    .
    .
    .
```

Next, activity classes are defined. The Informant determines what types of activities or event groupings it wants to employ. The activity class name specified in the SmartMessage must match the name of an activity class referenced SmartMessage Stylesheet version.

For Future Airlines has created three activity classes with which to group events: “Travel Itinerary”, “Future Airlines Mileage Account”, and “Future Airlines News”.

This activity class describes a Travel Itinerary as having a normal duration of many days and an event frequency of hours.

```
    <activity-class activity-name="Travel Itinerary" activity-duration="days" event-frequency="hours" display-name="Your Travel
        Itenerary">
        .
        .
        .
```

The activity class itself can possess a payload or content. This payload will be displayed to the Recipient on his target endpoint device. Thus, a default XSL document must be defined to render this content to any endpoint which does not has a XSL defined. This allows the Informant to define one generic presentation of the activity payload which is viewable on all of a Recipient’s endpoints.

```
        <activity-xsl-default>
            <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40" xmlns:xsl_default="http://www.w3.org/TR/WD-
                xsl">
                <xsl_default:template match="/"/>

                <xsl_default:template match="travel-itinerary">
                    <!--need an example here -->
                </xsl_default>

            </xsl_default:stylesheet>
        </activity-xsl-default>
        .
        .
        .
```

The activity payload XML schema (XDR) is defined within the SmartMessage Stylesheet which describes the structure of its payload or content.

```
        <!-- activity-payload-schema -->
        .
        .
        .
```

The informant will embed an XSL document within an <activity-xsl-endpoint> element for each endpoint that it wishes to provide a device-specific rendering of the activity payload.

```
        <!-- activity-xsl-endpoint -->
        .
        .
        .
    </activity-class>
        .
        .
        .
```

Once the activity class is defined, all it related event classes must also be defined. An event class can be associated to only one activity class. Again, the event class name specified in the SmartMessage must match the name of an event class referenced SmartMessage Stylesheet version.

Future Airlines defines three event classes for the activity class “Travel Itinerary.”

```
    <event-class event-name="Flight Cancellation" display-name=”Flight Cancellation”>
        .
        .
        .
```

Each event class must define an XML Schema which is used to validate its payload or content.

```
        <event-payload-schema>
            <Schema name="flightcancel.xdr"
                    xmlns="urn:schemas-microsoft-com:xml-data"
                    xmlns:dt="urn:schemas-microsoft-com:datatypes">
                <ElementType name="flightcancel" content="eltOnly" order="seq">
                    <AttributeType name="xmlns" dt:type="string" required="yes"/>
                    <attribute type="xmlns"/>
                    <element type="name"/>
                    <element type="airline"/>
                    <element type="destname"/>
                    <element type="destcode"/>
                    <element type="departname"/>
                    <element type="departcode"/>
                    <element type="departtime"/>
                    <element type="departdate"/>
                    <element type="flightnum"/>
                    <element type="newflight"/>
                    <element type="newtime"/>
                    <element type="newdate"/>
                    <element type="reason"/>
                    <element type="customerservice"/>
                </ElementType>
                <ElementType name="name" content="textOnly"/>
                <ElementType name="airline" content="textOnly"/>
                <ElementType name="destname" content="textOnly"/>
                <ElementType name="destcode" content="textOnly"/>
                <ElementType name="departname" content="textOnly"/>
                <ElementType name="departcode" content="textOnly"/>
                <ElementType name="departtime" content="textOnly"/>
                <ElementType name="departdate" content="textOnly"/>
                <ElementType name="flightnum" content="textOnly"/>
                <ElementType name="newflight" content="textonly"/>
                <ElementType name="newtime" content="textonly"/>
                <ElementType name="newdate" content="textonly"/>
                <ElementType name="reason" content="textOnly"/>
                <ElementType name="customerservice" content="textOnly"/>
            </Schema>
        </event-payload-schema>
        .
        .
        .
```

The event class possesses a payload or content which adheres to the defined XML schema. This payload will be displayed to the Recipient at his target endpoint device. Thus, a default XSL document must be defined to render this content to endpoint that does not have a specific XSL defined. This allows the Informant to define one generic presentation of the event payload which is viewable on all of a Recipient's endpoints.

```
<event-xsl-default>
    <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
        xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
        <xsl_default:template match="/">
            <xsl_default:apply-templates select="flightcancel"/>
        </xsl_default:template>
        <xsl_default:template match="flightcancel">
            <xsl_default:value-of select="airline"/> flight number <xsl_default:value-of select="flightnum"/> from
<xsl_default:value-of select="departname"/> to <xsl_default:value-of select="destname"/> has been cancelled.
You have been rescheduled on flight <xsl_default:value-of select="newflight"/> to <xsl_default:value-of select="destname"/> at
<xsl_default:value-of select="newtime"/> on <xsl_default:value-of select="newdate"/>.
Please call customer service at <xsl_default:value-of select="customerservice"/> if you have further questions.
        </xsl_default:template>
    </xsl_default:stylesheet>
</event-xsl-default>
.
.
.
```

Next, endpoint specific XSL documents are defined and embedded within the SmartMessage Stylesheet. The next section defines the XSL document for an HTML based e-mail endpoint.

```
<event-xsl-endpoint endpoint-type="html-email">
    <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
                              xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
        <xsl_default:template match="/">
            <xsl_default:apply-templates select="flightcancel"/>
        </xsl_default:template>
        <xsl_default:template match="flightcancel">
        <HTML>
            <HEAD>
                <TITLE>Reservations - FutureAir</TITLE>
            </HEAD>
            <BODY BGCOLOR="#FFFFFF" TEXT="#000000" LINK="#000099" VLINK="#336699"
ALINK="#CCCCCC" MARGINWIDTH="0" MARGINHEIGHT="0" LEFTMARGIN="0" TOPMARGIN="0">
                <TABLE BORDER="0" CELLPADDING="0" CELLSPACING="0" WIDTH="750">
                    <TR>
                        <TD WIDTH="750">
                            <IMG SRC="http://futureair.devpost.com/informants/futureair/futureair.jpg"
BORDER="0" ALT="FutureAir"/><BR/>
                        </TD>
                    </TR>
                    <TR>
                        <TD>
                            <TABLE WIDTH="750" BORDER="0" CELLPADDING="0" CELLSPACING="0">
                                <TR>
                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                        <BR/>
                                    </TD>
                                    <TD COLSPAN="2" BGCOLOR="#e3feff">
                                        <FONT SIZE="3" FACE="Arial, Helvetica, Sans Serif">
                                            <B>Flight Cancellation</B>
                                        </FONT>
                                    </TD>
                                </TR>
                                <TR>
                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                        <BR/>
                                    </TD>
                                    <TD WIDTH="100" BGCOLOR="#e3feff">
```

```
                                                    <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Ticket
Holder:</FONT>
                                                </TD>
                                                <TD WIDTH="640" BGCOLOR="#e3feff">
                                                    <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                        <xsl_default:value-of select="name"/>
                                                    </FONT>
                                                </TD>
                                            </TR>
                                            <TR>
                                                <TD WIDTH="10" BGCOLOR="#e3feff">
                                                    <BR/>
                                                </TD>
                                                <TD WIDTH="100" BGCOLOR="#e3feff">
                                                    <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Airline:</FONT>
                                                </TD>
                                                <TD WIDTH="640" BGCOLOR="#e3feff">
                                                    <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                        <xsl_default:value-of select="airline"/>
                                                    </FONT>
                                                </TD>
                                            </TR>
                                            <TR>
                                                <TD WIDTH="10" BGCOLOR="#e3feff">
                                                    <BR/>
                                                </TD>
                                                <TD WIDTH="100" BGCOLOR="#e3feff">
                                                    <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Flight
Number:</FONT>
                                                </TD>
                                                <TD WIDTH="640" BGCOLOR="#e3feff">
                                                    <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                        <xsl_default:value-of select="flightnum"/>
                                                    </FONT>
                                                </TD>
                                            </TR>
                                            <TR>
                                                <TD WIDTH="10" BGCOLOR="#e3feff">
                                                    <BR/>
                                                </TD>
                                                <TD WIDTH="100" BGCOLOR="#e3feff">
                                                    <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">From:</FONT>
                                                </TD>
                                                <TD WIDTH="640" BGCOLOR="#e3feff">
                                                    <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                        <xsl_default:value-of select="departname"/>
(<xsl_default:value-of select="departcode"/>) to <xsl_default:value-of select="destname"/> (<xsl_default:value-of
select="destcode"/>)</FONT>
                                                </TD>
                                            </TR>
                                            <TR>
                                                <TD WIDTH="10" BGCOLOR="#e3feff">
                                                    <BR/>
                                                </TD>
                                                <TD WIDTH="100" BGCOLOR="#e3feff">
                                                    <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                                                </TD>
                                                <TD WIDTH="640" BGCOLOR="#e3feff">
                                                    <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                        <xsl_default:value-of select="departdate"/>
                                                        <xsl_default:value-of select="departtime"/>
                                                    </FONT>
                                                </TD>
                                            </TR>
                                            <TR>
                                                <TD WIDTH="10" BGCOLOR="#e3feff">
                                                    <BR/>
                                                </TD>
```

```
                        <TD WIDTH="100" BGCOLOR="#e3feff">
                          <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                        </TD>
                        <TD WIDTH="640" BGCOLOR="#e3feff">
                          <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                        </TD>
                      </TR>
                      <TR>
                        <TD WIDTH="10" BGCOLOR="#e3feff">
                          <BR/>
                        </TD>
                        <TD WIDTH="100" BGCOLOR="#e3feff">
                          <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Reason:</FONT>
                        </TD>
                        <TD COLSPAN="2" BGCOLOR="#e3feff">
                          <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                            <B>
                              <xsl_default:value-of select="reason"/>
                            </B>
                          </FONT>
                        </TD>
                      </TR>
                      <TR>
                        <TD WIDTH="10" BGCOLOR="#e3feff">
                          <BR/>
                        </TD>
                        <TD WIDTH="150" BGCOLOR="#e3feff">
                          <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Rescheduled Flight:</FONT>
                        </TD>
                        <TD WIDTH="640" BGCOLOR="#e3feff">
                          <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                            Flight <xsl_default:value-of select="newflight"/> on
<xsl_default:value-of select="newdate"/>
                            <xsl_default:value-of select="newtime"/>
                          </FONT>
                        </TD>
                      </TR>
                      <TR>
                        <TD WIDTH="10" BGCOLOR="#e3feff">
                          <BR/>
                        </TD>
                        <TD WIDTH="100" BGCOLOR="#e3feff">
                          <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                        </TD>
                        <TD WIDTH="640" BGCOLOR="#e3feff">
                          <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                        </TD>
                      </TR>
                      <TR>
                        <TD WIDTH="10" BGCOLOR="#e3feff">
                          <BR/>
                        </TD>
                        <TD COLSPAN="2" BGCOLOR="#e3feff">
                          <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                            Please call customer service at <xsl_default:value-of
select="customerservice"/> if you have further questions.
                          </FONT>
                        </TD>
                      </TR>
                    </TABLE>
                  </TD>
                </TR>
                <TR>
                  <TD>
                    <BR/>
                    <CENTER>
                      <FONT SIZE="1" FACE="Arial, Helvetica, Sans Serif">&#xA9;2000
FutureAir</FONT>
```

```
                    </CENTER>
                  </TD>
                </TR>
              </TABLE>
            </BODY>
          </HTML>
          </xsl_default:template>
        </xsl_default:stylesheet>
      </event-xsl-endpoint>
```

The next section defines the XSL document for a PC web browser endpoint.

```
      <event-xsl-endpoint endpoint-type="browser">
        <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
                     xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
          <xsl_default:template match="/">
            <xsl_default:apply-templates select="flightcancel"/>
          </xsl_default:template>
          <xsl_default:template match="flightcancel">
            <HTML>
              <HEAD>
                <TITLE>Reservations - FutureAir</TITLE>
              </HEAD>
              <BODY BGCOLOR="#FFFFFF" TEXT="#000000" LINK="#000099" VLINK="#336699"
ALINK="#CCCCCC" MARGINWIDTH="0" MARGINHEIGHT="0"        LEFTMARGIN="0" TOPMARGIN="0">
                <TABLE BORDER="0" CELLPADDING="0" CELLSPACING="0" WIDTH="750">
                  <TR>
                    <TD WIDTH="750">
                      <IMG SRC="http://futureair.devpost.com/informants/futureair/futureair.jpg"
BORDER="0" ALT="FutureAir"/>
                    </TD>
                  </TR>
                  <TR>
                    <TD>
                      <TABLE WIDTH="750" BORDER="0" CELLPADDING="0"
CELLSPACING="0">
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD COLSPAN="2" BGCOLOR="#e3feff">
                            <FONT SIZE="3" FACE="Arial, Helvetica, Sans Serif">
                              <B>Flight Cancellation</B>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Ticket
Holder:</FONT>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="name"/>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Airline:</FONT>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
```

```
                                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                    <xsl_default:value-of select="airline"/>
                                </FONT>
                            </TD>
                        </TR>
                        <TR>
                            <TD WIDTH="10" BGCOLOR="#e3feff">
                                <BR/>
                            </TD>
                            <TD WIDTH="100" BGCOLOR="#e3feff">
                                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Flight
Number:</FONT>
                            </TD>
                            <TD WIDTH="640" BGCOLOR="#e3feff">
                                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                    <xsl_default:value-of select="flightnum"/>
                                </FONT>
                            </TD>
                        </TR>
                        <TR>
                            <TD WIDTH="10" BGCOLOR="#e3feff">
                                <BR/>
                            </TD>
                            <TD WIDTH="100" BGCOLOR="#e3feff">
                                <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">From:</FONT>
                            </TD>
                            <TD WIDTH="640" BGCOLOR="#e3feff">
                                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                    <xsl_default:value-of select="departname"/>
(<xsl_default:value-of select="departcode"/>) to <xsl_default:value-of select="destname"/> (<xsl_default:value-of
select="destcode"/>)</FONT>
                            </TD>
                        </TR>
                        <TR>
                            <TD WIDTH="10" BGCOLOR="#e3feff">
                                <BR/>
                            </TD>
                            <TD WIDTH="100" BGCOLOR="#e3feff">
                                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                            </TD>
                            <TD WIDTH="640" BGCOLOR="#e3feff">
                                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                    <xsl_default:value-of select="departdate"/>
                                    <xsl_default:value-of select="departtime"/>
                                </FONT>
                            </TD>
                        </TR>
                        <TR>
                            <TD WIDTH="10" BGCOLOR="#e3feff">
                                <BR/>
                            </TD>
                            <TD WIDTH="100" BGCOLOR="#e3feff">
                                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                            </TD>
                            <TD WIDTH="640" BGCOLOR="#e3feff">
                                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                            </TD>
                        </TR>
                        <TR>
                            <TD WIDTH="10" BGCOLOR="#e3feff">
                                <BR/>
                            </TD>
                            <TD WIDTH="100" BGCOLOR="#e3feff">
                                <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Reason:</FONT>
                            </TD>
                            <TD COLSPAN="2" BGCOLOR="#e3feff">
                                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                    <B>
                                <xsl_default:value-of select="reason"/>
                              </B>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="150" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Rescheduled Flight:</FONT>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              Flight <xsl_default:value-of select="newflight"/> on
<xsl_default:value-of select="newdate"/>

                              <xsl_default:value-of select="newtime"/>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD COLSPAN="2" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              Please call customer service at <xsl_default:value-of
select="customerservice"/> if you have further questions.
                            </FONT>
                          </TD>
                        </TR>
                      </TABLE>
                    </TD>
                  </TR>
                  <TR>
                    <TD>
                      <BR/>
                      <CENTER>
                        <FONT SIZE="1" FACE="Arial, Helvetica, Sans Serif">&#xA9;2000
FutureAir</FONT>
                      </CENTER>
                    </TD>
                  </TR>
                </TABLE>
              </BODY>
            </HTML>
          </xsl_default:template>
        </xsl_default:stylesheet>
      </event-xsl-endpoint>
```

The next section defines the XSL document for a fax endpoint.

```
      <event-xsl-endpoint endpoint-type="fax">
        <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
          <xsl_default:template match="/">
            <xsl_default:apply-templates select="flightcancel"/>
```

```
                    </xsl_default:template>
                    <xsl_default:template match="flightcancel">
                        <HTML>
                            <HEAD>
                                <TITLE>Reservations - FutureAir</TITLE>
                            </HEAD>
                            <BODY BGCOLOR="#FFFFFF" TEXT="#000000" LINK="#000099" VLINK="#336699"
ALINK="#CCCCCC" MARGINWIDTH="0" MARGINHEIGHT="0"        LEFTMARGIN="0" TOPMARGIN="0">
                                <TABLE BORDER="0" CELLPADDING="0" CELLSPACING="0" WIDTH="750">
                                    <TR>
                                        <TD WIDTH="750">

                                        </TD>
                                    </TR>
                                    <TR>
                                        <TD>
                                            <TABLE WIDTH="750" BORDER="0" CELLPADDING="0"
CELLSPACING="0">
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD COLSPAN="2" BGCOLOR="#e3feff">
                                                        <FONT SIZE="3" FACE="Arial, Helvetica, Sans Serif">
                                                            <B>Flight Cancellation</B>
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Ticket
Holder:</FONT>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            <xsl_default:value-of select="name"/>
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Airline:</FONT>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            <xsl_default:value-of select="airline"/>
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Flight
Number:</FONT>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            <xsl_default:value-of select="flightnum"/>
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">From:</FONT>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            <xsl_default:value-of select="departname"/>
(<xsl_default:value-of select="departcode"/>) to <xsl_default:value-of select="destname"/> (<xsl_default:value-of
select="destcode"/>)</FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            <xsl_default:value-of select="departdate"/>
                                                            <xsl_default:value-of select="departtime"/>
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Reason:</FONT>
                                                    </TD>
                                                    <TD COLSPAN="2" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            <B>
                                                                <xsl_default:value-of select="reason"/>
                                                            </B>
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="150" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Rescheduled Flight:</FONT>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            Flight <xsl_default:value-of select="newflight"/> on
<xsl_default:value-of select="newdate"/>

                                                            <xsl_default:value-of select="newtime"/>
                                                        </FONT>
```

```
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD COLSPAN="2" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            Please call customer service at <xsl_default:value-of
select="customerservice"/> if you have further questions.
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                            </TABLE>
                                        </TD>
                                    </TR>
                                    <TR>
                                        <TD>
                                            <BR/>
                                            <CENTER>
                                                <FONT SIZE="1" FACE="Arial, Helvetica, Sans Serif">&#xA9;2000
FutureAir</FONT>
                                            </CENTER>
                                        </TD>
                                    </TR>
                                </TABLE>
                            </BODY>
                        </HTML>
                    </xsl_default:template>
                </xsl_default:stylesheet>
            </event-xsl-endpoint>
```

The next section defines the XSL document for a text e-mail endpoint.

```
            <event-xsl-endpoint endpoint-type="text-email">
                <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
                    <xsl_default:template match="/">
                        <xsl_default:apply-templates select="flightcancel"/>
                    </xsl_default:template>
                    <xsl_default:template match="flightcancel">
FutureAir

Flight Cancellation

Ticket Holder:  <xsl_default:value-of select="name"/>
Airline:        <xsl_default:value-of select="airline"/>
Flight Number:  <xsl_default:value-of select="flightnum"/>
From:           <xsl_default:value-of select="departname"/> (<xsl_default:value-of select="departcode"/>)
To:             <xsl_default:value-of select="destname"/> (<xsl_default:value-of select="destcode"/>)
Date:           <xsl_default:value-of select="departdate"/>
Time:           <xsl_default:value-of select="departtime"/>

Reason:         <xsl_default:value-of select="reason"/>

New flight:     Futureair flight <xsl_default:value-of select="newflight"/>
New Time:       <xsl_default:value-of select="newdate"/>, <xsl_default:value-of select="newtime"/>
```

```
Please call customer service at <xsl_default:value-of select="customerservice"/> if you have further questions.


Copyright 2000 Future Airlines
</xsl_default:template>
                </xsl_default:stylesheet>
            </event-xsl-endpoint>
```

The next section defines the XSL document for a “tiny” e-mail endpoint. This includes pagers and text messaging enabled mobile phones.

```
            <event-xsl-endpoint endpoint-type="tiny-email">
                <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
                    <xsl_default:template match="/">
                        <xsl_default:apply-templates select="flightcancel"/>
                    </xsl_default:template>
                    <xsl_default:template match="flightcancel">
tiny <xsl_default:value-of select="airline"/> flight number <xsl_default:value-of select="flightnum"/> cancelled.  Call customer service
<xsl_default:value-of select="customerservice"/> to reschedule flight.
                    </xsl_default:template>
                </xsl_default:stylesheet>
            </event-xsl-endpoint>
        </event-class>
```

The next event class is defined including its XML schema, default XSL, and endpoint specific XSL. The remainder of this examples implements the endpoint definitions for each of the events in this activity class.

```
        <event-class event-name="Itinerary Change">
            <event-payload-schema>
                <Schema name="flightchange.xdr" xmlns="urn:schemas-microsoft-com:xml-data" xmlns:dt="urn:schemas-
microsoft-com:datatypes">
                    <ElementType name="flightchange" content="eltOnly" order="seq">
                        <AttributeType name="xmlns" dt:type="string" required="yes"/>
                        <attribute type="xmlns"/>
                        <element type="name"/>
                        <element type="airline"/>
                        <element type="destname"/>
                        <element type="destcode"/>
                        <element type="departname"/>
                        <element type="departcode"/>
                        <element type="departtime"/>
                        <element type="departdate"/>
                        <element type="flightnum"/>
                        <element type="reason"/>
                    </ElementType>
                    <ElementType name="name" content="textOnly"/>
                    <ElementType name="airline" content="textOnly"/>
                    <ElementType name="destname" content="textOnly"/>
                    <ElementType name="destcode" content="textOnly"/>
                    <ElementType name="departname" content="textOnly"/>
                    <ElementType name="departcode" content="textOnly"/>
                    <ElementType name="departtime" content="textOnly"/>
                    <ElementType name="departdate" content="textOnly"/>
                    <ElementType name="flightnum" content="textOnly"/>
                    <ElementType name="reason" content="textOnly"/>
                </Schema>
            </event-payload-schema>

            <event-xsl-default>
                <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
                    <xsl_default:template match="/">
                        <xsl_default:apply-templates select="flightchange"/>
                    </xsl_default:template>
                    <xsl_default:template match="flightchange">
```

```
<xsl_default:value-of select="airline"/> flight number<xsl_default:value-of select="flightnum"/> from<xsl_default:value-of
select="departname"/> to<xsl_default:value-of select="destname"/>has been cancelled.
You have been rescheduled on flight<xsl_default:value-of select="newflight"/> to <xsl_default:value-of select="destname"/> at
<xsl_default:value-of select="new time"/> on <xsl_default:value-of select="newdate"/>.
Please call customer service at <xsl_default:value-of select="customerservice"/>if you have further questions.
          </xsl_default:template>
        </xsl_default:stylesheet>
      </event-xsl-default>

      <event-xsl-endpoint endpoint-type="html-email">
        <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
          <xsl_default:template match="/">
            <xsl_default:apply-templates select="flightchange"/>
          </xsl_default:template>
          <xsl_default:template match="flightchange">
            <HTML>
              <HEAD>
                <TITLE>Reservations - FutureAir</TITLE>
              </HEAD>
              <BODY BGCOLOR="#FFFFFF" TEXT="#000000" LINK="#000099" VLINK="#336699"
ALINK="#CCCCCC" MARGINWIDTH="0" MARGINHEIGHT="0"        LEFTMARGIN="0" TOPMARGIN="0">
                <TABLE BORDER="0" CELLPADDING="0" CELLSPACING="0" WIDTH="750">
                  <TR>
                    <TD WIDTH="750">
                      <IMG SRC="http://futureair.devpost.com/informants/futureair/futureair.jpg"
BORDER="0" ALT="FutureAir"/><BR/>
                    </TD>
                  </TR>
                  <TR>
                    <TD>
                      <TABLE WIDTH="750" BORDER="0" CELLPADDING="0"
CELLSPACING="0">
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD COLSPAN="2" BGCOLOR="#e3feff">
                            <FONT SIZE="3" FACE="Arial, Helvetica, Sans Serif">
                              <B>Itinerary Change</B>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Ticket
Holder:</FONT>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="name"/>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Airline:</FONT>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="airline"/>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Flight
Number:</FONT>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="flightnum"/>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">From:</FONT>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="departname"/>
(<xsl_default:value-of select="departcode"/>) to <xsl_default:value-of select="destname"/> (<xsl_default:value-of
select="destcode"/>)</FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="departdate"/>
                              <xsl_default:value-of select="departtime"/>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD COLSPAN="2" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              Has been changed, please contact reservations at 800-
555-1234 for more information.

                            </FONT>
                          </TD>
                        </TR>
                      </TABLE>
                    </TD>
                  </TR>
```

```
                                    <TR>
                                        <TD>
                                            <BR/>
                                            <CENTER>
                                                <FONT SIZE="1" FACE="Arial, Helvetica, Sans Serif">&#xA9;2000
FutureAir</FONT>
                                            </CENTER>
                                        </TD>
                                    </TR>
                                </TABLE>
                            </BODY>
                        </HTML>
                    </xsl_default:template>
                </xsl_default:stylesheet>
            </event-xsl-endpoint>

            <event-xsl-endpoint endpoint-type="browser">
                <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
                    <xsl_default:template match="/">
                        <xsl_default:apply-templates select="flightchange"/>
                    </xsl_default:template>
                    <xsl_default:template match="flightchange">
                        <HTML>
                            <HEAD>
                                <TITLE>Reservations - FutureAir</TITLE>
                            </HEAD>
                            <BODY BGCOLOR="#FFFFFF" TEXT="#000000" LINK="#000099" VLINK="#336699"
ALINK="#CCCCCC" MARGINWIDTH="0" MARGINHEIGHT="0"        LEFTMARGIN="0" TOPMARGIN="0">
                                <TABLE BORDER="0" CELLPADDING="0" CELLSPACING="0" WIDTH="750">
                                    <TR>
                                        <TD WIDTH="750">
                                            <IMG SRC="http://futureair.devpost.com/informants/futureair/futureair.jpg"
BORDER="0" ALT="FutureAir"/><BR/>
                                        </TD>
                                    </TR>
                                    <TR>
                                        <TD>
                                            <TABLE WIDTH="750" BORDER="0" CELLPADDING="0"
CELLSPACING="0">
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD COLSPAN="2" BGCOLOR="#e3feff">
                                                        <FONT SIZE="3" FACE="Arial, Helvetica, Sans Serif">
                                                            <B>Itinerary Change</B>
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Ticket
Holder:</FONT>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            <xsl_default:value-of select="name"/>
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Airline:</FONT>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="airline"/>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Flight
Number:</FONT>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="flightnum"/>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">From:</FONT>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="departname"/>
(<xsl_default:value-of select="departcode"/>) to <xsl_default:value-of select="destname"/> (<xsl_default:value-of
select="destcode"/>)</FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="departdate"/>
                              <xsl_default:value-of select="departtime"/>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD COLSPAN="2" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
```

```
                                                            Has been changed, please contact reservations at 800-
555-1234 for more information.
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                            </TABLE>
                                        </TD>
                                    </TR>
                                    <TR>
                                        <TD>
                                            <BR/>
                                            <CENTER>
                                                <FONT SIZE="1" FACE="Arial, Helvetica, Sans Serif">&#xA9;2000
FutureAir</FONT>
                                            </CENTER>
                                        </TD>
                                    </TR>
                                </TABLE>
                            </BODY>
                        </HTML>
                    </xsl_default:template>
                </xsl_default:stylesheet>
            </event-xsl-endpoint>

            <event-xsl-endpoint endpoint-type="fax">
                <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
                    <xsl_default:template match="/">
                        <xsl_default:apply-templates select="flightchange"/>
                    </xsl_default:template>
                    <xsl_default:template match="flightchange">
                        <HTML>
                            <HEAD>
                                <TITLE>Reservations - FutureAir</TITLE>
                            </HEAD>
                            <BODY BGCOLOR="#FFFFFF" TEXT="#000000" LINK="#000099" VLINK="#336699"
ALINK="#CCCCCC" MARGINWIDTH="0" MARGINHEIGHT="0"    LEFTMARGIN="0" TOPMARGIN="0">
                                <TABLE BORDER="0" CELLPADDING="0" CELLSPACING="0" WIDTH="750">
                                    <TR>
                                        <TD WIDTH="750">

                                        </TD>
                                    </TR>
                                    <TR>
                                        <TD>
                                            <TABLE WIDTH="750" BORDER="0" CELLPADDING="0"
CELLSPACING="0">
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD COLSPAN="2" BGCOLOR="#e3feff">
                                                        <FONT SIZE="3" FACE="Arial, Helvetica, Sans Serif">
                                                            <B>Itinerary Change</B>
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Ticket
Holder:</FONT>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            <xsl_default:value-of select="name"/>
                                                        </FONT>
```

```
        </TD>
</TR>
<TR>
        <TD WIDTH="10" BGCOLOR="#e3feff">
                <BR/>
        </TD>
        <TD WIDTH="100" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Airline:</FONT>
        </TD>
        <TD WIDTH="640" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                        <xsl_default:value-of select="airline"/>
                </FONT>
        </TD>
</TR>
<TR>
        <TD WIDTH="10" BGCOLOR="#e3feff">
                <BR/>
        </TD>
        <TD WIDTH="100" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Flight
Number:</FONT>
        </TD>
        <TD WIDTH="640" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                        <xsl_default:value-of select="flightnum"/>
                </FONT>
        </TD>
</TR>
<TR>
        <TD WIDTH="10" BGCOLOR="#e3feff">
                <BR/>
        </TD>
        <TD WIDTH="100" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">From:</FONT>
        </TD>
        <TD WIDTH="640" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                        <xsl_default:value-of select="departname"/>
(<xsl_default:value-of select="departcode"/>) to <xsl_default:value-of select="destname"/> (<xsl_default:value-of
select="destcode"/>)</FONT>
        </TD>
</TR>
<TR>
        <TD WIDTH="10" BGCOLOR="#e3feff">
                <BR/>
        </TD>
        <TD WIDTH="100" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
        </TD>
        <TD WIDTH="640" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                        <xsl_default:value-of select="departdate"/>
                        <xsl_default:value-of select="departtime"/>
                </FONT>
        </TD>
</TR>
<TR>
        <TD WIDTH="10" BGCOLOR="#e3feff">
                <BR/>
        </TD>
        <TD WIDTH="100" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
        </TD>
        <TD WIDTH="640" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
        </TD>
</TR>
```

```
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD COLSPAN="2" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            Has been changed, please contact reservations at 800-
555-1234 for more information.

                                                        </FONT>
                                                    </TD>
                                                </TR>
                                            </TABLE>
                                        </TD>
                                    </TR>
                                    <TR>
                                        <TD>
                                            <BR/>
                                            <CENTER>
                                                <FONT SIZE="1" FACE="Arial, Helvetica, Sans Serif">&#xA9;2000
FutureAir</FONT>
                                            </CENTER>
                                        </TD>
                                    </TR>
                                </TABLE>
                            </BODY >
                        </HTML>
                    </xsl_default:template>
                </xsl_default:stylesheet>
            </event-xsl-endpoint>

            <event-xsl-endpoint endpoint-type="text-email">
                <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
                    <xsl_default:template match="/">
                        <xsl_default:apply-templates select="flightchange"/>
                    </xsl_default:template>
                    <xsl_default:template match="flightchange">
FutureAir

Itinerary Change
Ticket Holder:  <xsl_default:value-of select="name"/>
Airline:    <xsl_default:value-of select="airline"/>
Flight Number: <xsl_default:value-of select="flightnum"/>

Has changed. Please contact reservations at 800-555-1234.

Copyright 2000 FutureAir
</xsl_default:template>
                </xsl_default:stylesheet>
            </event-xsl-endpoint>
        </event-class>

        <event-class event-name="Itinerary Confirmation" display-name="Itinerary Confirmation">
            <event-payload-schema>
                <Schema name="flightconfirm.xdr" xmlns="urn:schemas-microsoft-com:xml-data" xmlns:dt="urn:schemas-
microsoft-com:datatypes">
                    <ElementType name="flightconfirm" content="eltOnly" order="seq">
                        <AttributeType name="xmlns" dt:type="string" required="yes"/>
                        <attribute type="xmlns"/>
                        <element type="name"/>
                        <element type="airline"/>
                        <element type="destname"/>
                        <element type="destcode"/>
                        <element type="departname"/>
                        <element type="departcode"/>
                        <element type="departtime"/>
                        <element type="departdate"/>
                        <element type="flightnum"/>
                        <element type="reason"/>
```

```
          </ElementType>
          <ElementType name="name" content="textOnly"/>
          <ElementType name="airline" content="textOnly"/>
          <ElementType name="destname" content="textOnly"/>
          <ElementType name="destcode" content="textOnly"/>
          <ElementType name="departname" content="textOnly"/>
          <ElementType name="departcode" content="textOnly"/>
          <ElementType name="departtime" content="textOnly"/>
          <ElementType name="departdate" content="textOnly"/>
          <ElementType name="flightnum" content="textOnly"/>
          <ElementType name="reason" content="textOnly"/>
        </Schema>
      </event-payload-schema>

      <event-xsl-default>
        <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
          <xsl_default:template match="/">
            <xsl_default:apply-templates select="flightconfirm"/>
          </xsl_default:template>
          <xsl_default:template match="flightconfirm">
Itinerary Confirmation - Ticket Holder: <xsl_default:value-of select="name"/> Airline: <xsl_default:value-of select="airline"/> Flight
Number: <xsl_default:value-of select="flightnum"/>
          </xsl_default:template>
        </xsl_default:stylesheet>
      </event-xsl-default>

      <event-xsl-endpoint endpoint-type="html-email">
        <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
          <xsl_default:template match="/">
            <xsl_default:apply-templates select="flightconfirm"/>
          </xsl_default:template>
          <xsl_default:template match="flightconfirm">
            <HTML>
              <HEAD>
                <TITLE>Reservations - FutureAir</TITLE>
                </HEAD>
                <BODY BGCOLOR="#FFFFFF" TEXT="#000000" LINK="#000099" VLINK="#336699"
ALINK="#CCCCCC" MARGINWIDTH="0" MARGINHEIGHT="0"        LEFTMARGIN="0" TOPMARGIN="0">
                  <TABLE BORDER="0" CELLPADDING="0" CELLSPACING="0" WIDTH="750">
                    <TR>
                      <TD WIDTH="750">
                        <IMG
SRC="http://futureair.devpost.com/informants/futureair/futureair.jpg" BORDER="0" ALT="FutureAir"/><BR/>
                      </TD>
                    </TR>
                    <TR>
                      <TD>
                        <TABLE WIDTH="750" BORDER="0" CELLPADDING="0"
CELLSPACING="0">
                          <TR>
                            <TD WIDTH="10" BGCOLOR="#e3feff">
                              <BR/>
                            </TD>
                            <TD COLSPAN="2" BGCOLOR="#e3feff">
                              <FONT SIZE="3" FACE="Arial, Helvetica, Sans Serif">
                                <B>Flight Confirmation</B>
                              </FONT>
                            </TD>
                          </TR>
                          <TR>
                            <TD WIDTH="10" BGCOLOR="#e3feff">
                              <BR/>
                            </TD>
                            <TD WIDTH="100" BGCOLOR="#e3feff">
                              <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Ticket Holder:</FONT>
                            </TD>
                            <TD WIDTH="640" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                    <xsl_default:value-of select="name"/>
                </FONT>
            </TD>
        </TR>
        <TR>
            <TD WIDTH="10" BGCOLOR="#e3feff">
                <BR/>
            </TD>
            <TD WIDTH="100" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Airline:</FONT>
            </TD>
            <TD WIDTH="640" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                    <xsl_default:value-of select="airline"/>
                </FONT>
            </TD>
        </TR>
        <TR>
            <TD WIDTH="10" BGCOLOR="#e3feff">
                <BR/>
            </TD>
            <TD WIDTH="100" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Flight Number:</FONT>
            </TD>
            <TD WIDTH="640" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                    <xsl_default:value-of select="flightnum"/>
                </FONT>
            </TD>
        </TR>
        <TR>
            <TD WIDTH="10" BGCOLOR="#e3feff">
                <BR/>
            </TD>
            <TD WIDTH="100" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">From:</FONT>
            </TD>
            <TD WIDTH="640" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                    <xsl_default:value-of select="departname"/>
(<xsl_default:value-of select="departcode"/>) to <xsl_default:value-of select="destname"/>      (<xsl_default:value-of
select="destcode"/>)</FONT>
            </TD>
        </TR>
        <TR>
            <TD WIDTH="10" BGCOLOR="#e3feff">
                <BR/>
            </TD>
            <TD WIDTH="100" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
            </TD>
            <TD WIDTH="640" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                    <xsl_default:value-of select="departdate"/>
                    <xsl_default:value-of select="departtime"/>
                </FONT>
            </TD>
        </TR>
        <TR>
            <TD WIDTH="10" BGCOLOR="#e3feff">
                <BR/>
            </TD>
            <TD WIDTH="100" BGCOLOR="#e3feff">
                <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
            </TD>
            <TD WIDTH="640" BGCOLOR="#e3feff">
```

```
                              <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                            </TD>
                          </TR>
                          <TR>
                            <TD WIDTH="10" BGCOLOR="#e3feff">
                              <BR/>
                            </TD>
                            <TD COLSPAN="2" BGCOLOR="#e3feff">
                              <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                For changes to this itinerary, please call
reservations at 800-555-1234
                              </FONT>
                            </TD>
                          </TR>
                        </TABLE>
                      </TD>
                    </TR>
                    <TR>
                      <TD>
                        <BR/>
                        <CENTER>
                          <FONT SIZE="1" FACE="Arial, Helvetica, Sans
Serif">&#xA9;2000 FutureAir</FONT>
                        </CENTER>
                      </TD>
                    </TR>
                  </TABLE>
                </BODY>
            </HTML>
          </xsl_default:template>
        </xsl_default:stylesheet>
      </event-xsl-endpoint>

      <event-xsl-endpoint endpoint-type="browser">
        <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
          <xsl_default:template match="/">
            <xsl_default:apply-templates select="flightconfirm"/>
          </xsl_default:template>
          <xsl_default:template match="flightconfirm">
            <HTML>
              <HEAD>
                <TITLE>Reservations - FutureAir</TITLE>
              </HEAD>
              <BODY BGCOLOR="#FFFFFF" TEXT="#000000" LINK="#000099" VLINK="#336699"
ALINK="#CCCCCC" MARGINWIDTH="0" MARGINHEIGHT="0"      LEFTMA RGIN="0" TOPMARGIN="0">
                <TABLE BORDER="0" CELLPADDING="0" CELLSPACING="0" WIDTH="750">
                  <TR>
                    <TD WIDTH="750">
                      <IMG SRC="http://futureair.devpost.com/informants/futureair/futureair.jpg"
BORDER="0" ALT="FutureAir"/><BR/>
                    </TD>
                  </TR>
                  <TR>
                    <TD>
                      <TABLE WIDTH="750" BORDER="0" CELLPADDING="0"
CELLSPACING="0">
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD COLSPAN="2" BGCOLOR="#e3feff">
                            <FONT SIZE="3" FACE="Arial, Helvetica, Sans Serif">
                              <B>Flight Confirmation</B>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Ticket
Holder:</FONT>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="name"/>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Airline:</FONT>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="airline"/>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Flight
Number:</FONT>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="flightnum"/>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">From:</FONT>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="departname"/>
(<xsl_default:value-of select="departcode"/>) to <xsl_default:value-of select="destname"/> (<xsl_default:value-of
select="destcode"/>)</FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
                            <BR/>
                          </TD>
                          <TD WIDTH="100" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                          </TD>
                          <TD WIDTH="640" BGCOLOR="#e3feff">
                            <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                              <xsl_default:value-of select="departdate"/>
                              <xsl_default:value-of select="departtime"/>
                            </FONT>
                          </TD>
                        </TR>
                        <TR>
                          <TD WIDTH="10" BGCOLOR="#e3feff">
```

```
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD COLSPAN="2" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            For changes to this itinerary, please call reservations at
800-555-1234

                                                        </FONT>
                                                    </TD>
                                                </TR>
                                            </TABLE>
                                        </TD>
                                    </TR>
                                    <TR>
                                        <TD>
                                            <BR/>
                                            <CENTER>
                                                <FONT SIZE="1" FACE="Arial, Helvetica, Sans Serif">&#xA9;2000
FutureAir</FONT>
                                            </CENTER>
                                        </TD>
                                    </TR>
                                </TABLE>
                            </BODY>
                        </HTML>
                    </xsl_default:template>
                </xsl_default:stylesheet>
            </event-xsl-endpoint>

            <event-xsl-endpoint endpoint-type="fax">
                <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
                    <xsl_default:template match="/">
                        <xsl_default:apply-templates select="flightconfirm"/>
                    </xsl_default:template>
                    <xsl_default:template match="flightconfirm">
                        <HTML>
                            <HEAD>
                                <TITLE>Reservations - FutureAir</TITLE>
                            </HEAD>
                            <BODY BGCOLOR="#FFFFFF" TEXT="#000000" LINK="#000099" VLINK="#336699"
ALINK="#CCCCCC" MARGINWIDTH="0" MARGINHEIGHT="0"        LEFTMARGIN="0" TOPMARGIN="0">
                                <TABLE BORDER="0" CELLPADDING="0" CELLSPACING="0" WIDTH="750">
                                    <TR>
                                        <TD WIDTH="750">

                                        </TD>
                                    </TR>
                                    <TR>
                                        <TD>
                                            <TABLE WIDTH="750" BORDER="0" CELLPADDING="0"
CELLSPACING="0">
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD COLSPAN="2" BGCOLOR="#e3feff">
                                                        <FONT SIZE="3" FACE="Arial, Helvetica, Sans Serif">
                                                            <B>Flight Confirmation</B>
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Ticket
Holder:</FONT>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            <xsl_default:value-of select="name"/>
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">Airline:</FONT>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            <xsl_default:value-of select="airline"/>
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">Flight
Number:</FONT>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            <xsl_default:value-of select="flightnum"/>
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans
Serif">From:</FONT>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            <xsl_default:value-of select="departname"/>
(<xsl_default:value-of select="departcode"/>) to <xsl_default:value-of select="destname"/> (<xsl_default:value-of
select="destcode"/>)</FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            <xsl_default:value-of select="departdate"/>
                                                            <xsl_default:value-of select="departtime"/>
                                                        </FONT>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD WIDTH="100" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                                                    </TD>
                                                    <TD WIDTH="640" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif"/>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD WIDTH="10" BGCOLOR="#e3feff">
                                                        <BR/>
                                                    </TD>
                                                    <TD COLSPAN="2" BGCOLOR="#e3feff">
                                                        <FONT SIZE="2" FACE="Arial, Helvetica, Sans Serif">
                                                            For changes to this itinerary, please call reservations at
800-555-1234

                                                        </FONT>
                                                    </TD>
                                                </TR>
                                            </TABLE>
                                        </TD>
                                    </TR>
                                    <TR>
                                        <TD>
                                            <BR/>
                                            <CENTER>
                                                <FONT SIZE="1" FACE="Arial, Helvetica, Sans Serif">&#xA9;2000
FutureAir</FONT>
                                            </CENTER>
                                        </TD>
                                    </TR>
                                </TABLE>
                            </BODY>
                        </HTML>
                    </xsl_default:template>
                </xsl_default:stylesheet>
            </event-xsl-endpoint>

            <event-xsl-endpoint endpoint-type="text-email">
                <xsl_default:stylesheet xmlns="http://www.w3.org/TR/REC-html40"
xmlns:xsl_default="http://www.w3.org/TR/WD-xsl">
                    <xsl_default:template match="/">
                        <xsl_default:apply-templates select="flightcconfirm"/>
                    </xsl_default:template>
                    <xsl_default:template match="flightconfirm">
FutureAir

Itinerary Confirmation
Ticket Holder:  <xsl_default:value-of select="name"/>
Airline:        <xsl_default:value-of select="airline"/>
Flight Number:  <xsl_default:value-of select="flightnum"/>
From:           <xsl_default:value-of select="departname"/> (<xsl_default:value-of select="departcode"/>) to <xsl_default:value-of
select="destname"/> (<xsl_default:value-of select="destcode"/>)
Date:           <xsl_default:value-of select="departdate"/> at <xsl_default:value-of select="departtime"/>

For changes, please call reservations at 800-555-1234

Copyright 2000 FutureAir
</xsl_default:template>
                </xsl_default:stylesheet>
            </event-xsl-endpoint>
        </event-class>

    </activity-class>
```

```
</smSmartMessageStylesheet>
```

7 Appendix C – Sample HTML

The following examples illustrate how to send a SmartMessage using Active Server Pages (ASP) or JavaScript from both the client and server.

7.1 Active Server Pages

```
<%@ Language=VBScript %>
<%Option Explicit%>
<%
Dim strXMLFile              'As String
Dim xmlDoc              'As MSXML2.DOMDocument
Dim xmlHttp             'As MSXML2.DOMDocument
Dim bOK                 'As Boolean
Dim fso, f
Dim temp

Const ForReading = 1

On Error Resume Next

strXMLFile = Server.MapPath("testxml/smartmsgs/flightcan.xml")

Set fso = CreateObject("Scripting.FileSystemObject")
Set f = fso.OpenTextFile(strXMLFile, ForReading)

set xmlHttp = Server.CreateObject("MSXML2.XMLHTTP")

xmlHttp.open "POST", "http://service_provider_URL_goes_here.com/submit.asp", false[1]

temp = f.ReadAll

xmlHttp.send temp

If xmlHttp.Status <> "200" Then
        Response.Write "Error HTTP POST " & xmlHttp.Status & ", " & xmlHttp.StatusText & "<BR>"
        Response.Write "ResponseText " & xmlHttp.ResponseText & "<BR>"
Else
        Response.Write "Message Sent Successfully." & vbCrLf

End If


%>

<HTML>
<HEAD>
<META NAME="GENERATOR" Content="Microsoft Visual Studio 6.0">
</HEAD>
<BODY>
<P>&nbsp;</P>
</BODY>
</HTML>
```

[1] Please contact your service provider for the correct URL.

7.2 JavaScript

```
var httpOb = new ActiveXObject("Microsoft.XMLHTTP");

httpOb.Open("POST","http://localhost/postCust.asp", false);
var customer = template.XMLDocument.documentElement;

customer.childNodes.item(0).text = custName.value;
customer.childNodes.item(1).text = custRelation.value;
customer.childNodes.item(2).text = custClass.value;

httpOb.send(template.XMLDocument);
```

8 Appendix D – Glossary

[TO BE COMPLETED]

Activity Class

EndPoint

Event Class

Informant

Informant Stylesheet

SmartMessage

SmartMessage Stylesheet

Recipient