A P I   S p e c i f i c a t i o n

Royal Mail Group

Mail Piece Event Submission API (SOAP)

Technical User Guide

This API specification details the
requirements for integrating with the Mail
Piece Event Submission API (SOAP). It
specifically covers how the Mail Piece Event
Submission API can be used by business
partners to send Event Tracking information
to Royal Mail and provides the technical
information to build this integration.

Version 1.1

Contents

1 Document Control

1.1 Terms and Abbreviations

Term	Meaning
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol over SSL or TLS
IP	Internet Protocol
SOAP	Originally an acronym for Simple Object Access Protocol, is a protocol specification for exchanging structured information in the implementation of web services
WSDL	Web Services Description Language
XML	Extensible Markup Language
MPE	Mail Piece Event

Table 1 – Terms and Abbreviations

1.2 Version History

Version	Date	Author	Notes
1.0	07/10/2016	RMG	Initial version
1.1	11/10/2016	RMG	Updated following internal review.

Table 2 – Document Version History

2 Overview

The Mail Piece Event Submission API provides the functionality for postal partners to submit event tracking information for mail items. The web service will be consumed by RMG postal partner operators during mail processing and delivery operations.

There are no costs to partners for using the Mail Piece Event Submission API, however partners' own development costs must be covered by the partner developing the solution. Royal Mail will not accept any responsibility for these development, implementation and testing costs.

Partners should address initial enquiries regarding development of systems for these purposes to their account handler.

3 Purpose

This document provides Royal Mail customers with guidelines and detailed specifications for integrating with the Mail Piece Event Submission API (SOAP) web service.

The document details:

- The specification for the web service interface for customers who want to access Mail Piece Event Submission functionality for their mail items

- Description of errors the API can return

- Non-functional characteristics of the API including response times, service availability and security considerations

This document is primarily intended to be read by developers and other technical roles involved with integrating systems' with the Mail Piece Event Submission API.

4 Introduction to Mail Piece Event Submission API

4.1 Overview

The Mail Piece Event Submission API provides a single operation for submitting Mail Item Tracking Event information to Royal Mail. The mail item barcode and associated meta-data can be provided to the Royal Mail tracking system for processing.

4.2 Interface Components

Please see Figure 1 below for a graphical representation of the interface between Royal Mail and partners for Mail Piece Event Submission API. This document covers what information is to be exchanged, how this information is structured and the means by which it is transferred.
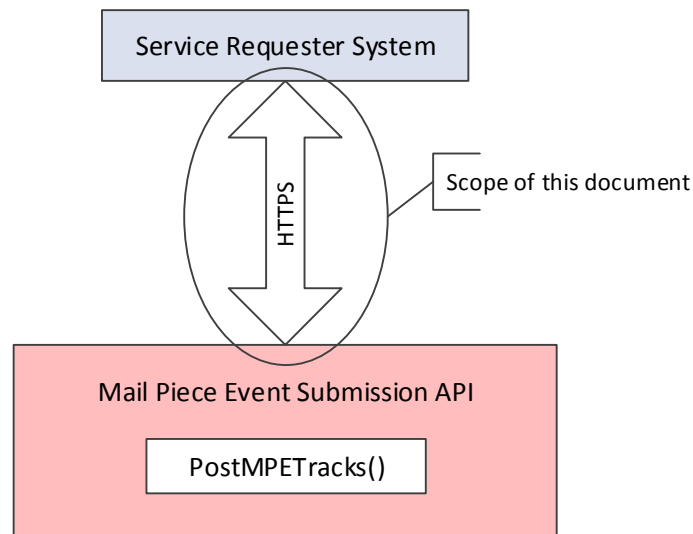

Figure 1 – Mail Piece Event Submission API

5 Integrating with the Mail Piece Event Submission API

The high-level process associated with integrating with the Mail Piece Event Submission API is represented and described in the diagram below.
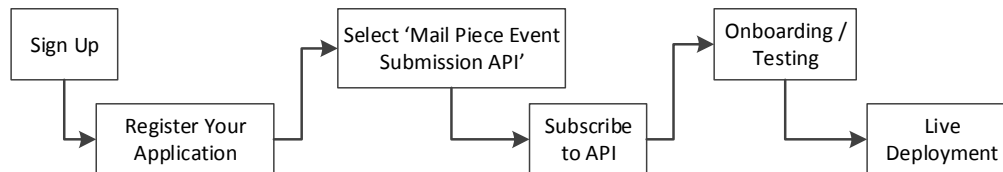

Figure 2 – Process for Integrating with the API

Access to the service is managed through Royal Mail Group's API Management system.

New users of the system will need to:

1. Sign up for an account and accept the terms and conditions on the Royal Mail API (Developer) Portal.

2. Register the 'application' which will be calling the API. When the application is registered, it will be assigned a unique system-generated Client ID and Secret which is needed to securely access the API. It is important that these credentials are noted and securely stored.

3. Request to subscribe to the API. This will result in an e-mail being automatically generated and sent to the Royal Mail Customer Solutions team.

4. Once approved, testing can be performed against the API in a sandboxed onboarding environment that allows you to test the integration.

5. Once all required testing has completed in the onboarding environment, access to the Live production system will be provided at a mutually agreed date/time.

Existing users who already have an account with Royal Mail's API Management system will need to perform step 2 onwards if the application accessing the API is different to any currently registered applications. If the application accessing the API is already registered, existing customers will need to perform step 3 onwards.

5.1 Terms & Conditions

You must accept the Royal Mail Terms and Conditions when creating your customer account. These cover the ways in which the service may be used and any integration activities must abide by these.

Of particular note to developers:

- The onboarding environment is available 24x7 and is a small scale system for functional testing only. It may not be used for performance testing.
- Royal Mail expects postal partners to use the service in a responsible way; this includes refraining from applying significant load to the API.

5.2 API Access

Both onboarding and live access to the API is obtained via the following URL:

https://api.royalmail.net/mailpieces/events/v1

Please note that the Client ID and Secret must be provided in the HTTP header of all API requests otherwise access to the API will be rejected and a HTTP 401 (Unauthorised) will be returned. The Client ID and Secret are obtained by registering an application on the Royal Mail API (Developer) Portal.

You must complete all required test activities in the onboarding environment prior to being permitted access to the live environment by the Royal Mail Customer Solutions Team. The onboarding test environment is available 24x7, has the same functionality as live (though with a reduced capacity) and allows you to test your integration.

You will be provided with a contact in Royal Mail who will take you through the onboarding process.

Please see section 9 for a full list of technical and business error codes which are returned from this API.

5.3 Live Deployment

Once you have completed all required testing in the onboarding environment you will be provided with access to the live production system.

5.4 API Versioning

Royal Mail is continuously working to improve its technology, and as part of this process updates to the services provided may on occasion necessitate a new WSDL version. Royal Mail will look to maintain three versions of the WSDL; as new versions are introduced, previous versions move down the stack until they are ultimately removed completely:

- Latest version

- Previous version

- Deprecated version

Postal partners will always be encouraged to integrate against the latest version as this will give them the longest stable period without the need to change, but if they have already

begun integration activities when a new version is released then they will be able to integrate against the previous version. Postal partners should not integrate against the deprecated version.

6 Mail Piece Event Submission Services

6.1 Business Services

The Mail Piece Event Submission API is a service offered to allow postal partners to submit mail piece event records to Royal Mail. The table below provides an overview of the business services that are supported by this interface.

Business Service	Web Service Operation	Description	Technology	Conversation Style
Post Mail Piece Event (MPE) Tracks	PostMPETracks	The string representation of a Mail Item Barcode is submitted, along with associated event Meta Data to record in the Royal Mail tracking systems.	SOAP over HTTPS	Synchronous Request / Response

Table 3 – Business Services

7 Message Structure

The structure of the Mail Piece Event Submission API SOAP request and response messages is represented by the diagram below.
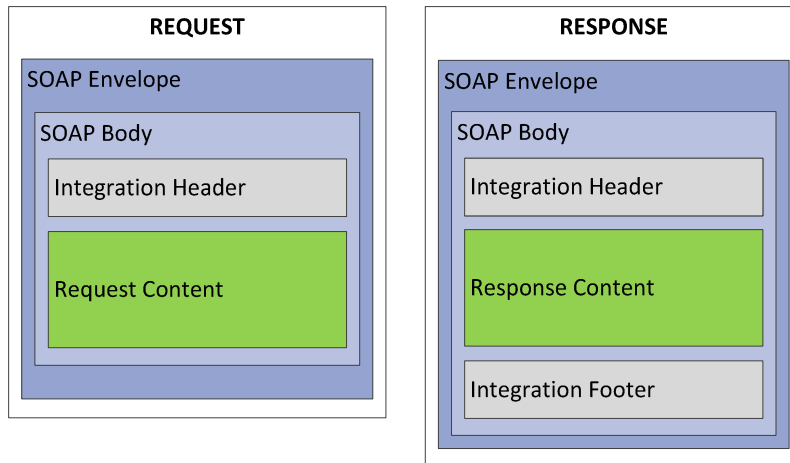
Figure 3 – API Structure

The Mail Piece Event Submission API operation (defined in section 6.1) is defined as a SOAP operation, with separate request / response message parts. Technical details are documented in the WSDL and XSDs which accompany this document.

Within the SOAP body tags, each request or response message is supplemented with an integrationHeader element and is described in sections 8.4 and 8.6 respectively. Response messages may contain an integrationFooter element that contains details of any errors or warnings and this is described in section 8.7.1.

The definition of the data types used within the elements section of each service call is defined within the schemas in section 8.2.

8 Message Definition and Schemas

8.1 Notation

The API elements described in this section are constructed using Royal Mail's Enterprise Canonical Data Model. The schema structures are described in XMLSpy notation with graphical representation meanings as explained in the table below.

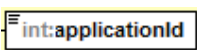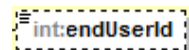| Graphical Representation	Meaning
int:applicationId	A solid line around an element indicates it is a mandatory field that will/must always be present.
int:endUserId	A dashed line around an element indicates the field is optional and may or may not be present. An optional element is one that indicates the data and enclosing XML tags may or may not be present in either a request or response.
(sequence symbol)	The *sequence* identifier represents an ordered set of elements.
(choice symbol)	The *choice* identifier represents a selection of elements.

Figure 4 – Notation used to describe this API

8.2 WSDL and Schemas

The WSDL for Mail Piece Event Submission API can be found on the 'Mail Piece Event Submission API' page on the 'Royal Mail APIs' section of the <u>Royal Mail API (Developer) Portal</u>.

The following table lists the technical documents that should be referenced for the Mail Piece Event Submission API. The XML schema documents themselves are provided in supporting files. Each schema file contains descriptions of every type using the "xs:documentation" element.

XML Schema File	Description
Mail Piece Event Submission API_v1.0.wsdl	WSDL describing the functionality offered by the Mail Piece Event Submission API
Mail Piece Event Submision API/V1 (defined in WSDL file)	Wrapper XSD for Mail Piece Event Submission API operation.
External Mail Piece Event v1.0 (defined in WSDL file)	Defines the request message used by the Mail Piece Event Submission API including Barcode information and event meta data.
FaultEx (defined in WSDL file)	XSD containing standard fault definition.
Core	Royal Mail Group schema which defines common

(defined in WSDL file)	objects such as "address" which are complex types with a defined structure based on Royal Mail Group defined simple data types as well as reference data types.
Royal Mail Datatypes (defined in WSDL file)	Royal Mail Group defined simple types that are commonly required such as "date" and "name". This schema is the foundation for the other schema files.

Table 4 – API Schemas

8.3 HTTP Header Information

8.3.1 Description

The purpose of the HTTP header is to support security and logging functionally within the Royal Mail systems and it is mandatory that it is provided in the request message.

8.3.2 Request Message

All service requests to this API will be authorised in accordance with the Client ID and Secret passed in the HTTP headers. Please see table below for the elements which need to be populated in the HTTP header.

Parameter	Optional	Description
Accept	No	This attribute accepts requests in application/soap+xml format.
SOAPAction	No	Used to indicate the intent of the SOAP HTTP request.
X-IBM-Client-Id	No	Similar to a client username. Required to access the API.
X-IBM-Client-Secret	No	Similar to a client password. Required to access the API.

Table 5 – HTTP Header Information in the API Request

8.3.3 Example Data

Example request data for the HTTP Header:

Parameter	Value
Accept	application/soap+xml
SOAPAction	"http://www.royalmailgroup.com/api/MPE-API/V1/PostMPETracks"
X-IBM-Client-Id	f0e4f151-2041-4df2-b31d
X-IBM-Client-Secret	kT0lB2dK0wF6mK0rD8sD7oE7vP2mG7l

Table 6 – Example HTTP Header Information for API Request

8.4 SOAP Header (Request)

8.4.1   integrationHeader

The purpose of this element is to support security and logging functionally within Royal Mail systems and it is mandatory that it is provided in all request messages. The integrationHeader element will also be present in all response messages.

Please see diagram below for a representation of the integrationHeader element:
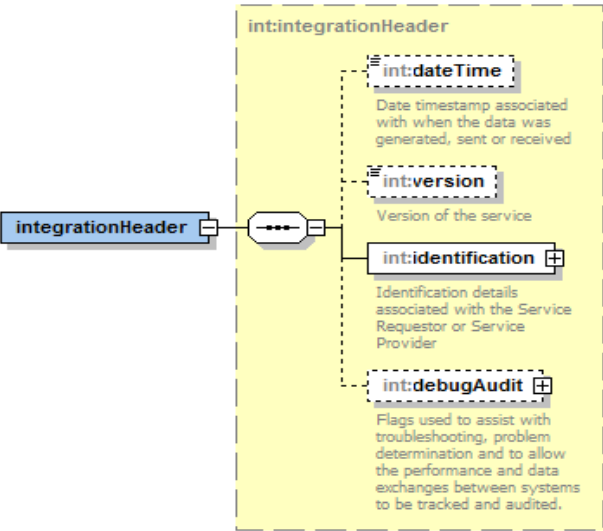
Figure 5 – integrationHeader Structure

All elements defined below are relative to the integrationHeader element in the request message.

Element	Occurs	Data Type	Description
dateTime	0-1	dateTime	This should be populated with the date timestamp when the message was generated.
version	0-1	decimal	The version of the API currently being used (currently 1.0).
identification	1-1	element	Identification element used to hold the identity and transaction details associated with the customer. See identification table below for structure.
debugAudit	0-1	boolean	Not used in the Mail Piece Event Submission API implementation.

Table 8 – integrationHeader Element (Request)

Please see diagram below for a representation of the identification element:
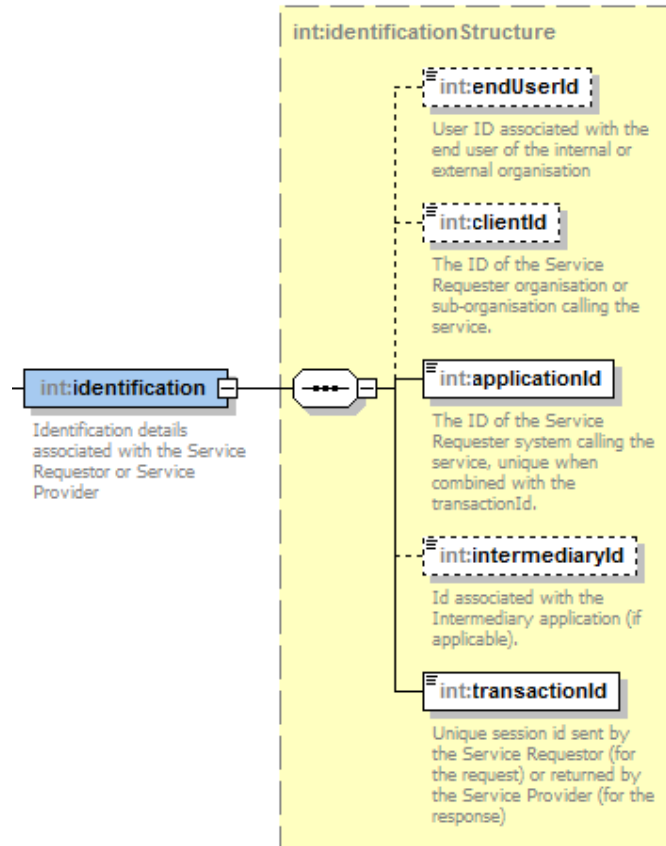
Figure 6 – identification Structure

All elements below are relative to the identification element in the integrationHeader.

Element	Occurs	Data Type	Description
endUserId	0-1	identifier	Not used in the Mail Piece Event Submission API implementation.
clientId	0-1	Identifier	Not used in the Mail Piece Event Submission API implementation.
applicationId	1-1	identifier	This is the ten digit Customer Account Number allocated by Royal Mail
intermediaryId	0-1	identifier	Not used in the Mail Piece Event Submission API implementation.
transactionId	1-1	identifier	This is a unique number used to identify the transaction as provided by the customer system. Any value can be provided in this field but must contain only the characters 'a-z', 'A-Z', '0-9', '/' and '-'. It allows the consuming application to correlate the response message to its request.

Table 9 – integrationHeader identification Element

8.5 SOAP Body (Request): PostMPETracksRequest

The behaviour of the PostMPETracks operation is to take the string representation of a Mail Item Barcode, along with

associated event Meta Data, and to record this in the Royal Mail tracking systems. To invoke the PostMPETracks operation, the customer system must construct a SOAP request message as described in section 7.

The PostMPETracksRequest element is contained in the SOAP Body and contains a list of Mail Piece Event-BarcodeScan elements.

Please see diagram below for a representation of the PostMPETracksRequest message:
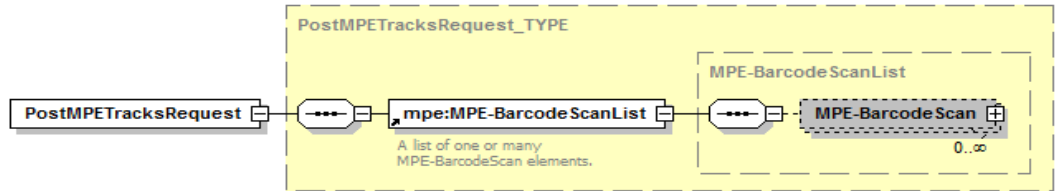
Figure 7 – PostMPETracksRequest element Structure

All elements in the table below are relative to the root PostMPETracksRequest element.

Element	Occurs	Data Type	Description
MPE-BarcodeScanList	0..1	Element	A list of one or many MPE-BarcodeScan elements.
MPE-BarcodeScanList\ MPE-BarcodeScan	0..n	Element	A container for MPE-BarcodeScan data. Please see section 8.5.1 for more information.

Table 7 – PostMPETracksRequest Element

8.5.1   MPE-BarcodeScan

The MPE-BarcodeScan element acts as a container for the mail items scanned and is represented by the diagram below.

MPE-BarcodeScan

0..∞

MPE-BarcodeScan

Operator
The postal operator that captured the Mail Piece Event. ID and name taken from UPU code list 118 - http://www.upu.int/uploads/tx _sbdownloader/118.txt

EventCode
Code denoting the type of Mail Piece Event that has been captured. A full list of possible codes can be provided by RMG on request.

EventDescription
A description of the Mail Piece Event that has been captured.

EventTimestamp
The date and time at which the Mail Piece Event was captured.

EventComment
This field is used to capture any additional comments about the event.

Barcode
Each Mail Piece should carry Barcodes which contain information about the item. All items should carry a One Dimensional Barcode and more recent items may also have a Two Dimensional barcode containing additional information.

ProofOfDelivery
This element will be used to carry Proof of Delivery evidence. This may be in the form of an embedded SVG image or a url to an external image.

AlternateDeliveryLocation
This element provides fields for capturing a delivery to an alternate location, either to a neighbour or a safe place.

Extensions
The extensions element is provided to allow additional fields to be sent in the future without requiring an update to the Schema.
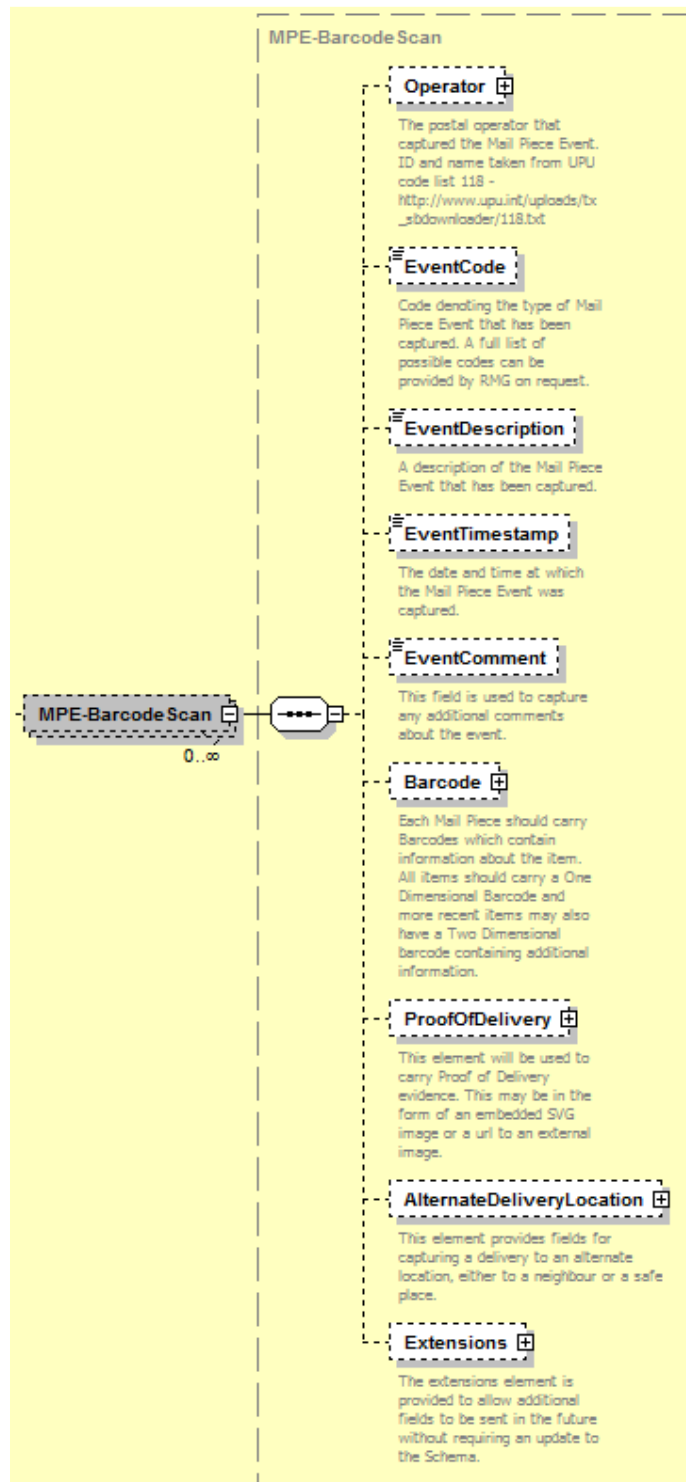
Figure 8 – MPE-BarcodeScan element Structure

All elements in the table below are related to MPE-Barcode Scan element

Element	Occurs	Data Type	Description
Operator	0..1	Element	The postal operator that captured the Mail Piece Event. ID and name taken from UPU code list 118 - http://www.upu.int/uploads/tx_sbdownloader/118.txt
Operator/ID	0..1	Integer	The ID of the postal operator. 'Code' field from UPU code list 118.
Operator/Name	0..1	String	The name of the postal operator. '35-character name' field from UPU code list 118.
Operator/LocationID	0..1	String	The Location ID of the postal operator. (Royal Mail Group OBID code, provided by Royal Mail Group).
EventCode	0..1	String	Code denoting the type of Mail Piece Event that has been captured. A full list of possible codes can be provided by Royal Mail Group on request.
EventDecscription	0..1	String	A description of the Mail Piece Event that has been captured.
EventTimestamp	0..1	DateTime	The date and time at which the Mail Piece Event was captured.
EventComment	0..1	String	This field is used to capture any additional comments about the event.
Barcode	0..1	Element	Each Mail Piece should carry Barcodes which contain information about the item. All items should carry a One Dimensional Barcode and more recent items may also have a Two Dimensional barcode containing additional information.
Barcode/OneDBarcode	0..1	String	String representation of a UPU S10 Barcode.
Barcode/TwoDBarcode	0..1	String	String representation of a 2 dimensional Royal Mail Group B4AP Barcode.
ProofOfDelivery	0..1	Element	This element will be used to carry Proof of Delivery evidence. This may be in the form of an embedded SVG image or a url to an external image.
ProofOfDelivery /SignatoryName	0..1	String	Captures the name of the person who is signing for the delivery.
ProofOfDelivery/svg	0..1	Element	W3C Scalable Vector Graphics object.
ProofOfDelivery/svg@height	0..1	Integer	Specifies the height of the SVG image.
ProofOfDelivery/svg@width	0..1	Integer	Specifies the width of the SVG image.
ProofOfDelivery/svg/polyline	0..*	Element	W3C SVG Polyline element, an image constructed from multiple straight lines.
ProofOfDelivery/svg/polyline@style	0..1	String	The style attribute is used to define CSS properties for the polyline.
ProofOfDelivery/svg/polyline@points	0..1	String	A list of points that form the image, consisting of comma separated pairs of x/y coordinates, each pair separated by a space. eg. points="0,0 40,25 60,40"
ProofOfDelivery /ImageURL	0..1	String	A URL that identifes the location of an external image resource.
AlternateDeliveryLocation	0..1	Element	This element provides fields for capturing a delivery to an alternate location, either to a neighbour or a safe place.

Element	Occurs	Data Type	Description
AlternateDeliveryLocation/ DeliveryToNeighbour	0..1	Element	This element captures information representing a delivery to a neighbour.
AlternateDeliveryLocation/ DeliveryToNeighbour/Ne ighbourName	0..1	String	The name of the Neighbour who has taken delivery of the mail item.
AlternateDeliveryLocation/ DeliveryToNeighbour/Bu ildingName	0..1	String	Name for building address if used.
AlternateDeliveryLocation/ DeliveryToNeighbour/Bu ildingNumber	0..1	String	Number for building address if used.
AlternateDeliveryLocation/ DeliveryToNeighbour/Ad dressLine1	0..1	String	First of building address.
AlternateDeliveryLocation/ DeliveryToNeighbour/Ad dressLine2	0..1	String	Second of building address.
AlternateDeliveryLocation/ DeliveryToNeighbour/Ad dressLine3	0..1	String	Third of building address.
AlternateDeliveryLocation/ DeliveryToNeighbour/Ad dressLine4	0..1	String	Fourth of building address.
AlternateDeliveryLocation/ DeliveryToNeighbour/Ad dressLine5	0..1	String	Fifth of building address.
AlternateDeliveryLocation/ DeliveryToNeighbour/To wn	0..1	String	Town of building address.
AlternateDeliveryLocation/ DeliveryToNeighbour/Co unty	0..1	String	County of building address.
AlternateDeliveryLocation/ DeliveryToNeighbour/Po stcode	0..1	String	Postcode of building address.
AlternateDeliveryLocation/ DeliveryToNeighbour/Co untry	0..1	String	Country of building address.
AlternateDeliveryLocation/ DeliveryToSafePlace	0..1	Element	This element captures information representing a delivery to a safe place.
AlternateDeliveryLocation/ DeliveryToSafePlace/ SafePlaceFieldList	1..*	Element	One or more fields to describe a Safe Place captured as Name/Value pairs.
AlternateDeliveryLocation/ DeliveryToSafePlace/ SafePlaceFieldList/Nam e	1	String	Name used to uniquely identify a data field.

Element	Occurs	Data Type	Description
AlternateDeliveryLocation/ DeliveryToSafePlace/ SafePlaceFieldList/Value	1	String	Captures the value of the data field.
Extensions	0..1	Element	The extensions element is provided to allow additional fields to be sent in the future without requiring an update to the Schema.
Extensions /Extension	1..*	Element	One or more Extension elements capture additional information as Name/Value pairs.
Extensions /Extension/Name	1	String	Name used to uniquely identify a new data field.
Extensions /Extension/Value	1	String	Captures the value of a new data field.

Table 10 – MPE-BarcodeScan Element

8.5.2 Example Data

This section provides a simplified extract of sample data to illustrate the PostMPETracksRequest.

```xml
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://www.royalmailgroup.com/integration/core/V1" xmlns:v11="http://www.royalmailgroup.com/api/MPE-API/V1"
xmlns:v12="http://www.royalmailgroup.com/api/ExternalMPE/V1">
        <soapenv:Header>
                <v1:integrationHeader>
                        <v1:dateTime>2016-07-25T00:00:00</v1:dateTime>
                        <v1:version>1.2</v1:version>
                        <v1:identification>
                                <v1:applicationId>AppName</v1:applicationId>
                                <v1:transactionId>123456</v1:transactionId>
                        </v1:identification>
                </v1:integrationHeader>
        </soapenv:Header>
        <soapenv:Body>
                <v11:PostMPETracksRequest>
                        <v12:MPE-BarcodeScanList>
                                <v12:MPE-BarcodeScan>
                                        <v12:Operator>
                                                <v12:ID>111111</v12:ID>
                                                <v12:Name>Jersey Post Limited</v12:Name>
                                                <v12:LocationID>3932</v12:LocationID>
                                        </v12:Operator>
                                        <v12:EventCode>EVMEVT</v12:EventCode>
                                        <v12:EventDescription>?</v12:EventDescription>
                                        <v12:EventTimestamp>2016-07-25T00:00:00</v12:EventTimestamp>
                                        <v12:EventComment>?</v12:EventComment>
                                        <v12:Barcode>
                                                <v12:OneDBarcode>SE020000035GB</v12:OneDBarcode>
                                                <v12:TwoDBarcode>JGB
8215EA03002260B3D0000310100725031016010 SE020000035GB3 IG117PY GB EC1A1BBS</v12:TwoDBarcode>
                                        </v12:Barcode>
                                </v12:MPE-BarcodeScan>
                        </v12:MPE-BarcodeScanList>
                </v11:PostMPETracksRequest>
        </soapenv:Body>
</soapenv:Envelope>
```

8.6 SOAP Header (Response)

8.6.1   integrationHeader

The integrationHeader element will also be present in all response messages. Please see diagram in **Error! Reference source not found.** in section 8.4.1 for a representation of the integrationHeader element.

Element	Occurs	Data Type	Description
dateTime	0-1	dateTime	This is always returned and contains the same value provided in the request.
version	0-1	decimal	This is always returned and contains the same value provided in the request.
identification	1-1	element	This is always returned and contains the same values provided in the request.
debugAudit	0-1	boolean	Not used in the Mail Piece Event Submission API implementation.

Table 12 – integrationHeader Element (Response)

The integrationHeader contains an identification element which is described below.

Element	Occurs	Data Type	Description
endUserId	0-1	identifier	Not used in the Mail Piece Event Submission API implementation.
clientId	0-1	identifier	Not used in the Mail Piece Event Submission API implementation.
applicationId	1-1	identifier	This is always returned with the same ten digit Customer Account Number provided in the request.
intermediaryId	0-1	identifier	Not used in the Mail Piece Event Submission API implementation.
transactionId	1-1	identifier	This is always returned with the same unique transaction number provided in the request

Table 13 – intgrationHeader identification Element (Response)

8.7 SOAP Body (Response): PostMPETracksResponse

The response for a requested PostMPETracks operation is constructed as a SOAP response message as described in Section 7. The PostMPETracks Response element is contained in the SOAP Body element and contains an optional integrationFooter element (see section 8.7.1).
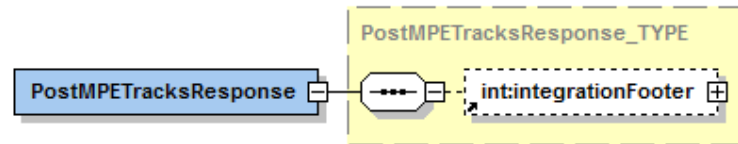

Figure 9 – PostMPETracksResponse element Structure

All elements in the table below are relative to the root PostMPETracksResponse element.

Element	Occurs	Data Type	Description
integrationFooter	0-1	element	Container for any error or warning messages associated with the operation. Please see section 8.7.1 for more information.

Table 11 – PostMPETracksResponse Element

8.7.1   integrationFooter

The purpose of this element is to return any business error and warning messages back to the customer. Please note that no business errors are currently returned by this service as the downstream processing is asynchronous.

The integrationFooter element will only be present in a response message if there are any business errors or warnings associated with processing a web service request. Please note that all technical exceptions will result in a SOAP fault being generated.
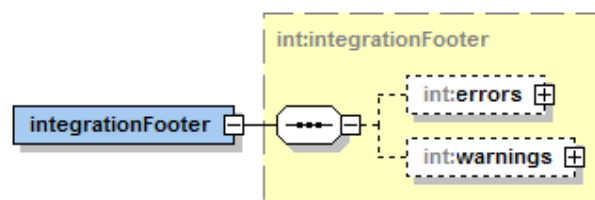

Figure 10 – integrationFooter Structure

All elements in the table below are relative to the integrationFooter element.

Element	Occurs	Data Type	Description
errors	0-1	element	Not currently used in the implementation of Mail Piece Event Submission API.
warnings	0-1	element	Not currently used in the implementation of Mail Piece Event Submission API.

Table 14 – integrationFooter Element

8.7.2   Example Data

This section provides a simplified extract of sample data to illustrate the PostMPETracksResponse.

```xml
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://www.royalmailgroup.com/integration/core/V1" xmlns:v11="http://www.royalmailgroup.com/api/MPE-API/V1"
xmlns:v12="http://www.royalmailgroup.com/api/ExternalMPE/V1">
        <soapenv:Header>
                <v1:integrationHeader>
                        <v1:dateTime>2016-07-25T00:00:00</v1:dateTime>
                        <v1:version>1.2</v1:version>
                        <v1:identification>
                                <v1:applicationId>AppName</v1:applicationId>
                                <v1:transactionId>123456</v1:transactionId>
                        </v1:identification>
                </v1:integrationHeader>
        </soapenv:Header>
        <soapenv:Body>
                <v11:PostMPETracksResponse/>
        </soapenv:Body>
</soapenv:Envelope>
```

9 Error Handling

9.1 Overview

The Mail Piece Event Submission API service highlights issues in two ways, namely:

- **Technical Errors -** Highlights fundamental problems with either the system or the request. All technical errors (e.g. schema validation failure, service unavailable etc.) are returned as SOAP Faults to the service requester.

- **Business Errors** – While the request was correctly formatted, it contained invalid data that cannot be automatically corrected. All business errors are also returned as SOAP Faults to the service requester.

All errors should be appropriately handled by your systems, and technical details of the error should not be displayed directly to consumers.

9.2 Technical Errors

Technical Errors highlight that there is either a problem with the Royal Mail system or there is a fundamental problem with the messages being sent to Royal Mail by the postal partner. Examples of technical errors caused by the postal partner would include the submission of a request message that failed schema validation.

Technical errors indicate that the request was not successful, and has not been processed by Royal Mail. Technical errors may also be an indication of serious problems with the interaction between the postal partner and Royal Mail, and postal partner systems should be built in such a way that these errors are gracefully handled, captured and reported to the relevant technical resources. Failure to do so may result in a disruption to service.

All technical exceptions are returned to the customer using the SOAP Fault message construct. Please see figure below for a graphical representation of the SOAP Fault construct which has been extended by the Royal Mail Group to specify a number of sub-elements under the <detail> element.
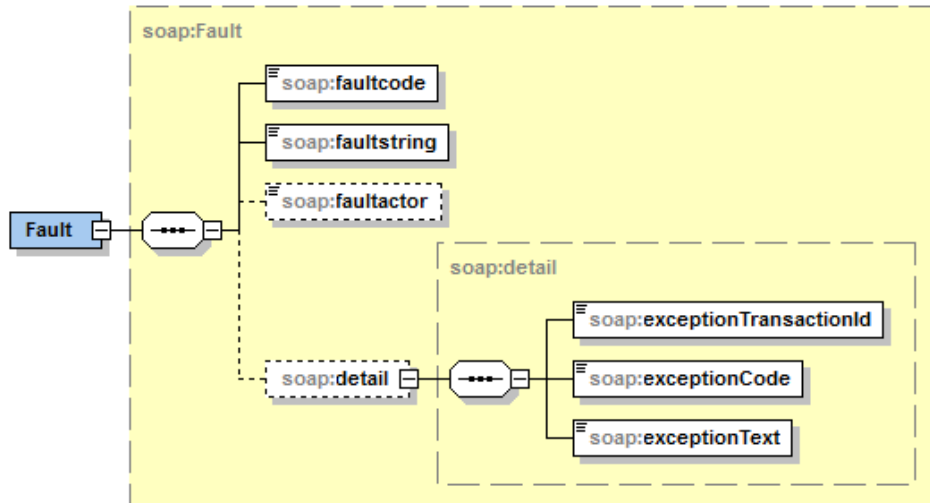
Figure 12 – SOAP Fault Structure

The SOAP Fault element has the following sub-elements:

Element	Max Length	Occurs	Data Type	Description
faultcode	N/A	1-1	QName	A code for identifying the fault
faultstring	N/A	1-1	string	A human readable explanation of the fault
faultactor	N/A	0-1	anyURI	Information about who caused the fault to happen.
detail	N/A	0-1	element	Container for application specific error information
detail.exceptionTransactionId	50	1-1	identifier	Used to identify the transaction Id associated with the request message which generated this technical exception.
detail.exceptionCode	5	1-1	identifier	Error code associated with the technical exception.
detail.exceptionText	256	1-1	description	A meaningful human-readable error description of the error condition.

Table 16 – SOAP Fault Elements

All technical errors will be thrown as a SOAP fault message. All SOAP faults will be accompanied with an HTTP Error Code of 500 along with the information defined in the Table below.

faultcode	faultstring	detail	
		exceptionCode	exceptionText
Server	Internal Error	E0000	Internal Exception Occurred
Server	Service Unavailable	E0001	Service Unavailable
Server	Service Temporarily Unavailable	E0002	Service Temporarily Unavailable

Server	Unknown Service Error	E0003	Service is unavailable due to an unknown reason. Contact Royal Mail Group Customer Experience Team.
Client	Invalid Request	E0004	Failed Schema Validation
Server	Unknown Service Error	E0005	No Response Received from Business Fulfilment System Web Service (Service is Unavailable or Timeout)
Server	Internal Error	E0009	Business Fulfilment System Returned an Error Response
Server	Service Unavailable	E0010	Configured Throttling Rate for Service Exceeded. Please try again later.

Table 17 – API Technical Errors

Please note that the exceptionTransactionId returned in the SOAP fault response will be populated with the transactionId provided in the original API request.

9.2.1 Example Data

Please see below for an example of a technical error which is returned from sending in invalid XML. Full XML examples of SOAP requests and responses are provided on the Royal Mail API (Developer) Portal.

```xml
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
        <soapenv:Body>
                    <NS1:Fault xmlns:NS1="http://schemas.xmlsoap.org/soap/envelope/">
                            <faultcode>Server</faultcode>
                            <faultstring>Internal Error</faultstring>
                            <faultactor>ESB</faultactor>
                            <detail>
                                    <exceptionDetails>
                                            <exceptionTransactionId>0127229000</exceptionTransactionId>
                                            <exceptionCode>E0005</exceptionCode>
                                            <exceptionText>No Response Received from Business Fulfilment System
Web Service (Service is Unavailable or Timeout)</exceptionText>
                                    </exceptionDetails>
                            </detail>
                    </NS1:Fault>
        </soapenv:Body>
</soapenv:Envelope>
```

9.3 Business Errors

No business errors are currently returned by this service as the downstream processing is asynchronous.

Non-Functional Characteristics

9.4 Availability

9.4.1 Service Hours

The Mail Piece Event Submission API is available 24 hours per day x 365 days per year.

9.4.2 Maintenance Windows

Royal Mail Online Services Terms and Conditions define the maintenance for this service.

9.4.3 Unavailability

In the unlikely event of the Mail Piece Event Submission API being unavailable, customer systems should make provision to handle this appropriately. Royal Mail will endeavour to proactively contact customers in the event of an outage to this API.

If you experience issues with the availability of this API please contact a Royal Mail Support representative by visiting the [Royal Mail API (Developer) Portal Support](#) pages.

9.5 Performance

Performance testing has validated that the Mail Piece Event Submission API responds to SOAP calls in less than 2 seconds on average when invoked from the edge of Royal Mail's UK data centre. Performance may be slower during peak periods of activity (between 15:00 and 18:00, Monday to Friday).

9.6 Security

All API service calls will be made using mutually authenticated HTTPS bound SOAP web services. Mail Piece Event Submission API exposes services using SOAP version 1.1 with a document / literal document-style encoding.

All service requests via the API Management solution will be authorised in accordance with the Client ID and Secret passed in the HTTP headers. This will ensure that any external service requests are authorised and authenticated in line with Royal Mail Group Security Policies and Standards.

11 Frequently Asked Questions

Please see the [FAQ page](#) on the [Royal Mail API (Developer) Portal](#) for a general list of frequently asked questions with responses.

All FAQs specific to the API described in this document are listed below.

11.1 Latest versions of WSDL

Question: Where can I find the latest version of the Mail Piece Event Submission API WSDL?

Answer: The latest version of the WSDL and XSDs can be found on the 'Mail Piece Event Submission API (SOAP)' page on the [Royal Mail API (Developer) Portal](#).

11.2 API Programming

Question: Can Royal Mail complete the API programming for me?

Answer: Royal Mail only provides user guides to enable an understanding of the API and therefore cannot complete any programming or system development for your business.

11.3 Business Account

Question: I don't have a business account with Royal Mail. Can I use the Mail Piece Event Submission API ?

Answer: No, the Mail Piece Event Submission API is only available to Royal Mail account holders.

11.4 Application Compatibility

Question: What Software Development Kits or tools have been proven to work with the Mail Piece Event Submission API ?

Answer: The following applications are known to be compatible with the Royal Mail Mail Piece Event Submission API : SoapUI.

Royal Mail