API Specification

Royal Mail Group

Tracking API V2 (REST)

Technical User Guide

This API specification details the requirements for integrating with Tracking API V2 (REST) B2B. It specifically covers how Tracking API V2 can be used by business customers to receive Track-and-Trace information and provides the technical information to build this integration.

11 January 2019

Version 1.3

Contents

1 Document Control

1.1 Terms and Abbreviations

Term	Meaning
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol over TLS
IP	Internet Protocol
JSON	JavaScript Object Notation
REST	Representational State Transfer
SOAP	Originally an acronym for Simple Object Access Protocol, is a protocol specification for exchanging structured information in the implementation of web services
TAPI	Tracking API
TLS	Transport Layer Security
Swagger	Specification for defining RESTful web services

Table 1 – Terms and Abbreviations

1.2 Version History

Version	Date	Author	Notes
1.0	20/04/2017	Mark Cornforth / Mohiddin Shaik	Document created and baselined.
1.1	25/05/2017	Mark Cornforth / Mohiddin Shaik	Further updates on error codes and response.
1.2	30/10/2018	RMG	Removing image from signature operation.
1.3	11/01/2019	RMG	Removing references regarding signature operation

Table 2 – Document Version History

2 Overview

The Royal Mail Tracking API V2 exposes a web service that allows account customers to receive track-and-trace information for their mail items. Built on industry standards, Tracking API V2 provides a simple and low cost method for customers to integrate with Royal Mail.

The API provides the latest tracking information, the tracking history, and the proof of delivery information for a single mail item and summary information for multiple mail pieces. The API provides an alternative mechanism to using the track and trace function on the Royal Mail website (http://www.royalmail.com/track-trace).

There are no costs to customers for using the Tracking API V2, however customers' own development costs must be covered by the customer developing the solution. Royal Mail will not accept any responsibility for these development, implementation and testing costs.

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

3 Purpose

This document is to provide Royal Mail customers with guidelines and detailed specifications for integrating with the Tracking API V2 RESTful web service.

The document details:

- The specification for the web service interface for customers who want to access tracking data 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 customer systems' with the Tracking API V2. This document should be read in conjunction with the following artefacts which are available from the 'Tracking API V2 (REST)' page on the Royal Mail API (Developer) Portal:

- Tracking API v2 Swagger Definition

- Tracking API v2 Reference Data

- Tracking API v2 Sample Data

4 Key Differences between Tracking API V1 & V2

The differences between Tracking API v1 and v2 are listed below:

- Only a RESTful version of v2 is available and no SOAP variant will be made available.

- The base bath of the URL has been changed to https://api.royalmail.net/mailpieces/v2. Please note the endpoint has been standardised in v2 with lowercase letters as opposed to mixed case in V1

- The summary operation supports up to 30 tracking numbers in a single request

- Tracking enquiries using both Royal Mail and Parcelforce tracking numbers are fully supported

- The signature operation returns signature metadata.

- For all operations, a richer data set is returned in the API response

- Support for higher API volumes and throughput

- Reduced latency for API responses

- Highly available, scalable and resilient solution to meet customer demand

5   Introduction to Tracking API V2

5.1   Overview

Tracking API V2 provides the functionality for customers to enquire on the tracking status of their mail items. It provides an alternative mechanism to using the track and trace function on the Royal Mail website: http://www.royalmail.com/track-trace.

The APIs provide the latest tracking information for single and multiple mail items, the tracking history for a single mail item, and the proof of delivery information for a single mail item.

5.2   Interface Components

Please see Figure 1 below for a graphical representation of the interface between Royal Mail and customers for Tracking API V2. This document covers what information is to be exchanged, how this information is structured and the means by which it is transferred.
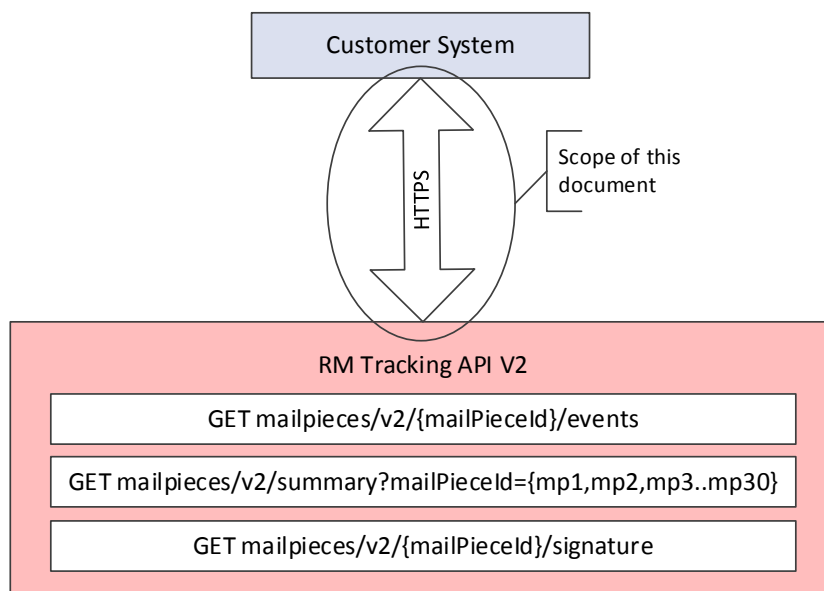
Customer System

HTTPS

Scope of this document

RM Tracking API V2

GET mailpieces/v2/{mailPieceId}/events

GET mailpieces/v2/summary?mailPieceId={mp1,mp2,mp3..mp30}

GET mailpieces/v2/{mailPieceId}/signature

Figure 1 – Tracking API V2

6 Integrating with Tracking API V2

6.1 Onboarding Process

The high-level process associated with integrating with Tracking API V2 is represented and described in the diagram below.
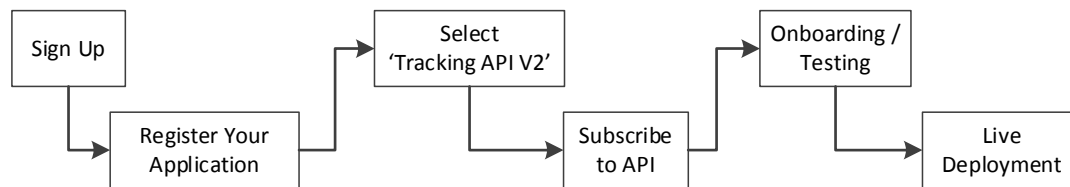

Figure 2 – Process for Integrating with the API

Access to the service is managed through RMG'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 at controlled transaction rate.

5. Once all required testing/integration has completed, access to the Live API 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.

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

6.2 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 API is available 24x7 although must not be used for performance testing.

- The API imposes a cap on the number of transactions per second for each customer. Excessive volumes of traffic over the configured throttling limit will result in transactions being rejected.

- Royal Mail expects customers to use the service in a responsible way; this includes refraining from continuously polling the API for updates.

- Regular checks will be performed by Royal Mail to ensure that customers are using the API in a responsible way.

6.3   API Access

Access to the Tracking API V2 'summary' sub-resource is obtained via the following URL:

https://api.royalmail.net/mailpieces/v2/summary?mailPieceId={mp1,mp2..mp30}

Access to the Tracking API V2 'events' and 'signature' sub-resources is obtained via the following URL:

https://api.royalmail.net/mailpieces/v2/{mailPieceId}/{sub-resource}

where {sub-resource} is either 'events' or 'signature'.

The API only supports HTTP GET requests against the 'mailpiece' resource.

Please note:

- Response formats supported: application/json

- See section 7 for all operations and parameters which are supported by this API.

- The only supported 'sub-resource' values for this API are:

    o   events

    o   summary

    o   signature

- If anything is appended to the path and which is unsupported (e.g. …/mailpieces/v2/something), then an HTTP 403 Forbidden response will be returned.

- All HTTP operations (e.g. PUT, POST, DELETE etc) other than GET are not supported and a HTTP 405 Method Not Allowed response will be returned.

- 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.

- Please see section 8 for a full list of technical and business error codes which are returned by this API.

You must complete all required test activities prior to being permitted access to the live API by the Royal Mail Customer Solutions Team.

6.4   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 API version. Royal Mail will look to maintain three versions of the API; as new versions are introduced, previous versions move down the stack until they are ultimately removed completely:

- Latest version

- Previous version

- Deprecated version

Customers 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. Customers should not integrate against the deprecated version.

7 Tracking Services

7.1 Business Services

Tracking API V2 is a service offered to customers to allow them to enquire on the tracking status of their mail items which are being handled through the Royal Mail network. The table below provides an overview of the business services that are supported by this interface.

Business Service	API Operations	Description	Technology	Conversation Style
Get Single Item History	GET mailpieces/v2/{mailPieceId}/events	Provides the tracking history for a single mail item.	JSON over HTTPS (REST)	Synchronous Request / Response
Get Single / Multi Item Summary	GET mailpieces/v2/summary?mailPieceId={mp1,mp2,mp3..mp30}	Provides the latest tracking event for one or more mail items.	JSON over HTTPS (REST)	Synchronous Request / Response
Get Proof Of Delivery	GET mailpieces/v2/{mailPieceId}/signature	Provides the proof of delivery information for a single mail item.	JSON over HTTPS (REST)	Synchronous Request / Response

Table 3 – Business Services

7.2 HTTP Header Information

7.2.1 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.

7.2.2 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/json format.
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 4 – HTTP Header Information in the API Request

7.2.3 Example Data

Example Request Data for the HTTP Header:

Parameter	Value
Accept	application/json
X-IBM-Client-Id	f0e4f151-2041-4df2-b31d
X-IBM-Client-Secret	kT0lB2dK0wF6mK0rD8sD7oE7vP2mG7l

<div align="center">Table 5 – Example HTTP Header Information for API Request</div>

7.3 Events Operation

7.3.1 Description

The behaviour of the events operation is to provide a history of tracks for a single mail item. This operation returns the summary, signature metadata, estimated delivery window and events for a supplied tracking number.

7.3.2 Request Message

URL Path: https://api.royalmail.net/mailpieces/v2/{mailPieceId}/events

Parameter	Optional	Description
mailPieceId	No	1D or 2D barcode tracking number of the mail item being queried.

<div align="center">Table 6 – API Request Parameters</div>

7.3.3 Response Message

The body of the JSON response message contains details for each tracking scan for the mail item or any errors that may have occurred. A successful business response will be returned as a standard HTTP response code of 200 (Ok).

Field	Type	Description	Optional
mailPieces	Object	Object containing tracking information for the requested mail item. This will only be provided in the event that no error information is returned.	No
mailPieces.mailPieceId	String	1D or 2D barcode provided in the API request	No
mailPieces.carrierShortName	String	Short name of the carrier	Yes
mailPieces.carrierFullName	String	Full name of the carrier	Yes
mailPieces.summary	Object	Object containing mail piece summary data	Yes
mailPieces.summary.uniqueItemId	String	2D barcode for the mail piece	Yes

Field	Type	Description	Optional
mailPieces.summary.oneDBarcode	String	1D barcode for the mail piece	Yes
mailPieces.summary.productId	String	Identifier for the tracked product	Yes
mailPieces.summary.productName	String	Name of the tracked product	Yes
mailPieces.summary.productDescription	String	Description of tracked product	Yes
mailPieces.summary.productCategory	String	Category for tracked product	Yes
mailPieces.summary.destinationCountryCode	String	Destination country code	Yes
mailPieces.summary.destinationCountryName	String	Destination country name	Yes
mailPieces.summary.originCountryCode	String	Origin country code	Yes
mailPieces.summary.originCountryName	String	Origin country name	Yes
mailPieces.summary.lastEventCode	String	Code associated with the latest mail piece event	Yes
mailPieces.summary.lastEventName	String	Name of the latest mail piece event	Yes
mailPieces.summary.lastEventDateTime	dateTime	Date timestamp associated with the latest mail piece event in the following format: ISO8601 YYYY-MM-DDThh:mm:ss hh:mm (Offset to UTC)	Yes
mailPieces.summary.lastEventLocationName	String	Location name associated with the latest mail piece event	Yes
mailPieces.summary.statusDescription	String	Status description associated with the latest mail piece event	Yes
mailPieces.summary.statusCategory	String	Status category associated with the latest mail piece event	Yes
mailPieces.summary.statusHelpText	String	Status help text associated with the latest mail piece event	Yes
mailPieces.summary.summaryLine	String	Summary message for mail item's last tracking scan	Yes
mailPieces.summary.internationalPostalProvider	Object	Object containing details of international postal organisation	Yes
mailPieces.summary.internationalPostalProvider.url	String	URL link to website of delivery provider for	No

Field	Type	Description	Optional
		international parcels	
mailPieces.summary.internationalPostalProvider.title	String	Name of the international postal organisation	No
mailPieces.summary.internationalPostalProvider.description	String	Description of the international postal organisation	No
mailPieces.signature	Object	Object containing signature metadata data	Yes
mailPieces.signature.recipientName	String	Name of the person who provided the signature	Yes
mailPieces.signature.signatureDateTime	dateTime	Date and time the signature was captured in the following format: ISO8601 YYYY-MM-DDThh:mm:ss±hh:mm (offset to UTC)	Yes
mailPieces.signature.imageId	String	Identifier associated with the signature image	Yes
mailPieces.estimatedDelivery	Object	Object containing the estimated delivery data	Yes
mailPieces.estimatedDelivery.date	date	Date of the estimated delivery window in the format: ISO8601 YYYY-MM-DD.	Yes
mailPieces.estimatedDelivery.startOfEstimatedWindow	Time	Start time of the estimated delivery window in the format: hh:mm:ss±hh:mm	Yes
mailPieces.estimatedDelivery.endOfEstimatedWindow	Time	End time of the estimated delivery window in the format: hh:mm:ss±hh:mm	Yes
mailPieces.events	Array	Array containing mail piece event information	Yes
mailPieces.events.eventCode	String	Code associated with the mail piece event	Yes
mailPieces.events.eventName	String	Name of the event	Yes
mailPieces.events.eventDateTime	String	Date and time of the event in the format: ISO8601 YYYY-MM-DDThh:mm:ss±hh:mm (offset to UTC)	No
mailPieces.events.locationName	String	Location name associated with the mail piece event	Yes
mailPieces.links	Object	Object containing API links	Yes

Field	Type	Description	Optional
mailPieces.links.summary	Object	Container for summary link information	Yes
mailPieces.links.summary.href	String	Relative URL link for summary information	No
mailPieces.links.summary.title	String	Title of the link	No
mailPieces.links.summary.description	String	Description of the link	No
mailPieces.links.signature	Object	Container for signature link information	Yes
mailPieces.links.signature.href	String	Relative URL link for signature information	No
mailPieces.links.signature.title	String	Title of the link	No
mailPieces.links.signature.description	String	Description of the link	No
mailPieces.links.redelivery	Object	Container for redelivery link information	Yes
mailPieces.links.redelivery.href	String	Relative URL link for redelivery	No
mailPieces.links.redelivery.title	String	Title of the link	No
mailPieces.links.redelivery.description	String	Description of the link	No
httpCode	Number	HTTP error code. Please note that this will only be populated in the event of an error condition.	Yes
httpMessage	String	HTTP error code description. Please note that this will only be populated in the event of an error condition.	Yes
moreInformation	String	Information relating to the error condition.	Yes
errors	Array	Array containing error information. Please see section 8.2 for details.	Yes
errors.errorCode	String	Code associated with the error condition	Yes
errors.errorDescription	String	Description of the error condition	Yes
errors.errorCause	String	Cause of the error (if known)	Yes
errors.errorResolution	String	Description of the resolution and action required to correct the error	Yes

Table 7 – API Events Response Data

7.3.4 Example Data

Full JSON example responses are provided on the Royal Mail API (Developer) Portal.

Example Request Data

```
GET https://api.royalmail.net/mailpieces/v2/090367574000000FE1E1B/events HTTP/1.1
Accept: application/json
X-IBM-Client-Secret: C8rGOuG5gl3hK3tR3iW6lROsYOkE1pG8wU3nQ4mA0xPOkB6aU7
X-IBM-Client-Id: a77f6e62-d4c5-4421-9af7-ba8fd3ed6eff
```

Example Response Data

```
HTTP/1.1 200 OK
Content-Type: application/json
{
  "mailPieces": {
    "mailPieceId": "090367574000000FE1E1B",
    "carrierShortName": "RM",
    "carrierFullName": "Royal Mail Group Ltd",
    "summary": {
      "uniqueItemId": "090367574000000FE1E1B",
      "oneDBarcode": "FQ087430672GB",
      "productId": "SD2",
      "productName": "Special Delivery Guaranteed",
      "productDescription": "Our guaranteed next working day service with tracking and a signature
on delivery",
      "productCategory": "NON-INTERNATIONAL",
      "destinationCountryCode": "GBR",
      "destinationCountryName": "United Kingdom of Great Britain and Northern Ireland",
      "originCountryCode": "GBR",
      "originCountryName": "United Kingdom of Great Britain and Northern Ireland",
      "lastEventCode": "EVNMI",
      "lastEventName": "Forwarded - Mis-sort",
      "lastEventDateTime": "2016-10-20T10:04:00+01:00",
      "lastEventLocationName": "Stafford DO",
      "statusDescription": "It's being redirected",
      "statusCategory": "IN TRANSIT",
      "statusHelpText": "The item is in transit and a confirmation will be provided on delivery. For
more information on levels of tracking by service, please see Sending Mail.",
      "summaryLine": "Item FQ087430672GB was forwarded to the Delivery Office on 2016-10-
20.",
      "internationalPostalProvider": {
        "url": "https://www.royalmail.com/track-your-item",
        "title": "Royal Mail Group Ltd",
        "description": "Royal Mail Group Ltd"
      }
    },
    "signature": {
      "recipientName": "Simon",
      "signatureDateTime": "2016-10-20T10:04:00+01:00",
```

```
      "imageId": "001234"
    },
    "estimatedDelivery": {
      "date": "2017-02-20",
      "startOfEstimatedWindow": "08:00:00+01:00",
      "endOfEstimatedWindow": "11:00:00+01:00"
    },
    "events": [
      {
        "eventCode": "EVNMI",
        "eventName": "Forwarded - Mis-sort",
        "eventDateTime": "2016-10-20T10:04:00+01:00",
        "locationName": "Stafford DO"
      }
    ],
    "links": {
      "summary": {
        "href": "/mailpieces/v2/summary?mailPieceId=090367574000000FE1E1B",
        "title": "Summary",
        "description": "Get summary"
      },
      "signature": {
        "href": "/mailpieces/v2/090367574000000FE1E1B/signature",
        "title": "Signature",
        "description": "Get signature"
      },
      "redelivery": {
        "href": "/personal/receiving-mail/redelivery",
        "title": "Redelivery",
        "description": "Book a redelivery"
      }
    }
  }
}
```

7.4   Summary Operation

7.4.1   Description

The behaviour of the summary operation is to allow customers to obtain the latest tracking data for a mail item. This operation returns the summary of one or more tracking numbers provided in the request. This operation only allows a maximum of 30 tracking numbers to be provided in the mailPieceId query parameter via a comma separated list. If some tracking numbers within a request incur a business exception, the error section will be populated for those, but not for others in the response.

7.4.2   Request Message

URL Path:

https://api.royalmail.net/mailpieces/v2/summary?mailPieceId={mp1,mp2,mp3...mp30}

Parameter	Optional	Description
mailPieceId={mp1,mp2,mp3...mp30}	No	List of one or more 1D and/or 2D barcode tracking numbers of the mail items being queried. A maximum of 30 tracking numbers can be queried in a single request.

<div align="center">Table 8 – API Request Parameters</div>

7.4.3   Response Message

The body of the JSON response message contains the latest tracking data for a mail item or any errors that may have occurred during processing. A successful business response will be returned as a standard HTTP response code of 200 (Ok).

Field	Type	Description	Optional
mailPieces	Array	Array containing tracking information for the requested mail items.	No
mailPieces.mailPieceId	String	1D or 2D barcode provided in the API request	No
mailPieces.status	String	HTTP status code associated with the provision of mail piece summary information	No
mailPieces.carrierShortName	String	Short name of the carrier	Yes
mailPieces.carrierFullName	String	Full name of the carrier	Yes
mailPieces.summary	Object	Object containing mail piece summary data	Yes
mailPieces.summary.uniqueItemId	String	2D barcode for the mail piece	Yes
mailPieces.summary.oneDBarcode	String	1D barcode for the mail piece	Yes
mailPieces.summary.productId	String	Identifier for the tracked product	Yes
mailPieces.summary.productName	String	Name of the tracked product	Yes
mailPieces.summary.productDescription	String	Description of tracked product	Yes
mailPieces.summary.productCategory	String	Category for tracked product	Yes
mailPieces.summary.destinationCountryCode	String	Destination country code	Yes
mailPieces.summary.destinationCountryName	String	Destination country name	Yes
mailPieces.summary.originCountryCode	String	Origin country code	Yes
mailPieces.summary.originCountryName	String	Origin country name	Yes
mailPieces.summary.lastEventCode	String	Code associated with the latest mail piece event	Yes
mailPieces.summary.lastEventName	String	Name of the latest mail piece event	Yes

Field	Type	Description	Optional
mailPieces.summary.lastEventDateTime	dateTime	Date timestamp associated with the latest mail piece event in the following format: ISO8601 YYYY–MM–DDThh:mm:ss±hh:mm (Offset to UTC)	Yes
mailPieces.summary.lastEventLocationName	String	Location name associated with the latest mail piece event	Yes
mailPieces.summary.statusDescription	String	Status description associated with the latest mail piece event	Yes
mailPieces.summary.statusCategory	String	Status category associated with the latest mail piece event	Yes
mailPieces.summary.statusHelpText	String	Status help text associated with the latest mail piece event	Yes
mailPieces.summary.summaryLine	String	Summary message for mail item's last tracking scan	Yes
mailPieces.summary.internationalPostalProvider	Object	Object containing details of international postal organisation	Yes
mailPieces.summary.internationalPostalProvider.url	String	URL link to website of delivery provider for international parcels	No
mailPieces.summary.internationalPostalProvider.title	String	Name of the international postal organisation	No
mailPieces.summary.internationalPostalProvider.description	String	Description of the international postal organisation	No
mailPieces.links	Object	Object containing API links	Yes
mailPieces.links.events	Object	Container for events link information	Yes
mailPieces.links.events.href	String	Relative URL link for event information	No
mailPieces.links.events.title	String	Title of the link	No
mailPieces.links.events.description	String	Description of the link	No
mailPieces.error	Object	Container for mail piece related error information	Yes
mailPieces.error.errorCode	String	The code associated with the error message	No
mailPieces.error.errorDescription	String	The description associated with the error code	No

Field	Type	Description	Optional
mailPieces.error.errorCause	String	The cause of the error if known	Yes
mailPieces.error.errorResolution	String	The description of the resolution and action required to correct the error if known.	Yes
httpCode	Number	HTTP error code. Please note that this will only be populated in the event of an error condition.	Yes
httpMessage	String	HTTP error code description. Please note that this will only be populated in the event of an error condition.	Yes
moreInformation	String	Information relating to the error condition.	Yes
errors	Array	Array containing error information. Please see section 8.3 for details.	Yes
errors.errorCode	String	Code associated with the error condition	Yes
errors.errorDescription	String	Description of the error condition	Yes
errors.errorCause	String	Cause of the error (if known)	Yes
errors.errorResolution	String	Description of the resolution and action required to correct the error	Yes

Table 9 – API Summary Response Data

7.4.4 Example Data

Full JSON example responses are provided on the Royal Mail API (Developer) Portal.

Example Request Data

```
GET https://.api.royalmail.net/mailpieces/v2//summary=?mailPieceId= {090367574000000FE1E1B,
021AAA820229ACC7,FQ087430643GB}  HTTP/1.1
Accept: application/json
X-IBM-Client-Secret: C8rGOuG5gI3hK3tR3iW6lROsY0kE1pG8wU3nQ4mA0xP0kB6aU7
X-IBM-Client-Id: a77f6e62-d4c5-4421-9af7-ba8fd3ed6eff
```

Example Response Data

```
HTTP/1.1 200 OK
Content-Type: application/json
{
  "mailPieces":[
    {
      "mailPieceId":"090367574000000FE1E1B",
      "status":"200",
      "carrierShortName":"RM",
      "carrierFullName":"Royal Mail Group Ltd",
      "summary":{
        "uniqueItemId":"090367574000000FE1E1B",
        "oneDBarcode":"FQ087430672GB",
        "productId":"SD2",
        "productName":"Special Delivery Guaranteed",
        "productDescription":"Our guaranteed next working day service with tracking and a signature on delivery",
        "productCategory":"NON-INTERNATIONAL",
        "destinationCountryCode":"GBR",
        "destinationCountryName":"United Kingdom of Great Britain and Northern Ireland",
        "originCountryCode":"GBR",
        "originCountryName":"United Kingdom of Great Britain and Northern Ireland",
        "lastEventCode":"EVNMI",
        "lastEventName":"Forwarded - Mis-sort",
        "lastEventDateTime":"2016-10-20T10:04:00+01:00",
        "lastEventLocationName":"Stafford DO",
        "statusDescription":"It's being redirected",
        "statusCategory":"IN TRANSIT",
        "statusHelpText":"The item is in transit and a confirmation will be provided on delivery. For more information on levels of tracking by service, please see Sending Mail.",
        "summaryLine":"Item FQ087430672GB was forwarded to the Delivery Office on 2016-10-20.",
        "internationalPostalProvider":{
          "url":"https://www.royalmail.com/track-your-item",
          "title":"Royal Mail Group Ltd",
          "description":"Royal Mail Group Ltd"
        }
      },
      "links":{
        "events":{
          "href":"/mailpieces/v2/FQ087430672GB/events",
          "title":"Events",
          "description":"Get events"
        }
      }
    },
    {
      "mailPieceId":"021AAA820229ACC7",
      "status":"403",
      "carrierShortName":"RM",
      "carrierFullName":"Royal Mail Group Ltd",
      "error":{
        "errorCode":"E11xx",
        "errorDescription":"Tracking information is not available for this service",
        "errorCause":"The service used doesn't support tracking",
        "errorResolution":"The service used doesn't support tracking"
```

```json
      }
    },
    {
      "mailPieceId":"090367575000000FE1E1B",
      "status":"200",
      "carrierShortName":"RM",
      "carrierFullName":"Royal Mail Group Ltd",
      "summary":{
        "uniqueItemId":"090367575000000FE1E1B",
        "oneDBarcode":"FQ087430672GB",
        "productId":"SD2",
        "productName":"Special Delivery Guaranteed",
        "productDescription":"Our guaranteed next working day service with tracking and a signature on
delivery",
        "productCategory":"NON-INTERNATIONAL",
        "destinationCountryCode":"GBR",
        "destinationCountryName":"United Kingdom of Great Britain and Northern Ireland",
        "originCountryCode":"GBR",
        "originCountryName":"United Kingdom of Great Britain and Northern Ireland",
        "lastEventCode":"EVNMI",
        "lastEventName":"Forwarded - Mis-sort",
        "lastEventDateTime":"2016-10-20T10:04:00+01:00",
        "lastEventLocationName":"Stafford DO",
        "statusDescription":"It's being redirected",
        "statusCategory":"IN TRANSIT",
        "statusHelpText":"The item is in transit and a confirmation will be provided on delivery. For more
information on levels of tracking by service, please see Sending Mail.",
        "summaryLine":"Item FQ087430672GB was forwarded to the Delivery Office on 2016-10-20.",
        "internationalPostalProvider":{
          "url":"https://www.royalmail.com/track-your-item",
          "title":"Royal Mail Group Ltd",
          "description":"Continue tracking on royalmail.com"
        }
      },
      "links":{
        "events":{
          "href":"/mailpieces/v2/FQ087430672GB/events",
          "title":"Events",
          "description":"Get events"
        }
      }
    },
    {
      "mailPieceId":"FQ087430643GB",
      "status":"404",
      "error":{
        "errorCode":"E1142",
        "errorDescription":"Barcode reference FQ087430643GB is not valid",
        "errorCause":"A mail item with that barcode cannot be located",
        "errorResolution":"Check barcode and resubmit"
      }
    }
  ]
}
```

7.5 Signature Operation

7.5.1 Description

The signature operation provides the details captured at the point of delivery as proof that delivery has occurred. Note that a proof of delivery is only captured by the delivery track for those service offerings that require a signature on delivery. Please also note that for data protection reasons the API does not currently supply the signature image captured at the point of delivery.

7.5.2 Request Message

URL Path: https://api.royalmail.net/mailpieces/v2/{mailPieceId}/signature

Parameter	Optional	Description
mailPieceId	No	1D or 2D barcode tracking number of the mail item being queried.

Table 10 – API Request Parameters

7.5.3 Response Message

The body of the JSON response message contains the proof of delivery information of the mail item being queried. A successful business response will be returned as a standard HTTP response code of 200 (Ok).

Field	Type	Description	Optional
mailPieces	Object	Object containing signature image and meta-data information for the requested mail item.	No
mailPieces.mailPieceId	String	1D or 2D barcode provided in the API request	No
mailPieces.carrierShortName	String	Short name of the carrier	Yes
mailPieces.carrierFullName	String	Full name of the carrier	Yes
mailPieces.signature	Object	Object containing mail piece signature data	Yes
mailPieces.signature.uniqueItemId	String	2D barcode for the mail piece	Yes
mailPieces.signature.oneDBarcode	String	1D barcode for the mail piece	Yes
mailPieces.signature.recipientName	String	Name of the person who signed for the mail piece	Yes
mailPieces.signature.signatureDateTime	dateTime	Date timestamp associated with when the signature was captured in the following format: ISO8601	Yes

Field	Type	Description	Optional
		YYYY-MM-DDThh:mm:ss±hh:mm (Offset to UTC)	
mailPieces.signature.imageFormat	String	Media type of the signature image, i.e. image/svg+xml or image/png	No
mailPieces.signature.imageId	String	Unique identifier associated with the signature image	Yes
mailPieces.signature.height	Number	Height of the signature image (in pixels)	Yes
mailPieces.signature.width	Number	Width of the signature image (in pixels)	Yes
mailPieces.links	Object	Object containing API links	Yes
mailPieces.links.events	Object	Container for events link information	Yes
mailPieces.links.events.href	String	Relative URL link for events information	No
mailPieces.links.events.title	String	Title of the link	No
mailPieces.links.events.description	String	Description of the link	No
mailPieces.links.summary	Object	Container for summary link information	Yes
mailPieces.links.summary.href	String	Relative URL link for summary information	No
mailPieces.links.summary.title	String	Title of the link	No
mailPieces.links.summary.description	String	Description of the link	No
httpCode	Number	HTTP error code. Please note that this will only be populated in the event of an error condition.	Yes
httpMessage	String	HTTP error code description. Please note that this will only be populated in the event of an error condition.	Yes
moreInformation	String	Information relating to the error condition.	Yes
errors	Array	Array containing error information. Please see section 8.2 for details.	Yes
errors.errorCode	String	Code associated with the error condition	Yes
errors.errorDescription	String	Description of the error condition	Yes

Field	Type	Description	Optional
errors.errorCause	String	Cause of the error (if known)	Yes
errors.errorResolution	String	Description of the resolution and action required to correct the error	Yes

Table 11 – API Signature Response Data

7.5.4 Example Data

Full JSON examples of requests and responses are provided on the Royal Mail API (Developer) Portal.

Example Request Data

```
GET https://.api.royalmail.net/mailpieces/v2/FQ087430672GB/signature HTTP/1.1
Accept: application/json
X-IBM-Client-Secret: C8rG0uG5gI3hK3tR3iW6lR0sY0kE1pG8wU3nQ4mA0xP0kB6aU7
X-IBM-Client-Id: a77f6e62-d4c5-4421-9af7-ba8fd3ed6eff
```

Example Response Data

```
HTTP/1.1 200 OK
Content-Type: application/json
{
  "mailPieces": {
    "mailPieceId": "090367574000000FE1E1B",
    "carrierShortName": "RM",
    "carrierFullName": "Royal Mail Group Ltd",
    "signature": {
      "uniqueItemId": "090367574000000FE1E1B",
      "oneDBarcode": "FQ087430672GB",
      "recipientName": "Simon",
      "signatureDateTime": "2017-03-30T16:15:00+01:00",
      "imageFormat": "image/svg+xml",
      "imageId": "001234",
      "height": 530,
      "width": 660

    },
    "links": {
      "events": {
        "href": "/mailpieces/v2/FQ087430672GB/events",
        "title": "Events",
        "description": "Get events"
      },
      "summary": {
        "href": "/mailpieces/v2/summary?mailPieceId= 090367574000000FE1E1B ",
        "title": "Summary",
        "description": "Get summary"
```

```
      }
    }
  }
}
```

8 Error Handling

8.1 Overview

There are two types of errors produced by Tracking API v2, namely:

- **Business Errors** (e.g. invalid tracking number etc)
- **Technical Errors / Exceptions** (e.g. database unavailable etc)

Both sets of errors should be appropriately handled by your system and technical details of the error should not be displayed directly to consumers. Please refer to the table below for the generic structure of all core error messages returned by Tracking API V2.

Field	Type	Description	Optional
httpCode	Number	HTTP error code	No
httpMessage	String	HTTP error code description	No
moreInformation	String	Information relating to the error condition	Yes
errors	Array	Array containing error information	Yes
errors.errorCode	String	Code associated with the error condition	Yes
errors.errorDescription	String	Description of the error condition	Yes
errors.errorCause	String	Cause of the error (if known)	Yes
errors.errorResolution	String	Description of the resolution and action required to correct the error	Yes

Table 12 – API Error Response Structure

The following sections describe the content of the business and technical errors returned by Tracking API V2.

8.2 Business Errors (Events and Signature Operations)

All errors associated with processing the API request for the signature and events operations are returned using the error structure defined in section 8.1 along with the corresponding HTTP status code. Please see table below for the details of all errors returned for the signature and events operations

httpCode	errorCode	errorDescription	errorCause	errorResolution
404/400	E1142	Barcode reference [trackingNumber] is not valid	A mail item with that barcode cannot be located	Check barcode and resubmit
404	E1144	Proof of Delivery is not available for barcode reference [trackingNumber]	Proof of Delivery information is not yet available	Please try again later. It can take up to 72 hours after delivery for the Proof of Delivery information to become available
404	E1145	Proof of Delivery is not available for barcode reference [trackingNumber]	Proof of Delivery is not available for this product	Please consult your Royal Mail account team to determine which products can be signed for
404	E1283	Tracking information is not available for this service	The service used doesn't support tracking	
404	E1284	An update will only be provided when we attempt to deliver your item	This service only provides delivery confirmation and delivery hasn't yet been attempted	Please try again later
404	E1308	The service used to send this item only provides an update once we have received the item in our network. Please allow up to 3 working days for delivery, depending on the service used.	An externally visible scan/event has not occurred on the mail item	Please try again later

Table 13 – API Business Errors (Events and Signature Operation)

Please note that the moreInformation field will not be populated for business errors returned by the API.

8.2.1   Example Data

Please see below for an example of a business error which is returned from calling the GET mailPieces/v2/{mailPieceId}/events operation and which results in an E1142 error being returned. Full JSON example responses are provided on the Royal Mail API (Developer) Portal.

```
HTTP/1.1 404
Content-Type: application/json
{
   "httpCode":"404",
```

```
    "httpMessage":"Not found"
    "errors":[
       {
          "errorCode":"E1142",
          "errorDescription":"Barcode reference 090367574000000FE1E1B is not valid",
          "errorCause":"A mail item with that barcode cannot be located",
          "errorResolution":"Check barcode and resubmit"
       }
    ]
 }
```

8.3 Business Errors (Summary Operation)

Errors associated with processing each tracking number provided in the summary operation (which can contain multiple tracking numbers), a success HTTP response of 200 (Ok) will be returned if there is at least one successful response returned for one of the tracking numbers provided in the API request. If there are business errors returned in conjunction with the successful response then these errors will be returned within the response structure for each mail piece as defined in section 7.4.3. Table 14 below lists all business errors which may be returned when calling the summary API operation.

httpCode	mailPieces. status	errorCode	errorDescription	errorCause	errorResolution
200	404/400	E1142	Barcode reference [trackingNumber] is not valid	A mail item with that barcode cannot be located	Check barcode and resubmit
200	404	E1144	Proof of Delivery is not available for barcode reference [trackingNumber]	Proof of Delivery information is not yet available	Please try again later. It can take up to 72 hours after delivery for the Proof of Delivery information to become available
200	404	E1145	Proof of Delivery is not available for barcode reference [trackingNumber]	Proof of Delivery is not available for this product	Please consult your Royal Mail account team to determine which products can be signed for
200	404	E1283	Tracking information is not available for this service	The service used doesn't support tracking	
200	404	E1284	An update will only be provided when we attempt to deliver your item	This service only provides delivery confirmation and delivery hasn't yet been	Please try again later

				attempted	
200	503	E1307	Tracking information for [tracking Number] is currently unavailable		Please try again later
200	404	E1308	The service used to send this item only provides an update once we have received the item in our network. Please allow up to 3 working days for delivery, depending on the service used.	An externally visible scan/event has not occurred on the mail item	Please try again later

<p align="center">Table 14 – API Business Errors (Summary Operation)</p>

8.3.1 Example Data

Please see below for an example of a business error which is returned from calling the GET mailpieces/v2/summary?mailPieceId={mp1,mp2} operation with two tracking numbers and which results in an E1142 error being returned for each mail piece. Full JSON example responses are provided on the Royal Mail API (Developer) Portal.

```
HTTP/1.1 200 OK
Content-Type: application/json
{
    "mailPieces": [
        {
            "mailPieceId": "090367574000000FE1E1B",
            "status": "404",
            "errors": {
                "errorCode": "E1142",
                "errorDescription": "Barcode reference 090367574000000FE1E1B  is not valid",
                "errorCause": "A mail item with that barcode cannot be located",
                "errorResolution": "Check barcode and resubmit"
            }
        },
        {
            "mailPieceId": "AG0367574000000FE1E1C",
            "status": "404",
            "errors": {
                "errorCode": "E1142",
                "errorDescription": "Barcode reference AG0367574000000FE1E1C  is not valid",
                "errorCause": "A mail item with that barcode cannot be located",
```

```
                "errorResolution": "Check barcode and resubmit"
            }
        }
    ]
}
```

8.4   Technical Errors / Exceptions

The following technical exceptions/error scenarios will be caught and handled as described below:

httpCode	httpMessage	moreInformation	errorCode	errorDescription	errorCause	errorResolution
400	Bad Request		E0013	Maximum parameters permitted in URL exceeded		Check barcode and resubmit
400	Bad Request	-	E0004	Failed schema validation	The submitted request was not valid against the published schema definition	Please check the API request against the schema definition and re-submit
401	Unauthorized	Client id not registered	-	-	-	-
404	Not Found	API not found for requested URI	-	-	-	-
405	Method Not Allowed	The method is not allowed for the requested URL	-	-	-	-
429	Too Many Requests	The rate limit has been exceeded for the plan or operation being used.	E0010	Too many requests	Configured throttling rate for service exceeded	Please try again later
500	Internal Server Error	-	E0009	Internal server error	Business fulfilment system returned an error response	Please try again later
503	Service Unavailable	-	E0001	Internal exception occurred	An internal error was identified while attempting to process your API request	Please try again later

Table 15 – API Technical Errors

For all other technical issues please contact a Royal Mail Support representative by visiting the Royal Mail API (Developer) Portal Support pages.

8.4.1   Example Data

Please see below for an example of a technical error which is returned in the event of a throttling error. Full JSON example responses are provided on the Royal Mail API (Developer) Portal.

```
HTTP/1.1 429 OK
Content-Type: application/json
{
      "httpCode": "429",
      "httpMessage": "Too Many Requests "
    "errors":[
     {
       "errorCode":"E0010",
       "errorDescription":"Too many requests",
       "errorCause":"Configured throttling rate for service exceeded",
       "errorResolution":"Please try again later"
     }
   ]
}
```

9 Non-Functional Characteristics

9.1 Availability

9.1.1 Service Hours

The Tracking API is available 24 hours per day x 365 days per year.

9.1.2 Maintenance Windows

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

9.1.3 Unavailability

In the unlikely event of the Tracking API V2 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.

9.2 Performance

For Tracking API V2, Royal Mail aims to respond to calls in less than 2 seconds on average when invoked from the edge of Royal Mail's UK data centre.

For the 'summary' operation, which supports tracking enquiries for up to 30 tracking numbers, the following average API response times will apply:

- 2 – 10 tracking numbers: less than 3 seconds
- 11 – 30 tracking numbers: less than 6 seconds

9.3 Security

The REST API will only accept requests and return responses over HTTPS. 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 RMG 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 API vs Website Tracking Results

Question: Will I get the same tracking information from Tracking API V2 as displayed on the Royal Mail website (http://www.royalmail.com/track-trace)?

Answer: Yes, the API uses the same source tracking application and retrieval process as the website.

11.2 Latest versions of Swagger Definition

Question: Where can I find the latest version of the Tracking API V2 Swagger definition?

Answer: The latest version of the Swagger definition can be found on the 'Tracking API V2 (REST)' page on the Royal Mail API (Developer) Portal.

11.3 Sample Code

Question: Do Royal Mail provide any sample code for the Tracking API V2 to help accelerate my integration?

Answer: Yes, the Royal Mail API (Developer) Portal provides sample code for a number of programming languages including cURL, PHP, Ruby, Python, Java, Node, Go, Swift etc. Please navigate to the 'API Library' and select 'Tracking API V2 (REST)'. A variety of programming languages will be provided on the right hand-side of the page.

11.4 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.

11.5 Service Offerings

Question: What types of service offering can I look up via Tracking API V2?

Answer: Tracking API V2 allows track-and-trace for the same service offerings as the Royal Mail website (http://www.royalmail.com/track-trace). Generally these are from the Special Delivery and RM Tracked product families.

11.6 Business Account

Question: I don't have a business account with Royal Mail. Can I use the Tracking API V2?

Answer: No – Tracking API V2 is only available to Royal Mail account holders.

11.7 Application Compatibility

Question: What Software Development Kits or tools have been proven to work with the Tracking API V2?

Answer: The following applications are known to be compatible with the Royal Mail Tracking API V2: SoapUI.