Frameworx Specification

Shipment Tracking API Conformance Profile

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NOTICE

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INTRODUCTION

The following document is the REST API Conformance for the Shipment Tracking API.

API DESCRIPTION

Typically, telcos use different delivery companies to deliver things on their behalf and this API intends to abstract the end developers from that complexity by providing a single interface. A Shipment Tracking captures information about the current status of the shipment, the past checkpoints and the estimated arrival date. Via this API, tracking information can be retrieved by providing an order Id or the shipping company's tracking id.

RESOURCE MODEL CONFORMANCE

Shipment Tracking API MANDATORY AND OPTIONAL RESOURCES

Resource Name	Mandatory or Optional	Comments
ShipmentTracking	M	

Shipment Tracking resource MANDATORY AND OPTIONAL ATTRIBUTES

Attribute Name	Mandatory or Optional	Comments
id	M (in response messages) O (otherwise)	Generated by the server and provided in the response upon resource creation. Accepted in entity-creation requests if the server supports the incoming identifier as the reference to create new resources
href	M (in response messages) O (otherwise)	Value in response must be the same as the one set in Location header provided upon entity creation
carrier	O	
trackingCode	O	
carrierTrackingUrl	O	
trackingDate	M (in response messages)	

Attribute Name	Mandatory or Optional	Comments
	O (otherwise)	
status	M (in response messages) O (otherwise)	
statusChangeDate	O	
weight	O	
estimatedDeliveryDate	O	
addressFrom	O	
city	O	At least one fields between locality or city or postcode must be fielded in the request
country	M if addressFrom appears	
locality	O	At least one fields between locality or city or postcode must be fielded in the request
postcode	O	At least one fields between locality or city or postcode must be fielded in the request
stateOrProvince	O	
streetName	O	
streetNr	O	

Attribute Name	Mandatory or Optional	Comments
streetNrLast	O	
streetNrLastSuffix	O	
streetNrSuffix	O	
streetSuffix	O	
streetType	O	
geographicLocation	O	If a geographicLocation is provided, attributes spatialRef and accuracy are mandatories. If href is not provided, both geometryType and geometry (at least one geometryPoint) are mandatories.
geographicSubAddress	O	
@type	O	
@schemaLocation	O	
addressTo	M	
city	O	At least one fields between locality or city or postcode must be fielded in the request
country	M	
locality	O	At least one fields between locality or city or postcode must be fielded in the

Attribute Name	Mandatory or Optional	Comments
		request
postcode	O	At least one fields between locality or city or postcode must be fielded in the request
stateOrProvince	O	
streetName	O	
streetNr	O	
streetNrLast	O	
streetNrLastSuffix	O	
streetNrSuffix	O	
streetSuffix	O	
streetType	O	
geographicLocation	O	If a geographicLocation is provided, attributes spatialRef and accuracy are mandatories. If href is not provided, both geometryType and geometry (at least one geometryPoint) are mandatories.
geographicSubAddress	O	
@type	O	
@schemaLocation	O	

Attribute Name	Mandatory or Optional	Comments
checkpoint	O	
status	M if checkpoint appears	
message	O	
date	M if checkpoint appears	
checkPost	O	
city	O	
stateOrProvince	O	
country	O	
order	O	
id	M if order appears	
href	M if order appears	
name	O	
description	O	

API OPERATIONS CONFORMANCE

For every single resource use the following templates and define what operations are optional and what operations are mandatory.

Shipment Tracking MANDATORY AND OPTIONAL OPERATIONS

Uniform API Operation	Mandatory/Optional	Comments
GET	M	GET must be used to retrieve a representation of a resource
POST	M	POST must be used to create a new resource
PUT	O	PUT must be used to completely update a resource identified by its resource URI
PATCH (JSON-MERGE)	O	PATCH must be used to partially update a resource
DELETE	O	DELETE must be used to remove a resource

API GET FILTERING OPERATION CONFORMANCE

Definitions

Filtered Search: A filtered search can be applied using query parameters in order to obtain only the resource entities that meet the criteria defined by the filtering parameters included in the query request. Several elements can be applied to the filtered search. In that case logic, a logical AND is applied to combine the criteria (e.g.:?carrier=<value> &status=<value>)

Filtered Data (Attribute selection): In order to apply a filter and limit the number of attributes included in the response, the GET request can include the "?fields=" query parameter. Several elements can be applied to the filter. In that case, a logical AND is applied to combine the values (e.g.:?fields=id,status) will provide in the response only the values assigned to attributes category and channel. Attribute selection capabilities are the same for collections retrieval and individual resource queries

Filtering in Shipment Tracking resource

Attribute name	Filtered search First Level	Filtered search N Level	Attribute Selection First Level	Attribute Selection N Level
id	NA	NA	M	NA
href	NA	NA	M	NA
carrier	O	NA	M	NA
trackingCode	O	NA	M	NA
carrierTrackingUrl	O	NA	M	NA
trackingDate	O	NA	M	NA
status	M	NA	M	NA
statusChangeDate	O	NA	M	NA
statusChangeReason	O	NA	M	NA

Attribute name	Filtered search First Level	Filtered search N Level	Attribute Selection First Level	Attribute Selection N Level
weight	O	NA	M	NA
estimatedDeliveryDate	O	NA	M	NA
addressFrom	NA	O	M	O
addressTo	NA	O	M	O
checkpoint	NA	O	M	O
order	NA	O	M	O

GET /tracking

Filtered Search: A filtered search can be applied using the following filtering criteria

- startTrackingDate: To obtain the list of shipment trackings that were shipped after a certain date.

- endTrackingDate: To obtain the list of shipment trackings that were shipped before a certain date.

- startEstimatedDeliveryDate: To obtain the list of shipment trackings that are expected to arrive after a certain date.

- endEstimatedDeliveryDate: To obtain the list of shipment trackings that are expected to arrive before a certain date.

- status: To obtain the list of shipment trackings that are in a certain status.

- other optional attributes as defined in the table above

Filtered Data: A filtered response can be requested for the following attributes using the "?fields=" query parameter

- Any of the attributes in the first level of shipment tracking resource definition

GET /tracking/{ID}

Filtered Search: A filtered response can be requested for the following attributes using the "?fields=" query parameter

- Any of the attributes in the first level of the Shipment Tracking resource definition

API POST OPERATION CONFORMANCE

POST to /tracking

This Uniform Contract operation is used to create a shipment tracking resource in the server.

The response to this operation must include a Location header set to /shipmentTracking/{ID} where {ID} indicates the identifier assigned by the server to the new shipment tracking resource created

POST	M	
Response Status Code 201	M	
Other Status Codes	NA	

The following table indicates attributes that are required to be sent when creating a new shipment tracking resource as well as attributes with special considerations. All other attributes defining the resource are not required to be sent as part of the BODY of the POST request message:

Attribute name	Mandatory	Default	Rule
TODO	Y		

The response from the server must include a BODY with the contents of the new resource created, filled with at least the same information elements that were included in the request and are supported by the server.

If the POST request includes optional parameters (as per the model resource definition) that are not supported by the server, then the server must reject the request (replying with a 4xx error response) indicating the parameter not supported.

The following parameters must be supported by the server when included in the request to create a new resource

- carrier
- trackingCode
- carrierTrackingUrl
- trackingDate
- status
- estimatedDeliveryDate

- addressTo

The BODY of the response from the server must include attribute "href" set to the same value as the one in the Location header.

The server must include in the BODY of the response, even if they are not included in the request, the following attributes that are mandatory in the definition of a Shipment Tracking as per the resource model defined (unless a response filter is included in the request indicating otherwise)

- id
- trackingDate
- href
- status

API PATCH OPERATION CONFORMANCE

This section defines which attributes are patchable.

Since PATCH operation is optional and not included in the basic CONNECT certification this is not applicable in this conformance document.

API DELETE OPERATION CONFORMANCE

This section defines what operations can be used to delete a Shipment Tracking resource.

Since DELETE operation is optional and not included in the basic CONNECT certification this is not applicable in this conformance document

API CONFORMANCE TEST SCENARIOS

This section describes the test scenarios required for the basic CONNECT certification of Shipment Tracking API.

Test Cases must be executed in the order defined for each resource because the result from one of the scenarios will be input for the next one.

Requests must be addressed to the endpoint provided for certification, specifically they must be addressed to the URI defined by the concatenation of the {apiRoot} and the specific resource, where the {apiRoot} is defined as **{serverRoot}/shipmentTracking/v1**, being {serverRoot} defines the certification endpoint

Shipment Tracking resource TEST CASES

Nominal Scenarios

TC_ShTr_N1 – Create new Shipment Tracking with minimum required information

- Send a POST message to {apiRoot}/tracking with the following contents in the BODY

```
{
  "carrier": "FEDXE",
  "trackingCode": "12345abcdeK",
  "carrierTrackingUrl": "fedxeApi/12345abcdeK",
  "status": "shipped",
  "weight": 2.32,
  "estimatedDeliveryDate": "2017-12-23T15:23:10.433Z",
  "addressTo": {
    "streetNr": "32",
    "streetName": "Alcalá",
    "streetType": "calle",
    "postcode": "28030",
    "city": "Madrid",
    "stateOrProvince": "Madrid",
    "country": "Spain"
  },
  "order": {
    "id": "321654987",
    "href": "orderingApi/order/321654987"
  }
}
```

- Wait for a response from the server with the following characteristics

  - Response Code 201-Created

- Include a location header in the body set to /{apiRoot}/tracking/{IDp1} where {IDp1} indicates the identifier assigned by the server to the new shipment tracking resource

- The response message includes all mandatory parameters (including trackingDate that was not sent in the original request)

- The body of the response matches the values set in the original request

- Send a GET message to /{apiRoot}/tracking

- Wait for a response from the server with the following characteristics

    - Response Code 200-OK

    - The body of the response includes one shipment tracking resource with ID set to {IDp1}, the same identifier as assigned by the server to the new resource created

    - The response message includes all mandatory parameters

    - The body of the response for the resource with identifier {IDp1} matches the values set in the original request

- Send a GET message to /{apiRoot}/tracking/{IDp1}

- Wait for a response from the server with the following characteristics

    - Response Code 200-OK

    - The response message includes all mandatory parameters

    - The body of the response includes a shipment tracking resource structure that matches the values in the original request

TC_ShTr_N2 – Create new shipmen tracking with minimum set of parameters supported by server

- Send a POST message to {apiRoot}/tracking with the following contents in the BODY

```
{
  "carrier": "TourlineSlow",
  "trackingCode": "654987321KKK",
```

```
      "carrierTrackingUrl": "tourlineSlow/654987321KKK",
      "status": "waiting for stock",
      "estimatedDeliveryDate": "2017-12-30T15:23:10.433Z",
      "addressTo": {
        "streetNr": "117",
        "streetName": "Pío XII",
        "streetType": "avenida",
        "postcode": "45600",
        "city": "Talavera de la Reina",
        "stateOrProvince": "Toledo",
        "country": "Spain"
      }
    }
```

- Wait for a response from the server with the following characteristics

    - Response Code 201-Created

    - Include a location header in the body set to /{apiRoot}/tracking/{IDp2} where {IDp2} indicates the identifier assigned by the server to the new shipment tracking resource

    - The response message includes all mandatory parameters (including interactionDate that was not sent in the original request)

    - The body of the response matches the values set in the original request

- Send a GET message to /{apiRoot}/tracking

- Wait for a response from the server with the following characteristics

    - Response Code 200-OK

    - The body of the response includes one shipment tracking resource with ID set to {IDp2}, the same identifier as assigned by the server to the new resource created

    - The response message includes all mandatory parameters

    - The body of the response for the resource with identifier {IDp2} matches the values set in the original request

- Send a GET message to /{apiRoot}/tracking/{IDp2}

- Wait for a response from the server with the following characteristics

    - Response Code 200-OK

- The response message includes all mandatory parameters

- The body of the response includes a shipment tracking resource structure that matches the values in the original request

TC_ShTr_N3 – Search for shipment tracking with specific characteristics

- Send a GET message to /{apiRoot}/tracking

- Wait for a response from the server with the following characteristics
  - Response Code 200-OK

  - The body of the response includes at least two shipment tracking resources referring to {IDp1} and {IDp2}

  - The body of the response for the resource with each identifier matches the values in the corresponding original request

- Send a GET message to /{apiRoot}/tracking?carrier=Fedxe

- Wait for a response from the server with the following characteristics

  - Response Code 200-OK

  - The body of the response includes one shipment tracking resource referring to {IDp1} and there is no reference to the shipment tracking resource {IDp2}

  - The response message includes all mandatory parameters

  - The body of the response for the resource with identifier {IDp1} matches the values in the original request

- Send a GET message to /{apiRoot}/tracking?status=waiting%20for%20stock

- Wait for a response from the server with the following characteristics

  - Response Code 200-OK

  - The body of the response includes one shipment tracking resource referring to {IDp2} and there is no reference to the shipment tracking resource {IDp1}

  - The response message includes all mandatory parameters

- The body of the response for the resource with identifier {IDp2} matches the values in the original request

TC_ShTr_N4 – Filtered retrieval of shipment tracking

- Send a GET message to /{apiRoot}/tracking/{IDp1}?fields=estimatedDeliveryDate

- Wait for a response from the server with the following characteristics

  - Response Code 200-OK

  - The body of the response includes one shipment tracking resource referring to {IDp1} and including only the channel attribute matching the values in the original request

- Send a GET message to /{apiRoot}/tracking/{IDp2}?fields=trackingDate,status

- Wait for a response from the server with the following characteristics

  - Response Code 200-OK

  - The body of the response includes one shipment tracking resource referring to {IDp2} and including only attributes trackingDate and status matching the values returned in the original request

Notice that this test case is using parameters "estimatedDeliveryDate", "trackingDate" and "status" to filter the data included in the response but any other parameter could be used

TC_ShTr_N5 – Filtered Search and Filtered data response

- Send a GET message to /{apiRoot}/tracking?trackingCode=654987321KKK &fields=estimatedDeliveryDate

- Wait for a response from the server with the following characteristics

  - Response Code 200-OK

  - The body of the response includes one shipment tracking resource referring to {Idp2} and there is no reference to shipment tracking resource {Idp1}

  - The body of the response for the resource with each identifier includes only attribute estimatedDeliveryDate, matching the values in the corresponding original creation

Notice that this test case is using the parameter "estimatedDeliveryDate" to filter the data included in the response but any other parameter could be used

Error Scenarios

TC_ShTr_E1 – Unknown shipment tracking identifier

- Send a GET message to /{apiRoot}/tracking/{IDp3}, where {IDp3} does not match any of the identifiers previously created in the server

- Wait for a response from the server with the following characteristics

    o Response Code 404-Not Found

TC_ ShTr_E2 – Invalid Request – Missing mandatory parameter

- Send a POST message to {apiRoot}/tracking/ with the following contents in the BODY.

```
{
  "carrier": "TourlineSlow",
  "trackingCode": "654987321KKK",
  "carrierTrackingUrl": "tourlineSlow/654987321KKK",
  "status": "waiting for stock",
  "estimatedDeliveryDate": "2017-12-30T15:23:10.433Z",
}
```

Notice that this request is missing mandatory parameter "addressTo" but any other mandatory parameter could be used

- Wait for an error response from the server indicating the mandatory parameter is missing in the request

TC_ ShTr _E3 – Invalid Request – Missing parameter mandatory in context

- Send a POST message to {apiRoot}/tracking with the following contents in the BODY.

```
{
  "carrier": "TourlineSlow",
  "trackingCode": "654987321KKK",
  "carrierTrackingUrl": "tourlineSlow/654987321KKK",
  "status": "waiting for stock",
  "estimatedDeliveryDate": "2017-12-30T15:23:10.433Z",
  "addressFrom": {
    "streetNr": "SN",
    "streetName": "Ronda de la Comunicación",
    "streetType": "Ronda",
```

```
        "postcode": "28050",
        "city": "Madrid",
        "stateOrProvince": "Madrid"
      },
      "addressTo": {
        "streetNr": "117",
        "streetName": "Pío XII",
        "streetType": "avenida",
        "postcode": "45600",
        "city": "Talavera de la Reina",
        "stateOrProvince": "Toledo",
        "country": "Spain"
      }
    }
```

Notice that this request is missing the mandatory parameters "country" when the information element "addressFrom" is included in the request, but any other parameter that becomes mandatory based on the context could be used

- Wait for an error response from the server indicating the mandatory parameter is missing in the request