



Frameworkx Specification

Address API REST Specification

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INTRODUCTION

The following document is the specification of the REST API for geographic address management. It includes the model definition as well as all available operations.

The Address API provides a standardized client interface to an Address management system.

It allows to look for worldwide addresses.

It can also be used to validate address data, to be sure that it corresponds to a real address.

Finally, it can be used to look for an address by: searching an area as a start (city, town, ...), then zooming on the streets of this area, and finally listing all the street segments (numbers) in a street.

SAMPLE USE CASES

N/A

RESOURCE MODEL

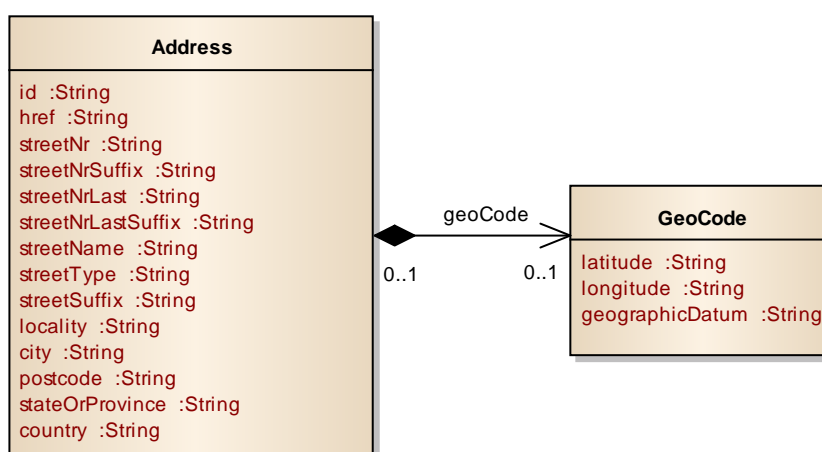
Managed Entity and Task Resource Models

ADDRESS RESOURCE

Structured textual way of describing how to find a Property in an urban area (country properties are often defined differently).

Nota : Address corresponds to SID UrbanPropertyAddress.

Resource model



Lifecycle

No state machine for the resources detailed in this API

Json representation sample

We provide below the json representation of an example of an Address resource object

```

{
  "id": "7660828",
  "href": "address/7660828",
  "streetNr": "225",
  "streetNrSuffix": "B",
  "streetNrLast": "",
  "streetNrLastSuffix": "",
  "streetName": "Strathmore",
  "streetType": "Terrace",
  "streetSuffix": "",
  "locality": "Brighton",
  "city": "Brighton",

```



```

"postcode": "5004",
"stateOrProvince": "SA",
"country": "Australia",
"geoCode": {
  "latitude": "1.430937",
  "longitude": "43.597208",
  "geographicDatum": "WGS84"
}
}

```

Field descriptions

Address fields

Field	Description
id	Unique identifier of the address
href	An URI used to access to the address resource
streetNr	Number identifying a specific property on a public street. It may be combined with streetNrLast for ranged addresses
streetNrSuffix	the first street number suffix
streetNrLast	Last number in a range of street numbers allocated to a property
streetNrLastSuffix	Last street number suffix for a ranged address
streetName	Name of the street or other street type
streetType	alley, avenue, boulevard, brae, crescent, drive, highway, lane, terrace, parade, place, tarn, way, wharf ?
streetSuffix	A modifier denoting a relative direction
locality	"An area of defined or undefined boundaries within a local authority or other legislatively defined area, usually rural or semi rural in nature." [ANZLIC-STREET], or a suburb "a bounded locality within a city, town or shire principally of urban character " [ANZLIC-STREET]
city	City that the address is in
postcode	A descriptor for a postal delivery area, used to speed and simplify the delivery of mail
stateOrProvince	the State or Province that the address is in
country	Country that the address is in
geoCode	Geographic coordinates to point to the address

geoCode fields

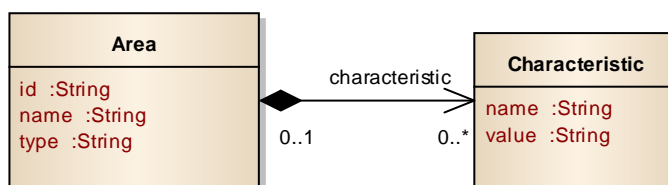
Field	Description
latitude	Latitude
longitude	Longitude
geographicDatum	Geocoding referential

AREA RESOURCE

It is used to represent areas defined on maps that relate to areas of settlement.

Nota : Area corresponds to SID GeographicArea.

Resource model



Lifecycle

No state machine for the resources detailed in this API

Json representation sample

We provide below the json representation of an example of an Area resource object :

```

{
  "id": "7660828",
  "name": "Bagneux",
  "type": "city",
  "characteristic": [{
    "name": "aWayOfCodingCityInTheCountry",
    "value": "10304"
  }]
}
  
```

Field descriptions

area fields

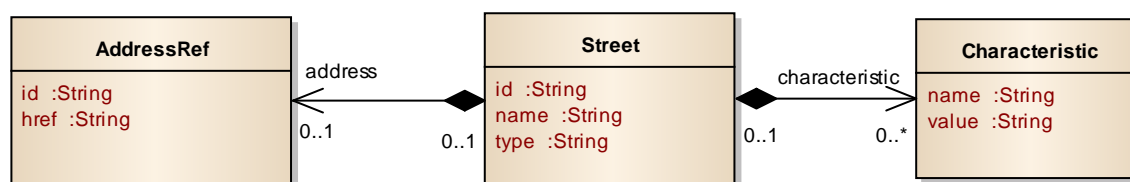
Field	Description
id	Unique identifier of the Area
name	The defined name of the municipality
type	SUBURB, LOCALITY, CITY, TOWN, BOROUGH, ...
characteristic	Name/value pairs, used to extra characterized the Area (e.g. if a standard code set has been defined for the GeographicArea type, etc.)

STREET RESOURCE

It is used to represent streets within an Area.

Nota : Street corresponds to SID Street.

Resource model



Lifecycle

No state machine for the resources detailed in this API

Json representation sample

We provide below the json representation of an example of a Street resource object :

```

{
  "id":"2173322",
  "type":"Rue",
  "name":"OLIVETTES",
  "characteristic": [{
    "name": "aWayOfCodingStreetsInTheCountry",
    "value": "34556"
  }]
}
  
```

In some cases, “streets” can represent small villages / hamlets which exist in a town and that are directly addressable (without any street specification).

In this last case, it can represent a complete address, which is accessible through hyperlinking.

```

{
  "id":"2173322",
  "type":"Hamlet",
  "name":"The Wires",
  "characteristic": [{
    "name": "aWayOfCodingHamletsInTheCountry",
    "value": "34556"
  }],
  "address":{
    "href":"address/21885630",
  }
}
  
```

```

    "id": "21885630"
  }
}

```

Field descriptions

street fields

Field	Description
id	Unique identifier of the Street
name	The defined name of the street
characteristic	Name/value pairs, used to extra characterized the Area (e.g. if a standard code set has been defined for the GeographicArea type, etc.)
type	alley, avenue, etc.
address	a linking to the corresponding geographic address

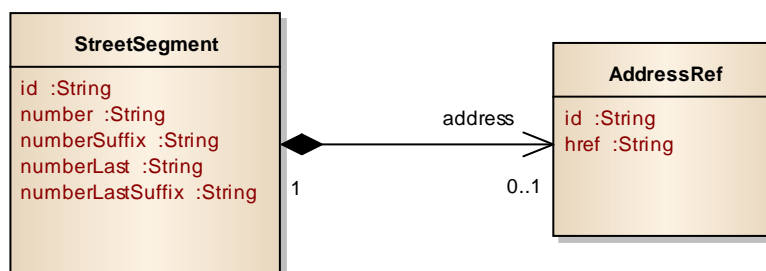
STREETSEGMENT RESOURCE

It is used to represent segments in a given street: this can be directly street numbers (22), or group of numbers materializing a geographic address, e.g. 22-24.

This level can represent an entire address, which is accessible through hyperlinking

Nota : StreetSegment corresponds to SID StreetSegment.

Resource model



Lifecycle

No state machine for the resources detailed in this API

Json representation sample

We provide below the json representation of an example of an StreetSegment resource object :

```

{
  "id": "21885630",
  "number": "1",
  "numberSuffix": "",

```

```

"numberLast": "",
"numberLastSuffix": "",
"address": {
  "href": "address/21885630",
  "id": "21885630"
}
}

```

Field descriptions

streetSegment fields

Field	Description
id	Unique identifier of the Street Segment
number	number identifying a specific property on a public street. It may be combined with streetNrLast for ranged addresses
numberSuffix	the first street number suffix
numberLast	the last number in a range of street numbers allocated to a property
numberLastSuffix	the last street number suffix for a ranged address
address	a linking to the corresponding geographic address

Notification Resource Models

There is no notification in the Address API

API OPERATIONS

Remember the following Uniform Contract:

Operation on Entities	Uniform API Operation	Description
Query Entities	GET Resource	GET must be used to retrieve a representation of a resource.
Create Entity	POST Resource	POST must be used to create a new resource
Partial Update of an Entity	PATCH Resource	PATCH must be used to partially update a resource
Complete Update of an Entity	PUT Resource	PUT must be used to completely update a resource identified by its resource URI
Remove an Entity	DELETE Resource	DELETE must be used to remove a resource
Execute an Action on an Entity	POST on TASK Resource	POST must be used to execute Task Resources
Other Request Methods	POST on TASK Resource	GET and POST must not be used to tunnel other request methods.

Filtering and attribute selection rules are described in the TMF REST Design Guidelines.

Notifications are also described in a subsequent section.

OPERATIONS ON ADDRESS

LIST ADDRESSES

```
GET /api/address?{fields=attributes}&{filtering expression}&.fullText={fullTextSearch}&.fuzzy={true/false}
```

Description

This operation is used to retrieve an address corresponding to search criteria.

Filtering is allowed on all attributes. See example below.

Attribute selection is possible for all attributes. See example below.

Two special search fields can also be used:

- “.fullText” : which can be used for full text searches, for example when you have a single textarea to capture address search infos
- “.fuzzy” : which can be used for approximative searches (sounds like, etc.)

Behavior :

- Returns HTTP/1.1 status code 200 if the request was successful

Usage Samples

Here's an example of a request for retrieving Address resources.

Request
GET /api/address?geoCode.latitude=1.296349&geoCode.longitude=43.717627 Accept: application/json
Response
200 Content-Type: application/json [{ "id": "7513180", "href": "address/7513180", "streetNr": "29", "streetName": "Rambeau", "streetType": "Rue",

```
"city": "Merville",
"postcode": "31330",
"country": "France",
"geoCode": {
  "latitude": "1.296349",
  "longitude": "43.717627",
  "geographicDatum": "WGS84"
}
}
```

VALIDATE AN ADDRESS

POST /api/address/validate

Description

This operation can be used to validate an address if you give a sufficient part or the entire attribute set of the address to validate.

Behavior :

- Returns HTTP/1.1 status code 201 and the detailed validated address as payload if the request was successful
- Returns HTTP/1.1 status code 404 (Not found) if the address does not exist

Usage Samples

Request

POST /api/address/validate
Content-type: application/json

```
{
  "streetNr": "225",
  "streetNrSuffix": "B",
  "streetName": "Strathmore",
  "streetType": "Terrace",
  "city": "Brighton",
  "country": "Australia"
}
```

Response


```
201
Content-Type: application/json

[
  {
    "id": "7660828",
    "href": "address/7660828",
    "streetNr": "225",
    "streetNrSuffix": "B",
    "streetName": "Strathmore",
    "streetType": "Terrace",
    "locality": "Brighton",
    "city": "Brighton",
    "postcode": "5004",
    "stateOrProvince": "SA",
    "country": "Australia",
    "geoCode": {
      "latitude": "1.430937",
      "longitude": "43.597208",
      "geographicDatum": "WGS84"
    }
  }
]
```

GET AN ADDRESS

GET /api/address/{id}

Description

Retrieves an address using its unique ID. This ID should be retrieve either using the address completion process (cf. completion), or in another API of the ecosystem (party, appointment, etc.)

Behavior :

- Returns HTTP/1.1 status code 200 if the request was successful
- Returns HTTP/1.1 status code 404 (Not found) if the address does not exist

Usage Samples

Request

```
GET /api/address/7660828
```

```
Accept: application/json
```

Response

```
200
```

```
Content-Type: application/json
```

```
{
  "id": "7660828",
  "href": "address/7660828",
  "streetNr": "225",
  "streetNrSuffix": "B",
  "streetName": "Strathmore",
  "streetType": "Terrace",
  "locality": "Brighton",
  "city": "Brighton",
  "postcode": "5004",
  "stateOrProvince": "SA",
  "country": "Australia",
  "geoCode": {
    "latitude": "1.430937",
    "longitude": "43.597208",
    "geographicDatum": "WGS84"
  }
}
```

ADDRESS COMPLETION PROCESS : STEP1 - LIST GEOGRAPHIC AREA

```
GET api/area?{fields=attributes}&{filtering expression}&.fuzzy={true/false}
```

Description

This operation is the first step of an address completion process, allowing to retrieve geographic areas:

- Step 1: I look for a geographic area (city, locality, district, etc.) using its name
- Step 2: I look for the streets inside this geographic area
- Step 3: I get all the street segments (numbers) existing in the street

Filtering is allowed on all attributes. See example below.

Attribute selection is possible for all attributes. See example below.

A special search field can also be used:

- “.fuzzy” : which can be used for approximative searches (sounds like, etc.)

Behavior:

- Returns HTTP/1.1 status code 200 if the request was successful

Usage Samples

Request
GET /api/area?name=Kensington&fields=id,name,type Accept: application-json
Response
200 Content-Type: application/json [{ "id": "7660828", "name": "Royal Borough of Kensington and Chelsea", "type": "borough" }, { "id": "7660855", "name": "North Kensington", "type": "district" }, { "id": "7660821", "name": "South Kensington", "type": "district" }, { "id": "7660834", "name": "Kensington", "type": "district" }]

ADDRESS COMPLETION PROCESS : STEP2 - LIST STREETS

```
GET /api/street?{fields=attributes}&{filtering expression}&.fuzzy={true/false}
```

Description

This operation is the second step of an address completion process, allowing to retrieve streets:

- Step 1: I look for a geographic area (city, locality, district, etc.) using its name
- Step 2: I look for the streets inside this geographic area
- Step 3: I get all the street segments (numbers) existing in the street

Filtering is allowed on all attributes. See example below.

Attribute selection is possible for all attributes. See example below.

A special search field can also be used:

- “.fuzzy” : which can be used for approximative searches (sounds like, etc.)

Behavior:

Returns HTTP/1.1 status code 200 if the request was successful

Usage Samples

Request
<pre>GET /api/street?name=Cromwell&area.id=7660821&fields=id,name,type Accept: application/json</pre>
Response
<pre>200 Content-Type: application/json [{ "id":"2173322", "type":"Road", "name":"Cromwell" }, { "id":"2173323", "type":"Place",</pre>

```

"name":"Cromwell"
},
{
  "id":"2173324",
  "type":"Mews",
  "name":"Cromwell"
}
]

```

ADDRESS COMPLETION PROCESS : STEP3 - LIST SEGMENTS

GET /api/street/{id}/segment

Description

This operation is the last step of an address completion process, allowing to retrieve numbers in a street:

- Step 1: I look for a geographic area (city, locality, district, etc.) using its name
- Step 2: I look for the streets inside this geographic area
- Step 3: I get all the street segments (numbers) existing in the street

Behavior:

Returns HTTP/1.1 status code 200 if the request was successful

Usage Samples

Request
<pre> GET /api/street/2173323/segment Accept: application/json </pre>
Response
<pre> 200 Content-Type: application/json [{ "id":"21733233", "number":"3", "address":{ </pre>

```
"href":"address/217332332",  
  "id":"217332332"  
},  
{  
  "id":"21733234",  
  "number":"4",  
  "address":{  
    "href":"address/217332342",  
    "id":"217332342"  
  }  
},  
etc.  
]
```

API NOTIFICATIONS

N/A

ACKNOWLEDGMENTS

VERSION HISTORY

Version Number	Date	Modified by	Description
Version 2.0.0	15/04/2016	Pierre Gauthier TM Forum	Final version for Fx16
Version 2.0.1	14/06/2016	Alicja Kawecki TM Forum	Updated cover, header, footer; minor formatting/style corrections prior to publishing for Fx16
Version 2.0.2	05/10/2016	Alicja Kawecki TM Forum	Updated cover and Notice to reflect TM Forum Approved status

RELEASE HISTORY

Release Number	Date	Release led by:	Description
Release 1.0	09/06/2015	Maxime Delon Orange maxime.delon@orange.com	First Release of Draft Version of the Document.
Release 1.1	25/03/2016	Ludovic Robert Orange ludovic.robert@orange.com	Updated for delete of subAddress resource not necessary

CONTRIBUTORS TO DOCUMENT

This document was prepared by members of the TM Forum API Program team.