

# TM Forum Specification

## Geographic Site Management API User Guide

TMF674

Team Approved Date: 03-Apr-2020

Release Status: Production	Approval Status: TM Forum Approved
Version 4.0.1	IPR Mode: RAND

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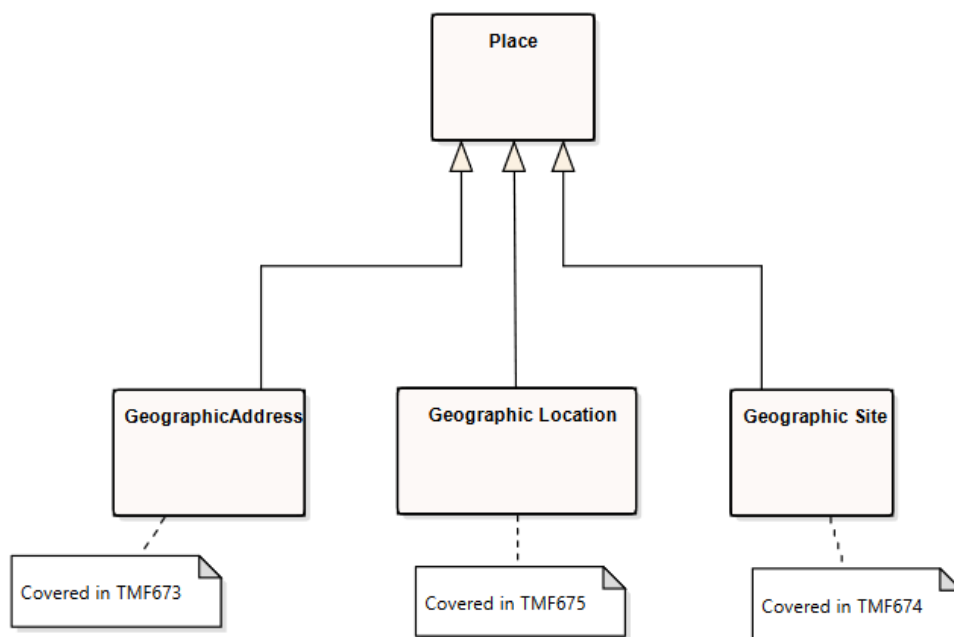
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N/A

## Introduction

The following document is the specification of the REST API for Geographic Site management. A geographic site is a specialization of the abstract Place entity (like Geographic Address and Geographic Location).



This specification includes the Geographic site model definition as well as all available operations. Possible actions are creating, updating and retrieving geographic sites.

This API covers the operations to manage (create, read, delete) sites that can be associated to a customer, an account, a service delivery or other entities.

This API defines a Site as a convenience class that allows to easily refer to places important to other entities, where a geographic place is the entity that can answer the question “where?”, allowing to determine where things are in relation to the earth's surface, and can be represented either in a textual structured way (geographic address) or as a geometry referred to a spatial reference system (geographic location)

This API relates with the following two APIs also covering SID GeographicPlace entity

- Geographic Address Management API, specific to manage places defined in a structured textual way (street name, street number ...) and validate existence of given address definition.
- GeoLocation API specific for management of places defined as a geometry in the spatial reference regarding the surface of the Earth (coordinates ...) and the relationship between different geolocations (distance, proximity ...)

This API allows the following operations

- Create a new site
- Partial update of a geographic site
- Retrieve a list of sites stored in a server filtered by a given criteria
- Retrieve a specific site
- Notification of events on a geographic site
  - o geographic site creation
  - o geographic site removal
  - o geographic site status change
  - o geographic site value change used to notify that any data in a geographic site has just changed

## Sample Use Cases

This section includes a set of main use cases that can be performed with this API. Additional use cases can be generated using the operations and resources defined in this specification.

- Create a site in the server and associate a given customer/account to that site. The site definition includes all the address definition (street name, street number...) as well as the type of site it is in the relationship with the customer and the validity period for the relationship
- Request a new product order and associate the delivery of any of the products/services in the order to one of the sites that have been associated to a customer/account
- A customer creates a new trouble ticket for technical assistance requiring an agent to provide assistance in a specific geographic address, identified as one of the sites allocated to the customer

## Support of polymorphism and extension patterns

Support of polymorphic collections and types and schema based extension is provided by means of a list of generic meta-attributes that we describe below. Polymorphism in collections occurs when entities inherit from base entities, for instance a Warehouse and Customer Access inheriting properties from the Geographic Site entity itself inheriting from geographic place.

Generic support of polymorphism and pattern extensions is described in the TMF API Guidelines v3.0 Part 2 document.

The `@type` attribute provides a way to represent the actual class type of an entity. For example, within a list of Geographic Site (or Geographic place) instances some may be instances of Warehouse where other could be instances of physical store. The `@type` gives this information. All resources and sub-resources of this API have a `@type` attributes that can be provided when this is useful.

The `@referredType` can be used within reference entities (like for instance in PlaceRef object) to explicitly denote the actual entity type of the referred class. Notice that in reference entities the `@type`, when used, denotes the class type of the reference itself, such as WarehouseRef or PhysicalStoreRef, and not the class type of the referred object. However, since reference classes are rarely sub-classed, `@type` is generally not useful in reference objects.

The `@schemaLocation` property can be used in resources to allow specifying user-defined properties of an Entity or to specify the expected *characteristics* of an entity.

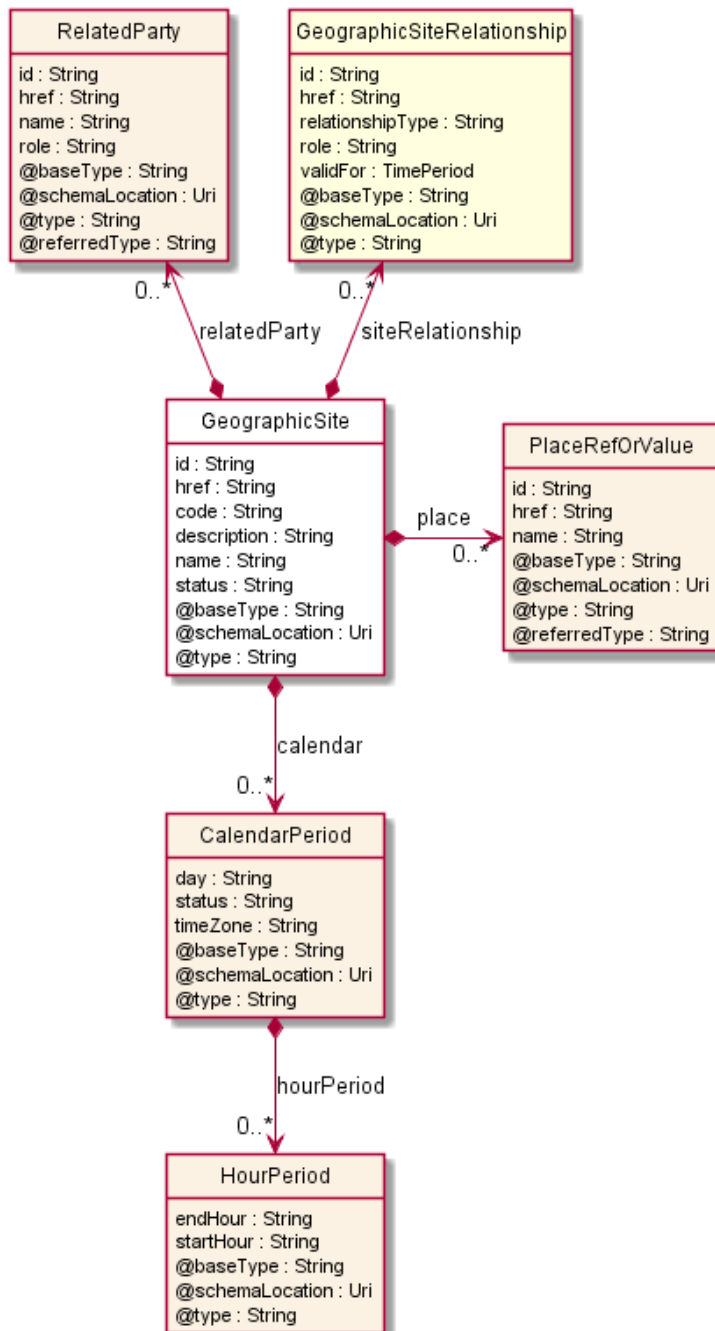
The `@baseType` attribute gives a way to provide explicitly the base of class of a given resource that has been extended.

# RESOURCE MODEL

## Managed Entity and Task Resource Models

### Geographic Site resource

#### Resource model



**Field descriptions**GeographicSite fields

href	A string. Unique reference of the place.
id	A string. Unique identifier of the place.
name	A string. A user-friendly name for the place, such as [Paris Store], [London Store], [Main Home].
calendar	A list of calendar periods (CalendarPeriod [*]).
code	A string. A code that may be used for some addressing schemes e.g.: [ANSI T1.253-1999].
description	A string. Text describing additional information regarding the site.
place	A list of place ref or values (PlaceRefOrValue [*]). A place defines a place described by reference or by value linked to a specific entity. The polymorphic attributes @type, @schemaLocation & @referredType are related to the place entity and not the RelatedPlaceRefOrValue class itself.
relatedParty	A list of related parties (RelatedParty [*]). Related Entity reference. A related party defines party or party role linked to a specific entity.
siteRelationship	A list of geographic site relationships (GeographicSiteRelationship [*]).
status	A string. The condition of the GeographicSite, such as planned, underConstruction, cancelled, active, inactive, former.

CalendarPeriod sub-resource

day	A string. Day where the calendar status applies (e.g.: monday, mon-to-fri, weekdays, weekend, all week, ...).
hourPeriod	A list of hour periods (HourPeriod [*]).
status	A string. Indication of the availability of the site (e.g.: open).
timeZone	A string. Indication of the timezone applicable to the calendar information (e.g.: Paris, GMT+1).

GeographicSiteRelationship sub-resource

href	A string. Reference of the related geographic site.
------	---

id	A string. Unique identifier of the related site entity within the server.
relationshipType	A string. Type of relationship.
role	A string. Role of the related site in the relationship.
validFor	A time period. Validity for the relationship.

HourPeriod sub-resource

endHour	A string. The time when the status ends applying.
startHour	A string. The time when the status starts applying.

PlaceRefOrValue sub-resource

A place defines a place described by reference or by value linked to a specific entity. The polymorphic attributes @type, @schemaLocation & @referredType are related to the place entity and not the RelatedPlaceRefOrValue class itself.

@referredType	A string. The actual type of the target instance when needed for disambiguation.
name	A string. A user-friendly name for the place, such as [Paris Store], [London Store], [Main Home].
href	A string. Unique reference of the place.
id	A string. Unique identifier of the place.
@baseType	A string. When sub-classing, this defines the super-class.
@schemaLocation	An uri (Uri). A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A string. When sub-classing, this defines the sub-class Extensible name.

RelatedParty sub-resource

Related Entity reference. A related party defines party or party role linked to a specific entity.

@referredType	A string. The actual type of the target instance when needed for disambiguation.
name	A string. Name of the related entity.
href	A string. Hyperlink reference.
id	A string. unique identifier.
@baseType	A string. When sub-classing, this defines the super-class.

@schemaLocation	An uri (Uri). A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A string. When sub-classing, this defines the sub-class Extensible name.
role	A string. Role played by the related party.

### Json representation sample

We provide below the json representation of an example of a 'GeographicSite' resource object

```
{
  "id": "sd65-8874",
  "href": "https://host:port/geographicSiteManagement/v4/geographicSite/sd65-8874",
  "code": "Warehouse",
  "description": "Warehouse in Marseille",
  "name": "Marseille Warehouse",
  "status": "active",
  "calendar": [
    {
      "day": "weekdays",
      "status": "open",
      "timeZone": "GMT+1",
      "hourPeriod": [
        {
          "endHour": "16:30 pm",
          "startHour": "6:30 am",
          "@type": "HourPeriod"
        }
      ]
    },
    "@type": "Calendar"
  ],
  "place": [
    {
      "id": "9912",
      "href": "https://host:port/geographicAddressManagement/v4/geographicAddress/9912",
      "@type": "PlaceRef",
      "@referredType": "GeographicAddress"
    }
  ],
  "relatedParty": [
    {
      "id": "45",
      "href": "https://host:port/partyManagement/v4/individual/45",
      "name": "Jean Pontus",
      "role": "Warehouse manager",
      "@referredType": "Individual"
    }
  ],
  "siteRelationship": [
    {
      "id": "4589-jj65",
      "href": "string",
```

```
"relationshipType": "support",
"role": "support site in case of stock shortage",
"validFor": {
  "endDateTime": "2019-01-02T09:33:35.749Z",
  "startDateTime": "2023-12-31T09:33:35.749Z"
},
"@type": "SiteRelationship"
},
"@type": "GeographicSite"
}
```

## Notification Resource Models

4 notifications are defined for this API

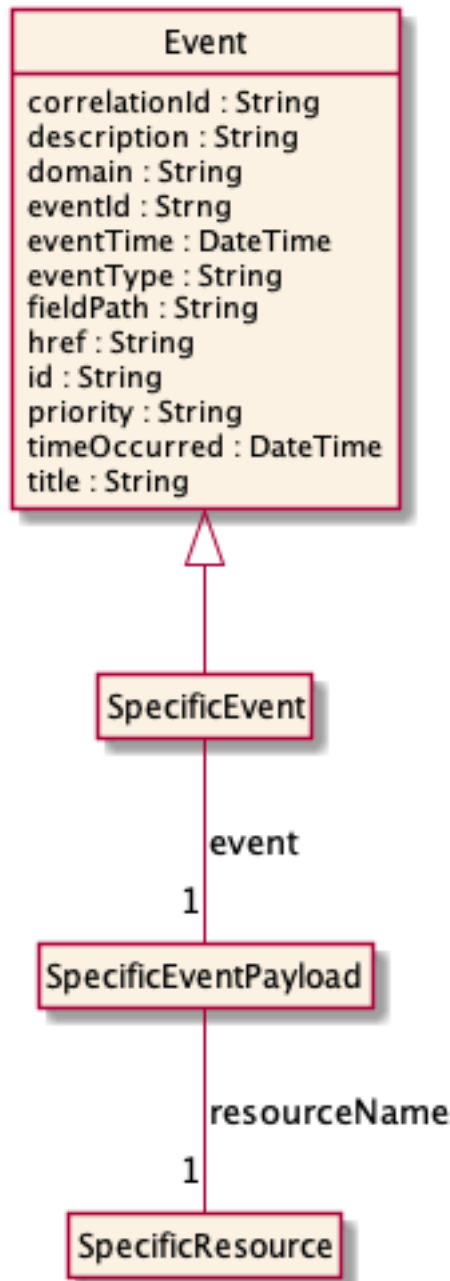
Notifications related to GeographicSite:

- GeographicSiteCreateEvent
- GeographicSiteAttributeValueChangeEvent
- GeographicSiteStatusChangeEvent
- GeographicSiteDeleteEvent

The notification structure for all notifications in this API follow the pattern depicted by the figure below.

A notification event resource (depicted by "SpecificEvent" placeholder) is a sub class of a generic Event structure containing at least an id of the event occurrence (eventId), an event timestamp (eventTime), and the name of the resource (eventType).

This notification structure owns an event payload structure ("SpecificEventPayload" placeholder) linked to the resource concerned by the notification using the resource name as access field ("resourceName" placeholder).



### Geographic Site Create Event

Notification GeographicSiteCreateEvent case for resource GeographicSite

#### Json representation sample

We provide below the json representation of an example of a 'GeographicSiteCreateEvent' notification event object

```

{
  "eventId": "00001",
  "eventTime": "2015-11-16T16:42:25-04:00",
  "eventType": "GeographicSiteCreateEvent",
  "event": {

```

```
"geographicSite" :
  {-- SEE GeographicSite RESOURCE SAMPLE --}
}
```

## Geographic Site Attribute Value Change Event

Notification GeographicSiteAttributeValueChangeEvent case for resource GeographicSite

### Json representation sample

We provide below the json representation of an example of a 'GeographicSiteAttributeValueChangeEvent' notification event object

```
{
  "eventId":"00001",
  "eventTime":"2015-11-16T16:42:25-04:00",
  "eventType":"GeographicSiteAttributeValueChangeEvent",
  "event": {
    "geographicSite" :
      {-- SEE GeographicSite RESOURCE SAMPLE --}
  }
}
```

## Geographic Site Status Change Event

Notification GeographicSiteStatusChangeEvent case for resource GeographicSite

### Json representation sample

We provide below the json representation of an example of a 'GeographicSiteStatusChangeEvent' notification event object

```
{
  "eventId":"00001",
  "eventTime":"2015-11-16T16:42:25-04:00",
  "eventType":"GeographicSiteStatusChangeEvent",
  "event": {
    "geographicSite" :
      {-- SEE GeographicSite RESOURCE SAMPLE --}
  }
}
```

## Geographic Site Delete Event

Notification GeographicSiteDeleteEvent case for resource GeographicSite

### Json representation sample

We provide below the json representation of an example of a 'GeographicSiteDeleteEvent' notification event object

```
{
  "eventId":"00001",
  "eventTime":"2015-11-16T16:42:25-04:00",
  "eventType":"GeographicSiteDeleteEvent",
  "event": {
    "geographicSite" :
      [-- SEE GeographicSite RESOURCE SAMPLE --]
  }
}
```

## API OPERATIONS

Only allowed operations are listed:

Operation on Entities	Uniform API Operation	Description
Query Entities	GET geographicSite	GET must be used to retrieve a representation of a resource.
Create Entity	POST geographicSite	POST must be used to create a new geographicSite resource  If resource is created code 201 is send back.
Partial Update of an Entity	PATCH geographicSite	PATCH must be used to partially update a resource
Remove an Entity	DELETE geographicSite	DELETE must be used to remove a resource

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

Notifications are also described in a subsequent section.

### Operations on Geographic Site

#### List geographic sites

**GET /geographicSite?fields=...&{filtering}**

#### Description

This operation list geographic site entities.

Attribute selection is enabled for all first level attributes.

Filtering may be available depending on the compliance level supported by an implementation.

## Usage Samples

Here's an example of a request for retrieving a list of geographic sites. The given criteria is the code (Warehouse) and state (active).

Request
GET /tmf-api/geographicSiteManagement/v4/geographicSite?fields=id,href,name&code=Warehouse&state=active Accept: application/json
Response
200  [ { "id": "6987", "href": "https://host:port/geographicSiteManagement/v4/geographicSite/sd65-8874", "name": "Marseille Warehouse" }, { "id": "7412", "href": "https://host:port/geographicSiteManagement/v4/geographicSite/sd65-8851", "name": "Paris Nord Warehouse" }, { "id": "3214", "href": "https://host:port/geographicSiteManagement/v4/geographicSite/sd65-8814", "name": "Bordeaux Warehouse" }, { "id": "6547", "href": "https://host:port/geographicSiteManagement/v4/geographicSite/sd65-547", "name": "Lille Warehouse" } ]

## Retrieve geographic site

**GET /geographicSite/{id}?fields=...&{filtering}**

### Description

This operation retrieves a geographic site entity.

Attribute selection is enabled for all first level attributes.

Filtering on sub-resources may be available depending on the compliance level supported by an implementation.

**Usage Samples**

Here's an example of a request for retrieving a geographic site which has an address defined by reference (id). The given criteria is the geographic site id sd65-8874.

<b>Request</b>
GET /tmf-api/geographicSiteManagement/v4/geographicSite/sd65-8874 Accept: application/json
<b>Response</b>
<pre> 200 {   "id": "sd65-8874",   "href": "https://host:port/geographicSiteManagement/v4/geographicSite/sd65-8874",   "code": "Warehouse",   "description": "Warehouse in Marseille",   "name": "Marseille Warehouse",   "status": "active",   "calendar": [     {       "day": "weekdays",       "status": "open",       "timeZone": "GMT+1",       "hourPeriod": [         {           "endHour": "16:30 pm",           "startHour": "6:30 am",           "@type": "HourPeriod"         }       ]     },     {       "@type": "Calendar"     }   ],   "place": [     {       "id": "9912",       "href": "https://host:port/geographicAddressManagement/v4/geographicAddress/9912",       "@type": "PlaceRef",       "@referredType": "GeographicAddress"     }   ],   "relatedParty": [     {       "id": "45",       "href": "https://host:port/partyManagement/v4/individual/45",       "name": "Jean Pontus",       "role": "Warehouse manager", </pre>

```

    "@referredType": "Individual"
  }
],
"siteRelationship": [
  {
    "id": "4589-jj65",
    "href": "string",
    "relationshipType": "support",
    "role": "support site in case of stock shortage",
    "validFor": {
      "endDateTime": "2019-01-02T09:33:35.749Z",
      "startDateTime": "2023-12-31T09:33:35.749Z"
    },
    "@type": "SiteRelationship"
  }
],
"@type": "GeographicSite"
}

```

Here's an example of a request for retrieving a geographic site which has an address valued. The given criteria is the geographic site id sd65-4444.

### Request

```

GET /tmf-api/geographicSiteManagement/v4/geographicSite/sd65-4444
Accept: application/json

```

### Response

```

200

{
  "id": "sd65-4444",
  "href": "https://host:port/geographicSiteManagement/v4/geographicSite/sd65-4444",
  "code": "Warehouse",
  "description": "Warehouse in Bordeaux",
  "name": "Bordeaux Warehouse",
  "status": "active",
  "calendar": [
    {
      "day": "weekdays",
      "status": "open",
      "timeZone": "GMT+1",
      "hourPeriod": [
        {
          "endHour": "16:45 pm",
          "startHour": "6:15 am",
          "@type": "HourPeriod"
        }
      ]
    }
  ]
}

```

```

    ],
    "@type": "Calendar"
  }
],
"place": [
  {
    "@type": "GeographicAddress",
    "geographicAddress": {
      "streetNr": "48",
      "streetName": "Kieser",
      "streetType": "rue",
      "postcode": "33000",
      "locality": "Bordeaux",
      "city": "Bordeaux",
      "stateOrProvince": "Gironde",
      "country": "France"
    }
  }
],
"relatedParty": [
  {
    "id": "99",
    "href": "https://host:port/partyManagement/v4/individual/99",
    "name": "Louise Pontus",
    "role": "Warehouse manager",
    "@referredType": "Individual"
  }
],
"@type": "GeographicSite"
}

```

## Create geographic site

### POST /geographicSite

#### Description

This operation creates a geographic site entity.

#### Mandatory and Non Mandatory Attributes

The following tables provide the list of mandatory and non mandatory attributes when creating a GeographicSite, including any possible rule conditions and applicable default values. Notice that it is up to an implementer to add additional mandatory attributes.

Mandatory Attributes	Rule
----------------------	------

Non Mandatory Attributes	Rule
name	
calendar	

Non Mandatory Attributes	Rule
code	
description	
place	
relatedParty	
siteRelationship	
status	

**Additional Rules**

The following table provides additional rules indicating mandatory fields in sub-resources or relationships when creating a GeographicSite resource.

Context	Mandatory Sub-Attributes
siteRelationship	id, relationshipType
relatedParty	id, @referredType
calendar	status
place	id and @referredType or @type and valued place

**Usage Samples**

Here's an example of a request for creating a geographic site - the resulting geographic site is sd65-8874.

```

Request
POST /tmf-api/geographicSiteManagement/v4/geographicSite
Content-Type: application/json

{
  "code": "Warehouse",
  "description": "Warehouse in Bordeaux",
  "name": "Bordeaux Warehouse",
  "status": "active",
  "calendar": [
    {
      "day": "weeekdays",
      "status": "open",
      "timeZone": "GMT+1",
      "hourPeriod": [
        {
          "endHour": "16:45 pm",
          "startHour": "6:15 am",
          "@type": "HourPeriod"
        }
      ]
    },
    "@type": "Calendar"
  ]
},
"place": [

```

```

{
  "@type": "GeographicAddress",
  "geographicAddress": {
    "streetNr": "48",
    "streetName": "Kieser",
    "streetType": "rue",
    "postcode": "33000",
    "locality": "Bordeaux",
    "city": "Bordeaux",
    "stateOrProvince": "Gironde",
    "country": "France"
  }
},
"relatedParty": [
  {
    "id": "99",
    "name": "Louise Pontus",
    "role": "Warehouse manager",
    "@referredType": "Individual"
  }
],
"@type": "GeographicSite"
}

```

## Response

```

201
{
  "id": "sd65-4444",
  "href": "https://host:port/geographicSiteManagement/v4/geographicSite/sd65-4444",
  "code": "Warehouse",
  "description": "Warehouse in Bordeaux",
  "name": "Bordeaux Warehouse",
  "status": "active",
  "calendar": [
    {
      "day": "weeekdays",
      "status": "open",
      "timeZone": "GMT+1",
      "hourPeriod": [
        {
          "endHour": "16:45 pm",
          "startHour": "6:15 am",
          "@type": "HourPeriod"
        }
      ],
      "@type": "Calendar"
    }
  ],
  "place": [

```

```

{
  "@type": "GeographicAddress",
  "geographicAddress": {
    "streetNr": "48",
    "streetName": "Kieser",
    "streetType": "rue",
    "postcode": "33000",
    "locality": "Bordeaux",
    "city": "Bordeaux",
    "stateOrProvince": "Gironde",
    "country": "France"
  }
},
"relatedParty": [
  {
    "id": "99",
    "href": "https://host:port/partyManagement/v4/individual/99",
    "name": "Louise Pontus",
    "role": "Warehouse manager",
    "@referredType": "Individual"
  }
],
"@type": "GeographicSite"
}

```

### Patch geographic site

#### PATCH /geographicSite/{id}

##### Description

This operation allows partial updates of a geographic site entity. Support of json/merge (<https://tools.ietf.org/html/rfc7386>) is mandatory, support of json/patch (<http://tools.ietf.org/html/rfc5789>) is optional.

Note: If the update operation yields to the creation of sub-resources or relationships, the same rules concerning mandatory sub-resource attributes and default value settings in the POST operation applies to the PATCH operation. Hence these tables are not repeated here.

##### Patchable and Non Patchable Attributes

The tables below provide the list of patchable and non patchable attributes, including constraint rules on their usage.

Patchable Attributes	Rule
name	
calendar	
code	
description	

Patchable Attributes	Rule
place	
relatedParty	
siteRelationship	
status	

Non Patchable Attributes	Rule
id	
href	

**Usage Samples**

Here's an example of a request for updating geographic site sd65-8874 - Change start hour to 6:00 am - the full resource representation is sent in PATCH response

<b>Request</b>
<pre>PATCH /tmf-api/geographicSiteManagement/v4/geographicSite/sd65-8874 Content-Type: application/json-patch+json  [   {     "op": "replace",     "path": "/calendar/hourPeriod/startHour",     "value": "6:00 am"   } ]</pre>
<b>Response</b>
<pre>200  {   "id": "sd65-8874",   "href": "https://host:port/geographicSiteManagement/v4/geographicSite/sd65-8874",   "code": "Warehouse",   "description": "Warehouse in Marseille",   "name": "Marseille Warehouse",   "status": "active",   "calendar": [     {       "day": "weeekdays",       "status": "open",       "timeZone": "GMT+1",       "hourPeriod": [         {           "endHour": "16:30 pm",</pre>

```

        "startHour": "6:00 am",
        "@type": "HourPeriod"
      }
    ],
    "@type": "Calendar"
  }
],
"place": [
  {
    "id": "9912",
    "href": "https://host:port/geographicAddressManagement/v4/geographicAddress/9912",
    "@type": "PlaceRef",
    "@referredType": "GeographicAddress"
  }
],
"relatedParty": [
  {
    "id": "45",
    "href": "https://host:port/partyManagement/v4/individual/45",
    "name": "Jean Pontus",
    "role": "Warehouse manager",
    "@referredType": "Individual"
  }
],
"siteRelationship": [
  {
    "id": "4589-jj65",
    "href": "string",
    "relationshipType": "support",
    "role": "support site in case of stock shortage",
    "validFor": {
      "endDateTime": "2019-01-02T09:33:35.749Z",
      "startDateTime": "2023-12-31T09:33:35.749Z"
    },
    "@type": "SiteRelationship"
  }
],
"@type": "GeographicSite"
}

```

Here's an example of a request for updating geographic site sd65-8874 - Change start hour to 6:00 am - the full resource representation is sent in PATCH response

#### Request

PATCH /tmf-api/geographicSiteManagement/v4/geographicSite/sd65-8874

Content-Type: application/merge-patch+json

```

{
  "id": "sd65-8874",
  "code": "Warehouse",
  "description": "Warehouse in Marseille",

```

```

"name": "Marseille Warehouse",
"status": "active",
"calendar": [
  {
    "day": "weekdays",
    "status": "open",
    "timeZone": "GMT+1",
    "hourPeriod": [
      {
        "endHour": "16:30 pm",
        "startHour": "6:00 am",
        "@type": "HourPeriod"
      }
    ],
    "@type": "Calendar"
  }
],
"place": [
  {
    "id": "9912",
    "@type": "PlaceRef",
    "@referredType": "GeographicAddress"
  }
],
"relatedParty": [
  {
    "id": "45",
    "name": "Jean Pontus",
    "role": "Warehouse manager",
    "@referredType": "Individual"
  }
],
"siteRelationship": [
  {
    "id": "4589-jj65",
    "href": "string",
    "relationshipType": "support",
    "role": "support site in case of stock shortage",
    "validFor": {
      "endDateTime": "2019-01-02T09:33:35.749Z",
      "startDateTime": "2023-12-31T09:33:35.749Z"
    },
    "@type": "SiteRelationship"
  }
],
"@type": "GeographicSite"
}

```

**Response**

200

```

{
  "id": "sd65-8874",
  "href": "https://host:port/geographicSiteManagement/v4/geographicSite/sd65-8874",
  "code": "Warehouse",
  "description": "Warehouse in Marseille",
  "name": "Marseille Warehouse",
  "status": "active",
  "calendar": [
    {
      "day": "weekdays",
      "status": "open",
      "timeZone": "GMT+1",
      "hourPeriod": [
        {
          "endHour": "16:30 pm",
          "startHour": "6:00 am",
          "@type": "HourPeriod"
        }
      ],
      "@type": "Calendar"
    }
  ],
  "place": [
    {
      "id": "9912",
      "href": "https://host:port/geographicAddressManagement/v4/geographicAddress/9912",
      "@type": "PlaceRef",
      "@referredType": "GeographicAddress"
    }
  ],
  "relatedParty": [
    {
      "id": "45",
      "href": "https://host:port/partyManagement/v4/individual/45",
      "name": "Jean Pontus",
      "role": "Warehouse manager",
      "@referredType": "Individual"
    }
  ],
  "siteRelationship": [
    {
      "id": "4589-jj65",
      "href": "string",
      "relationshipType": "support",
      "role": "support site in case of stock shortage",
      "validFor": {
        "endDateTime": "2019-01-02T09:33:35.749Z",
        "startDateTime": "2023-12-31T09:33:35.749Z"
      },
      "@type": "SiteRelationship"
    }
  ],
  "@type": "GeographicSite"
}

```

## Delete geographic site

**DELETE** /geographicSite/{id}

### Description

This operation deletes a geographic site entity.

### Usage Samples

Here's an example of a request for deleting a geographic site.

<b>Request</b>
DELETE /tmf-api/geographicSiteManagement/v4/geographicSite/sd65-8874
<b>Response</b>
204

## API Notifications

For every single of operation on the entities use the following templates and provide sample REST notification POST calls.

It is assumed that the Pub/Sub uses the Register and UnRegister mechanisms described in the REST Guidelines reproduced below.

### Register listener

**POST** /hub

#### Description

Sets the communication endpoint address the service instance must use to deliver information about its health state, execution state, failures and metrics. Subsequent POST calls will be rejected by the service if it does not support multiple listeners. In this case DELETE /api/hub/{id} must be called before an endpoint can be created again.

#### Behavior

Returns HTTP/1.1 status code 204 if the request was successful.

Returns HTTP/1.1 status code 409 if request is not successful.

## Usage Samples

Here's an example of a request for registering a listener.

<b>Request</b>
POST /api/hub Accept: application/json  {"callback": "http://in.listener.com"}
<b>Response</b>
201 Content-Type: application/json Location: /api/hub/42  {"id": "42", "callback": "http://in.listener.com", "query": null}

## Unregister listener

**DELETE** /hub/{id}

### Description

Clears the communication endpoint address that was set by creating the Hub.

### Behavior

Returns HTTP/1.1 status code 204 if the request was successful.

Returns HTTP/1.1 status code 404 if the resource is not found.

### Usage Samples

Here's an example of a request for un-registering a listener.

<b>Request</b>
DELETE /api/hub/42 Accept: application/json
<b>Response</b>
204

## Publish Event to listener

**POST** /client/listener

### Description

Clears the communication endpoint address that was set by creating the Hub.

Provides to a registered listener the description of the event that was raised. The /client/listener url is the callback url passed when registering the listener.

### Behavior

Returns HTTP/1.1 status code 201 if the service is able to set the configuration.

### Usage Samples

Here's an example of a notification received by the listener. In this example "EVENT TYPE" should be replaced by one of the notification types supported by this API (see Notification resources Models section) and EVENT BODY refers to the data structure of the given notification type.

<b>Request</b>
POST /client/listener Accept: application/json  { "event": { EVENT BODY }, "eventType": "EVENT_TYPE" }
<b>Response</b>
201

For detailed examples on the general TM Forum notification mechanism, see the TMF REST Design Guidelines.

## Acknowledgements

### Version History

Release Number	Date	Release led by:	Description
Release 1.0.0	22/05/2017	Pierre Gauthier TM Forum <a href="mailto:pgauthier@tmforum.org">pgauthier@tmforum.org</a>  Mariano Belaunde Orange <a href="mailto:mariano.belaunde@orange.com">mariano.belaunde@orange.com</a>  Ludovic Robert Orange <a href="mailto:Ludovic.robert@orange.com">Ludovic.robert@orange.com</a>	First Release of the Document.
Version 4.0.0	05-Apr-2020	P. Gauthier / L.Robert	Schema-driven API with polymorphism pattern  Following Jira have been integrated: <ul style="list-style-type: none"> <li>• AP-1074 (partial)</li> </ul> <i>Note: the version 4.0 is assigned to all the APIs delivered in the release 19.5</i>
4.0.1	25-May-2020	Adrienne Walcott	Updated to reflect TM Forum Approved Status

### Release History

Release Number	Date	Release led by:	Description
Release 17.5	22/05/2017	P. Gauthier / M.Belaunde/ L.Robert	
Pre-production	05-Apr-2020	P. Gauthier / L.Robert	Version 4.0 of the API REST  <i>Note: the version 4.0 is assigned to all the APIs delivered in the release 19.0</i>
Production	25-May-2020	Adrienne Walcott	Updated to reflect TM Forum Approved Status