# TM Forum Specification

## Party Interaction Management API REST Specification

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## NOTICE

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# INTRODUCTION

Users are communicating constantly with our enterprises either calling, entering our stores or using our websites and apps. Our companies are also communicating with them proactively by sending them new offers and providing support through different channels. Sometimes it is different to keep track of all those actions througout all channels. A **Party Interaction** captures information about past interactions in order to re-use it in future ones. This allows agents to serve users better by knowing the steps they went through. It also allows customers to see better the actions they have performed and how they interacted with us.

The Party Interaction Management API provides a mechanism to manage party interactions. Creation, update and retrieval.

## SAMPLE USE CASES

| Use Case Id | UC_TMF_PartyInteractionManagement_0001 |
|---|---|
| Use Case Name | Agent checks previous user interactions |
| Summary | This case an agent, either from a store or call center, checks the previous interactions a user had with the company. |
| Actor(s) | 1. User (person, may or may not be a customer)<br><br>2. Agent (with a dashboard connected to the systems exposing the APIs) |
| Pre-Conditions | 1. The identity of the user is known (his details were requested in the store or his phone number identified when he called). |
| Begins When | When all pre-conditions have been met and the user begins speaking with an agent. The agent requests using the dashboard the user's interactions info. |
| Description | 1. The agent requests the last user's interactions.<br><br>2. His dashboard shows a timeline with all the user interactions of the user.<br><br>3. The agent clicks in one to see its details.<br><br>4. The detailed interaction appears on screen. |

| Use Case Id | UC_TMF_PartyInteractionManagement_0002 |
|---|---|
| Use Case Name | User checks previous interactions in app |
| Summary | This case describes how an app might show the user a list of his last interactions with the company. |

| Actor(s) | 1. User (person)<br>2. Mobile App (system) |
|---|---|
| Pre-Conditions | 1. App back-end is available.<br>2. User has logged into the mobile app. |
| Begins When | When all pre-conditions have been met the app may prompt a timeline with the user's last interactions as a consequence of a user action within the app. |
| Description | 1. The user logs in the app.<br>2. In order to check when he visited a certain store, he clicks on the timeline button.<br>3. The user sees when he last went there. |

# RESOURCE MODEL

## Managed Entity and Task Resource Models

## PARTY INTERACTION RESOURCE

The party interaction resource is used for indicating an interaction within a party and a company (e.g.: visit to a store, call to a call center, message received in a marketing campaign, etc.). A party interaction might result in other actions, such as submitted orders or raised tickets. A party interaction has a description, a reason, an originator (the user or the company) and contains a reference to an account, to other related parties and to the channel where it occurred.

**Resource model**

**Field descriptions**

*PartyInteraction* fields

| | |
|---|---|
| id | A string. Unique identifier of the party interaction. |
| href | A string. Hyperlink to access the party interaction. |
| @baseType | A string: Base type of interaction |
| @type | A string: Type of interaction |
| @schemaLocation | A string: uri where the data model can be retrieved |
| interactionDate | A time period. The period during which the interaction took place. Start and end will be different in case of a call or a store visit. They will be the same (or only one will appear) in case of a message or other momentary interactions. |
| description | A string. Description of the interaction. |
| reason | A string. Reason why the interaction happened |
| status | A string. Status of the interaction (booked, ongoing, rescheduled, closed) |
| subStatus | A string. In case the status is not enough information |
| statusChangeDate | DateTime. Last time the status changed |
| direction | A string. Specifies who started the interaction. It might be the party or the enterprise exposing this API. Possible values are "inbound" and "outbound" |
| channel | Channel.  Where the interaction took place (e.g.: web, mobile app, store, kiosk, etc.) |
| relatedParty | RelatedParty[*]. A list of related parties. |
| attachment | Attachment. Possible attachments to the interaction (documents, photos, recordings…) |
| note | Note. Notes taken regarding the interaction |
| interactionItem | InteractionItem[*]. A list of interaction items. |

 *Channel* relationship

Channel defines where the interaction took place: store, call center, app, etc.

| | |
|---|---|
| id | A string. Unique identifier of the channel. |

| | |
|---|---|
| href | A string. Unique reference of the channel. |
| name | A string. A user-friendly name for the channel, such as "My Telco App", "London Store", "Technical call center". |
| role | A string. Specifies whether it was the creation channel, modification… |
| @type | A string. Specifies the channel type |

### *RelatedParty* relationship

RelatedParty reference. Related party defines any party that had to do with the interaction. For instance, an agent or clerk.

| | |
|---|---|
| id | A string. Unique identifier of the related party. |
| href | A string. Unique reference of the related party. |
| @referredType | A string. Type of the related party |
| role | A string. Role of the party. |
| name | A string. A user-friendly name of the party. |

### *InteractionItem* relationship

InteractionItem reference. Interaction Item defines any entity that had to do with the interaction. For instance, a created order or a ticket.

| | |
|---|---|
| id | A string. Unique identifier of the interaction item. |
| href | A string. Unique reference of the interaction item. |
| reason | A string. Reason why this item is referred |
| itemDate | Date-time. Moment this item is referred. |
| resolution | A string. Resolution of the interaction item. |

### *RelatedEntityRef* relationship

RelatedEntityRef reference.RelatedEntityRef defines a reference to any entity. It uses polymorphism in order to let the API client know how to treat the element, as the entity type is not known beforehand.

| | |
|---|---|
| id | A string. Unique identifier of the referenced entity. |

| | |
|---|---|
| href | A string. Unique reference of the referenced entity. |
| @referredType | A string. Type of the referenced entity. |
| name | A string. A user-friendly name of the referenced entity. |
| role | A string. Role of the referenced entity with the interaction item. |

*Note* relationship

Note defines a note taken regarding an interaction item or the party interaction.

| | |
|---|---|
| date | DateTime. Moment the note was taken. |
| author | A string. Who wrote/added the note. |
| text | Note text |

*Attachment* relationship

Attachment defines an attachment related to the interaction item or the party interaction.

| | |
|---|---|
| id | A string. Unique identity of the attachment |
| href | A string. Unique reference of the attachment |
| name | A string. Screen name of the attachment |
| description | A string. Attachment description |
| type | A string. Attachment type |
| mimeType | A string. Mime type of the file |
| size | A decimal. Size of the file |
| sizeUnit | A string. Units of the size. E.g.: MB, KB… |
| URL | A string. Download URL |
| validFor | TimePeriod. Time period the attachment is available/valid |

# JSON REPRESENTATION SAMPLE

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

```
{
  "id": "123",
  "href": "https://host:port/partyInteractions/partyInteraction/123",
```

```
"@type": "storeVisit",
"interactionDate": {
  "startDateTime": "2017-11-02T11:36:18.758Z",
  "endDateTime": "2017-11-02T11:53:21.789Z"
},
"description": "Visit to store",
"reason": "The user wanted to query about new TV tariffs ",
"status": "finished",
"subStatus": "finished",
"statusChangeDate": "2017-11-02T11:53:21.789Z"
"direction": "inbounds",
"relatedParty": [
  {
    "id": "999",
    "href": "https://host:port/partyManagement/individual/999",
    "@referredType": "individual",
    "role": "user",
    "name": "John Doe"
  },
  {
    "id": "888",
    "href": "https://host:port/partyManagement/individual/888",
    "@referredType": "individual",
    "role": "clerk",
    "name": "Jane Doe"
  }
],
"interactionItem": [
  {
    "id": "5678",
    "href": "https://host:port/partyInteractions/partyInteraction/123/interactionItem/5678",
    "reason": "The user signed up to new TV bundle and paid the decoder",
    "itemDate": "2017-11-02T11:50:01.333Z"
    "resolution": "TODO",
    "item": {
      "id": " 777",
      "href": "https://host:port/productOrderingManagement/productOrder/777",
      "@referredType": "order",
      "name": "TV bundle plus",
    }
  },
  {
    "id": "9999",
    "href": "https://host:port/partyInteractions/partyInteraction/123/interactionItem/9999",
    "reason": "The user paid the decoder in the store with credit card",
    "itemDate": "2017-11-02T11:50:01.333Z"
    "resolution": "TODO",
    "item": {
      "id": "666",
      "href": "https://host:port/paymentManagement/payment/666",
      "@referredType": "payment",
      "name": "TV bundle plus decoder payment"
    }
```

```
    }
   ],
   "channel": [{
    "id": "555",
    "href": "https://host:port/channelManagement/channel/555",
    "name": "Madrid Gran Vía Store",
    "role": "interaction creation",
    "@type": "store"
   }],
   "attachment": [
    {
      "id": "111222444",
      "href": "https://host:port/partyInteractions/partyInteraction/123/attachment/111222444",
      "name": "Some cool attachment",
      "description": "blahblahblah"
      "type": "receipt",
      "mimeType": "application/pdf",
      "size": 321321,
      "sizeUnit": "KB",
      "URL": "https://whereverthpdfis.com",
      "interactionDate": {
        "startDateTime": "2017-11-02T11:36:18.758Z",
        "endDateTime": "2017-11-02T11:53:21.789Z"
      }
    }
   alv },
   "note": [
    {
      "text": "loren ipsum dolor sit amet…",
      "author": "John Doe",
      "date": "2017-11-02T11:36:18.758Z",
    }
  }
```

## Notification Resource Models

2 notifications are defined for this API

Notifications related to PartyInteraction:
   - PartyInteractionCreationNotification
   - PartyInteractionChangeNotification

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

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

This notification structure owns an event structure ("SpecificEvent" placeholder) linked to the resource concerned by the notification using the resource name as access field ("resourceName" placeholder).
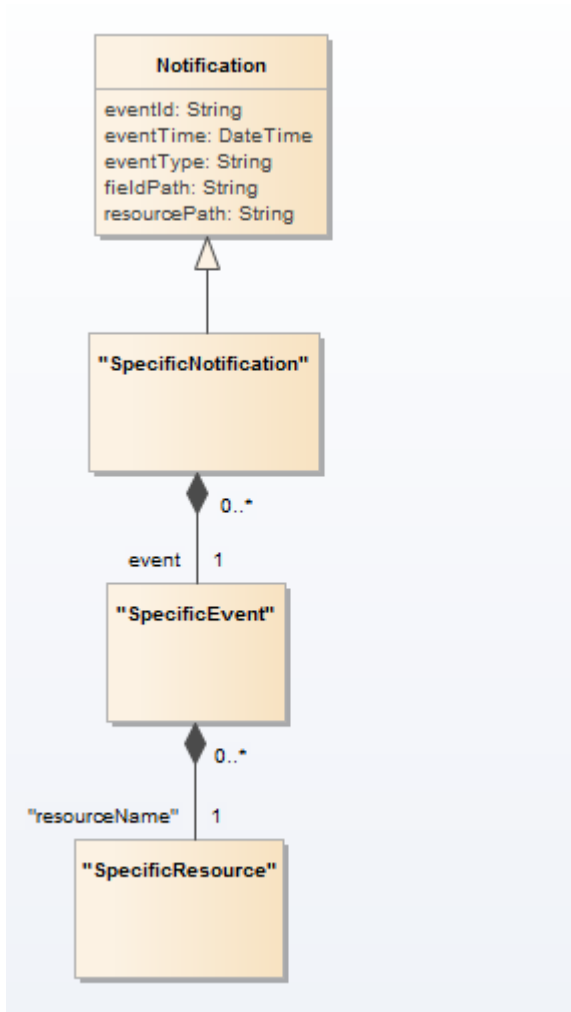
## PARTY INTERACTION CREATION NOTIFICATION

Notification sent when a new PartyInteraction resource is created.

**Json representation sample**

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

```
{
    "eventId":"00001",
    "eventTime":"2015-11-16T16:42:25-04:00",
    "eventType":"PartyInteractionCreationNotification",
    "event": {
       "partyInteraction" :
          {-- SEE PartyInteraction RESOURCE SAMPLE --}
    }
}
```

## PARTY INTERACTION CHANGE NOTIFICATION

Notification sent when changing a PartyInteraction resource.

**Json representation sample**

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

```
{
   "eventId":"00001",
   "eventTime":"2015-11-16T16:42:25-04:00",
   "eventType":"PartyInteractionChangeNotification",
    "event": {
      "partyInteraction":
         {-- SEE PartyInteraction RESOURCE SAMPLE --}
   }
}
```

## 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 PARTY INTERACTIONS

## LIST PARTY INTERACTIONS

### GET /partyInteraction?fields=...&{filtering}

**Description**

This operation lists party interaction 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 PartyInteraction resources.

| Request |
| --- |
| GET /partyInteraction/v1/partyInteraction<br>Accept: application/json |

| Response |
| --- |
| 200<br><br>[<br>  {<br>   "id": "123",<br>   "href": "https://host:port/partyIntereactions/partyInteraction/123",<br>   "@type": "storeVisit",<br>   "interactionDate": {<br>    "startDateTime": "2017-11-02T11:36:18.758Z",<br>    "endDateTime": "2017-11-02T11:53:21.789Z"<br>   },<br>   "description": "Visit to store",<br>   "reason": "The user wanted to query about new TV tariffs. Signed up to new TV bundle and paid the decoder",<br>   "status": "finished",<br>   "direction": "inbounds",<br>   "relatedParty": [<br>    {<br>     "id": "999",<br>     "href": "https://host:port/partyManagement/individual/999",<br>     "@referredType": "individual",<br>     "role": "user",<br>     "name": "John Doe" |

```json
      },
      {
        "id": "888",
        "href": "https://host:port/partyManagement/individual/888",
        "@referredType": "individual",
        "role": "clerk",
        "name": "Jane Doe"
      }
    ],
    "interactionItem": [
      {
        "id": "789456",
        "href": "https://host:port/partyIntereactions/partyInteraction/123/interactionItem/789456",
        "item": {
          "id": "777",
          "href": "https://host:port/productOrderingManagement/productOrder/777",
          "@referredType": "order",
          "name": "TV bundle plus"
        }
      },
      {
        "id": "654654",
        "href": "https://host:port/partyIntereactions/partyInteraction/123/interactionItem/654654",
        "item": {
          "id": "666",
          "href": "https://host:port/paymentManagement/payment/666",
          "@referredType": "payment",
          "name": "TV bundle plus decoder payment"
        }
      }
    ],
    "channel": [{
      "id": "555",
      "href": "https://host:port/channelManagement/channel/555",
      "name": "Madrid Gran Vía Store",
      "role": "Visited store",
      "@type": "store"
    }]
  },
  {
    "id": "456",
    "href": "https://host:port/partyInteractions/partyInteraction/456",
    "@type": "phoneCall",
    "interactionDate": {
      "startDateTime": "2017-09-03T10:16:13.758Z",
      "endDateTime": "2017-09-03T10:24:12.789Z"
    },
    "description": "Phone complaint",
    "reason": "The user complains a bundle was not taken into account",
    "status": "finished",
    "direction": "inbounds",
    "relatedParty": [
      {
```

```
        "id": "999",
        "href": "https://host:port/partyManagement/individual/999",
        "@referredType": "individual",
        "role": "user",
        "name": "John Doe"
      },
      {
        "id": "444",
        "href": "https://host:port/partyManagement/individual/444",
        "@referredType": "individual",
        "role": "agent",
        "name": "Jane Doe"
      }
    ],
    "interactionItem": [
      {
        "id": "111111",
        "href": "https://host:port/partyIntereactions/partyInteraction/456/interactionItem/111111",
        "item": {
          "id": "333",
          "href": "http://serverlocation:port/BillingManagement/appliedCustomerBillingCharge/333",
          "@referredType": "bill",
          "name": "February mobile bill"
        }
      },
      {
        "id": "999888",
        "href": "https://host:port/partyIntereactions/partyInteraction/456/interactionItem/999888",
        "item": {
          "id": "222",
          "href": "https://host:port/troubleTicket/222",
          "@referredType": "ticket",
          "name": "Ticket raised for the bill complaint"
        }
      }
    ],
    "channel": [{
      "id": "222",
      "href": "https://host:port/channelManagement/channel/222",
      "name": "Technical call center",
      "role": "Interaction creation"
      "@type": "callCenter"
    }]
  },
  {
    "id": "789",
    "href": "https://host:port/partyInteractions/partyInteraction/789",
    "@type": "pushNotification",
    "interactionDate": {
      "startDateTime": "2017-12-03T11:36:18.758Z",
      "endDateTime": "2017-12-03T11:36:18.758Z"
    },
    "description": "Push notification during Christmas campaign",
```

```
    "reason": "December Christmas campaign",
    "status": "finished",
    "direction": "outbound",
    "relatedParty": [
      {
        "id": "999",
        "href": "https://host:port/partyManagement/individual/999",
        "@referredType": "individual",
        "role": "user",
        "name": "John Doe"
      }
    ],
    "interactionItem": [
      {
        "id": "654654",
        "href": "https://host:port/partyIntereactions/partyInteraction/789/interactionItem/654654",
        "item": {
          "id": "123456",
          "href": "https://host:port/campaignManagement/campaign/123456",
          "@referredType": "campaign",
          "name": "Christmas campaign"
        }
      },
      {
        "id": "662211",
        "href": "https://host:port/partyIntereactions/partyInteraction/789/interactionItem/662211",
        "item": {
          "id": "996547",
          "href": "https://host:port/productCatalog/productOffering/996547",
          "@referredType": "offering",
          "name": "Offering in call to action"
        }
      }
    ],
    "channel": [{
      "id": "545454",
      "href": "https://host:port/channelManagement/channel/545454",
      "name": "Mobile Android self care app",
      "role": "notification channel",
      "@type": "mobileApp"
    }]
  }
]
```

## RETRIEVE PARTY INTERACTION

### GET /partyInteraction/{id}?fields=...

**Description**

This operation retrieves a single party interaction entity.

Attribute selection is enabled for all first level attributes.

**Usage Samples**

Here's an example of a request for retrieving a PartyInteraction resource.

| Request |
| --- |
| GET /partyInteraction/v1/partyInteraction/789<br>Accept: application/json |

| Response |
| --- |

```
200

{
  "id": "789",
  "href": "https://host:port/partyInteractions/partyInteraction/789",
  "@type": "pushNotification",
  "interactionDate": {
    "startDateTime": "2017-12-03T11:36:18.758Z",
    "endDateTime": "2017-12-03T11:36:18.758Z"
  },
  "description": "Push notification during Christmas campaign",
  "reason": "December Christmas campaign",
  "status": "finished",
  "direction": "outbound",
  "relatedParty": [
    {
      "id": "999",
      "href": "https://host:port/partyManagement/individual/999",
      "@referredType": "individual",
      "role": "user",
      "name": "John Doe"
    }
  ],
  "interactionItem": [
    {
      "id": "654654",
      "href": "https://host:port/partyIntereactions/partyInteraction/789/interactionItem/654654",
      "item": {
        "id": "123456",
        "href": "https://host:port/campaignManagement/campaign/123456",
        "@referredType": "campaign",
        "name": "Christmas campaign"
      }
    },
```

```
    {
      "id": "662211",
      "href": "https://host:port/partyIntereactions/partyInteraction/789/interactionItem/662211",
      "item": {
        "id": "996547",
        "href": "https://host:port/productCatalog/productOffering/996547",
        "@referredType": "offering",
        "name": "Offering in call to action"
      }
    }
  ],
  "channel": [{
    "id": "545454",
    "href": "https://host:port/channelManagement/channel/545454",
    "name": "Mobile Android self-care app",
    "role": "notification channel",
    "@type": "mobileApp"
  }]
}
```

## CREATE PARTY INTERACTION

### POST /partyInteraction

**Description**

This operation creates a party interaction entity.

**Mandatory and Non-mandatory Attributes**

The following tables provides the list of mandatory and non-mandatory attributes when creating a PartyInteraction, 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 |
|---|---|
| @type | |
| interactionDate | Only interactionDate.startDate is mandatory so the API can be used to book interactions (appointments) and so instantaneous interactions such as notifications can be recorded |
| reason | |
| status | |
| direction | |
| channel | |

| Non Mandatory Attributes | Default Value | Rule |
|---|---|---|
| relatedObject | | |

**Additional Rules**

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

| Context | Mandatory Sub-Attributes |
|---------|--------------------------|
| relatedParty | id, href, @referredType |
| interactionItem | |
| channel | Id, href |

**Usage Samples**

Here's an example of a request for creating a PartyInteraction resource. In this example the request only passes mandatory attributes.

**Request**

```
POST /partyInteraction/v1/partyInteraction
Content-Type: application/json

{
  "@type": "phoneCall",
  "interactionDate": {
    "startDateTime": "2018-01-01T12:00:00.000Z"
  },
  "reason": "Support call for broken router",
  "status": "booked",
  "direction": "outbounds",
  "relatedParty": [
    {
      "id": "999",
      "href": "https://host:port/partyManagement/individual/999",
      "@referredType": "individual",
      "role": "user",
      "name": "John Doe"
    }
  ],
  "channel": [{
    "id": "222",
    "href": "https://host:port/channelManagement/channel/222",
    "name": "Technical call center",
    "@type": "callCenter",
    "role": "Creation"
  }]
}
```

**Response**

201

```
{
   "id": "789987",
   "href": "https://host:port/partyInteraction/partyInteraction/789987",
   "@type": "phoneCall",
   "interactionDate": {
     "startDateTime": "2018-01-01T12:00:00.000Z"
   },
   "reason": "Support call for broken router",
   "status": "booked",
   "direction": "outbounds",
   "relatedParty": [
     {
       "id": "999",
       "href": "https://host:port/partyManagement/individual/999",
       "@referredType": "individual",
       "role": "user",
       "name": "John Doe"
     }
   ],
   "channel": [{
     "id": "222",
     "href": "https://host:port/channelManagement/channel/222",
     "name": "Technical call center",
     "@type": "callCenter",
     "role": "Creation"
   }]
}
```

## PATCH PARTY INTERACTION

## PATCH /partyInteraction/{id}

**Description**

This operation allows partial updates of a party interaction 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 |
|---|---|
| interactionDate | |
| description | |
| relatedParty | |
| reason | |
| relatedItem | |
| status | |
| @type | |
| channel | |
| attachment | |
| note | |

| Non Patchable Attributes | Rule |
|---|---|
| id | |
| href | |
| direction | |

**Usage Samples**

Here's an example of a request for patching a partyInteraction resource. It is a request to update a booked interaction and turn it into a finished one.

**Request**

```
PATCH /partyInteraction/v1/partyInteraction/789987
Content-Type: application/json-patch+query
[
 {"op": "replace", "path": "interactionDate.startDateTime", "value": "2018-01-01T12:01:34.000Z"},
 {"op": "add", "path": "interactionDate.endDateTime", "value": "2018-01-01T12:08:50.000Z"},
 {
   "op": "add",
   "path": "relatedParty",
   "value": {
     "id": "123456789",
     "href": "https://host:port/partyManagement/individual/123456789",
     "@referredType": "individual",
     "name": "James Smith",
     "role": "agent"
   }
 },
 {"op": "replace", "path": "status", "value": "finished"}
]
```

**Response**

```
201
```

```
{
   "id": "789987",
   "href": "https://host:port/partyInteractions/partyInteraction/789987",
   "@type": "phoneCall",
   "interactionDate": {
     "startDateTime": "2018-01-01T12:01:34.000Z",
     "endDateTime": "2018-01-01T12:08:50.000Z"
   },
   "reason": "Support call for broken router",
   "status": "finished",
   "direction": "outbounds",
   "relatedParty": [
     {
       "id": "999",
       "href": "https://host:port/partyManagement/individual/999",
       "@referredType": "individual",
       "role": "user",
       "name": "John Doe"
     },
     {
       "id": "123456789",
       "href": "https://host:port/partyManagement/individual/123456789",
       "@referredType": "individual",
       "name": "James Smith",
       "role": "agent"
     }
   ],
   "channel": [{
     "id": "222",
     "href": "https://host:port/channelManagement/channel/222",
     "name": "Technical call center",
     "@type": "callCenter",
     "role": "creation"
   }]
}
```

## DELETE PARTY INTERACTION

## DELETE /partyInteraction/{id}

**Description**

This operation deletes a party interaction entity.

**Usage Samples**

Here's an example of a request for deleting a PartyInteraction resource.

| Request |
|---|
| DELETE /partyInteractions/partyInteraction/789987 |

| Response |
|---|
| 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.

| Request |
| --- |
| POST /api/hub<br>Accept: application/json<br><br>{"callback": "http://in.listener.com"} |
| **Response** |
| 201<br>Content-Type: application/json<br>Location: /api/hub/42<br><br>{"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.

| Request |
| --- |
| DELETE /api/hub/42<br>Accept: application/json |
| **Response** |
| 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.

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

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

# ACKNOWLEDGEMENTS

## VERSION HISTORY

| Version Number | Date | Release led by: | Description |
|---|---|---|---|
| 1.0 | 11/10/2017 | Guillermo Martínez del Camino Telefónica guillermo.martinezdelcamino@telefonica.com | First Release of Draft Version of the Document. |
| 2.0 | 24-Apr-2018 | Guillermo Martínez del Camino | Renamed UserInteraction to PartyInteraction and added multiple modifications |
| 2.0.1 | 29-Jun-2018 | Adrienne Walcott | Formatting/style edits prior to R18 publishing. |

## RELEASE HISTORY

| Release Number | Date | Release led by: | Description |
|---|---|---|---|
| 18.0.0 | 25-Jun-2018 | Guillermo Martínez del Camino | Initial Release |

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