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REST SPECIFICATION TEMPLATE

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INTRODUCTION

The following document is the template for the REST API documentation. Please provide a description of the API here.

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SAMPLE USE CASES

Please provide some sample use cases here. Description of how the API is used in context.

Sample Use Case

Provide Sample Example from Profile Template. From the Profile when we have it.

Description of Use Case

Example of API Usage in the Context of the Use Case

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RESOURCE MODEL

Managed Entity and Task Resource Models

For every single resource managed by the API provide a JSON based representation of the managed entities and tasks.

Also remember that you representation must be based on the SID at least from a conceptual view point.

Also define the structure of the Resource IDs.

For example the SMAPI 2.0 use the following Management Report representation:

```
{
   “id”: « 42 »,
   "datetime": "2012-12-20 15:00:00",
   "health_state": "operational",
   "metrics": [
      {
         "code": "123",
         "category_id": "45",
         "date_time": "2012-12-20 14:30:00",
         "reference": "4321",
         "source_id": "8f27ce50-4b00-11e2-bcfd-0800200c9a66",
         "value": 50,
         "metric_id": "b0dbbc50-4b00-11e2-bcfd-0800200c9a66"
      },
      {
         "code": "321",
         "category_id": "48",
```


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```
        "date_time": "2012-12-20 14:30:00",
        "reference": "4321",
        "source_id": "8f27ce50-4b00-11e2-bcfd-0800200c9a66",
        "value": 50,
        "metric_id": "c50f3e90-4b00-11e2-bcfd-0800200c9a66"
      }
    ],
    "failures": [
      {
        "failure_id": "0bec4420-4b01-11e2-bcfd-0800200c9a66",
        "detail": "Network authentication failure",
        "source_id": "24b2bc00-4b01-11e2-bcfd-0800200c9a66"
      },
      {
        "failure_id": "3b687c50-4b01-11e2-bcfd-0800200c9a66",
        "detail": "Network authentication failure",
        "source_id": "462f1f40-4b01-11e2-bcfd-0800200c9a66"
      }
    ]
},
```


For each resource in your model fill the following table.

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Field	Description

For each resource in your API provide a UML model:

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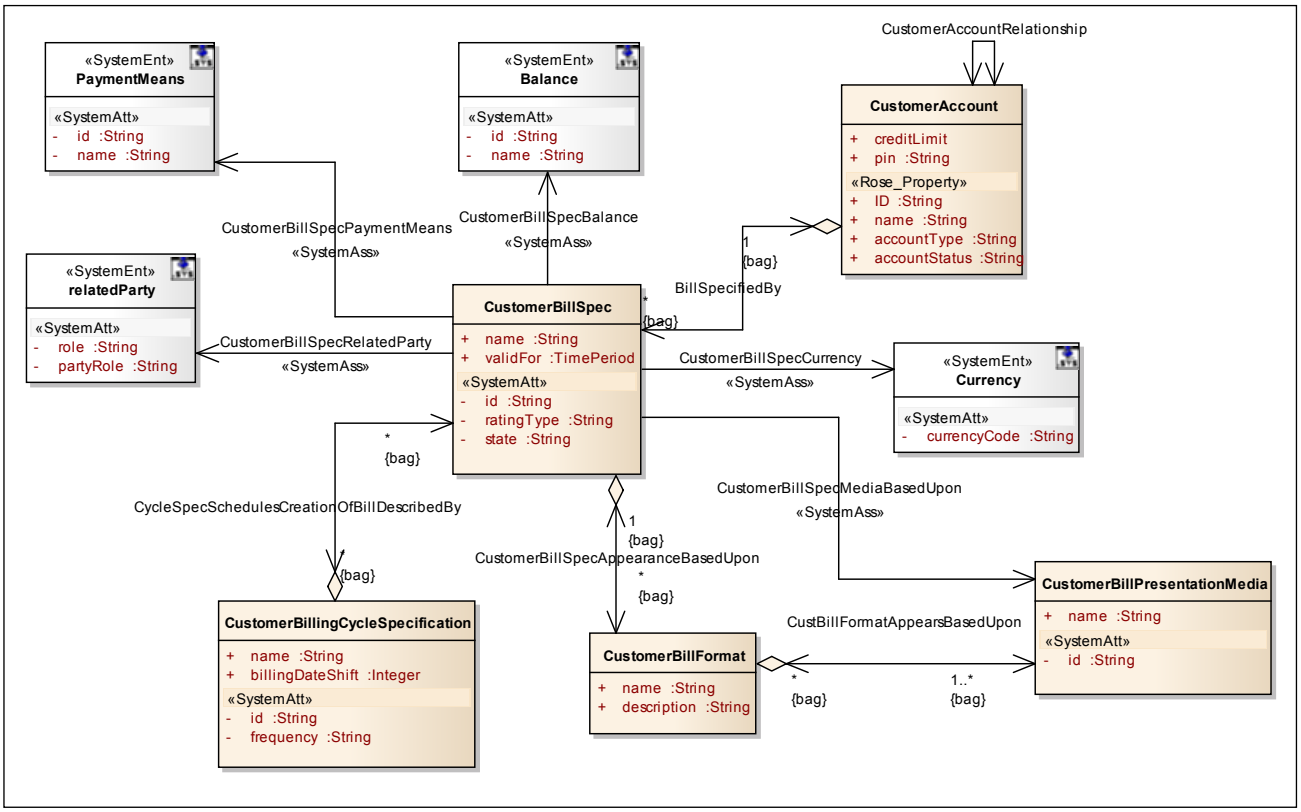

Figure 1 – CustomerBillSpec resource model

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Event Models

For every single event supported by the API provide a JSON based representation of the managed event.

You can start with an XML representation but remember that the default representation will be JSON.

Remember that the Pub/Sub models are common and described in the TMF REST Design Guidelines.

For example the SMAPI 2.0 use the following Management Report Event representation:


```
{
  "event": {
    "dateTime": null,
    "id": "42",
    "state": {
      "healthState": "UNKNOWN",
      "executionState": "ACTIVE"
    },
    "metrics": [
      {
        "code": "76e27e2b-644e-11e2-8ea1-5c260a86d1e4",
        "categoryID": null,
        "dateTime": 1367266835571,
        "reference": null,
        "sourceID": null,
        "value": "20",
        "metricID": null
      },

      {
        "code": "7987c7bc-644e-11e2-8ea1-5c260a86d1e4",
        "categoryID": null,
        "dateTime": 1367266835573,
        "reference": null,
        "sourceID": null,
        "value": "60000",
        "metricID": null
      },
```


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```
        {
          "code": "7c7d6e22-644e-11e2-8ea1-5c260a86d1e4",
          "categoryID": null,
          "dateTime": 1367266835573,
          "reference": null,
          "sourceID": null,
          "value": "12",
          "metricID": null
        },
        {
          "code": "7c98ea37-644e-11e2-8ea1-5c260a86d1e4",
          "categoryID": null,
          "dateTime": 1367266835573,
          "reference": null,
          "sourceID": null,
          "value": "70000",
          "metricID": null
        },
        {
          "code": "7dd589b2-644e-11e2-8ea1-5c260a86d1e4",
          "categoryID": null,
          "dateTime": 1367266835573,
          "reference": null,
          "sourceID": null,
          "value": "89",
          "metricID": null
        }
      ]


}

   },
   "eventType": "ManagementReport"
}
```


For each Event in your API fill the following table:

Field	Description

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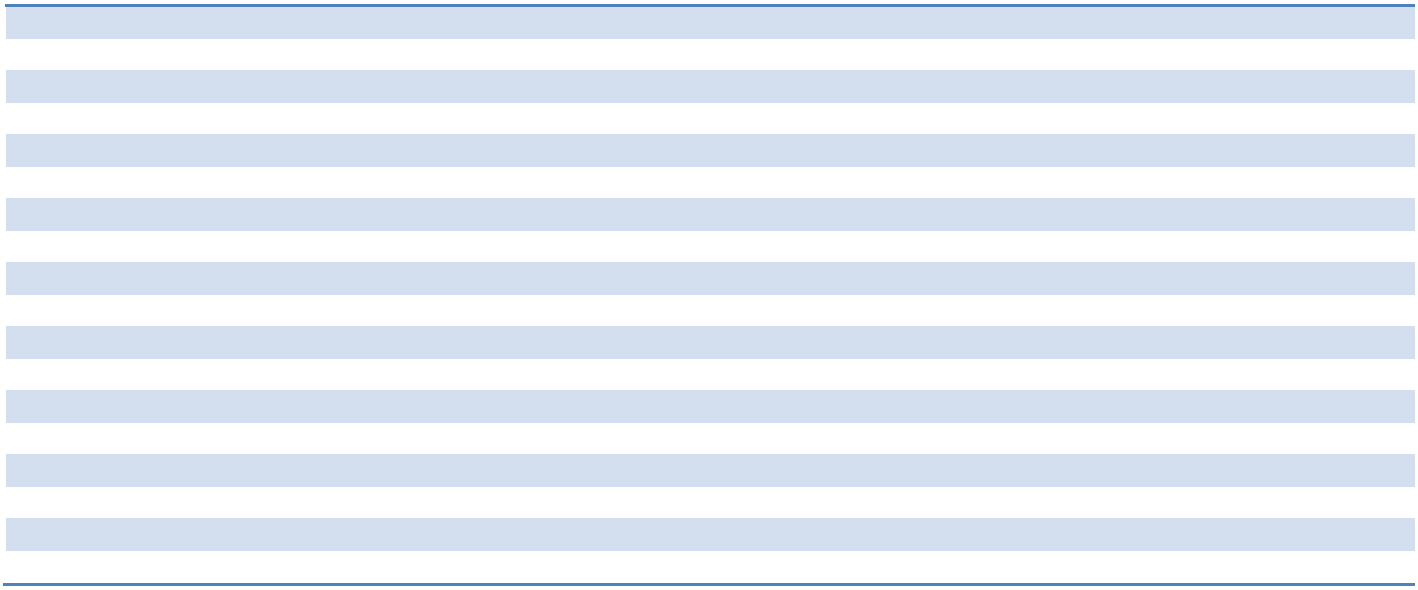

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API OPERATION TEMPLATES

For every single of operation on the entities use the following templates and provide sample REST requests and responses.

Remember that the following Uniform Contract rules must be used :

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.

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Notifications are also described in a subsequent section.

GET /api/<RESOURCE>/{ID}

This Uniform Contract operation is used to retrieve the representation of a managed entity or a task.

Note that collections can be retrieved via GET /API/<RESOURCE> with no {ID}

Description :

- Provide an overall description of the Operation
- Describe the returned representation of the <resource> instance(s).
- Describe if filtering is enabled and what can be done using query parameters.
- Describe if attribute selection is enabled.
- Describe if the resource represents a managed entity, a collection or a task.
- Describe the structure of the identifier.

Behavior :

- What status and exception codes are returned.
- Returns HTTP/1.1 status code 200 if the request was successful.
- Any other special return and/or exception codes.
- Specify what level of attribute filtering can be used. In fact we mandate L0 (equality) filtering in every specification as per REST Guidelines. Add this to Template.

REQUEST
GET /api/{Resource}/{ID}/{attributeSelector}?{filtering expression} Accept: application/json
RESPONSE

200
Content-Type: application/json
 	
{
JSON Resource Representation
}

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Example see TMF REST Design Guidelines.

PUT API/{RESOURCE}/{ID}

This Uniform Contract operation is used to completely update the representation of a managed entity or a task.

Description :

- Provide an overall description of the Operation
- Describe the input representation of the <resource> instance.
- Describe if the resource represents a managed entity or a task.
- Describe the structure of the identifier.

Behavior :

- What status and exception codes are returned.
- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

REQUEST

PUT API/{RESOURCE}/{ID}
Content-type: application/json
 	
{
JSON Resource Representation with every attributes
}

RESPONSE
201 Content-Type: application/json { JSON Resource Representation with every attributes }

Example see TMF REST Design Guidelines.

PATCH API/{RESOURCE}/{ID}

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This Uniform Contract operation is used to partially update the representation of a managed entity or a task.

Description :

- Provide an overall description of the Operation
- Describe the input representation of the <resource> instance.
- Describe if the resource represents a managed entity or a task.
- Describe the structure of the identifier.

Behavior :

- What status and exception codes are returned.
- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

Specify which attributes are patchable using the following table (to capture RO attributes)

Attribute name	Patchable	Rule
ratingType	No	
Name	Y	
Valid for. startDateTime	Y	
Valid for:endDateTime	Y	After the start date and a reference to the rule name in the table below if complex rule.
CustomerAccount.id	Y	Should exist
CustomerBillingCycleSpecification.id	Y	
CustomerBillFormat	Y	
CustomerBillPresentationMedia	Y	

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Currency code	Y	
PaymentMeans	Y	
PartyRole	Y	Bill receiver is mandatory
state	Y	Transition state should be valid

Further document any rules that must be implemented when patching attributes.

Rule name	Rule/Pre Condition/Side Effects/Post Conditons
ratedProductUsage Patching Mandatory Values	When status is patched from below rated to rated or billed, the following attributes are mandatory: "ratingDate", "taxIncludedRatingAmount", "taxExcludedRatingAmount, "taxRate", "currencyCode ", "productRef",
ratedProductUsage Patching Default Values	When status is patched resulting in a status of rated or billed, and the following attributes are empty in the prior state, the following default values apply: "usageRatingTag": "Usage",

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	"isBilled": "False", "ratingAmountType": "Total", "isTaxExempt": "false", "offerTariffType": "Normal"

REQUEST

PATCH API/{RESOURCE}/{ID}
Content-type: application/json
 	
{
JSON Resource Representation with every attributes
}

RESPONSE
201 Content-Type: application/json { JSON Resource Representation with every attributes }

Example see TMF REST Design Guidelines.

POST API/{RESOURCE}/{ID}

This Uniform Contract operation is used to create a managed entity or a task.

Description :

- Provide an overall description of the Operation
- Describe the input representation of the <resource> instance.

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- Describe if the resource represents a managed entity or a task.
- Describe the structure of the identifier.
- Describe what are the mandatory attributes that must be provided when you create the entity.

Behavior :

- What status and exception codes are returned.
- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

ID Management :

Specify the ID Management Rule POST without specifying the ID must result in the system generating the ID for the <Entity>. In a specific case, the ID can also be included in the POST (optional)

Specify the attributes required when an entity is created (and their default values if not):

Attribute name	Mandatory	Default	Rule
ratingType	N	Postpaid	
Name	N	Customer name	
Valid for. startDateTime	N	Today	Valid date not earlier than one bill cycle in the past
Valid for:endDateTime	N		After the start date
CustomerAccount.id	Y		Should exist

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CustomerBillingCycleSpecification.id	N	Bill issuer choice	
CustomerBillFormat	N	Standard invoice	
CustomerBillPresentationMedia	N	Electronic invoice	
Currency code	N	National currency	
PaymentMeans	N	Customer choice	
PartyRole	Y		Bill receiver is mandatory

- Further specify any rules on the creation of the entity

Rule name	Rule
POST Conditional Mandatory Values	When a usage record is created with a status of rated or billed, the following attributes are mandatory: "ratingDate", "taxIncludedRatingAmount", "taxExcludedRatingAmount, "taxRate", "currencyCode ", "productRef",
POST Mandatory attributes within object	○ Within “disabilities” ▪ the disability ○ Within “characteristics” ▪ name & value ○ Within “organizationIdentification” ▪ type ▪ identificationId ○ Within “externalReference”

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	▪ referenceType ▪ reference ○ Within “relatedParty” ▪ Role ▪ Party ▪ startDateTime ○ Within “xxxRelationship” ▪ relationshipType ▪ id ▪ startDateTime

REQUEST

POST API/{RESOURCE}
Content-type: application/json
 	
{
JSON Resource Representation with every mandatory attributes
}

RESPONSE
201 Content-Type: application/json { JSON Resource Representation with every provided and default attributes }

Example see TMF REST Design Guidelines.

DELETE API/{RESOURCE}/{ID}

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This Uniform Contract operation is used to delete a managed entity or a task.

Description :

- Provide an overall description of the Operation
- Describe if the resource represents a managed entity or a task.
- Describe the structure of the identifier.

Behavior :

- What status and exception codes are returned.
- Returns HTTP/1.1 status code 200 if the request was successful.
- Any other special return and/or exception codes.

REQUEST
DELETE API/{RESOURCE}/{ID}
RESPONSE
200

Example see TMF REST Design Guidelines.

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API NOTIFICATION TEMPLATES

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.

REQUEST
POST /api/hub Accept: application/json {"callback": "http://in.listener.com"}
RESPONSE
201 Content-Type: application/json Location: /api/hub/42 {"id":"42","callback":"http://in.listener.com","query":null}

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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.

REQUEST
DELETE /api/hub/{id} Accept: application/json
RESPONSE
204

PUBLISH {EVENTTYPE} POST /LISTENER

Description :

Provide the Event description

Behavior :

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

REQUEST

POST /client/listener
Accept: application/json
 	
{
 	
"event": {

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```
   EVENT BODY
        },
   "eventType": "eventType"
}
```

RESPONSE

201
Content-Type: application/json

Example see TMF REST Design Guidelines.

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RELEASE HISTORY

Release Number	Date	Release led by:	Description
Release 1.0	04/15/2013	Pierre Gauthier TM Forum pgauthier@tmforum.org	First Release of Draft Version of the Document.
Release 1.1			Updated for use in the Paris Spec Jam – and rebranded,.

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