



## *Frameworkx Specification*

# Performance Management API REST Specification

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N/A

## INTRODUCTION

The following document is the template for the REST API documentation.





measurements, collection of measurements or PM objective monitoring (scheduled evaluation of thresholds).

In each of these cases, the PM measurement job will include the following:

- A set of requested performance indicators
- A network/service scope defining a subset of the network or a subset of the service catalog
- Scheduling parameters
- Specific activity parameters, related to collection, production or objective monitoring

Below is the JSON Resource Model for “measurementCollectionJob”.

```
{
  "id": "collJob001",
  "creationTime": "11-26-2014 16:00:00 +0530",
  "lastModifiedTime": "11-26-2014 16:00:00 +0530",
  "adminState": "UNLOCKED",
  "jobPriority": "5",
  "executionState": "EXECUTING",
  "scheduleDefinition": {
    "type": "RecurringScheduleDefinition",
    "scheduleInfo": {
      "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
      "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
    }
  },
  "consumingApplicationId": "CONSUMER001",
  "producingApplicationId": "NE001",
}
```

```
"granularity": "G_15MN",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    },
    "packingType": "NO_PACKING"
  }
},
"reportingPeriod": "R_15MN",
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
```

```
{ "name": "ES" },
{ "name": "SES" },
{ "name": "UAS" },
{ "name": "BBE" },
{ "name": "FEBBE" },
{ "name": "FEES" },
{ "name": "FESES" },
{ "name": "FEUAS" },
{ "name": "UASBID" },
{ "name": "LINK_AVAIL_PCT" }
]
}
```

---

## MEASUREMENTPRODUCTIONJOB

Performance measurements production functionality is about controlling the generation of indicators, the equivalent of PM Control in MTOSI. Production instructions are usually set in the set-up of a PM project. Changes are usually required for new versions of network elements or other kinds of network changes.

The PM Production Interface Service supports to flavors of operations:

- Production only
- Production and Collection - A mode that supports the creation and the deletion of both PM Production and PM Collection, similarly to some of the existing standards (3GPP, OSS/J)

Below is the JSON Resource model for measurementProductionJob.

```
{
  "id": "prodJob001",
```

```
"creationTime": "11-26-2013 16:00:00 +0530",
"lastModifiedTime": "11-26-2013 16:00:00 +0530",
"adminState": "UNLOCKED",
"jobPriority": "5",
"executionState": "EXECUTING",
"scheduleDefinition": {
  "type": "RecurringScheduleDefinition",
  "scheduleInfo": {
    "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
    "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
  }
},
"consumingApplicationId": "CONSUMER001",
"producingApplicationId": "NE001",
"granularity": "G_15MN",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
```

```
"retentionDuration": {
  "units": "MINUTES",
  "amount": "180"
},
"packingType": "NO_PACKING"
},
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
  { "name": "UASBID" },
  { "name": "LINK_AVAIL_PCT" }
]
}
```

---

## ADHOCCOLLECTION

Ad-hoc collection is an on-demand collection method of Performance measurements results from a consuming application, requesting spontaneously a set of data for a set of network or service testing resources for a given temporal context. As the ad-hoc query is a single isolated request, its lifecycle is much simpler and isolated, having a request-response nature.

A PM query for collecting performance indicators of a certain time range. AdhocCollections have no schedule.

Below is the JSON Resource Model for “adhocCollection”.

```
{
  "id": "adhocJob001",
  "creationTime": "11-26-2014 16:00:00 +0530",
  "lastModifiedTime": "11-26-2014 16:00:00 +0530",
  "adminState": "UNLOCKED",
  "jobPriority": "5",
  "executionState": "EXECUTING",
  "consumingApplicationId": "CONSUMER001",
  "producingApplicationId": "NE001",
  "granularity": "G_15MN",
  "monitoredObjectsCriteria": {
    "type": "MonitoredClassCriteria",
    "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
  },
  "protocolTransferData": {
    "transportProtocol": "FILE_TRANSFER",
    "fileTransferData": {
```

```
"fileLocation": "\\pm\\pmdata",
"fileFormat": "XML",
"compressionType": "NO_COMPRESSION",
"retentionDuration": {
  "units": "MINUTES",
  "amount": "180"
},
"packingType": "NO_PACKING"
},
"collectionPeriod": {
  "units": "MINUTES",
  "amount": "120"
},
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
```



```
{ "name": "FEES" },
{ "name": "FESES" },
{ "name": "FEUAS" },
{ "name": "UASBID" },
{ "name": "LINK_AVAIL_PCT" }
]
}
```

---

## TRACKINGRECORD

The measurement job has associated tracking record objects to log and audit the lifecycle of the measurement job.

Allows the tracking of modifications on the measurement job.

The tracking records should not be returned by default with the measurement job to allow retrieving the job without the tracking records. Whether the tracking records are stored with the measurement job or outside of it is implementation specific.

Below is the JSON Resource Model for “trackingRecord”.

```
{
  "id": "1",
  "jobId": "collJob001",
  "jobType": "measurementCollectionJob",
  "description": "measurementCollectionJobCreated successfully",
  "time": "11-26-2014 16:00:00 +0530",
  "userId": "root",
  "systemId": "tmfPm"
}
```

---

## GETSUPPORTEDOBJECTCLASSESTASK

This operation provides the list of object classes supported by the network interface

```
{
  "supportedObjectClasses": [
    "Blade",
    "VC4",
    "E1-Link"
  ]
}
```

---

## GETSUPPORTEDOBJECTSTASK

This operation provides the list of object instances supported by the interface. If an object class is provided in input, only the object instances related to the input class will be returned.

```
{
  "supportedObjects": {
    "Object": [
      "/md1/Node1",
      "/md1/Node1/If1"
    ]
  }
}
```

---

## GETSUPPORTEDINDICATORGROUPSTASK

This operation provides the list of indicator groups supported by the interface for the class provided in input

```
{
  "supportedIndicatorGroups": [
    "Groups_1",
    "Groups_2"
  ]
}
```

---

## GETSUPPORTEDINDICATORSTASK

This operation provides the list of indicator instances supported by the interface for the provided class and/or indicator group. If the indicator group is provided in input, only the indicator instances related to the input class and this group will be returned.

```
{
  "supportedIndicators": [
    "SES",
    "BBE"
  ]
}
```

---

## GETSUPPORTEDTRANSPORTTASK

This operation provides the transport supported by the network interface.

```
{
  "supportedTransport": [
    "SFTP",
    "TFTP"
  ]
}
```

---

## GETSUPPORTEDFILEFORMATTASK

This operation provides the file format supported by the network interface.

```
{
  "supportedFileFormat": [
    "3GPP",
    "MTOSI"
  ]
}
```

---

## GETCOMMONINDICATORGROUPSGRANULARITIESTASK

This operation provides the list of granularities which are common to a set of indicator groups.

```
{
  "commonGranularities": [
    "G_15MN",
    "G_30MN"
  ]
}
```

```
]
}
```

---

## GETCOMMONINDICATORSGRANULARITIESTASK

This operation provides the list of granularities which are common to a set of indicators.

```
{
  "commonGranularities ": [
    "G_15MN",
    "G_30MN"
  ]
}
```

---

## LISTAVAILABLEFILESTASK

This operation returns all files generated by the server and available for download. This operation is particularly useful in case of loss of communications as it allows the client to know the files available for which notifications might have been missed.

```
{
  "JobId": "1234",
  "beginTime": "19_08_2013_23:00:00",
  "endTime": "19_08_2013_23:30:00",
  "FileInfo": [
    "JOB1234_YYY_19_08_2013_23:15:00",
    "JOB1234_YYY_19_08_2013_23:30:00"
  ]
}
```

---

## DEFINITIONS AND ALTERNATIVES

### ***SCHEDULE DEFINITION***

A schedule object is attached to the measurement job to define the job scheduling. This is an abstract and can be of the following types:

- MonthlyScheduleDayofMonthDefinition,
- MonthlyScheduleDayofWeekDefinition,
- WeeklyScheduleDefinition,
- RecurringScheduleDefinition,

```
{
  "scheduleDefinition": {
    "type": "RecurringScheduleDefinition",
    "scheduleInfo": {
      "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
      "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
    }
  }
}
```

- FixedScheduleDefinition,

```
{
  "scheduleDefinition": {
    "type": "FixedScheduleDefinition",
    "scheduleInfo": {
      "scheduleTime": [
        "11-26-2013 16:00:00 +0530",
        "11-27-2013 16:00:00 +0530"
      ]
    }
  }
}
```

```
}

```

- DateScheduleDefinition

---

### **PERFORMANCE GROUP AND INDICATOR**

A Performance Indicator Specification holds the definition of the requested Performance indicator including its name, value type, collection type, description and units.

A Performance Indicator Group is a set of performance indicators that are reported as a group by an Element Manager or a Network Element. Other common terms in the industry are Counter Set or Counter Group.

A Performance Indicator Group Specification is the logical group of the Performance Indicator Specification objects that compose a Performance Indicator Group. The Performance Indicator Group Specification has a name (string) and it can (optionally) hold the individual performance indicator specification objects.

A Measurement Job, at the base entity level, can define its scope of requested indicators in one of two ways:

- By specifying a list of performance indicator group specification objects. This will be more common for some technologies such as Mobile and IP. In some cases, interfaces may even use just the indicator group names without using the underlying indicators. For these cases, it is assumed that the underlying indicator specifications are standard and agreed on by both parties of the interface.
- By specifying a list of specific performance indicator specification objects. This may be used for cases where equipment vendors do not support performance indicator groups or for service layer indicators where the performance indicator groups may not exist.

---

### **SUPPORTED ENUMERATIONS**

ENUMERATIONS	SUPPORTED VALUES	DEFAULT
AdminState	LOCKED,UNLOCKED	UNLOCKED
ExecutionState	EXECUTNG, FAILED	EXECUTING

Granularity	G_1MN,G_5MN,G_15MNN,G_30MN,G_1HR,G_24H,G_1M,G_1Y, NA	
ReportingPeriod	R_1MN,R_5MN,R_15MN,R_30MN,R_1HR,R_24H,NA	
FileFormat	3GPP, MTOSI	
OutputFormat	3GPP, MTOSI	
TransportProtocol	Any string value	FILE_TRANSFER

---

## MONITORED OBJECTS CRITERIA

MonitoredObjectCriteria is an abstract class. It is transformed to a datatype in the implementation.

- MonitoredInstancesCriteria has a single attribute monitoredObjectInstances of type ObjectName containing the list of monitored instances.  
MonitoredInstancesCriteria is transformed to a datatype in the implementation.

```
{
  "monitoredObjectsCriteria": {
    "type": "MonitoredObjectInstances",
    " monitoredObjectInstancesInfo": [
      " monitoredObjectInstance": "Route001",
```

```

    "monitoredObjectInstance": "Route002"
  ]
}

```

➤ MonitoredClassCriteria has 2 attributes:

- monitoredObjectClass: (String, Optional) A monitored object class for specifying the set of instances that are referenced by a PM query.
- objectInstanceFilter: (Filter, Optional) A filter that can be used in conjunction with the monitored object class for specifying the set of instances that are referenced by a PM query.

```

{
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": {
    "monitoredObjectClass": "SDH-Route",
    "objectInstanceFilter": "route001,route010"
  }
}
}

```

---

## STATE MACHINE FOR ADMIN STATE & EXECUTION STATE

There are two state variables for each of the three jobs.

---

### **ADMIN JOB STATE MACHINE:**

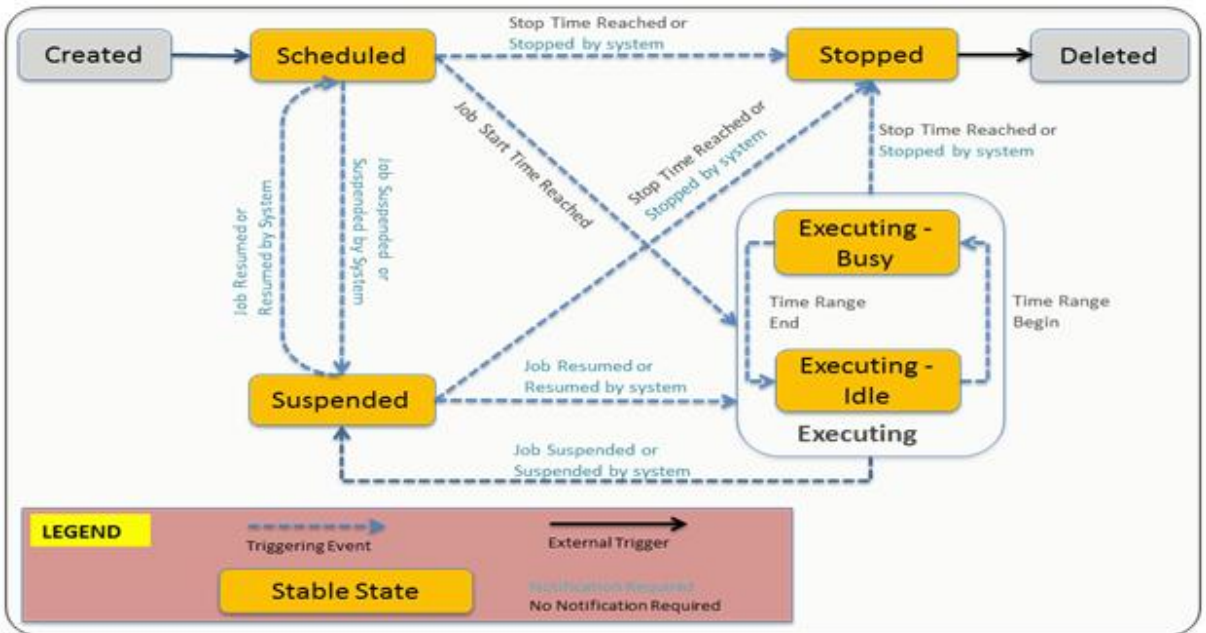
Possible states are LOCKED and UNLOCKED. The default value when any job is created it shall be UNLOCKED. The operation Resume (PATCH) shall put the admin state to UNLOCKED. And the operation Suspend (PATCH) shall put the admin state to LOCKED.

---

### **PRODUCTION JOB STATE MACHINE WITH SCHEDULE**

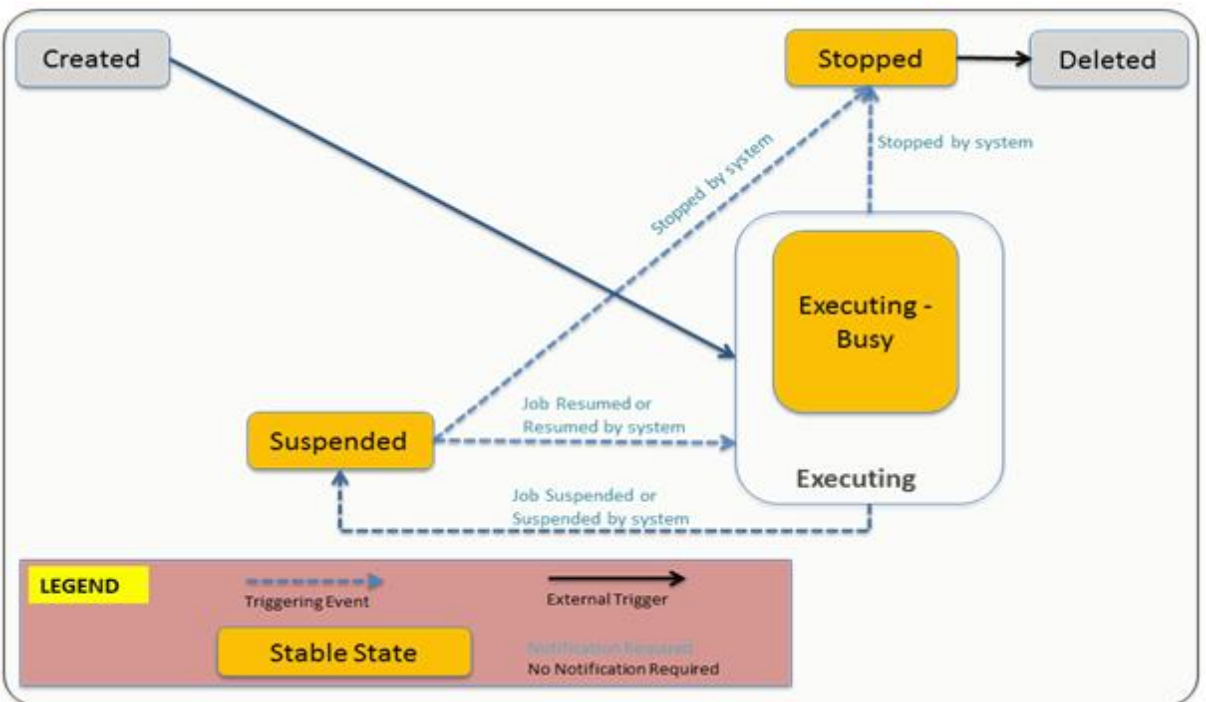


The following diagram depicts the state machine and notifications for a Performance Measurement Production Job with an attached schedule.



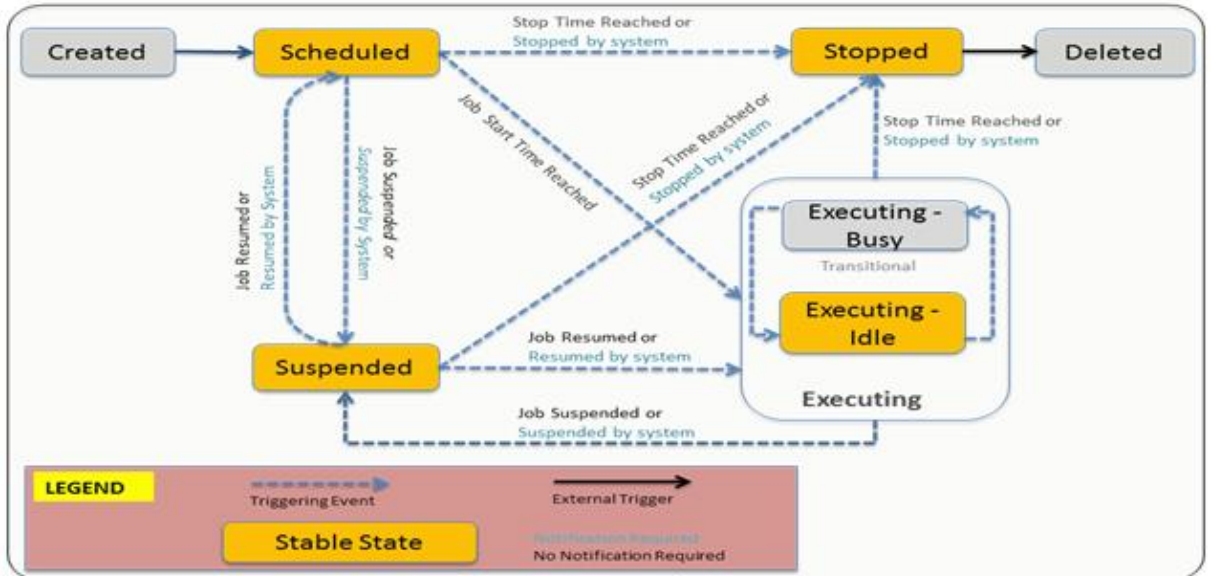
**PRODUCTION JOB STATE MACHINE WITHOUT SCHEDULE**

The following diagram depicts the state machine and notifications for a Performance Measurement Production Job without an attached schedule.



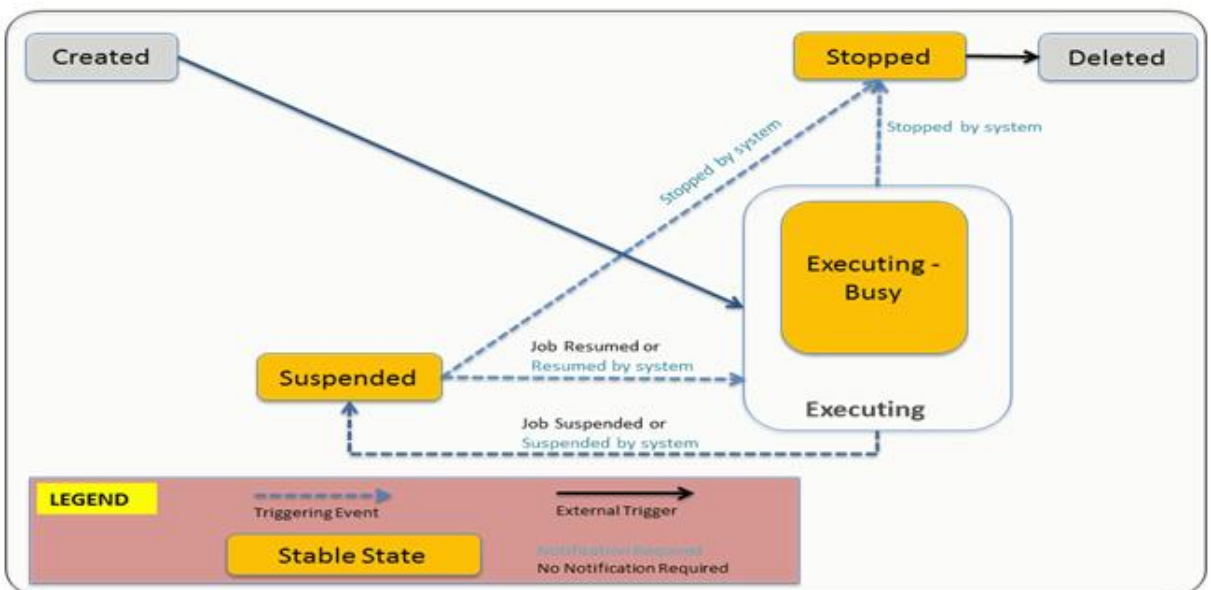
**COLLECTION JOB STATE MACHINE WITH SCHEDULE**

The following diagram depicts the state machine and notifications for a Performance Measurement Collection Job with an attached schedule.



**COLLECTION JOB STATE MACHINE WITHOUT SCHEDULE**

The following diagram depicts the state machine and notifications for a Performance Measurement Collection Job without any attached schedule.



## Notification Resource 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:

---

### FILESREADY

MeasurementCollectionJobService and AdhocCollectionService shall emit the notification “filesReady”, when the file has been generated.

```
{
  "event": {
    "id": "1",
    "compressionType": "NO_COMPRESSION",
    "packingType": "NO_PACKING",
    "fileInfo": {
      "fileName": "SDH-NE_SDH-Route_20131126163000+0530_900.csv",
      "fileLocation": "/pm/pmdata/collJob001/",
      "readyTime": "11-26-2014 16:30:00 +0530"
    },
    "fileTransferStatus": "COMPLETE"
  },
  "eventType": "FilesReady"
}
```

---

### FILESPREPARATIONERROR

MeasurementCollectionJobService and AdhocCollectionService shall emit the notification “filesPreparationError”, when the file cannot be generated due to any reason.

```
{
  "event": {
    "id": "1",
    "compressionType": "NO_COMPRESSION",
    "packingType": "NO_PACKING",
    "fileInfo": {
      "fileName": "SDH-NE_SDH-Route_20131126163000+0530_900.csv",
      "fileLocation": "/pm/pmdata/collJob001/",
      "readyTime": "11-26-2014 16:30:00 +0530"
    },
    "reason": " filePreparationErrorReason ",
    "description": " prepatation error for link down "
  },
  "eventType": "FilesPreparationError"
}
```

---

## ADHOC\_COLLECTION\_AVCN

Notification of the changes to `adhocCollection` for the following attributes:

- `lastModifiedTime`
- `AdminState`
- `jobPriority`
- `executionstate`
- `scheduleDef`
- `Id`
- `sourceTime`
- `ObjectType`

### REQUEST

```
{
  "lastModifiedTime": "",
  "AdminState": "UNLOCKED",
}
```

```
    "jobPriority": "5",
    "executionState": "Executing",
    "scheduleDefinition": {
      "type": "RecurringScheduleDefinition",
      "scheduleInfo": {
        "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
        "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
      }
    },
    "id": "collJob001",
    "sourceTime": "11-26-2014 16:00:00 +0530",
    "ObjectType": "AdhocCollection"
  }
```

---

## MEASUREMENTCOLLECTIONJOBVCN

Notification of the changes to measurementCollectionJob for the following attributes:

- reportingPeriod
- granularity
- monitoredObjectsCriteria
- AdminState
- jobPriority
- executionstate
- scheduleDef
- Id
- sourceTime
- ObjectType

```
{
  "reportingPeriod": "R_15M",
  "granularity": "G_15M",
  "monitoredObjectsCriteria": {
    "type": "MonitoredClassCriteria",
    "monitoredObjectInfo": {
      "monitoredObjectClass": "SDH-Route"
    }
  },
  "AdminState": "UNLOCKED",
  "jobPriority": "5",
  "executionState": "Executing",
  "scheduleDefinition": {
    "type": "RecurringScheduleDefinition",
    "scheduleInfo": {
      "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
      "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
    }
  },
  "id": "collJob001",
  "sourceTime": "11-26-2014 16:00:00 +0530",
  "ObjectType": "AdhocCollection"
}
```

---

## MEASUREMENTPRODUCTIONJOBVCN

Notification of the changes to measurementProductionJob for the following attributes:

- granularity
- monitoredObjectsCriteria
- AdminState
- jobPriority
- executionstate
- scheduleDef
- Id
- sourceTime
- ObjectType

```
{  
  
  "granularity": "G_15M",  
  
  "monitoredObjectsCriteria": {  
  
    "type": "MonitoredClassCriteria",  
  
    "monitoredObjectInfo": {  
  
      "monitoredObjectClass": "SDH-Route"  
  
    }  
  
  },  
  
  "AdminState": "UNLOCKED",  
  
  "jobPriority": "5",  
  
  "executionState": "Executing",  
  
  "scheduleDefinition": {  
  
    "type": "RecurringScheduleDefinition",  
  
    "scheduleInfo": {  
  
      "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",  
  
      "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"  
  
    }  
  
  },  
  
  "id": "collJob001",  
  
  "sourceTime": "11-26-2014 16:00:00 +0530",  
  
}
```

```
    "ObjectType" : "AdhocCollection"  
  }
```

---

## MEASUREMENTCOLLECTIONJOB

Notification of the creation of measurementCollectionJob.

```
{  
  "id": "collJob001",  
  "creationTime": "11-26-2014 16:00:00 +0530",  
  "lastModifiedTime": "11-26-2014 16:00:00 +0530",  
  "adminState": "2",  
  "jobPriority": "5",  
  "executionState": "ExecutionState",  
  "scheduleDefinition": {  
    "type": "RecurringScheduleDefinition",  
    "scheduleInfo": {  
      "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",  
      "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"  
    }  
  },  
  "consumingApplicationId": "CONSUMER001",  
  "producingApplicationId": "NE001",  
  "reportingPeriod": "R_15M",  
  "granularity": "G_15M",  
  "monitoredObjectsCriteria": {
```



```
"type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    },
    "packingType": "NO_PACKING"
  }
},
"reportingPeriod": "R_15M",
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
```

```
{ "name": "FEBBE" },
{ "name": "FEES" },
{ "name": "FESES" },
{ "name": "FEUAS" },
{ "name": "UASBID" },
{ "name": "LINK_AVAIL_PCT" }
]
},
"sourceTime" : "11-26-2014 16:00:00 +0530",
"ObjectType" : "AdhocCollection"
}
```

---

## MEASUREMENTPRODUCTIONJOB

Notification of the creation of measurementProductionJob.

```
{
  "id": "prodJob001",
  "creationTime": "11-26-2013 16:00:00 +0530",
  "lastModifiedTime": "11-26-2013 16:00:00 +0530",
  "adminState": "2",
  "jobPriority": "5",
  "executionState": "ExecutionState",
  "scheduleDefinition": {
    "type": "RecurringScheduleDefinition",
    "scheduleInfo": {
      "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
```

```
"scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
}
},
"consumingApplicationId": "CONSUMER001",
"producingApplicationId": "NE001",
"granularity": "G_15M",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    },
    "packingType": "NO_PACKING"
  }
},
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
```

```
"performanceIndicatorSpecification": [  
  { "name": "ES" },  
  { "name": "SES" },  
  { "name": "UAS" },  
  { "name": "BBE" },  
  { "name": "FEBBE" },  
  { "name": "FEES" },  
  { "name": "FESES" },  
  { "name": "FEUAS" },  
  { "name": "UASBID" },  
  { "name": "LINK_AVAIL_PCT" }  
]  
},  
"sourceTime" : "11-26-2014 16:00:00 +0530",  
"ObjectType" : "AdhocCollection"  
}
```

---

## MEASUREMENTCOLLECTIONJOBODELN

Notification of the deletion of measurementCollectionJob.

```
{  
  "id": "collJob001",  
  "creationTime": "11-26-2014 16:00:00 +0530",  
  "lastModifiedTime": "11-26-2014 16:00:00 +0530",  
  "adminState": "2",  
}
```

```
"jobPriority": "5",
"executionState": "ExecutionState",
"scheduleDefinition": {
  "type": "RecurringScheduleDefinition",
  "scheduleInfo": {
    "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
    "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
  }
},
"consumingApplicationId": "CONSUMER001",
"producingApplicationId": "NE001",
"reportingPeriod": "R_15M",
"granularity": "G_15M",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    }
  }
},
```

```
    "packingType": "NO_PACKING"
  }
},
"reportingPeriod": "R_15M",
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
  { "name": "UASBID" },
  { "name": "LINK_AVAIL_PCT" }
]
},
"sourceTime" : "11-26-2014 16:00:00 +0530",
"ObjectType" : "AdhocCollection"
}
```

---

## MEASUREMENTPRODUCTIONJOBODELN

## Notification of the deletion of measurementProductionJob.

```
{
  "id": "prodJob001",
  "creationTime": "11-26-2013 16:00:00 +0530",
  "lastModifiedTime": "11-26-2013 16:00:00 +0530",
  "adminState": "2",
  "jobPriority": "5",
  "executionState": "ExecutionState",
  "scheduleDefinition": {
    "type": "RecurringScheduleDefinition",
    "scheduleInfo": {
      "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
      "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
    }
  },
  "consumingApplicationId": "CONSUMER001",
  "producingApplicationId": "NE001",
  "granularity": "G_15M",
  "monitoredObjectsCriteria": {
    "type": "MonitoredClassCriteria",
    "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
  },
  "protocolTransferData": {
    "transportProtocol": "FILE_TRANSFER",
    "fileTransferData": {
      "fileLocation": "\\pm\\pmdata",

```

```
"fileFormat": "XML",
"compressionType": "NO_COMPRESSION",
"retentionDuration": {
  "units": "MINUTES",
  "amount": "180"
},
"packingType": "NO_PACKING"
}
},
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
  { "name": "UASBID" },
  { "name": "LINK_AVAIL_PCT" }
]
},
"sourceTime": "11-26-2014 16:00:00 +0530",
```



```
"ObjectType" : "AdhocCollection"
```

```
}
```

## 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
Create measurementCollectionJob	POST measurementCollectionJob	Create measurementCollectionJob
Query measurementCollectionJob	GET measurementCollectionJob	Query measurementCollectionJob
Complete Update of measurementCollectionJob	PUT measurementCollectionJob	Complete Update measurementCollectionJob
Partial Update measurementCollectionJob	PATCH measurementCollectionJob	Partial Update measurementCollectionJob
Delete measurementCollectionJob	DELETE measurementCollectionJob	Delete measurementCollectionJob
Create measurementProductionJob	POST measurementProductionJob	Create measurementProductionJob
Query measurementProductionJob	GET measurementProductionJob	Query measurementProductionJob
Complete Update measurementProductionJob	PUT measurementProductionJob	Complete Update measurementProductionJob
Partial Update measurementProductionJob	PATCH measurementProductionJob	Partial Update measurementProductionJob
Delete	DELETE	Delete

measurementProductionJob	measurementProductionJob	measurementProductionJob
Create adhocCollection	POST adhocCollection	Create adhocCollection
Query adhocCollection	GET adhocCollection	Query adhocCollection
Delete adhocCollection	DELETE adhocCollection	Delete adhocCollection
Query trackingRecord	GET trackingRecord	Query trackingRecord

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

Notifications are also described in a subsequent section.

### GET /api/measurementCollectionJob/{ID}

Description :

- This Uniform Contract operation is used to retrieve the representation of measurementCollectionJob using id.
- Collection of jobs can be retrieved via GET /API/<RESOURCE> with no {ID}

Behavior :

- 200 OK – request was successful
- 404 Not Found.

Example:

<b>REQUEST</b>
GET /api/measurementCollectionJob/collJob001 Accept: application/json
<b>RESPONSE</b>
200 Content-Type: application/json

```
{
  "id": "collJob001",
  "creationTime": "11-26-2014 16:00:00 +0530",
  "lastModifiedTime": "11-26-2014 16:00:00 +0530",
  "adminState": "UNLOCKED",
  "jobPriority": "5",
  "executionState": "EXECUTING",
  "scheduleDefinition": {
    "type": "RecurringScheduleDefinition",
    "scheduleInfo": {
      "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
      "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
    }
  },
  "consumingApplicationId": "CONSUMER001",
  "producingApplicationId": "NE001",
  "granularity": "G_15MN",
  "monitoredObjectsCriteria": {
    "type": "MonitoredClassCriteria",
    "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
  },
  "protocolTransferData": {
    "transportProtocol": "FILE_TRANSFER",
    "fileTransferData": {
```

```
"fileLocation": "\\pm\pmdata",
"fileFormat": "XML",
"compressionType": "NO_COMPRESSION",
"retentionDuration": {
  "units": "MINUTES",
  "amount": "180"
},
"packingType": "NO_PACKING"
},
"reportingPeriod": "R_15MN",
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
```

```

    { "name": "UASBID" },
    { "name": "LINK_AVAIL_PCT" }
  ]
}

```

Retrieving all jobs – returns an array/list of measurementCollectionJobs

- GET /api/measurementCollectionJob

Retrieving all jobs with AdminState as LOCKED

- GET /api/measurementCollectionJob?adminState=LOCKED

Retrieve a job with ID, but only the attributes executionState & scheduleDefinition in response.

- GET /api/measurementCollectionJob/1/executionState,scheduleDefinition

GET /api/measurementProductionJob/{ID}

Description :

- This Uniform Contract operation is used to retrieve the representation of measurementProductionJob using id.
- Collection of jobs can be retrieved via GET /API/<RESOURCE> with no {ID}

Behavior :

- 200 OK – request was successful
- 404 Not Found.

Example:

<b>REQUEST</b>
GET /api/measurementProductionJob/collJob001 Accept: application/json
<b>RESPONSE</b>
200 Content-Type: application/json

```
{
  "id": "prodJob001",
  "creationTime": "11-26-2013 16:00:00 +0530",
  "lastModifiedTime": "11-26-2013 16:00:00 +0530",
  "adminState": "UNLOCKED",
  "jobPriority": "5",
  "executionState": "EXECUTING",
  "scheduleDefinition": {
    "type": "RecurringScheduleDefinition",
    "scheduleInfo": {
      "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
      "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
    }
  },
  "consumingApplicationId": "CONSUMER001",
  "producingApplicationId": "NE001",
  "granularity": "G_15MN",
  "monitoredObjectsCriteria": {
    "type": "MonitoredClassCriteria",
    "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
  },
  "protocolTransferData": {
    "transportProtocol": "FILE_TRANSFER",
    "fileTransferData": {
```

```
"fileLocation": "\\pm\pmdata",
"fileFormat": "XML",
"compressionType": "NO_COMPRESSION",
"retentionDuration": {
  "units": "MINUTES",
  "amount": "180"
},
"packingType": "NO_PACKING"
},
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
  { "name": "UASBID" },
  { "name": "LINK_AVAIL_PCT" }
```



```
]
```

```
}
```

Retrieving all jobs – returns an array/list of measurementProductionJobs

- GET /api/measurementProductionJob

Retrieving all jobs with AdminState as LOCKED

- GET /api/measurementProductionJob?adminState=LOCKED

Retrieve a job with ID, but only the attributes executionState & scheduleDefinition in response.

- GET /api/measurementProductionJob/1/executionState,scheduleDefinition

GET /api/adhocCollection/{ID}

Description :

- This Uniform Contract operation is used to retrieve the representation of adhocCollection using id.
- Collection of jobs can be retrieved via GET /API/<RESOURCE> with no {ID}

Behavior :

- 200 OK – request was successful
- 404 Not Found.

Example:

#### REQUEST

```
GET /api/adhocCollection/collJob001
Accept: application/json
```

#### RESPONSE

```
200
Content-Type: application/json
```

```
{
  "id": "adhocJob001",
  "creationTime": "11-26-2014 16:00:00 +0530",
  "lastModifiedTime": "11-26-2014 16:00:00 +0530",
  "adminState": "UNLOCKED",
  "jobPriority": "5",
  "executionState": "EXECUTING",
  "consumingApplicationId": "CONSUMER001",
  "producingApplicationId": "NE001",
  "granularity": "G_15MN",
  "monitoredObjectsCriteria": {
    "type": "MonitoredClassCriteria",
    "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
  },
  "protocolTransferData": {
    "transportProtocol": "FILE_TRANSFER",
    "fileTransferData": {
      "fileLocation": "\\pm\\pmdata",
      "fileFormat": "XML",
      "compressionType": "NO_COMPRESSION",
      "retentionDuration": {
        "units": "MINUTES",
        "amount": "180"
      }
    }
  },
}
```

```
"packingType": "NO_PACKING"
}
},
"collectionPeriod": {
  "units": "MINUTES",
  "amount": "120"
},
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
  { "name": "UASBID" },
  { "name": "LINK_AVAIL_PCT" }
]
}
```

Retrieving all jobs – returns an array/list of adhocCollections

- GET /api/adhocCollection

Retrieving all adhocCollections with AdminState as LOCKED

- GET /api/adhocCollection?adminState=LOCKED

Retrieve a job with ID, but only the attributes granularity & protocolTransferData in response.

- GET /api/measurementCollectionJob/1/granularity,protocolTransferData

PUT /api/measurementCollectionJob/{ID}

Description :

- This Uniform Contract operation is used to modify any specified 'measurementCollectionJob' identified by the id.

Behavior :

- 200 OK – request was successful
- 404 Not Found.

Example:

#### REQUEST

PUT /api/measurementCollectionJob/collJob001

Accept: application/json

Content-Type: application/json

{

"id": "collJob001",

"creationTime": "11-26-2014 16:00:00 +0530",

"lastModifiedTime": "11-26-2014 16:00:00 +0530",

"adminState": "UNLOCKED",

```
"jobPriority": "5",
"executionState": "EXECUTING",
"scheduleDefinition": {
  "type": "RecurringScheduleDefinition",
  "scheduleInfo": {
    "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
    "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
  }
},
"consumingApplicationId": "CONSUMER001",
"producingApplicationId": "NE001",
"granularity": "G_15MN",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    }
  }
}
```

```
    },
    "packingType": "NO_PACKING"
  }
},
"reportingPeriod": "R_15MN",
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
  { "name": "UASBID" },
  { "name": "LINK_AVAIL_PCT" }
]
}
```

**RESPONSE**

200

Content-Type: application/json

```
{
  "id": "collJob001",
  "creationTime": "11-26-2014 16:00:00 +0530",
  "lastModifiedTime": "11-26-2014 16:00:00 +0530",
  "adminState": "UNLOCKED",
  "jobPriority": "5",
  "executionState": "EXECUTING",
  "scheduleDefinition": {
    "type": "RecurringScheduleDefinition",
    "scheduleInfo": {
      "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
      "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
    }
  },
  "consumingApplicationId": "CONSUMER001",
  "producingApplicationId": "NE001",
  "granularity": "G_15MN",
  "monitoredObjectsCriteria": {
    "type": "MonitoredClassCriteria",
    "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
  },
  "protocolTransferData": {
    "transportProtocol": "FILE_TRANSFER",
```

```
"fileTransferData": {
  "fileLocation": "\\pm\\pmdata",
  "fileFormat": "XML",
  "compressionType": "NO_COMPRESSION",
  "retentionDuration": {
    "units": "MINUTES",
    "amount": "180"
  },
  "packingType": "NO_PACKING"
},
"reportingPeriod": "R_15MN",
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
```



```
{ "name": "FEUAS" },  
  { "name": "UASBID" },  
  { "name": "LINK_AVAIL_PCT" }  
]  
}
```

### PUT /api/measurementProductionJob/{ID}

#### Description :

- This Uniform Contract operation is used to modify any specified 'measurementProductionJob' identified by the id.

#### Behavior :

- 200 OK – request was successful
- 404 Not Found.

#### Example:

##### REQUEST

```
PUT /api/measurementProductionJob/collJob001
```

```
Accept: application/json
```

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

```
{
```

```
  "id": "prodJob001",
```

```
  "creationTime": "11-26-2013 16:00:00 +0530",
```

```
  "lastModifiedTime": "11-26-2013 16:00:00 +0530",
```

```
  "adminState": "UNLOCKED",
```

```
  "jobPriority": "5",
```

```
“executionState”: “EXECUTING”,
"scheduleDefinition": {
  "type": "RecurringScheduleDefinition",
  "scheduleInfo": {
    "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
    "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
  }
},
"consumingApplicationId": "CONSUMER001",
"producingApplicationId": "NE001",
"granularity": "G_15MN",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    }
  }
},
```

```
"packingType": "NO_PACKING"
}
},
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
  { "name": "UASBID" },
  { "name": "LINK_AVAIL_PCT" }
]
}
```

**RESPONSE**

200  
Content-Type: application/json

```
{
```

```
"id": "prodJob001",
"creationTime": "11-26-2013 16:00:00 +0530",
"lastModifiedTime": "11-26-2013 16:00:00 +0530",
"adminState": "UNLOCKED",
"jobPriority": "5",
"executionState": "EXECUTING",
"scheduleDefinition": {
  "type": "RecurringScheduleDefinition",
  "scheduleInfo": {
    "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
    "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
  }
},
"consumingApplicationId": "CONSUMER001",
"producingApplicationId": "NE001",
"granularity": "G_15MN",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
```

```
"compressionType": "NO_COMPRESSION",
"retentionDuration": {
  "units": "MINUTES",
  "amount": "180"
},
"packingType": "NO_PACKING"
},
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
  { "name": "UASBID" },
  { "name": "LINK_AVAIL_PCT" }
]
}
```

**PUT /api/adhocCollection/{ID}****Description :**

- This Uniform Contract operation is used to modify any specified 'adhocCollection' identified by the id.

**Behavior :**

- 200 OK – request was successful
- 404 Not Found.

**Example:****REQUEST**

```
PUT /api/adhocCollection/collJob001
```

```
Accept: application/json
```

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

```
{
```

```
  "id": "adhocJob001",
```

```
  "creationTime": "11-26-2014 16:00:00 +0530",
```

```
  "lastModifiedTime": "11-26-2014 16:00:00 +0530",
```

```
  "adminState": "UNLOCKED",
```

```
  "jobPriority": "5",
```

```
  "executionState": "EXECUTING",
```

```
  "consumingApplicationId": "CONSUMER001",
```

```
  "producingApplicationId": "NE001",
```

```
  "granularity": "G_15MN",
```

```
  "monitoredObjectsCriteria": {
```

```
"type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    },
    "packingType": "NO_PACKING"
  }
},
"collectionPeriod": {
  "units": "MINUTES",
  "amount": "120"
},
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
```

```
"performanceIndicatorSpecification": [  
  { "name": "ES" },  
  { "name": "SES" },  
  { "name": "UAS" },  
  { "name": "BBE" },  
  { "name": "FEBBE" },  
  { "name": "FEES" },  
  { "name": "FESES" },  
  { "name": "FEUAS" },  
  { "name": "UASBID" },  
  { "name": "LINK_AVAIL_PCT" }  
]  
}
```

**RESPONSE**

```
200  
Content-Type: application/json  
  
{  
  
  "id": "adhocJob001",  
  
  "creationTime": "11-26-2014 16:00:00 +0530",  
  
  "lastModifiedTime": "11-26-2014 16:00:00 +0530",  
  
  "adminState": "UNLOCKED",  
  
  "jobPriority": "5",  
  
  "executionState": "EXECUTING",  
  
  "consumingApplicationId": "CONSUMER001",  
  
  "producingApplicationId": "NE001",  
  
}
```



```
"granularity": "G_15MN",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    },
    "packingType": "NO_PACKING"
  }
},
"collectionPeriod": {
  "units": "MINUTES",
  "amount": "120"
},
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
```

```
{ "name": "TRANSPORT02" }  
  
],  
"performanceIndicatorSpecification": [  
  { "name": "ES" },  
  { "name": "SES" },  
  { "name": "UAS" },  
  { "name": "BBE" },  
  { "name": "FEBBE" },  
  { "name": "FEES" },  
  { "name": "FESES" },  
  { "name": "FEUAS" },  
  { "name": "UASBID" },  
  { "name": "LINK_AVAIL_PCT" }  
]  
}
```

Example see TMF REST Design Guidelines.

PATCH /api/measurementCollectionJob/{ID}

Description :

- This Uniform Contract operation is used to partially update the representation of a measurementCollectionJob identified by its id.
- Resource represents a managed entity.

Behavior :

- 200 OK – request was successful
- 404 Not Found.

Example:

REQUEST
<pre>PATCH /api/measurementCollectionJob/collJob001 Accept: application/json Content-Type: application/json  {   "adminState": "1" }</pre>
RESPONSE
<pre>200 Content-Type: application/json  {   "id": "collJob001",   "creationTime": "11-26-2014 16:00:00 +0530",   "lastModifiedTime": "11-26-2014 16:00:00 +0530",   "adminState": "1",   "jobPriority": "5",   "executionState": "EXECUTING",   "scheduleDefinition": {     "type": "RecurringScheduleDefinition",     "scheduleInfo": {       "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",       "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"     }   },   "consumingApplicationId": "CONSUMER001",</pre>

```
"producingApplicationId": "NE001",
"granularity": "G_15MN",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    },
    "packingType": "NO_PACKING"
  }
},
"reportingPeriod": "R_15MN",
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
```

```
"performanceIndicatorSpecification": [  
  { "name": "ES" },  
  { "name": "SES" },  
  { "name": "UAS" },  
  { "name": "BBE" },  
  { "name": "FEBBE" },  
  { "name": "FEES" },  
  { "name": "FESES" },  
  { "name": "FEUAS" },  
  { "name": "UASBID" },  
  { "name": "LINK_AVAIL_PCT" }  
]  
}
```

**PATCH /api/measurementProductionJob/{ID}**

Description :

- This Uniform Contract operation is used to partially update the representation of a measurementProductionJob identified by its id.
- Resource represents a managed entity.

Behavior :

- 200 OK – request was successful
- 404 Not Found.

Example:

**REQUEST**

PATCH /api/measurementProductionJob/colJob001

Accept: application/json  
Content-Type: application/json

```
{  
  "jobPriority": "6"  
}
```

## RESPONSE

200  
Content-Type: application/json

```
{  
  "id": "prodJob001",  
  "creationTime": "11-26-2013 16:00:00 +0530",  
  "lastModifiedTime": "11-26-2013 16:00:00 +0530",  
  "adminState": "UNLOCKED",  
  "jobPriority": "6",  
  "executionState": "EXECUTING",  
  "scheduleDefinition": {  
    "type": "RecurringScheduleDefinition",  
    "scheduleInfo": {  
      "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",  
      "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"  
    }  
  },  
  "consumingApplicationId": "CONSUMER001",  
}
```

```
"producingApplicationId": "NE001",
"granularity": "G_15MN",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    },
    "packingType": "NO_PACKING"
  }
},
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
```

```
{ "name": "SES" },
{ "name": "UAS" },
{ "name": "BBE" },
{ "name": "FEBBE" },
{ "name": "FEES" },
{ "name": "FESES" },
{ "name": "FEUAS" },
{ "name": "UASBID" },
{ "name": "LINK_AVAIL_PCT" }
]
}
```

#### PATCH /api/adhocCollection/{ID}

##### Description :

- This Uniform Contract operation is used to partially update the representation of a adhocCollectionJob identified by its id.
- Resource represents a managed entity.

##### Behavior :

- 200 OK – request was successful
- 404 Not Found..

##### Example:

###### REQUEST

```
PATCH /api/adhocCollection/adhocJob001
Accept: application/json
Content-Type: application/json
```



```
{  
  "consumingApplicationId": "CONSUMER002",  
}
```

**RESPONSE**

200

Content-Type: application/json

```
{  
  "id": "adhocJob001",  
  "creationTime": "11-26-2014 16:00:00 +0530",  
  "lastModifiedTime": "11-26-2014 16:00:00 +0530",  
  "adminState": "UNLOCKED",  
  "jobPriority": "5",  
  "executionState": "EXECUTING",  
  "consumingApplicationId": "CONSUMER002",  
  "producingApplicationId": "NE001",  
  "granularity": "G_15MN",  
  "monitoredObjectsCriteria": {  
    "type": "MonitoredClassCriteria",  
    "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }  
  },  
  "protocolTransferData": {  
    "transportProtocol": "FILE_TRANSFER",  
    "fileTransferData": {  
      "fileLocation": "\\pm\\pmdata",  
      "fileFormat": "XML",  
    }  
  }  
}
```

```
"compressionType": "NO_COMPRESSION",
"retentionDuration": {
  "units": "MINUTES",
  "amount": "180"
},
"packingType": "NO_PACKING"
},
"collectionPeriod": {
  "units": "MINUTES",
  "amount": "120"
},
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
```

```
{ "name": "FEUAS" },  
  { "name": "UASBID" },  
  { "name": "LINK_AVAIL_PCT" }  
]  
}
```

Example see TMF REST Design Guidelines.

## POST /api/measurementCollectionJob

Description :

- This Uniform Contract operation is used to create the representation of any specified 'measurementCollectionJob'.

Behavior :

- 201 OK – job created successfully
- 404 Not Found.

Example:

### REQUEST

```
POST /api/measurementCollectionJob  
Accept: application/json  
Content-Type: application/json
```

```
{  
  "id": "collJob001",  
  "creationTime": "11-26-2014 16:00:00 +0530",  
  "lastModifiedTime": "11-26-2014 16:00:00 +0530",  
  "adminState": "UNLOCKED",  
  "jobPriority": "5",
```

```
“executionState”: “EXECUTING”,
"scheduleDefinition": {
  "type": "RecurringScheduleDefinition",
  "scheduleInfo": {
    "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
    "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
  }
},
"consumingApplicationId": "CONSUMER001",
"producingApplicationId": "NE001",
"granularity": "G_15MN",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    }
  }
},
```

```
"packingType": "NO_PACKING"
}
},
"reportingPeriod": "R_15MN",
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
  { "name": "UASBID" },
  { "name": "LINK_AVAIL_PCT" }
]
}
```

**RESPONSE**

201  
Content-Type: application/json

```
{
  "id": "collJob001",
  "creationTime": "11-26-2014 16:00:00 +0530",
  "lastModifiedTime": "11-26-2014 16:00:00 +0530",
  "adminState": "UNLOCKED",
  "jobPriority": "5",
  "executionState": "EXECUTING",
  "scheduleDefinition": {
    "type": "RecurringScheduleDefinition",
    "scheduleInfo": {
      "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
      "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
    }
  },
  "consumingApplicationId": "CONSUMER001",
  "producingApplicationId": "NE001",
  "granularity": "G_15MN",
  "monitoredObjectsCriteria": {
    "type": "MonitoredClassCriteria",
    "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
  },
  "protocolTransferData": {
    "transportProtocol": "FILE_TRANSFER",
    "fileTransferData": {
```

```
"fileLocation": "\\pm\\pmdata",
"fileFormat": "XML",
"compressionType": "NO_COMPRESSION",
"retentionDuration": {
  "units": "MINUTES",
  "amount": "180"
},
"packingType": "NO_PACKING"
},
"reportingPeriod": "R_15MN",
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
```

```
{ "name": "UASBID" },  
  { "name": "LINK_AVAIL_PCT" }  
]  
}
```

Example see TMF REST Design Guidelines.

## POST /api/measurementProductionJob

Description :

- This Uniform Contract operation is used to create the representation of any specified ‘measurementProductionJob’..

Behavior :

- 201 OK – job created successfully
- 404 Not Found.

Example:

### REQUEST

PUT /api/measurementProductionJob

Accept: application/json

Content-Type: application/json

```
{  
  "id": "prodJob001",  
  "creationTime": "11-26-2013 16:00:00 +0530",  
  "lastModifiedTime": "11-26-2013 16:00:00 +0530",  
  "adminState": "UNLOCKED",  
  "jobPriority": "5",
```



```
“executionState”: “EXECUTING”,
"scheduleDefinition": {
  "type": "RecurringScheduleDefinition",
  "scheduleInfo": {
    "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
    "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
  }
},
"consumingApplicationId": "CONSUMER001",
"producingApplicationId": "NE001",
"granularity": "G_15MN",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    }
  }
},
```

```
"packingType": "NO_PACKING"
}
},
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
  { "name": "UASBID" },
  { "name": "LINK_AVAIL_PCT" }
]
}
```

**RESPONSE**

201  
Content-Type: application/json

```
{
  "id": "prodJob001",
```

```
"creationTime": "11-26-2013 16:00:00 +0530",
"lastModifiedTime": "11-26-2013 16:00:00 +0530",
"adminState": "UNLOCKED",
"jobPriority": "5",
"executionState": "EXECUTING",
"scheduleDefinition": {
  "type": "RecurringScheduleDefinition",
  "scheduleInfo": {
    "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
    "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
  }
},
"consumingApplicationId": "CONSUMER001",
"producingApplicationId": "NE001",
"granularity": "G_15MN",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
```

```
"retentionDuration": {
  "units": "MINUTES",
  "amount": "180"
},
"packingType": "NO_PACKING"
},
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
  { "name": "UASBID" },
  { "name": "LINK_AVAIL_PCT" }
]
}
```

Example see TMF REST Design Guidelines.

## POST /api/adhocCollection

Description :

- This Uniform Contract operation is used to create the representation of any specified 'adhocCollection'.

Behavior :

- 201 OK – request was successful
- 404 Not Found.

Example:

### REQUEST

```
POST /api/adhocCollection
Accept: application/json
Content-Type: application/json
```

```
{
  "id": "adhocJob001",
  "creationTime": "11-26-2014 16:00:00 +0530",
  "lastModifiedTime": "11-26-2014 16:00:00 +0530",
  "adminState": "UNLOCKED",
  "jobPriority": "5",
  "executionState": "EXECUTING",
  "consumingApplicationId": "CONSUMER001",
  "producingApplicationId": "NE001",
  "granularity": "G_15MN",
  "monitoredObjectsCriteria": {
    "type": "MonitoredClassCriteria",
```

```
"monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    },
    "packingType": "NO_PACKING"
  }
},
"collectionPeriod": {
  "units": "MINUTES",
  "amount": "120"
},
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
```

```
{ "name": "ES" },
{ "name": "SES" },
{ "name": "UAS" },
{ "name": "BBE" },
{ "name": "FEBBE" },
{ "name": "FEES" },
{ "name": "FESES" },
{ "name": "FEUAS" },
{ "name": "UASBID" },
{ "name": "LINK_AVAIL_PCT" }
]
}
```

**RESPONSE**

201

Content-Type: application/json

```
{
  "id": "adhocJob001",
  "creationTime": "11-26-2014 16:00:00 +0530",
  "lastModifiedTime": "11-26-2014 16:00:00 +0530",
  "adminState": "UNLOCKED",
  "jobPriority": "5",
  "executionState": "EXECUTING",
  "consumingApplicationId": "CONSUMER001",
  "producingApplicationId": "NE001",
  "granularity": "G_15MN",
```

```
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    },
    "packingType": "NO_PACKING"
  }
},
"collectionPeriod": {
  "units": "MINUTES",
  "amount": "120"
},
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
```



```
],  
  "performanceIndicatorSpecification": [  
    { "name": "ES" },  
    { "name": "SES" },  
    { "name": "UAS" },  
    { "name": "BBE" },  
    { "name": "FEBBE" },  
    { "name": "FEES" },  
    { "name": "FESES" },  
    { "name": "FEUAS" },  
    { "name": "UASBID" },  
    { "name": "LINK_AVAIL_PCT" }  
  ]  
}
```

Example see TMF REST Design Guidelines.

#### DELETE /api/measurementCollectionJob/{ID}

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

Description :

- This operation is used to delete any specified 'measurementCollectionJob' by the job's id .

Behavior :

- 200 OK – request was successful
- 404 Not Found.

Example:

<b>REQUEST</b>
DELETE /api/measurementCollectionJob/collJob0001
<b>RESPONSE</b>
200

Example see TMF REST Design Guidelines.

**DELETE /api/measurementProductionJob/{ID}**

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

Description :

- This operation is used to delete any specified 'measurementProductionJob' by the job's id .

Behavior :

- 200 OK – request was successful
- 404 Not Found.

Example:

<b>REQUEST</b>
DELETE /api/measurementProductionJob/prodJob0001
<b>RESPONSE</b>
200

Example see TMF REST Design Guidelines.

**DELETE /api/adhocCollection/{ID}**

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

Description :

- This operation is used to delete any specified 'adhocCollection' by the job's id .

Behavior :

- 200 OK – request was successful
- 404 Not Found.

Example:

<b>REQUEST</b>
DELETE /api/adhocCollection/adhocCollJob0001
<b>RESPONSE</b>
200

Example see TMF REST Design Guidelines.

GET /api/trackingRecord/{ID}

Description :

- This Uniform Contract operation is used to retrieve the collection of tracking records belonging to a job via the job's id.

Behavior :

- 200 OK – request was successful
- 404 Not Found.

Example:

<b>REQUEST</b>
GET /api/trackingRecord/collJob001 Accept: application/json

**RESPONSE**

200

Content-Type: application/json

```
{
  "trackingRecord": [
    { "id": "1",
      "jobId": "collJob001",
      "jobType": "measurementCollectionJob",
      "description": "measurementCollectionJob Created successfully",
      "time": "11-26-2014 16:00:00 +0530",
      "userId": "root",
      "systemId": "tmfPm" },
    { "id": "2",
      "jobId": "collJob001",
      "jobType": "measurementCollectionJob",
      "description": "measurementCollectionJob Completed successfully",
      "time": "11-26-2014 16:01:00 +0530",
      "userId": "root",
      "systemId": "tmfPm"
    }
  ]
}
```

**POST API/GETSUPPORTEDOBJECTCLASSESTASK**

This Uniform Contract operation retrieves supported object classes.

Description :

- Shall return all identifiers of object classes supported by the interface.

## Behavior :

- 200 OK – request was successful
- 404 Not Found.

REQUEST
POST API/getSupportedObjectClassesTask Content-type: application/json
RESPONSE
201 Content-Type: application/json  <pre>{   "supportedObjectClasses": [     "Blade",     "VC4",     "E1-Link"   ] }</pre>

## POST API/GETSUPPORTEDOBJECTSTASK

This Uniform Contract operation list supported objects Instances for the specified Object Class. Object Class specification is optional, & when no Object Class is specified, all Object Instances shall be returned.

## Description :

- Returns all Object Instances supported by the interface (either all or scoped by the Object Class)

## Behavior :

- 200 OK – request was successful
- 404 Not Found.

REQUEST
POST API/getSupportedObjectsTask Content-type: application/json

```
{
  "inputClass": "Blade"
}
```

**RESPONSE**

201  
Content-Type: application/json

```
{
  "supportedObjects": {
    "Object": [
      "/md1/Node1",
      "/md1/Node1/If1"
    ]
  }
}
```

**POST API/GETSUPPORTEDINDICATORGROUPSTASK**

This Uniform Contract operation retrieves supported Indicator Groups. Object Class specification is optional, & when no object Class is specified, all indicator groups shall be returned.

Description:

- Returns all indicator groups supported by the interface (either all or scoped by Object Class)

Behavior :

- 200 OK – request was successful
- 404 Not Found.

**REQUEST**

POST API/getSupportedIndicatorGroupsTask  
Content-type: application/json

```
{  
  "inputClass": "Blade"  
}
```

**RESPONSE**

```
201  
Content-Type: application/json  
  
{  
  "supportedIndicatorGroups": [  
    "Groups_1",  
    "Groups_2"  
  ]  
}
```

**POST API/GETSUPPORTEDINDICATORSTASK**

This Uniform Contract operation retrieves supported Indicators. Object Class, Indicator Group specification shall be used to scope the result.

**Description:**

- Returns all indicators supported by the provided Object class and/or Indicator group.
- If indicator group is provided in input only the indicator instances related to the input object class & specified group shall be returned

**Behavior :**

- 200 OK – request was successful
- 404 Not Found.

**REQUEST**

```
POST API/getSupportedIndicatorsTask  
Content-type: application/json
```

```
{
  "inputClass": "Blade"
  "inputIndicatorGroup": "Group1"
}
```

**RESPONSE**

201  
Content-Type: application/json

```
{
  "supportedIndicators": [
    "SES",
    "BBE"
  ]
}
```

**POST API/GETSUPPORTEDTRANSPORTTASK**

This Uniform Contract operation retrieves supported transport supported.

Description:

- Returns supported transports

Behavior :

- 200 OK – request was successful
- 404 Not Found.

**REQUEST**

POST API/getSupportedTransportTask  
Content-type: application/json

**RESPONSE**

201  
Content-Type: application/json



```
{
  "supportedTransport": [
    "SFTP",
    "TFTP"
  ]
}
```

## POST API/GETSUPPORTEDFILEFORMATTASK

This Uniform Contract operation retrieves supported file formats.

Description:

- Returns supported file formats

Behavior :

- 200 OK – request was successful
- 404 Not Found.

### REQUEST

POST API/getSupportedFileFormatTask  
Content-type: application/json

### RESPONSE

201  
Content-Type: application/json

```
{
  "supportedFileFormat": [
    "3GPP",
    "MTOSI"
  ]
}
```

## POST API/GETCOMMONINDICATORGROUPSGRANULARITIESTASK

This Uniform Contract operation retrieves the list of granularities which are common to a set of indicator groups.

Description:

- Returns common granularities for a set of indicator groups

Behavior :

- 200 OK – request was successful
- 404 Not Found.

### REQUEST

POST API/ getCommonIndicatorGroupsGranularitiesTask

Content-type: application/json

```
{
  "inputIndicatorGroups": ["Grp_1", "Grp_2"]
}
```

### RESPONSE

201

Content-Type: application/json

```
{
  "commonGranularities": [
    "G_15MN",
    "G_30MN"
  ]
}
```

## POST API/GETCOMMONINDICATORSGRANULARITIESTASK

This Uniform Contract operation retrieves the list of granularities which are common to a set of indicators.

Description:

- Returns common granularities for a set of indicators

Behavior :

- 200 OK – request was successful
- 404 Not Found.

REQUEST
POST API/ getCommonIndicatorGroupsGranularitiesTask Content-type: application/json <pre>{   "inputIndicators": ["SES", "BBE"] }</pre>
RESPONSE
201 Content-Type: application/json <pre>{   "commonGranularities ": [     "G_15MN",     "G_30MN"   ] }</pre>

## POST API/LISTAVAILABLEFILESTASK

This Uniform Contract operation list available files for a given job & time scope.

Description :

- Returns all files generated by the server and available for download

Behavior :

- 200 OK – request was successful
- 404 Not Found.

**REQUEST**

POST API/listAvailableFilesTask  
Content-type: application/json

```
{  
  "JobId": "1234",  
  "beginTime": "19_08_2013_23:00:00",  
  "endTime": "19_08_2013_23:30:00",  
}
```

**RESPONSE**

201  
Content-Type: application/json

```
{  
  "JobId": "1234",  
  "beginTime": "19_08_2013_23:00:00",  
  "endTime": "19_08_2013_23:30:00",  
  "FileInfo": [  
    "JOB1234_YYY_19_08_2013_23:15:00",  
    "JOB1234_YYY_19_08_2013_23:30:00"  
  ]  
}
```

## 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  <pre> {"callback": "http://in.listener.com" }</pre>
RESPONSE
201 Content-Type: application/json Location: /api/hub/42  <pre> {"id": "42", "callback": "http://in.listener.com", "query": null}</pre>

### 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.

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

## PUBLISH ADHOC COLLECTIONAVCN POST /LISTENER

Description:

Publish the changes to adhocCollection for the following attributes:

- lastModifiedTime
- AdminState
- jobPriority
- executionstate
- scheduleDef
- Id
- sourceTime
- ObjectType

Behavior:

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

<b>REQUEST</b>
POST /client/listener Accept: application/json

```
{
  "event": {
    "lastModifiedTime": "",
    "AdminState": "UNLOCKED",
    "jobPriority": "5",
    "executionState": "Executing",
    "scheduleDefinition": {
      "type": "RecurringScheduleDefinition",
      "scheduleInfo": {
        "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
        "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
      }
    },
    "id": "collJob001",
    "sourceTime": "11-26-2014 16:00:00 +0530",
    "ObjectType": "AdhocCollection"
  },
  "eventType": "adhocCollectionAVCN "
}
```

**RESPONSE**

201  
Content-Type: application/json

PUBLISH MEASUREMENTCOLLECTIONJOBVAVCN POST /LISTENER

**Description:**

Publish the changes to measurementCollectionJob for the following attributes:

- reportingPeriod
- granularity
- monitoredObjectsCriteria
- AdminState
- jobPriority
- executionstate
- scheduleDef
- Id
- sourceTime
- ObjectType

**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":{  
    "reportingPeriod": "R_15M",  
    "granularity": "G_15M",  
    "monitoredObjectsCriteria": {  
      "type": "MonitoredClassCriteria",  
      "monitoredObjectInfo": {  
        "monitoredObjectClass": "SDH-Route"  
      }  
    },  
    "AdminState": "UNLOCKED",  
    "jobPriority": "5",  
  }  
}
```



```
    "executionState" : "Executing",
    "scheduleDefinition": {
      "type": "RecurringScheduleDefinition",
      "scheduleInfo": {
        "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
        "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
      }
    },
    "id": "collJob001",
    "sourceTime" : "11-26-2014 16:00:00 +0530",
    "ObjectType" : "AdhocCollection"
  },
  "eventType": " MeasurementCollectionJobAVCN "
}
```

**RESPONSE**

201  
Content-Type: application/json

**PUBLISH MEASUREMENTPRODUCTIONJOBVAVCN POST /LISTENER**

Description:

Publish the changes to MeasurementProductionJob for the following attributes:

- granularity
- monitoredObjectsCriteria
- AdminState
- jobPriority
- executionstate
- scheduleDef
- Id
- sourceTime

- ObjectType

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":{
    "granularity": "G_15M",
    "monitoredObjectsCriteria": {
      "type": "MonitoredClassCriteria",
      "monitoredObjectInfo": {
        "monitoredObjectClass": "SDH-Route"
      }
    },
    "AdminState": "UNLOCKED",
    "jobPriority": "5",
    "executionState": "Executing",
    "scheduleDefinition": {
      "type": "RecurringScheduleDefinition",
      "scheduleInfo": {
        "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
        "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
      }
    },
    "id": "collJob001",
    "sourceTime": "11-26-2014 16:00:00 +0530",
```

<pre>"ObjectType" : "AdhocCollection" }, "eventType": " MeasurementProductionJobAVCN" }</pre>
<b>RESPONSE</b>
201 Content-Type: application/json

## PUBLISH MEASUREMENTCOLLECTIONJOB OCN POST /LISTENER

Description:

Publish the creation of MeasurementCollectionJob.

Behavior:

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

<b>REQUEST</b>
200 Content-Type: application/json <pre>{ "event":{ "measurementCollectionJob": { "id": "collJob001", "creationTime": "11-26-2014 16:00:00 +0530", "lastModifiedTime": "11-26-2014 16:00:00 +0530", "adminState": "2", "jobPriority": "5", "executionState": "ExecutionState",</pre>

```
"scheduleDefinition": {
  "type": "RecurringScheduleDefinition",
  "scheduleInfo": {
    "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
    "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
  }
},
"consumingApplicationId": "CONSUMER001",
"producingApplicationId": "NE001",
"reportingPeriod": "R_15M",
"granularity": "G_15M",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    }
  },
  "packingType": "NO_PACKING"
}
```

```
    },
    "reportingPeriod": "R_15M",
    "outputFormat": "3GPP",
    "performanceIndicatorGroup": [
      { "name": "TRANSPORT01" },
      { "name": "TRANSPORT02" }
    ],
    "performanceIndicatorSpecification": [
      { "name": "ES" },
      { "name": "SES" },
      { "name": "UAS" },
      { "name": "BBE" },
      { "name": "FEBBE" },
      { "name": "FEES" },
      { "name": "FESES" },
      { "name": "FEUAS" },
      { "name": "UASBID" },
      { "name": "LINK_AVAIL_PCT" }
    ]
  },
  "sourceTime" : "11-26-2014 16:00:00 +0530",
  "ObjectType" : "AdhocCollection"
},
"eventType": " MeasurementCollectionJobOCN "
}
```

**RESPONSE**

201  
Content-Type: application/json

**PUBLISH MEASUREMENTPRODUCTIONJOB OCN POST /LISTENER**

Description:

Publish the creation of MeasurementProductionJob.

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":{
    "id": "prodJob001",
    "creationTime": "11-26-2013 16:00:00 +0530",
    "lastModifiedTime": "11-26-2013 16:00:00 +0530",
    "adminState": "2",
    "jobPriority": "5",
    "executionState": "ExecutionState",
    "scheduleDefinition": {
      "type": "RecurringScheduleDefinition",
      "scheduleInfo": {
        "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
        "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
      }
    },
    "consumingApplicationId": "CONSUMER001",
    "producingApplicationId": "NE001",
  }
}
```

```
"granularity": "G_15M",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    },
    "packingType": "NO_PACKING"
  }
},
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
```

```
{ "name": "FEBBE" },
{ "name": "FEES" },
{ "name": "FESES" },
{ "name": "FEUAS" },
{ "name": "UASBID" },
{ "name": "LINK_AVAIL_PCT" }
]
},
"sourceTime" : "11-26-2014 16:00:00 +0530",
"ObjectType" : "AdhocCollection"
}
"eventType": " MeasurementProductionJobOCN "
}
```

**RESPONSE**

201  
Content-Type: application/json

**PUBLISH MEASUREMENTCOLLECTIONJOBODELN POST /LISTENER**

Description:

Publish the deletion of MeasurementCollectionJob.

Behavior:

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

**REQUEST**

200  
Content-Type: application/json



```
{
  "event":{
    "measurementCollectionJob": {
      "id": "collJob001",
      "creationTime": "11-26-2014 16:00:00 +0530",
      "lastModifiedTime": "11-26-2014 16:00:00 +0530",
      "adminState": "2",
      "jobPriority": "5",
      "executionState": "ExecutionState",
      "scheduleDefinition": {
        "type": "RecurringScheduleDefinition",
        "scheduleInfo": {
          "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
          "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
        }
      },
    },
    "consumingApplicationId": "CONSUMER001",
    "producingApplicationId": "NE001",
    "reportingPeriod": "R_15M",
    "granularity": "G_15M",
    "monitoredObjectsCriteria": {
      "type": "MonitoredClassCriteria",
      "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
    },
    "protocolTransferData": {
      "transportProtocol": "FILE_TRANSFER",
      "fileTransferData": {
```

```
"fileLocation": "\\pm\pmdata",
"fileFormat": "XML",
"compressionType": "NO_COMPRESSION",
"retentionDuration": {
  "units": "MINUTES",
  "amount": "180"
},
"packingType": "NO_PACKING"
},
"reportingPeriod": "R_15M",
"outputFormat": "3GPP",
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
  { "name": "UASBID" },
  { "name": "LINK_AVAIL_PCT" }
```

```
]
},
"sourceTime" : "11-26-2014 16:00:00 +0530",
"ObjectType" : "AdhocCollection"
},
"eventType": " MeasurementCollectionJobODELN "
}
```

**RESPONSE**

201  
Content-Type: application/json

**PUBLISH MEASUREMENTPRODUCTIONJOBODELN POST /LISTENER**

Description:

Publish the deletion of MeasurementProductionJob.

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":{
  "id": "prodJob001",
  "creationTime": "11-26-2013 16:00:00 +0530",
  "lastModifiedTime": "11-26-2013 16:00:00 +0530",
  "adminState": "2",
  "jobPriority": "5",
```

```
"executionState": "ExecutionState",
"scheduleDefinition": {
  "type": "RecurringScheduleDefinition",
  "scheduleInfo": {
    "scheduleDefinitionStartTime": "11-26-2013 16:00:00 +0530",
    "scheduleDefinitionEndTime": "11-26-2014 16:00:00 +0530"
  }
},
"consumingApplicationId": "CONSUMER001",
"producingApplicationId": "NE001",
"granularity": "G_15M",
"monitoredObjectsCriteria": {
  "type": "MonitoredClassCriteria",
  "monitoredObjectInfo": { "monitoredObjectClass": "SDH-Route" }
},
"protocolTransferData": {
  "transportProtocol": "FILE_TRANSFER",
  "fileTransferData": {
    "fileLocation": "\\pm\\pmdata",
    "fileFormat": "XML",
    "compressionType": "NO_COMPRESSION",
    "retentionDuration": {
      "units": "MINUTES",
      "amount": "180"
    }
  },
  "packingType": "NO_PACKING"
}
```

```
},
"performanceIndicatorGroup": [
  { "name": "TRANSPORT01" },
  { "name": "TRANSPORT02" }
],
"performanceIndicatorSpecification": [
  { "name": "ES" },
  { "name": "SES" },
  { "name": "UAS" },
  { "name": "BBE" },
  { "name": "FEBBE" },
  { "name": "FEES" },
  { "name": "FESES" },
  { "name": "FEUAS" },
  { "name": "UASBID" },
  { "name": "LINK_AVAIL_PCT" }
]
},
"sourceTime": "11-26-2014 16:00:00 +0530",
"ObjectType": "AdhocCollection"
}
"eventType": " MeasurementProductionJobODeIN "
}
```

**RESPONSE**

201  
Content-Type: application/json

**PUBLISH FILESREADY POST /LISTENER**

**Description:**

Publish the filesReady event.

**Behavior:**

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

REQUEST
<pre>POST /client/listener Accept: application/json  {   "event": {     "id": "1",     "compressionType": "NO_COMPRESSION",     "packingType": "NO_PACKING",     "fileInfo": {       "fileName": "SDH-NE_SDH-Route_20131126163000+0530_900.csv",       "fileLocation": "/pm/pmdata/collJob001/",       "readyTime": "11-26-2014 16:30:00 +0530"     },     "fileTransferStatus": "COMPLETE"   },   "eventType": "FilesReady" }</pre>
RESPONSE
<pre>201 Content-Type: application/json</pre>

**PUBLISH FILESPREPARATIONERROR POST /LISTENER****Description:**

Publish the filespreparationerror event.

Behavior:

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

REQUEST
<pre>POST /client/listener Accept: application/json  {   "event": {     "id": "1",     "compressionType": "NO_COMPRESSION",     "packingType": "NO_PACKING",     "fileInfo": {       "fileName": "SDH-NE_SDH-Route_20131126163000+0530_900.csv",       "fileLocation": "/pm/pmdata/collJob001/",       "readyTime": "11-26-2014 16:30:00 +0530"     },     "reason": " filePreparationErrorReason ",     "description": " prepatation error for link down "   },   "eventType": "FilesPreparationError" }</pre>
RESPONSE
<pre>201 Content-Type: application/json</pre>

Example see TMF REST Design Guidelines.

**RELEASE HISTORY**

<b>Release Number</b>	<b>Date</b>	<b>Release led by:</b>	<b>Description</b>
Release 1.0	11/27/2013	Pierre Gauthier TM Forum <a href="mailto:pgauthier@tmforum.org">pgauthier@tmforum.org</a>	First Release of Draft Version of the Document.



**ACKNOWLEDGEMENTS**

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