A YANG Data Model for Optical Resource Performance Monitoring

CCAMP WG, IETF116

draft-yu-ccamp-optical-resource-pm-yang-00

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Major Updates Since IETF 115

- Changed the name of draft and data model
  - ✓This document was presented in IETF 115 as draft-yu-performance-monitoring-yang, and was feedback that the name of draft and YANG data model was too broad and is possibly overlap with some works in IPPM.
  - ✓The main purpose of this document is aimed to cover the capabilities of traditional PM of Optical domain, e.g. capabilities of MTOSI, to reduce some costs for the some operators who want to switch to RESTCONF protocol and don't want to change their existing PM system's logic too much.
- Supporting of TCA configuration
  - ✓ TCA configuration on resources
  - ✓ TCA profile control
- Changing the identifier of Performance Monitoring task

The Capabilities Scope of Our Draft

3.1 Business Requirements

The following business requirements are stated:

R_TMF518_RPM_BR_0001	The Interface shall support the retrieval of current and historical performance measurements for network resources.
Source	TMF518_RPM, Version 1.0
R_TMF518_RPM_BR_0002	The Interface shall support the distribution of Threshold Crossing Alerts (TCAs) to subscribed OSs.
Source	TMF518_RPM, Version 1.0
R_TMF518_RPM_BR_0003	The Interface shall support the control of performance monitoring in the network. This includes PM control, e.g., the enabling and disabling of PM collection and TCA control, e.g., the enabling and disabling of TCA generation.
Source	TMF518_RPM, Version 1.0

Service Interfaces	Operations	Supporting Status by Our I-D
PerformanceManagementControl		
	clearPerformanceMonitoringData	
	disablePerformanceMonitoringData	Supported by last version
	enablePerformanceMonitoringData	Supported by last version
PerformanceManagementRetrieval		
	getAllCurrentPerformanceMonitoringData	Supported by last version
	getAllPerformanceMonitoringPoints	
	getHistoryPerformanceMonitoringData	Supported by last version
	getHoldingTime	
	getMePerformanceMonitoringCapabilities	
	getProfileAssociatedTerminationPoints	
	getPerformanceMonitoringDataIterator	Out of scope
	getPerformanceMonitoringPointsIterator	Out of scope
ThresholdCrossingAlertControl		
	createTcaParameterProfile	Supported by this version
	deleteTcaParameterProfile	Supported by this version
	disableThresholdCrossingAlert	Supported by this version
	enableThresholdCrossingAlert	Supported by this version
	getAllTcaParameterProfiles	Supported by this version
	getTcaParameterProfile	Supported by this version
	getTcaParameterProfilesIterator	Out of scope
	getTcaTpParameter	Supported by this version
	setTcaParameterProfile	Supported by this version
	setTcaTpParameter	Supported by this version

- This data model is not a translation but supplement;
- This data model should be harmonized with the existing IETF data model (Objects defined in network topology and inventory).

Threshold Crossing Alert Control

Operations
createTcaParameterProfile
deleteTcaParameterProfile
getAllTcaParameterProfiles
getTcaParameterProfile
setTcaParameterProfile
setTcaTpParameter
getTcaTpParameter
disableThresholdCrossingAlert
enableThresholdCrossingAlert

TCA Profile management

TCA Control on Resource

```
module: ietf-optical-resource-pm
 +--rw performance-monitoring
   +--rw monitor-tasks
   |    +--.....................................
   +--rw tca-management
   | +--rw profiles
   | | +--rw profile* [profile-id]
   | |    +--rw profile-id yang:uuid
   | |    +--rw profile-name? string
   | |    +--rw tca-cfg
   | |    +--rw tca-indicator* [indicator-name threshold-type period severity]
   | |    +--rw indicator-name string
   | |    +--rw indicator-value string
   | |    +--rw indicator-value-unit string
   | |    +--rw threshold-type enumeration
   | |    +--rw period identityref
   | |    +--rw severity identityref
   | +--rw tcas
   |    +--rw tca* [resource-id]
   |       +--rw resource-id leafref
   |       +--ro resource-type? identityref
   |       +--rw admin-status? enumeration
   |       +--rw applied-profiles
   |       | +--rw profile* [profile-id]
   |       | +--rw profile-id leafref
   |       +--rw tca-cfg
   |       +--rw tca-indicator* [indicator-name threshold-type period severity]
   |       +--rw indicator-name string
   |       +--rw indicator-value string
   |       +--rw indicator-value-unit string
   |       +--rw threshold-type enumeration
   |       +--rw period identityref
   |       +--rw severity identityref
```

Identifier of Performance Monitoring Task

Last Version

```
module: ietf-performance-monitoring
  +--rw monitor-tasks
    +--rw monitor-task* [resource]
      +--rw resource        union
      +--rw resource-type?   identityref
      +--rw task-name?       string
      +--ro task-status?     enumeration
      +--rw task-cfg
        +--rw period?       identityref
        +--rw indicators
          +--rw indicator* [indicator-name]
            +--rw indicator-name    string
```

Issues for the last version:

- For a same performance indicator, there are requirements to monitor in different period on a same resource; ✗
- Different PM tasks which are based on different types of period can be created on a same resource; ✗

Latest Version

```
module: ietf-optical-resource-pm
  +--rw performance-monitoring
    +--rw monitor-tasks
      |  +--rw monitor-task* [task-id]
      |     +--rw task-id         yang:uuid
      |     +--rw resource-id?     leafref
      |     +--ro resource-type?   identityref
      |     +--rw task-name?       string
      |     +--rw admin-status?    enumeration
      |     +--ro task-status?     enumeration
      |     +--rw task-cfg
      |        +--rw period?       identityref
      |        +--rw indicators
      |           +--rw indicator* [indicator-name]
      |              +--rw indicator-name         string
      |              +--rw indicator-value-unit?   string
```

Some open issue to discuss

1. Should the indicator-name attribute include some collecting method, e.g. maximum/minimum/average/instance value.

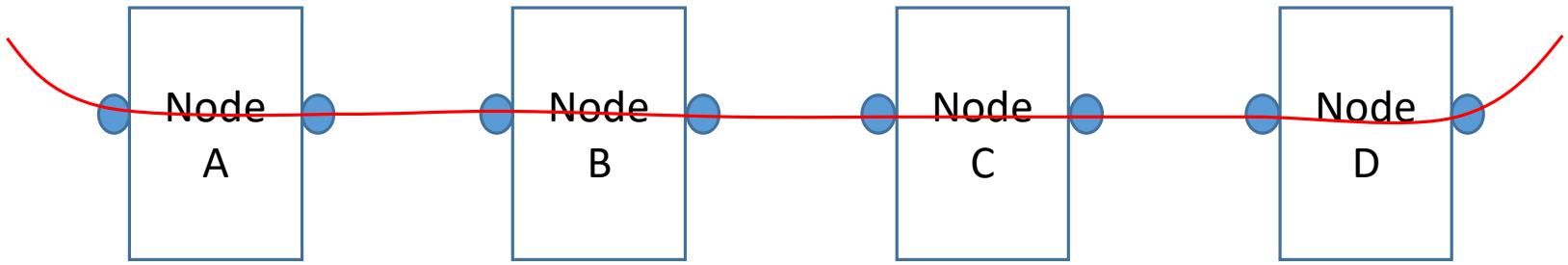
```
Option1:
"indicator": [
   {
      "indicator-name": "maximum-latency"
   }
]
```

```
Option2:
"indicator": [
   {
      "indicator-name": “latency";
      "collection-type": "maximum"
   }
]
```

2. Which is better for the type of indicator-name, a specific identity or a string format?

- We could not list all the performance indicators which should be supported in Optical domain;
- A string format is lack of restriction which is not convenient to interop;

3. What is the relationship between Optical resource PM draft and client signal PM draft?



The client signal PM data can be calculated by the data collected on the resource.

Next Step

- Cover the capabilities of left MTOSI interfaces which are not supported by current data model;
- Call for interest & joint contribution

Thank You ！