A YANG Data Model for Optical Resource Performance Monitoring

CCAMP WG, IETF119

draft-yu-ccamp-optical-resource-pm-yang-03

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Status of this 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	Supported
	disablePerformanceMonitoringData	Supported
	enablePerformanceMonitoringData	Supported
PerformanceManagementRetrieval		
	getAllCurrentPerformanceMonitoringData	Supported
	getAllPerformanceMonitoringPoints	Supported
	getHistoryPerformanceMonitoringData	Supported
	getHoldingTime	Supported
	getMePerformanceMonitoringCapabilities	Supported
	getProfileAssociatedTerminationPoints	Supported
	getPerformanceMonitoringDataIterator	Out of scope
	getPerformanceMonitoringPointsIterator	Out of scope
ThresholdCrossingAlertControl		
	createTcaParameterProfile	Supported
	deleteTcaParameterProfile	Supported
	disableThresholdCrossingAlert	Supported
	enableThresholdCrossingAlert	Supported
	getAllTcaParameterProfiles	Supported
	getTcaParameterProfile	Supported
	getTcaParameterProfilesIterator	Out of scope
	getTcaTpParameter	Supported
	setTcaParameterProfile	Supported
	setTcaTpParameter	Supported

- Currently all the functionalities of MTOSI PM interfaces have been covered by our draft.
- This model is harmonized with existing IETF data models, e.g. RFC8345(network topology) and inventory.

Updates After Last IETF Meeting

Some use cases and corresponding examples are designed in appendix:

- Get the Performance Monitoring Capabilities of A Specific Resource
- Creating & Deleting a Performance Monitoring Task
- Get the Current Performance Monitoring Data of Resources
- Get the History Performance Monitoring Data of Resources
- TCA
  - Create a TCA Profile
  - Get All the TCA Profiles
  - TCA Configuration on Resource
  - Notification of TCA
  - Get All the Resources Associated with A Specific TCA Profile

Next Step

- Call for Working Group Adoption
- Collaborate with the service PM draft

A YANG Data Model for Transport Network Client Signals

CCAMP WG, IETF119

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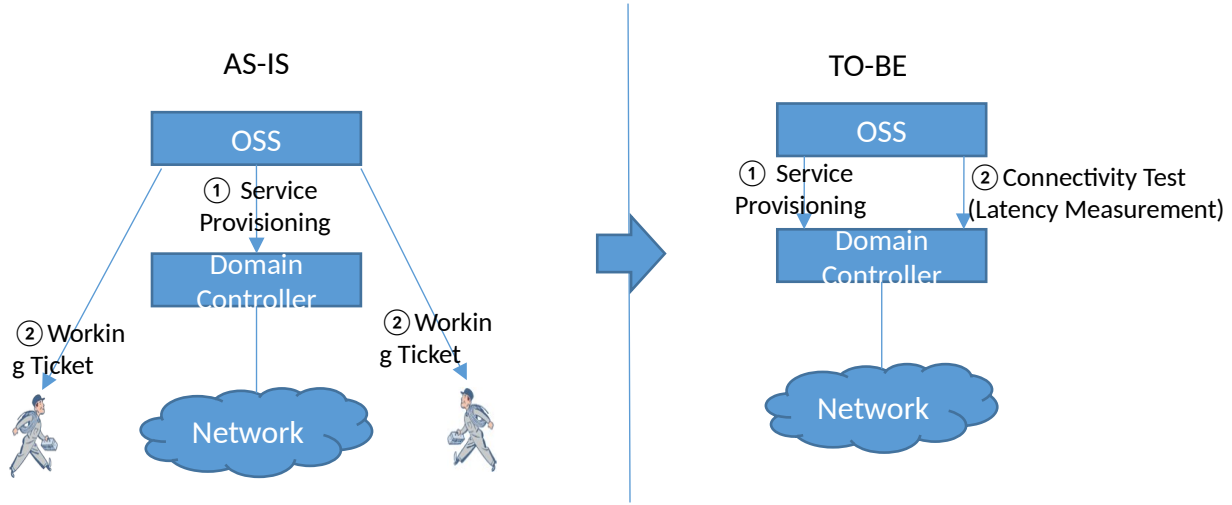
The Latest Update

- Indicate the relationship between optical resource PM draft;
  - The YANG data model is operated on different level of objects;
  - The calculation of Service PM data can be based on the resource PM data;
- Introduce two new use cases of service PM;
  - Automatic Service Acceptance Test
  - Private Line Service SLA Assurance
- Update the section of parameter consideration;
  - Service Latency Measurement

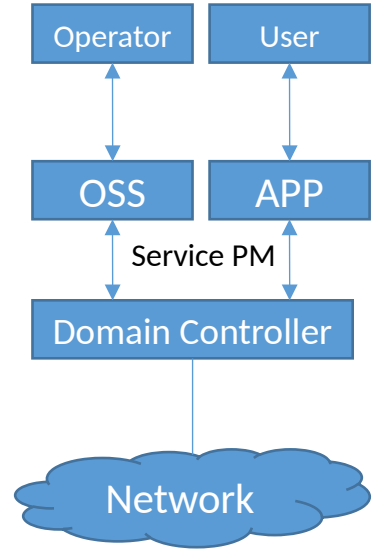
UCs for Service PM

UC1. Automatic Service Acceptance Test



1) The traditional approach is human intensive and take more time to market;
2) Service PM can make the acceptance test more automatic

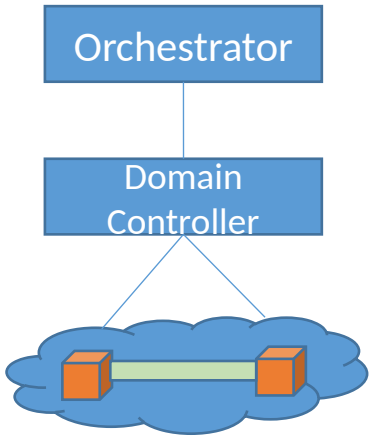
UC2. Private Line Service SLA Assurance



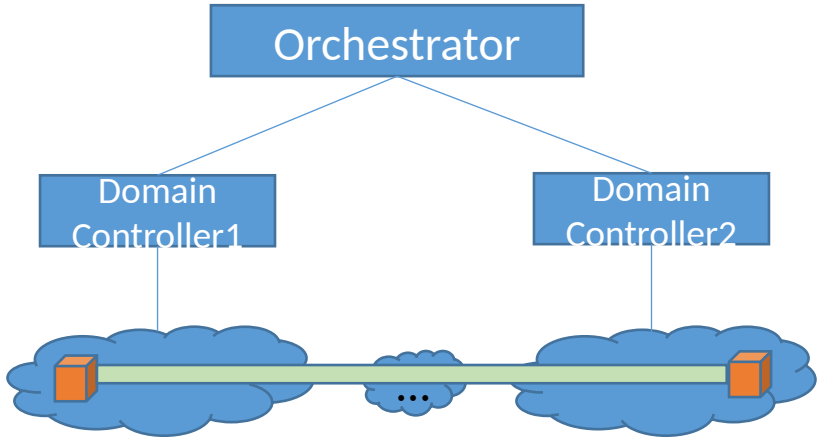
- SLA (Service Level Agreement) could be visible for the user;
- Operators can do the maintenance work proactively;

Service Latency Measurement

- The latency value can be measured by several overheads sent from source node and looped back by the destination node. More detailed information can reference to section 15.8.2.1.6 in ITU-T G.709.



Single-Domain Scenario



Multi-Domain Scenario

```
module: ietf-service-pm
  +--rw performance-monitoring
     +--rw service-pm* [service-name]
        +--rw service-name                    union
        +--.....................................
        +--rw performance-data-config* [parameter-name]
        |  +--rw parameter-name      identityref
        |  +--rw measure-method?     identityref
```

- measure-by-loopback
- measure-at-ingress

- The overhead cannot be sent from the source node before the destination is looped back.
- For single-domain scenario, the domain controller can do the orchestration
- For multi-domain scenario, an orchestrator is needed to do the orchestration

Next Step

- Try to define more service performance monitoring parameters and corresponding measurement mechanism;
- Collaborate with Optical resource PM draft.

Thank You