Applicability of YANG models for ACTN

<draft-zhang-teas-actn-yang-03>

Young Lee (Huawei)
Xian Zhang (Huawei)
Daniele Ceccarelli (Ericsson)
Bin Young Yoon (ETRI)
Oscar Gonzalez de Dios (Telefonica)
Jong Yoon Shin (SKT)
Sergio Belotti (Nokia)
Purpose of the draft

• Explains how the different types of YANG models defined in the Operations and Management Area and in the Routing Area are applicable to the ACTN framework.
• Shows how the ACTN architecture can be satisfied using classes of data model that have already been defined
• Discusses the applicability of specific data models that are under development.
• Highlights where new data models may need to be developed.
Service Yang Models in IETF

Reference: draft-wu-opsawg-service-model-explained
Service Yang Models in IETF

Reference: draft-wu-opsawg-service-model-explained

A customer service model is used to describe a service as offered or delivered to a customer by a network operator.
Service Yang Models in IETF
Reference: draft-wu-opsawg-service-model-explained

A service delivery model is used by a service orchestrator to define and configure how a service is provided by the network.
Service Yang Models in IETF

Reference: draft-wu-opsawg-service-model-explained

A network configuration model is used by a network orchestrator to provide network-level configuration model to a controller.
A device configuration model is used by a controller to configure physical network elements.
ACTN and Service Model Mapping

Customer Service Model

Service Delivery Model

Network Configuration Model

Device Configuration Model

Service Orchestrator

Network Orchestrator

Controller

Network Element

CNC

CMI

MDSC

MPI

PNC

SBI

Network Element
ACTN and Service Model Mapping

Customer Service Model
Service Delivery Model
Network Configuration Model
Device Configuration Model

Customer
Service Orchestrator
Network Orchestrator
Controller
Network Element

CNC
CMI
MDSC
MPI
SBI
Network Element

CNC
CMI
MDSC
MMI
MPI
SBI
Network Element
ACTN related YANG drafts

<table>
<thead>
<tr>
<th>Functions</th>
<th>IETF Draft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport Service Request</td>
<td>[Transport-Service]</td>
</tr>
<tr>
<td>VN/VTS Service Request VN Compute</td>
<td>[PATH-COMP-API] [ACTN-VN-YANG]</td>
</tr>
<tr>
<td>Configuration Scheduling</td>
<td>[Schedule]</td>
</tr>
<tr>
<td>Path computation</td>
<td>[PATH_COMPUTATION-API]</td>
</tr>
<tr>
<td>Tunnel Provisioning</td>
<td>[TE-Tunnel] [OTN-Tunnel]</td>
</tr>
<tr>
<td>Topology Abstraction</td>
<td>[TE-Topology]</td>
</tr>
<tr>
<td>Tech-specific Topology Abstraction</td>
<td>[WSON-YANG] [Layer 1 YANG] [Flexi-grid YANG]</td>
</tr>
</tbody>
</table>
Next Steps

• Keep updating with development of various YANG models
  – Telemetry
  – Policy
  – Different kinds of service request model
  – Improve with other specific network scenarios ACTN applicability example (e.g. IP/Optical integration)

• Use as a guideline to understand Yang model mapping to ACTN scenarios.

• Is this effort useful?