NGON & DCI World

TeraFlow

Utilizing Optical Network Slicing to Connect Clouds for Autonomic 5G and Beyond Services

SDOs Enabling Optical Network and IT Convergence

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SDN has been in the market for more than 10 years with great success, but Operators still have not adopted basic deployments.

Telco Cloud is evolving slowly and there is no clear path of SDN introduction in Operators.

Automation is needed for Network Operators in order to fully benefit SDN adoption.

With B5G Networks, massive SDN flows will be needed. Flow aggregation at the network core, is not efficient and does not provide specific services.

Computing and network resource shall be addressed in a unified way. There is the need to break VIM or WIM paradigm.

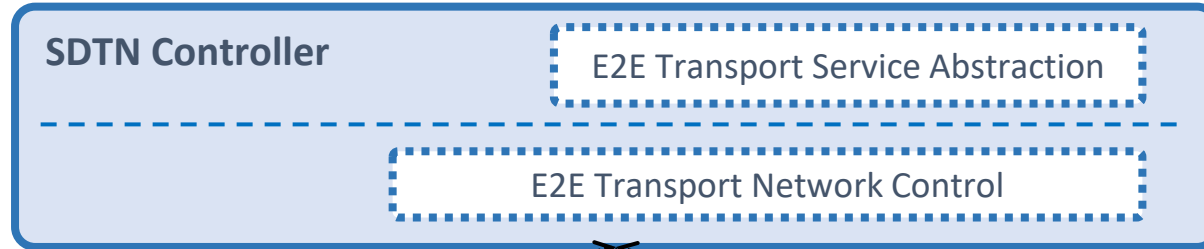Networks need to be able to autonomously resist attacks.
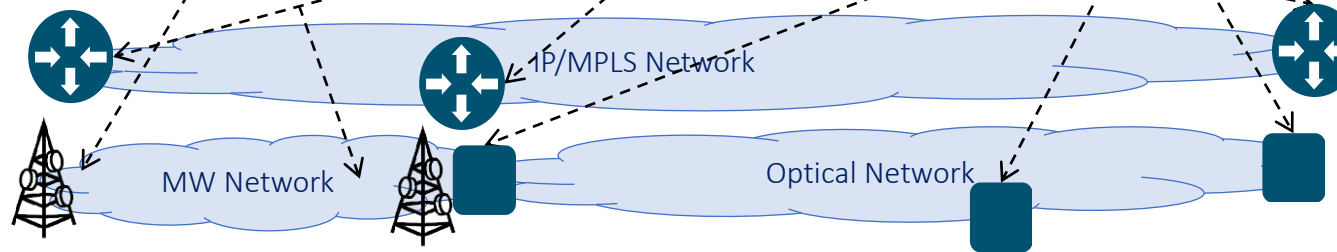
TeraFlow Architecture and SDO relevance

- TeraFlow uses a combination generic service models and SDO device models, for network slicing deployment
- IETF Network Slicing Northbound Interface (NBI), it needs to express
  - Customer details
  - Endpoints
  - Connectivity matrices
  - SLOs and SLEs
- Abstraction and Control of TE Networks (ACTN) RFC 8453
  - A management architecture and YANG models for building Virtual Network services for slicing
- Framework for IETF Network Slices
  - draft-ietf-teas-ietf-network-slices
- Early work on a NBI Slice YANG specification
  - draft-wd-teas-ietf-network-slice-nbi-yang
- Layer 2 VPN Network and Enhanced VPNs (VPN+) are defined in
  - draft-ietf-opsawg-l2nm
  - draft-ietf-teas-enhanced-vpn
- ACTN can be used to deliver IETF Network Slices
  - draft-ietf-teas-applicability-actn-slicing
- Segment Routing Policies (SR-TE) are a way of delivering IETF Network Slices in an SR network
  - draft-ietf-spring-sr-for-enhanced-vpn
  - draft-bestbar-teas-ns-packet
  - draft-bestbar-teas-yang-slice-policy