YANG Data Model for SD-WAN VPN service model delivery

draft-sun-opsawg-sdwan-service-model-00

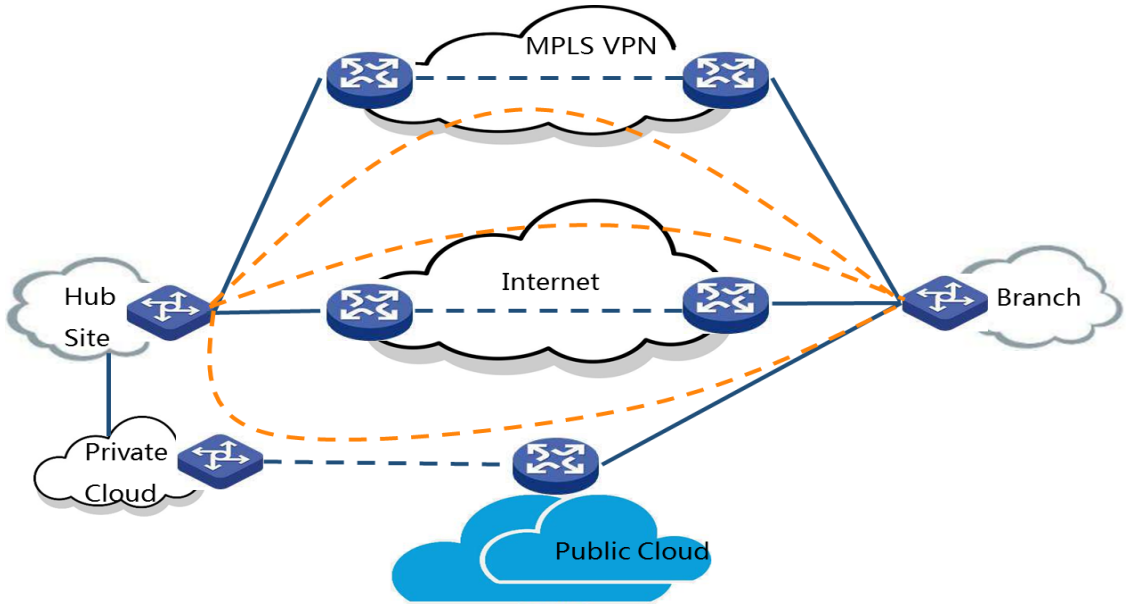
Qiong Sun
Chongfeng Xie (presenter)
China Telecom

Bo Wu
Huawei Technologies

IETF102@Montreal

Overview of SD-WAN

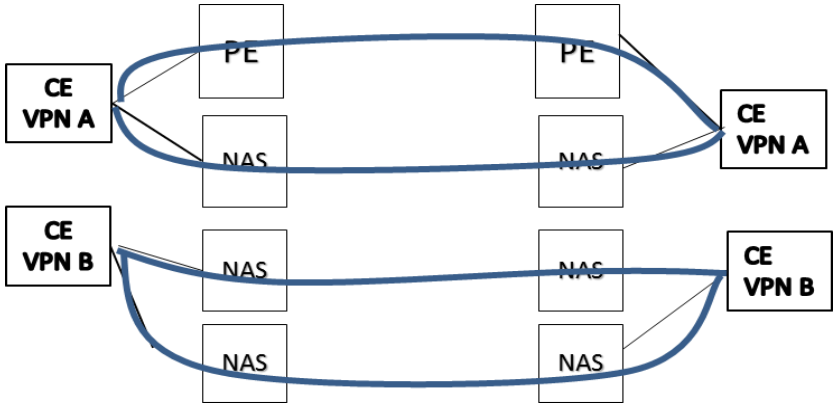
- A new kind of VPN service provisioned by
  - Using Internet connection only or together with traditional transport techniques, such as MPLS VPN
  - Orchestrating function instance, i.e., vFW, vCE, on customer premise or cloud
- Rapid deployment, fast provisioning, i.e., within hours



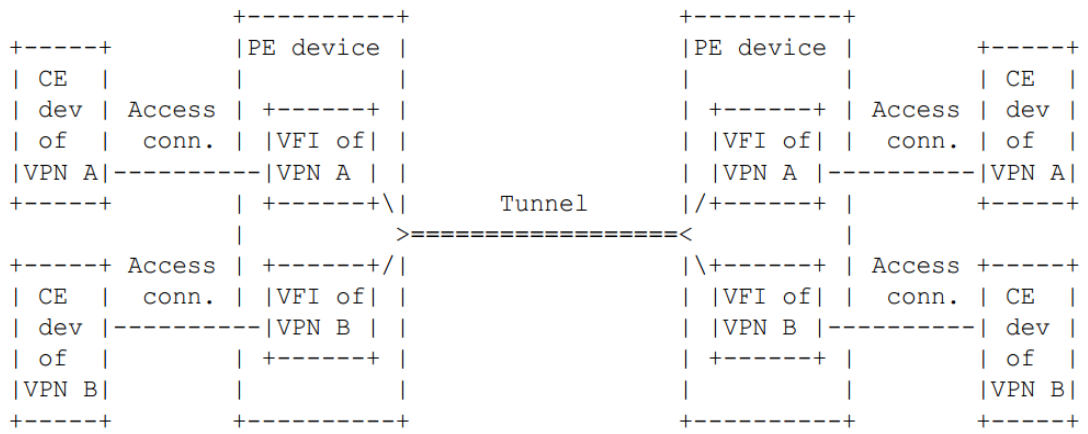
Difference from L3SM, L2SM

- Difference
  - L3 VPN/L2 VPN: Provider provisioned, PE-based VPN and PE maintains VPN state
  - SD-WAN : CE-based overlay VPN, PE has no knowledge of it
- Association
  - SD-WAN can leverage L2VPN and L3VPN as underlay transport technologies

SD-WAN

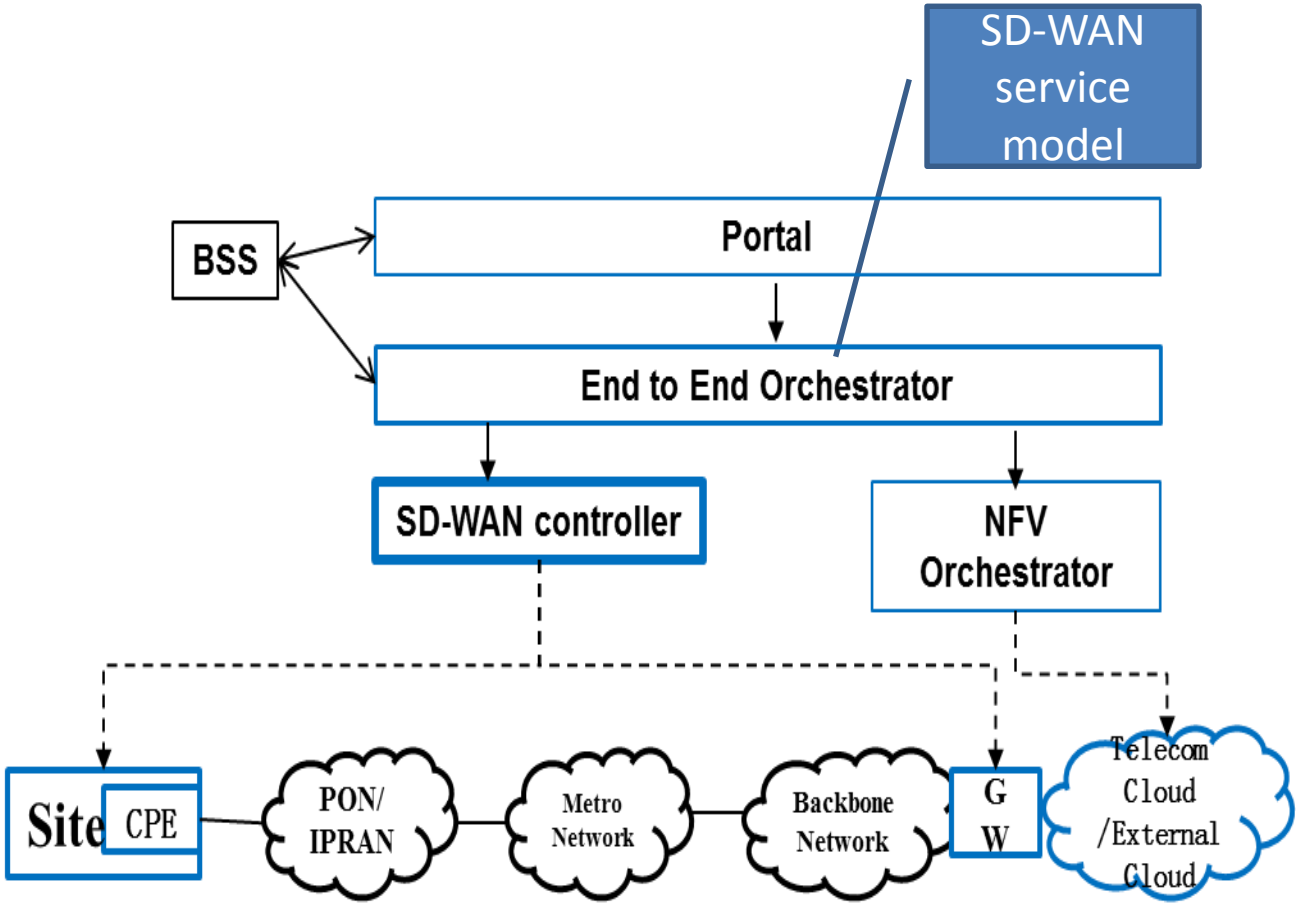


MPLS VPN from RFC4110(A Framework for L3 PPVPNs)



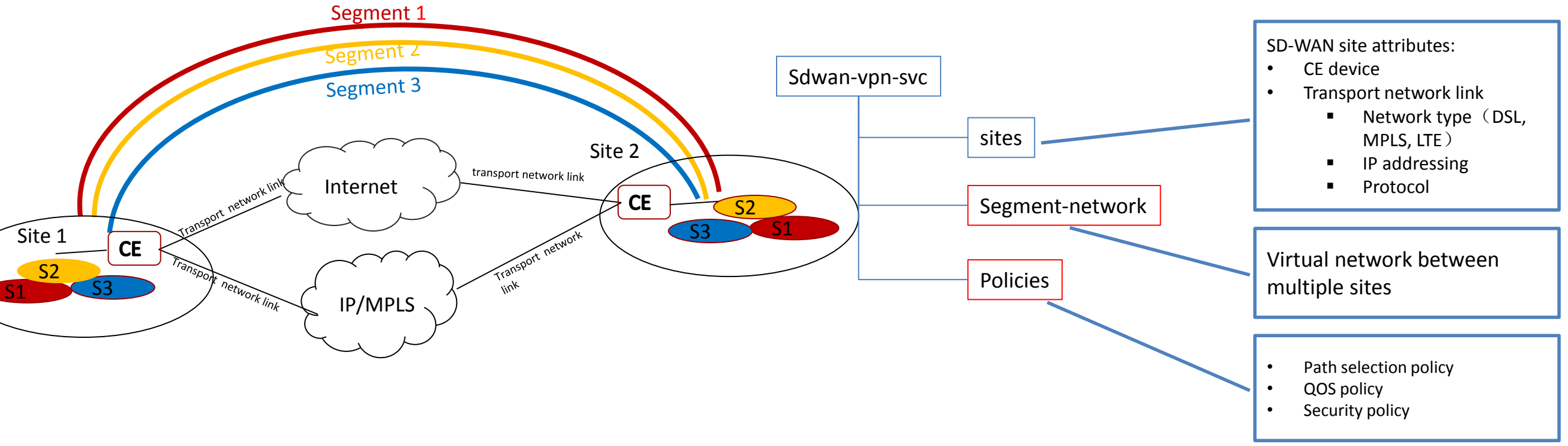
Why a service model is needed for SD-WAN?

- Service agility needs orchestration and automation
  - Dynamic, e.g. new branch, bandwidth adjust, holiday use
  - Cloud service extension
  - Service lifecycle management
- Abstraction of customer requirements to the service
  - no specific detail of protocol and NE configuration



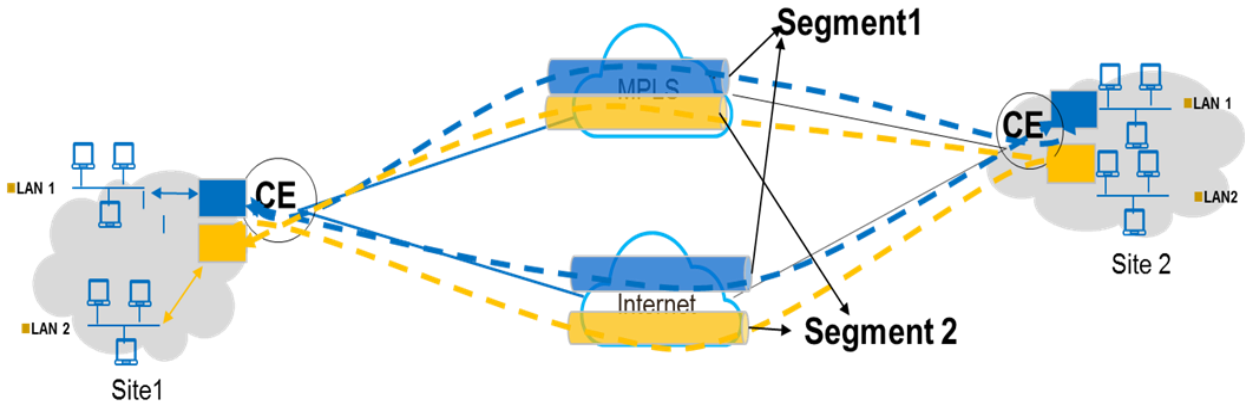
SD-WAN service model overview

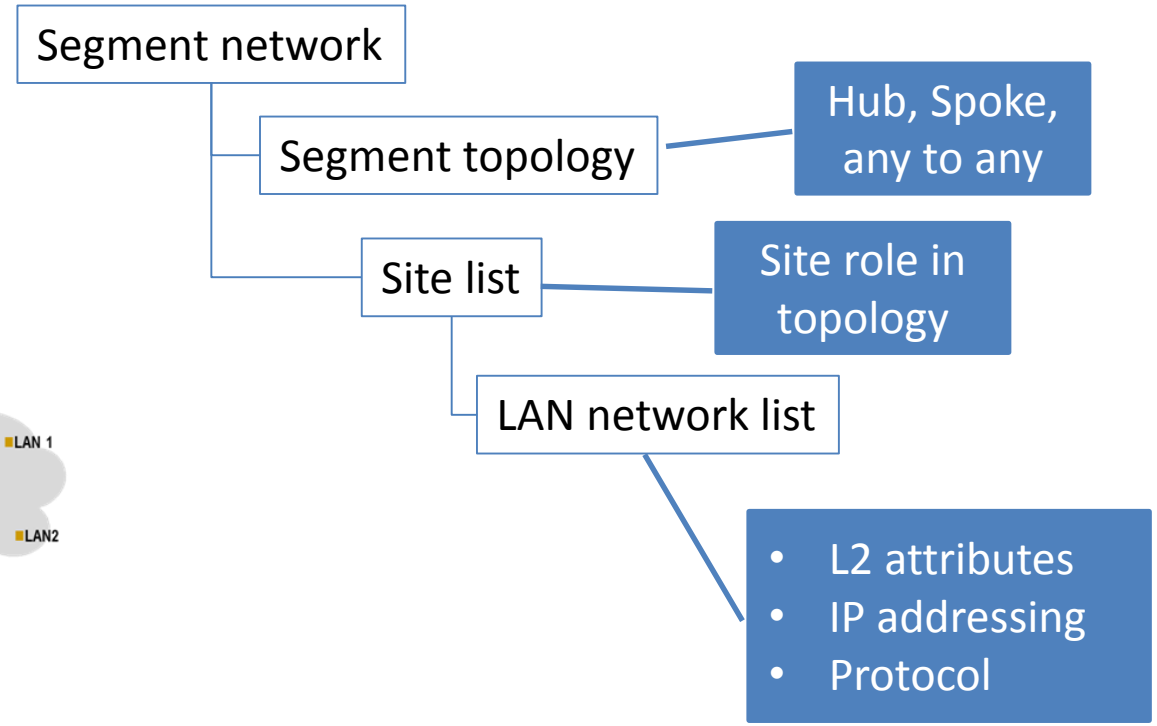
- The tree model architecture complies with L3SM&L2SM, but add two major components:
  - Segment network: Customer could have multiple virtual network which are not allowed to communicate with each other
  - Policies: Policy could be applied per segment or per site in application or flow granularity



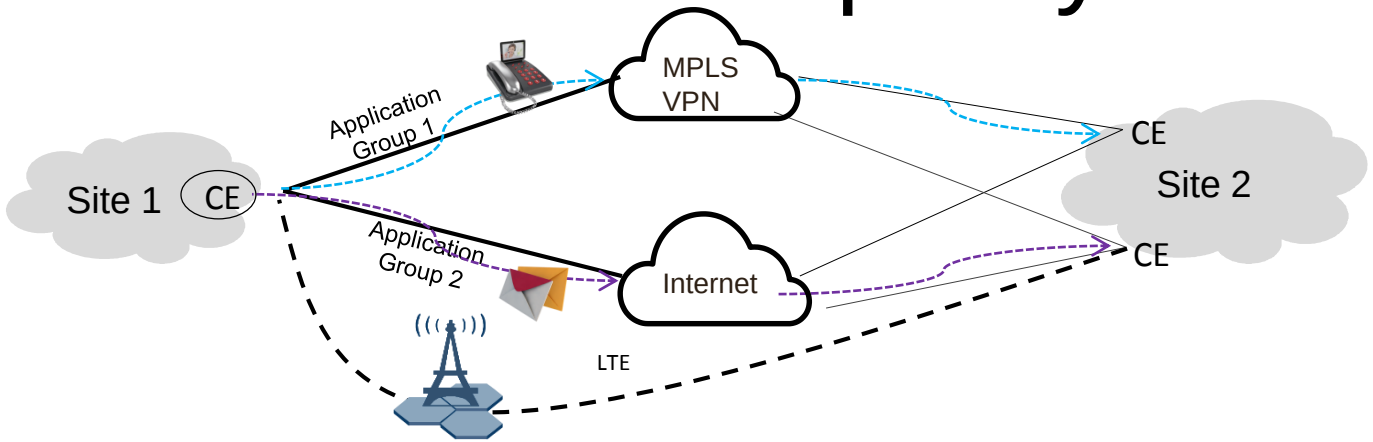
Segment network

- Ensure per segment traffic separation
  - site to site connection
  - site to external network interconnection （Internet, public cloud）



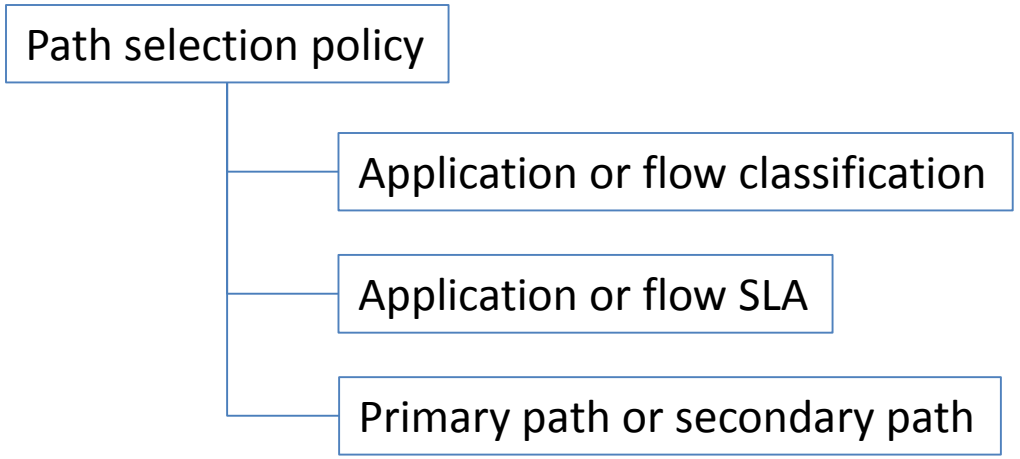


Path selection policy



Application or flow classification → Path selection : Primary path Secondary path ← Path-selection-profile-> Application SLA Measurement

- Path selection policy main parameters
  - Customers define their own applications and flow classification
    - Voice, video, game, critical data
  - Application or flow SLA
    - monitor the delay, jitter or packet of application or flow
  - Path selection: based on the status, steer the traffic to appropriate transport network link



Next steps

- The authors appreciate thoughts, feedback, and text on the content of the documents.
- And then prepare another version.