E-LINE over OTN Inter-Domain Links - Proposal

Overview

Current CCVPN scenario supports cross-domain VPN services in which an E-LINE is terminated at the boundary of each OTN transport domain. There is a good interest from operators to extend the support of E-LINE creation and management across multiple OTN transport domains interconnected by OTN links. Under this scenario, ONAP will be visible to resource parameters pertaining to the OTN layer, and will be responsible for the overall orchestration to lay E-LINE over those OTN resources.

Frankfurt Goals

1. **Enhancements to Information & Data Model** - Extend CCVPN IM and DM to support E-LINE service design and life-cycle management.
2. **SBI Extensions to Interact with SDN controller on OTN -** Create plugin extensions in SDN-C to support standard OTN YANG data models for topology and service at the southbound to interact with external SDN controller on the instantiation and management of E-LINE and OTN tunnel segments.
3. **OTN Resource Management -** Support for discovering and registering OTN resources, monitoring OTN link status and generate notifications.
4. **E-LINE over OTN Orchestration** - Compute end-to-end OTN paths, generate schemes to lay E-LINE over the OTN path and drives the creation of E-LINE services.

Business Requirement

It is considered a typical scenario for operators to use OTN to interconnect its multiple transport network domains. Hence the capabilities of orchestrating end-to-end E-LINE services across the domains over OTN is important for ONAP. When operating with multiple domains with each potentially from different vendors, it is also important to define and use standard and open interfaces, such as the IETF ACTN-based transport YANG models, as the southbound interface of ONAP, in order to ensure interoperability.
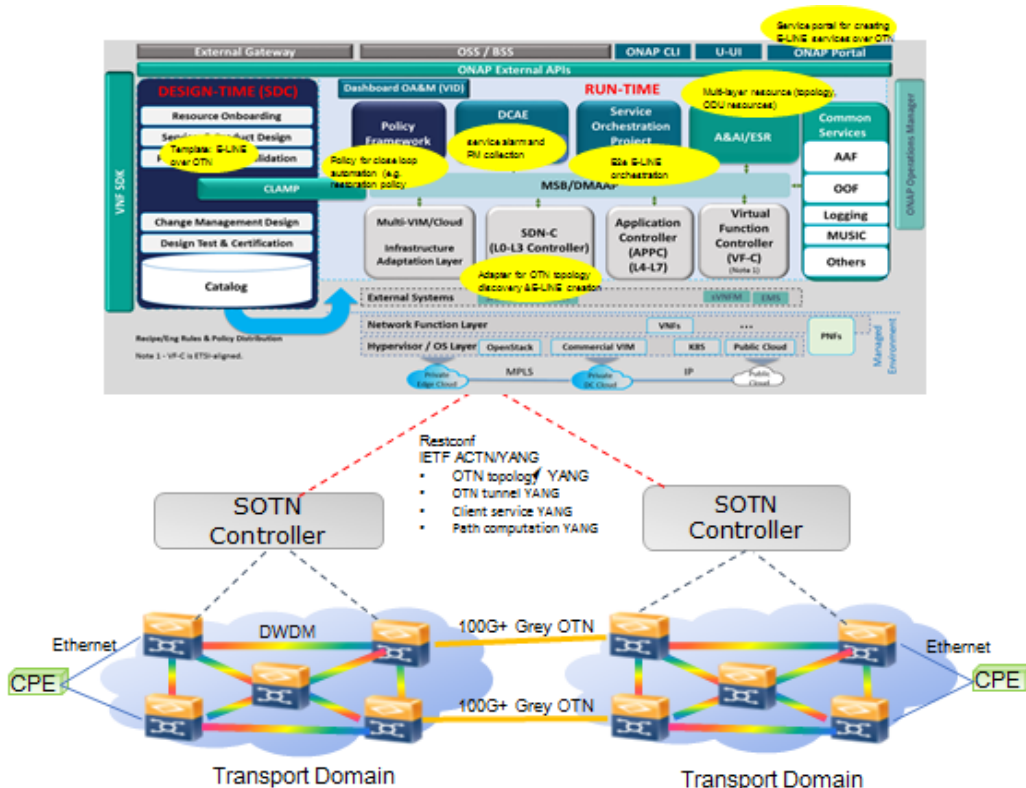
Participating Companies

Futurewei

Scope

- Provide OTN model extensions to SDN-C
- Design and orchestration of E-LINE over OTN; perform path computation for OTN underlay; creation, deletion and performance monitoring of E-LINE and underlying OTN tunnel segments.

Use Case Presentations

CCVPN E-LINE over OTN NNI - Frankfurt Proposal Draft.pptx (draft)

CCVPN E-LAN Service Use Case Team Meetings

Meeting Logistics

Meeting Minutes

Impacts

It is envisioned that the extension to support E-LINE Service over OTN will have impacts on the following projects: External API, SDC, SO, A&AI, DCAE, SDN-C.

SDN-C

- Standard IETF OTN YANG data models support to interact with SDN controller.

A&AI

- Multi-layer topology (Ethernet, OTN) management.

SDC

- Service template to allow VPN service over E-LINE with the capability of specifying OTN constraints across transport network domains.

DCAE

- PM/Alarms management for OTN.

SO

- Implement workflow to support E-LINE over OTN.

Project Impact for Frankfurt

Project	PTL	Epic	UserStory	Resources	Notes
A&AI		⚡ AAI 2593 - Support CCVPN use case SOTN NNI Proposal in AAI CLOSED	🔖 AAI 2607 - Add v17/v18/v19 schema oxm and edge rule files CLOSED	Huawei	
U-UI		⚡ USECASEUI 332 - Support CCVPN in Frankfurt CLOSED	🔖 USECASEUI 375 - Support CCVPN-E-LINE over OTN Inter Domain Links CLOSED	Huawei	
OOF		⚡ OPTFRA 298 - Should be able to orchestrate CCVPN CLOSED	🔖 OPTFRA-297 - OOF Should support CCVPN CLOSED	Huawei	
SDN-C		⚡ SDNC-898 - CCVPN SOTN NNI Extension CLOSED	🔖 SDNC-900 - SOTN NNI based service creation CLOSED 🔖 SDNC-899 - L1 topology discovery CLOSED	Huawei	