

CCVPN Use case Requirements Proposal for Kohn

Participants: CMCC, Huawei, China Telecom, AsiaInfo, Wipro , STL

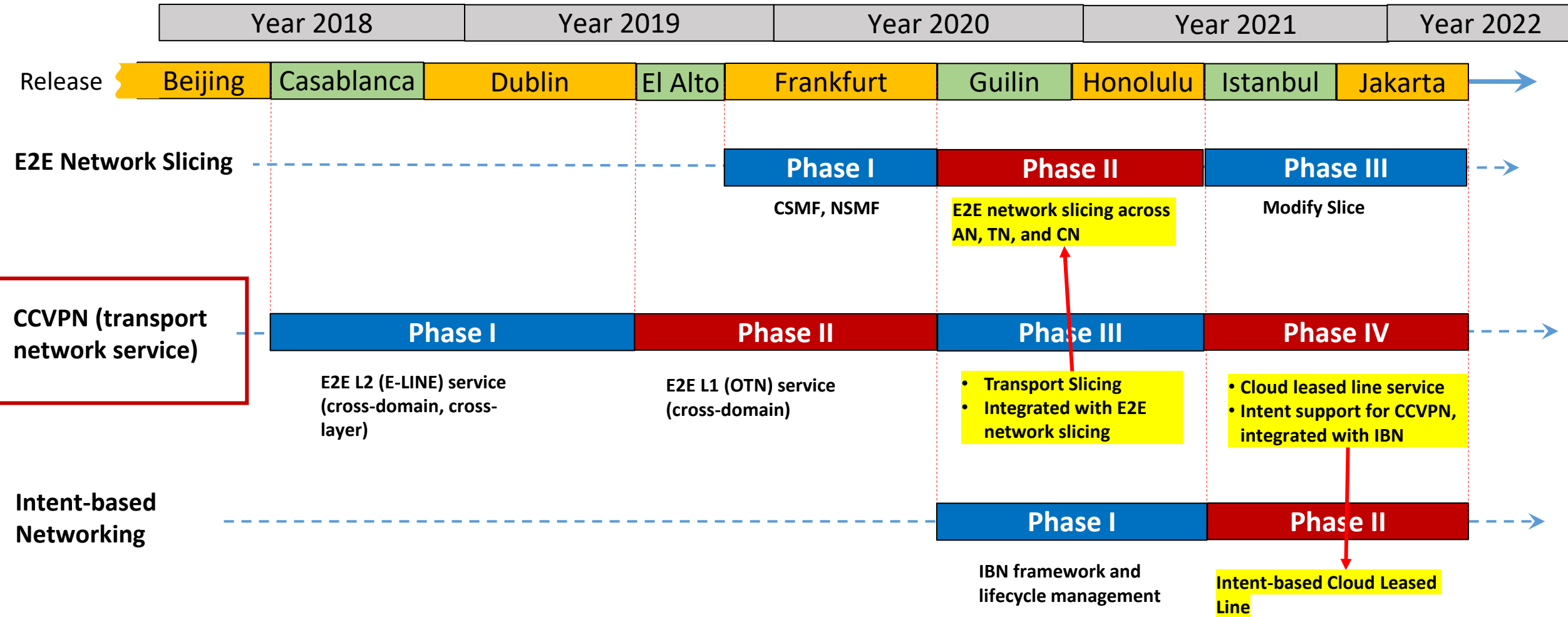
Authors: Henry Yu (Huawei), Keguang He (CMCC), Dong Wang (China Telecom), Chuanyu Chen (Huawei), Ahila Pandaram (Wipro), Kevin Tang (STL), Lei Shi (AsiaInfo)

Reporters: Henry Yu (Huawei), Keguang He (CMCC), Dong Wang (China Telecom)

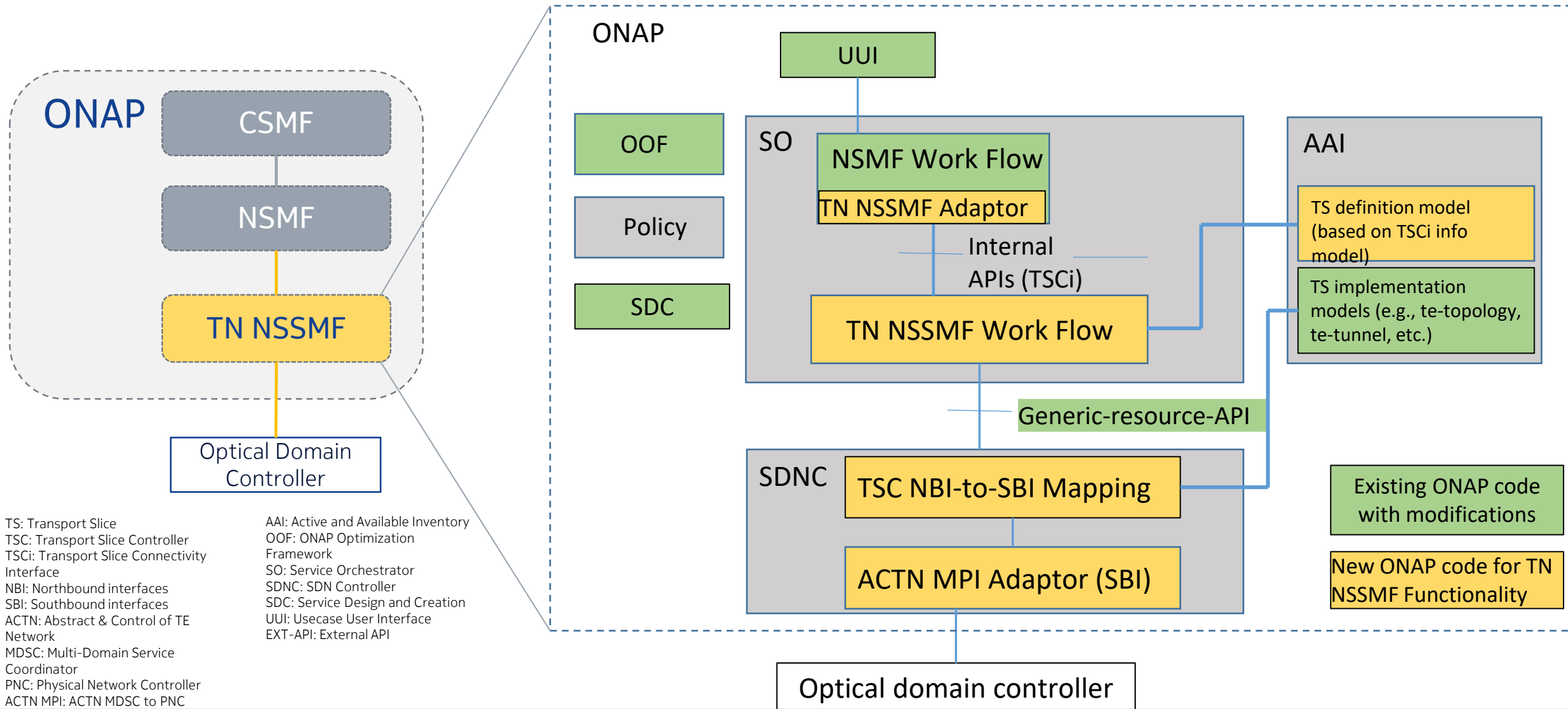
Contents

- Review of CCVPN Evolution
- Scope of Kohn Release

Brief History of CCVPN



CCVPN Support for E2E Network Slicing: Transport Slicing/TN NSSMF

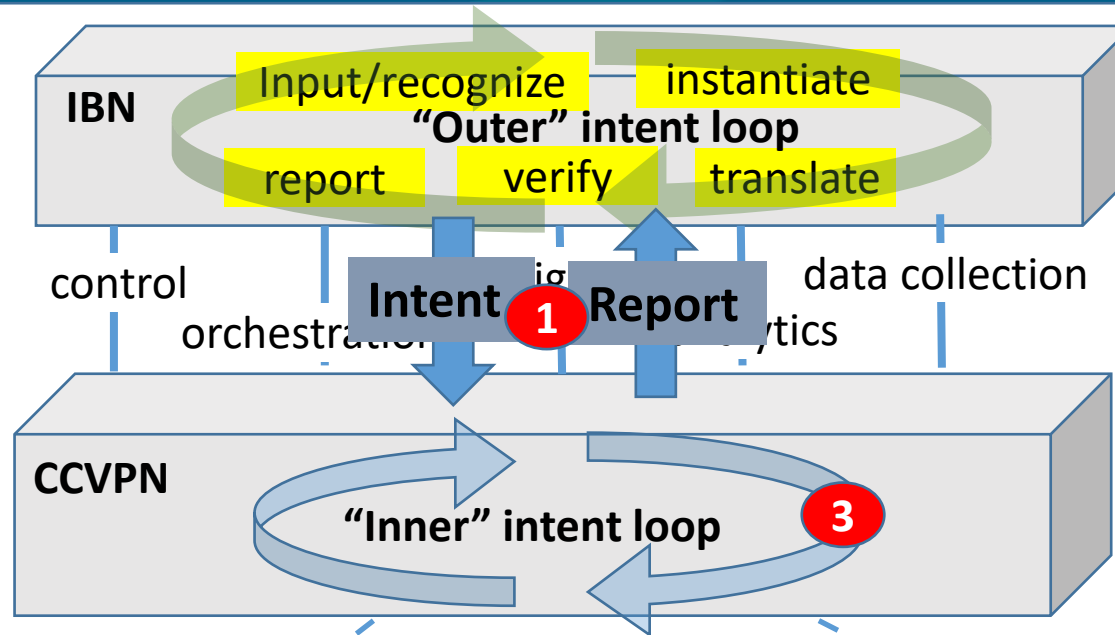


TS: Transport Slice
 TSC: Transport Slice Controller
 TSCi: Transport Slice Connectivity Interface
 NBI: Northbound interfaces
 SBI: Southbound interfaces
 ACTN: Abstract & Control of TE Network
 MDSC: Multi-Domain Service Coordinator
 PNC: Physical Network Controller
 ACTN MPI: ACTN MDSC to PNC Interface
 AAI: Active and Available Inventory
 OOF: ONAP Optimization Framework
 SO: Service Orchestrator
 SDNC: SDN Controller
 SDC: Service Design and Creation
 UII: Use Case User Interface
 EXT-API: External API

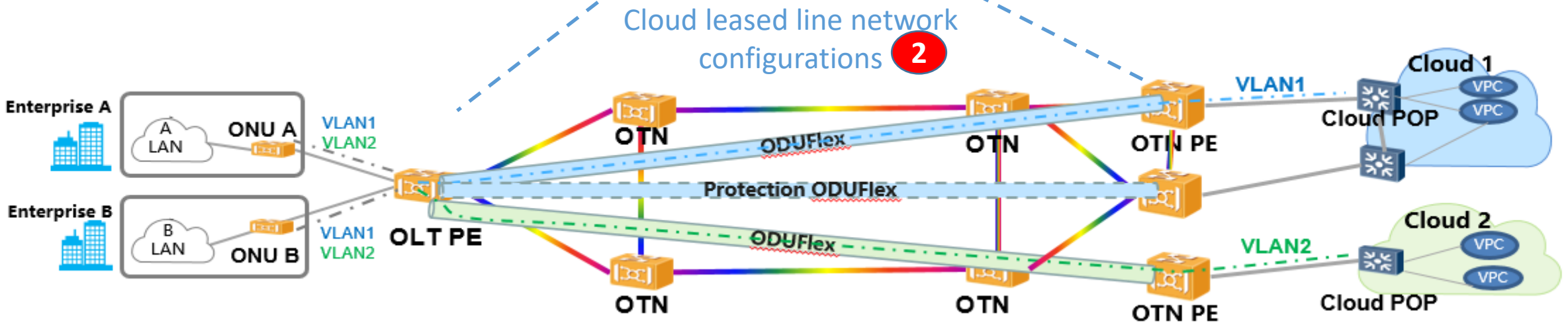
CCVPN Support for IBN: Intent-based Cloud Leased Line

IBN use case, which provides E2E service management for Intent

CCVPN use case, which provides transport networking support to the IBN use case



- CCVPN requirements/features are classified into 3 categories:
- 1 Support for IBN framework
 - 2 Cloud Leased Line network configurations
 - 3 Closed-loop automation in CCVPN



Recap of Istanbul and Jakarta: Feature Highlights

- 1** CCVPN support for **Intent-based Networking**
 - Created an architectural framework to support the IBN usecase in Transport networks (Istanbul)
 - Support user-triggered Intent modification closed-loop (Jakarta)
- 2** Support for the **Cloud Leased Line (CLL)** service
 - Creation, Modification, and Deletion of CLL instances (Istanbul)
 - Add traffic protection (e.g., 1+1 route protection) to the leased line (Jakarta)
 - UUI support for graphical display of the topology and CLL services (Jakarta)
- 3** **Closed-loop automation** for transport services in CCVPN usecase
 - Created a closed-loop framework to support CLL service assurance (Istanbul)
 - Closed-loop enhancement for CLL service (Jakarta)
 - Create a closed-loop framework to support Transport Slicing (Jakarta)

Kohn: continue to support IBN and E2E Network Slicing

- Support for the **Cloud Leased Line** service
 - E-LINE (P2P connection) support for the cloud leased line service delivery
- **Closed-loop automation** of CCVPN services
 - Closed-loop enhancement in DCAE: Enhance slice analysis MS to use DCAE SDK dmaap-client lib
- CCVPN support for **Transport Slicing**
 - TN NSSMF NBI enhancement to align with latest IETF specification (SO changes)
 - Open source IETF/ACTN network domain controller simulator

Kohn: continuation and extension of Istanbul and Jakarta

Requirements/Features	Istanbul	Jakarta	Kohn
Support for Intent-Based Networking	Create architectural framework to support the IBN	Support user-triggered Intent modification closed-loop	
Support for Cloud Leased Line (CLL) service	CLL service delivery (create, delete, and modify) using E-TREE service model	Support CLL traffic protection and UI display of CLL	Add E-LINE service model for CLL
CCVPN closed-loop operations	Closed-loop framework for CLL	Closed-loop enhancement in DCAE and Policy	Closed-loop enhancement in DCAE
Support for E2E Network Slicing (i.e., Transport Slicing)		Closed-loop framework to support Transport Slicing	<ul style="list-style-type: none"> - Align TN interface with latest IETF TN slice model - Open source IETF/ACTN network controller simulator

CCVPN Kohn Requirement Summary

Category	Requirement		Notes
Architectural and Functional requirements	AR1	none	The Kohn release is an enhancement release. The architectural changes have already been introduced in Istanbul.
	FR1	E-LINE support for CLL service	Add E-LINE service model (P2P connection) to cloud leased line
	FR2	CCVPN closed-loop enhancement	Enhance slice analysis MS to use DCAE SDK dmaap-client lib
	FR3	TN NSSMF NBI enhancement	Align TN NSSMF northbound interface with the latest IETF transport slice definition model (SO changes)
	FR4	Open source ACTN PNC simulator	Contribute source code of the ACTN PNC simulator which is used by E2E Network Slicing and Intent-based Cloud Leased Line
Modeling	MR1	none	No modeling changes in Kohn

Business Drivers

Executive Summary

We would like to enhance the CCVPN use-case to support Intent-based networking. Intent separates “what” (description of the desired outcome) from “how” (actual network configurations), and can be used to enable the full network automation. We will make CCVPN offer an Intent NBI that can be used to enable the closed-loop automation of the transport network.

Business Impact

Driven by use-cases such as IoT and 5G, the complexity of today’s transport network grows abruptly. Intent-Based Networking (IBN) is an emerging technology that aims to effectively manage network complexity and also aims for closed-loop automation.

Business Drivers

Business Markets

Intent Based Networking (IBN) is an essential feature of future networking. Any operators who would like to deploy ONAP-based network automation solution would most likely require ONAP to support IBN.

Funding/Financial Impacts

Intent CCVPN provides service automation, assurance, and the optimal use of network resources. Thus, it helps reduce OPEX for a service provider.

Organization Mgmt, Sales Strategies

There is no additional organizational management or sales strategies for this use case outside of a service providers "normal" ONAP deployment and its attendant organizational resources from a service provider.



ONAP

OPEN NETWORK AUTOMATION PLATFORM

Thank You!