Multi-Operator Network Sharing over Open Optical Networks

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Outline

1. Optical disaggregation

2. Optical slicing concept

3. Conclusions

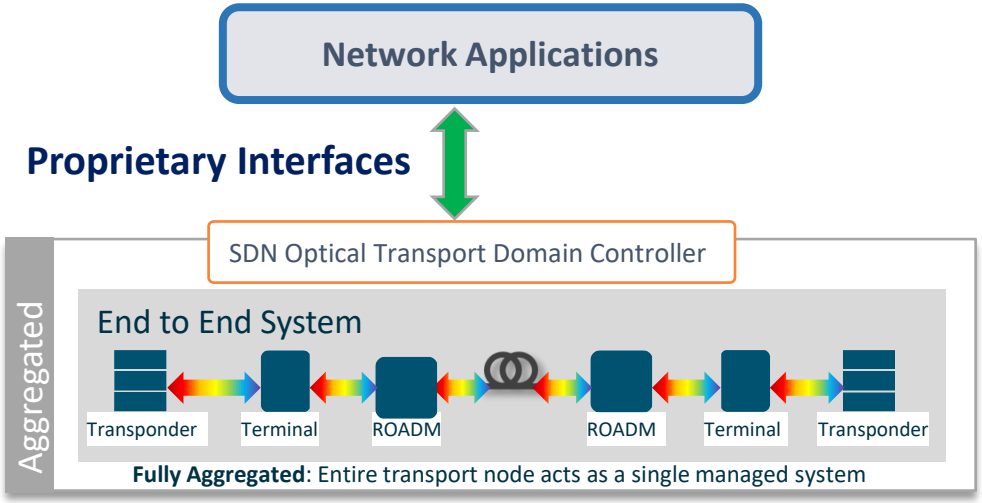
Open Optical Networks

Optical disaggregation will bring a flexible and modular network architecture

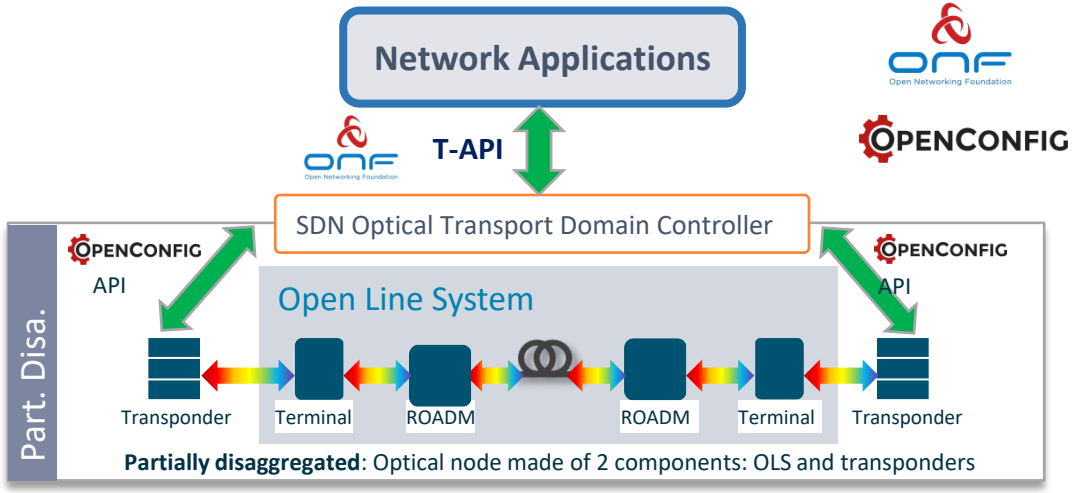
Two key aspects to make **Open Optical Networks** a reality

Interoperability through **standard** interfaces

SDN control plane capabilities, based on **standard models**, to connect multivendor solutions together.



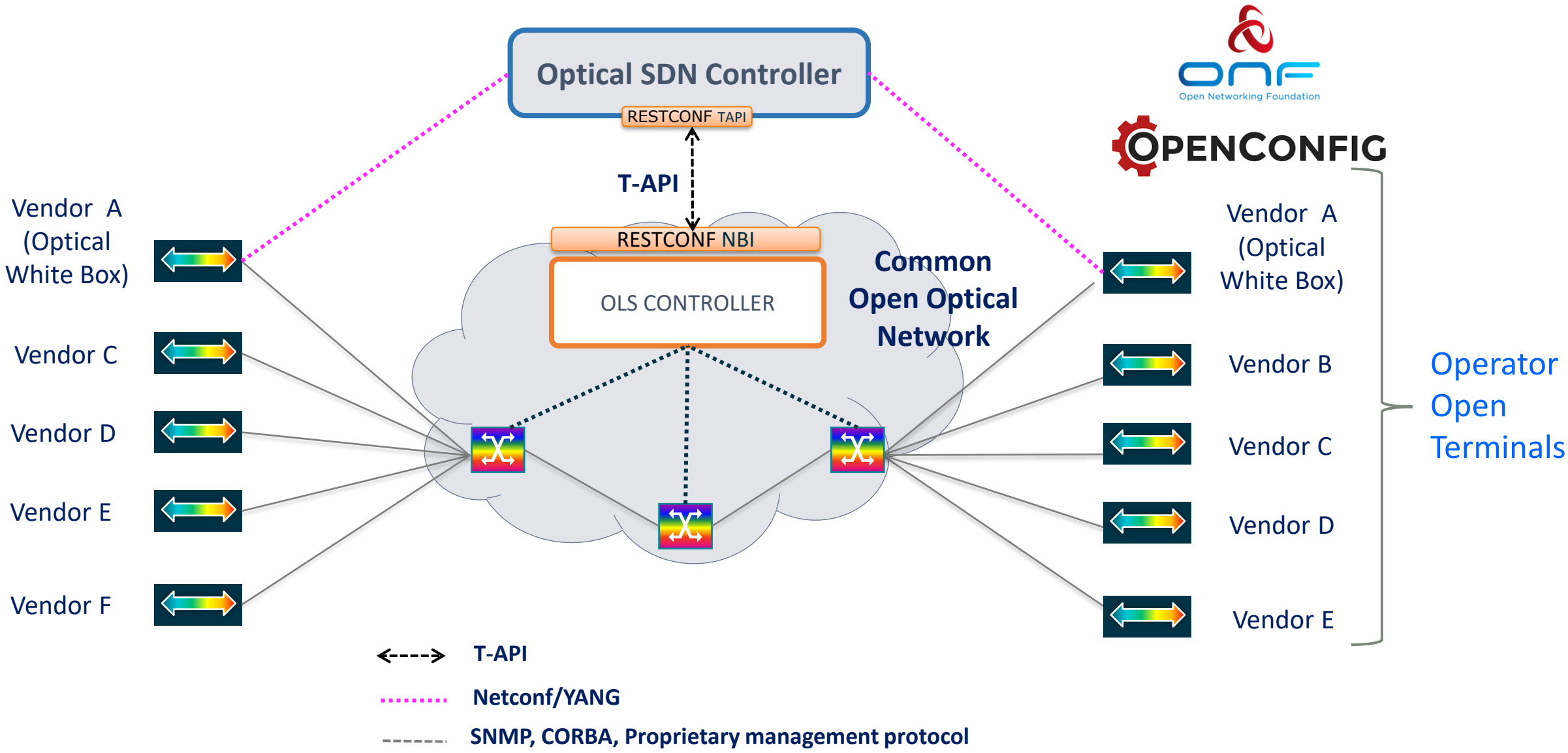
Open Optical Networks



- Nowadays, network operators deploy optical nodes provided as an **end-to-end closed solution**
- Proprietary device configuration interfaces

- Open Terminals (OTs) and OLS can be supplied by **different vendors.**
- New Optical DCI solutions could be deployed over existing OLS while keeping carrier class functionalities in restoration, performance, fault management and discovery.

Partially Disaggregated SDN Architecture

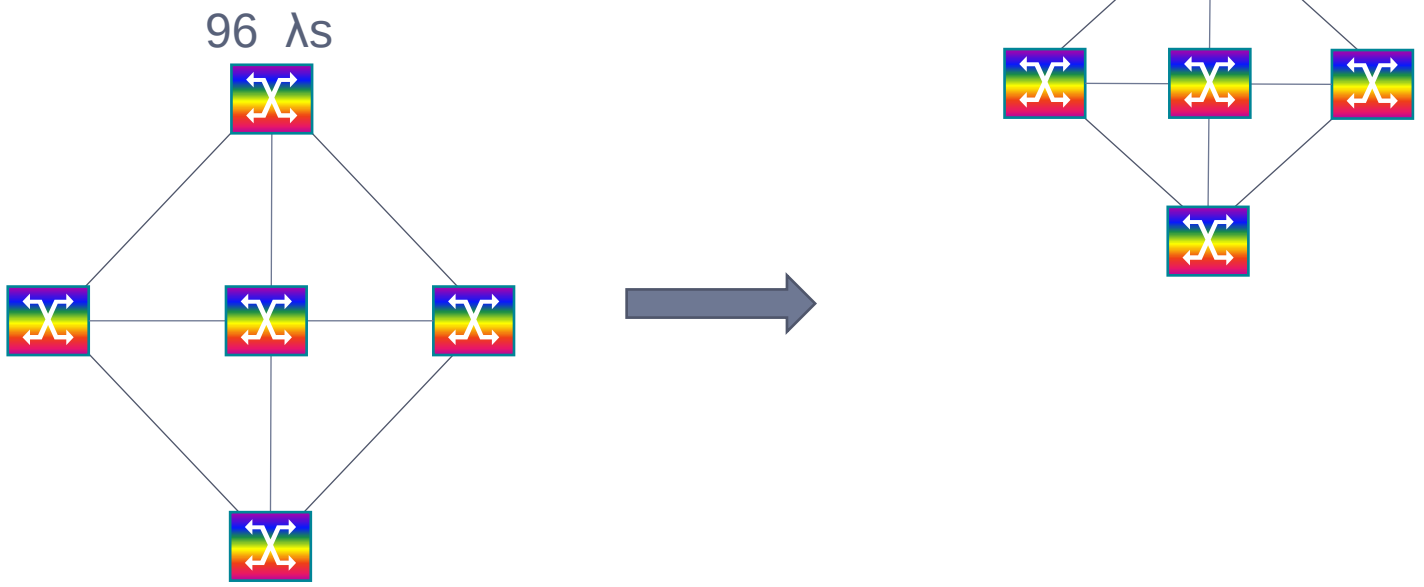


Optical Slicing Concept

1. Involves Optical Slices - different operators and organisations

2. Topology – combine topologies

3. Optical Spectrum - wavelengths



Optical Slicing-Drivers

We have three drivers to consider when activating optical slicing:

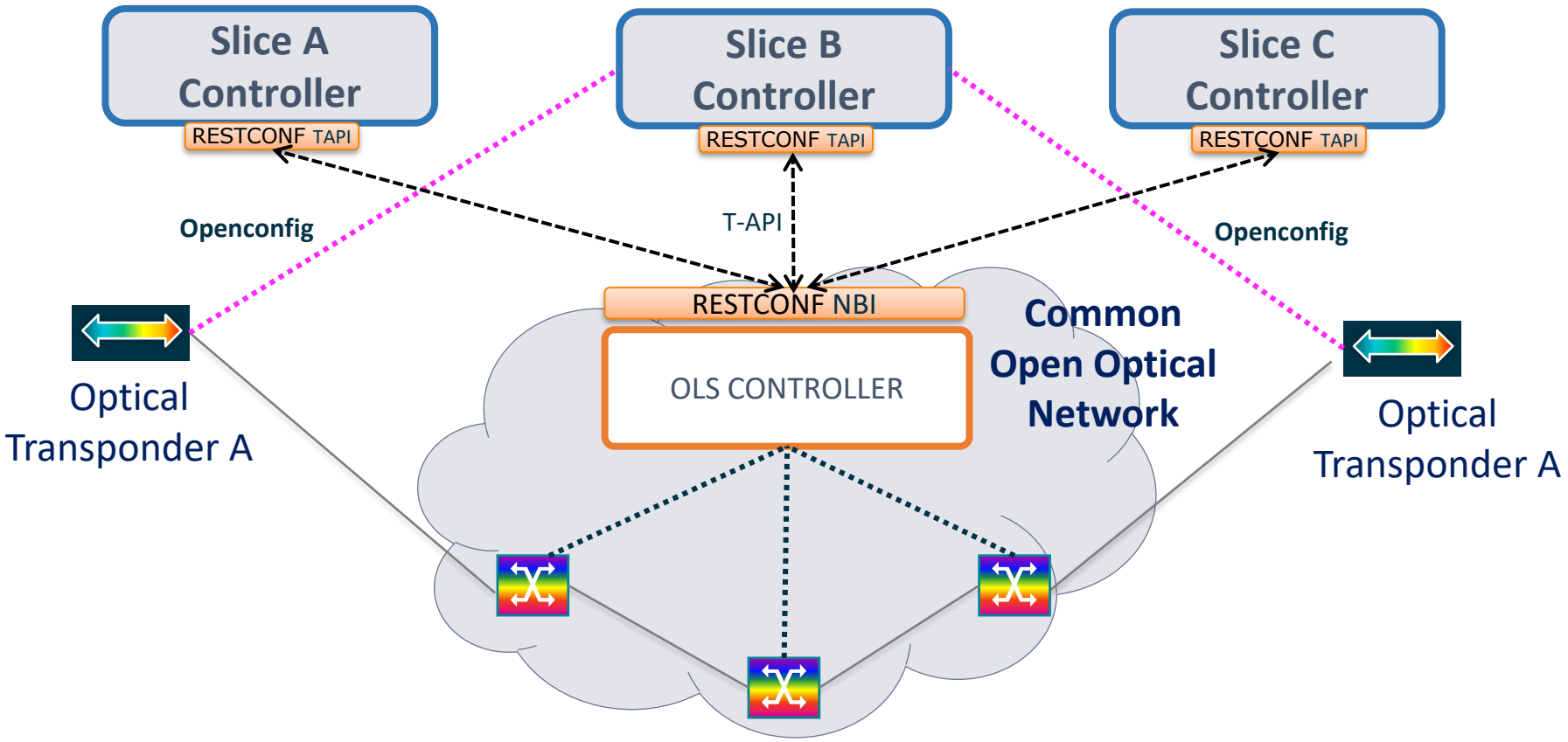
1. Sharing a common optical transport infrastructure

2. Control optical slices (including topology and spectrum). We have defined use cases by targeting these categories:

- ✓ Inventory and topology
- ✓ Service provisioning
- ✓ Restoration
- ✓ Performance monitoring and fault management

3. Optical slices enable QoS and security control isolation

Optical Slicing-Control Architecture



Conclusions

- Transport SDN should be based on **open and standard interfaces**
- **TAPI and OpenConfig** are the key standards
- **Optical slicing** is a concept that helps to optimise the infrastructure and saves resources for network operators
- **Telefonica** collaborates with other operators to define these interfaces following a **use case-driven methodology**.

Acknowledgements

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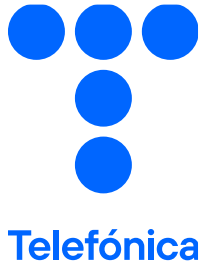
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