## **OpenFlow-enabled transport network**

## \*Programmable-Packet Transport Node

Highly resilient, managed paths by MPLS-TP Dynamic provisioning of MPLS-TP LSPs and Pseudowires by OpenFlow • Resource-optimized, automated, and real-time control

**OpenFlow Controller for transport NW** -Assign or setup LSP/PW for each flow -Classify each flow according to the service (application) -Set flow tables to each MPLS-TP switch **OpenFlow-enabled** MPLS-TP Switch (P-PTN\*) Programmable Flow Switch (PF5240) -OAM -Protection Flow Antes course states states ..... LSP **5** ~~ **MPLS-TP** Ethernet, MPLS, etc.

MPLS-TP: Next generation packet transport technology High resiliency Rich OAM function IP-independent control plane Control plane for MPLS-TP Dynamic provisioning •MPLS-TP LSPs Pseudowires (PW) Requirements Optimization Automation Real-time control OpenFlow as MPLS-TP control plane Requirement OpenFlow

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	Optimization	Resource optimization by centralized control
	Automation	Well specified automatic flow control
	Real-time control	First packet of flow triggers flow-setup

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## **ProgrammableFlow Solutions OpenFlow-enabled Virtual Network Infrastructure for the Cloud Next-gen Data Center** Logical Network Services Tenant A Fenant B Tenant C Network Simplification WAN/Internet Controller **Network Pool** Network Visualization **OpenFlow** Scale Out Switch **X o** Network Virtualization Switch Load **Fire Wall** Application Application Balancer OS OS Load Fire Wall Balancer Scale Out Application Application OS OS VM LB FW Virtual Machine Server **Server Pool Appliance Pool ProgrammableFlow Switch ProgrammableFlow Controller PF5240** NEC Empowered by Innovation ----