


*Telefonica*

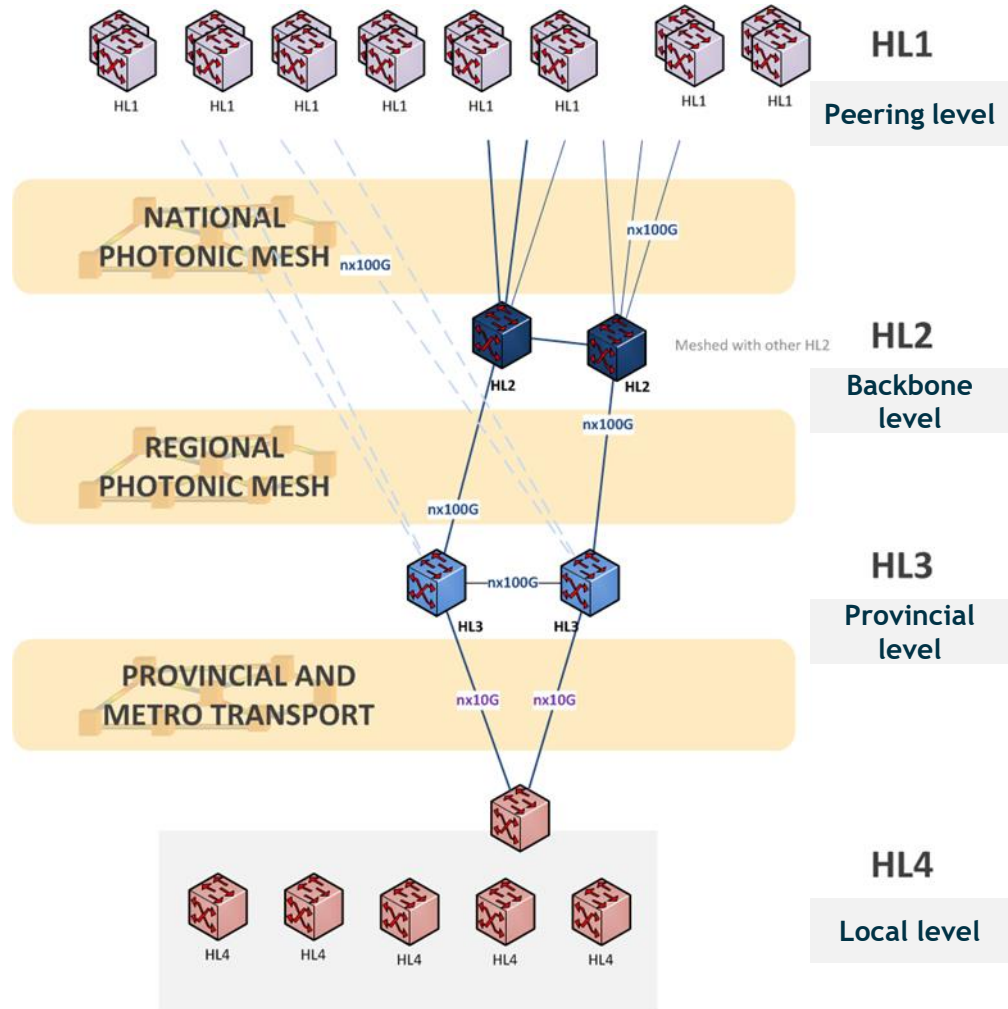
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# Application scenarios for Optical Pluggable Transceivers in 5G Transport



Juan Pedro Fernandez-Palacios, Telefónica GCTIO  
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# Where is the Edge?



Most application servers are moving to HL2 (Video, Gaming, MEC, etc)

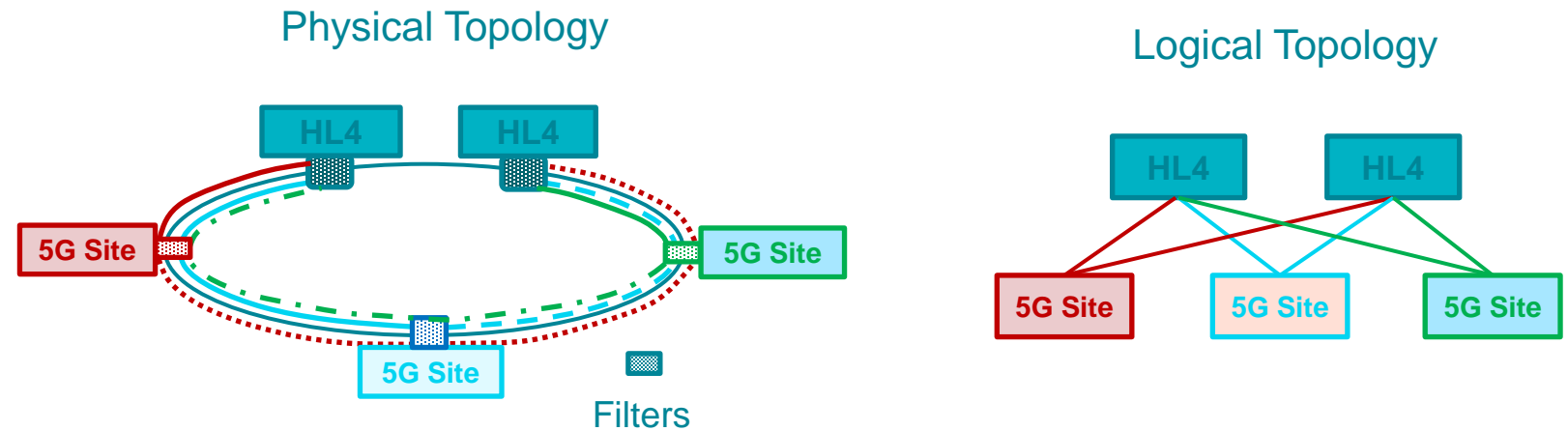
Increased traffic pressure in Regional and Metro optical networks (from HL2-HL4 and HL5 (Cell Site Router)).

New Pluggable Transceivers can play an important role to optimize the investments for increased traffic demands.

# From ring to star topologies

WDM allows fibre investment optimization for new 5G sites as well as network sharing approaches among Telco Operators

Usual requirements:  
10G/100G, DSP  
integration, up to 10  
hops, up to 30 Km

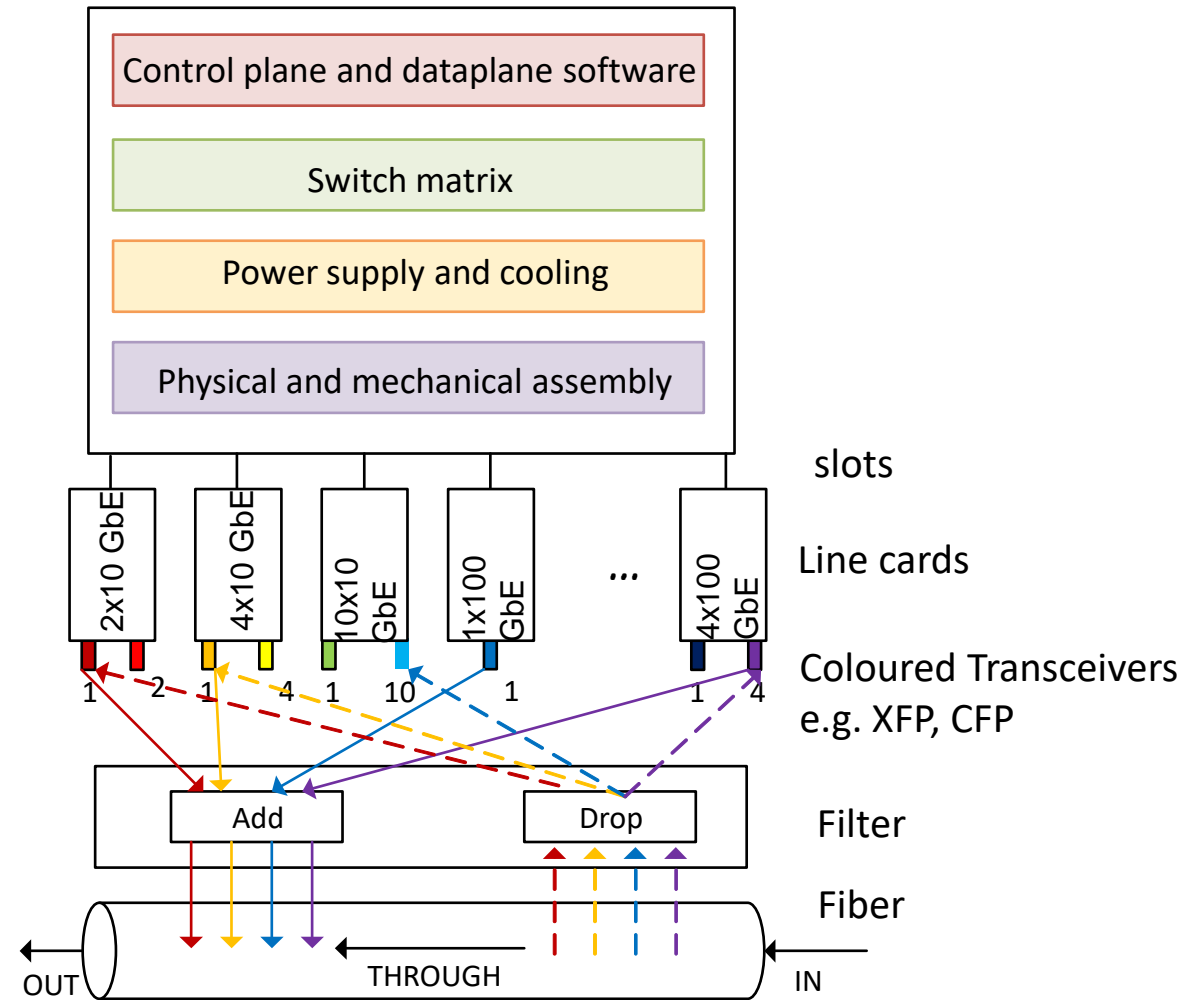


Logical Tree topology over a Physical Ring topology

# New optical pluggables enable Optical and packet integration

New Pluggable Transceivers with low power and space requirements could enable packet and optical integration supporting high density cards (eg 4x100G)

Standard configuration interfaces between Optical SDN controllers and transceivers enable partial optical disaggregation. Telefonica is using Netconf/Yang and OpenConfig models for this purpose



# Conclusions

- Edge computing impact expected in regional and metro networks (<1000Km)
- Dynamic provisioning and restoration of 100/200/400G channels
- Optical disaggregation can play an important role to optimize costs in regional and metro networks with limited physical constraints
- WDM allows fibre investment optimization for new 5G sites as well as network sharing approaches among Telco Operators (ring to star migration)
- New pluggables can enable scalable packet and optical integration in multivendor networks