

# PtP / PtMP Selectable and Low Latency Access System

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**OKI Electric Industry Co., Ltd.**

# Proposing PtP / PtMP Selectable System for Low Power Consumption

## Specific Features

- For the improvement of energy efficiency and bandwidth utilization ratio, ONUs have PtP/ PtMP modes; and PtP is used for heavy traffic PtMP is used for light traffic

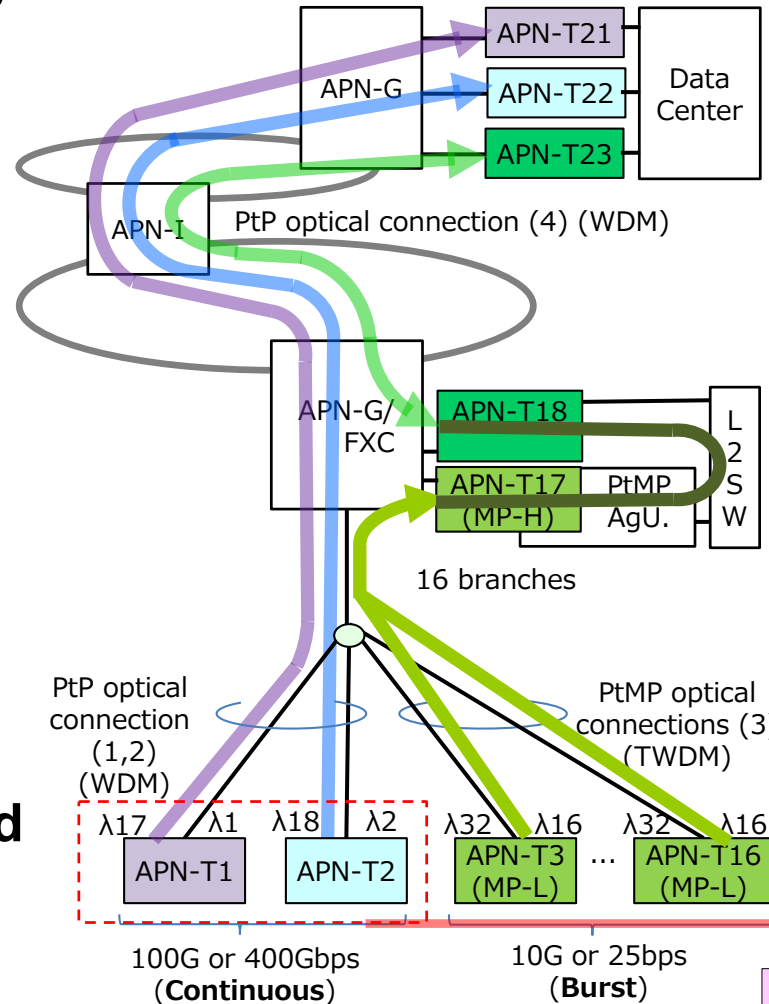
## Issues

- **Low latency** for PtMP
- Traffic prediction
- Loss-less PtP/PtMP mode change etc...

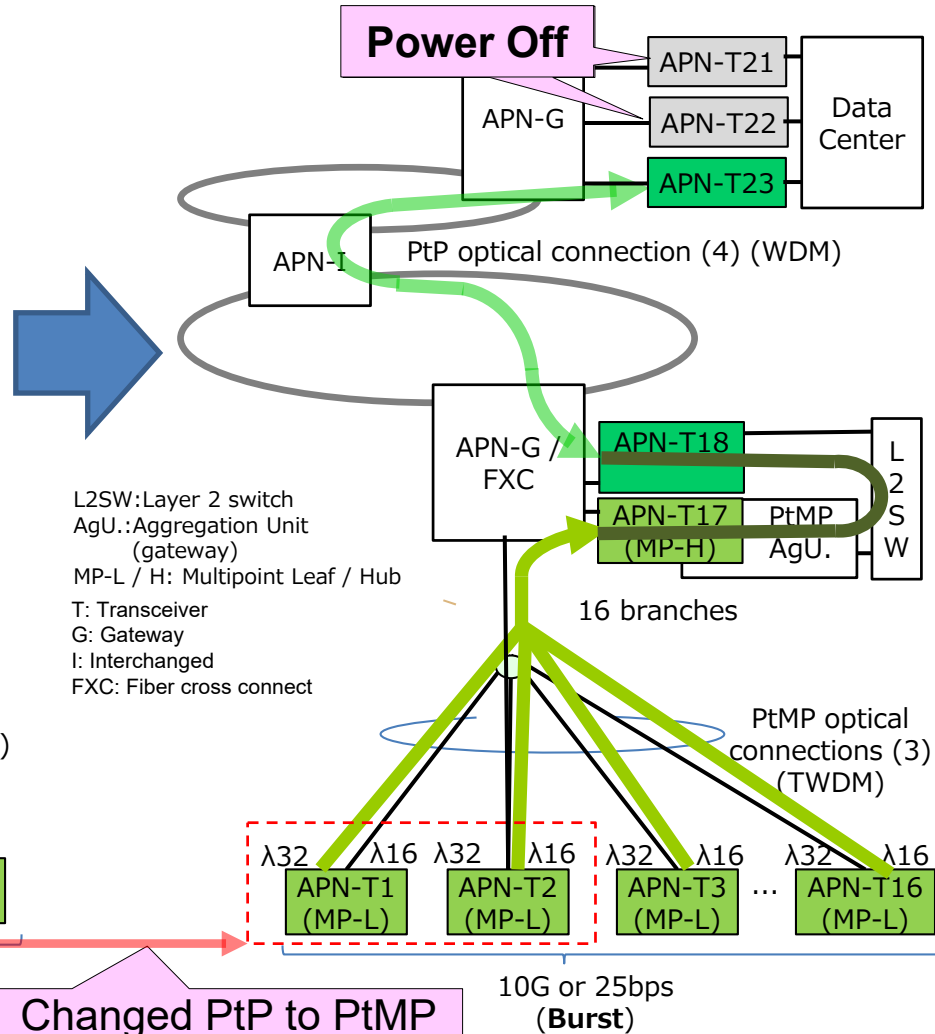
## iPOP2024 Test

- Measurement of delay time and power consumption with our developed low latency DBA

(1) When traffic between APN-T1, T2 to T21, T22 are **heavy**



(2) When all traffic are **light**

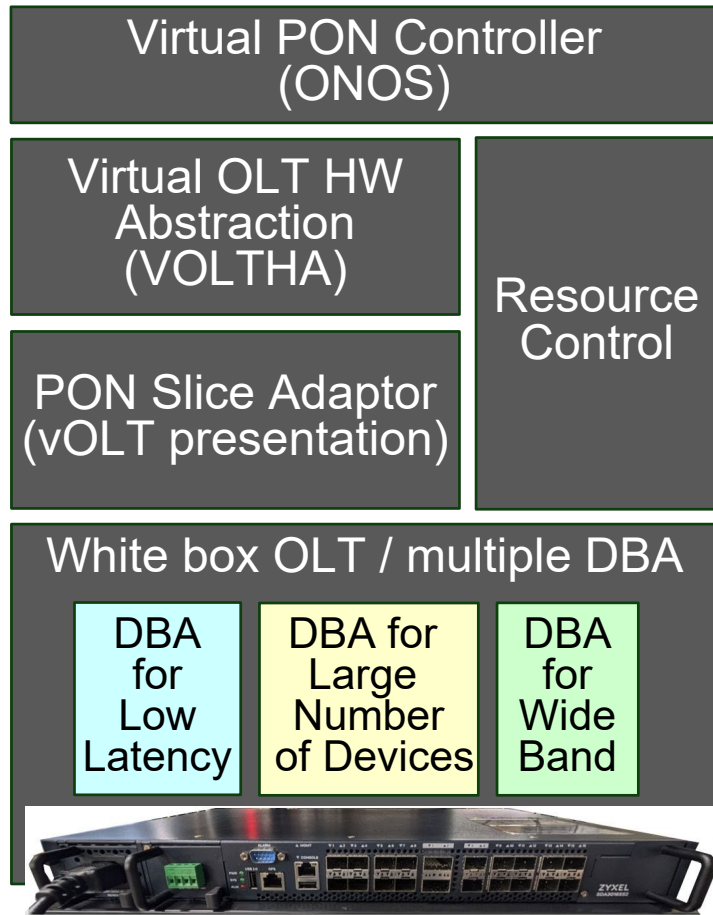


Changed PtP to PtMP (Transmission Rate)

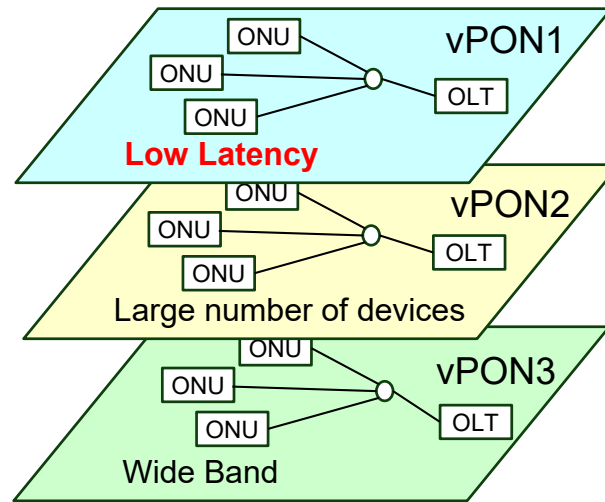
# OKI's virtualized PON providing multi-service slices and **low latency** application environment

OKI's virtualized PON (PtMP) system

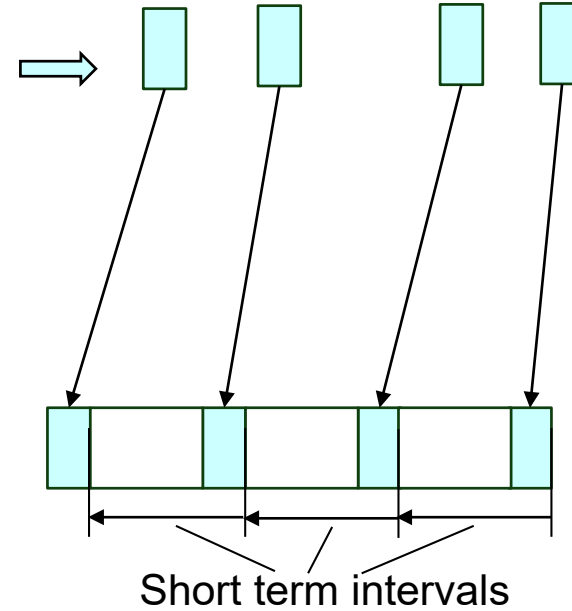
- OSS (vOLT Hardware abstraction (VOLTHA) and Open Network Operation System(ONOS)) based system
- Multiple service slices presented as virtual PONs with multiple DBA dedicated for each service slice



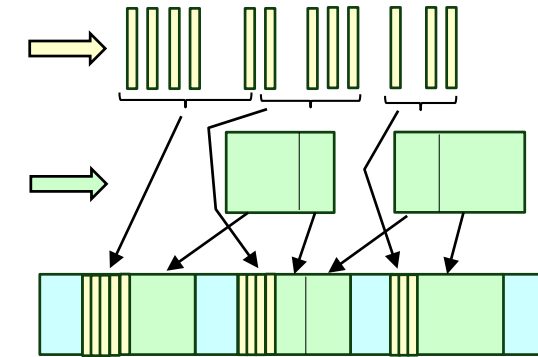
Multiple service slices provided by virtual PON (vPON) with multiple DBA



① Traffic allocation for **low latency** service with short term interval

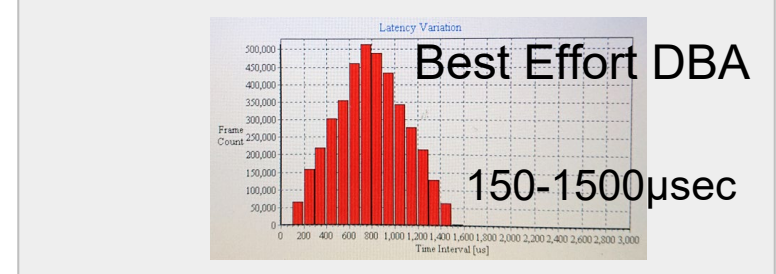
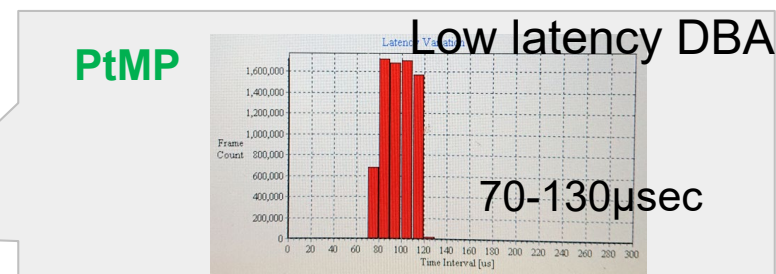
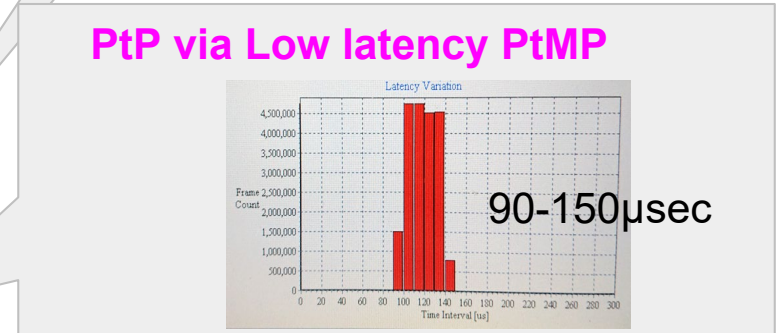
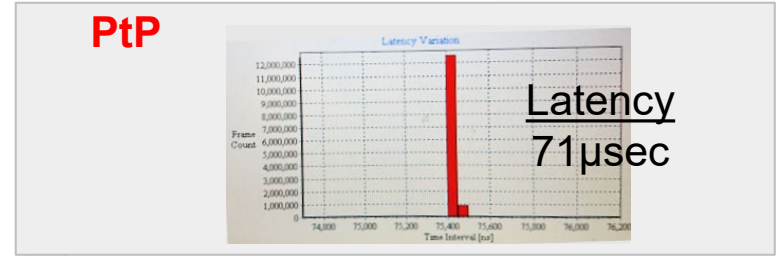
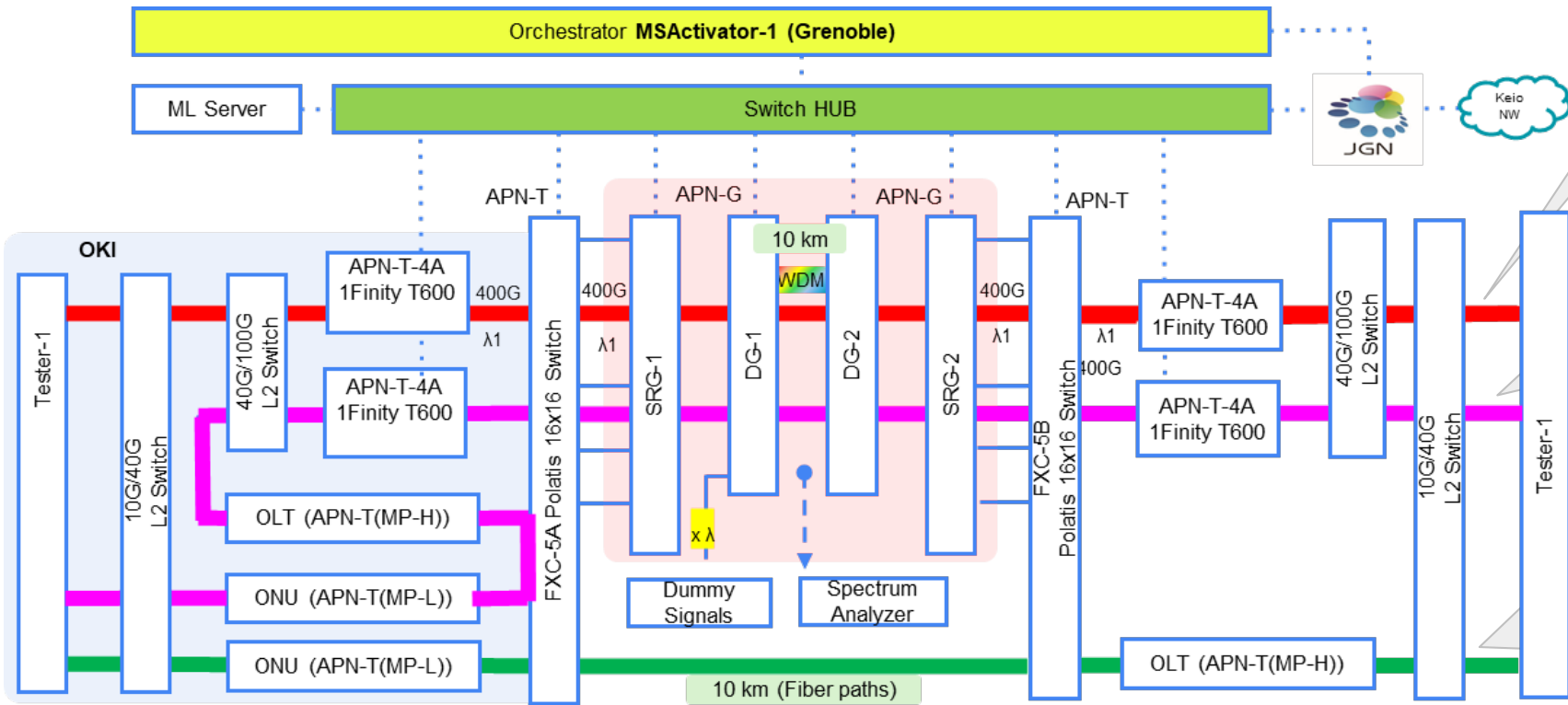


② Traffic allocation for other service slices



Even if mobile scheduling data can not be obtained, low latency flow for various types of services might be provided

# Show Case Experiment for **Low Latency** Point to Multi-Point Connectivity



# Scale of the X-axis is not the same on these graphs