

Photonic Dynamic Path Network

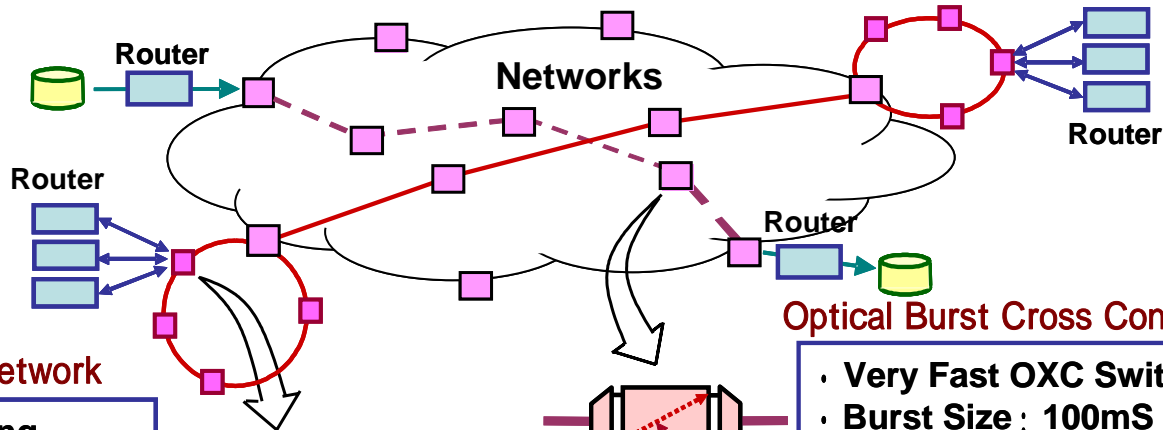
Optical Burst Switching (OBS) Networks

UEC Proposal

Photonic Dynamic Path Network

- Ultra Fast OADM Switching
- Burst Size: 100nS ~ several μ S

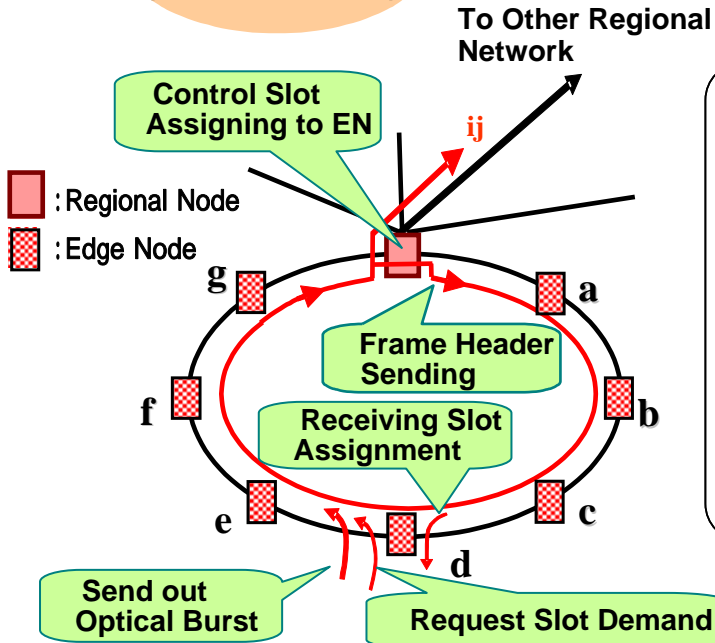
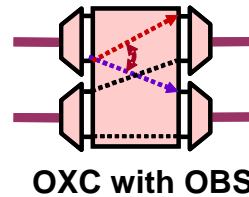
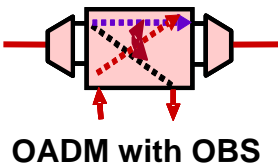
- Dynamic Packet Traffic Path (ISP/ASP/ IDC, etc)



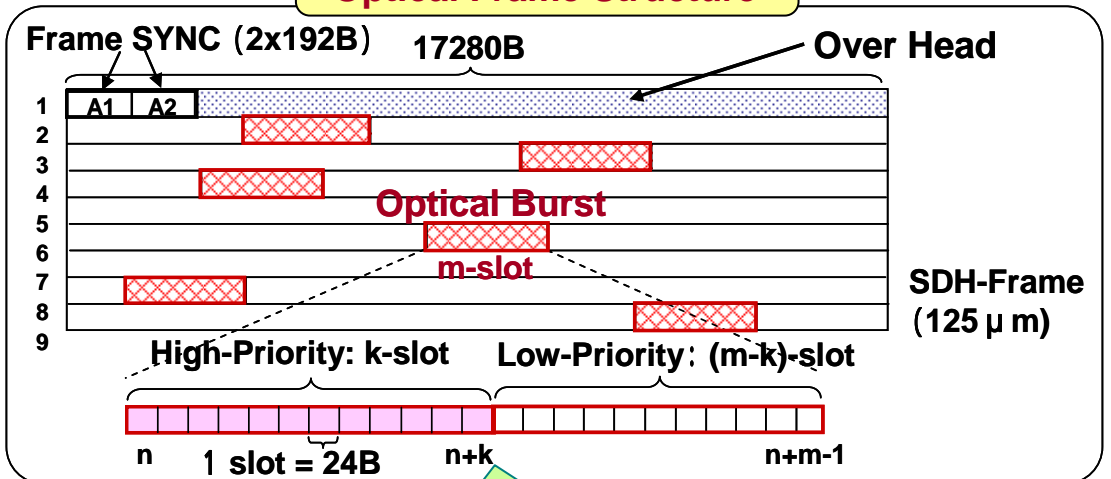
Optical Burst Cross Connect Network

- Very Fast OXC Switching
- Burst Size : 100mS ~ several S

- Large Scale Data Transfer (File Distribution, etc)



Optical Frame Structure



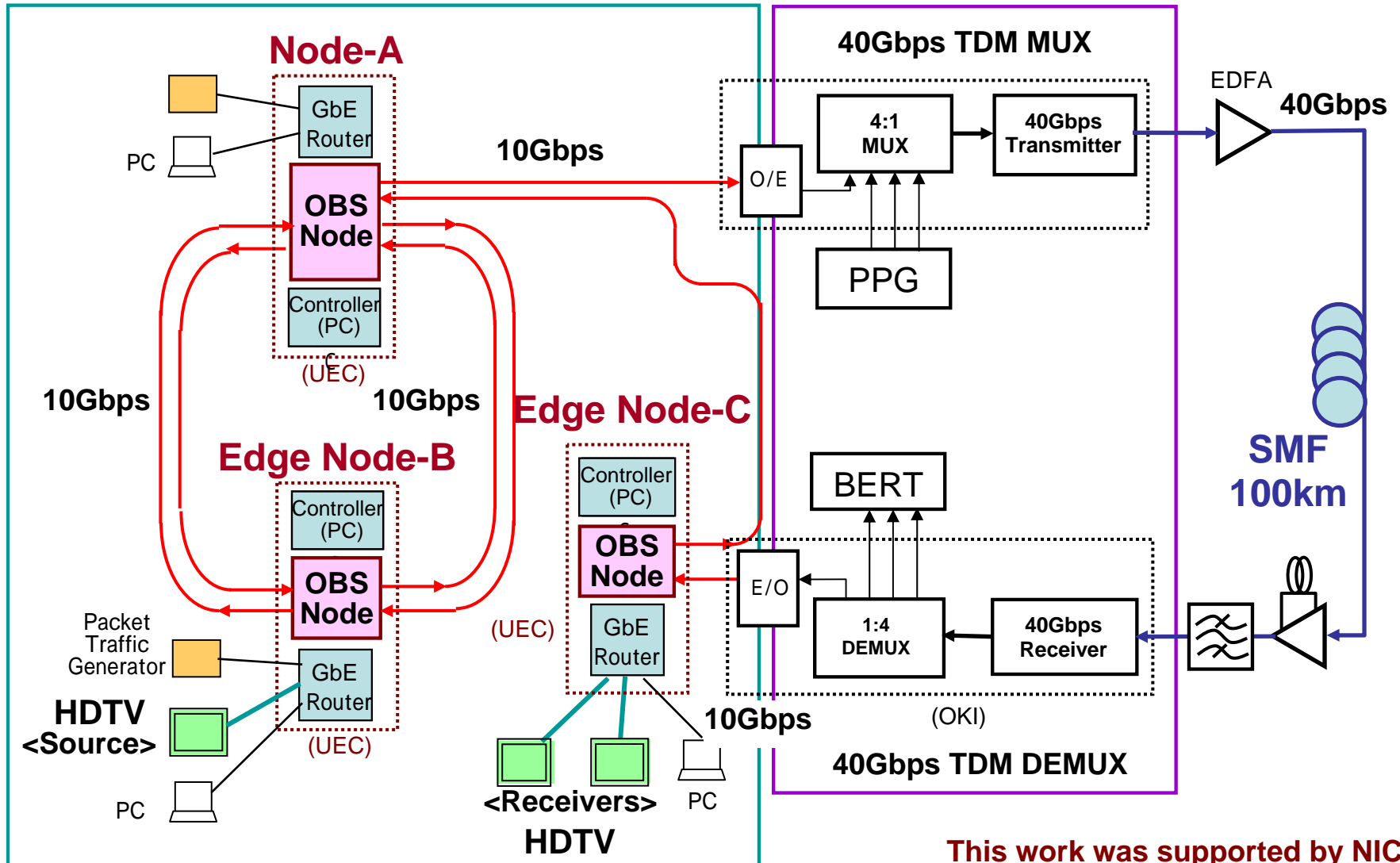
Priority Control

Setup for Demonstration

< 10Gbps OBS + 40Gbps Transmission >

Optical Burst Switching Setup

Optical Transmission Setup

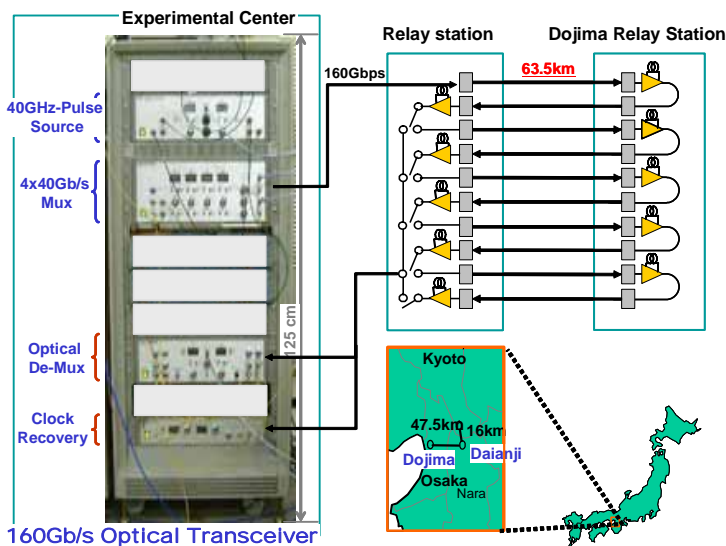


This work was supported by NICT.

160Gbit/s Optical Transmitter and Receiver

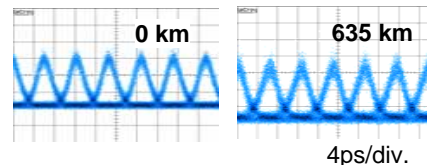
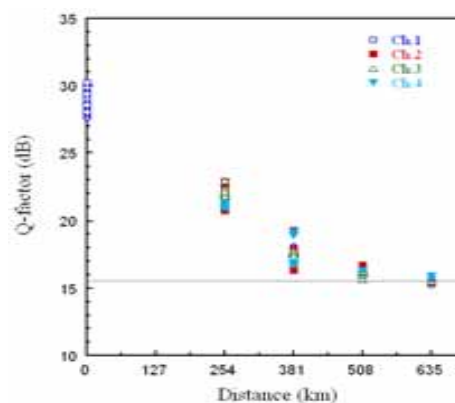
- The world's first single-channel optical transmitter and receiver are able to deliver data at 160Gbit/s over a distance of 640km(about 400miles).
- The transmitter is capable of sending the equivalent of four movies in a single second, using optical time-division multiplexing (OTDM) technology.
- The transmitter make an impact not only in telecommunication industry, but also in digital-movie distribution and the network computing industry.

160 Gbit/s Field trial on JGN



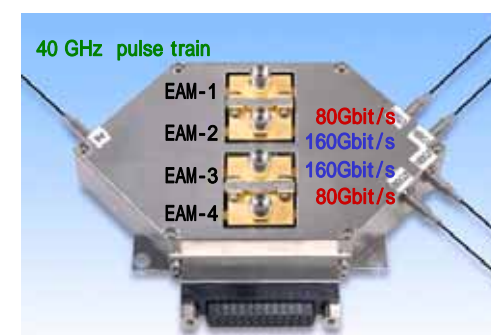
Field Trail at Kei-Han-Na,
160Gb/s OTDM – 635km SMF

Experimental result



Optical sampling waveform

160 Gbit/s OTDM module



EAM :Electro-Absorption Modulator

The OTDM module uses a free-space interconnection for its delay-line circuit, enabling four 40Gbit/s optical modulators to work in parallel.

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