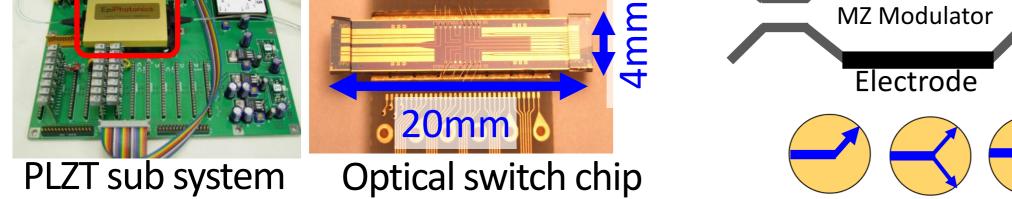


PS-23

A Study of Multicast Delivery System Using PLZT **Optical Switch on Active Optical Access Network** Yuji Shimada, Yamanaka Lab., Keio University, Japan

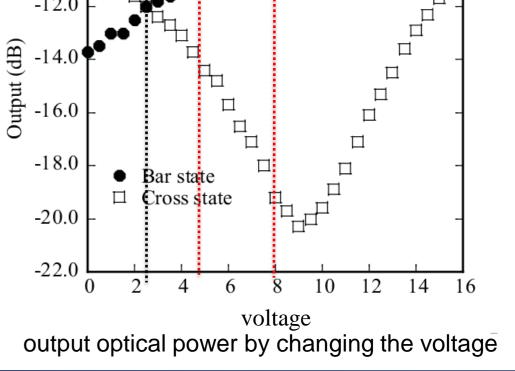


Optical Access Network ActiON (Active Optical Network) **PON (Passive Optical Network)** ONU ONU 40km **20km** COCO **1280NUs 320NUs** JserA UserA PLZT Optical OIT Splitter Switch CO : Central Office **U**serB UserB **OLT : Optical Line Terminal** #1 #2 UserC ONU : Optical Network Unit UserC 1 × 2 Optical **ActiON:** switch element -quadruplicate the number of users (128users). 7 stages -double the maximum transmission distance(40km). Multistage configraton of 1 × 2 optical switch element PLZT : Plomb Lanthanum Zirconate Titanate **PLZT optical switch structure** Variable distribution (5:5) (7:3) (9:1) Electrode -10.0Optical power is output in



Mach-Zehnder type wave-guide: -switches by changing voltage different distribution ratio by

applying the variable voltage.

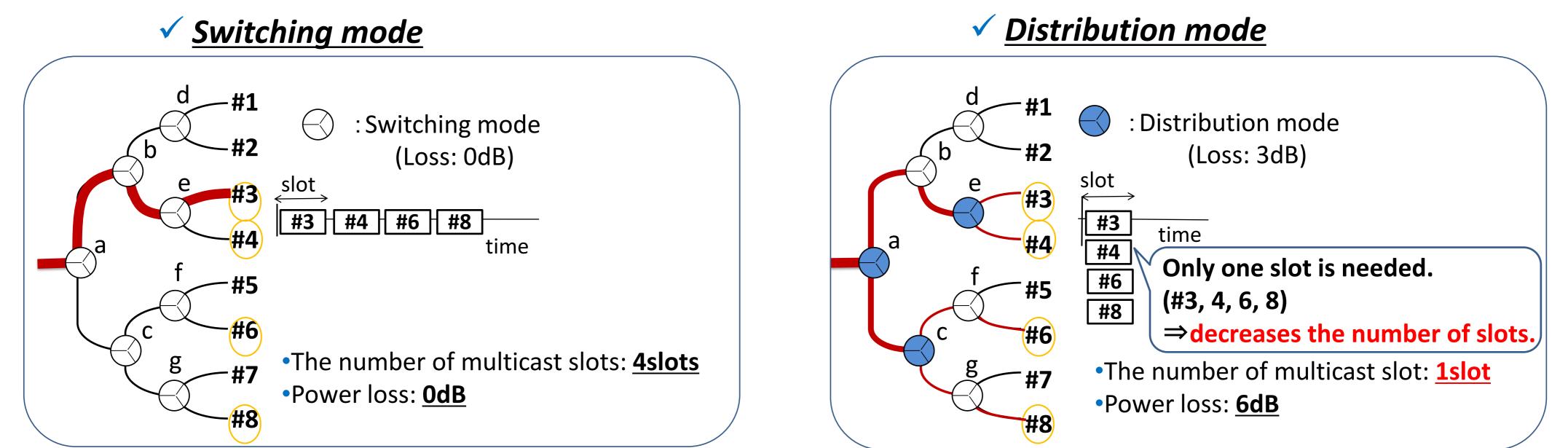


Optical switch chip:

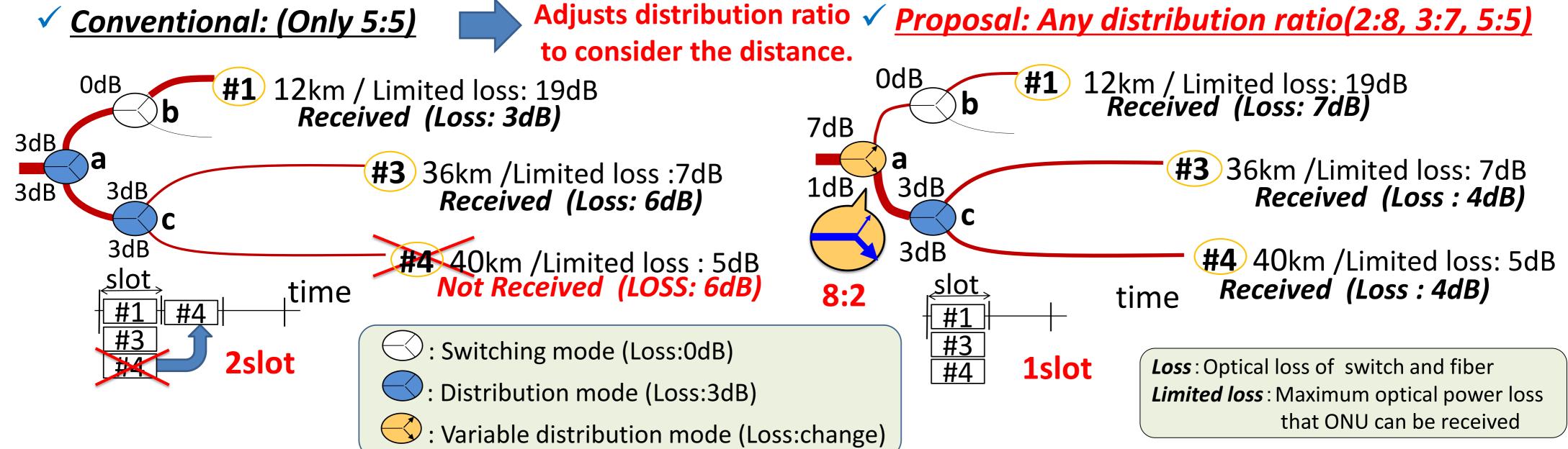
-switches by 10ns high speed

-low power consumption

Difference of switching mode and distribution mode



Multicast slot allocation with variable distribution mode(proposal)



<u>Proposed scheme adjusts any distribution ratio, improves the bandwidth.</u>