Joint ITU-T/IEEE Workshop on Next Generation Optical Access Systems

NTT's FTTH Deployment status and perspective toward next generation

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Outline

History of Commercial FTTH

Current FTTH

FTTH Enhancements for Next Step



Significant Changes in Access last decade

Broadband access competition DSL and FTTH marketing pitches have focused on the transmission speed.

Services

Internet access and High-quality VoIP services became the "Basic FTTH Service".

Networks

Adopting IP packet-base and Ethernet technologies.

The First Commercial FTTH in NTT

First commercial FTTH deployed in 1997. The services for FTTH were up to 2ch. POTS/ISDN and analog RF video broadcasting.



The impact of High-Speed Internet Access

FTTH System cost reductionTransmission speed increase

The simple system design



"BORSCHT"

Index = (ONU&OLT system cost / line) / (Transmission speed of PON or P2P link) Geneva, 19-20 June 2008 5



FTTH Growth in Japan

FTTH Internet access moved into full swing in 2000. In 2006, DSL shifted to decrease. More than 11million FTTH lines in Japan today.





FTTH System Configuration today

Since 2004, GE-PON has deployed for FTTH. IP-based services: Internet access, PSTN-quality VoIP and IP-TV RF Digital video broadcasting service over GE-PON



GE-PON Functions and Stds.

For the "carrier-grade" system operation, the functional specifications of "out of standards" will be well-designed.



Move to Next Step

NTT plans 20-Million FTTH lines by 2010 and further deployments all over Japan. The issues for next step will be

Efficient deployment in various areas

OPEX reduction

Power saving



Further Efficient Deployment

The new type of physical / logical topology would stimulate operators to deploy FTTH in various areas.

The harmonization of IEEE802.1, .3, ITU-T SG13, 15 becomes more important.



OPEX Reduction

For OPEX reductions, shorten the time of operation is the essential.

Installation

Faults detection and isolation

Fiber management





Access Network Configuration



In-house Wiring

Significant improvement in wiring to the ONU.



Fault Detection and Fiber Management



Power Saving

When we operate 40-million FTTH, 80% out of total power will be access networks. 50% out of them will be estimated from ONUs.

Power saving technologies, IEEE802.3az and "Sleep mode" are the urgent developments.



Summary

Commercial FTTH history Significant cost reduction and transmission speed. Simplified access system design.

Current FTTH GE-PON is the mainstay of FTTH access system. Internet access, PSTN-quality VoIP and Video services

FTTH enhancements for the next step The technologies related new topology, OPEX reduction, power saving will be required.