



WWW.PROFIBER.EU
...umění optické komunikace

FTTx Ethernet P₂P switche

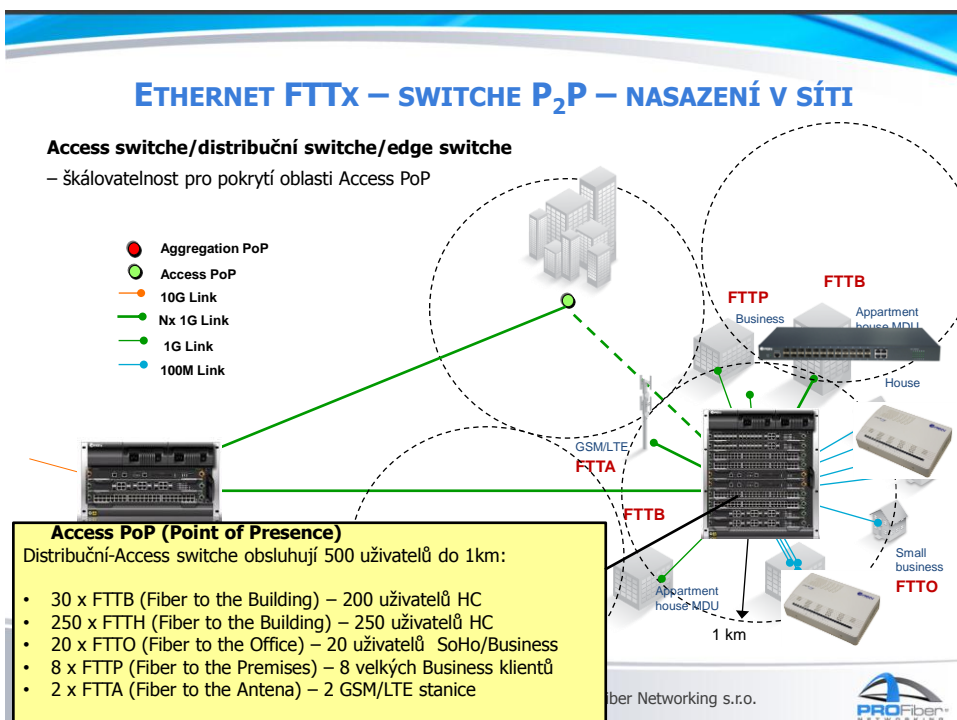
Ing. Martin Ťupa

info@profiber.eu | www.profiber.eu



ETHERNET FTTX – SWITCHE P₂P – NASAZENÍ V SÍTI


Access switch/distribuční switch/edge switch
– škálovatelnost pro pokrytí oblasti Access PoP



● Aggregation PoP
● Access PoP
— 10G Link
— Nx 1G Link
— 1G Link
— 100M Link

Access PoP (Point of Presence)
Distribuční-Access switche obsluhují 500 uživatelů do 1km:

- 30 x FTTB (Fiber to the Building) – 200 uživatelů HC
- 250 x FTTH (Fiber to the Building) – 250 uživatelů HC
- 20 x FTTO (Fiber to the Office) – 20 uživatelů SoHo/Business
- 8 x FTTP (Fiber to the Premises) – 8 velkých Business klientů
- 2 x FTFA (Fiber to the Antena) – 2 GSM/LTE stanice

ber Networking s.r.o. 

ETHERNET FTTX – SWITCHE P₂P – NASAZENÍ V SÍTI

Access switche/distribuční switche/edge switche - více portů

- škálovatelnost portů 100M/1G
- Uplink 1-2-4x 1G SFP (jak přidávat více?), n x 10 G SFP+ (XFP)
- downlink 24-48-72-..... x 100M SFP Tx1550/Rx1310
- downlink 24-48-72-..... x 1G SFP Tx1550/Rx1310
- Jak kombinovat 100M/1G downlink porty? Někdy 10G?
- Stohovatelné switche



Někdy navíc porty downlink

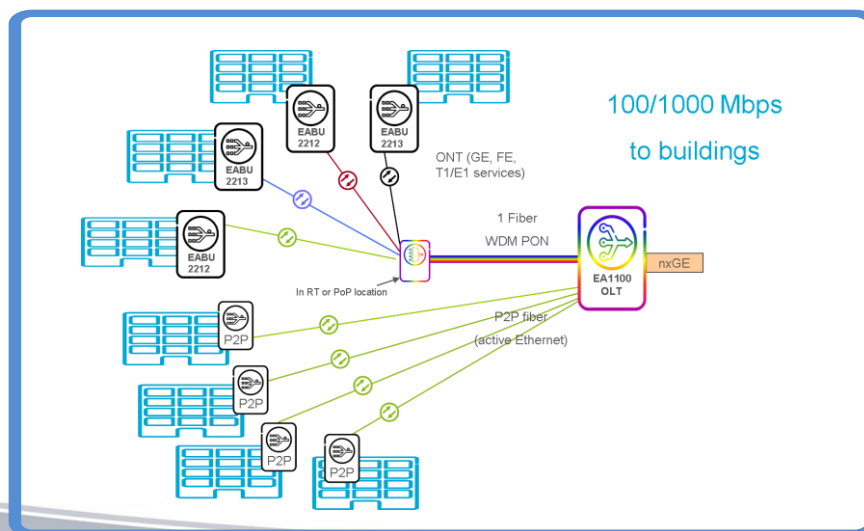
- downlink metalické porty 24-48-72-.... 10/100/1000 M
- downlink – připojení 10G?
- E1
- ADSL2/VDSL2
- GPON
- GEAPON
- X-GPON, 10GEAPON
- WDM-PON



www.profiber.eu | info@profiber.eu | Copyright © PROFiber Networking s.r.o.



KOMBINACE P₂P A WDM-PON SÍŤÍ



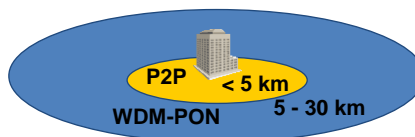
www.profiber.eu | info@profiber.eu | Copyright © PROFiber Networking s.r.o.



METRO BUILD-OUT HYBRID WDM-PON BUSINESS SUMMARY



1. Large number active POPs in total
2. Point-to-Point services everywhere
3. Expensive optics at long distances
4. Higher operational costs



1. Small number of active POPs in full total
2. Point-to-Point services everywhere
3. Common WDM-PON optics at all distances
4. Low operational costs

Active Ethernet Pt-to-Pt does not scale cost-effectively beyond city core

WDM-PON is cost effective for larger deployments

Lower OPEX savings generates return on investment over initial CAPEX

Integrated model can make sense

www.profiber.eu | info@profiber.eu | Copyright © PROFiber Networking s.r.o.



MODULÁRNÍ PLATFORMA ACCESS 1100 LG-ERICSSON



Integrated Fabric

- Redundant, protected Sw Fabric
- Up to 8 SFP+ uplinks (GE /10GE) per Switch card

Service Densities/Chassis

- 384 100M and/or 1G P2P
- 256 E1 / T1 Ports
- 256 100M WDM PON Ports
- 256 1G WDM PON Ports

Carrier Grade Platform

- 19" (W) x 10U (H) x 14" (D);
- 4 shelves/2.2m rack
- Integrated cooling units & maintenance ports
- 11 Slot Chassis
- 8 Universal Service Slots

Service Interfaces

- Ethernet over λ
- Ethernet Point to Point
- E1/T1 Circuit Emulation
- 10GE P2P (2012)

Key Features

- Synchronisation
 - OLT Bits input / output ports
 - Stratum 3 / 3E with holdover
 - Sync E Timing distribution
 - 1588v2 Time/Phase Support
- Link Protection
 - ITU G.8032 E-SPRing support
 - 1+1 protection

www.profiber.eu | info@profiber.eu | Copyright © PROFiber Networking s.r.o.



EA 1100

Service Interface Cards

WDM PON i/f

- Single fibre bi-directional PON
- SC-APC connector
- DS: L-Band, US: C-Band
- 48 Gbps non-blocking switching fabric
 - **4G PON: 32 x 125M PON**
 - **4G PON 32 x 125M PON (ER)**
 - **40G PON: 32 x 1.25G PON**
 - **40G PON 32 x 1.25G PON (ER)**

48 port 100/ge p2p

- 48 Gbps non-blocking switching fabric
- **24 SFP** sockets per service card
- supports 100M & 1G SFPs
- supports single and/or dual channel SFPs
- **48x1G** ports per card
- E-Spring / Point-to-Point Protection

32 port e1 / t1

- **32 x E1/T1** ports per unit
- Up to 8 cards may be equipped on OLT shelf
- Framed and Unframed / Channelised or Un-channelised
- SAToP (RFC4553)
- CESoPSN (RFC5086)
- Available Now

Future service cards

- **Quad/Octal x 10GE** P2P Card
- Multi-Node Ring or P2P Support
- UNI Support / NNI Support (Future)
- Available 2012
- **RBH CPRI transport (2.5Gbps)**
 - Under review



www.profiber.eu

...umění optické komunikace

...umění optické komunikace

DĚKUJI ZA POZORNOST

Ing. Martin Ťupa

martin.tupa@profiber.cz | www.profiber.eu

