FTTx NETWORKS
OPTRONICS Capabilities

COMPANY PROFILE

26 Years company specialization in:

- Fiber Optic Network Infrastructure Development (Turn-Key projects including study, design, supply of materials, installation, maintenance, training)
- Manufacturing of Fiber-Net Product Series
- Supply of products (passive and active) and Services provision for LAN-MAN-WAN in Greece and abroad
- Implementation of the first FTTH installations in Greece
- Design-Deployment of the first GPON installations in Greece
- OPTRON (ATHEX)
FIBER-NET Series

- ILAFID monitoring detector
- Drawer Patch Panels
- Wall 4-24 panels
- ODFs - Cabins
- WDM & splitter cassettes
- Patchcords & pigtails
- SFPs - converters
R&D

SEVENTH FRAMEWORK PROGRAMME

Adaptive Software defined Terabit Transceiver for flexible Optical Networks

COCONUT

Flexible Optical X-connect
Building Next Generation Flexible Networking

COCONUT

COCONUT OLT

Pt2Pt tcvr’s

TDMA tcvr’s

MUX

Power Splitter

COCONUT ONU’s

Macro Cell

Wireless access point

FTTH

Micro Cell

1:32 (or 1:16) Power Splitter or Passive MUX-DEMUX

10G/λ

1577nm band

1270nm or 1310nm band

WDM 10GPON for Downstream (1575nm to 1625nm band = L-Band) – TDM 10GPON for Upstream (1270nm or 1310nm band)

When Power Splitter used then WDM

10 Gbps

10 Gbps

10 Gbps

PT2PT

COCONUT

1 λ per ONU – 32 ONUs

PT2PT

PT2PT

PT2PT

PT2PT

TDMA

TDMA

TDMA

Up to 10x 24-48 users

Up to 10x 24-48 users

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OPTRONICS Capabilities

Turn-Key Fiber Optic Network Projects
Design, Construction, Commission, Documentation, Maintenance
FIRST FTTH PILOT IN GREECE
FTTH N. SMYRNH

FTTH TWO-STAGE PON ARCHITECTURE

- OUTDOOR CABINET (FPP)
- 1X KOI 72 QI (FEEDER CABLE)
- 1/16 SPLITTERS
- KOI 72 QI (FEEDERS)
- ALL CONNECTORS LC/APC
- SPlice ENCLOSURE SINGLE CIRCUIT 24-72 OI - MULTIPORT
- 1X KOI 72 QI (FEEDER CABLE)
- MAIN DISTRIBUTION BOX (MDB)
- 1X KOI 12 QI (DROP CABLE)
- BUILDING DISTRIBUTION BOX (BDB)
- 1/4 SPLITTER
- SECONDARY DROP CABLE 2 QI
- FIBRE OPTIC TERMINAL OUTLETS (One SC/APC CONNECTOR)

OPTRONICS TECHNOLOGIES S.A.
OPTRONICS TECHNOLOGIES ABITECH FTTH ARCHITECTURE

Drawn By: GP, IK
Approved By: GP
Date: 23.7.2012

FTTH Ready!!!
OPTRONICS Capabilities

FTTH in ATHENS

PING 9 ms
DOWNLOAD SPEED 95.64 Mbps
UPLOAD SPEED 94.13 Mbps
NEW SERVER
TEST AGAIN
SHARE THIS RESULT

FTTH Ready!!!

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OPTRONICS Capabilities

MARFON MARINA PROJECTS
GPON DESIGN & FTTBoat
OPTRONICS Capabilities

SERVICES PROVISION

- 100Mbps-1Gbps
- WiFi access
- FTTBoat
- TV to the boat
- VIP CCTV

Guest Interface Design by Smart Phone App for guest facilities use and Rhodes travel content
FTTH Architectures

FTTH Network Topologies
Point-to-Point vs PON

For 32 subscribers:
- 64 fibers / 64 transceivers
- 33 power supplies

For 2 fibers:
- 66 transceivers
- 34 power supplies

For 1 fiber:
- 33 transceivers
- 33 power supplies
Access Networks Architectures

Fiber to the: Node Curb Premises

GigE / 10GigE

Gigabit Ethernet

GPON – XGPON WDM-PON

FTTH

FTTB

VDSL2

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FTTH IMPLEMENTATION MODELS
Design based on CENELEC & ITU Guidelines

OPEN ACCESS MODEL & OPEN SERVICE MODEL
PON - Ethernet - SDH - P2P
any provider - any service/customer

Subscribers \( a1 \) and \( a2 \) obtain services from ISP A
Subscriber \( b \) obtains services from ISP B
Subscriber \( c \) obtains video service from ISP C

Solid lines represent fiber connections
Dashed lines represent logical connections
FTTx/FTTH study & design (infrastructure & services)
FTTx Study & Design

FTTH area ........... (urban, dense urban)
Houses passed .......... (e.g. 1.000 -10.000 -1M )
Infrastructure .......... (e.g. 300 – 3.000 houses connected, i.e. 30%)
Distribution points .......... (e.g. 3-4 points)
Services .......... (e.g. IPTV , HDTV, P2P, Super Bandwidth Internet for live stream, BMS)
How it is done!!

- Find Demographics
- Analyse Demographics & define the area & houses
- Analyse Maps
- Do site surveys - Analyse Photos (& 360 degrees videos)
- Measure meters - cables - splitters - distribution points
- Measure end users
- Design architecture, define project target values - KPIs
- Create Project timeplan & BOM
- Calculate costs per route/building/home passed & connected
- Speak to the Mayor
- Analyse and manage project rollout
- Apply & get licenses
- Supply materials
- Install materials
- Connect customers
- Create Project Documentation

Project management
Network Project Planning
Licensing
Outside Plant Construction
Intra-building Networks evaluations
Outside plant material
Network maintenance
Thank you for your attention