



VSOL PON training & ISP FTTx Solutions

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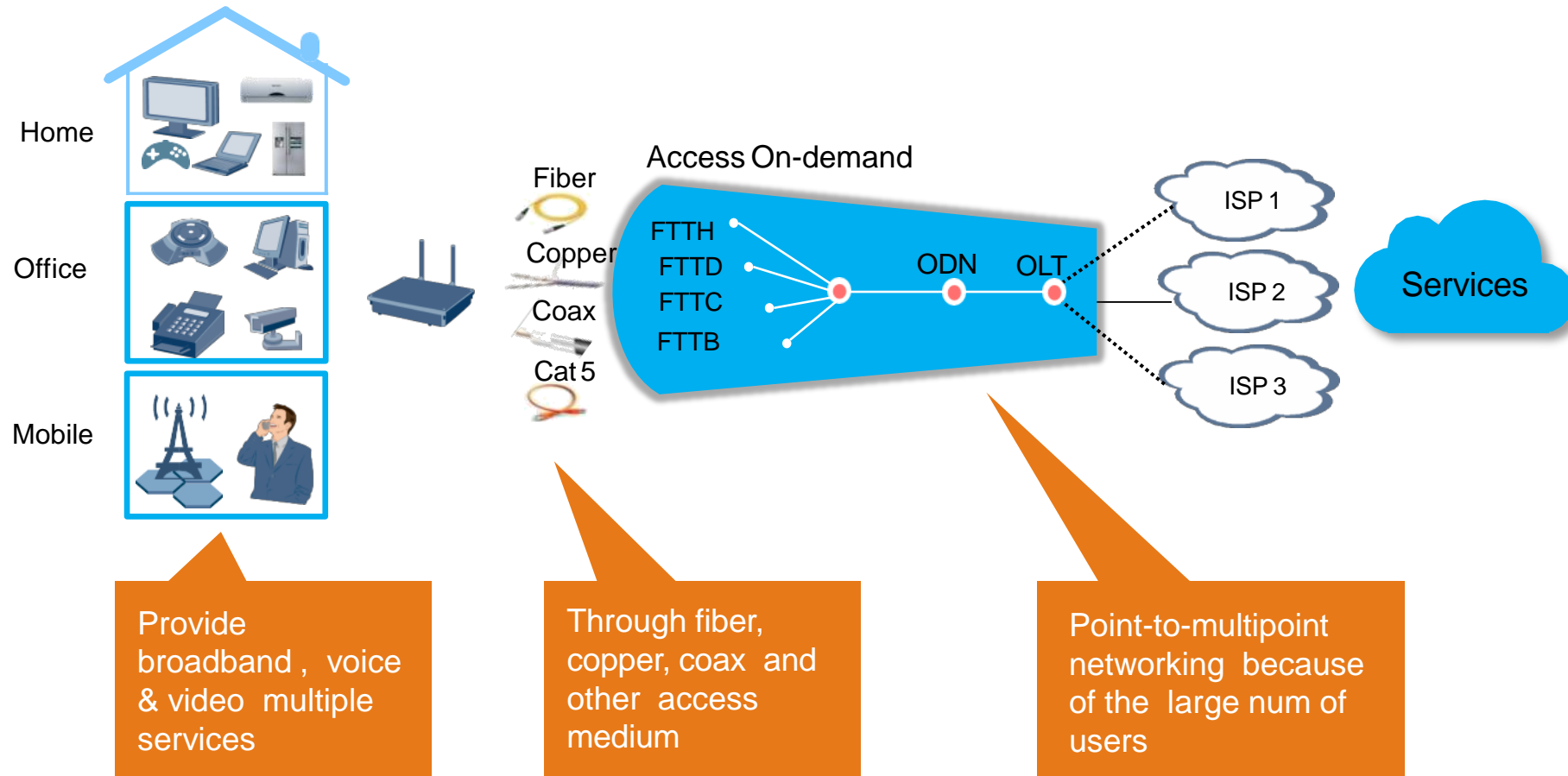
ACCESS THE WORLD

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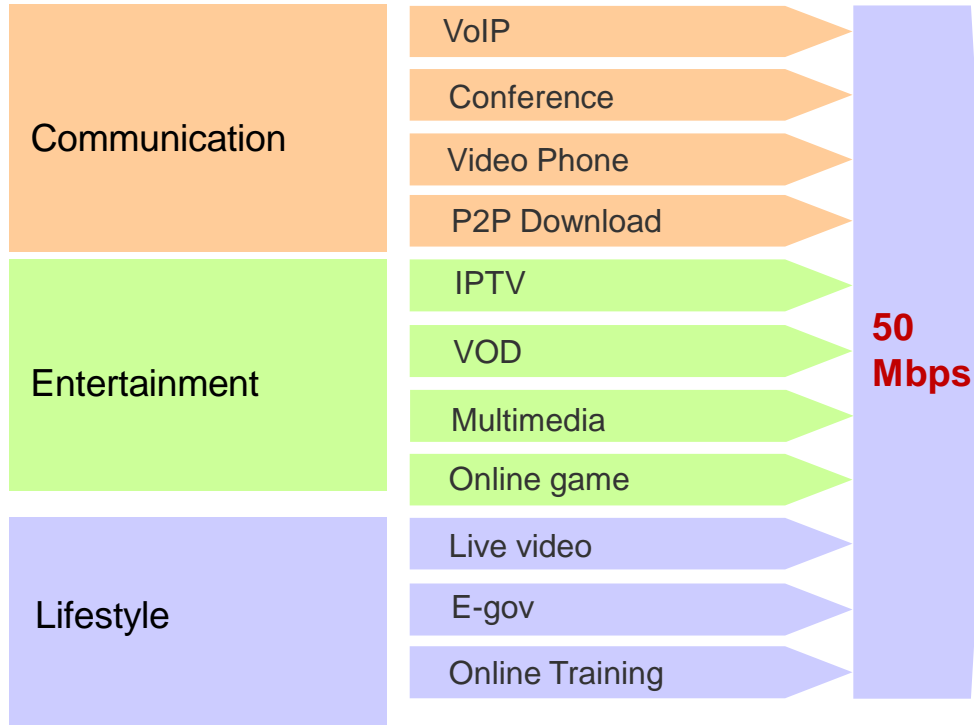
- 1 Challenges for ISP Network
- 2 VSOL Smart ISP Solution
- 3 Products & Success Stories

What is Access Network

Access Network is also called **last mile network**, which is closed to end users



Business develop drive ISP access network speed up

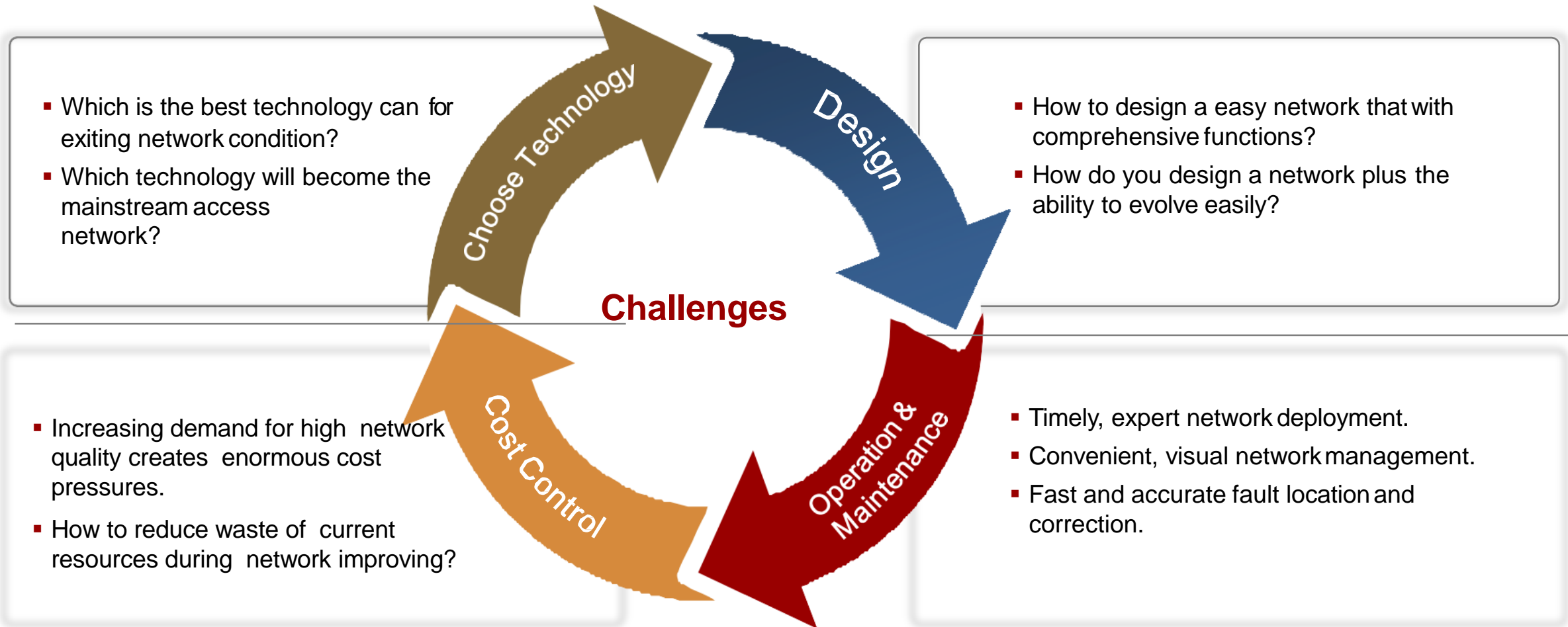


Broadband service and video service need high bandwidth

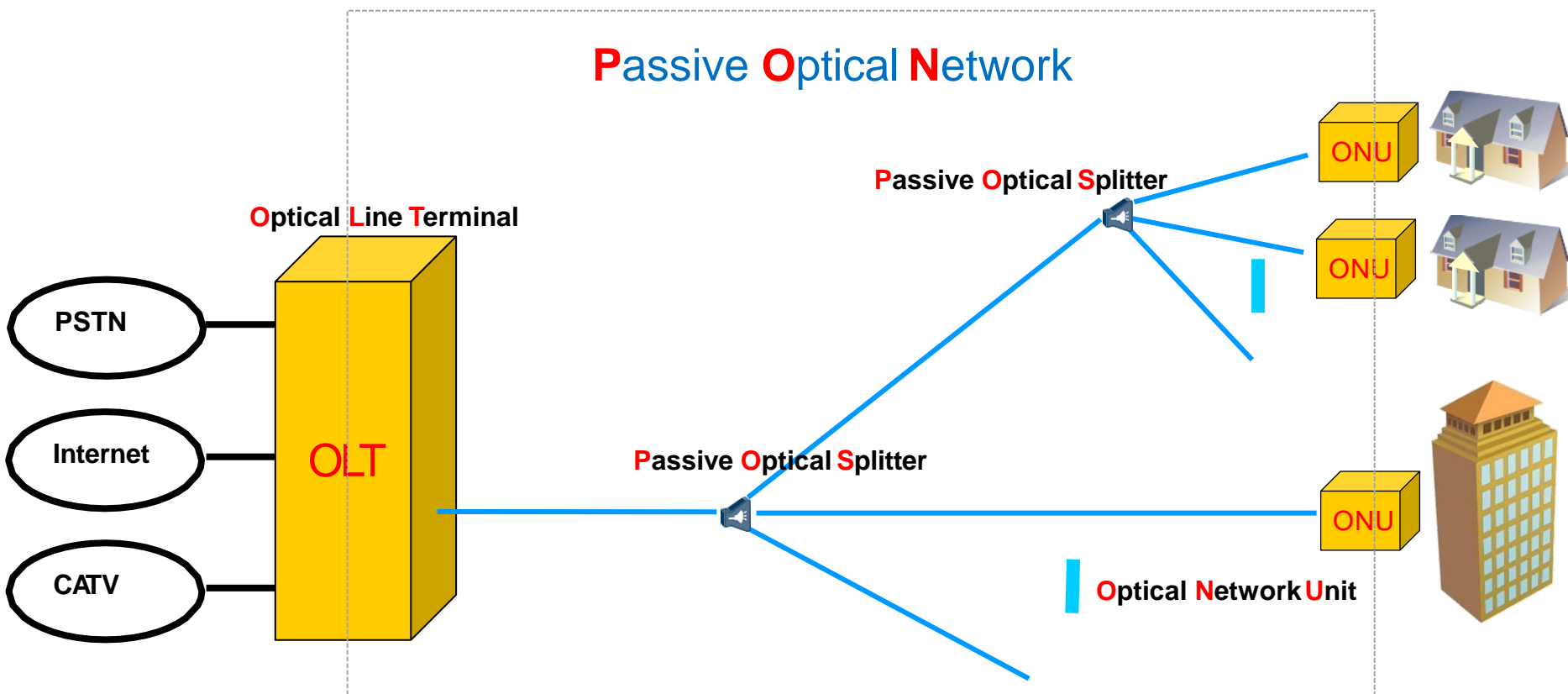


IPTV subscribers growing fast

Challenges for ISP Network



What is PON?

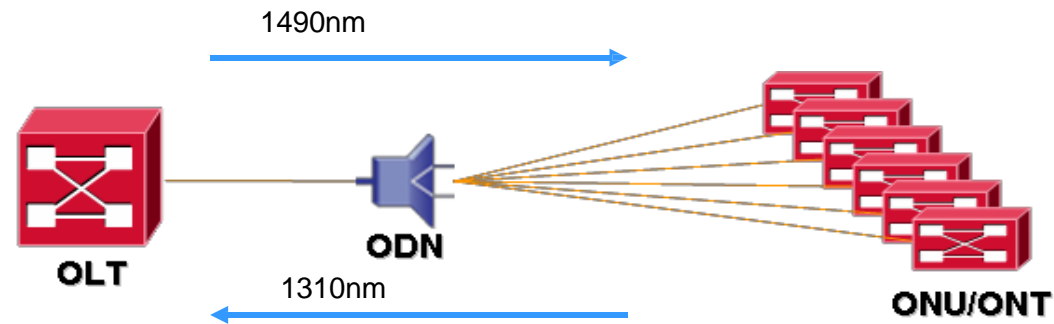


- A PON network is a point to multiple points passive optical network.
- A PON network consists of the Optical Line Terminal (OLT), Optical Network Unit (ONU), and Passive Optical Splitter.



XPON Technology –Data Multiplexing

- The XPON system uses the WDM technology to implement the bi-directional transmission over a single fiber



- Over a single optical fiber, to separate the Tx and Rx signals of multiple subscribers, the XPON system uses the following two multiplexing technologies:

The downstream data streams use the broadcast technology.

The upstream data streams use the TDMA technology.

XPON is mainstream broadband access



Open standards and mature Technology

- ITU-T/IEEE standards, evolution is clear and open.
- PON technology: robust and industry-leading.

High bandwidth and multiple services

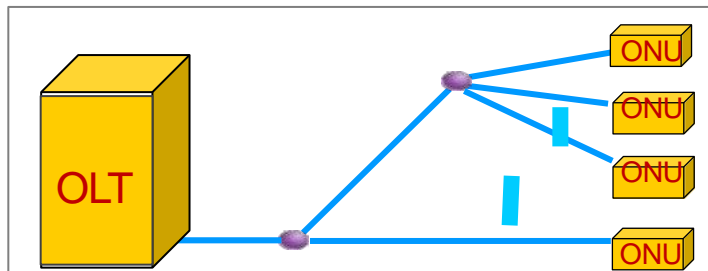
- Supports bi-directional high bandwidth, multiple service access, and a single network platform.
- Promotes bandwidth access to the entire society and is widely applied in national broadband projects, city optical networks, and the Internet of Things.



PON: Mainstream Broadband Access

High reliability and low cost

- Ensures high reliability with optical fiber and passive component networking.
- Simplifies cabling and reduces maintenance costs.



Flexible networking

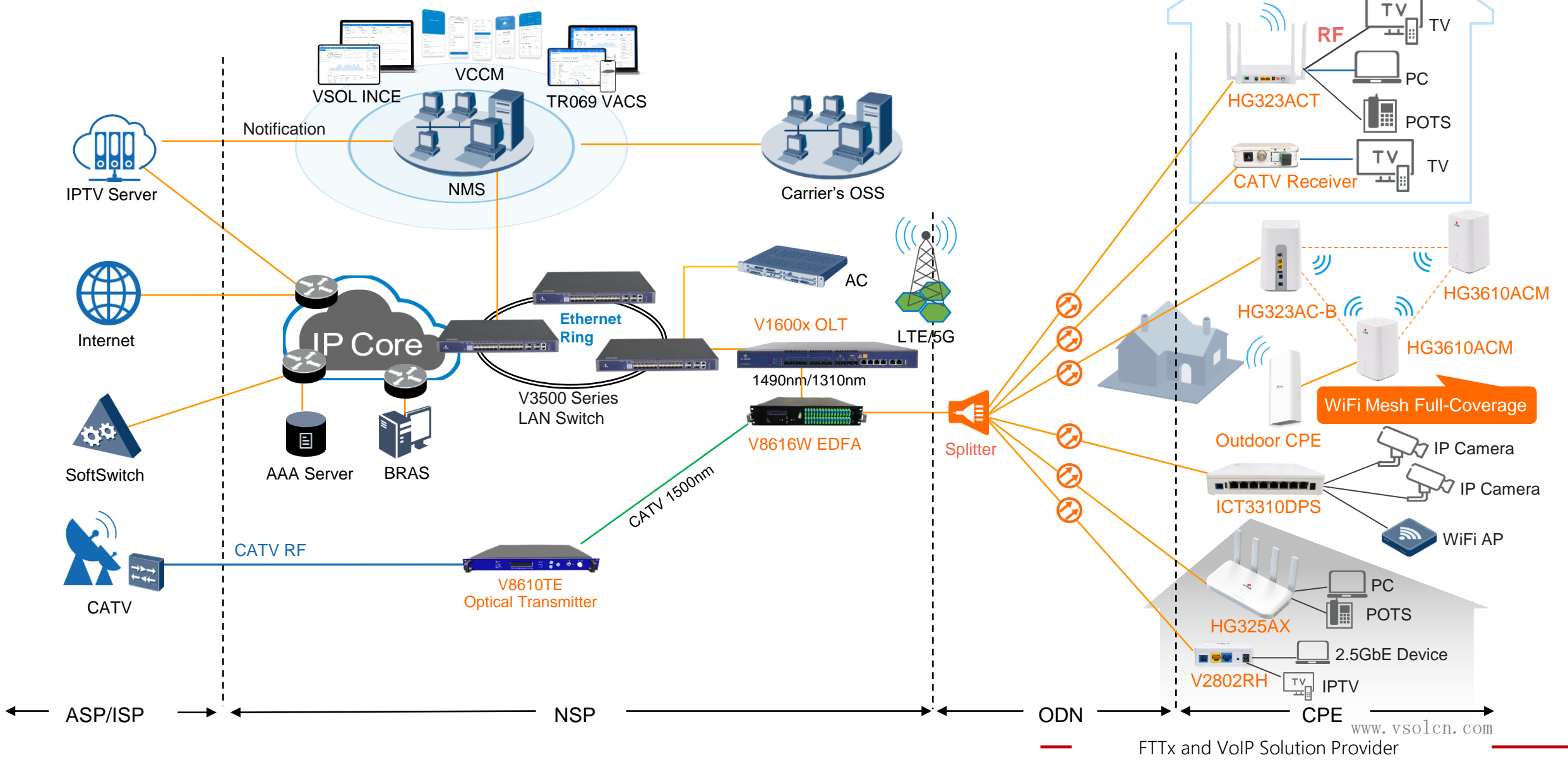
- Supports point-to-multipoint architecture and saves backbone optical fibers.
- Allows concurrent terminal access and enables networking flexibility.



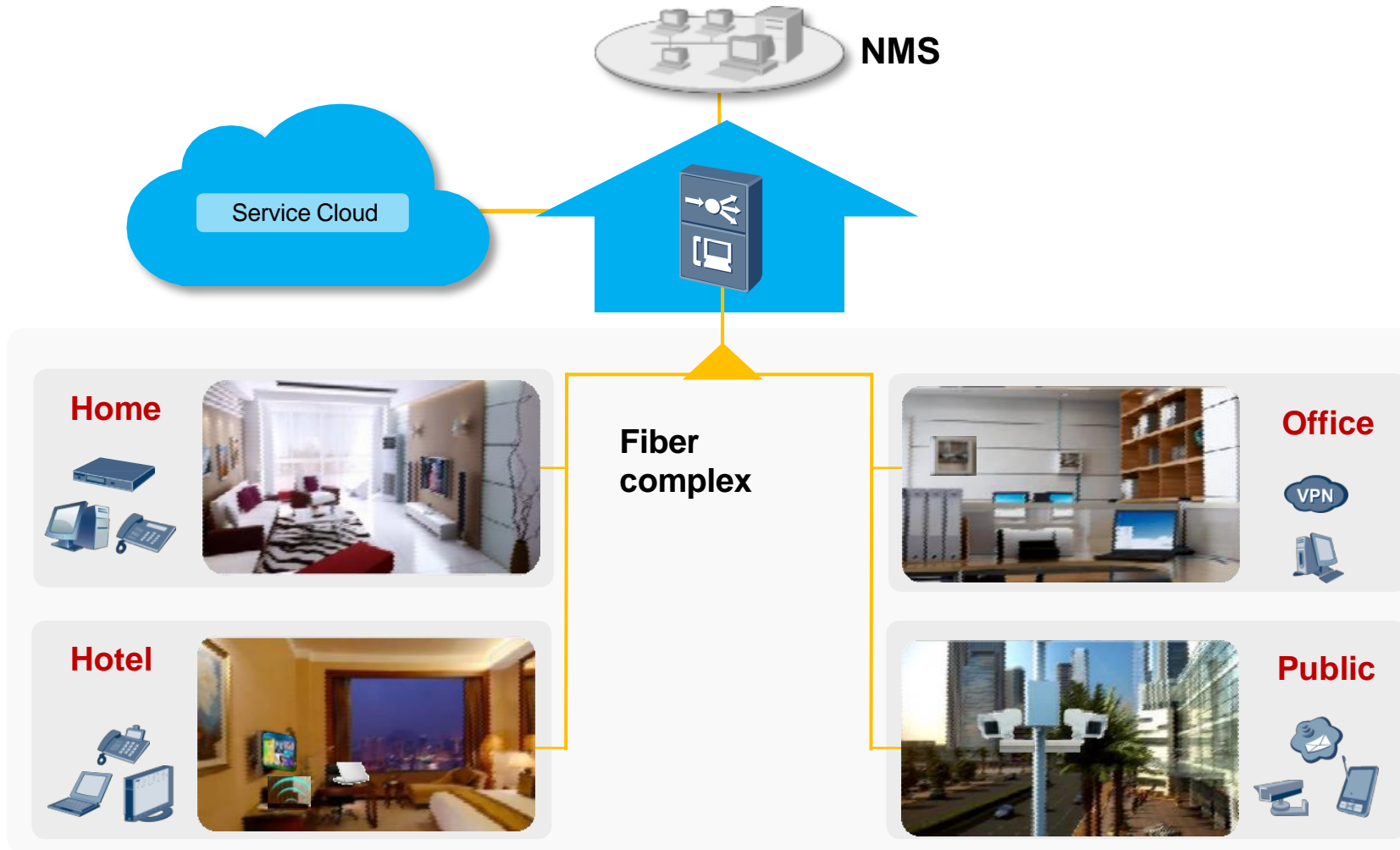
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VSOL Access Network Solution (PON)



Overview of Smart ISP solution



All-Fiber Access

Converged service high-speed access

Visible and Manageable

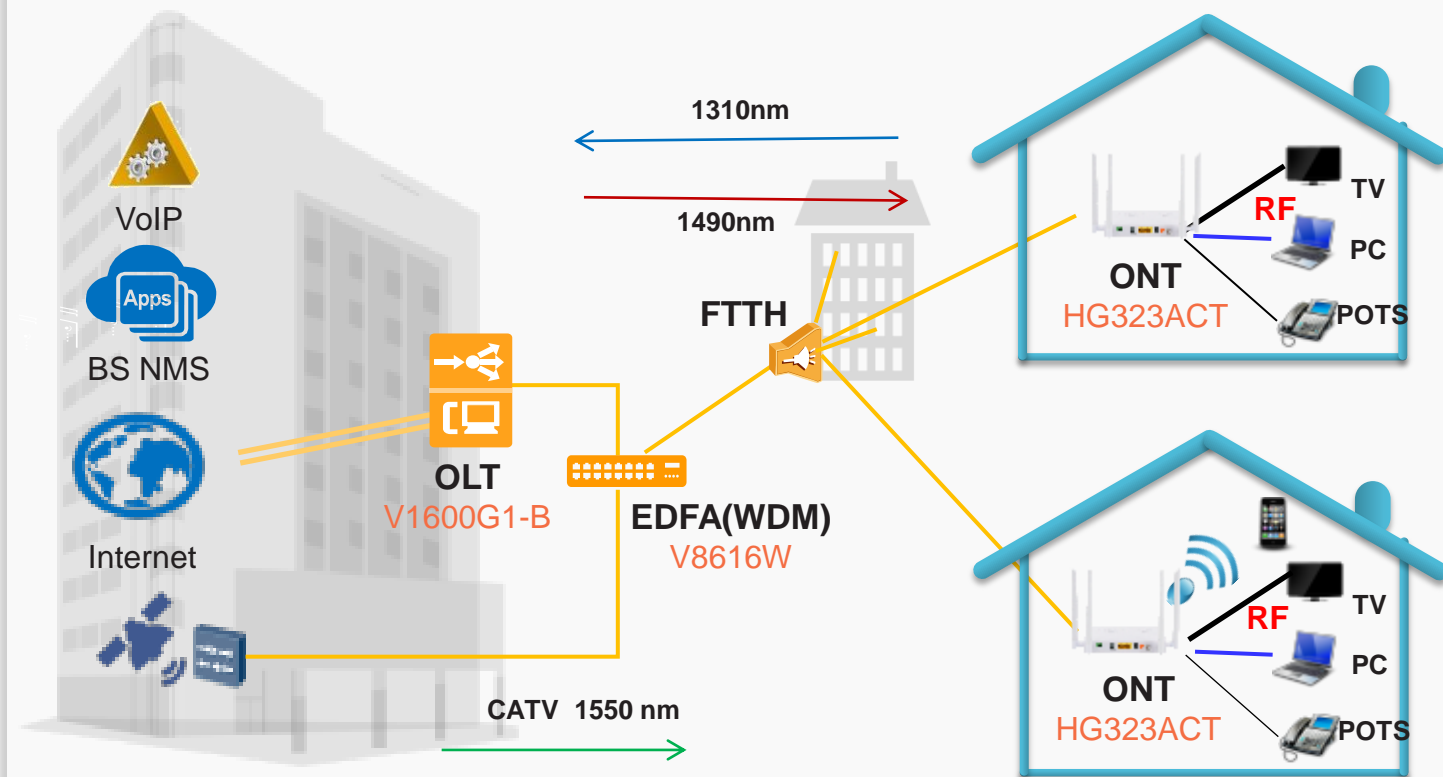
BS EMS&TR069-VACS&VCCM

Fast Deployment

Fast deploy, plug & play

FTTH Cable Operator CATV Solution

Network Architecture



Overview

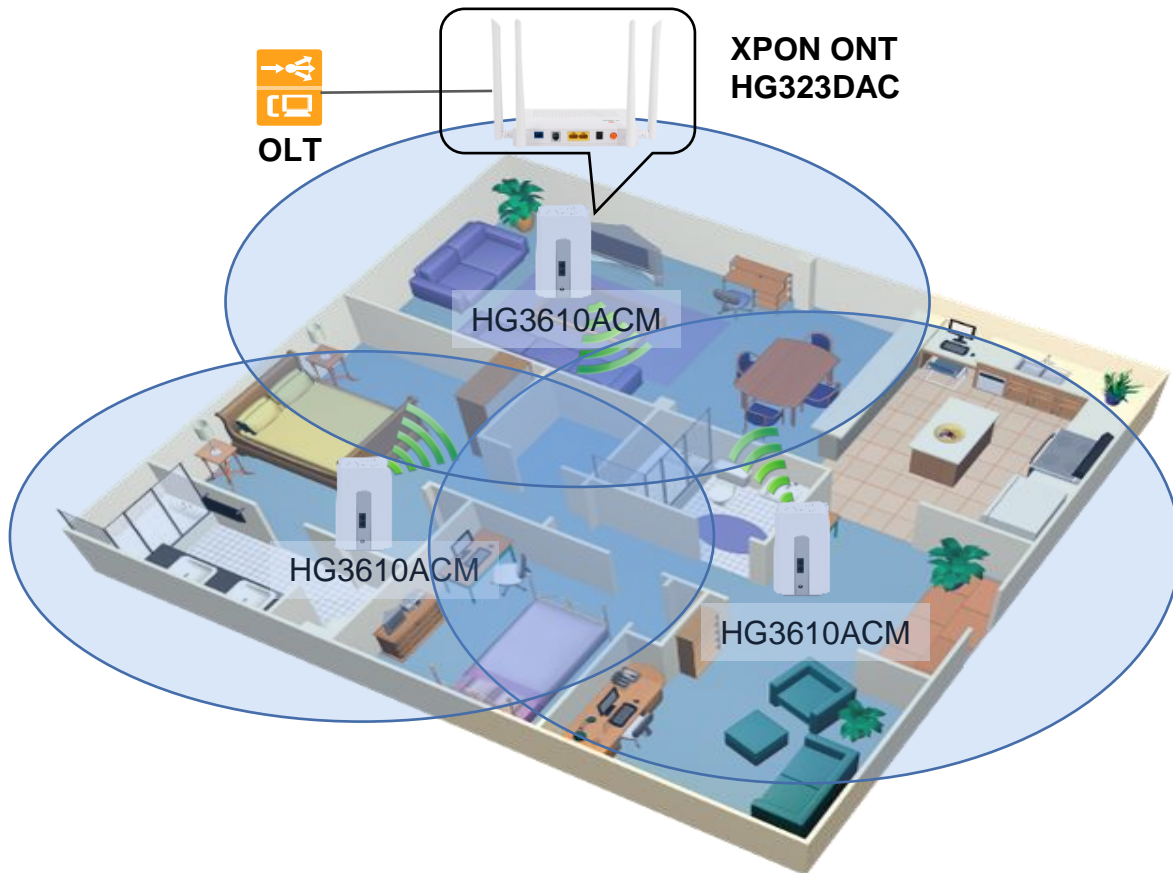
- On OLT side, CATV signals (wavelength 1550nm) are combined by WDM combiner, and the upstream and downstream wavelengths of GPON are transmitted on an optical fiber
- On ONT side, the built-in RF module of ONT converts CATV optical signals into electrical signals, and outputs them through the RF interface on ONT

Recommended Products

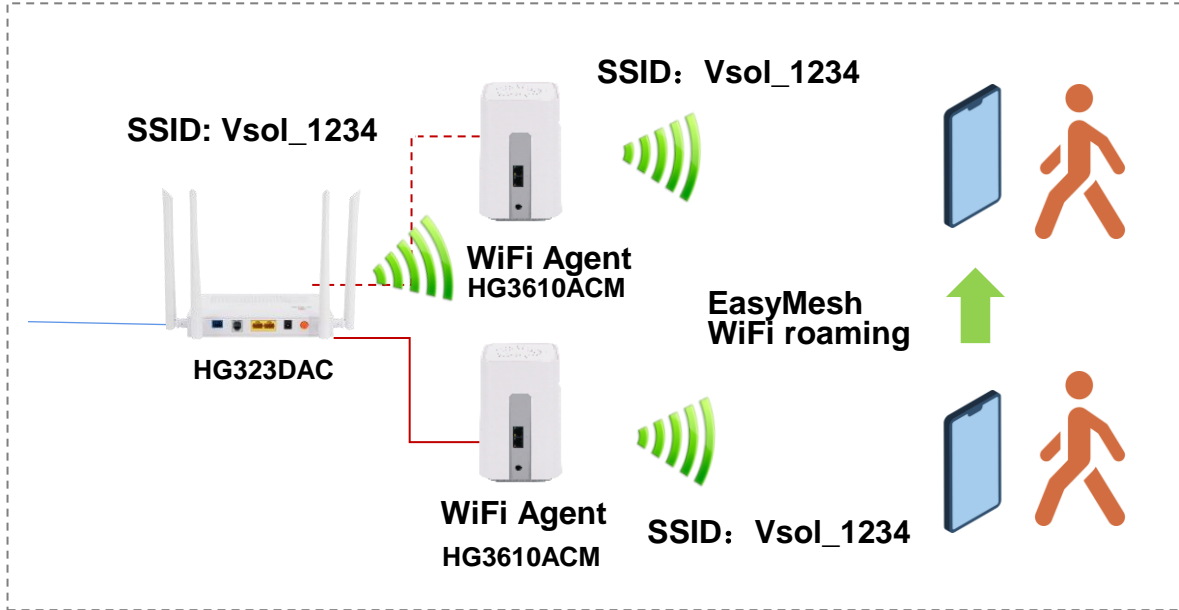
ONT HG323ACT		2*GE + 1*POTS+1*USB + 1* RF+WiFi (11ac)
EDFA V8616W-8P		1*RF(in)+8*PON(in)+8*PON(out)
OLT V1600G1-B		8*GPON+2*SFP+2*SFP/(SFP+) +4*GE

FTTH EasyMesh WiFi Full-Coverage Solution

Distributed WiFi Router EasyMesh Full-coverage enhancement solution makes WiFi signal everywhere

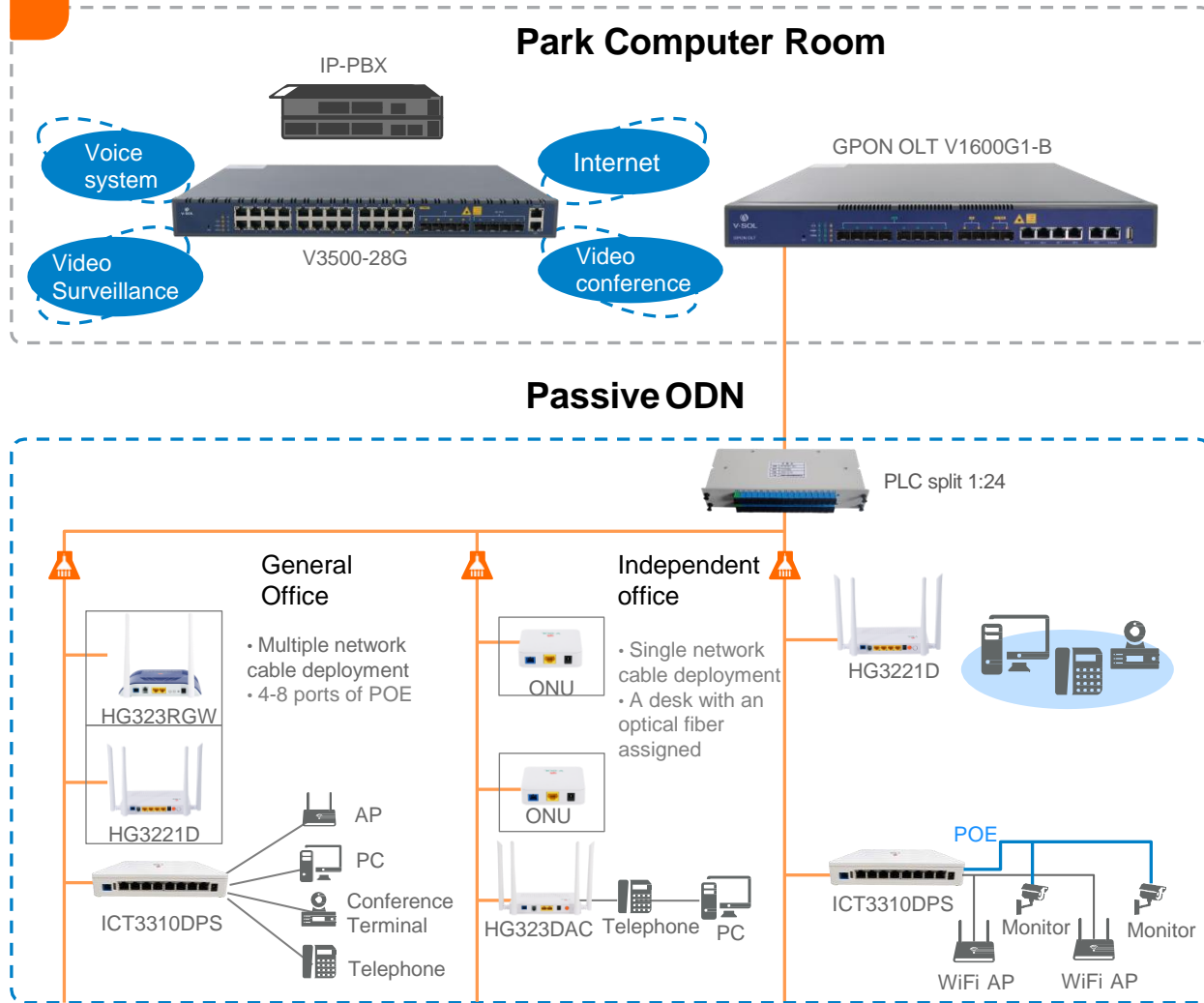


- ✓ Configure HG3610 WiFi to Controller or Agent on the WebUI
- ✓ WiFi devices can roam in the coverage area

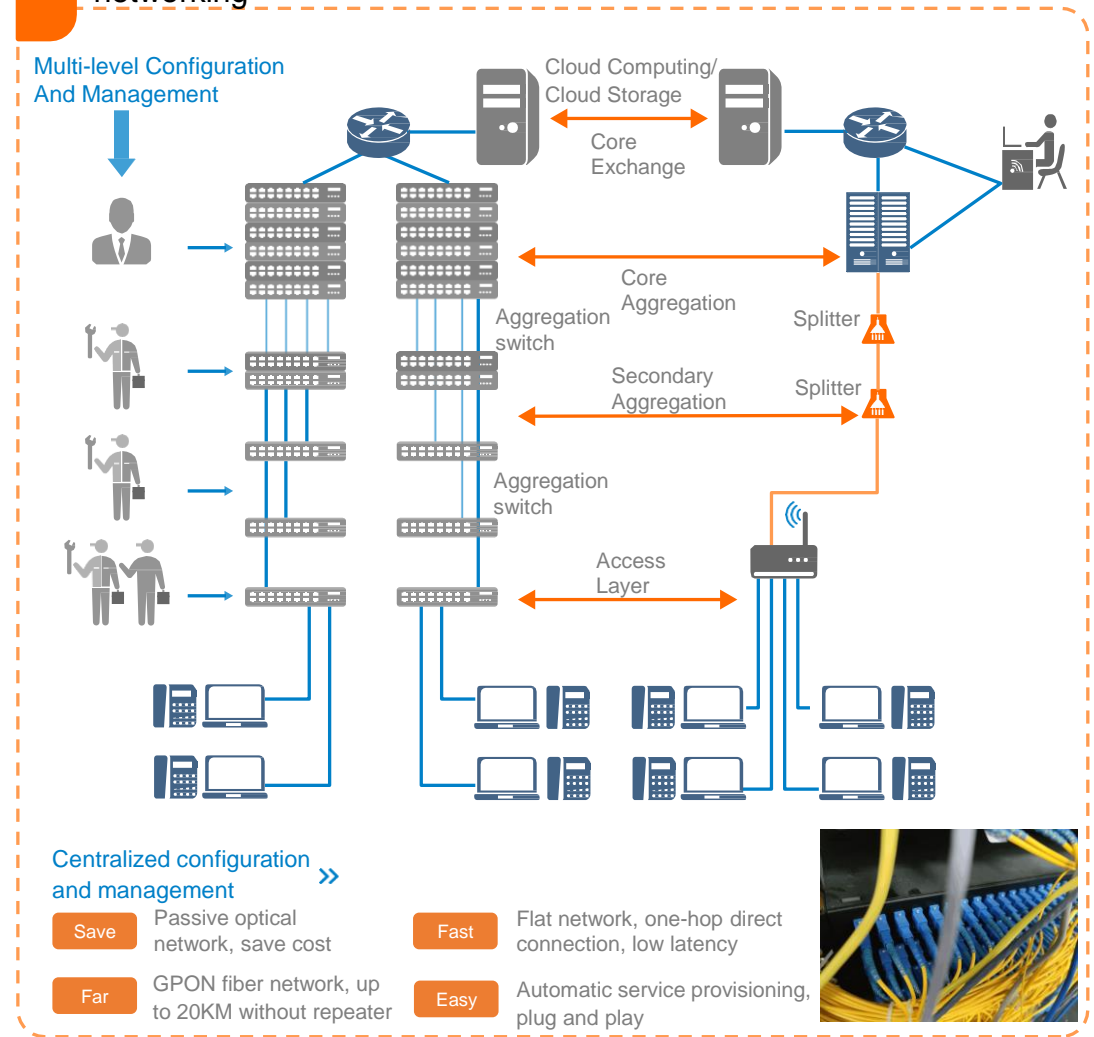


Enterprise POL Solution

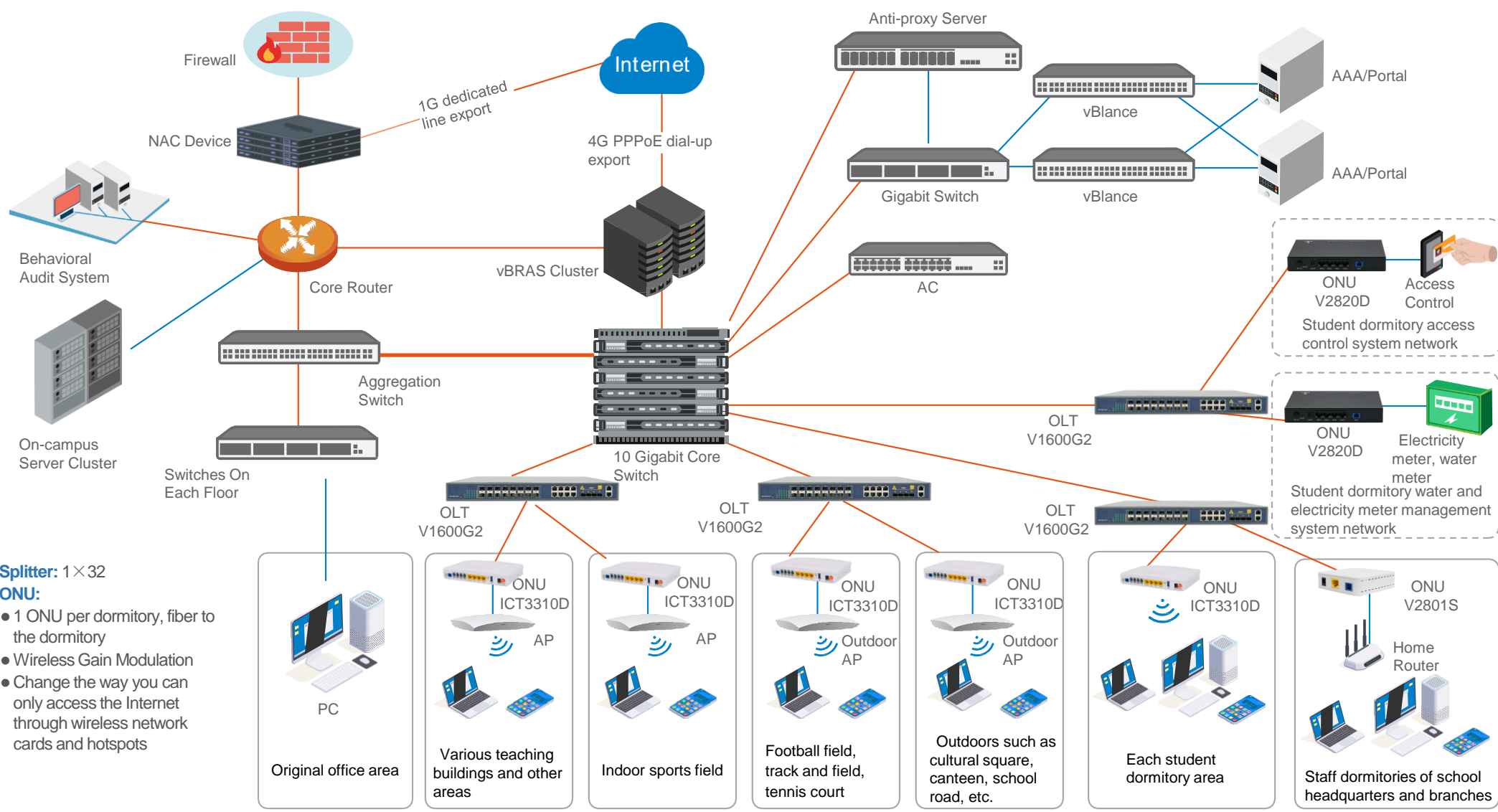
VSOL Enterprise POL Networking adopts all-fiber connection, The network is flattened, and the office multi-service is connected in a unified manner.



VSOL Enterprise POL Networking VS Traditional Enterprise switch networking



Campus All-Optical Network



- Splitter:** 1×32
ONU:
- 1 ONU per dormitory, fiber to the dormitory
 - Wireless Gain Modulation
 - Change the way you can only access the Internet through wireless network cards and hotspots

Advantages over traditional solutions

Simplified horizontal wiring of floors

- » Save space «
- » Reduce energy «
- » Easy to manage «

Centralized management, operation and maintenance

OLT(G2) + Splitter + ONU (ICT3310DPS)

Splitter in the corridor Inside in the splitter ONU in the student dormitory

Live Shooting

“Sharp Eyes” Project (Originally called Safe City) PON case



Upper Platform



Integrated Management and Control Platform

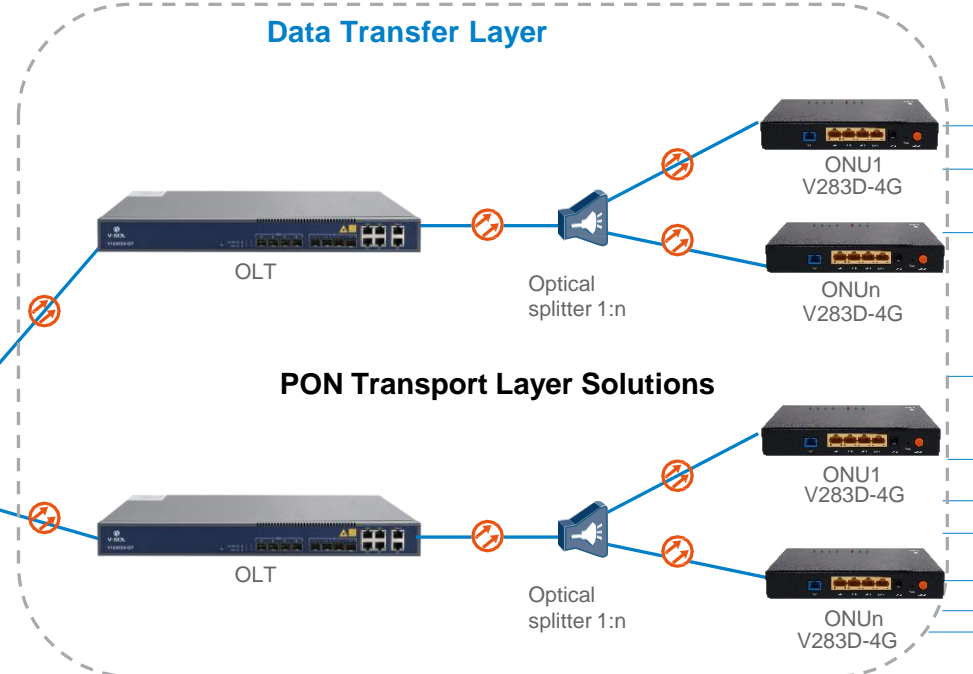
Video Surveillance Platform



Business Database



Data Center Switch



Data Transfer Layer

Data Transfer Layer

- Personnel Entry
- Vehicle Entrance and Exit
- Smart Access Control
- Face Capture
- Vehicle Snapshot
- Information Bayonet
- Mobile Patrol
- Video Surveillance
- Alarm Joint Defense
- Information Release

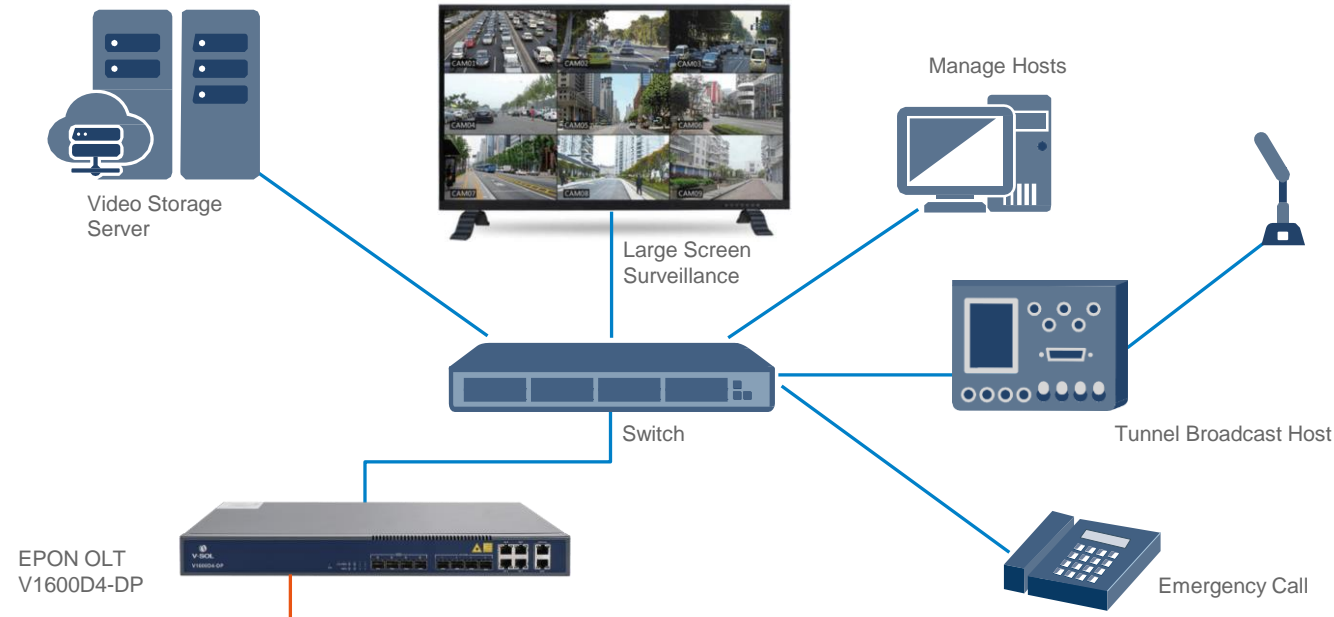


“Sharp Eyes” Project Street View

Program overview

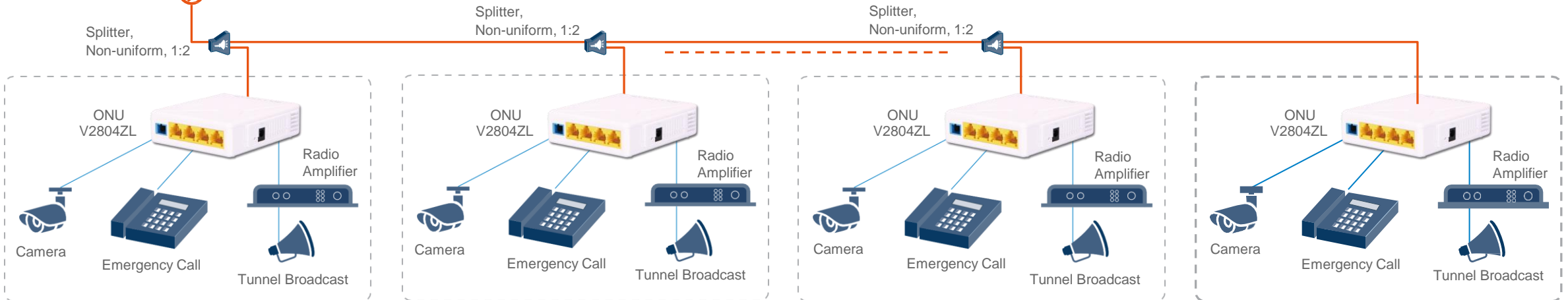
- » OLT+ONU mode reduces communication cables and facilitates maintenance.
- » From the Gigabit Ethernet port to the application subsystem, the data delay is short.
- » OLT 10 Gigabit uplink, video data is transmitted at wire speed.

Highway Tunnel Solutions

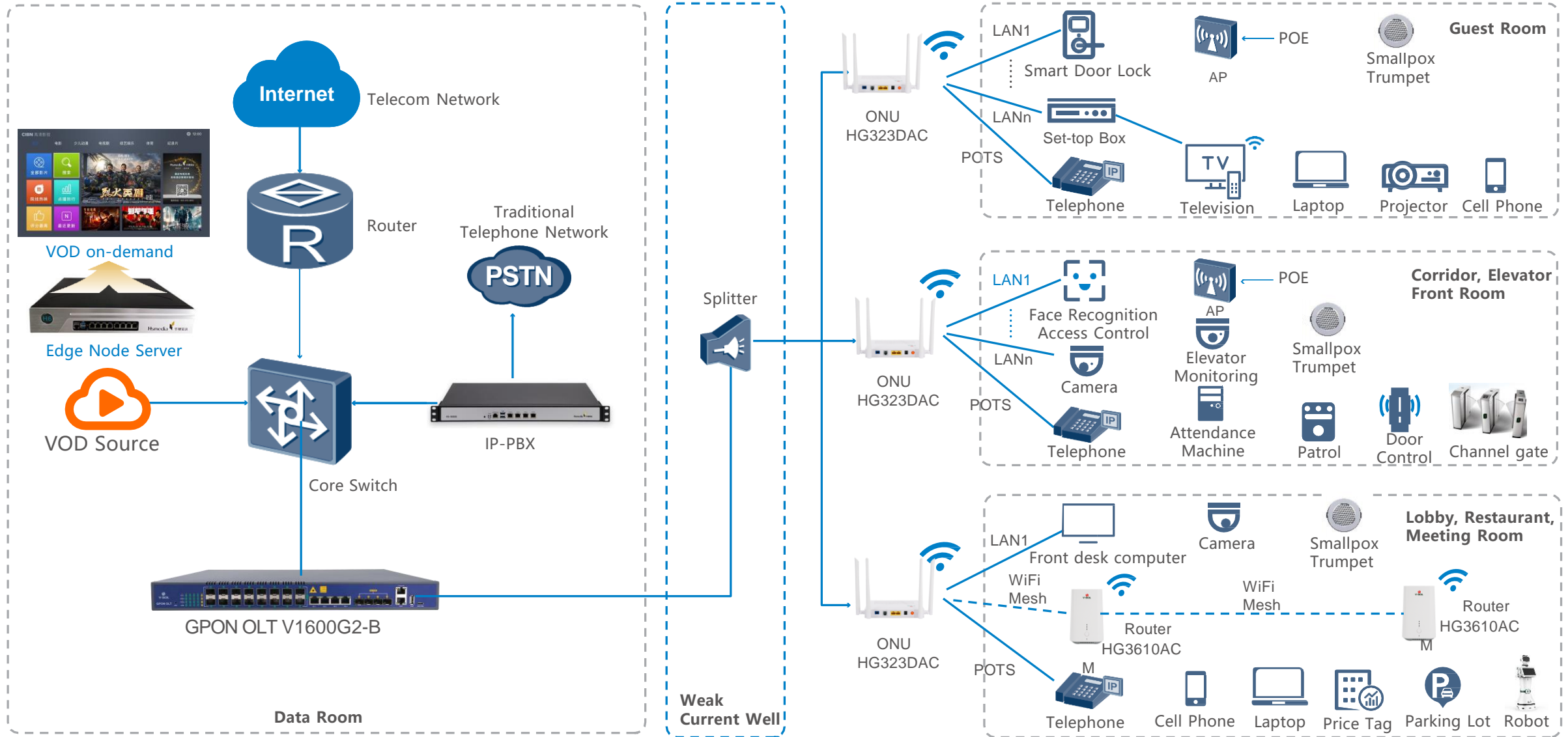


Solution Overview (EPON Solution)

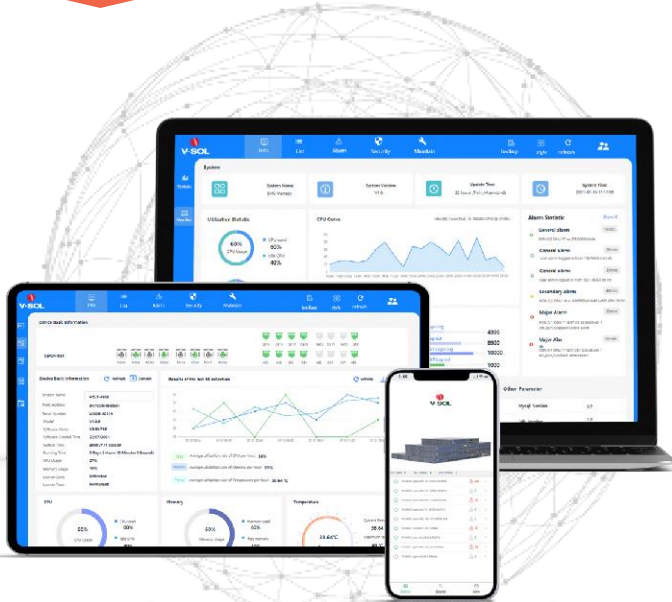
- » EPON technology (upstream and downstream data flow symmetry, cost advantage)
- » 1×2 non-uniform beam splitting, the strong side continues to be pulled away, and the weak side is connected to the ONU
- » Support video multicast transmission, one-key emergency call.



Hotel PON Network Solution



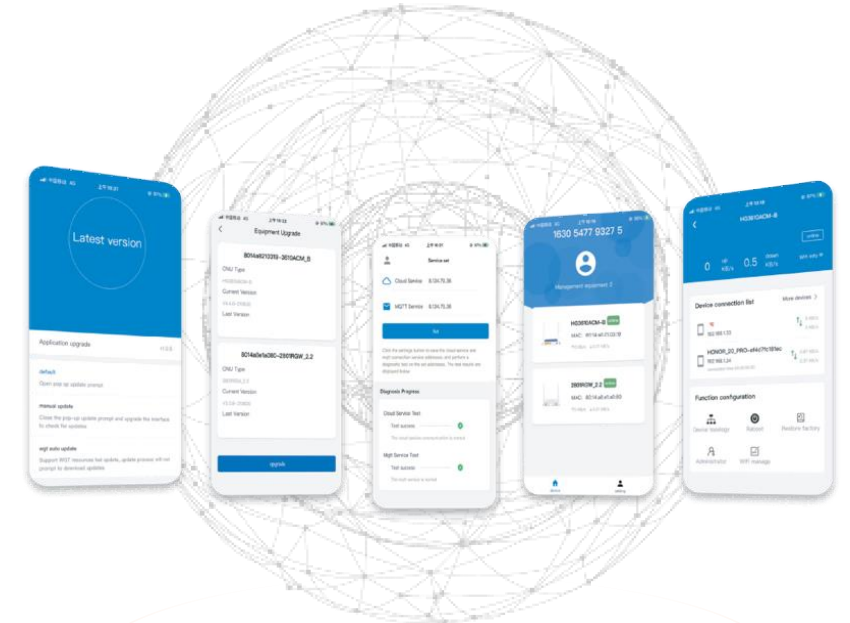
Note: Actually, the room uses ONU WiFi, not AP.



VSOL INCE



TR069-VACS

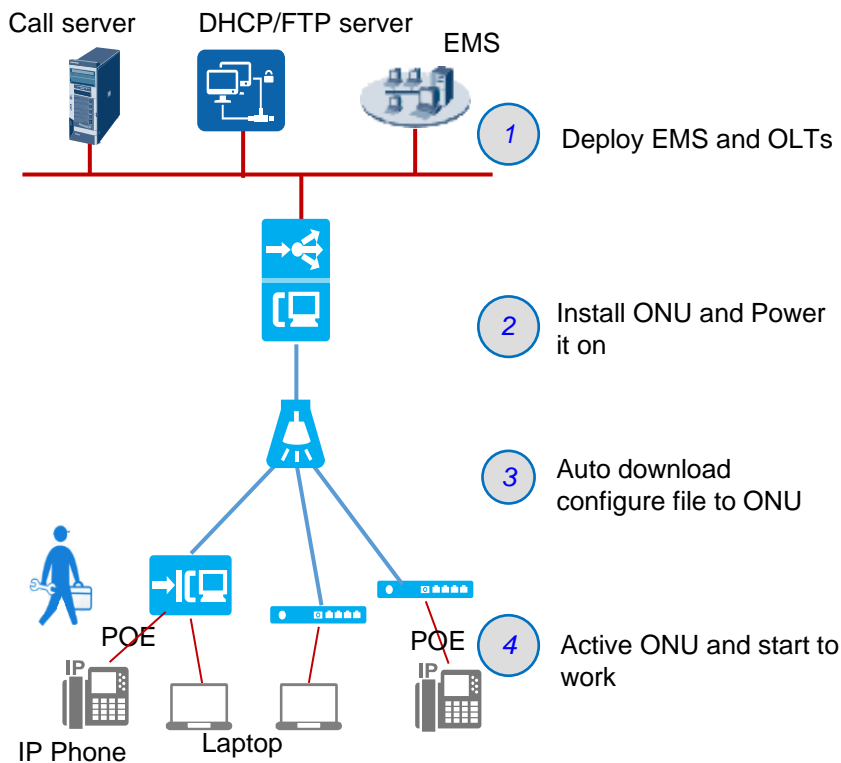


VST

- ✓ **Cloud management EMS(VSOL INCE)&TR069-VACS&VCCM Platform**
- ✓ **Auto/Manual Topology**
- ✓ **Auto find and configure ONU/ONT**

- ✓ **Support Window, Linux and APP**
- ✓ **O&M everywhere**
- ✓ **VCCM auto diagnosis and MQTT**

ONU plug and play, no on-site commissioning



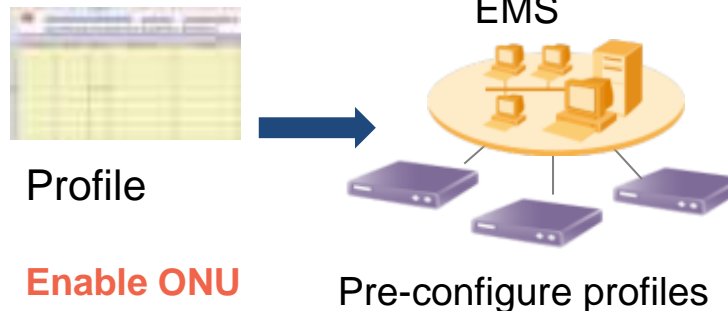
✔ Plug and play, auto configuration, just power on and then leave the site

✔ Saving time from 30 to 3 minutes

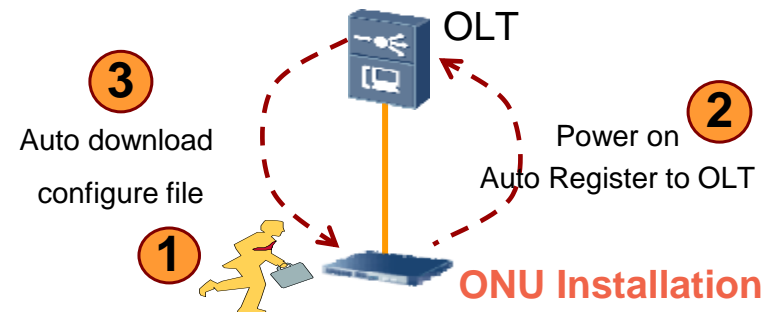
✔ Easy to use, saving the human resource costs

① Easy to Maintenance

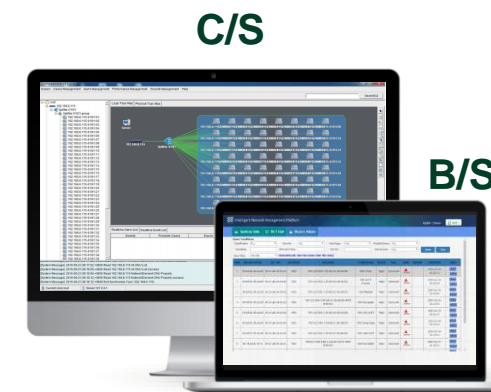
Auto provision, easy and Efficient



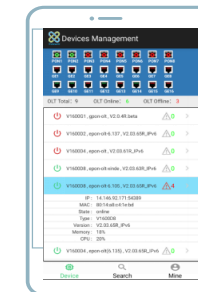
Plug and play



② Friendly UI



EMS APP



Benefits

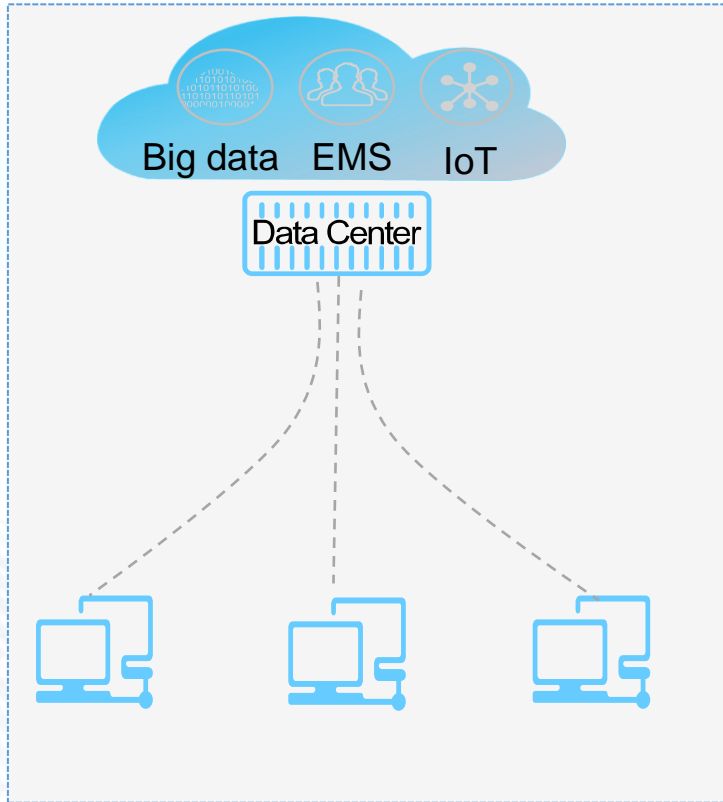
Simple Structure

All Fiber Access
Transmission distance up to 40km

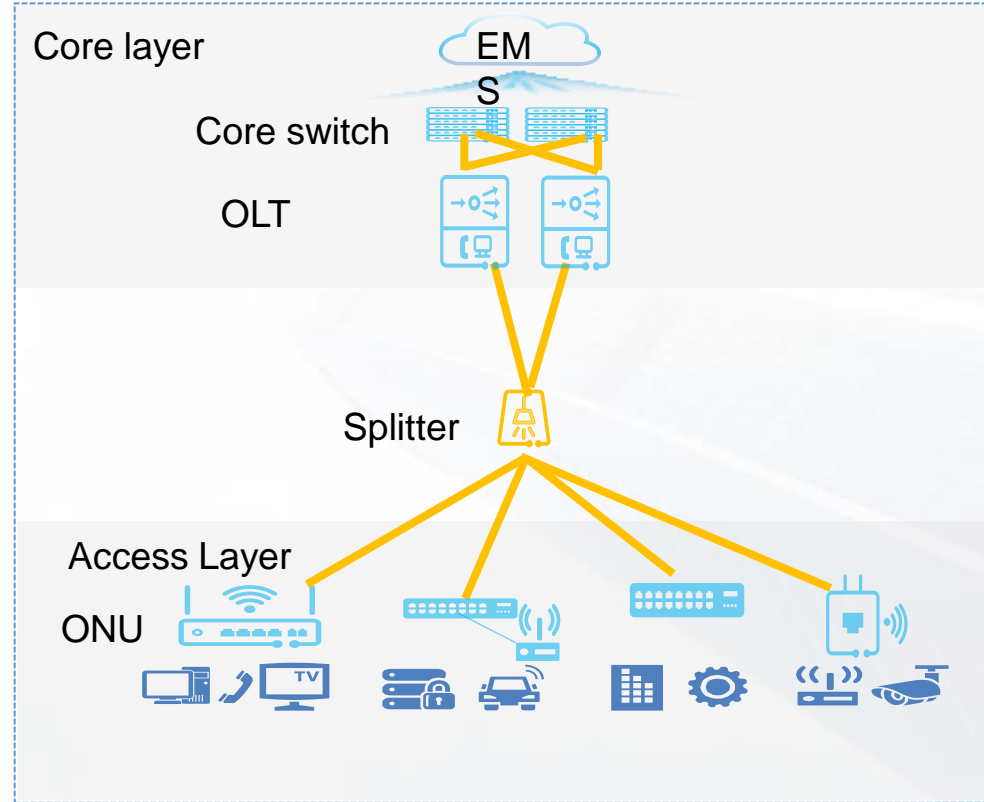
Passive Optical Network

Flat Structure
Super simple structure with lower latency

Cloud Based Structure



POL



Bandwidth Upgrade

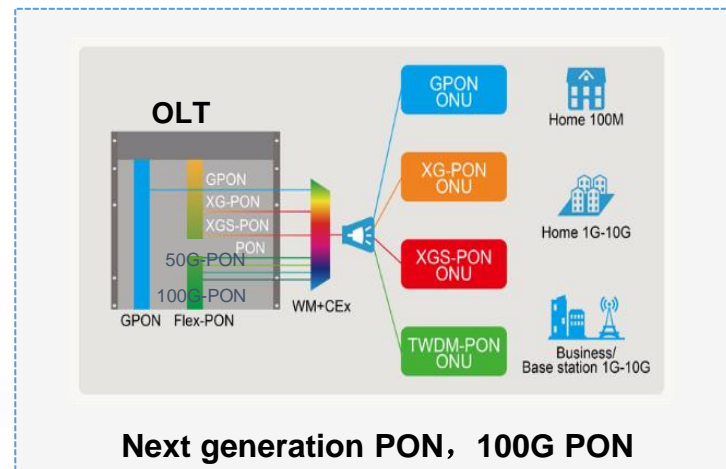
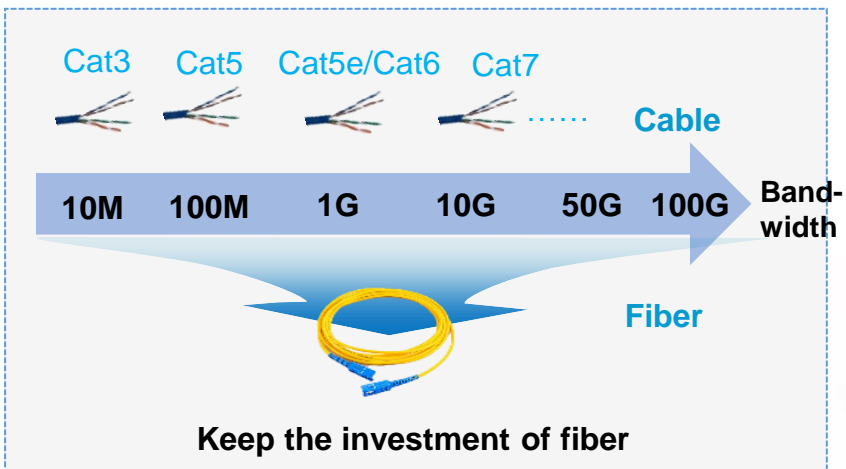
2.5G->10G->50G->100G

Bandwidth upgrade smoothly
without changing the platform and
network cabling

Multiple Services

Support multiple services in different
scenarios

Capability Expansion on Demand



Offices



Industry



Video surveillance



Campus



Building



IOT

Scenarios: **Campus, IoT, Enterprises, Surveillance**

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↑
EPON



V1600D4-BT

- 4*EPON
- 4*RJ45+4*SFP/SFP+
- Single Power supply + BBU
- or Dual AC/DC Power Modules



V1600D4-DP

- 4*EPON
- 4*RJ45+4*SFP/SFP+
- Dual AC/DC Power Modules



V1600D8

- 8*EPON
- 4*GE(RJ45)+4*GE(SFP/RJ45,Combo)
- 4*10GE(SFP+)
- Dual AC/DC Power Modules



V1600D16

- 16*EPON
- 4*GE(RJ45)
- 4*GE(SFP)+4*10GE(SFP+)
- Dual AC/DC Power Modules

GPON



V1600G0-B

- 4*GPON
- 2*GE(RJ45)
- 2*10GE/GE(SFP+)
- Dual AC/DC Power Modules



V1600G1-B

- 8*GPON
- 4*GE(RJ45)
- 2*GE(SFP)
- 2*10GE/GE(SFP+)
- Dual AC/DC Power Modules



V1600G1WEO-B

- 8*GPON
- 2*GE(SFP)
- 2*10GE/GE(SFP+)
- 1*1550nm(CATV IN)
- Dual Power Modules



V1600G2-B

- 16*GPON
- 4*GE(RJ45)
- 4*10GE/GE(SFP+)
- Dual AC/DC Power Modules



V5828

- 24*10GE/GE (SFP+) ports
- 4*100GE/40GE (QSFP28) ports



V3528E

- 24*GE (RJ45) ports
- 4*10GE/GE (SFP+) ports



V3528-P

- 24*GE (RJ45, POE) ports
- 4*10GE/GE (SFP+) ports



V3528EF

- 16*GE (SFP) ports
- 8*GE (SFP/RJ45 combo) ports
- 4*10GE/GE (SFP+) ports



V3552E

- 48*GE (RJ45) ports
- 4*10GE/GE (SFP+) ports



V3554-P

- 48*GE (RJ45,POE) ports
- 6*10GE/GE (SFP+) ports



V3500-28X

- 20*GE (SFP)ports
- 4*GE(SFP/RJ45 combo)ports
- 4*10GE/GE (SFP+) ports



V3500-28G

- 20*GE (RJ45)ports
- 4*GE(SFP/RJ45 combo)ports
- 4*10GE/GE (SFP+) ports

4 Ports OLT

8 Ports OLT

16 Ports OLT

L3 Lan Switch

Products

ONU/ONT



HGU



HG323DAC
2GE+1POTS+WIFI 5



HG323ACT
2GE+1POTS+WIFI5+
USB3.0+CATV

HG323DAC-B
2GE+1POTS+WIFI5
+USB3.0

HG3610ACM
Mesh Router
2GE+WIFI AC



HG323P
2GE+1POTS



HG325AX
4GE+1POTS+WIFI6
AX1800

HG5000-5G4AX
4GE+1POTS+WIFI6
AX1800, EasyMesh

CATV



V2804RET / V2804RGT
1GE+3FE+CATV (Routing+Single fiber)



V2801D V2 1GE+CATV
V2801D V3 1GE+CATV, Passive



V2802GWT
1GE+1FE+WIFI+CATV



V2804RGWT
1GE+3FE+WIFI+CATV



V2804ACT
4GE+USB3.0+WIFI 5+CATV

WIFI



V2801REW
1GE+WIFI



V2802EW
1GE+1FE+WIFI



V2801RGW
1GE+WIFI



V2802GW
1GE+1FE+WIFI



V2802DAC
2GE+WIFI AC



V2804N
1GE+3FE+WIFI



V2804DAC
4GE+WIFI AC+USB2.0+USB3.0



ICT3310D-8G8S2NAC
8GE+8POTS+WIFI AC

POE



V2801D-1GPD
1GE Reverse POE



V2810E-4PD/V2810G4PD
4FE Reverse POE



V2808PD-ZE / V2808PD-ZG
8FE Reverse POE
(Industrial Grade)



V2820D-1G3FPS
1GE+3FE (POE+)



ICT3310DPS-8G2NAC
8GE+WIFI AC(POE optional)



V2801SE 1GE



V2801SG/RD 1GE



V2802RH 1GE+2.5GbE



V2804Z-LE 4FE



V283D-4G 4GE



V2801F 1GE



ICT3310D-4G4S
4GE+4POTS

EPON/GPON ONU

XPON ONT

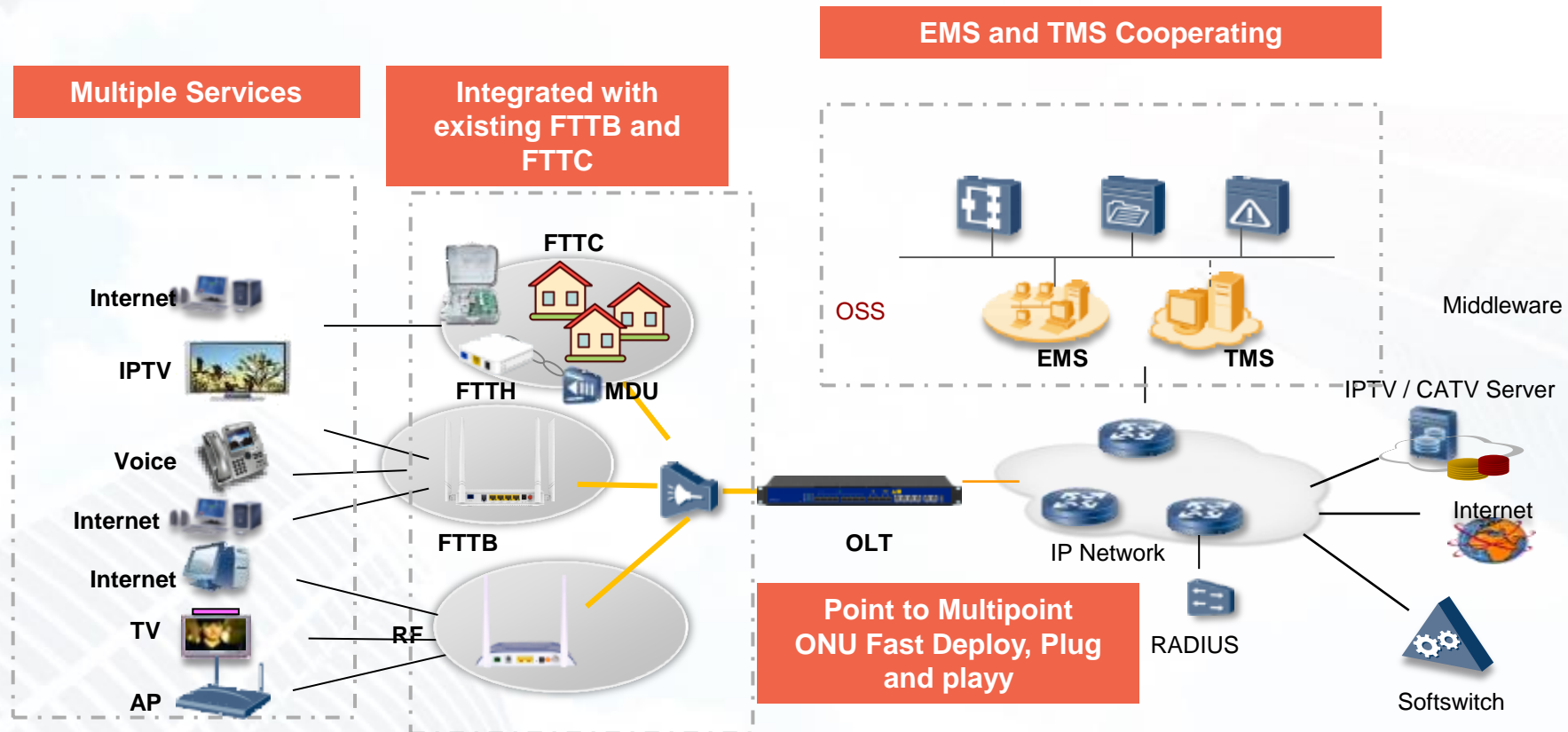
MDU Series
www.vsolcn.com

Success Case

VSOL Products help to build "Digital India"

Digital India is a flagship program of the Government of India with a vision to transform India into a digitally empowered society and knowledge economy.

VSOL PON products help India service providers include excitel, KCCL, Hathway, MTNL to build faster and innovative network.



**THE
END**
