



Open Fiber

FED2020 Tech Talk

24 September 2020

*“The new neutral network connecting Italy
to the future”*

open fiber
IL FUTURO HA UN NUOVO NOME.

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The oral report is complementary to the following pages, which therefore, do not make up the presentation by themselves

Open Fiber is the **Italian wholesale only** operator that is deploying a fiber-only state-of-the-art **new neutral network** and provides all telco operators with **best-in-class FTTH access and FTTB transmission services** dedicated to Consumers, SMEs, Large enterprises, Data Centers and Internet Providers, ensuring **fair conditions and non-discriminatory access**.



Open Fiber is the biggest-ever project financing deal for a fiber optic network in the EMEA region...

OPEN FIBER IS THE BIGGEST-EVER PROJECT FINANCING FOR A FIBER OPTIC NETWORK IN THE EMEA REGION

	Sep 2020		Target (2023)
Big cities	149	➤	271
Medium/Small towns	828	➤	7.500
Investments	~ € 3 Bln	➤	€ 7 Bln
Dwellings / Premises	~9 Mln	➤	19 Mln



More than 180 operators have already chosen Open Fiber....

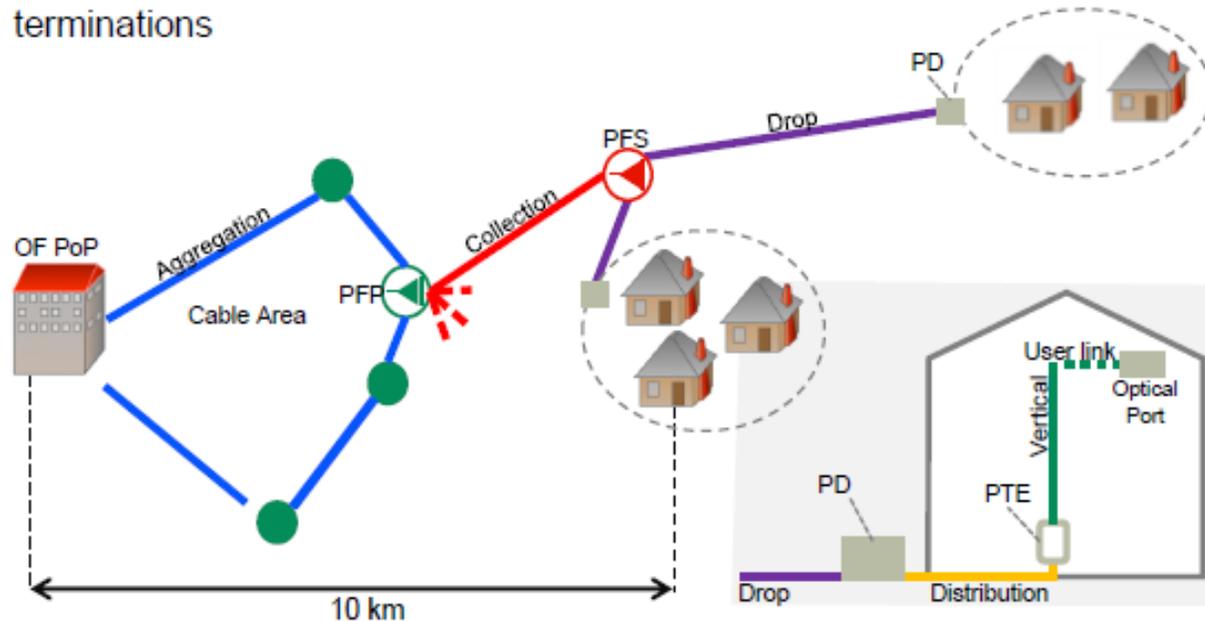
MORE THAN 180 OPERATORS HAVE ALREADY CHOSEN OPEN FIBER



Picture does not include all the logo

OPEN FIBER GPON ARCHITECTURE IS IDEAL FOR SUPPORTING FUTURE STREAMING SOLUTIONS

Hierarchical fiber access network designed to implement FTTB/H network services for multiple retail operators offering Passive Optical Network (PON) and Point-to-Point fiber links from the Open Fiber Point of Presence (PoP) to customer premises and terminations

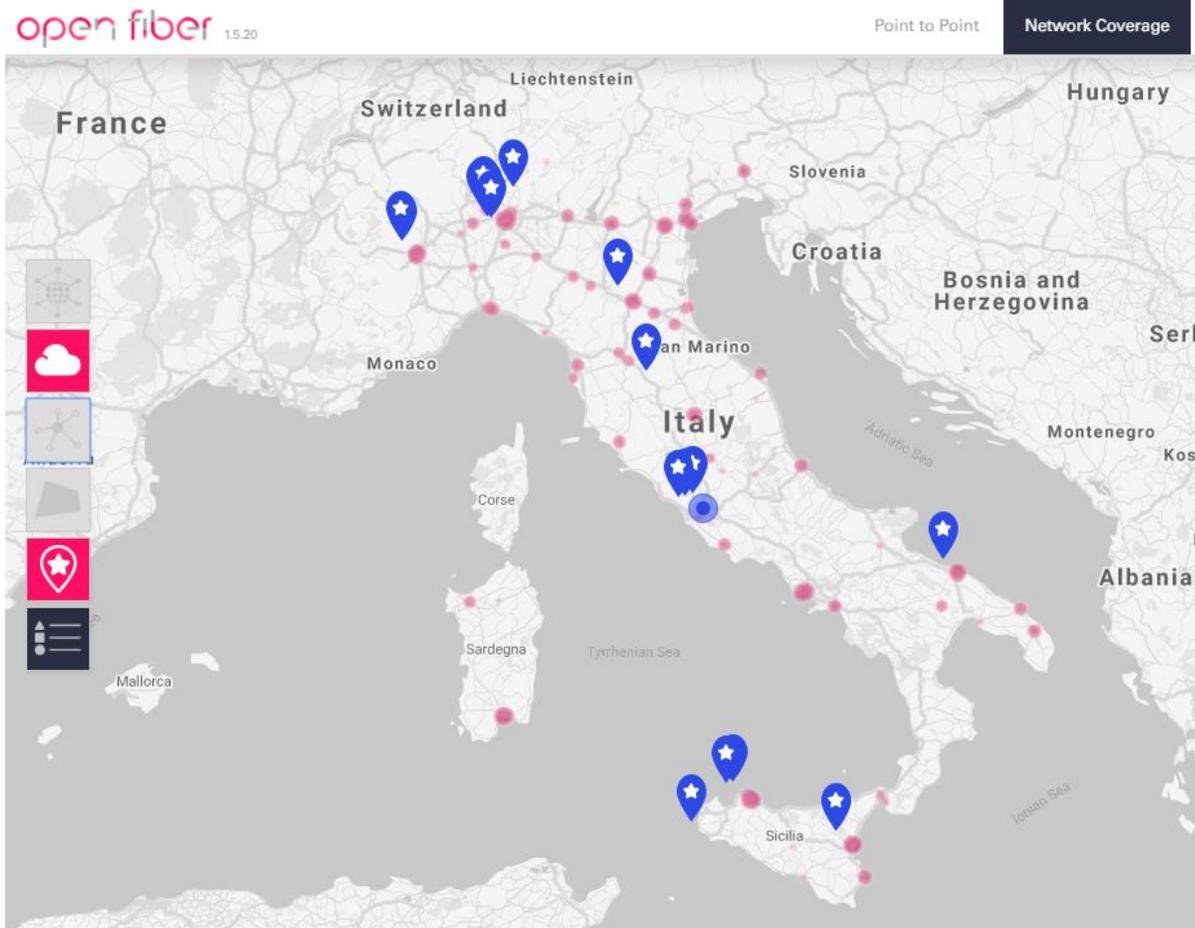


- ❖ More than 1.300 Points of Presence in Italy
- ❖ More than 300 Points of Presence serving the big cities
- ❖ No active equipment in the access network with the highest possible availability
- ❖ The PoPs have space and energy available to host customer equipment (main telcos already hosted)
- ❖ The entire network is monitored centrally: thanks to OTDR techniques it is possible to precisely identify the location of any fault

Open Fiber Network is present in the main points of internet traffic connection...



OPEN FIBER NETWORK IS PRESENT IN THE MAIN POINTS OF INTERNET TRAFFIC CONNECTION



Internet eXchange Points

MIX (all buildings), NaMeX, ToPIX, BoIX

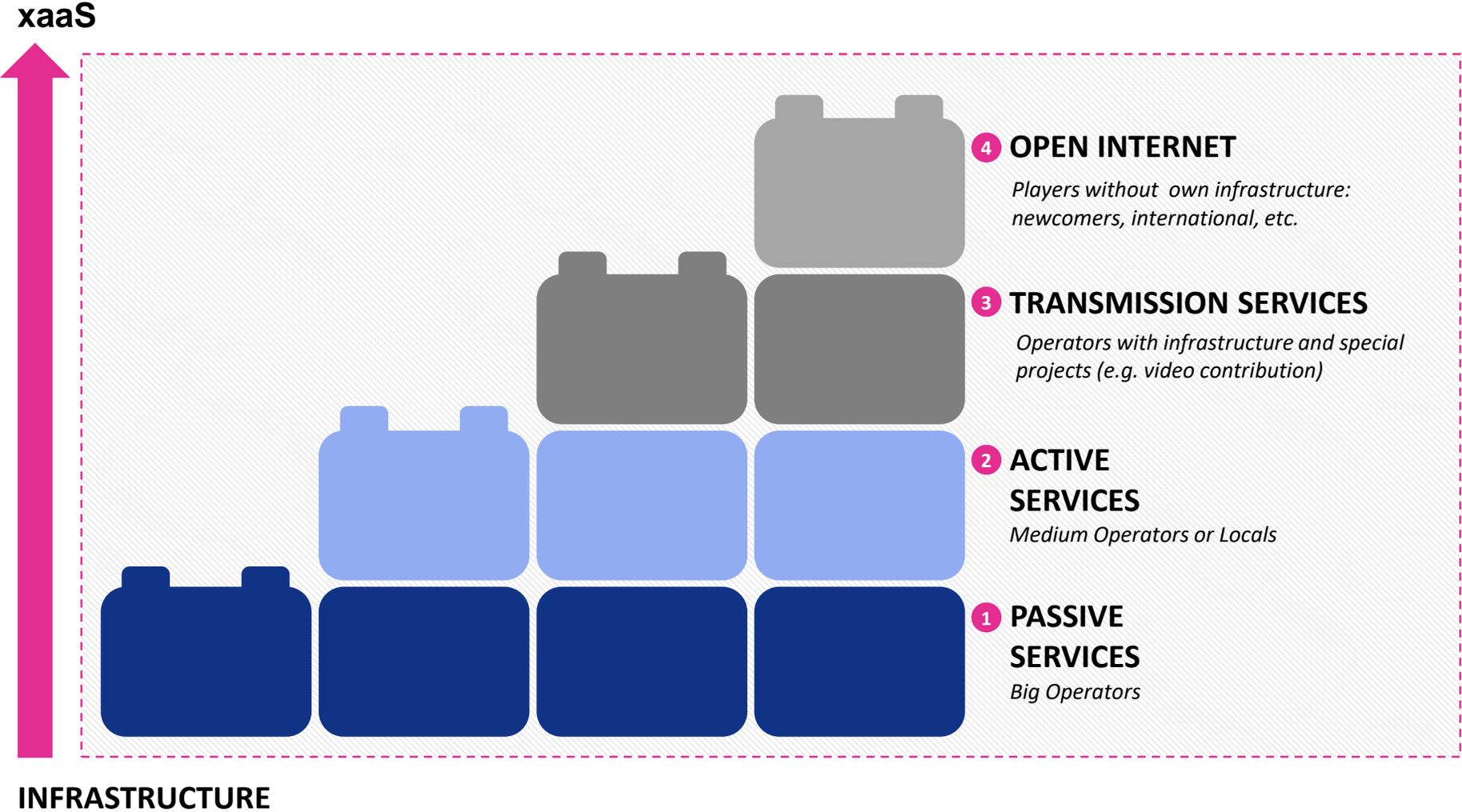
Data Centres

Aruba, Data4, Equinix, I-Net, IT.Gate
SuperNAP, Verizon and many others

Submarine Cable Landing Stations

Bari, Catania, Mazara del Vallo, Palermo

OPEN FIBER SERVICE LAYERS



UTILITY



TOWERCO



TELCO

OPEN INTERNET: THE EASIEST SOLUTION TO EXPERIENCE THE POWER OF FTTH

UltraBroadBand Direct Internet Access with no need to invest in network infrastructure.



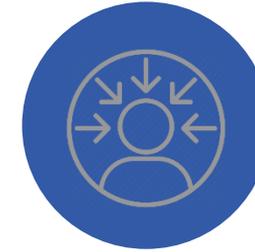
Best in Class

FTTH with 1Gbps/300Mbps
Tier 1 performance cutting edge transmission network
Highly Available
CDN interconnection with main Internet eXchange



Ready To Service

Low set-up time for the Client
No network infrastructure needed
Simple cost managed low CAPEX (only variable costs)



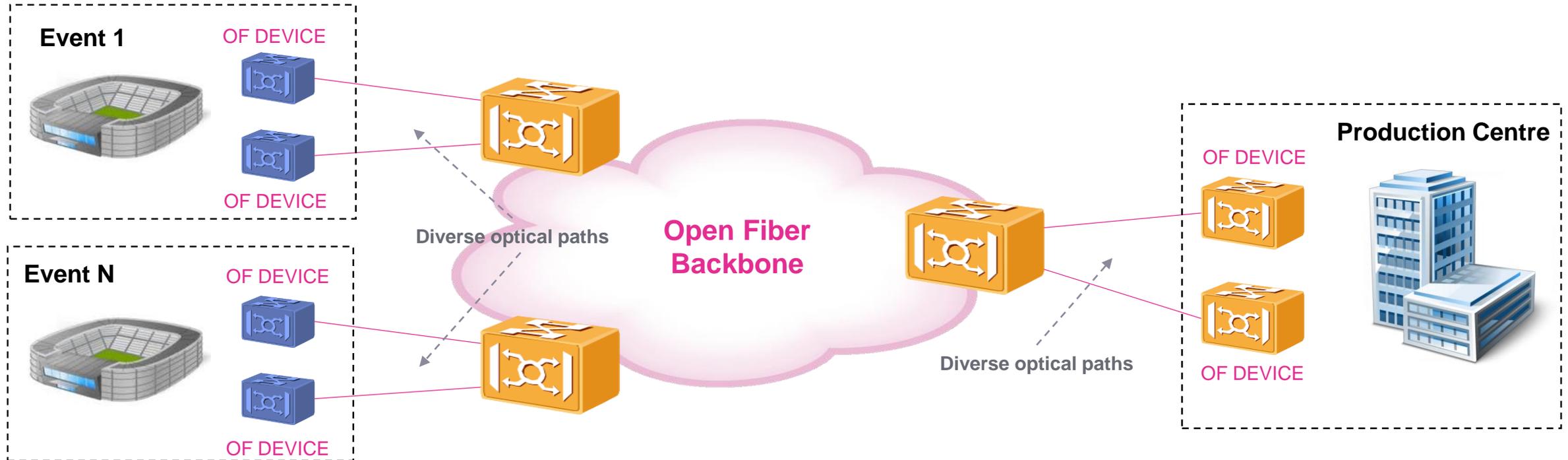
Customer eXperience

24x7 Monitoring service with proactive analysis services
Customized activation processes with digital tracking activities
Fully managed CPE

Ready for OTT...

OPEN FIBER CUTTING EDGE TRANSMISSION SERVICES ENABLE TODAY NEW SERVICE MODELS

Highly convenient, cutting-edge performance and quick to deploy **10G and 100G** Optical Transport Services **ALL the points of interest in Italy**, including Stadium, Sport Centers, Theaters, Production Centers, are already in the Open Fiber Network Roll-Out





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Thank You

24 September 2020

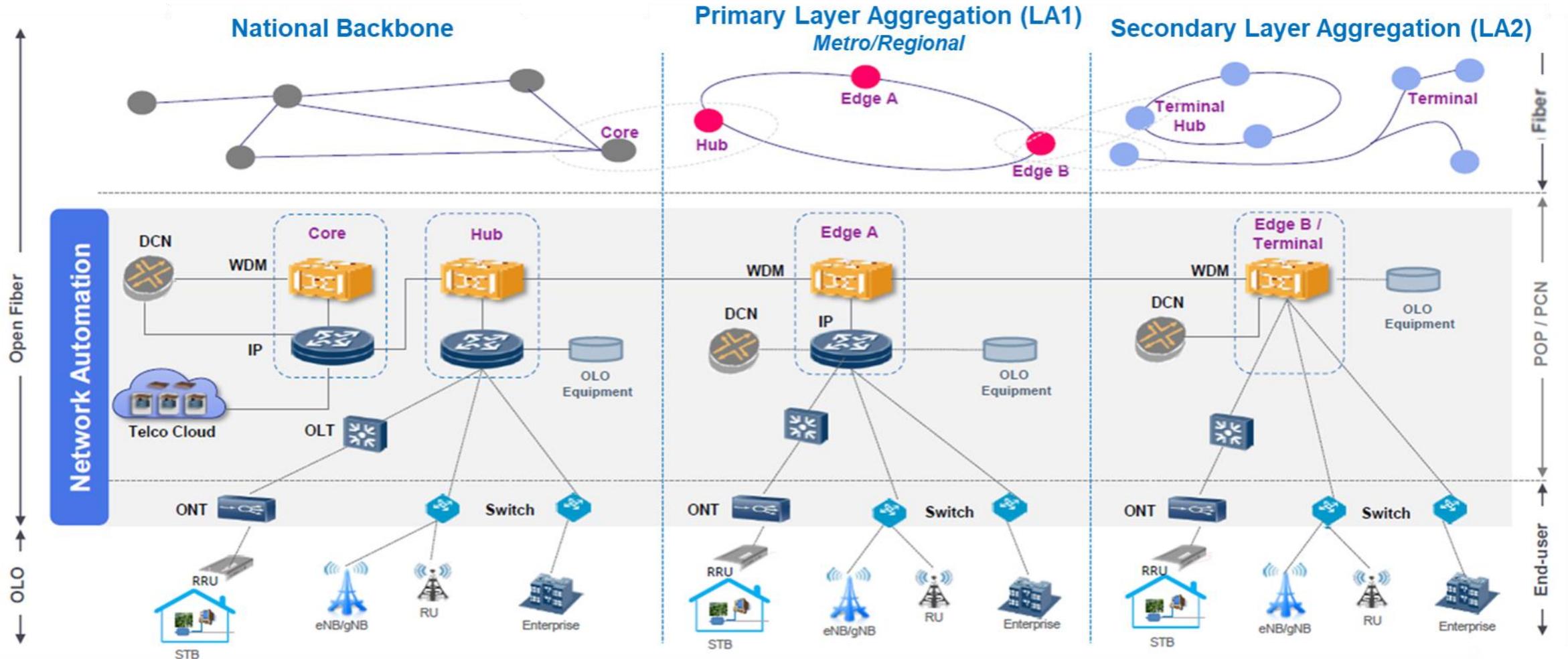
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BACKUP

OPEN FIBER NETWORK

More than 47.000 Km optical fiber only, more than 1.300 Points of Presence spread all around Italy



NATIONAL BACKBONE
MORE THAN 6.000KM FIBER, 17POPs

METRO/ REGIONAL LAYER:
MORE THAN 15.500KM FIBER, +300POPs

CITY LAYER:
MORE THAN 25.500KM FIBER, +1000POPs



IL FUTURO HA UN NUOVO NOME.

OPEN FIBER NATIONAL BACKBONE



17 PoP ROADM in mesh configuration

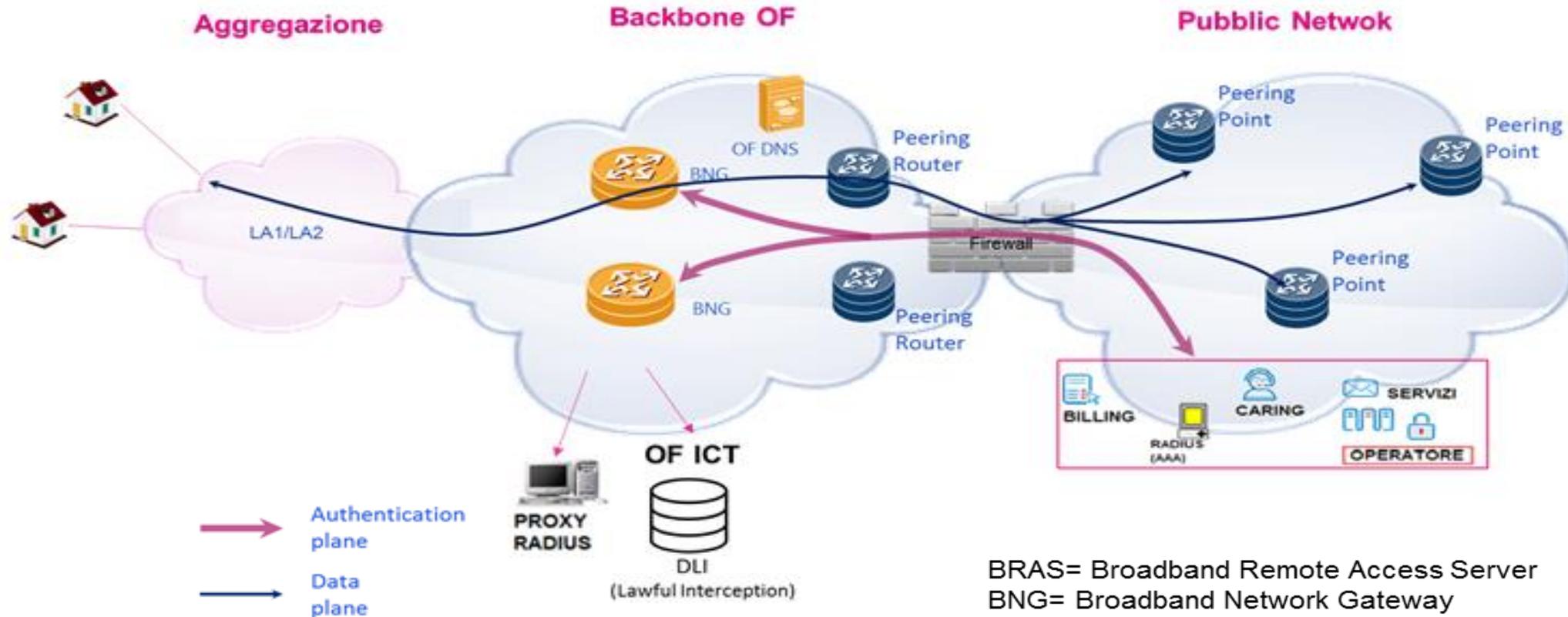
- WDM Full ROADM
- CDF (Colorless Directionless & Flex Grid)
- WSON
- 200G QPSK
- OTN

Backbone Capacity

- +50 λ (lambda) @200Gbps for each fiber links (C band)
- «Backbone future proof»: capacity upgrade (C+L bands)

OPEN INTERNET SERVICE ARCHITECTURE

1Gbps/300Mbps Direct Internet Access with access to Big Internet from MIX and NAMEX IXP



Active Access Services provides high speeds for great prices*

- Common portfolio features:**
- Full Fiber
 - Independent network
 - > up to 99.99% availability SLAs
 - Easy E-NNI Interconnection
 - 24/7/365 NOC facility
 - Wide Coverage

ENNI
handover

Wavelength PoP-To-PoP	<p>10 Gb/s ↓ ↑</p> <p>NRC: 1.350€ MRC: 700€</p>		<p>100 Gb/s ↓ ↑</p> <p>NRC: 5.400€ MRC: 2.800€</p>	
	<p>Open Stream - GPON</p> <p>1Gb/s ↓ 300Mb/s ↑</p> <p>NRC: 120€ MRC: 15,50€ <small>Including transmission</small></p> <p>1Gb/s ↓ 500Mb/s ↑ <small>MRC 77Mb/s</small></p> <p>NRC: 120€ MRC: 47€ <small>Including transmission</small></p>		<p>P2P (Dedicated)</p> <p>1 Gb/s ↓ ↑</p> <p>NRC: 500€ MRC: 400€</p> <p>10 Gb/s ↓ ↑</p> <p>NRC: 2.000€ MRC: 1.000€</p>	
Ethernet PoP OF/POI -To-Customer Site	<p>GPON</p> <p>1Gb/s ↓ 300Mb/s ↑</p> <p>NRC: 120€ MRC: 17€</p>		<p>Open Internet</p> <p>1Gbps ↓ ↑</p> <p>NRC: 600€ MRC: 550€</p>	
Direct Internet Access	<p>GPON</p> <p>1Gb/s ↓ 300Mb/s ↑</p> <p>NRC: 120€ MRC: 17€</p>		<p>P2P (Dedicated)</p> <p>1Gbps ↓ ↑</p> <p>NRC: 600€ MRC: 550€</p>	

Common P2P features

- MEF aligned
- Per circuit availability SLA
- Up to 4-hour repair SLA

*All prices are Vat excluded