



xPON

Portfolio

**Open your
network
to the future**



xPON portfolio

The Altice Labs xPON Portfolio includes a full set of Hardware, Software and highly skilled engineering services enabling resilient and future proof FTTx network implementations with an optimized TCO, ranging from active and passive hardware equipment up to the Network Management System (NMS).

Scalable and flexible equipment

The Altice Labs xPON Portfolio is comprised of scalable and flexible best of breed hardware platforms and equipment that differentiates it and promotes new business models.

Multi technology and RF Overlay dedicated features over the same chassis encourage service providers on a soft migration from legacy to FTTx topologies. The support of next generation PON technologies also ensures future proof for classical Telcos as they move to digital.

Broad range of network terminal equipments are envisioned for retail, wholesale, mobile and Wi-Fi backhaul as well as for topologies reusing the existing copper twisted pair and coaxial infrastructures.

Several passive and active infrastructures are available for indoor and outdoor mountings either on the central office or customer premises.

Full set of professional engineering services are available in the context of FTTx projects deployment.

Who benefits from it?



Low density rural sets



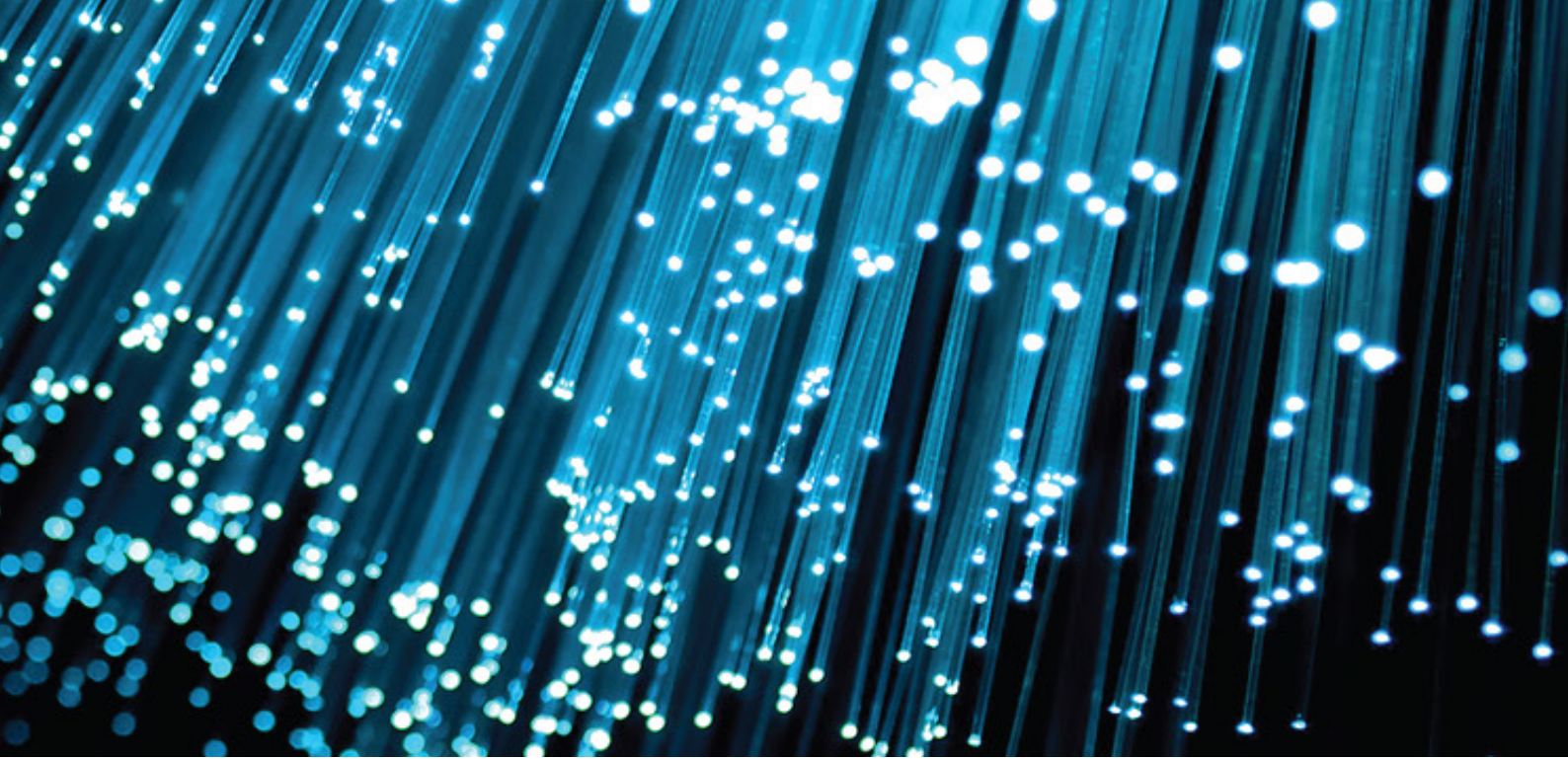
Condominium



Industrial park networks



High density urban networks



The challenges

- Ever increasing worldwide broadband demand (mainly video streaming and cloud services);
- Market demand for optical access fibre technologies;
- PON solutions ready for future network evolution.

Business benefits

- End-to-End active and passive equipment portfolio;
- Multi-services supported from a single chassis;
- Highly skilled design on passive elements results in CAPEX and OPEX savings;
- Faster Time-to-Market Deployments;
- Pay-as-you-grow approach.

Our solutions

- Flexible and multi-technology OLT chassis;
- Comprehensive ONT portfolio;
- User friendly AGORA network management system;
- FTTx End-to-End suitable infrastructures;
- Engineering Services;
- After Sale Services (24/7);
- Comprehensive Training Programmes.

OLT portfolio

Highest Density OLT in the industry

- Scalable OLT portfolio ranging from rural low density to urban high density;
- PON and Point-to-Point Ethernet technologies from a single chassis;
- Ready to support Next Generation PON technologies namely XG-PON, XGS-PON and NG-PON2;
- RF Overlay CATV/SAT capabilities;
- Flexible Sync mechanisms such as SYNC-E PTP/IEEE 1588v2.

Rich OLT portfolio: unparalleled density & capacity



15 RU / 18 slots



4 RU / 4 slots



14 RU / 18 slots



3 RU / 3 slots



1 RU / Pizza-box

| OLT2T4 | OLT2T2 | OLT1T3 | OLT1T1 | OLT1T0 |
|----------------------------------|---------------------------------|--------------------|--------------------|-------------------|
| 1.6 Tbps | 300 Gbps | 640 Gbps | 160 Gbps | 64 Gbps |
| 256 GPON | 64 GPON | 256 GPON | 48 GPON | 8 GPON |
| 768 GE | 192 GE | 768 GE | 144 GE | 8 GE |
| 128 XG/XGS/TWDM PON | 32 XG/XGS/TWDM PON | | | |
| 128 10GE | 32 10GE | | | |

*The presented pictures are for illustration purposes only and may not be an exact representation the actual equipment.

ONT portfolio

Comprehensive ONT portfolio

- Interoperable models for Residential, Business, Wi-Fi and Mobile Backhaul scenarios;
- Several available interfaces: GE, POTS (VoIP), VDSL2, T1/E1, Wi-Fi, G.FAST, MOCA 2.0, RF TV, SAT (DTH) and PoE;
- Certified Equipment (BBF.247 / BBF.069).

Flexible ONT solutions, fully interoperable



Services

- FE/GE/10GE
- T1/E1 TDM
- POTS VoIP
- ADSL2+/
VDSL2/ G.fast
- RF Overlay
- Wi-Fi



Customers

- Single family /
residential
- SMB, Corporate,
Mobile and Wi-Fi
Backhaul
- Multi-dwelling
- Indoor/outdoor



Interfaces

- 2.5/10/40/
80Gbps PON
(ITU-T)



FTTx Infrastructures

Optimised and faster ODN rollout

Engineering capabilities and know-how in design innovative solutions enabling CAPEX/OPEX savings.

- Faster rollout;
- Simplified project, logistics and training;
- Customized and dedicated solutions;
- Collaborate with engineering and operation teams to design unique solutions.

Outdoor Cabinets



603 x 420 x 390 mm



1300 x 1800 x 500 mm



1825 x 1830 x 620 mm

Other relevant passive elements



Optical Distribution
Points



Fiber Box Splitting &
Termination



Optical Distribution
Frames



Fusion and splitter box



Outlet

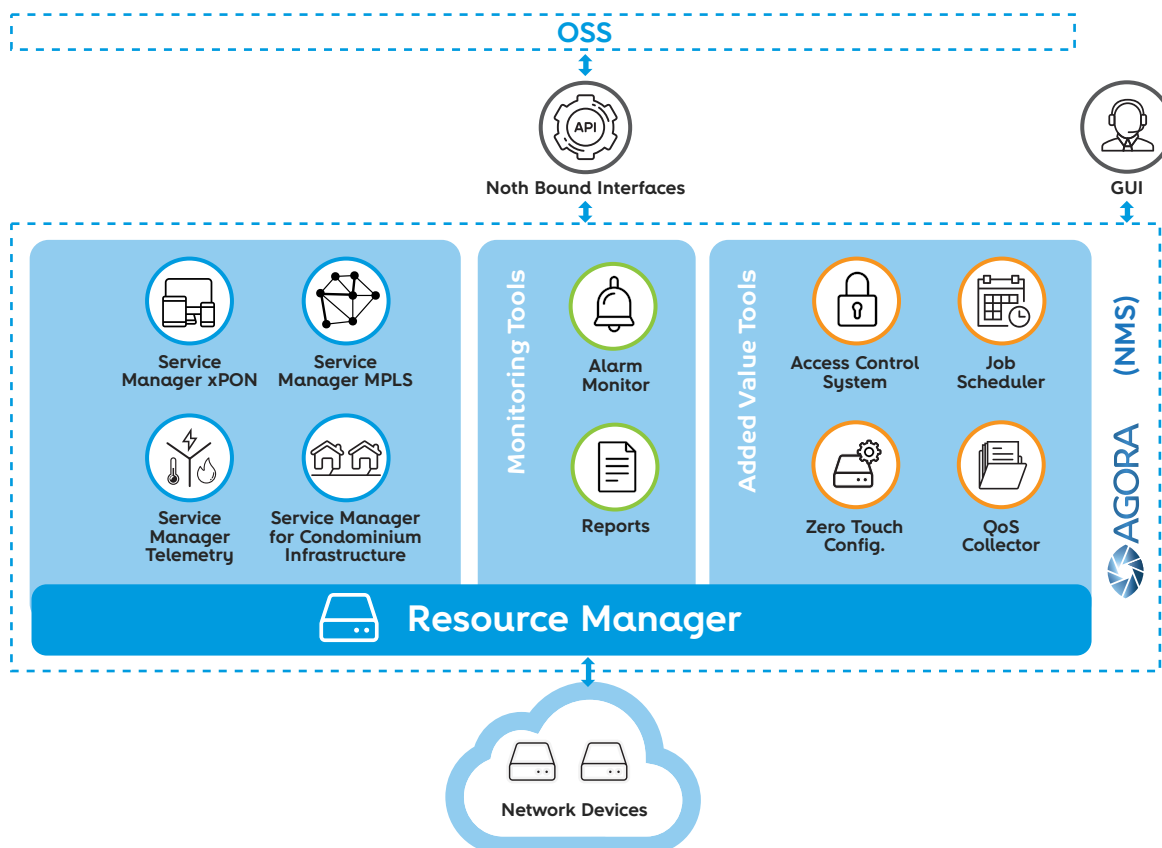
NMS

User friendly Network Management System

AGORA management solution is the centralized multi-technology Network Management System (NMS) from Altice Labs.

The AGORA NMS is composed of different applications and components, complementing each other to achieve a full management experience. It provides a simplification and abstraction of the Network Elements, offering several services, a complete set of tools and APIs that can be used by higher order applications such as OSS and external SDN applications.

These APIs cover the full FCAPs dimensions (Fault, Configuration, Administration, Performance and Security). The GUI interface allows a direct access to AGORA by the operator, with user-friendly provisioning and monitoring of the global managed resources.



Engineering Services

FTTx deployment services

Besides delivery, setup, configuration, commissioning and go live professional services, FTTx network services portfolio also include the survey, planning, building, inventory and monitoring services covering the entire project rollout cycle.



Consultancy



FTTx project coordination/management



Survey



Project



Deployment & supervision



Inventory



Delivery



Setup



Configuration



Commissioning



Go Live!



After Sale Services

Warranty, support, operation and maintenance services

Round-the-clock (24/7) post sale service portfolio empowered by highly skilled technicians. Different service levels (SLAs) are available in order to attend to each specific scenario.





Training Services

Enabling knowledge sharing

Training is, to us, a way of power thinking, creating, developing, innovating and establishing links.

Technology and product dedicated training programs are available at either Altice Labs or on premises.

Sharing knowledge is the most faithful mirror of our organization and our capabilities. As such, we aim to provide a training service of excellence on our products and solutions.

| Training courses | | | |
|------------------|------------------------|--|-----------------------|
| Tracks | Entry Level | Professional | Expert |
| Survey | FTTH Networks - Basics | FTTH Site Survey | |
| Project | FTTH Networks - Basics | FTTH Project - Consultation | FTTH Project - Design |
| Deployment | FTTH Networks - Basics | FTTH Project - Consultation FTTH Deployment | Optical Tests in FTTH |
| Connect | FTTH Networks - Basics | FTTH Connect | |
| Inventory | FTTH Networks - Basics | FTTH Inventory | |
| Factory Training | | | |
| Local Training | | | |
| On-job Training | | | |

Future proof optical access platforms



Strong partnership approach

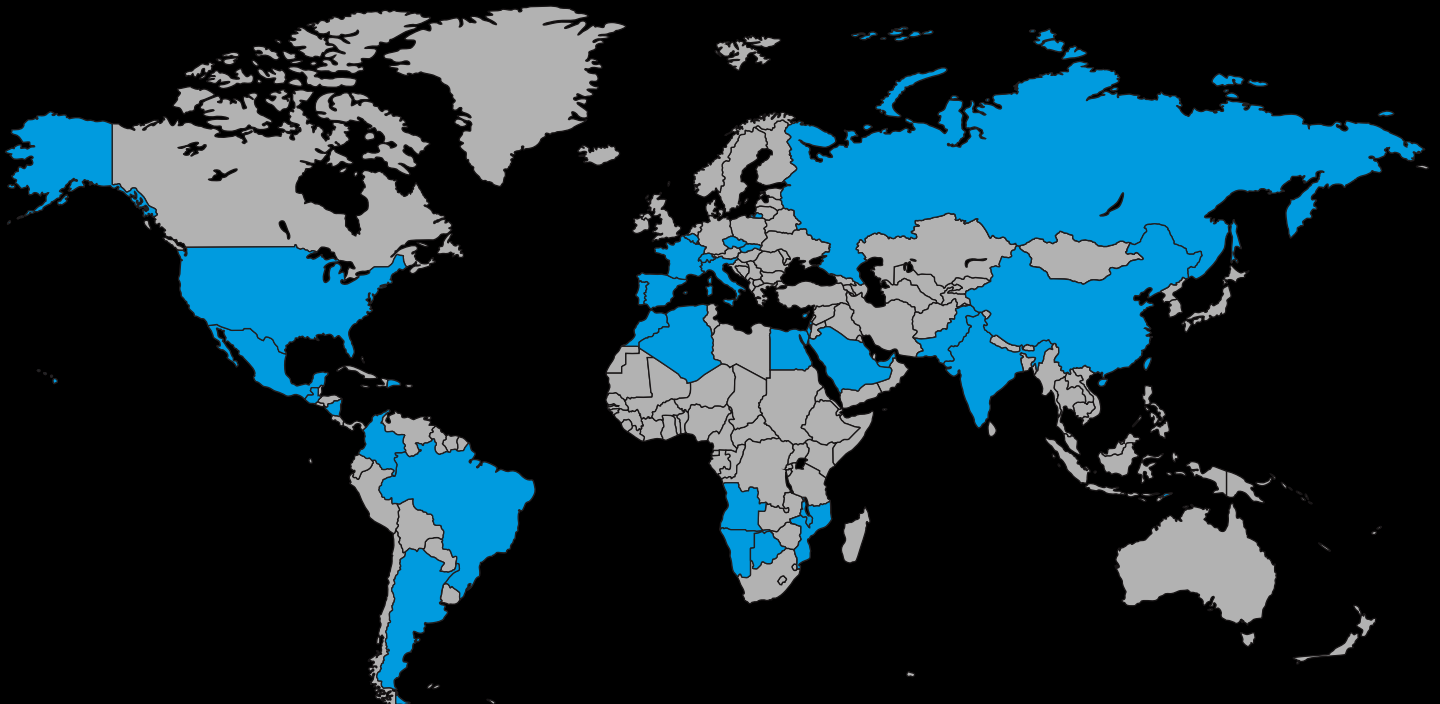


Differentiated portfolio



CAPEX and OPEX gains

Altice Labs global footprint





About Altice Labs

Delivering key telecommunications technologies since 1950, Altice Labs has been shaping the future of technology, enabling Communications Service Providers and Enterprises to offer advanced and differentiated services to their customers and users.

Altice Labs is an innovation and transformation catalyst supported on a strong and dynamic Innovation Ecosystem. Through technology, we are committed to improve people's lives and the way in which companies do business.



www.alticelabs.com