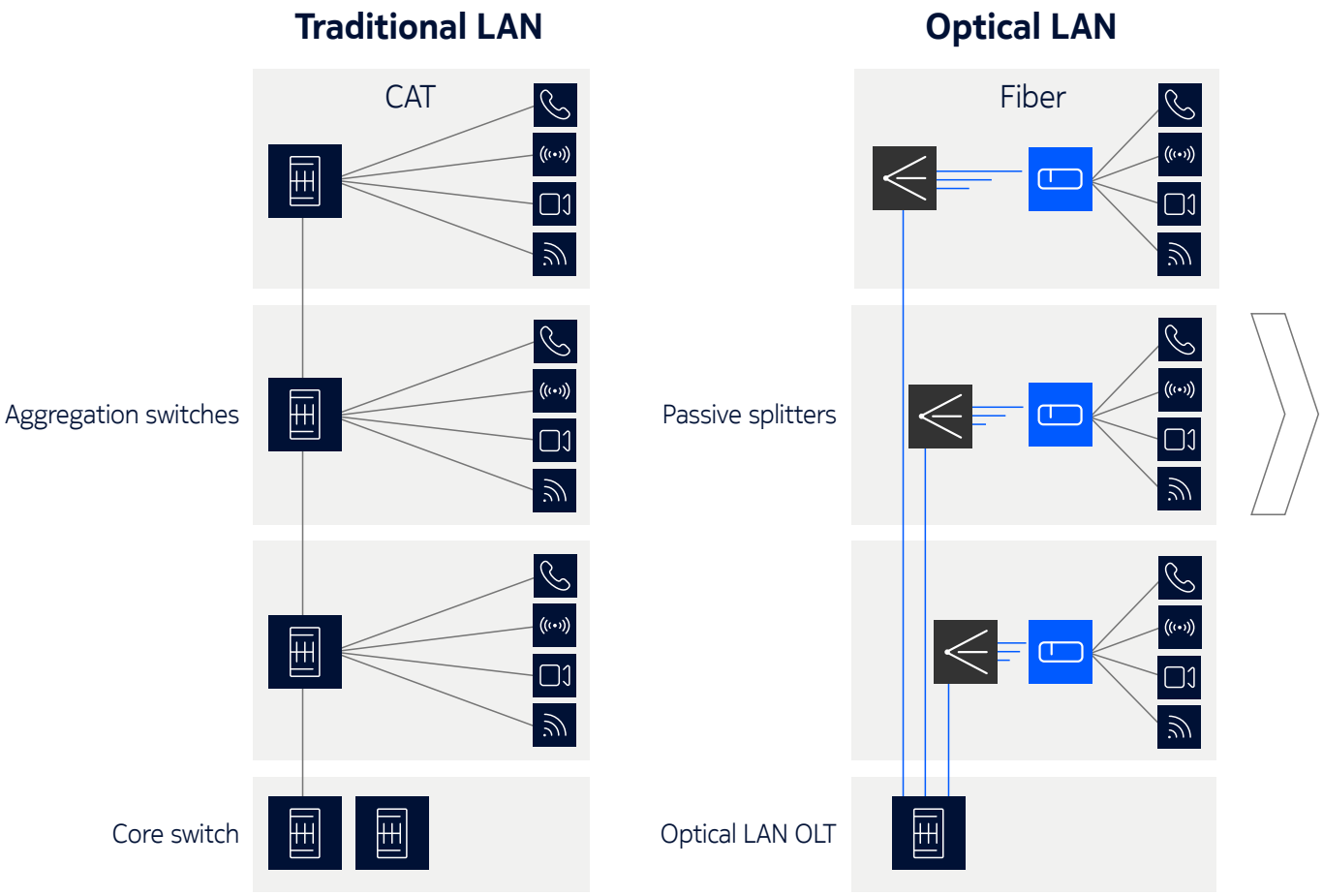
The benefits of Optical LAN
NOKIA

A smarter way to structure the network



Benefits of Optical LAN:

At the speed of light

- Efficient upgrades to next-generation PON technologies
- Low latency
- High reliability and security

Light on energy

- 40% lower energy consumption
- Built on Nokia Broadband Zero principles

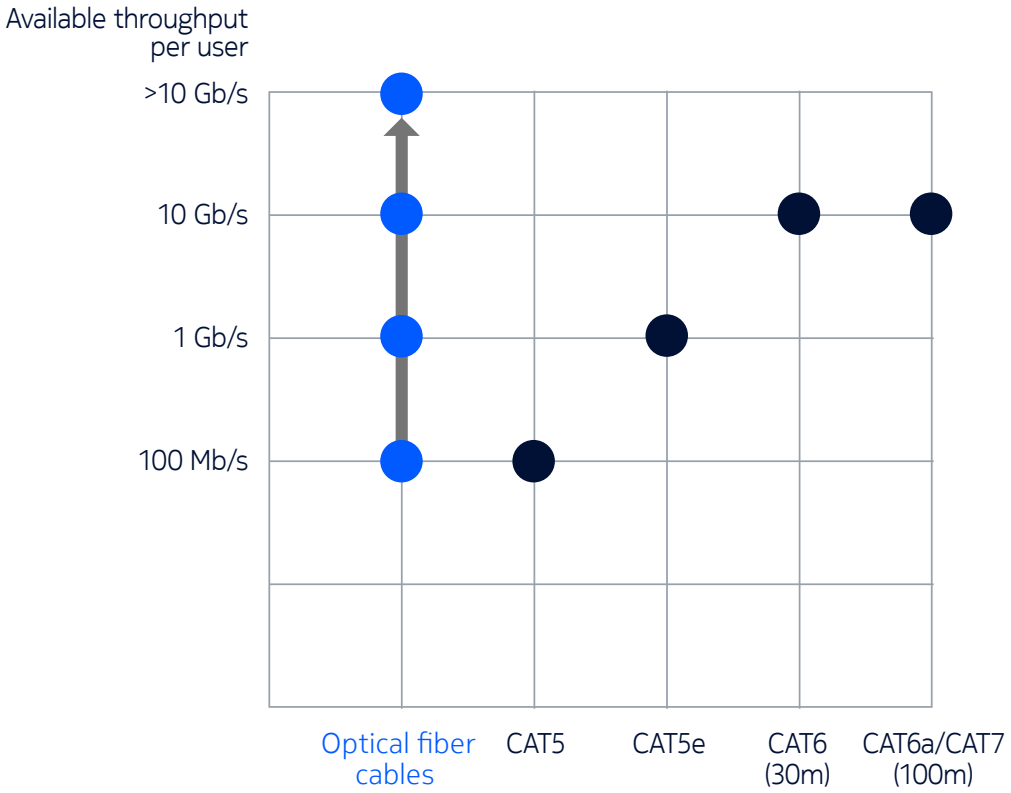
Light on infrastructure

- Less equipment, fewer cables leads to a 90% smaller equipment footprint
- Simple, centralized, automated control
- Long reach (20 km)

Light on TCO

- 50% lower total cost of ownership from CAPEX, energy, maintenance and upgrade savings
- A single network for all services and devices
- Same fiber infrastructure has unlimited potential

Bandwidth



Get value for 50+ years with Optical LAN

Optical fiber cables are more resilient and longer lasting than copper cables. They also offer unlimited bandwidth potential. Fiber-based Optical LAN supports cost-efficient network evolution by allowing businesses to reuse cables and central node for new services and bandwidth increases.

Traditional LAN upgrades are disruptive and costly

Today's LANs need upgrades to support high-bandwidth fixed and mobile services. Most LANs run on copper cables and, in order to accomplish speeds of 1 Gb/s or 10 Gb/s, investment in new switches and a physical cabling upgrade is required.

Cable infrastructure

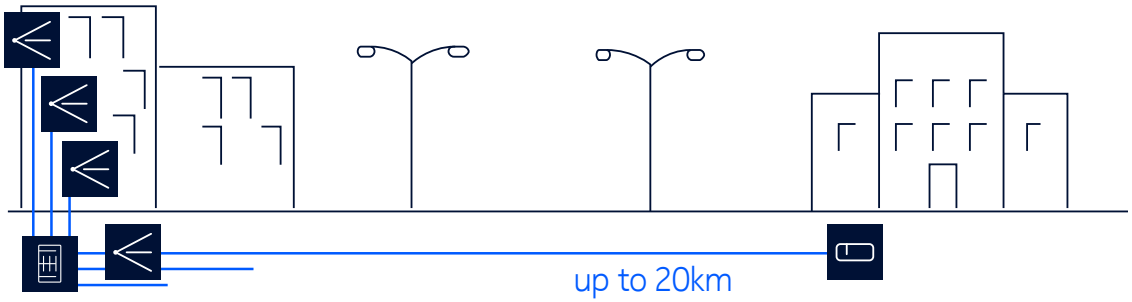
Fiber optic cabling is simple and light

Fiber optic cabling is easier to install and requires fewer cables. Fiber cables are also more flexible, more resistant to physical and environmental elements, and carry less fire load than their copper counterparts. Fiber is cheaper and easier to maintain, thinner and lighter than copper and can bring an end to cable congestion.

Copper cabling is bulky and heavy

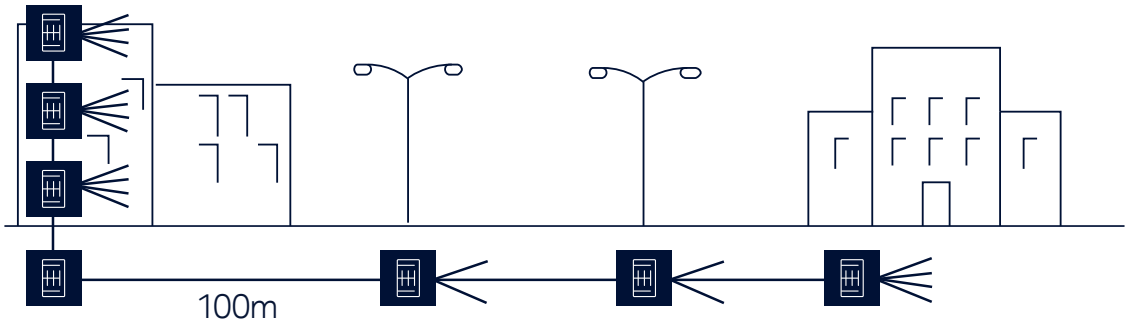
Installation of copper cable is a delicate task with many considerations including wiring routes and clearance from power wires. The high frequency signal transmitted via copper cable is very sensitive to noise generated by other cables or devices. A significant amount of time is spent laying the cables tightly. However, copper cables get messy and bulky easily. Moreover, the weight of copper cables can be significant as well.

Coverage



Optical LAN's long range

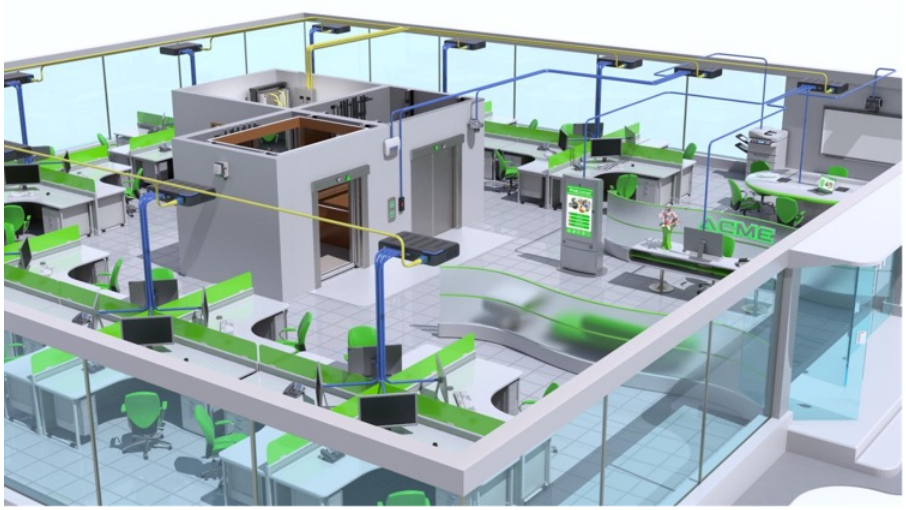
Optical LAN provides coverage over distances up to 20 km. A single energy-efficient central node can serve a tall building or large campus. There is no need to add switches or patch panels to cover a new site. Fiber cables can simply be extended to the new endpoints.



Traditional LAN has limited area coverage

The maximum length for a copper cable link between two active devices is 100 meters. Additional investment is required in extra switches, power supplies, patch panels and storage space to provide coverage throughout buildings or extended campuses.

Space and power savings



Optical LAN requires less equipment, fewer cables, lower power and reduced space

Optical LAN uses a simple and centralized architecture, significantly reduces the overall cabling, and converges a wide range of voice, data and video applications onto a single network. Optical LAN reduces the power consumption and the amount of required IT space and increases the usable floor space on every floor.

Traditional LAN is inefficient and expensive

Copper-based IT systems require large IT rooms on every floor of the building. The number of switches increases with every floor, as does power consumption for these devices and the required high volume air conditioning (HVAC). The switches terminate and interconnect a large number of CAT cables for every endpoint. This is multiplied with every additional floor in the building.

Futureproof

GPON
2.5 Gb/s downstream
1.2 Gb/s upstream

XGS-PON
10 Gb/s downstream
10 Gb/s upstream

25G-PON
25 Gb/s downstream
10 or 25 Gb/s upstream

Optical LAN readies your infrastructure for the future

The benefits of Optical LAN technology extend far into the future. The capacity of GPON and XGS-PON networks will address the needs of users for years to come. When more capacity is needed, network evolutions will be graceful, cost efficient and without a forklift upgrade. An investment in this technology also clears the path to 25G PON, the next evolution in fiber technology.

For more information about Nokia Optical LAN, click here.

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