



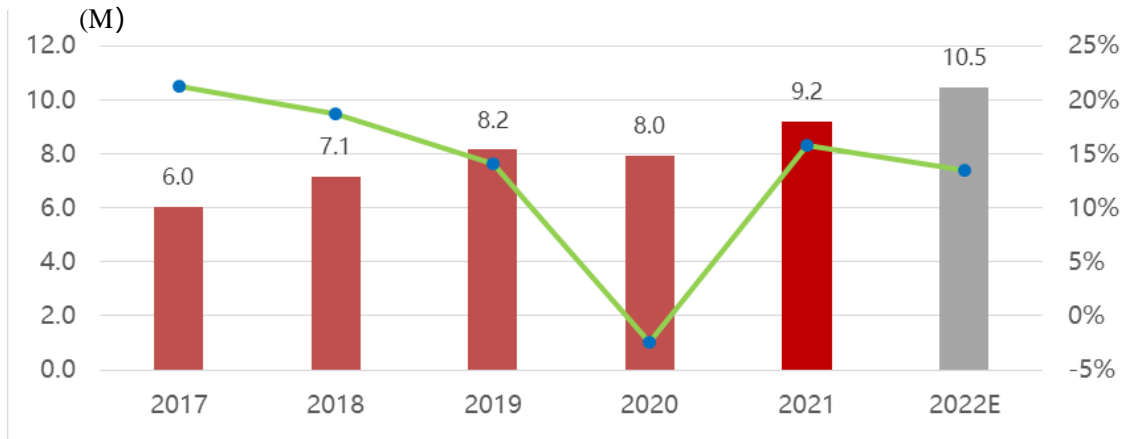
FTTR4B Applications and Challenges

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Why FTTR4B?

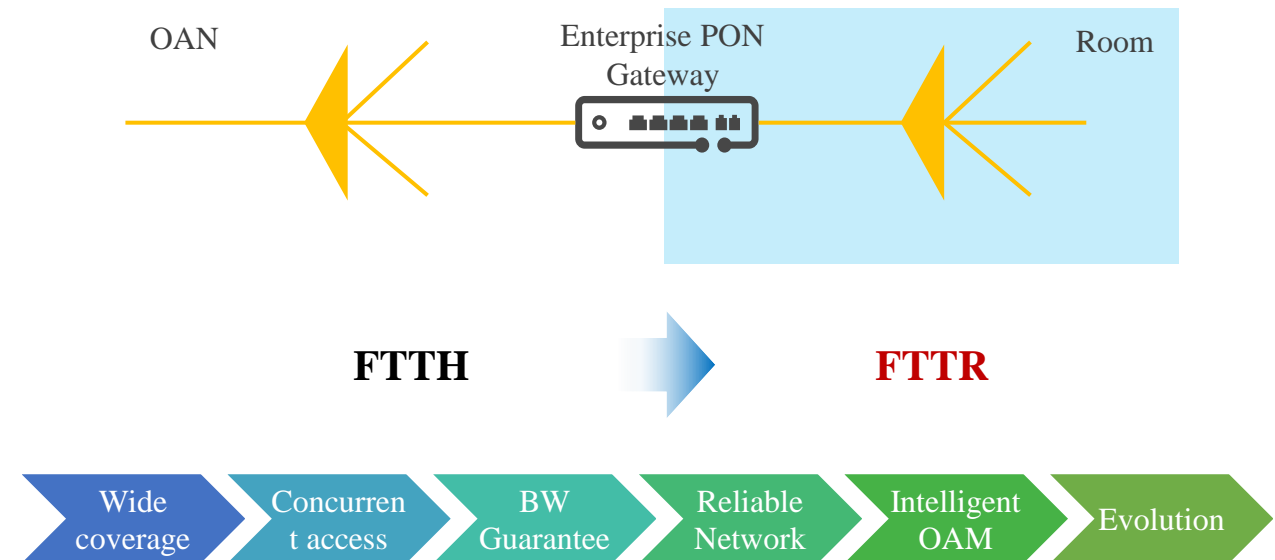
- ❑ Huge market potential, tens of millions of enterprises, while small/medium/micro enterprises account for > 99%
- ❑ Clear trend for enterprise customers' network – More wireless in office with business cloudification
- ❑ All-optical networking is an important business strategy

AP annual shipment growth rate of 15%



WLAN Shipment in China
(Source: IDC Consulting report)

All-optical networking



Technical advantages of FTTR4B

Higher
transmission
rate

*1G ~ 10G
(future evolution
>10Gbps)*

Longer
Distance,
for all
scenarios

Kilometres level

Good
Reliability

*Very long lifetime,
with easy operation
and high stability*

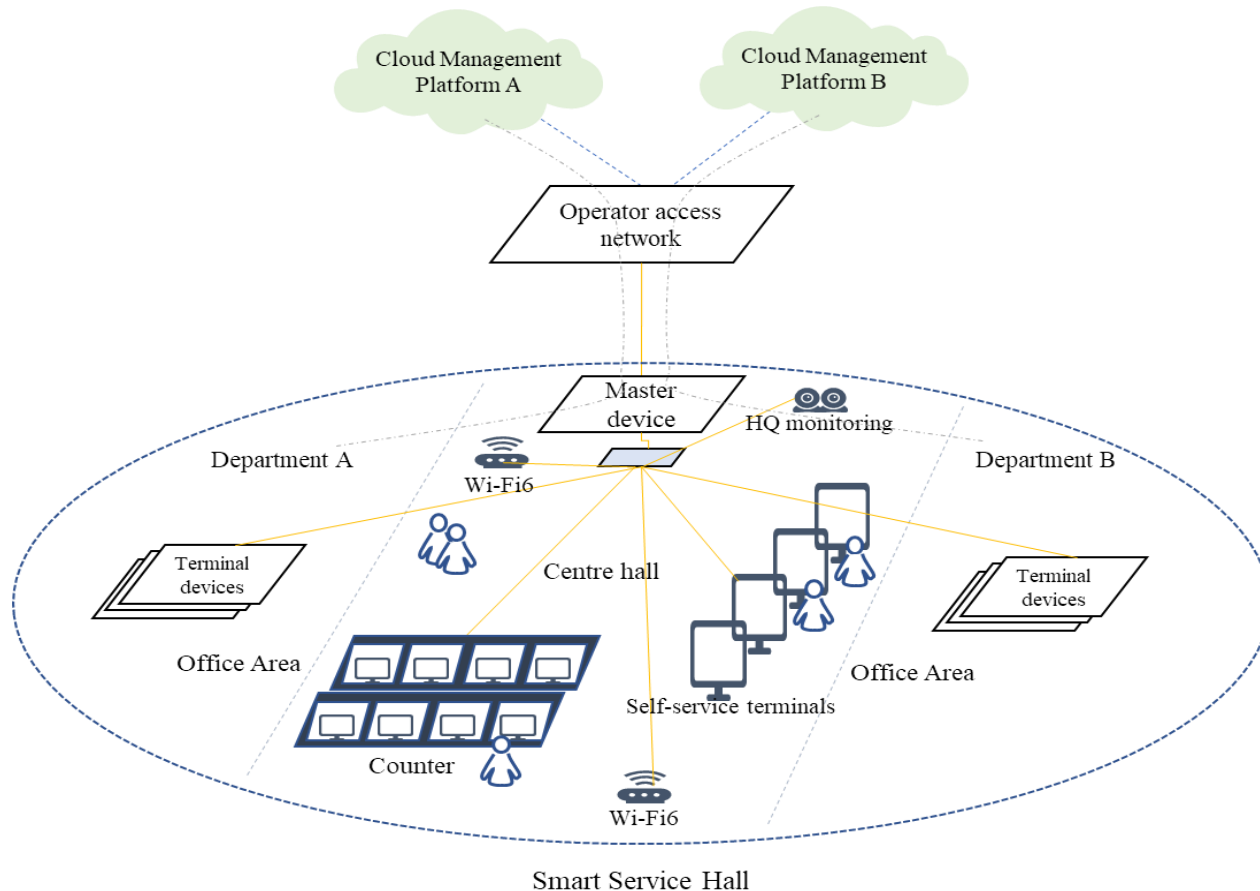
Extends
Operators'
management
capabilities

*Simple, transparent,
and intelligent*

Strong
Evolution
ability

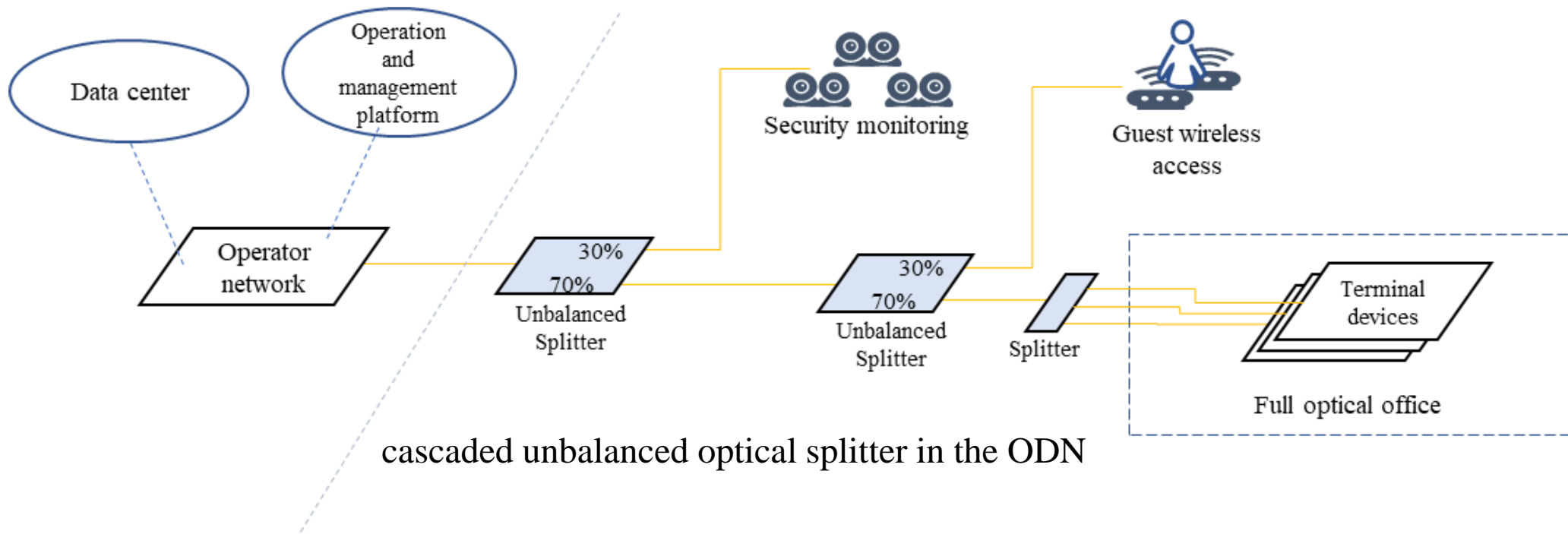
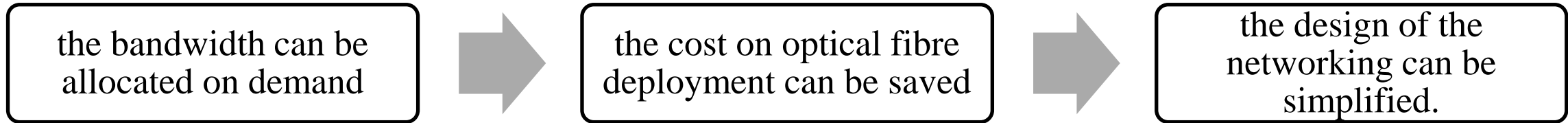
❑ FTTR full-optics deployment increases the working efficiency, enrich the working scenarios

- simplify the architecture of the whole network
- reduce the wiring cost with the long lifetime and low loss optical fibre



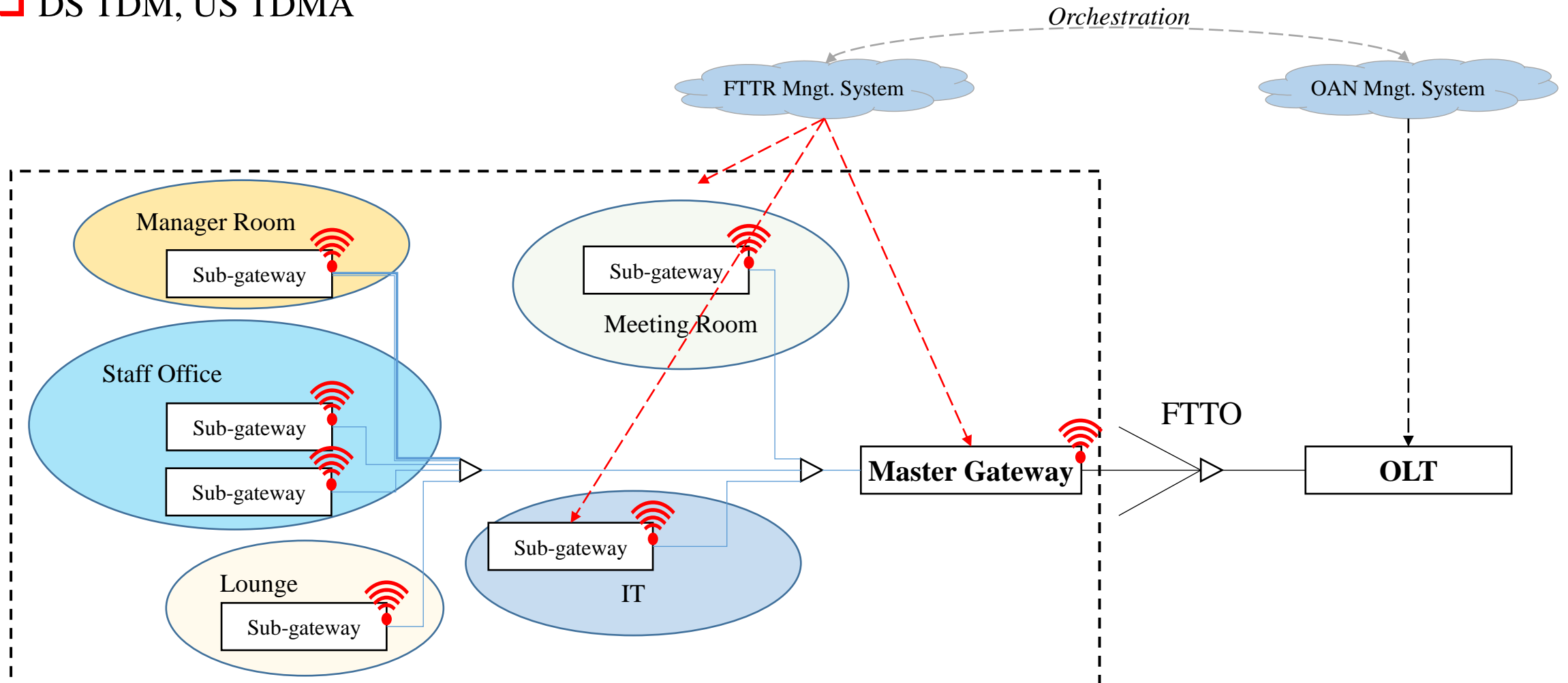
1. *Isolation Wireless network for people being serviced should be isolated from the office internal network.*
2. *The master device should enable the isolation between departments, Network Slicing for different management cloud platforms is required.*

Flexible network design supported with the help of unbalanced splitter



Typical Architecture of FTTR4B

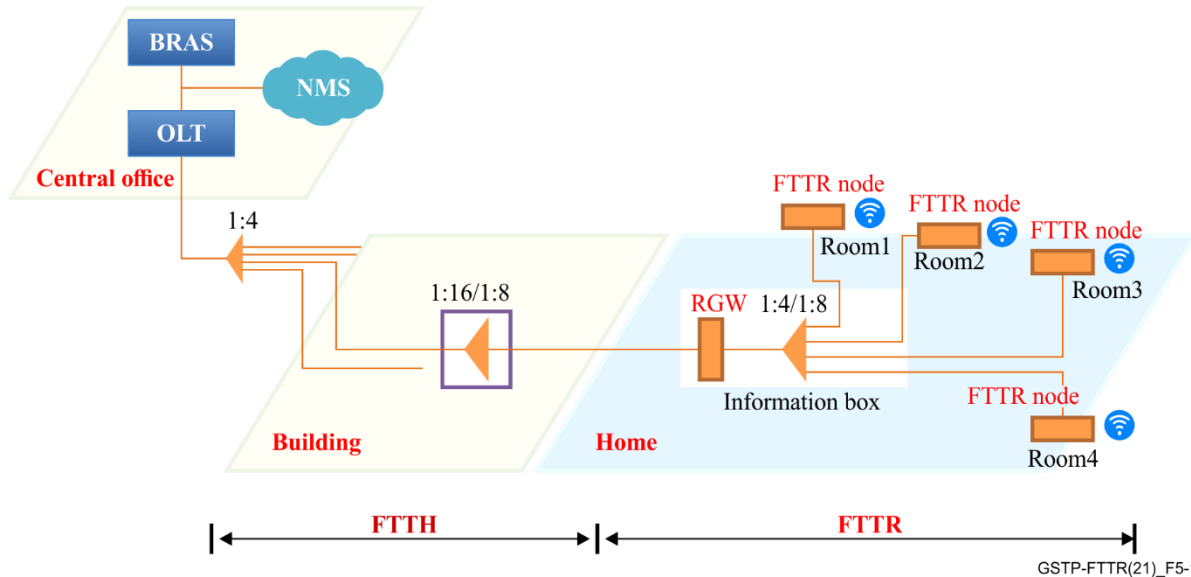
- ❑ PON-like topology, full-fibre connection, PtMP architecture
- ❑ DS TDM, US TDMA



Differentiated ODN between FTTR for home and business

For Home

- ❑ Super short reach, typically <100m
- ❑ Major scenarios with 1:1 ~ 1:4
- ❑ Overload is an issue to be taken care

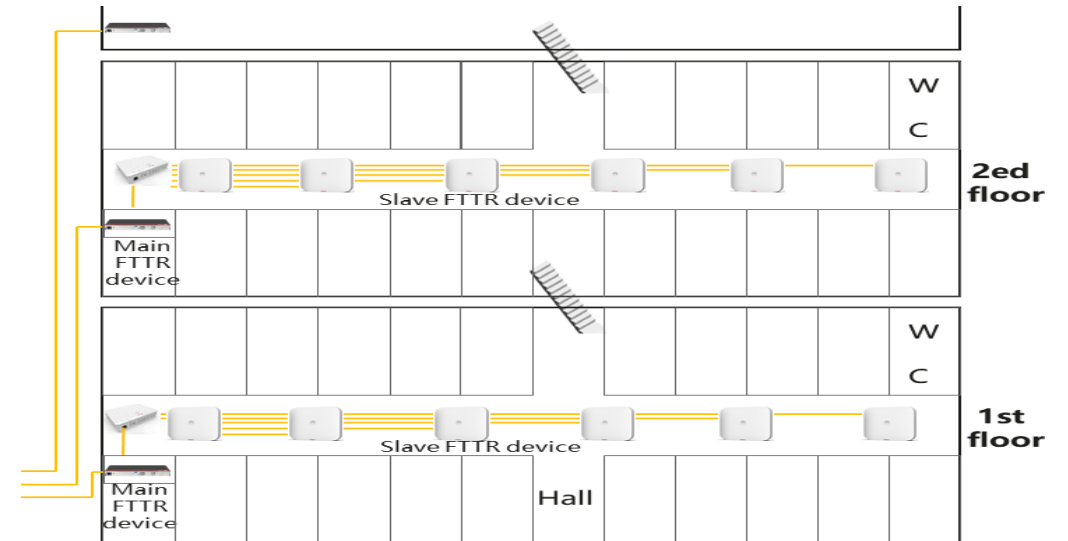


For Business

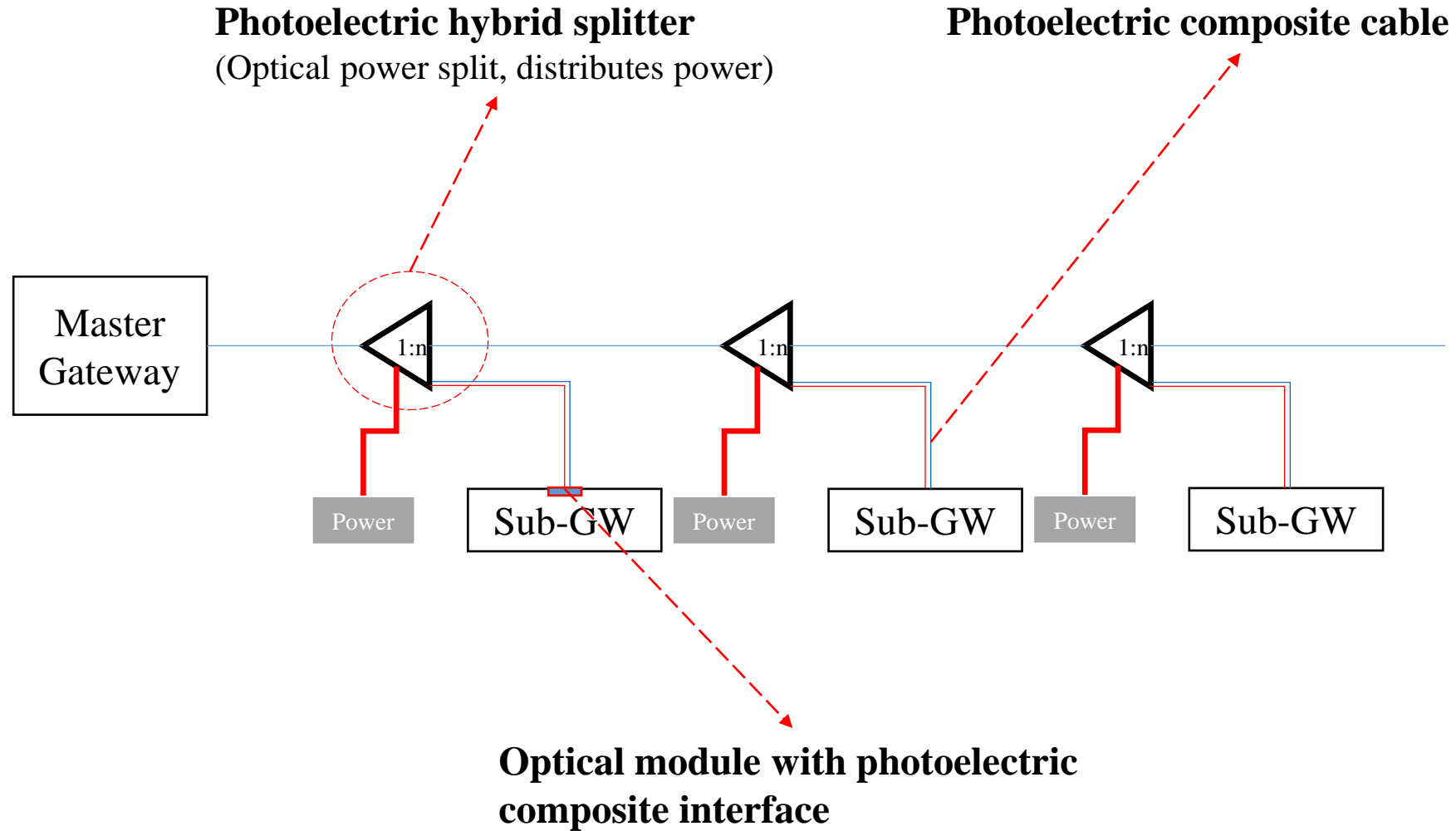
- ❑ Short reach, <1 KM
- ❑ 1:32 (1:64?)
- ❑ Sometimes, multi-level cascading with equal/unequal ratio splitter, ≤ 4 levels)

$4*(1:5)$ unequal splitter ~ 23dB OPL

$4*(1:9)$ unequal splitter ~ 28dB OPL



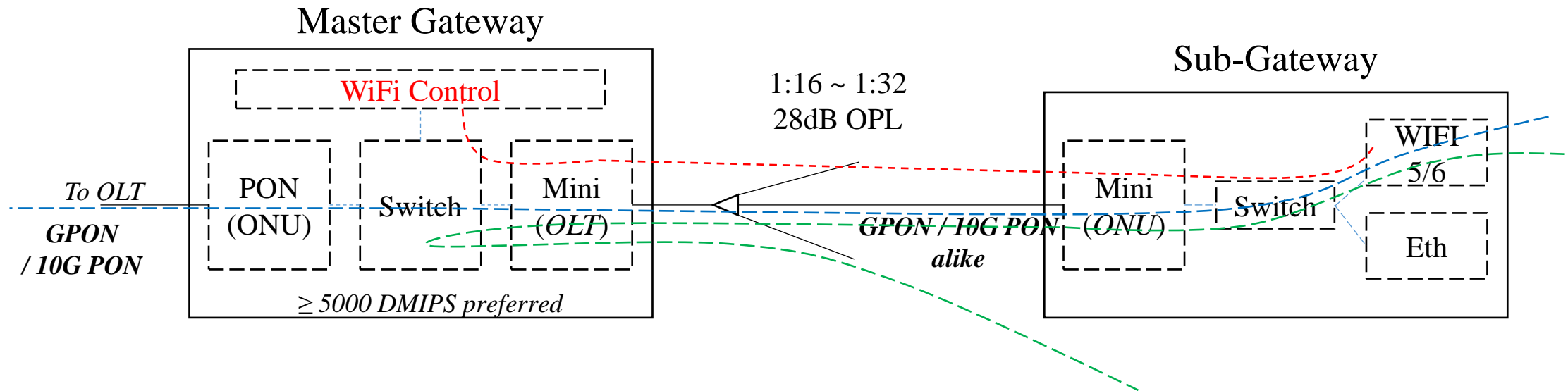
Remote power supply along fiber



*Standardization
Needed.*

Key Technical points of FTTR4B system

- ❑ Diverse traffic flows and SLA requirements supported
 - To OAN, and Inside the FTTR4B
 - Line rate, GPON & 10G PON alike interface required
- ❑ Wi-Fi seamless switching management (SDOs cooperation preferred)
 - Guarantee the Wi-Fi connection experience for all Sub-Gateways

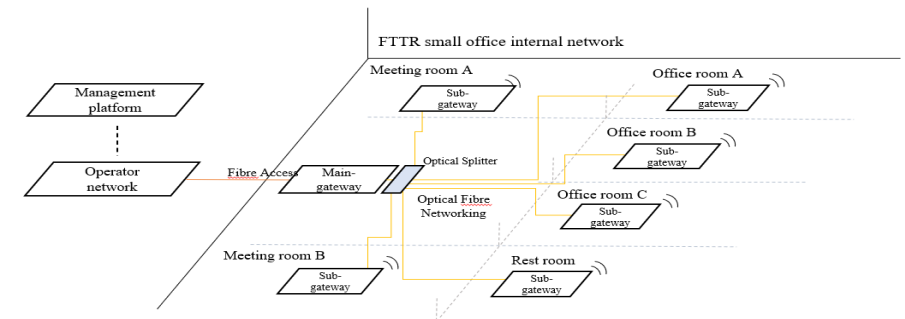


❑ Appropriate design scheme for different building types and scenarios

- Match the scene and characteristics of commercial buildings, whether new or renovated
- Network topology scheme (equal ratio and unequal ratio, etc.)

❑ Take care of Cable/fibre selection

- Remote power supply scenario: photoelectric composite cable (prefabricated end)
- Pipe-through: high enough tensile strength value to meet the requirements for traction force during pipe-through
- Top-line: invisible features are preferred



❑ Different OAM situation for FTTR4B, as all FTTR system is in customers' building

- Automatically discovered Sub-gateways, achieve plug and play
- Easy to configure and use, as convenient as plugging in a router bought from open market
- Remote FTTR network status monitoring and quick issue fixing ability required

- ❑ FTTR4B: strong technical competitiveness, broad market potential**
- ❑ Still many key technologies in FTTR4B need to be standardized**
- ❑ SDOs work together to speed up development of key standards, to promote technological maturity and ecological prosperity**



Thank You

