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Huawei FTTM Solution for Factory

Flexible and Reliable Optical Network
Enhancing Smart Manufacturing Efficiency

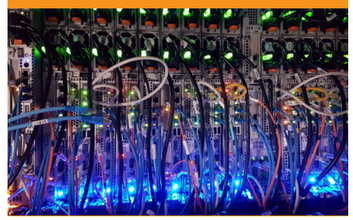
HUAWEI

Challenges

AI quality inspection + automatic control
Requires high reliability and deterministic latency

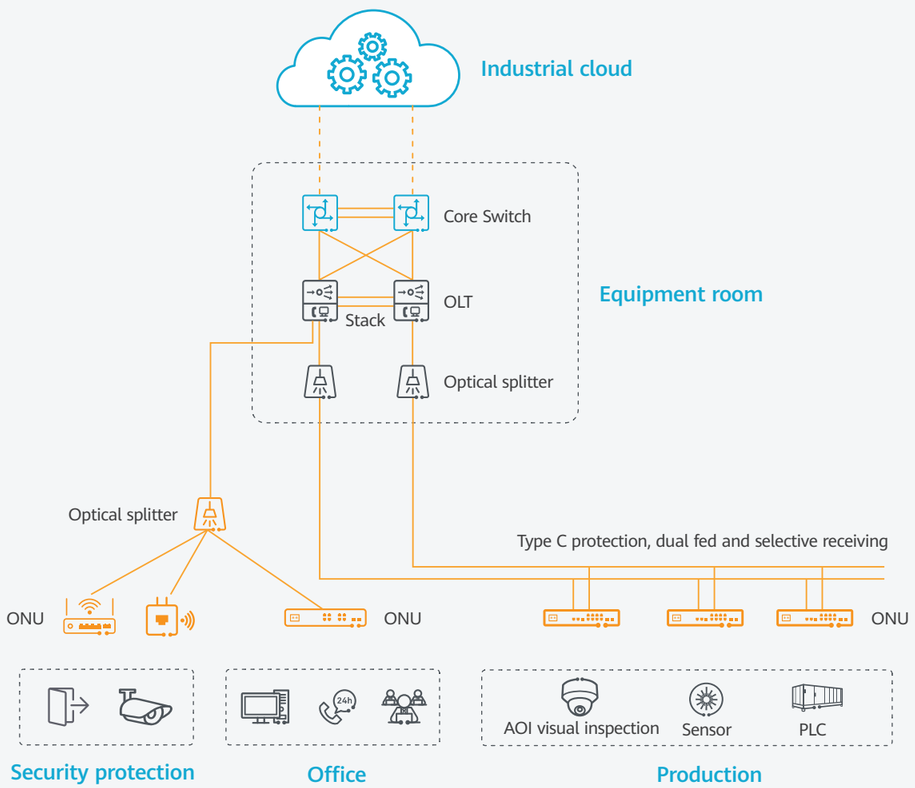
Fast production line adjustment
IT systems need quick delivery and flexible deployment

IT O&M does not affect production
Quick fault locating and troubleshooting



Solution

The Huawei FTTM solution is based on passive optical network technologies and features simple architecture, advanced media, and simplified O&M. It provides an efficient network solution for smart manufacturing, meeting the network requirements of high reliability, large bandwidth, low latency, and easy expansion in industrial manufacturing scenarios.



Solution Highlights

"0" Cabinet in workshop	• Reduce the number of cabinets by 90% • Cable space is reduced by 80%
"0" Service interruption	• Hard isolation and Deterministic low latency • E2E protection, Type C dual fed and selective receiving
"1" Engineer O&M	• Unified NMS and topology visualization • Intelligent fault prediction, analysis, and diagnosis

Highlight 1: "0" Cabinet in workshop:

Fiber to the machine, improving deployment efficiency

Traditional network

Limited by 100m network cable, a large quality of network cables are required, heavy cabling bridge

Standard cabinet needs to be deployed every 70m in workshop

FTTM network

No distance limit, P2MP fiber architecture, light cabling bridge

Fiber to the machine, no cabinet required

Highlight 2: “0” service interruption:

E2E hard isolation, deterministic low latency

Production: AI cameras with 1K fps generate 500 Mbit/s burst traffic, which may interfere with manufacturing execution that require instant response and interrupt production.

AI quality inspection

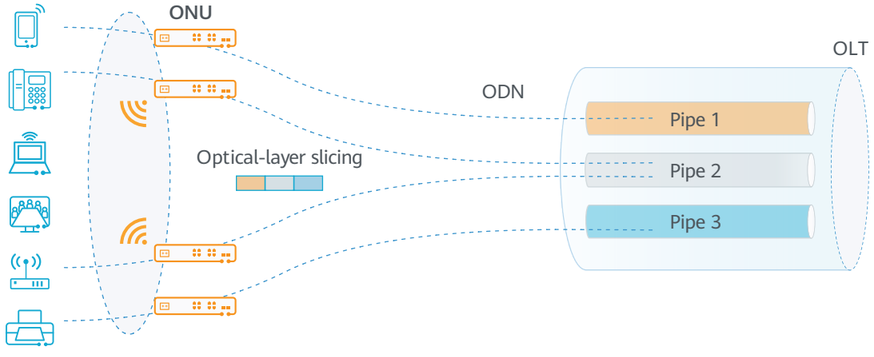
Manufacturing execution

Office: Users share the same pipe, experience is easily disturbed

Downloading

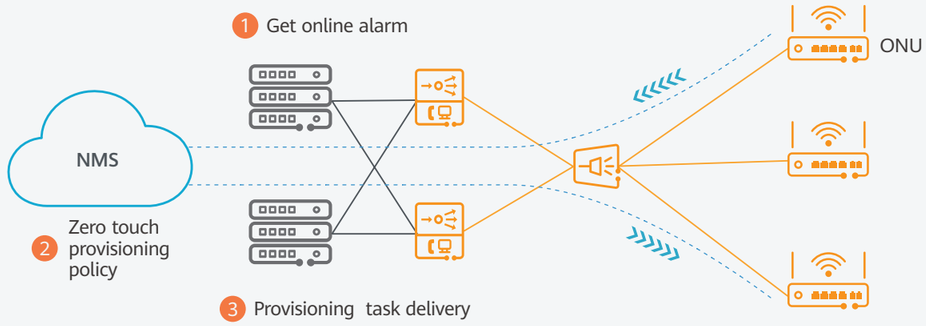
Video conference

Wavelength and timeslot isolation, ensuring no interference between services



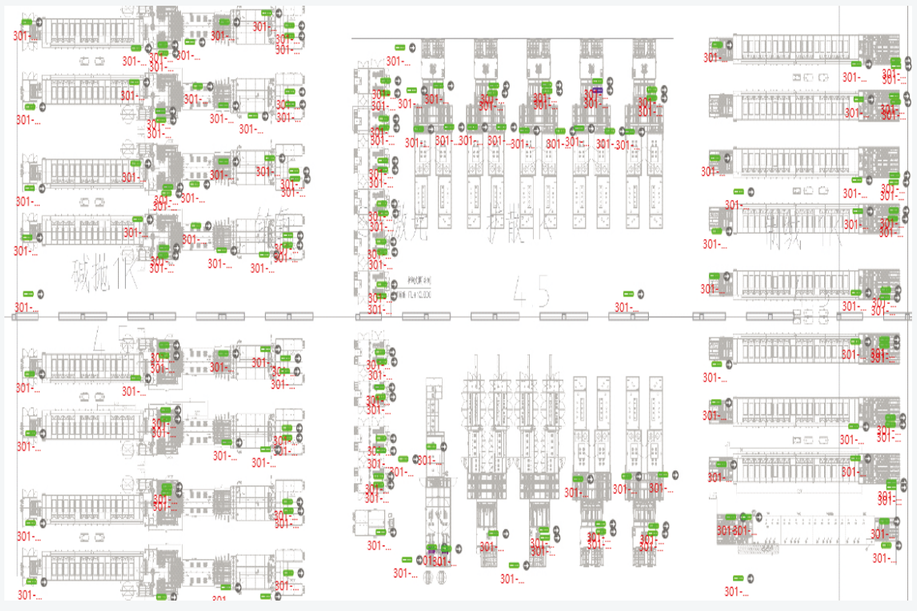
Highlight 3: “1” engineer O&M:

Intelligent network management simplifies O&M



ZTP

- ONU plug-and-play, automatic service delivery, free of IP management
- Two-layer architecture, passive aggregation layer free of O&M



Digital map

Digital map displays device and link status based on location, precise fault locating and minute-level fault rectification

Success Cases

Shaanxi Fast (Mechanical Manufacturing)

Background: Fast mainly produces and sells gears, speed transformers, and other heavy vehicle parts, with a market share of 70%.

Solution: Use the Industry OptiX solution to cover the production workshops and offices on three campuses.

Benefits:
- ONUs without fans, adapting to the air environment of the cutting fluid in the factory
- Antioxidation and corrosion resistance of fibers and fiber connectors
- Tree networking, and ONUs powered on and off on demand to reduce power consumption

Risen Energy Co., Ltd. (PV Manufacturing)

Background: A top PV manufacturing enterprise builds new module and battery factories for expansion.

Solution: Use the Industry OptiX solution to carry the production network, office network, and monitoring network in a unified manner.

Benefits:
- 40 km long transmission distance, easily covering 400 m ultra-large factories
- Saving 80% of ELV cabinets, and improving the space utilization of the factory
- Smooth evolution and flexible capacity expansion

Yichang Humanwell Healthcare (Pharmaceutical Manufacturing)

Background: Founded in 2001, fixed-point R&D and production enterprises of narcotic drugs, key high-tech enterprise.

Solution: Use F5G optical network to cover all services such as campus office, lab, and security protection.

Benefits:
- One network carries multiple services, simplifying network deployment and saving investment
- Passive optical distribution network, maintenance-free and energy-saving
- All fiber deployment, smooth upgrade and expansion

Product Introduction

Huawei OptiXaccess OLT series

EA5800-X7

7 service slots
User-side port type: 50G PON/XGS-PON/GPON/GE/10GE

EA5800-X2

2 service slots
User-side port type: GPON/XG(S)-PON/XGS-PON&GPON Combo/GE/10GE

EA5801E-GP16

Box-shaped OLT
User-side ports: 16 x GPON

Production line service optical terminals

T602E

NNI: GPON PoF
UNI: 4 x GE

T823E-DL

NNI: 2 x GPON/XGS-PON
UNI: 8 x GE

T823E-D

NNI: 2 x GPON/XGS-PON
UNI: 8 x GE(PoE++) + 2 x RS485 + 2 x RS232 + 2 x DI + 1 x DO + 1 x USB 2.0

T823E-G

NNI: 2 x GPON
UNI: 8 x GE(PoE++) + 2 x RS485/RS232+1 x DI + 1 x DO

Campus office service optical terminals

P613E-E

NNI: 2 x GPON
UNI: 8 x GE, PoE/PoE+

P613E-L1

NNI: GPON
UNI: 8 x GE, PoE/PoE+

P813L NEW

NNI: XGS-PON
UNI: 8 x GE, PoE/PoE+

P813E-E

NNI: 2 x XGS-PON
UNI: 8 x GE, PoE/PoE+

P615E-L1

NNI: 2 x GPON
UNI: 24 x GE, PoE+

P815E-L1

NNI: 2 x XGS-PON
UNI: 24 x GE, PoE+

P885E

NNI: 2 x XGS-PON Pro (BOB), compatible with XGS-PON
UNI: 24 x 2.5GE, PoE+

P871E series

NNI: GPON/XGS-PON
UNI: 2 x GE

W817C NEW

NNI: XGS-PON
UNI: 1 x GE + 2.4GHz&5GHz Wi-Fi 7

W827E

NNI: XG-PON
UNI: 1 x POTS + 4 x GE + 1 x USB 2.0 + 2.4GHz&5GHz Wi-Fi 7
Power supply: PoF

W826P

NNI: XGS-PON
UNI: 1 x POTS + 4 x GE + 1 x USB 2.0 + 2.4GHz&5GHz Wi-Fi 6