



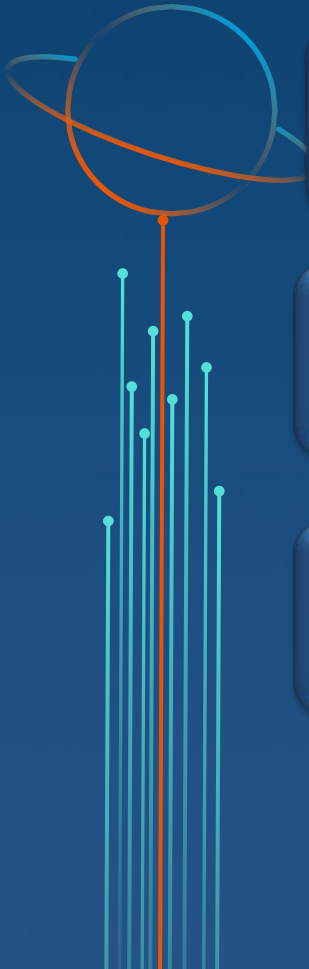
# FiberHome Cable Solution

*FiberHome*



Peng Huang

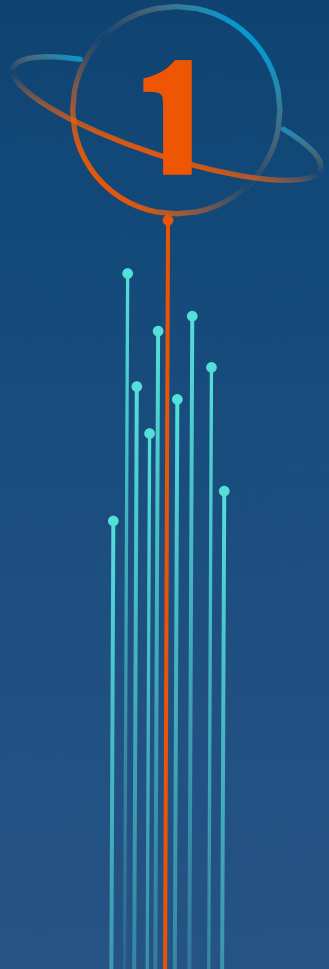
2021.6

A decorative graphic on the left side of the slide. It consists of two overlapping circles, one orange and one light blue, with a vertical line of small dots and a larger orange dot below them.

1. Introduction

2. Cable Products

3. Success Projects



# Introduction





# ■ Origin of China Optical Fiber & Cable

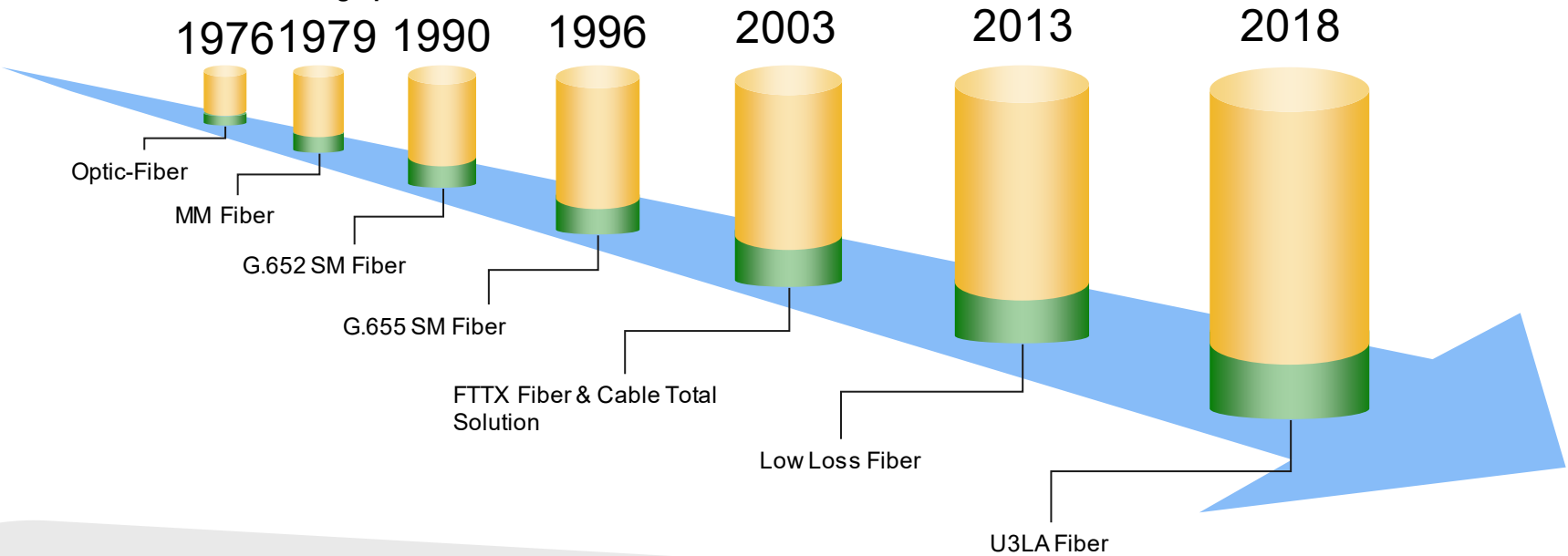


**China first optical fiber (1976)**

**100+ Invention patents**

**80%+ Fiber & Cable standards**

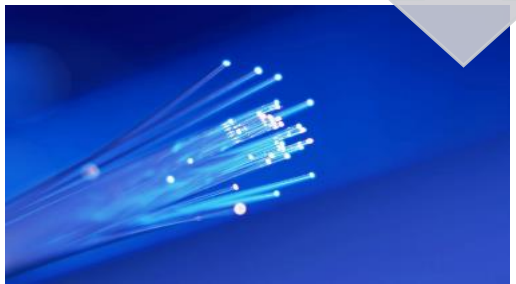
Photographed at 1976



**U3LA  
Fiber**

VAD+PCVD+OVD  
technologies  
Typical Attenuation  
0.170 (dB/km)

Transmission length  
800km in 400G network  
Used in China Unicom  
backbone 400G network





# FiberHome Optical Preform & Fiber Industry

## Advanced manufacture technologies

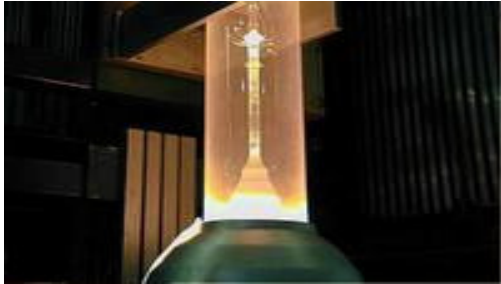
- 6th generation VAD + OVD for single mode preform
- PCVD/MCVD for special preform
- More than **2000** ton perform per year

## Advanced manufacture process

- Drawing furnace and coating system
- More than **60 million core-km** per year
- Specific defect detection technique

## Advanced manufacture product

- Low attenuation loss
- Perfect geometrical accuracy
- Minimums difference between batches



VAD+OVD



PCVD/MCVD



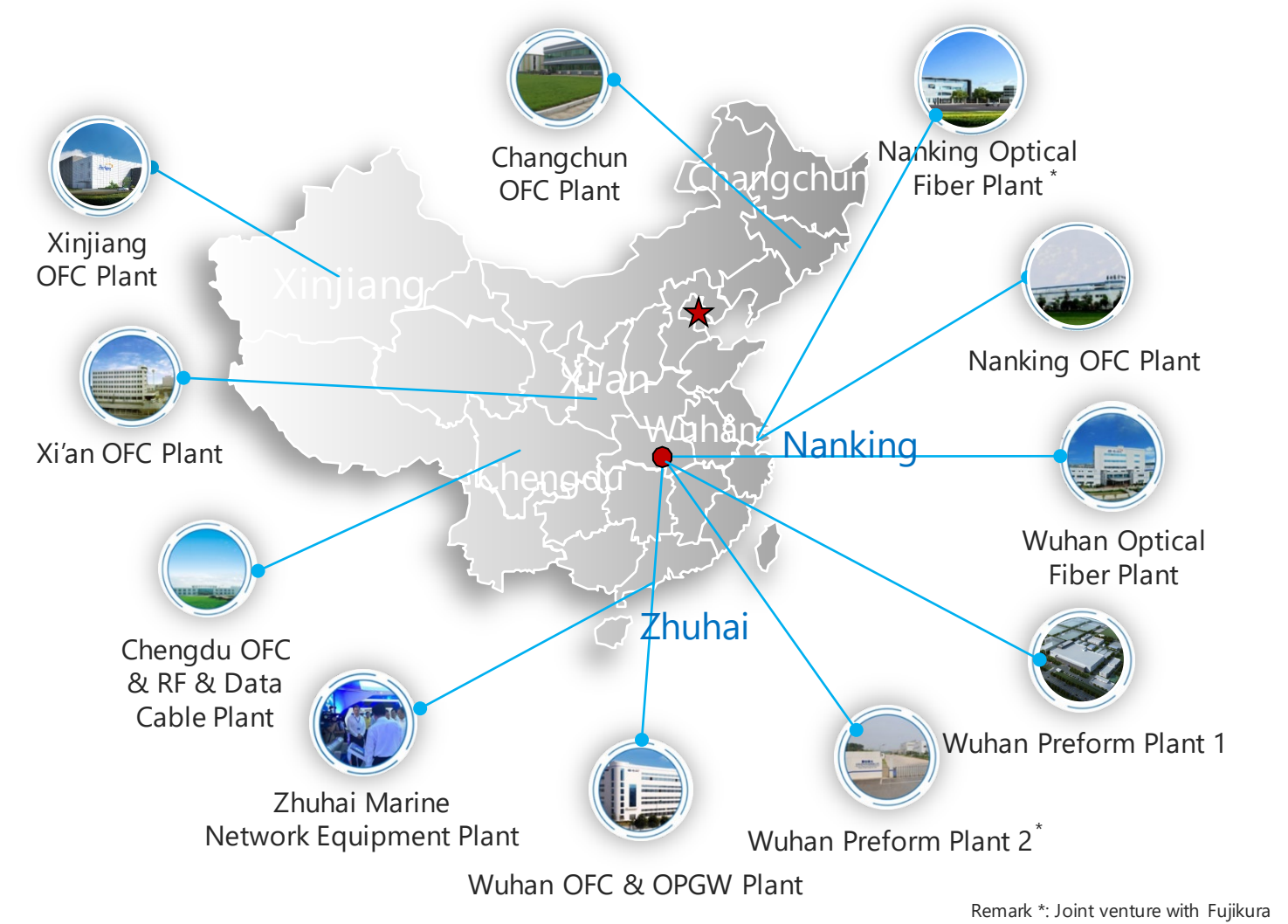
Draw tower



Optical fiber

OM3, OM4, 3LA  
G.652, G.655 & G.657  
Power delivery fiber, rare-earth doped fiber & etc.

# Industry Layout



Wuhan, Headquarter



# ■ International Main Customers

- The Whole Industrial Chain
- High Quality
- Fully customization



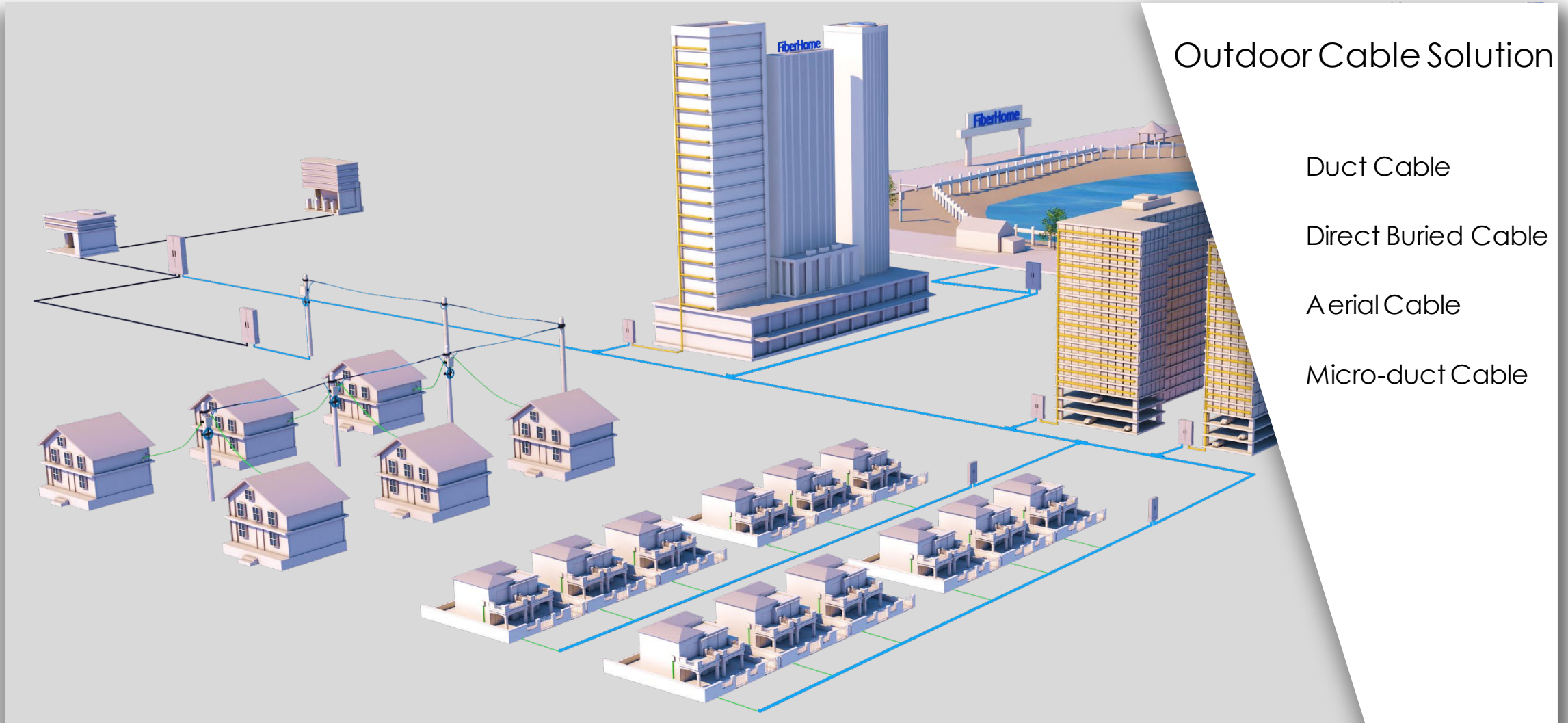




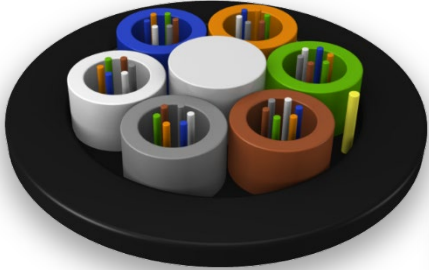
## Cable Products



# ■ Outdoor Cable Solution



# Duct Cables



All Dielectric, Stranded Loose Tube Cable



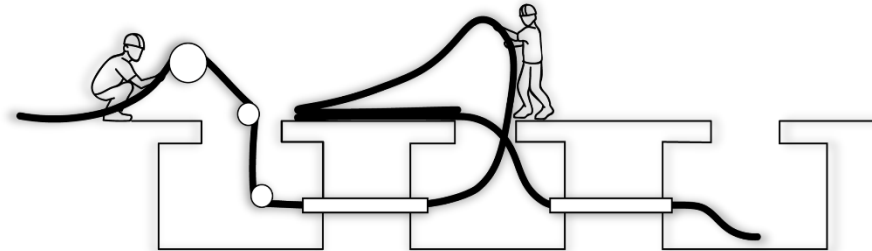
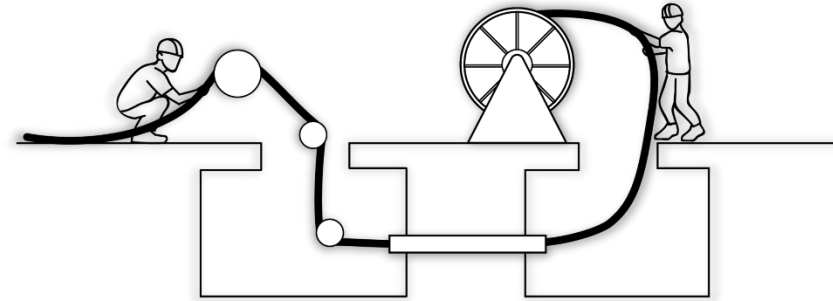
All Dielectric, Stranded Loose Tube Cable with Aramid Yarn



Corrugated Steel Tape Armored, Stranded Loose Tube Cable



Corrugated Aluminum Tape Armored, Stranded Loose Tube Ribbon Cable





# ■ Direct Buried Cables



Double Armored, Double Sheath, Stranded Loose Tube Cable



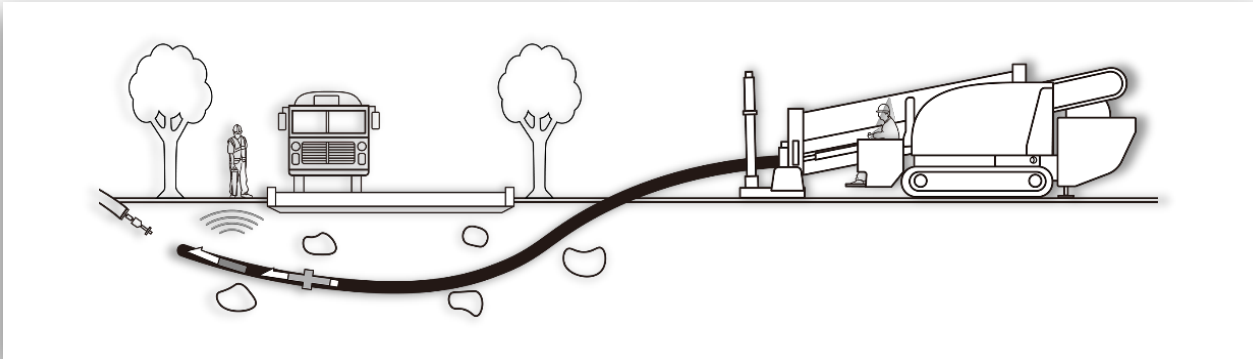
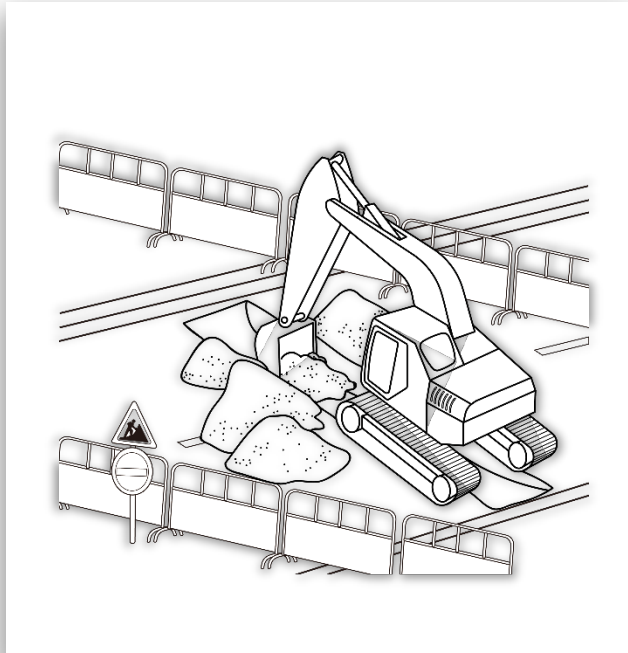
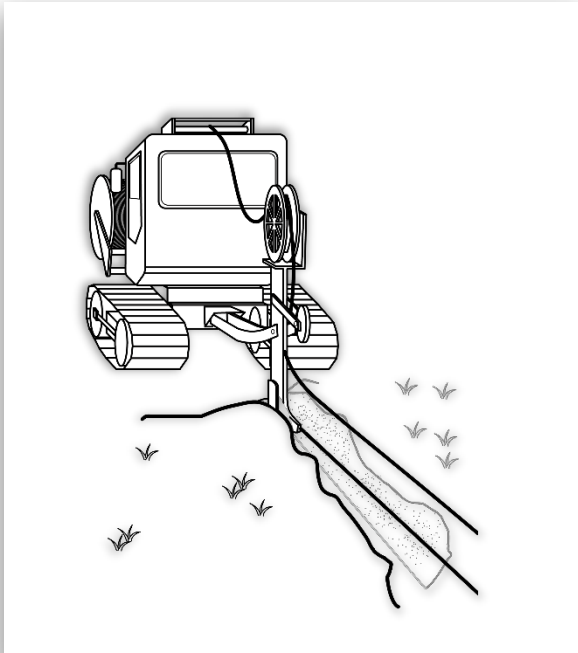
Single Armored, Double Sheath, Stranded Loose Tube Cable



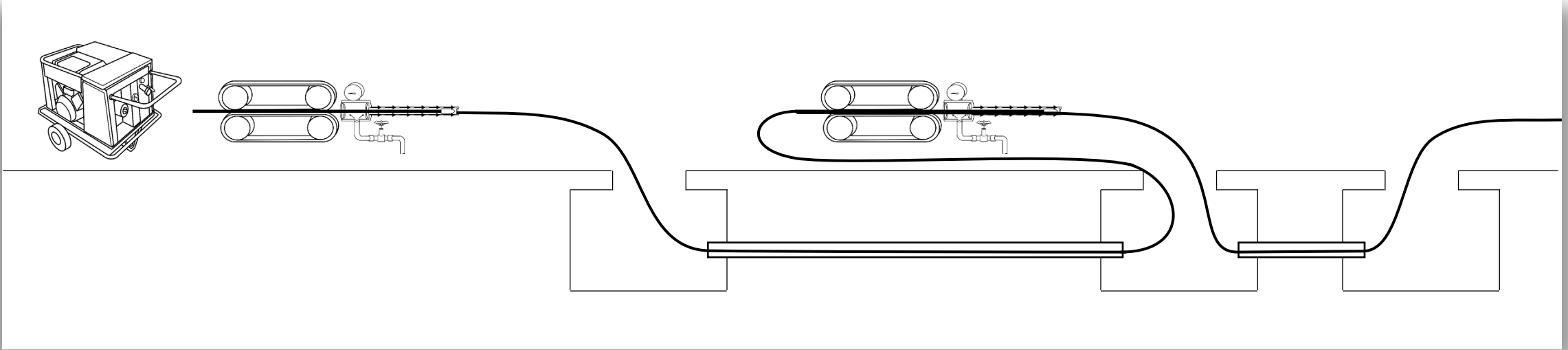
Single-layer Steel Wire Armored, Corrugated Aluminum Tape Armored, Stranded Loose Tube Cable



Double-layer Steel Wire Armored, Corrugated Aluminum Tape Armored, Stranded Loose Tube Cable



# ■ Micro-duct Cables(Air-blown cable solution)

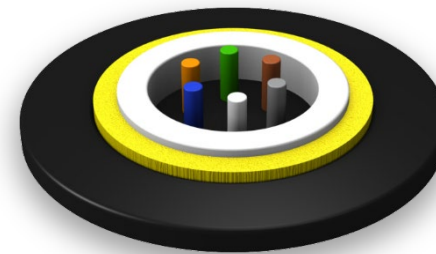


Low costs

High efficiency and safe

Short pay-back period

Easy expansion



Air-blown Fiber Unit



Air-blown Micro Cable

# ■ Micro-Duct

## Micro-duct bundle

- Higher pipeline density
- Poorer impact resistance

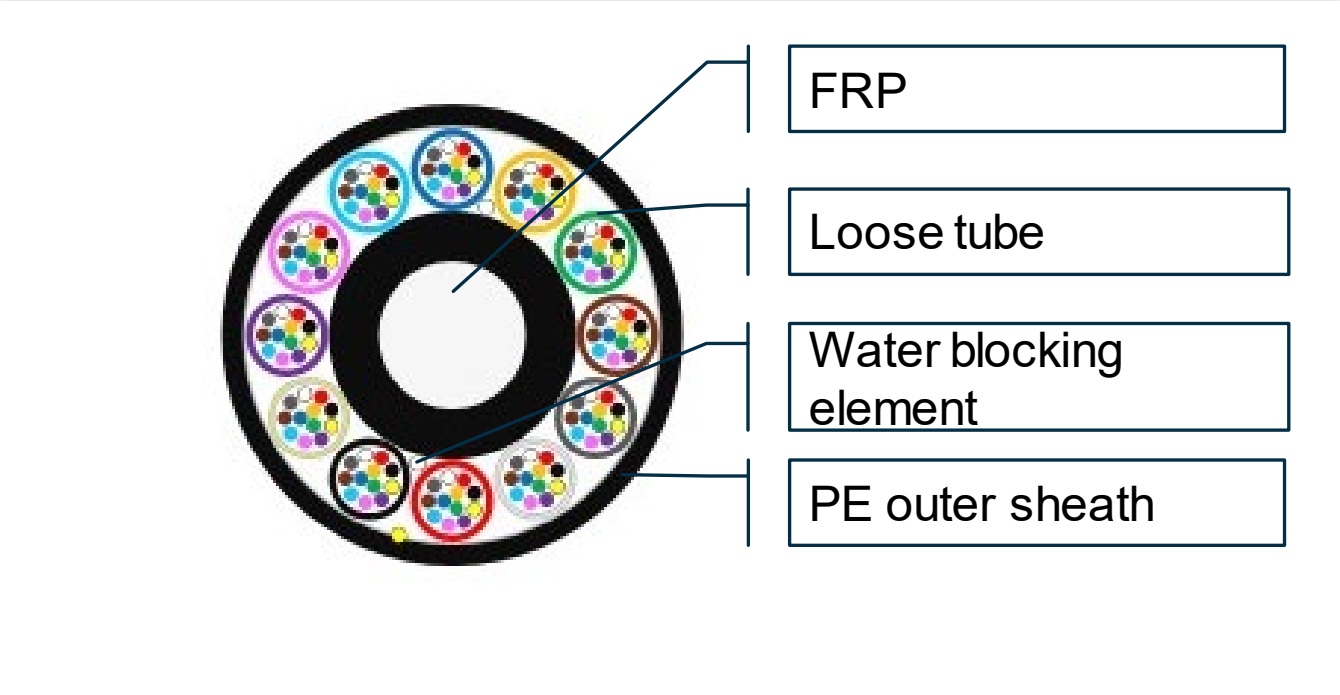


## Outer protective tube + Micro-Duct

- Lower pipeline density
- Higher impact resistance



# ■ Micro-duct Cables



| Fiber Counts | Structure | Cable Diameter (Max.) | Cable Weight | Appropriate Micro Duct Type (OD/ID mm) |
|--------------|-----------|-----------------------|--------------|----------------------------------------|
| 2~72         | 1+6       | 6.0mm                 | 30kg/km      | 10/8                                   |
| 96           | 1+8       | 6.2mm                 | 34kg/km      | 12/10                                  |
| 144          | 1+12      | 8.0mm                 | 55kg/km      | 12/10                                  |
| 288          | 1+9+15    | 9.6mm                 | 80kg/km      | 14/12                                  |

# ■ Micro-duct Cables Installation



Micro-duct air tightness inspection



Sponge ball



Clean the Micro-duct



lubrication



Bullet Cap



Cable Pay-off



Machine Installation

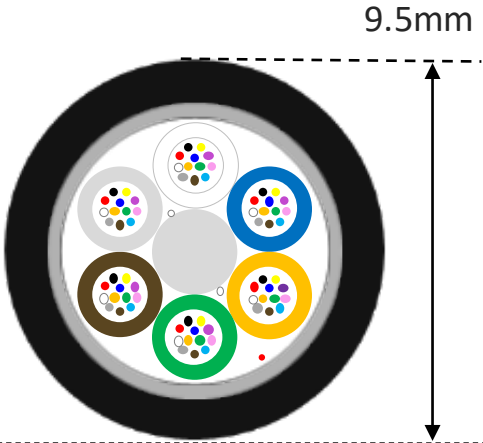


Air Compressor

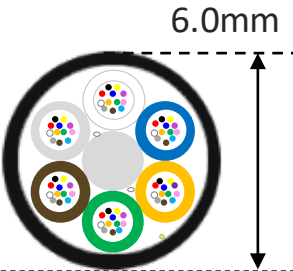


Cooler

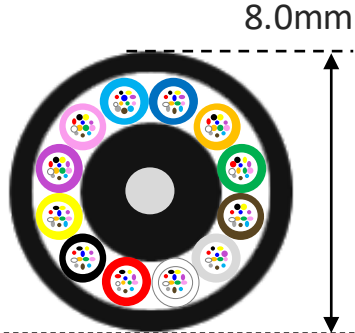
# ■ Micro-Duct Cables



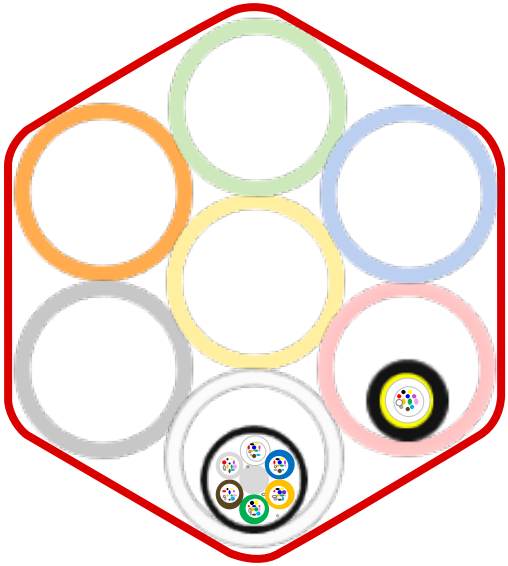
Typical Duct Cable  
**72** Fibers



Typical Air-blown  
Micro-duct Cable  
**72** Fibers



Typical Air-blown  
Micro-duct Cable  
**144** Fibers



Less Spaces More Fibers

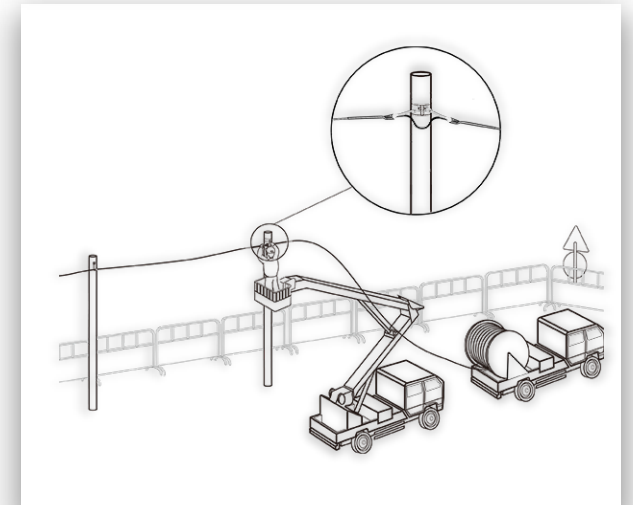
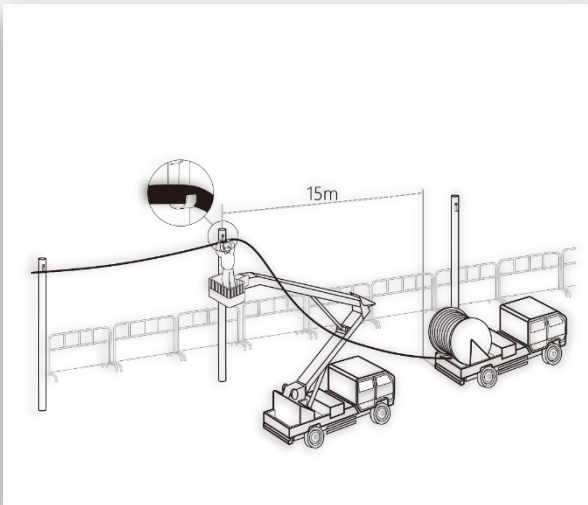
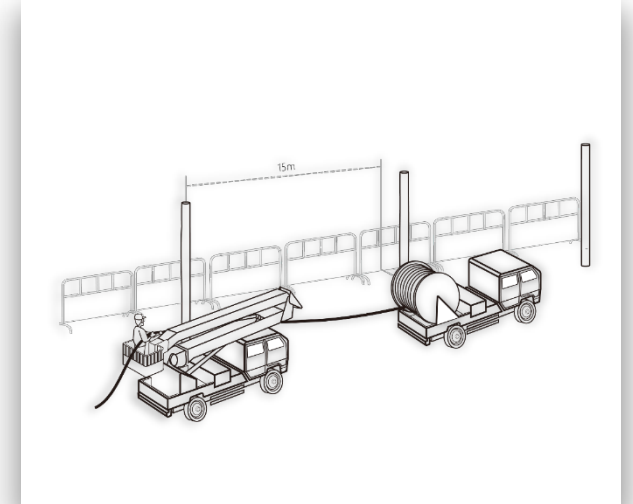
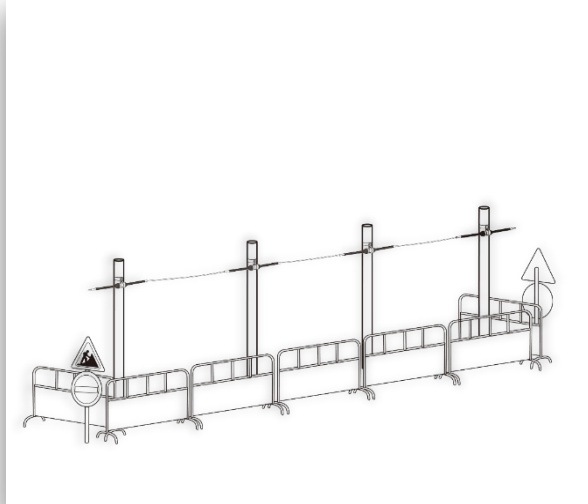
# ■ Figure-8 Aerial Cables



Figure 8 Self-supporting Cable

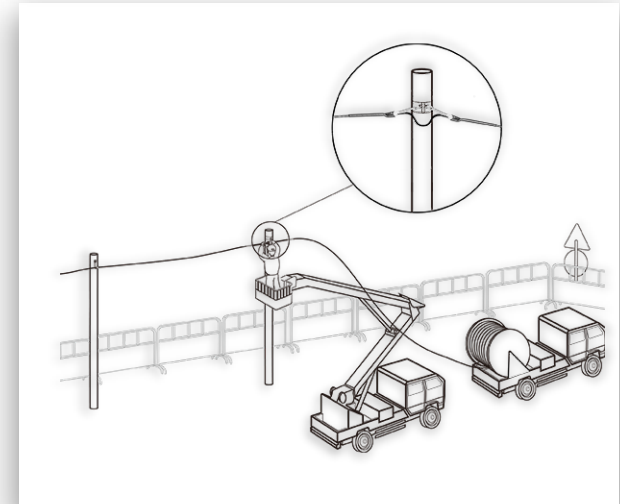
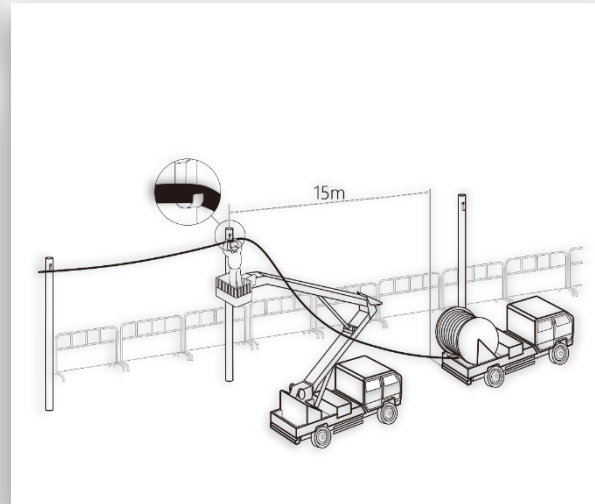
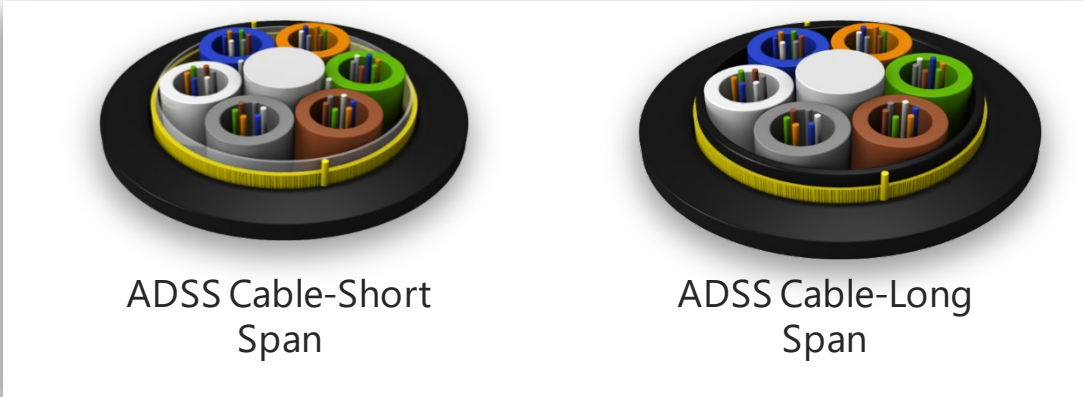
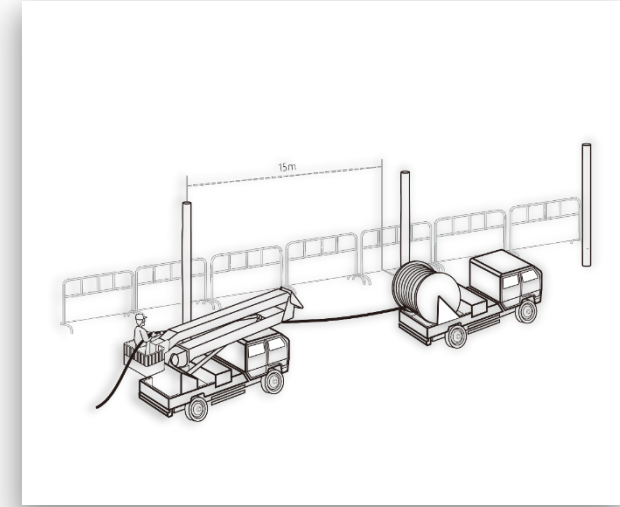
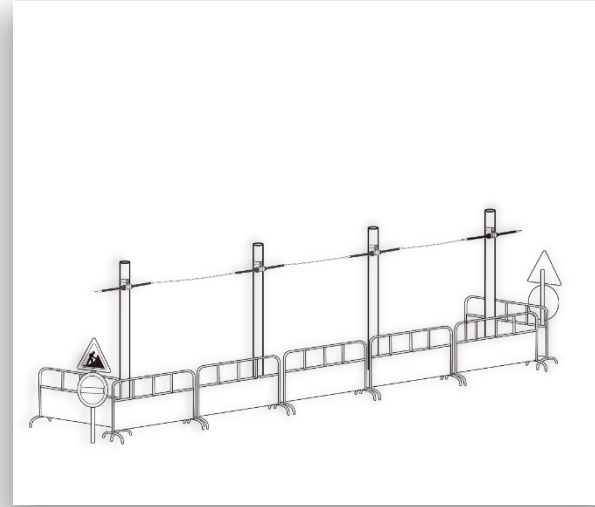
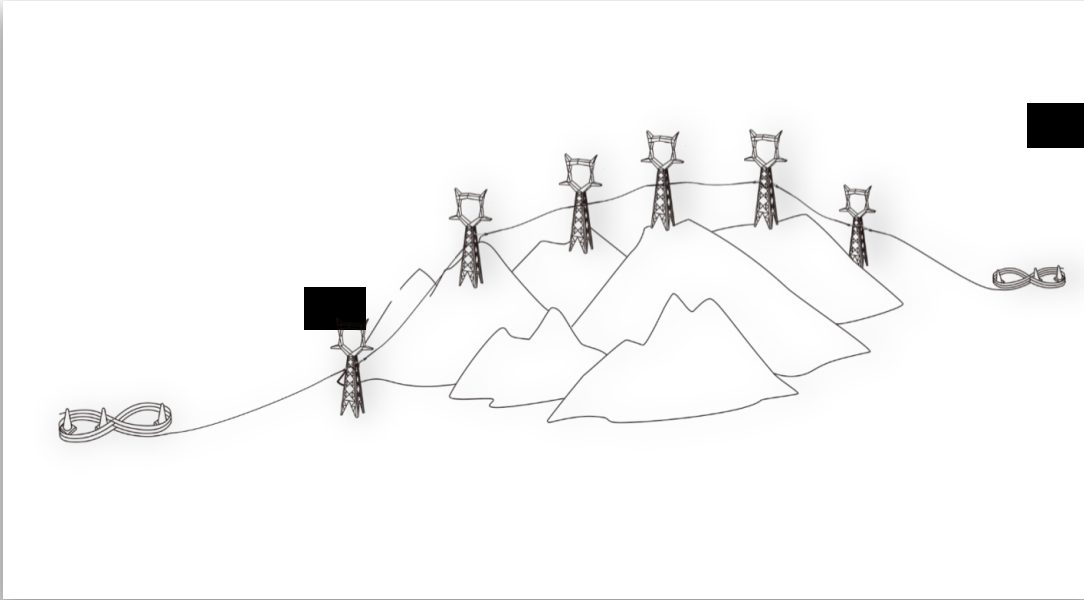


Corrugated Steel Tape Armored, Double Sheath, Figure 8 Self-supporting Cable

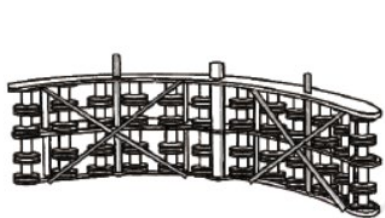




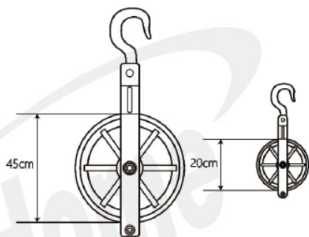
# ■ ADSS 400m 800m 1600m



# ■ Hardware



Stringing block



Tension clamp



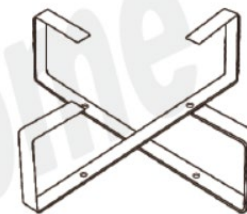
Suspension clamp



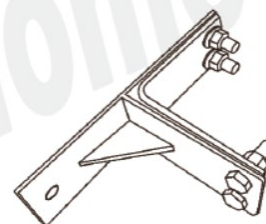
Pulling grip



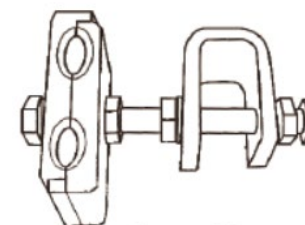
Break-away swivel



Cable Storage Shelf

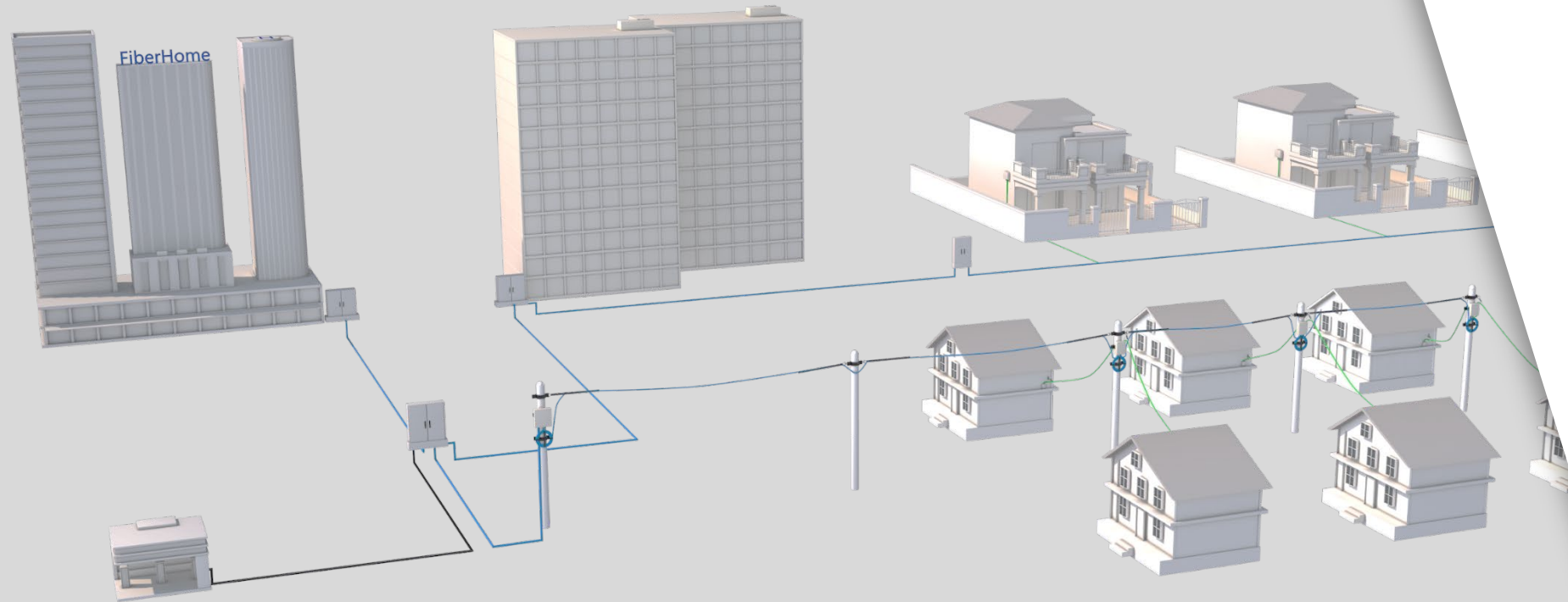


Fastening clamp



Down-lead clamp

# Indoor Cable Solution



## Indoor Cable Solution

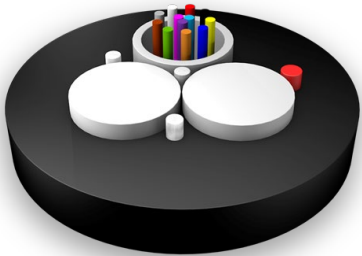
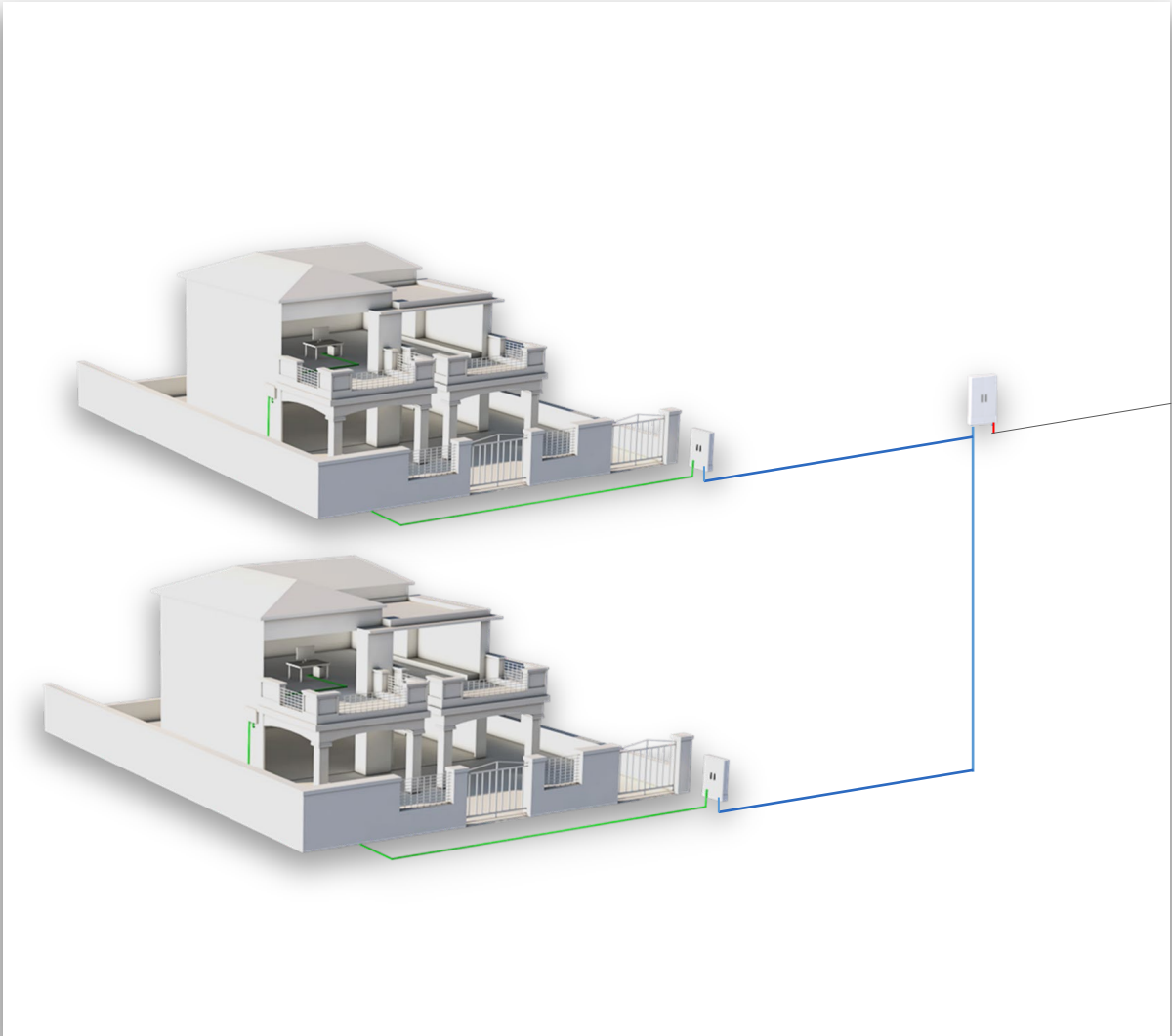
Distribution

Outdoor Drop Cable

Wiring Cable

Indoor Drop Cable

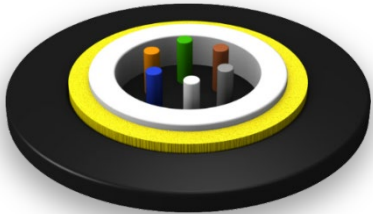
# ■ Distribution Cables



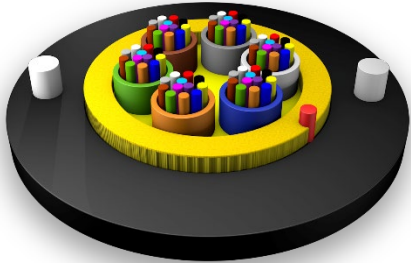
ASU



Flat Unitube



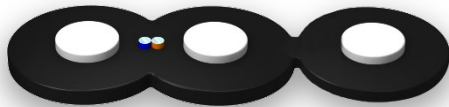
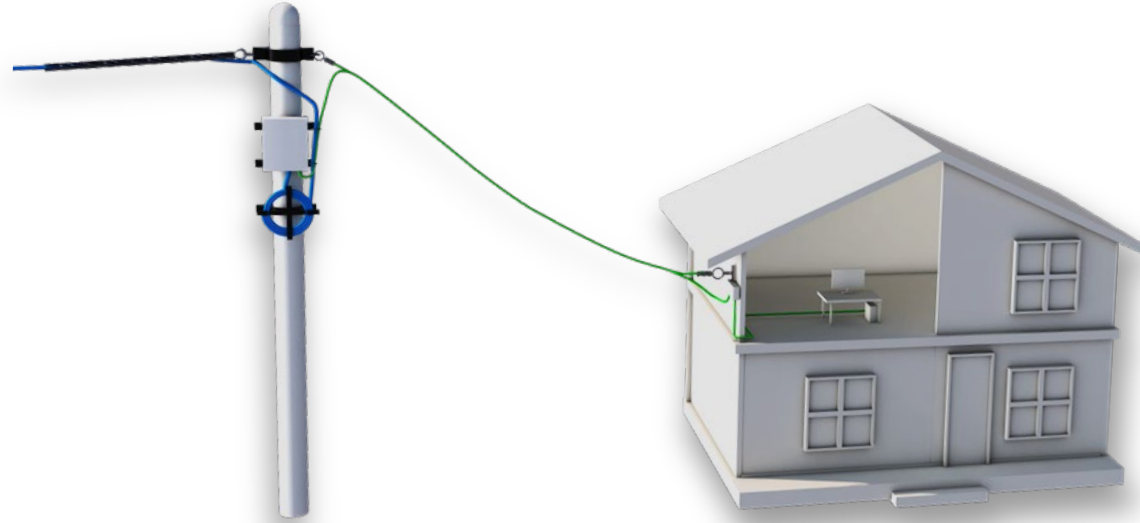
Air Blown Micro Cable



Outdoor Micro Tube Cable



# ■ Outdoor Drop Cables



Self-supporting Bow Type Cable



Round Type Drop Cable

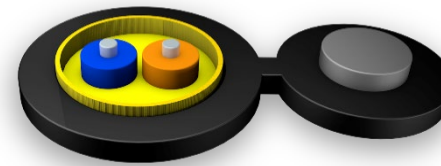
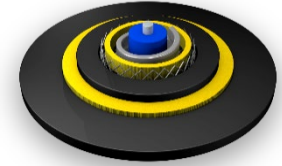
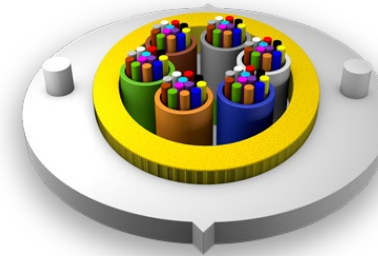
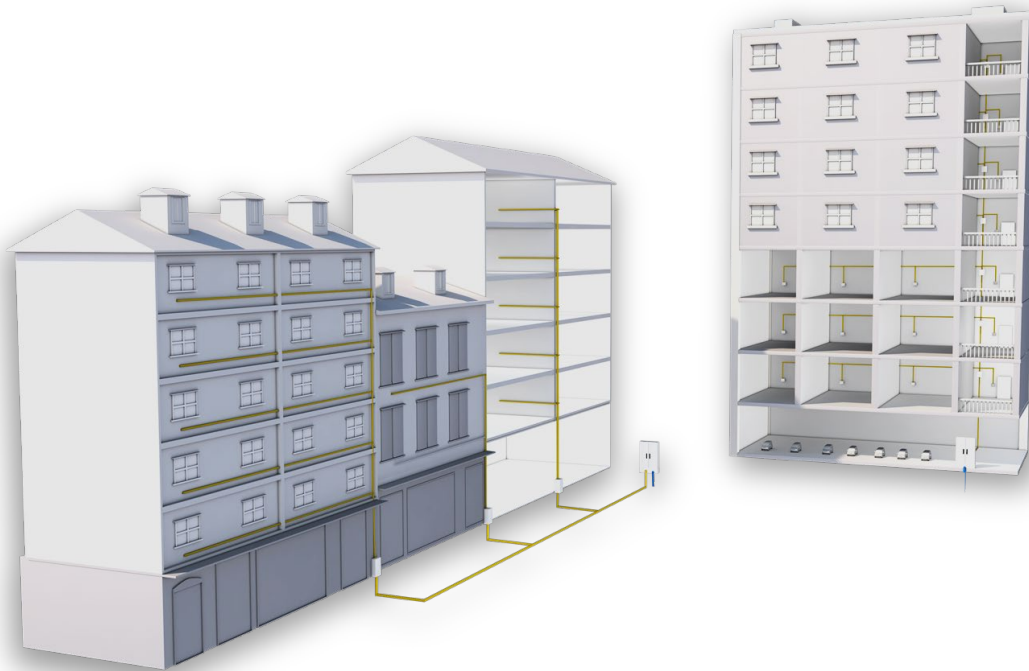


Figure-8 Round Type Cable



Flexible Armored Cable

# ■ Wiring Cable



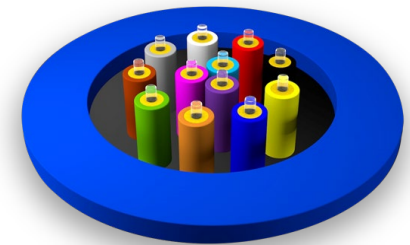
Indoor Micro Tube Cable



Breakout Cable



Tight Buffer Distribution Cable

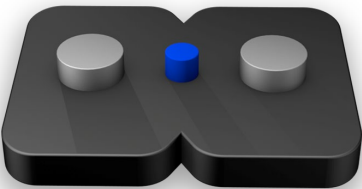


Mini Simplex Unit Distribution Cable

# ■ Indoor Drop Cable

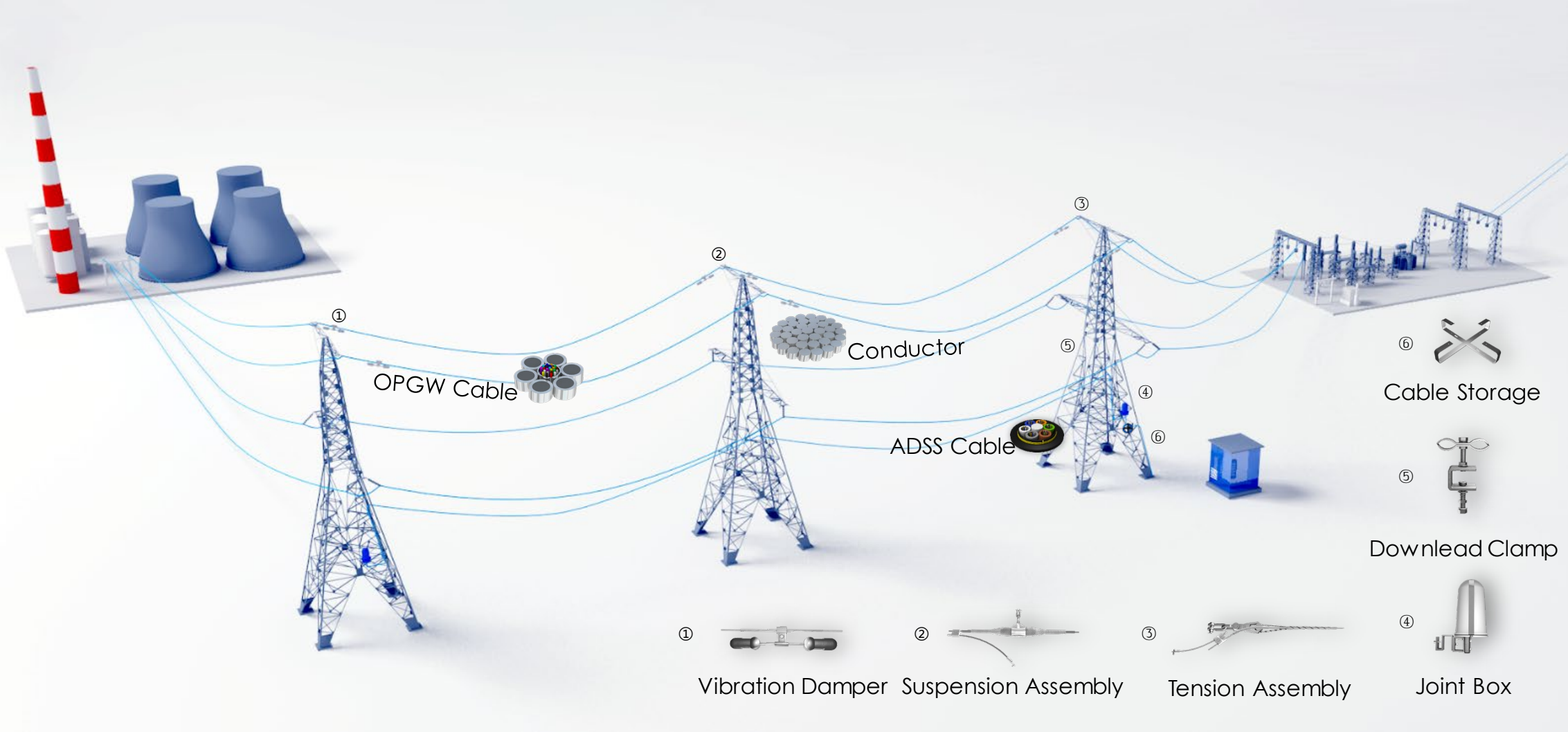


Invisible Cable



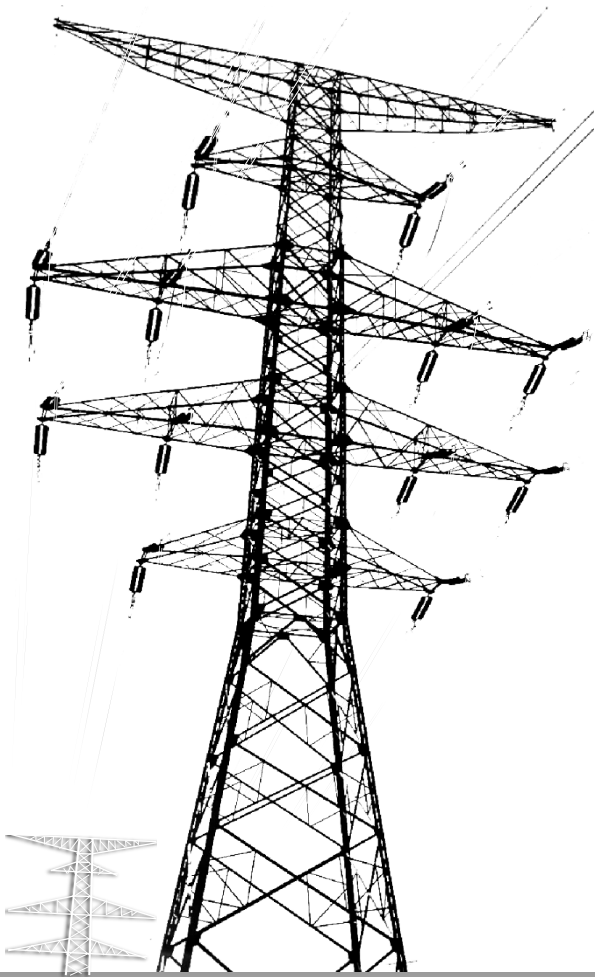
Low-friction Bow  
Type Cable

# ■ Overhead Transmission Cable Solution





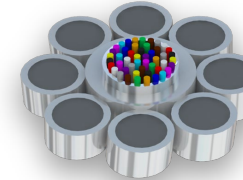
# ■ Optical Fiber Overhead Ground Wire



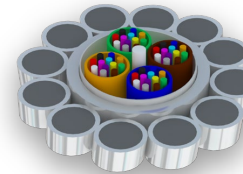
Central Stainless Steel Tube OPGW



Stranded Stainless Steel Tube OPGW

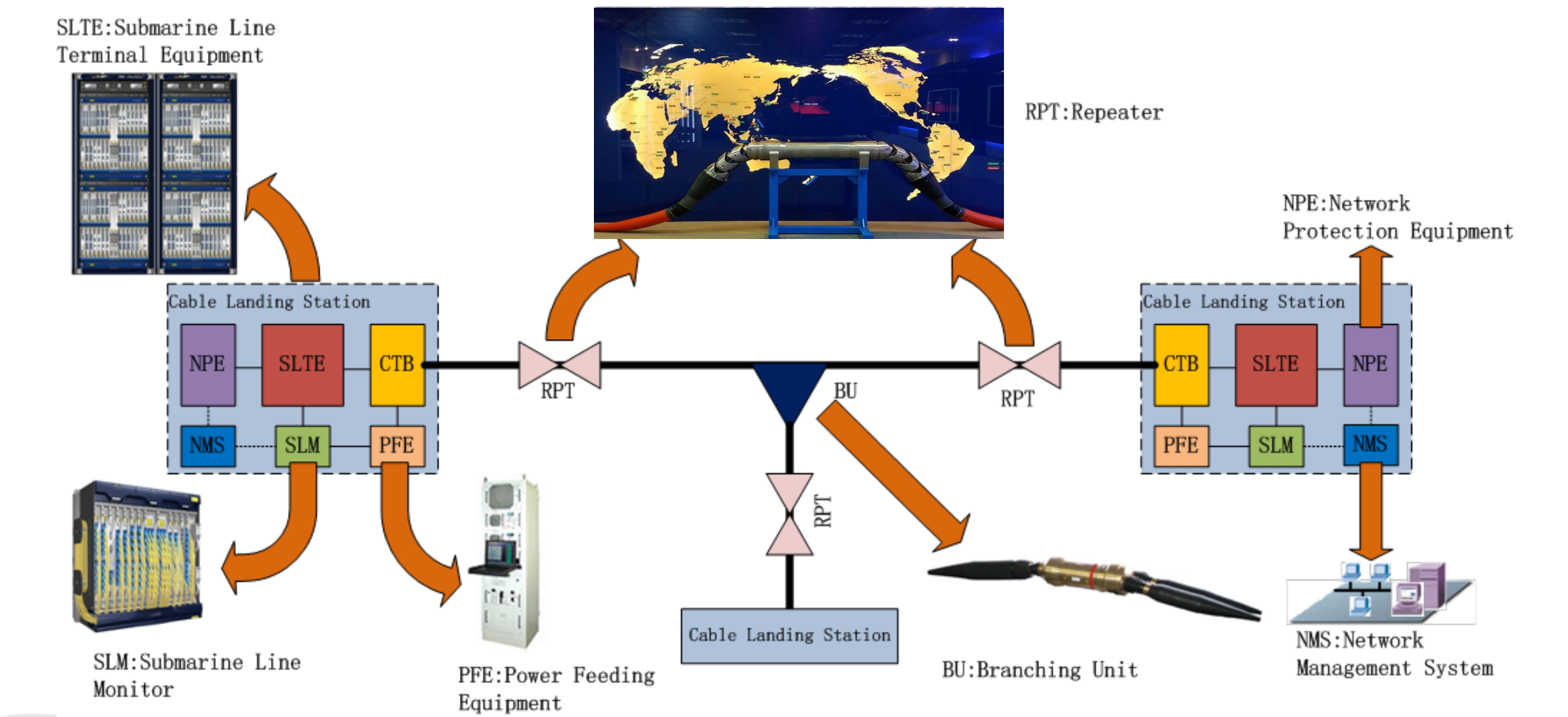


Al-covered Stainless Steel Tube OPGW

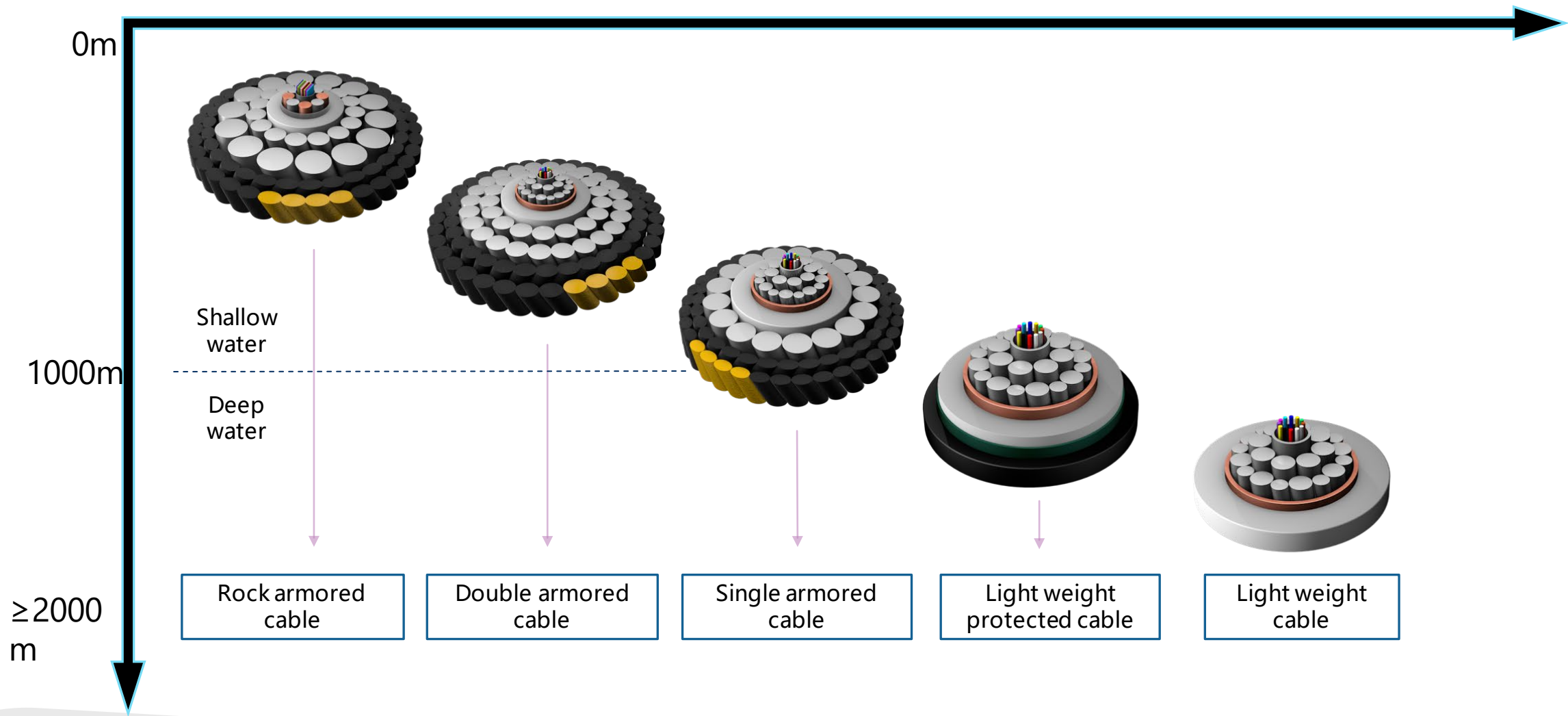


Central Aluminum Tube OPGW

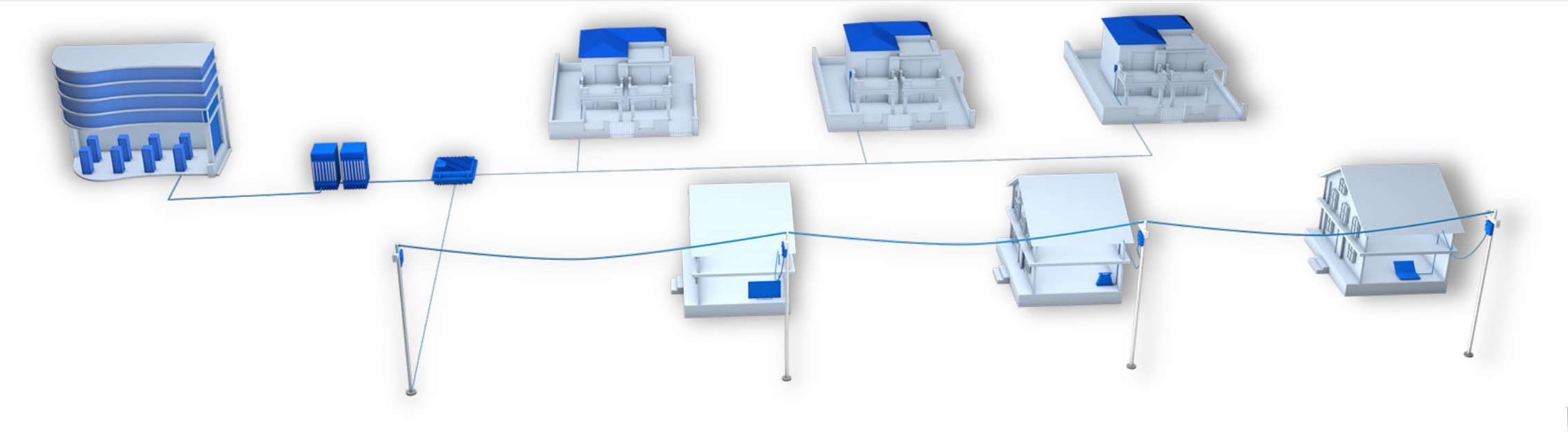
# ■ Submarine Network Solution



# ■ Submarine Cables



# ■ CATV Coaxial Cable



CATV Coaxial Drop Cable



Fig-8 CATV Coaxial Drop Cable



CATV Coaxial Trunk Cable

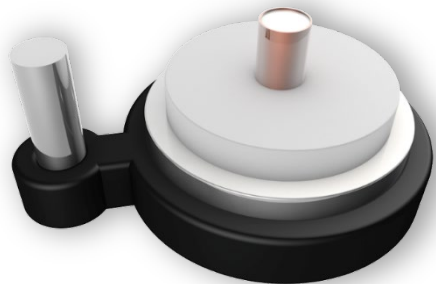
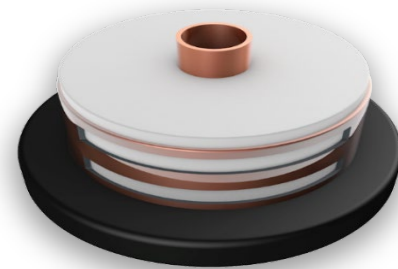
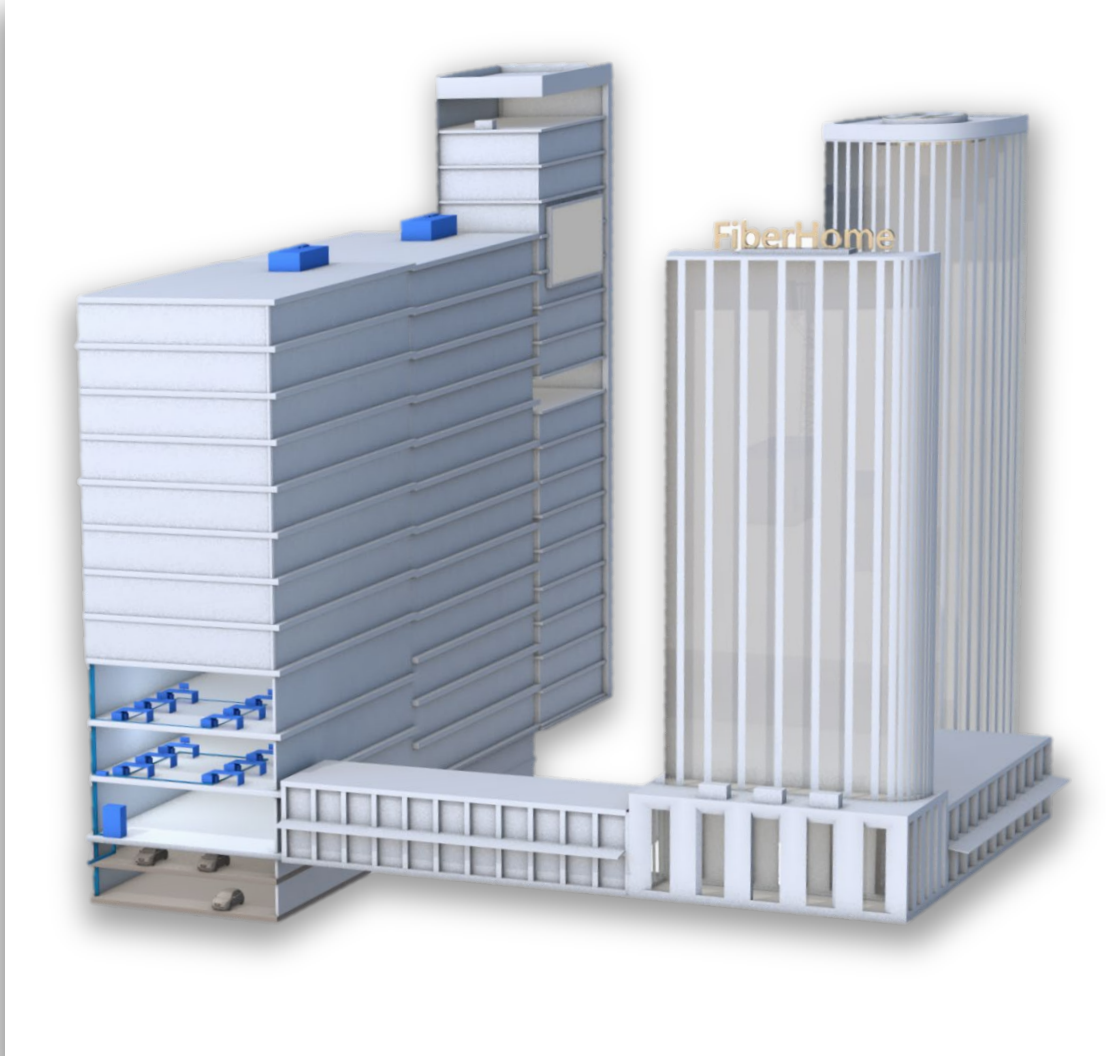


Fig-8 CATV Coaxial Trunk Cable

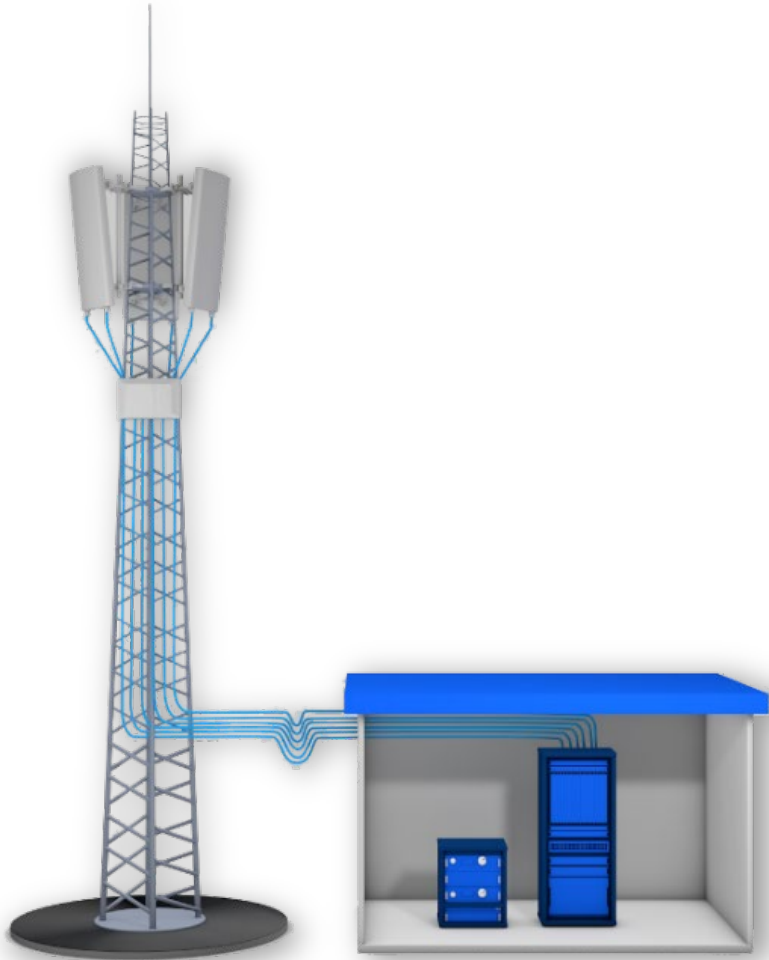


# ■ RF Radiating/ Leaky Cables



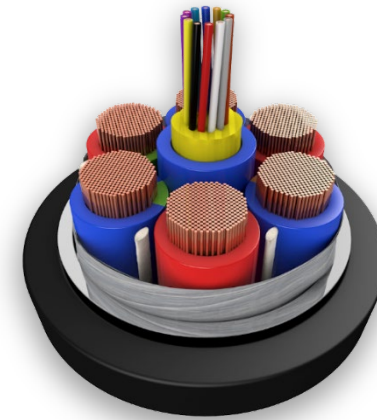
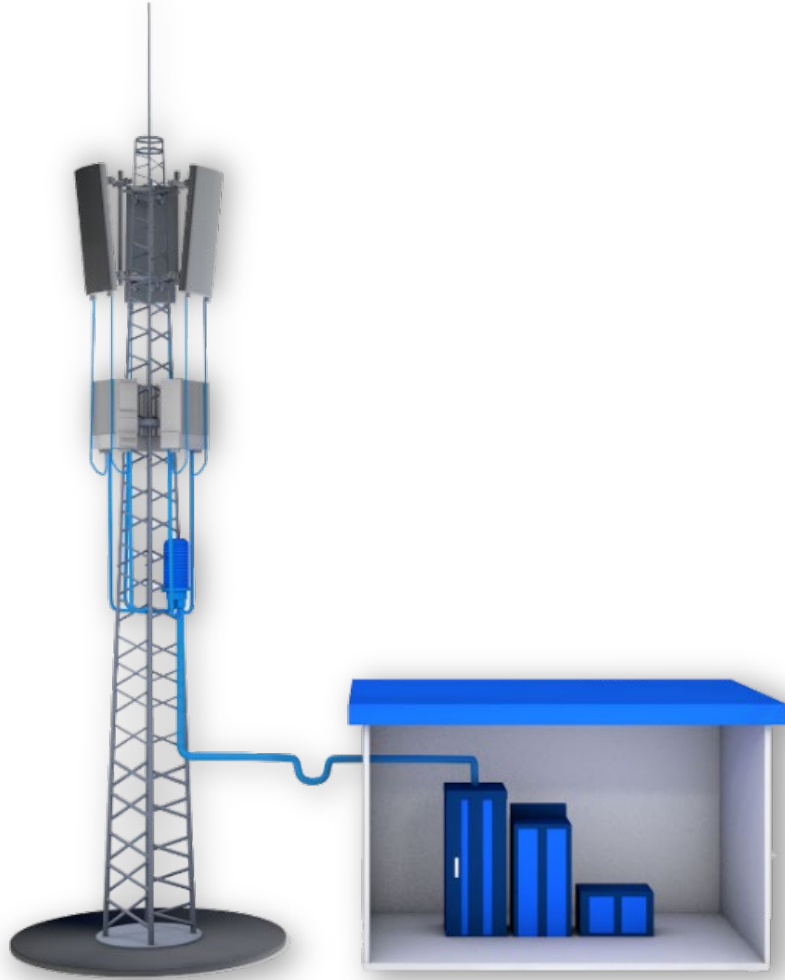
RF Radiating Cable

# ■ RF Coaxial Cable



RF Coaxial Cable

# ■ Hybrid Cable



Hybrid Cable

# ■ LAN Cables



CAT 5e UTP



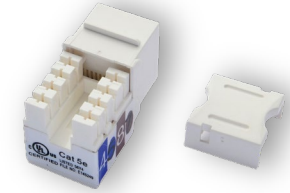
CAT 6 UTP



CAT 6A U/FTP



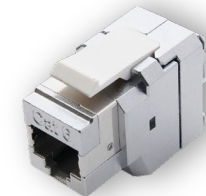
CAT 7 S/FTP



Unshielded CAT.5e module



Shielded connector



Shielded CAT.6 module



## Successful Projects





# Certificate

|                                 |                                                                                                                                                         |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certificate Number 181201       |                                                                                                                                                         |
| <b>GR-20-CORE / IEEE-1222</b>   |                                                                                                                                                         |
| TESTING CERTIFICATE             |                                                                                                                                                         |
| <u>Certification Type:</u>      | Testing Completed                                                                                                                                       |
| <u>Testing Criteria:</u>        | Telcordia GR-20-CORE and IEEE-1222                                                                                                                      |
| <u>Manufacturer:</u>            | FiberHome Telecommunication Technologies Co., Ltd.<br>No. 42 Optical Valley Chuangye Street<br>Hongshan District<br>Wuhan, Hubei<br>P.R. China (430073) |
| <u>Product:</u>                 | All-Dielectric Self Supporting Fiber Optic Cable                                                                                                        |
| <u>Testing Completion Date:</u> | October 2018                                                                                                                                            |
| <u>Testing Validity</u>         | 3 years                                                                                                                                                 |
| <u>Certificate Number:</u>      | 181201                                                                                                                                                  |

Ericsson Network Infrastructure Solutions (NIS) has completed an analysis of the FiberHome Telecommunication Technologies Co., Ltd. all-dielectric self-supporting fiber optic cables (1-layer and 2-layer designs, all dry and semi-dry construction) against the requirements contained in Telcordia GR-20-CORE, *Generic Requirements for Optical Fiber and Optical Fiber Cable*, Issue 4, July 2013

For details on the scope of the analysis and results, please refer to NIS Report DA-2212, *Test Program Report for FiberHome All-Dielectric Self Supporting Fiber Optic Cables (1 tube layer and 2 tube layers) (all dry and semi-dry construction)* available from FiberHome.

  
Richard G. Kluge  
Engineering Manager  
Network Infrastructure Solutions (NIS)

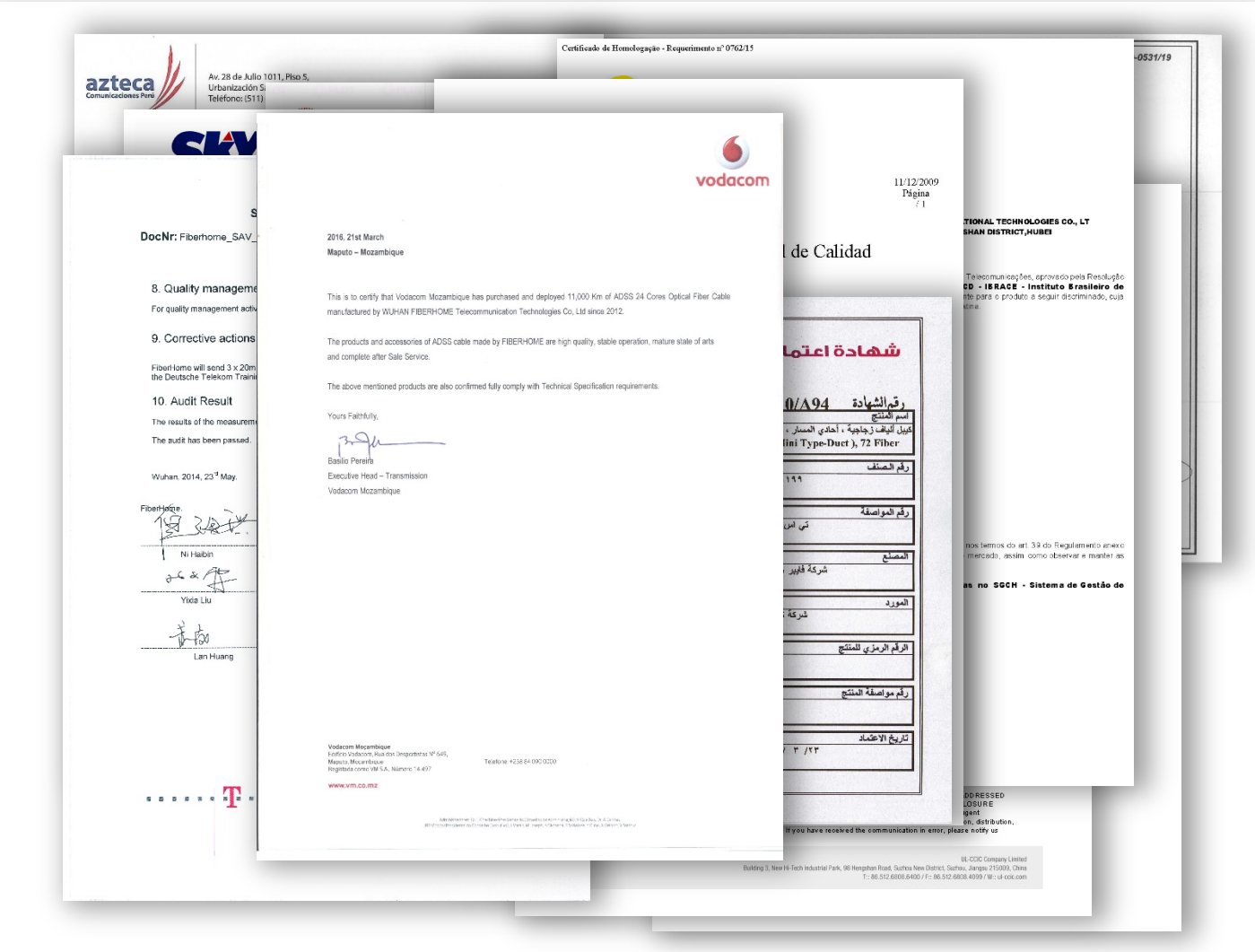
|                                                                                                                                                                |                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Telcordia Certificate Number 180101<br>January 15, 2018                                                                                                        |                                                                                                                               |
| Certified by<br> <b>Telcordia</b><br>Network Infrastructure Solutions (NIS) |                                                                                                                               |
| GR-20-CORE CERTIFICATE                                                                                                                                         |                                                                                                                               |
| <u>Certification Type:</u>                                                                                                                                     | Product Conformance                                                                                                           |
| <u>Testing Criteria:</u>                                                                                                                                       | Telcordia GR-20-CORE                                                                                                          |
| <u>Manufacturer:</u>                                                                                                                                           | FiberHome Telecommunication Technologies Co., Ltd.<br>No. 42, Dongxin Lu<br>Guandong Industrial Park<br>Wuhan, Hubei<br>China |
| <u>Product:</u>                                                                                                                                                | G.652D, G.655C, and G.657A2 optical fiber                                                                                     |
| <u>Testing Completion Date:</u>                                                                                                                                | November 2017                                                                                                                 |
| <u>Certificate Period</u>                                                                                                                                      | January 1, 2018 - December 31, 2020                                                                                           |
| <u>Certificate Number:</u>                                                                                                                                     | 180101                                                                                                                        |

Telcordia-NIS has completed an analysis of the FiberHome Telecommunication Technologies Co. Ltd G.652D, G.655C, and G.657A2 optical fibers against the requirements contained in GR-20-CORE, *Generic Requirements for Optical Fiber and Optical Fiber Cable*, Issue 4, July 2013 and has found that the cited fibers conform to the criteria of GR-20.

For details on the scope of the analysis and results, please refer to Telcordia Report DA-2034, *Features, Functions, and Performance Analysis of the FiberHome G.652/G655/G657 Optical Fibers against Telcordia GR-20-CORE* available from FiberHome.

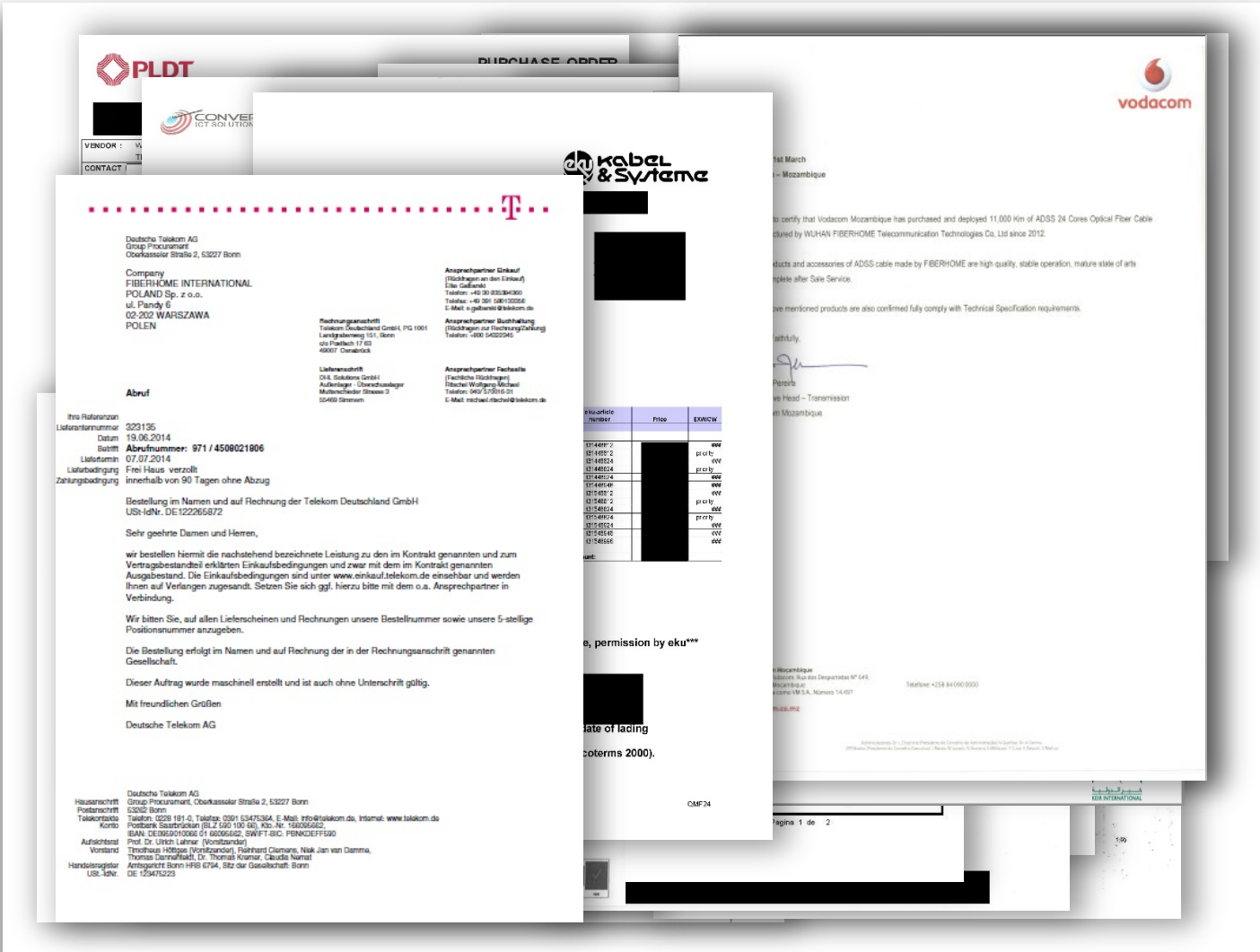
  
Richard G. Kluge  
Engineering Manager  
Telcordia Network Infrastructure Solutions (NIS)

# Customer Certificates



GLOBE  
Deutsche Telecom  
Azteca  
PLDT  
ONO  
TISI  
SKY  
UL  
ANATEL  
Telefonica  
Vodacom  
STC

# Customer POs



- Deutsche  
Telecom  
eku  
Vodacom  
Telconet  
Broadband  
MTN  
Globe  
celecom  
UIH  
ITC
- true  
OPTUS  
Telecom  
Telefonica  
CONVERGE  
entel  
PLDT  
OBB



# THANKS!

*FiberHome*