

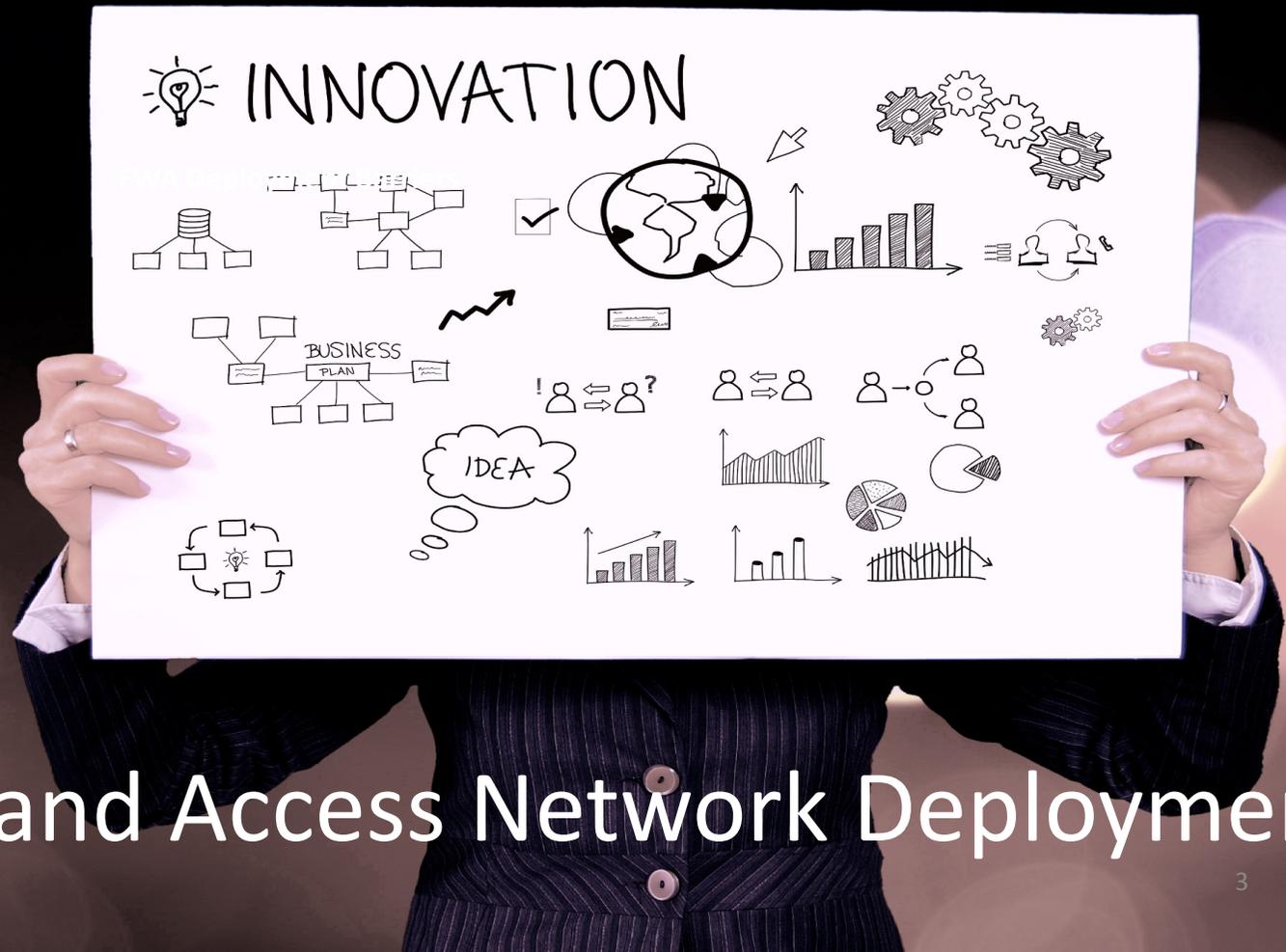
Power-up Your Fiber Network





What We Offer

Changes the Economics



of Broadband Access Network Deployment

POWER & FIBER

ione

HEXATRONIC 



The Worlds **First and Only**

Air Blown Hybrid Power and Fiber System



For 5G and Smart Cities

Powered Fiber Networks

Mobile operators
Small cells 5G WiFi

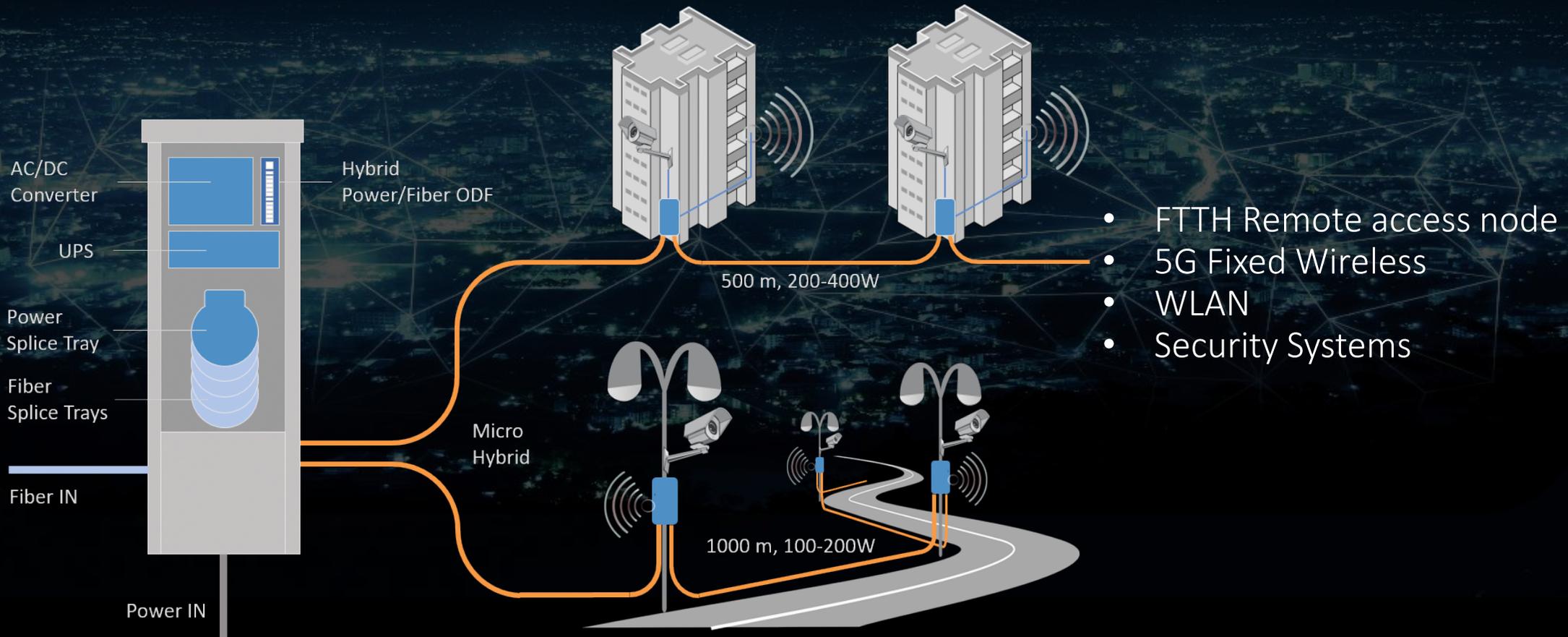
Smart city
WiFi IoT

Security
Surveillance
Cameras & Sensors

Powered Fiber Networks for 5G, WLAN and Security



Powered Fiber Access Networks – One Network – All Applications



Ready To Use in Existing Infrastructure



The Well-known Financial Savings of Microduct System with Micro Cables

- 50-70% savings compared with conventional cable installations of power and fiber
- Use same ducts for your FTTH network and your powered fiber network
- 90% of civil works already done upon future expansion

SAVES
50-70%
INSTALLATION
COST

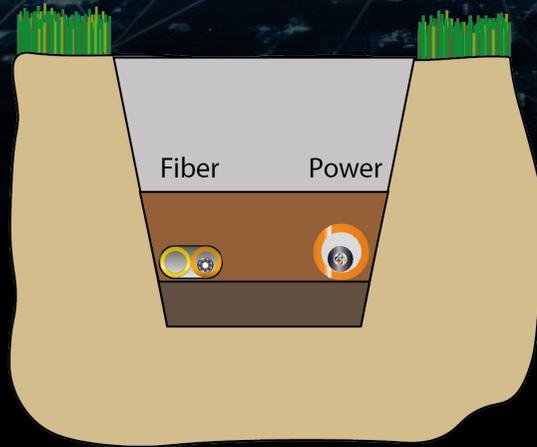
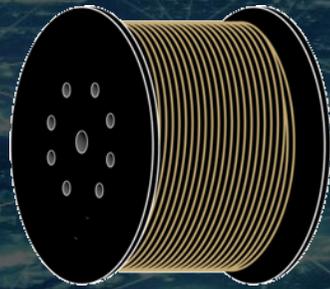




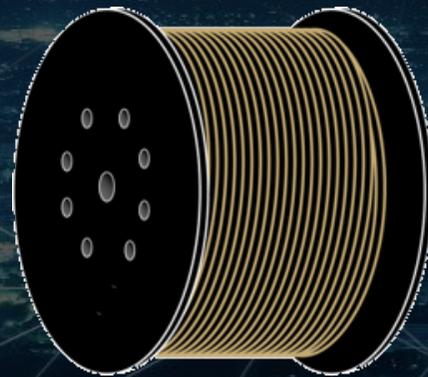
InOne reduces installation cost

Traditional installation

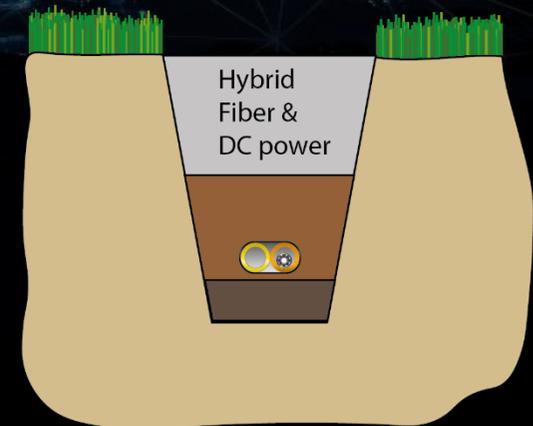
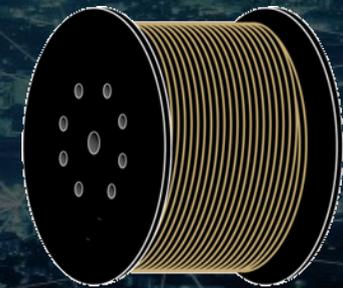
Fiber cable & Duct



AC Power cable & Duct



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IONe
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Power and Safety –

High Power *and* High Safety

- High Power Transmission $>200\text{W}/1000\text{m}$
- Slim cable, high impedance
- Slim cable, thin isolation

How Is It Possible?

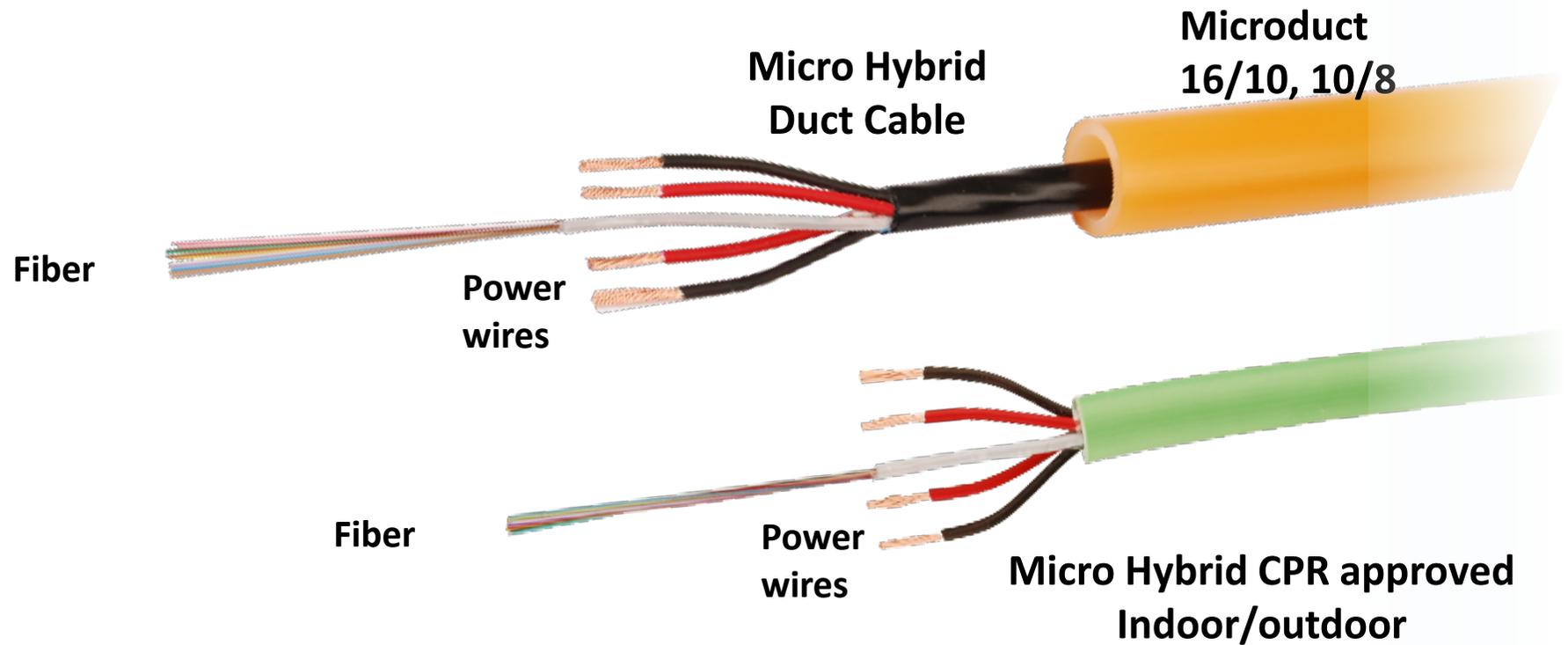
Power and Safety – Extra Low Voltage System

- Safety and high power by 110 Vdc isolated from ground
- Duct is defined as an integral part of cable jacket
- 120 Vdc is defined as extra low voltage
- Extra low voltage not included in concession of power distribution

Hexatronic Hybrid Cable System is approved by Intertek
in accordance to EN 502887

intertek
Total Quality. Assured.

Hexatronic Powered Fiber Access System - Micro Hybrid Cables





FOS & Power supply In Matrix cabinet

PSU 110 Vdc



Termination
Options

Hybrid ODF

Power &
Fiber tray



Power Cable
230 Vac

Fiber Cable

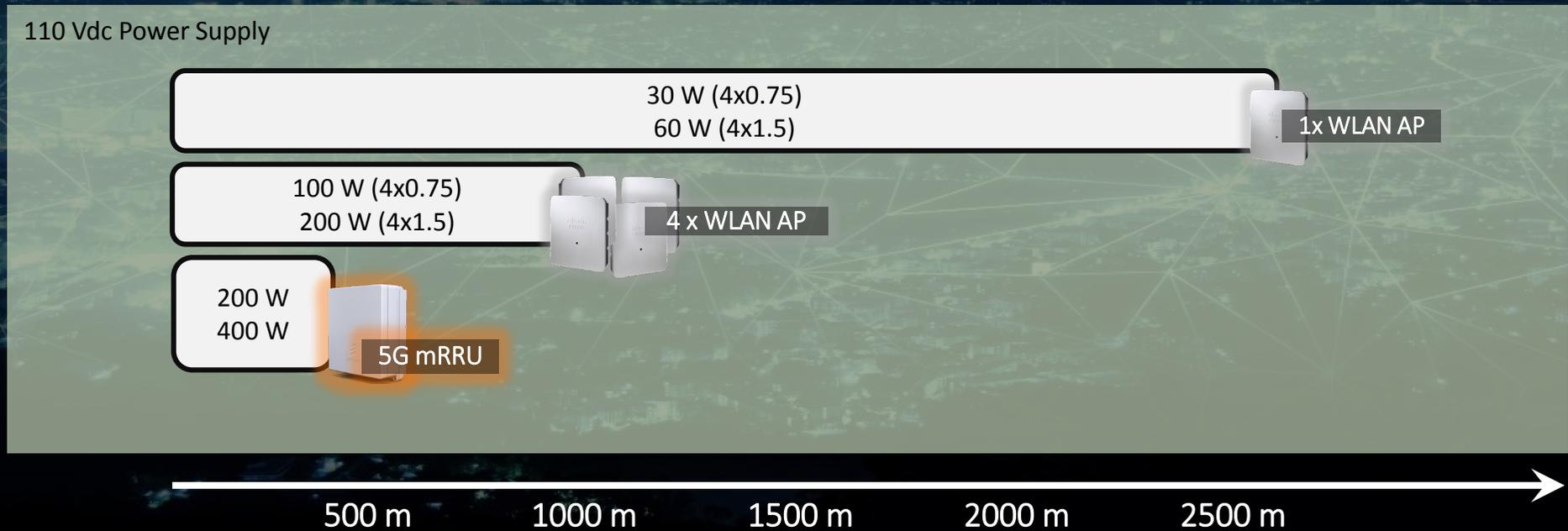
Hybrid Cable

POWER & FIBER



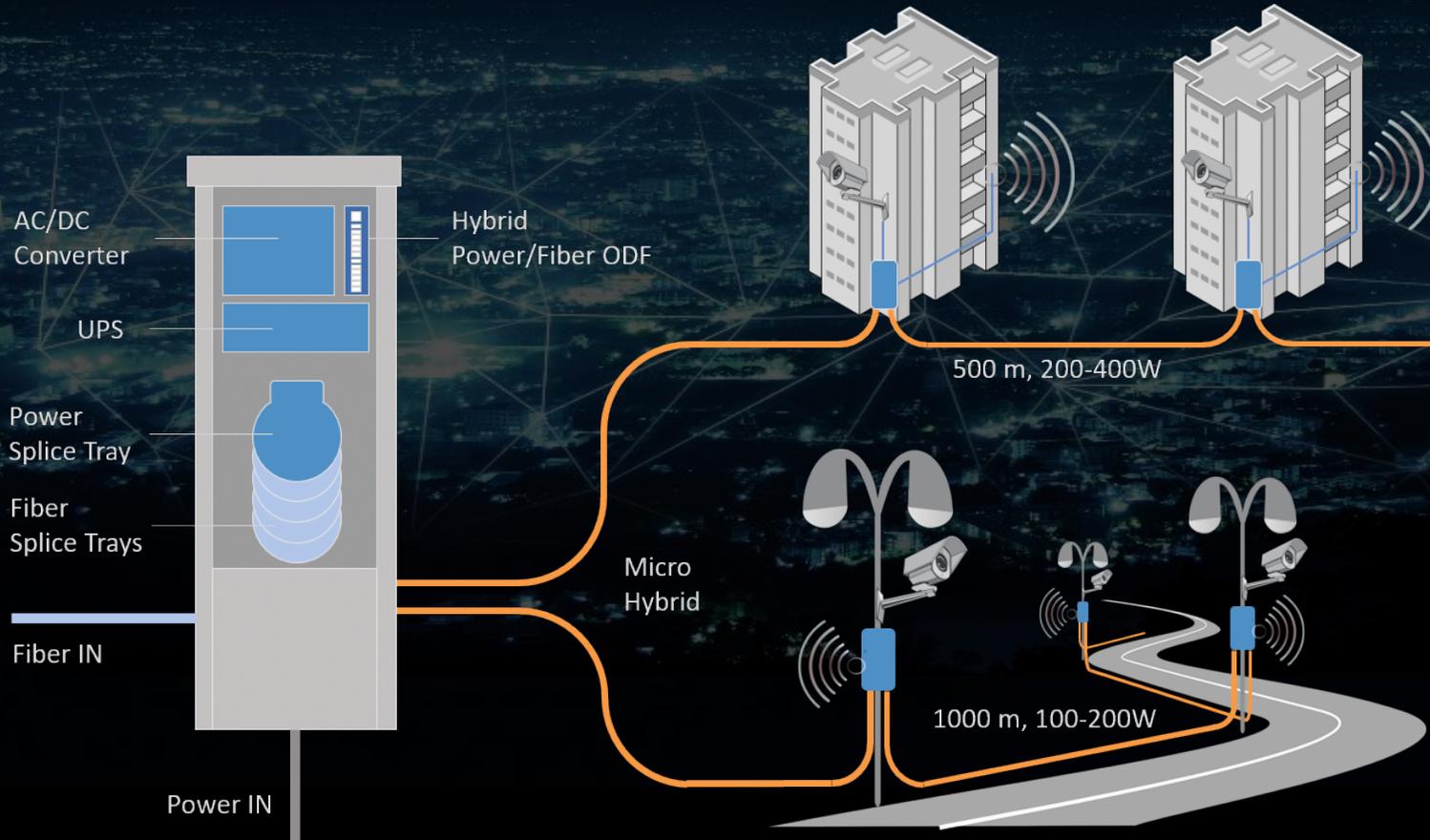


Hexatronic Powered Fiber Access System - Power calculation





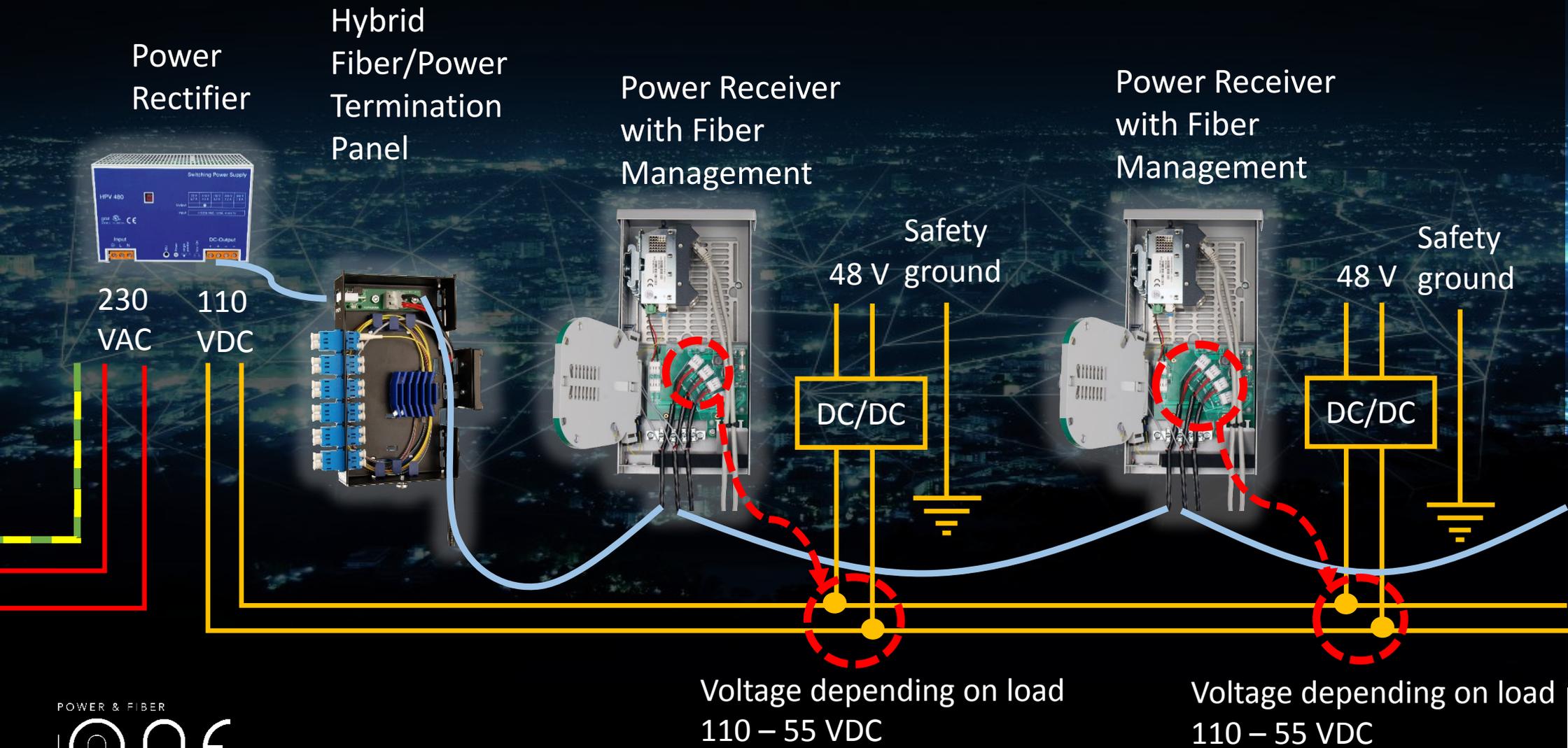
Powered Fiber Access Networks – One Network – All Applications



- FTTH Remote access node
- 5G Fixed Wireless
- WLAN
- Security Systems



Micro Hybrid Power Circuit Diagram



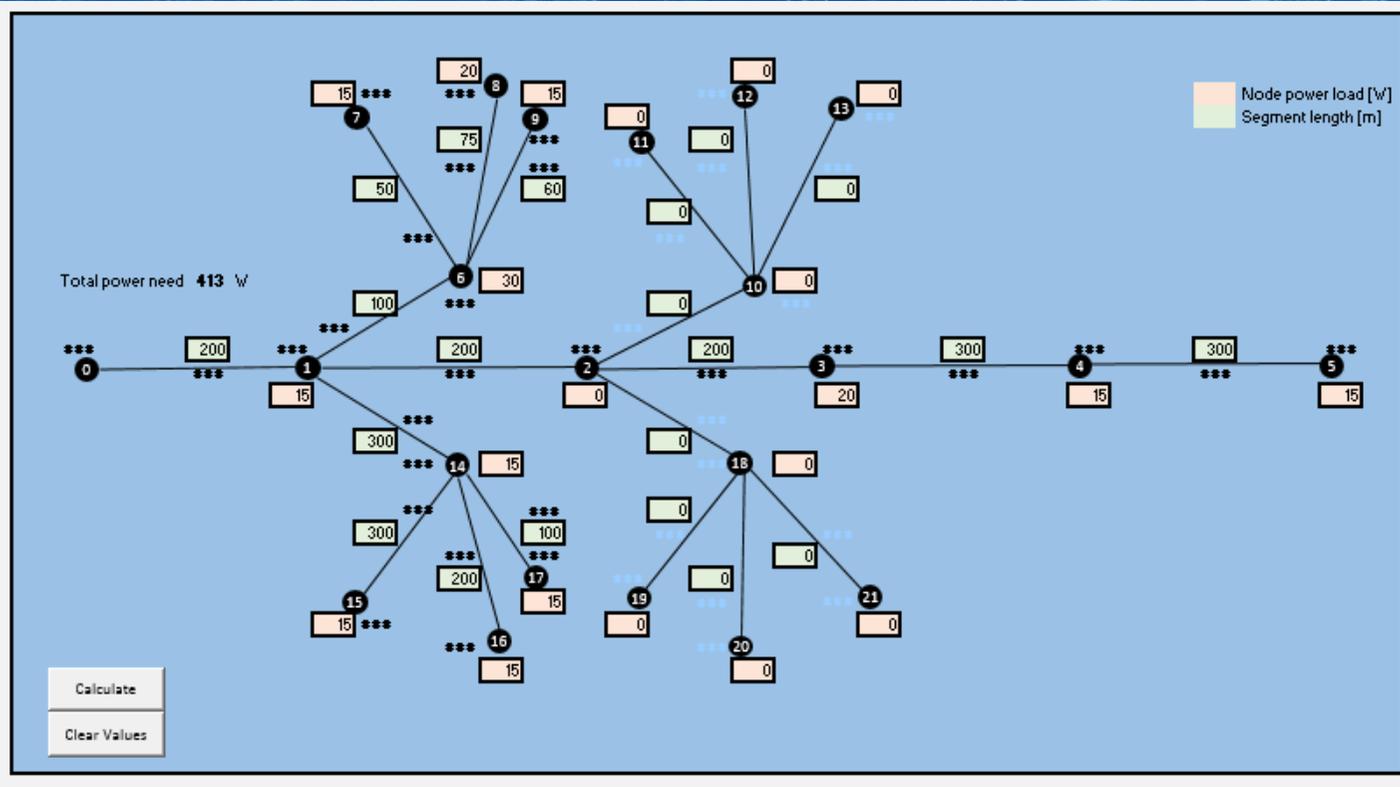
Design tool for power network



Input Voltage	110 Vdc
Min node voltage	55 Vdc
Node self consumption	5 W
Node power efficiency	85 %

Cable segment	Cable type	Resistance [Ω/km]	Resistance [Ω]
0-1	4x0.75 mm ²	25,25	5,05
1-2	4x0.75 mm ²	25,25	5,05
1-6	4x0.75 mm ²	25,25	2,525
1-14	4x0.75 mm ²	25,25	7,575
2-3	4x0.75 mm ²	25,25	5,05
2-10	4x0.75 mm ²	25,25	0
2-18	4x0.75 mm ²	25,25	0
3-4	4x0.75 mm ²	25,25	7,575
4-5	4x0.75 mm ²	25,25	7,575
6-7	4x0.75 mm ²	25,25	1,2625
6-8	4x0.75 mm ²	25,25	1,89375
6-9	4x0.75 mm ²	25,25	1,515
10-11	4x0.75 mm ²	25,25	0
10-12	4x0.75 mm ²	25,25	0
10-13	4x0.75 mm ²	25,25	0
14-15	4x0.75 mm ²	25,25	7,575
14-16	4x0.75 mm ²	25,25	5,05
14-17	4x0.75 mm ²	25,25	2,525
18-19	4x0.75 mm ²	25,25	0
18-20	4x0.75 mm ²	25,25	0
18-21	4x0.75 mm ²	25,25	0

Cable types	
Name	Resistance [Ω/km]
4x0.75 m	25,25
4x1.50 m	12,62





Key Benefits – Re-use of Existing Infrastructure



**No need to worry
about power!**





Security cameras in remote locations





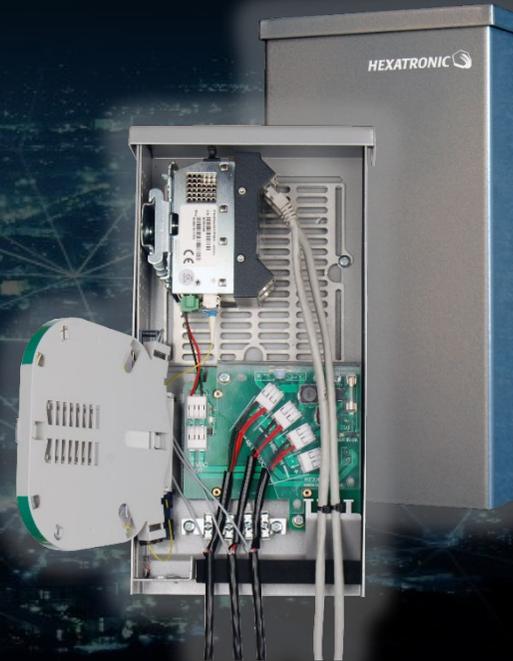
Hexatronic Powered Fiber Access System - Micro Hybrid Portfolio



Power
Rectifier



Hybrid
Fiber/Power
Termination
Panel



Termination box
Power and Fiber
Management
Indoor



Termination box
Power and Fiber
Management
Outdoor

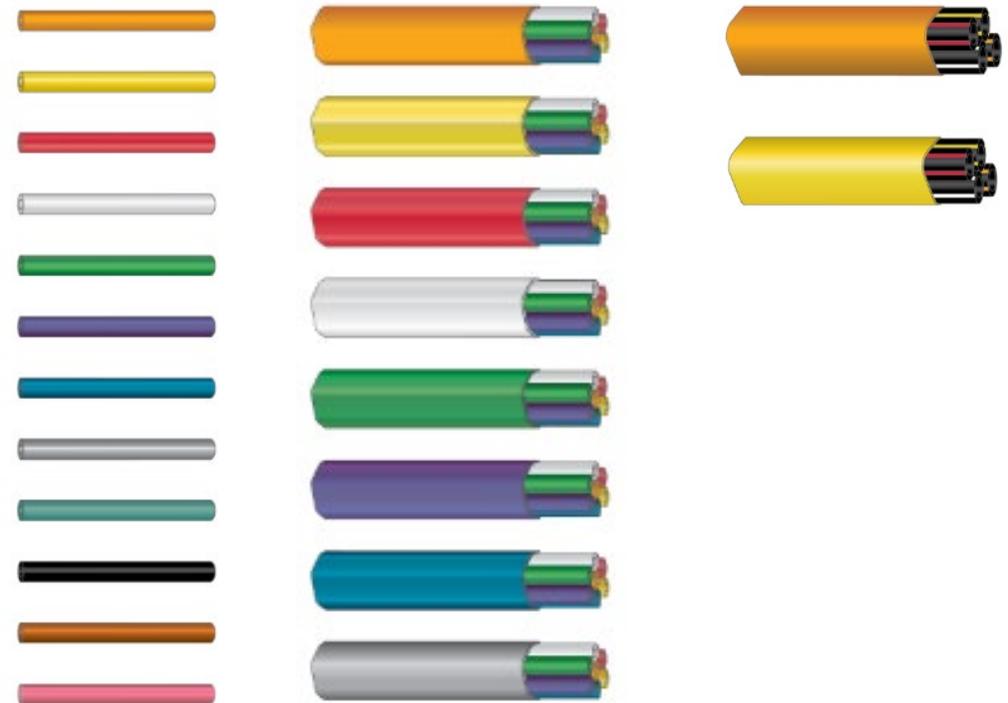
Hexatronic Powered Fiber Access System - Microducts



Hexatronic Powered Fiber Access System - Microducts



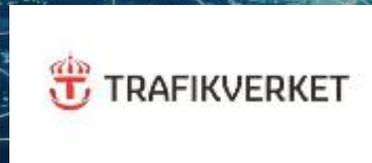
- Large selection of ducts
- Thick walled and thin walled
- OD/ID from 10/8 to 16/10 mm
- Configurations from 1 to 7 microducts
- All accessories available





Reference Projects

- **Telia Sweden** (Incumbent Service Provider)
 - Public WiFi
- **Trafikverket** (Swedish Transport Administration)
 - Automatic Speed Surveillance
 - Traffic Signs
 - Surveillance cameras for road maintenance
- **STOKAB** (Stockholms IT Infrastructure Company)
 - Public WiFi
 - Smart signs
 - Surveillance
- **LKAB** (Mining Company)
 - WiFi
 - Surveillance Camera
 - Fixed IP Phone
 - Remote Powered UPS
- **Utsikt** (Public WLAN provider)
 - Public WiFi
- ...





700 m

POWER & FIBER



HE



220 m

POWER & FIBER



HE

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