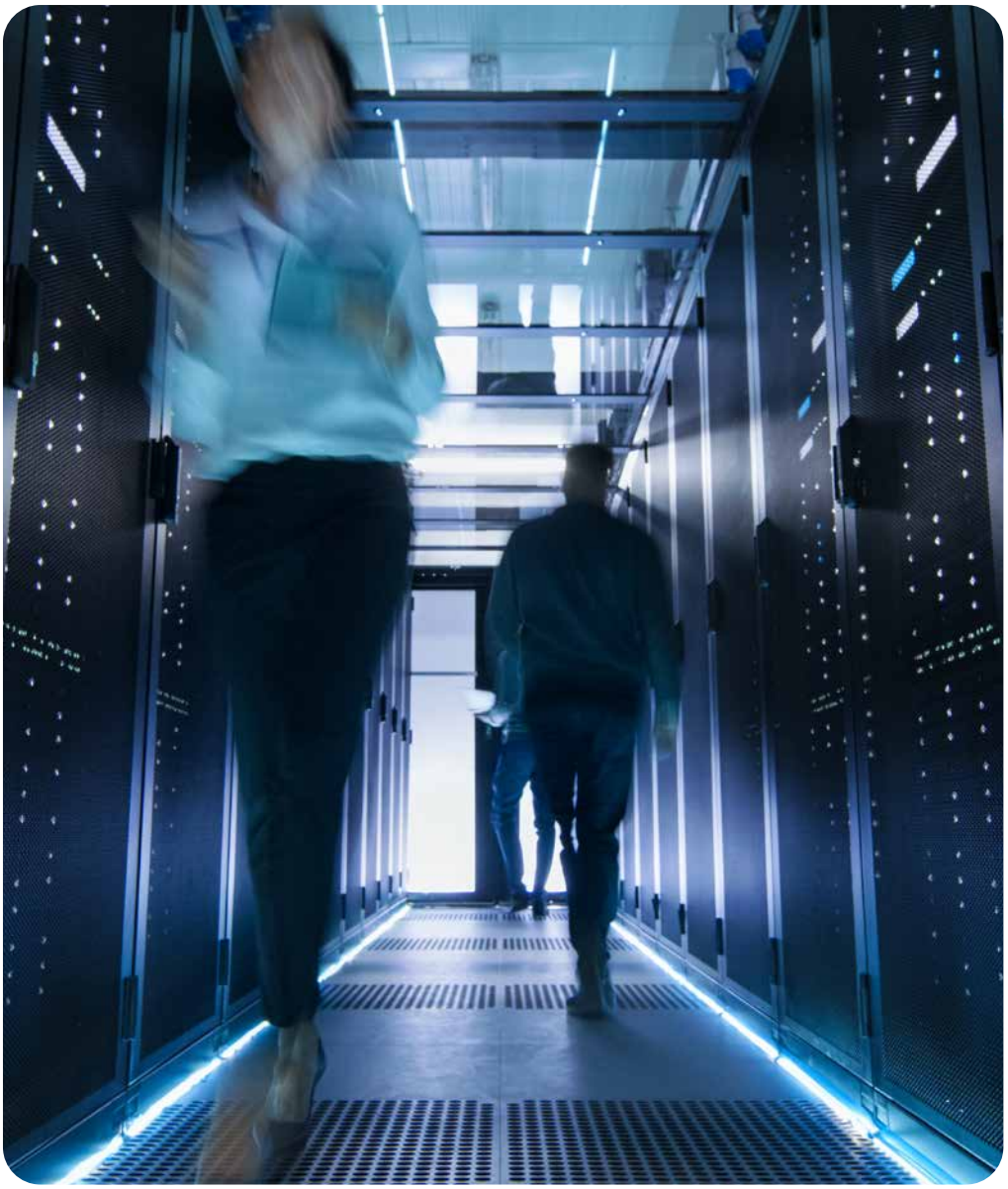
PRYSMIAN DATA CENTRE SOLUTIONS

Everything you need from the world leader in telecom and energy innovation



prysmian

The planet's pathways

ACCELERATING GROWTH

As the world leader in cable manufacturing, Prysmian believes in the effective, efficient and sustainable supply of energy and information as a primary driver in the development of communities. We stand apart in our ability to deliver end-to-end solutions for both energy transmission and telecom networks, and provide major global organisations in multiple industries with best-in-class products and services based on state-of-the-art technology.

The challenges and opportunities before us demand that we harness the power of human ingenuity to drive new forms of energy and information to each and every corner of the earth – and faster than ever.

With deep expertise, relentless innovation, and global reach, Prysmian delivers energy and data wherever it's needed. Our advanced cable technologies are driving the future of electrification and digitalisation, powering the circular economy, and strengthening grid resilience. We help you stay focused on what matters most, wherever you operate.

Together, we can lead the way towards a brighter, smarter, more sustainable future for people, communities, and businesses.

Together, we will accelerate growth.

SUSTAINABILITY & LOCAL REGULATIONS

Data centres are placing an increased emphasis on sustainability and energy efficiency as key pillars of their design and operations. With growing environmental concerns and the rising energy demand of these facilities, the focus is shifting toward minimising carbon emissions and optimising resource consumption.

To improve sustainability, data centres are adopting innovative strategies such as employing renewable energy sources like solar and wind power, implementing advanced cooling technologies (liquid cooling), and optimising server efficiency.

As the world's largest cable solutions provider leading the energy transition and digital transformation, Prysmian is uniquely positioned to assist developers and operators in meeting the specific demands of modern data centres. We are facilitating their exponential growth by enhancing their infrastructure, improving efficiency and adopting sustainable practices – both locally and globally.

At Prysmian, we further sustainability in data centre construction by providing cabling solutions that help minimise environmental impact. We do this through the use of recycled raw materials and production with 100% renewable electricity, helping to minimise CO_2 emissions throughout the value chain.

COMPREHENSIVE CABLE INFRASTRUCTURE FOR DATA CENTRES

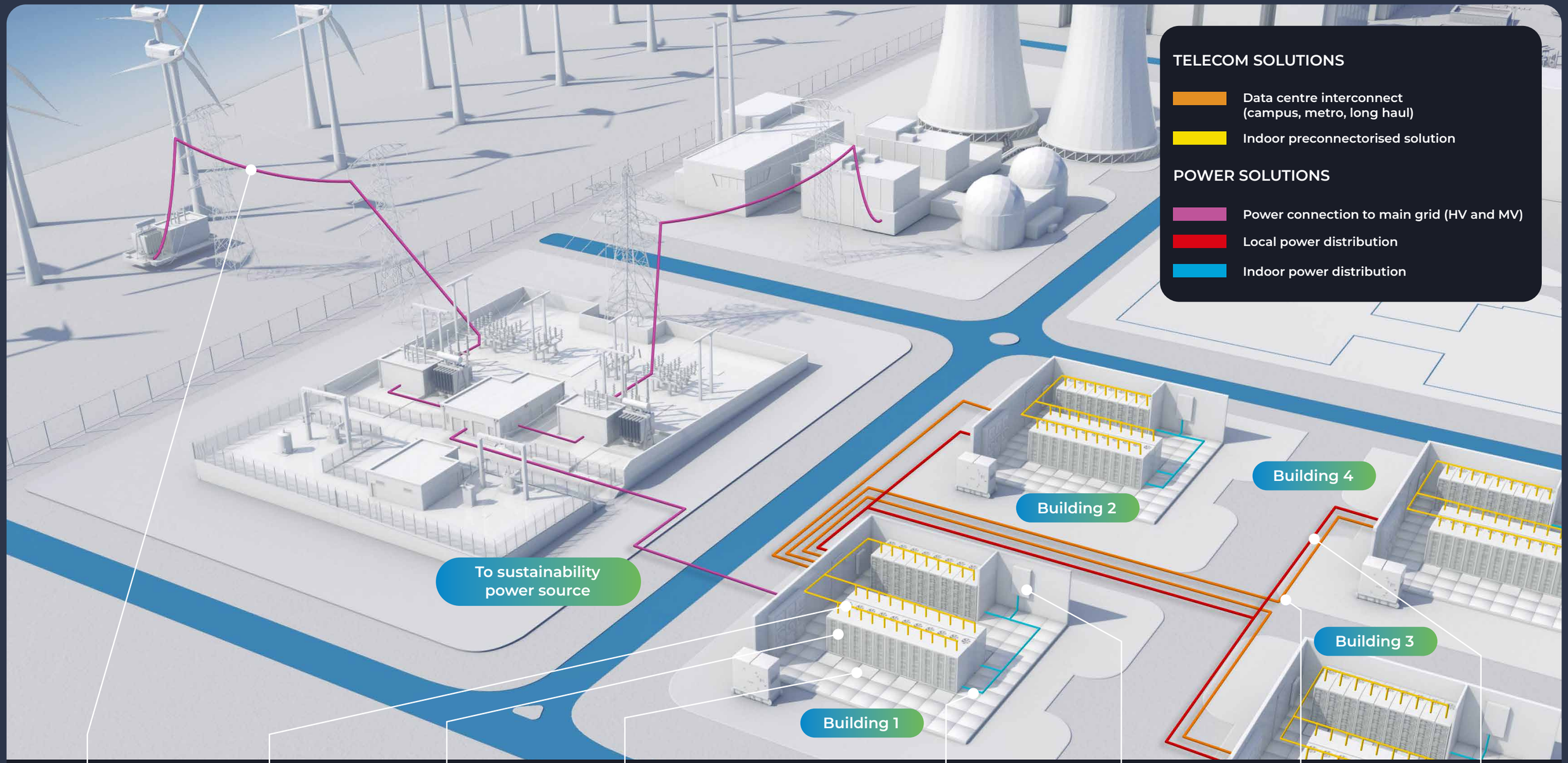
Speed, capacity, reliability.

The three essential performance requirements for data centres around the world: all delivered only with effective cable systems.

The rise of Artificial Intelligence (AI) and Machine Learning (ML) has transformed the way data centres operate. AI workloads demand unprecedented bandwidth, low latency, and energy efficiency.

Prysmian's advanced engineering and unique position spanning both energy and telecom cable solutions means we are ready to meet the demands of hyperscale and AI-optimised data centres, ensuring future-ready connectivity and power delivery.

Data centre overview



HV cable

Preconnectorised UC connect

Prysmian's UHD distribution solution

Preterminated solutions

Prysmian energy LV

EOSS cable monitoring technology

High-density FlexRibbon™

Prysmian energy MV + EOSS

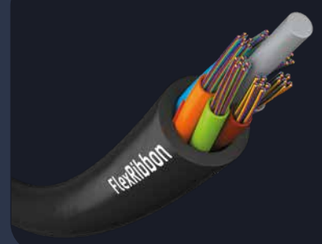
EVOLUTION OF DATA CENTRE INTERCONNECT

SIROCCO EXTREME

BendBright technology, 180µm
High-density cables for installation in microducts
Up to 864 fibres in 9.8mm

SIROCCO HD

BendBright technology, 200µm
High-density cables for installation in microducts
Up to 864 fibres in 11.0mm



MASSLINK™

BendBright technology
Ribbon construction, highest fibre count possible
Mass fusion splicing

MICRO FIBRE CABLE (MFC)

BendBright technology
Direct termination to MPO, SN-MT, MMC and EBO
Mass fusion splicing

PRYSMIAN'S HIGH-PERFORMANCE FIBRE OPTIC SOLUTIONS:

High-count fibre optic cables
Ensures seamless connections within data centre campuses, between cities, and for long-haul interconnectors.

Sirocco miniature air-blown cables
Offers record-breaking fibre density in minimal cable diameters, optimising existing duct infrastructure.

FlexRibbon
Combines high packing density with mass fusion splicing using bend-insensitive fibre.

BendBright bend-insensitive fibre
Features unprecedented micron diameters to allow smaller cables and higher fibre count in space-constrained environments.

50+ YEARS

After optimisation of the optical fibre and materials, and rigorous testing, Prysmian Sirocco cables now have an expected lifetime of 50+ years without compromise on performance during that time.

This enables operators to calculate the lifecycle analysis of their network over a much longer period of time.

DATA CENTRE ARCHITECTURE

AI data centres require 300 to 1000 times more power than traditional CPU-based centres. Liquid cooling and dense accelerator clusters drive the need for robust cabling and thermal management, and Clos and Fat-Tree topologies demand high-density fibre interconnects.

AI workloads generate massive heat and require high-performance accelerators interconnected with ultra-high bandwidth. Prysmian's high-fibre-count solutions and energy cables support these dense environments, enabling seamless scalability.

THERE ARE VARIOUS ARCHITECTURES AVAILABLE FOR NETWORK DESIGNERS TO SELECT FROM.

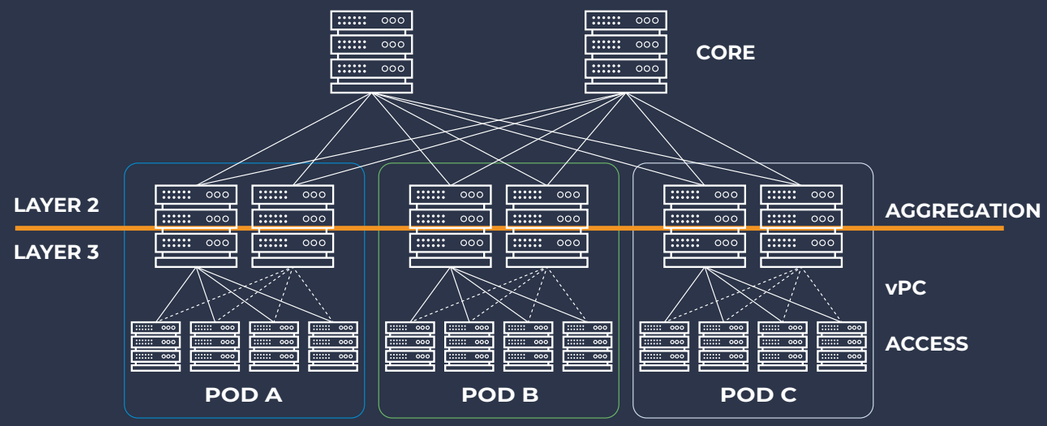
The choice you make will depend on several factors, including the current size of your data centre, your future expansion plans, whether you are setting up a new installation or upgrading an existing legacy system, and how rapidly you anticipate your data centre requirements evolving.

The three primary approaches in data centre are:

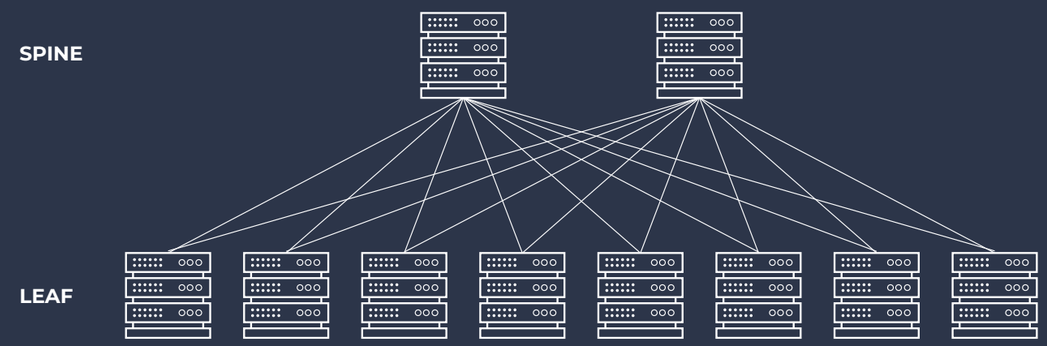
Direct connect - (centralised) or direct connections between two pieces of equipment

Zone distribution - which includes End-of-Row (EoR), Middle-of-Row (MoR), and Point-of-Delivery (PODs)10

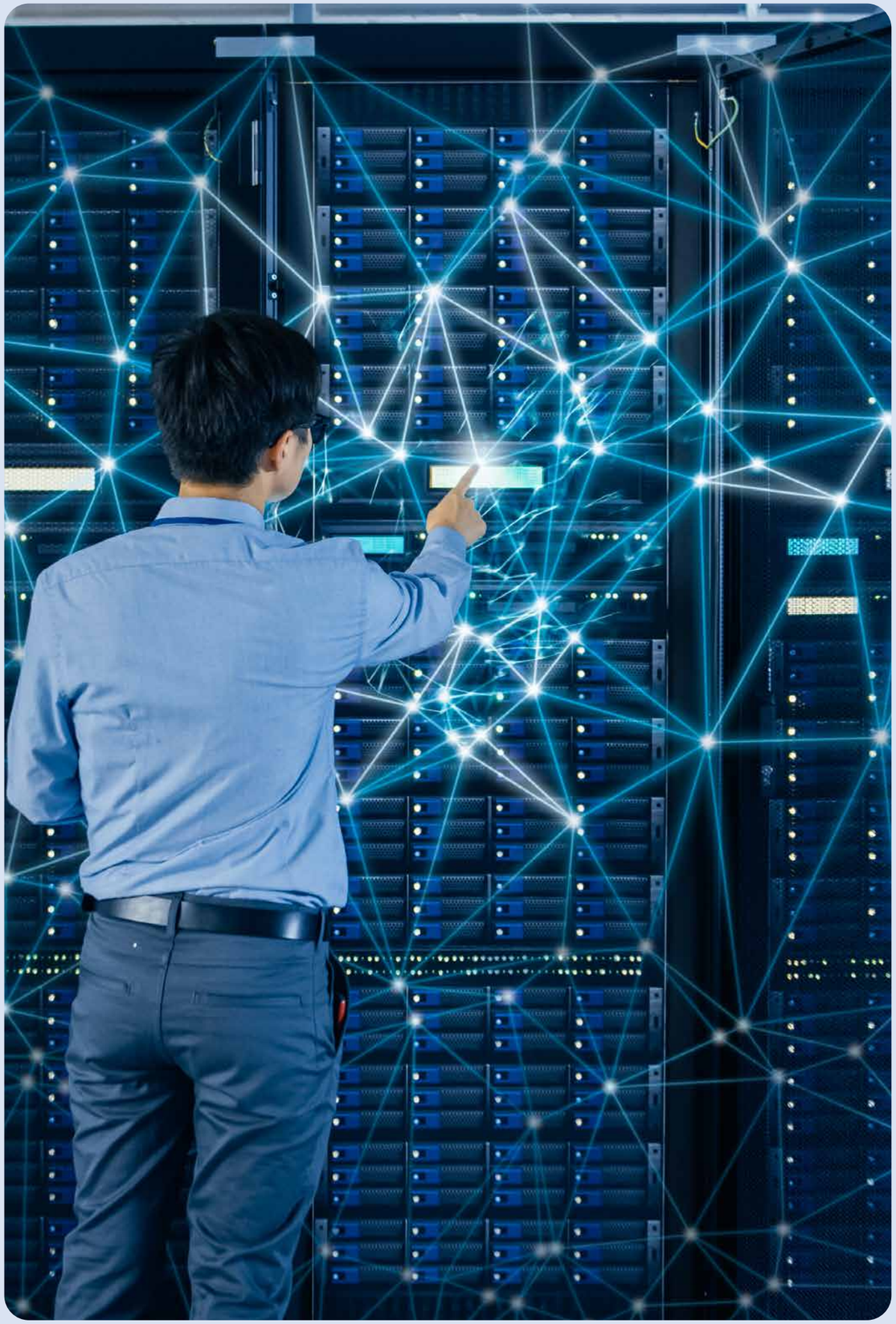
Top-of-rack - (ToR)



Traditional three-tier data centre design



Spine-and-leaf architecture

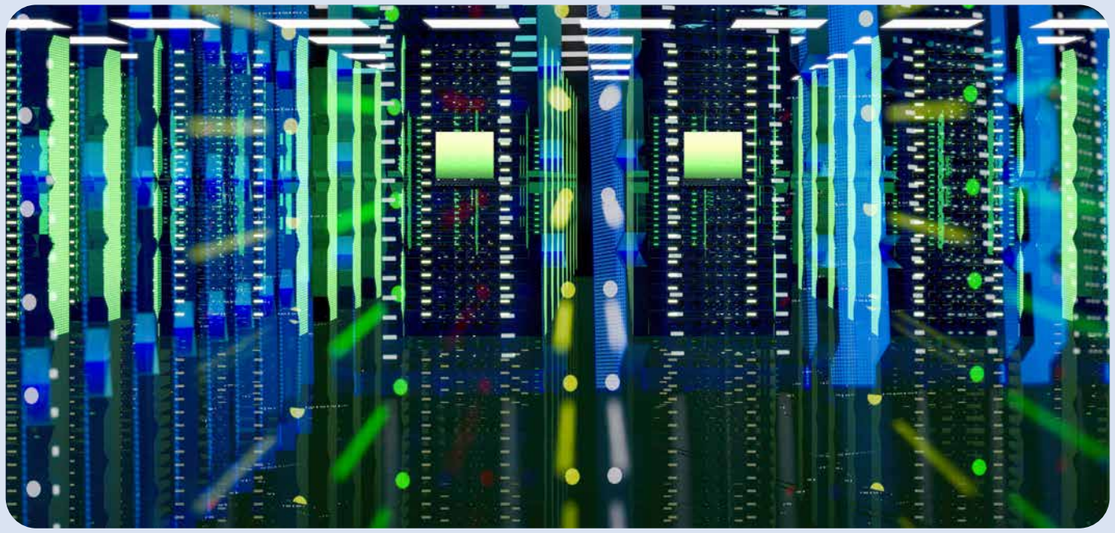


DATA CENTRE INTERNAL CONNECTION SOLUTIONS

This critical area of a data centre needs accurate cable management with optimal use of limited space.

Since its acquisition of Warren & Brown Technologies in 2024, Prysmian has been able to offer a comprehensive range of cable-management systems to complement our fibre optic cables. Combining the highest quality optical fibre technology with efficient cable management and all associated components allows customers to source a complete cable system from a single manufacturer.

A bespoke design service will provide detailed layouts and component lists for UL tested duct raceways within 72 hours.



INTERNAL DATA CENTRE PORTFOLIO

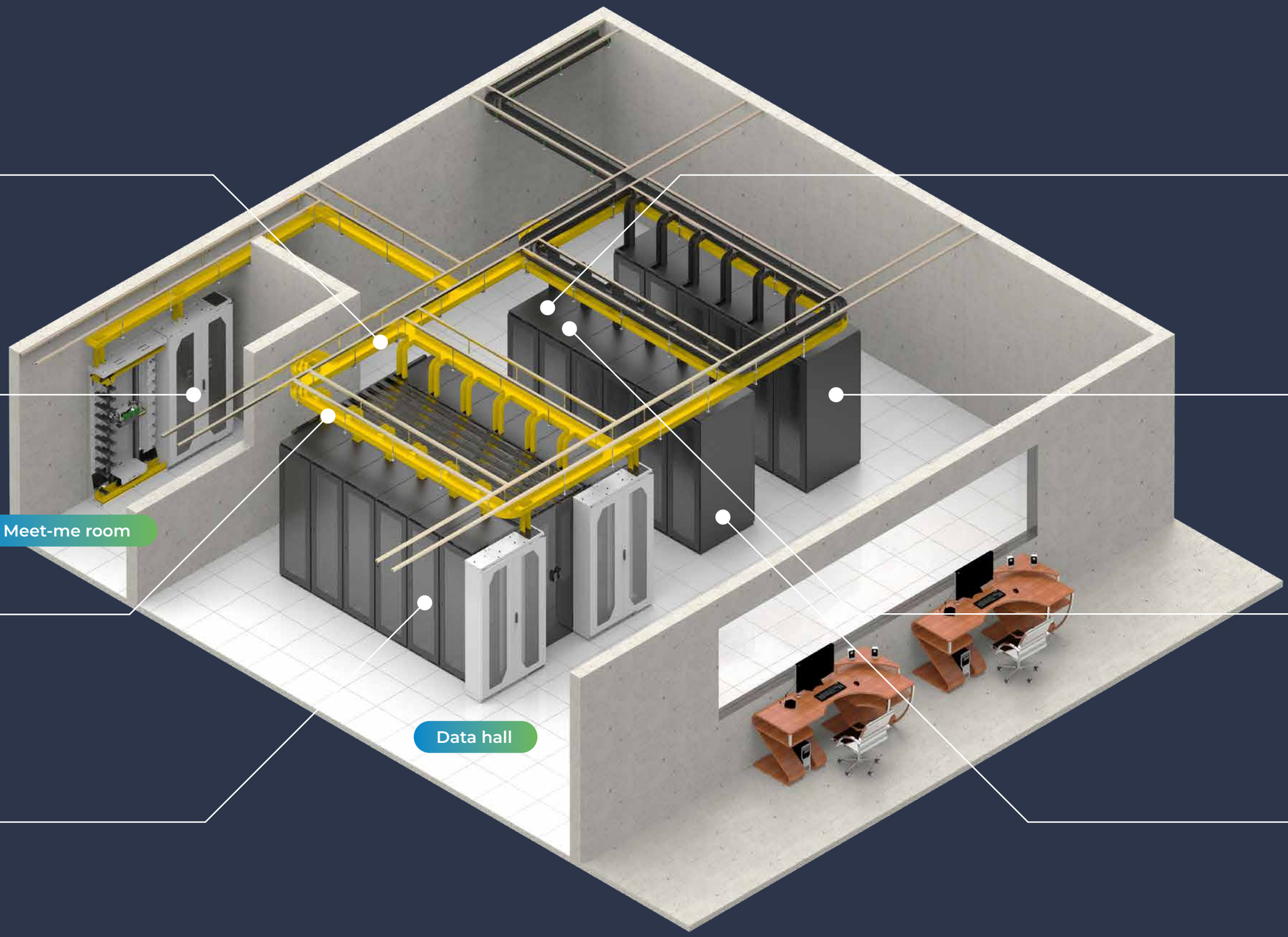
Fibre solutions

Fibre raceway

ODF solutions

MPO/MTP® preterm

High-density fibre patching solution



Copper solutions

Category cables

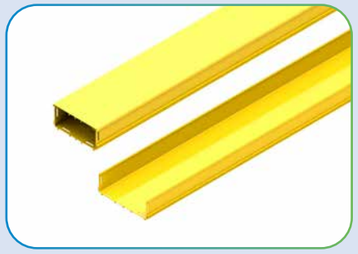
High-density copper patching solution

CAT6A preterm HD CAT6A cables

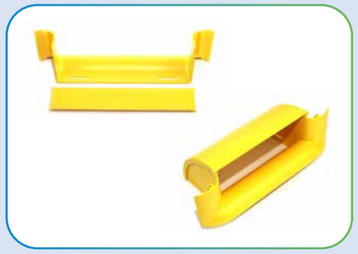
Cabinet solutions

OPTICAL FIBRE RACEWAY–DUCTING SOLUTIONS

Optical fibre patch cords transmit large data volumes but are easily damaged by heavy cabling. Traditional routing can compromise bend radii and cause downtime. Prysmian's ducting solutions protect fibres and ensure reliable network performance.



STRAIGHT DUCT



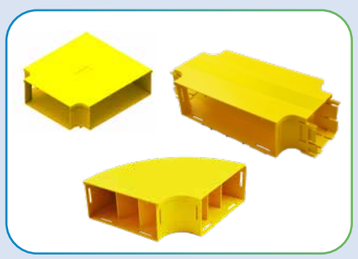
BREAKOUTS

REDUCERS

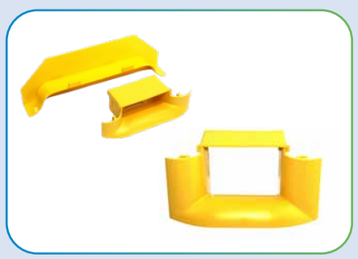
JOINERS

EXPRESS OUTLETS

FIBRE STORAGE LOOPS



TEES, ELBOWS & CROSSES



DROP-OFF SOLUTIONS

TUBING

MEET-ME ROOM SOLUTIONS

A meet-me room is a secure, shared space in a data centre where different network operators interconnect their infrastructure – a central hub for managing and routing high volumes of fibre connections. Prysmian's meet-me room solutions organise, protect, and optimise fibre pathways, ensuring efficient connectivity while minimising signal loss and downtime.

Sub-rack systems

Splice and patch

– Up to 144f

– 4 x 36f swing out trays per 1U

– Side or rear cable entry

Splice only or patch only

– Up to 144f per RU

– Modular approach utilises 1/4RU or 1/3RU blades

Mass fusion splice

– Up to: 864f (FlexRibbon) 384f (stranded fibre in 1U)

– 2-sided cable entry

Fibre management accessories

Fibre optic storage tray

– Slide out for ease of access

– LH and RH access

– Pre-fitted cable saddles

Cable slack management

– For both 600mm and 300mm ODF

310 Series ODF

– 5184 LC port capacity

– 19 x 2U sub-rack capacity

– 36 x 1U sub-rack capacity

– Integrated internal yellow ducting

– Offset cable slack management (max 4.1m)

Optical splice enclosure

- Splice enclosure
- 600mm wide
- 3840 single fibre splice

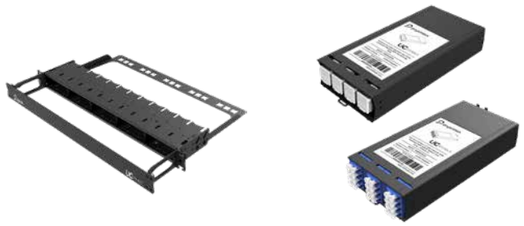
DATA HALL SOLUTIONS

Efficient use of whitespace boosts data centre performance and scalability. Prysmian's patch panels, multimedia systems, ultra-high-density systems and accessories streamline cabling, protect links, improve airflow, and meet ever-increasing bandwidth demands.

Patch panel

– LC, ST, SC
– Single & multimode
– Colour-coded adapters
– 6-way up to 96-way
– Supplied with all required accessories – splice cassettes, splice protectors, glands, warning label, earth-bonding kit, splice tray fibre-identification label, cage nuts
– Built to order

Multimedia system



– Available as LC-MPO, LC splice or RJ45
– Up to 120 LC ports in 1U
– Available in OM3, OM4 & OM5 as well as G657.A1 & G657.A2
– Up to 20 RJ45 ports using copper cassettes
– Compact size for installation inside shallow depth racks
– One-click latch technology for easy installation
– Front module access

Ultra-high-density system

– Ultra-high-density fibre panels (144f LC)
– Toolless technology
– Front and rear cassette loading
– Up to 24f per cassette
– Fully customisable sub-trays can accept base 8, 12, 16 or 24
– Factory tested preterminated cassettes
– 1U, 2U and 4U chassis

Preterminated trunk cables

– Utilising all of our UC Future Cable portfolio up to 3456 core
– Multiple fibre counts, designs up to 288 core, with multiple MTP® or MMC connector breakouts
– Base 8, 12, 16, 24 or 36 available
– Fully tested for attenuation loss as well as low insertion loss and back reflection on every connector
– Fully bespoke with short lead times
– 16f VSFF connector options available

Patching cords

– Full fibre optic pigtail and patch cord portfolio available including LC, SC, ST in OM1-5 and G657.A1 & G657.A2
– European manufactured and CPR-compliant patch cord range
– Simplex 1.6mm > 3.0mm up to B2ca
– Duplex in zipcord or flat-twin up to B2ca
– Duplex Uniboot in 2.0mm B2ca
– All manufactured using Prysmian-produced fibre
– Full factory testing

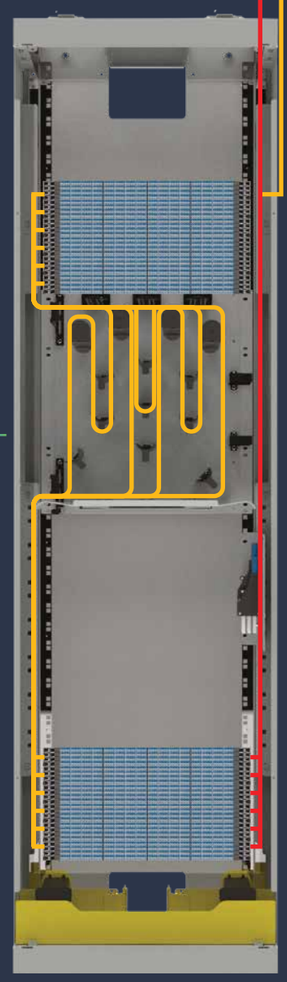
CROSS CONNECT

MEDIUM DENSITY (UP TO 432F LC)

IntelliFOX Blade

2mm uniboot duplex patch cords routed between IntelliFOX Blade and MTP®-LC/A trays- Left side access

IntelliFOX Blade



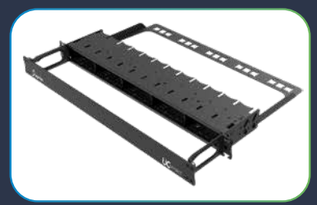
6 x 144F FTPs shown in top cluster = scalable to 864F (minimum proven capacity)

MTP®-LC transition cassettes 144F per RU. This could potentially serve as a cross connect point and breakout to LC for these services - 36F horizontal cassettes x 4 per RU = 144F

Patch cord routing and storage module

Preterminated MTP®/MPO-LC cabling

Equipment rack



CP512 1RU chassis with 5 x 24f LC cassettes

Patch with LC duplex uniboot push/pull tab cords to equipment

CROSS CONNECT

ALL THE WAY UP TO ULTRA HIGH DENSITY (5,184LC)

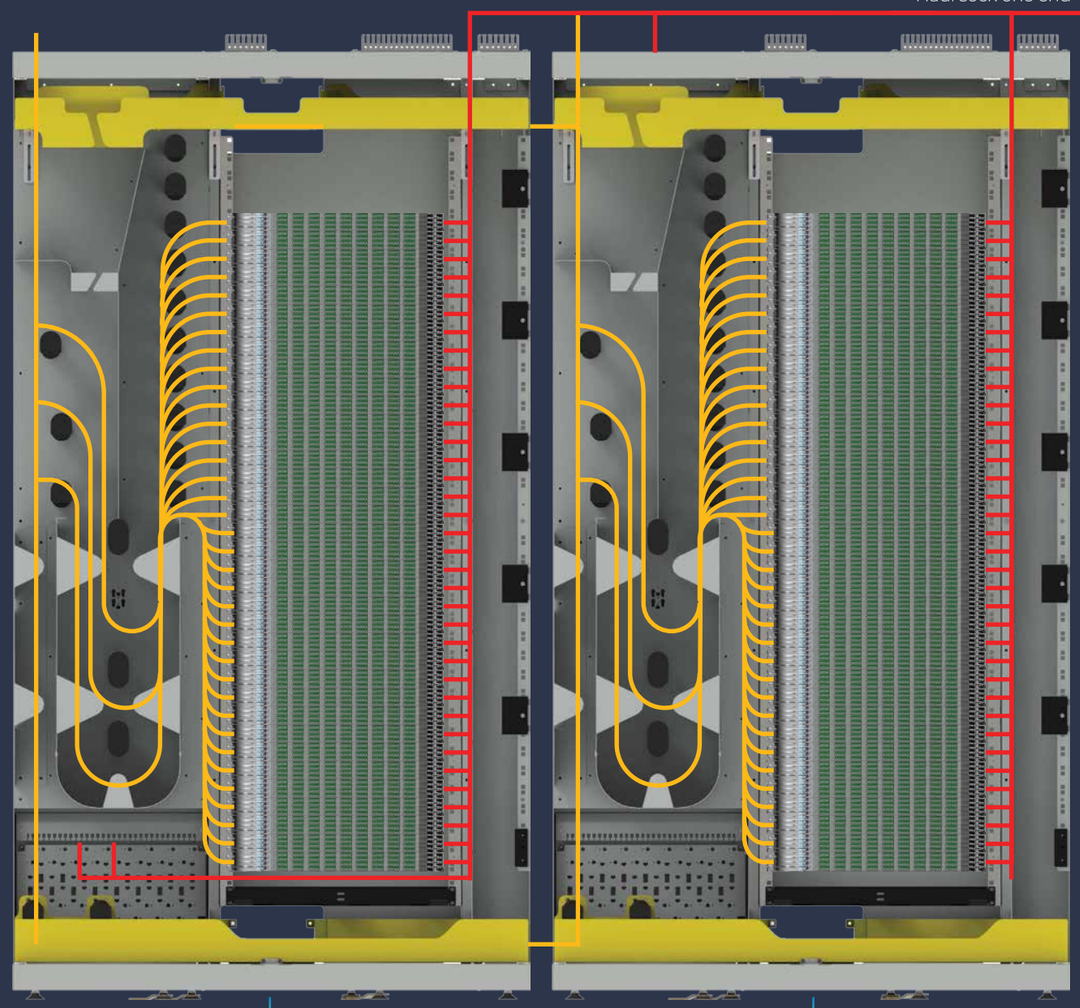
ODF 1

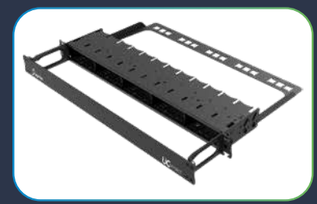
LC duplex patchcords
between ODF 1 & 2

ODF 2

MTP®/A 144F trunks
Female - female polarity A.
Haul sock one end

Equipment rack





CP512 1RU chassis with 5 x 24f LC cassettes

Patch with LC duplex uniboot push/pull tab cords to equipment

IntelliFOX Blade
1 RU modular chassis with 4 x 36F LC/A-MTP® cassettes (144F)

36 x scalable 1RU 144F FTP's (4 x 36F cassettes) Total port density of 5,184 LC/A fibres 144F per RU deployment

IntelliFOX Blade
1 RU modular chassis with 4 x 36F LC/A-MTP® cassettes (144F)

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