

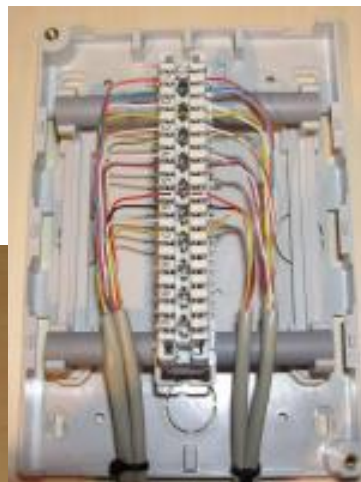


## FOC – Werkstattgespräche

Infrastruktur optimieren

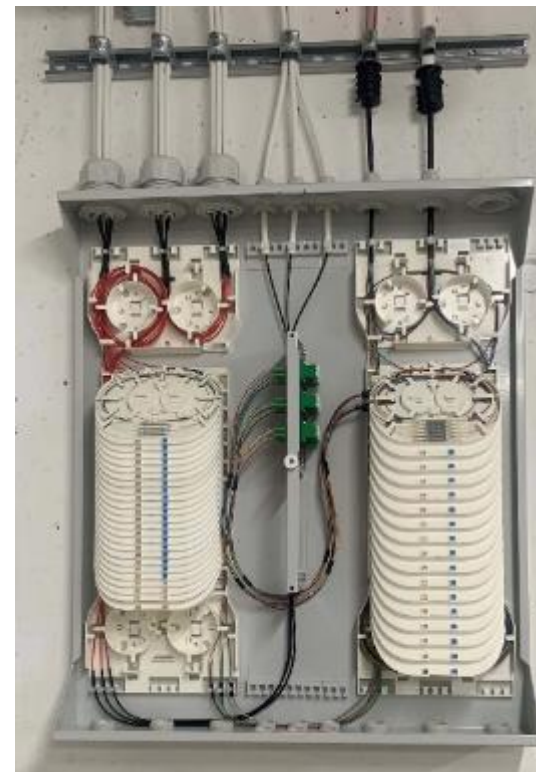
Form folgt Funktion

# Infrastruktur optimieren



**Form folgt  
Funktion**

**Die Glasfaser-„LSA+-Leiste“**



# Glasfaser Spleißen

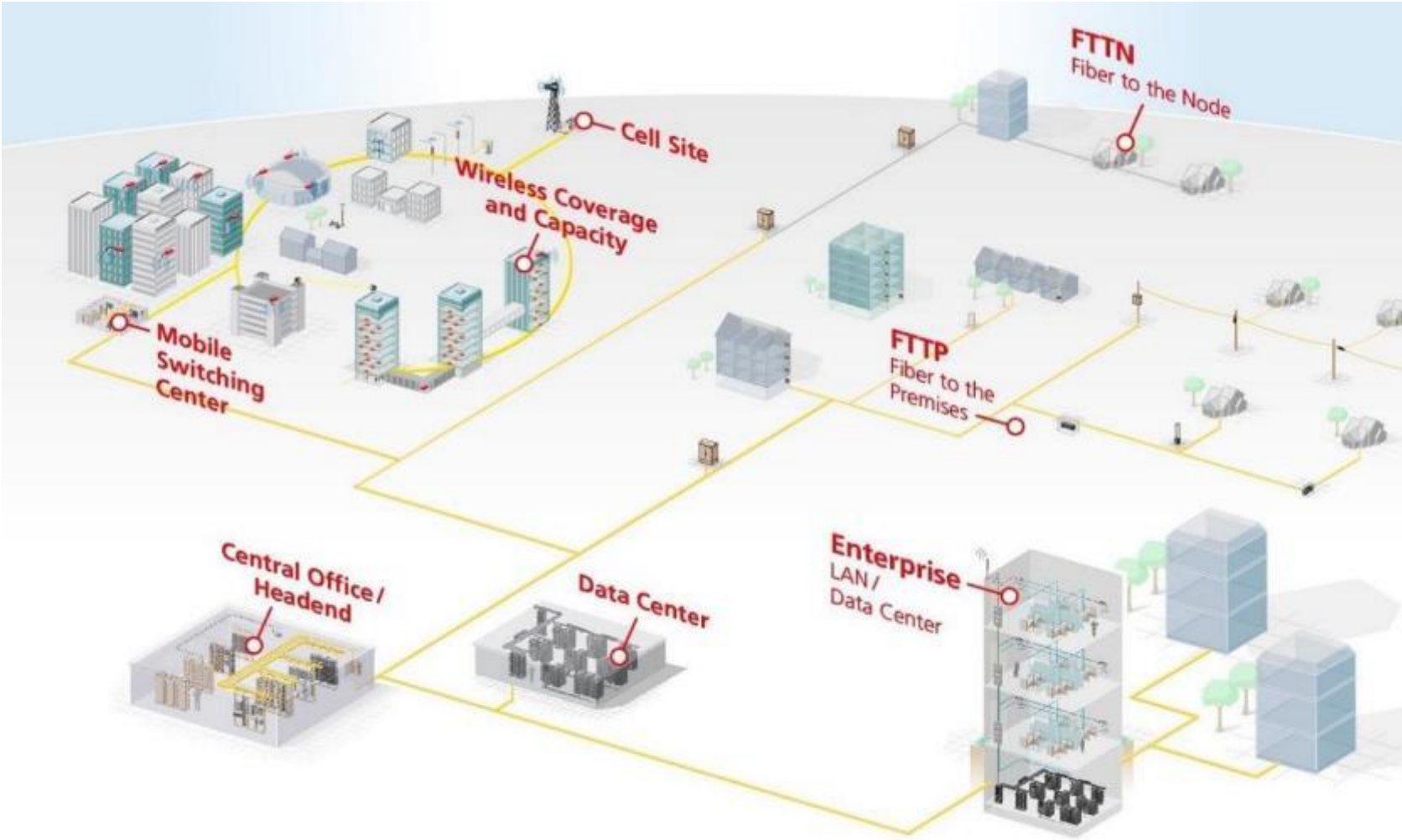


Bild 0

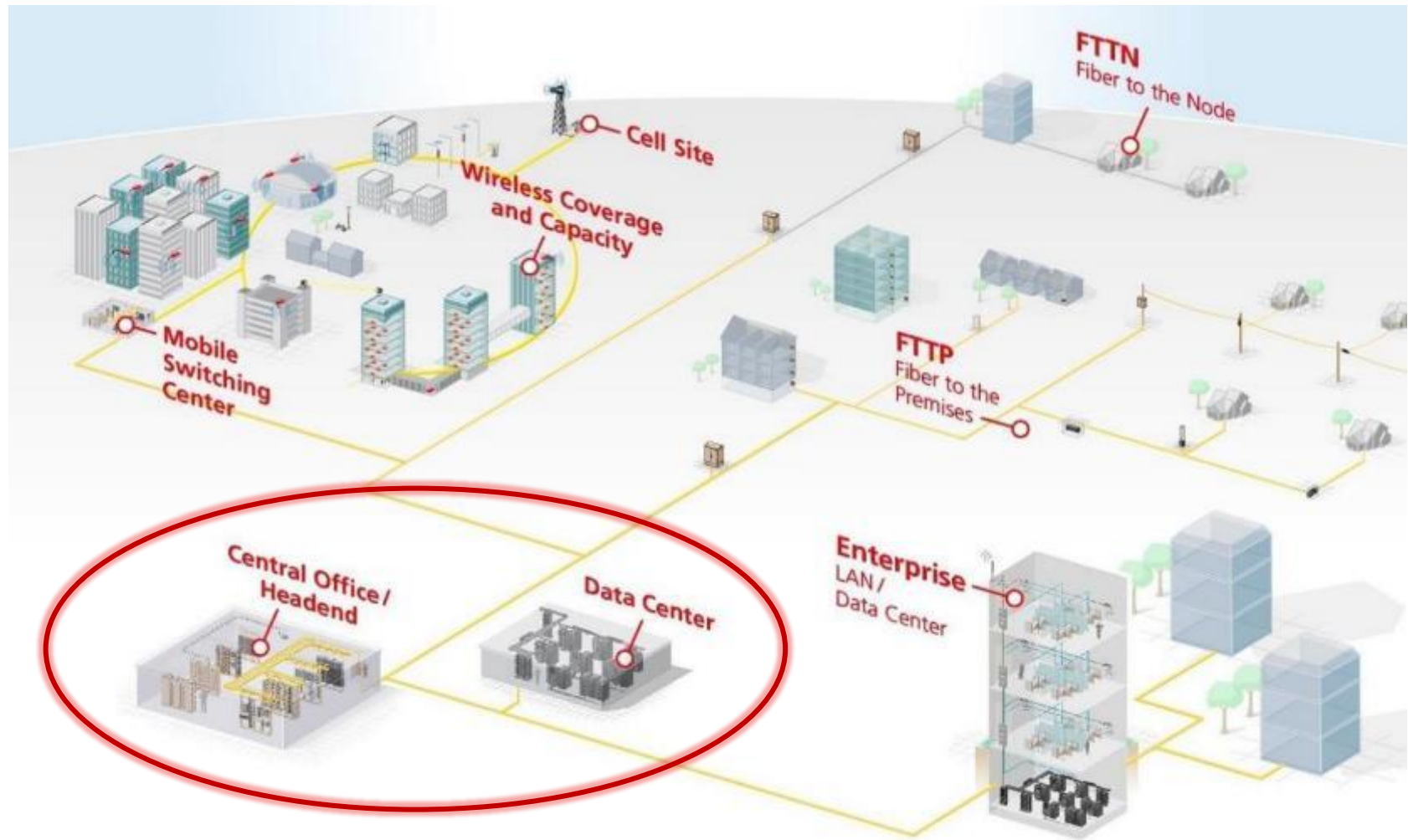




# Glasfaser-Netzwerk



# Datacenter - Central Office - Hauptverteiler



# Datacenter - Central Office - Hauptverteiler



**Rechenzentrum**

**Hauptverteiler**







**Umsetzung Außenkabel – Innenkabel  
Brandlast – Potentiale – Schnittstelle**

# Datacenter - Central Office - Hauptverteiler



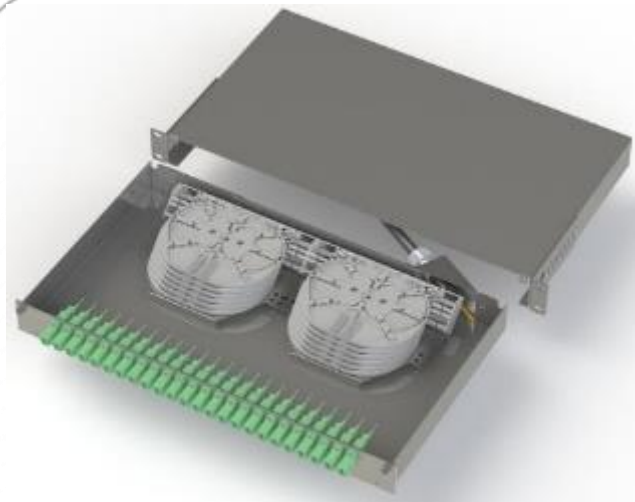
**Rechenzentrum**

**Hauptverteiler**



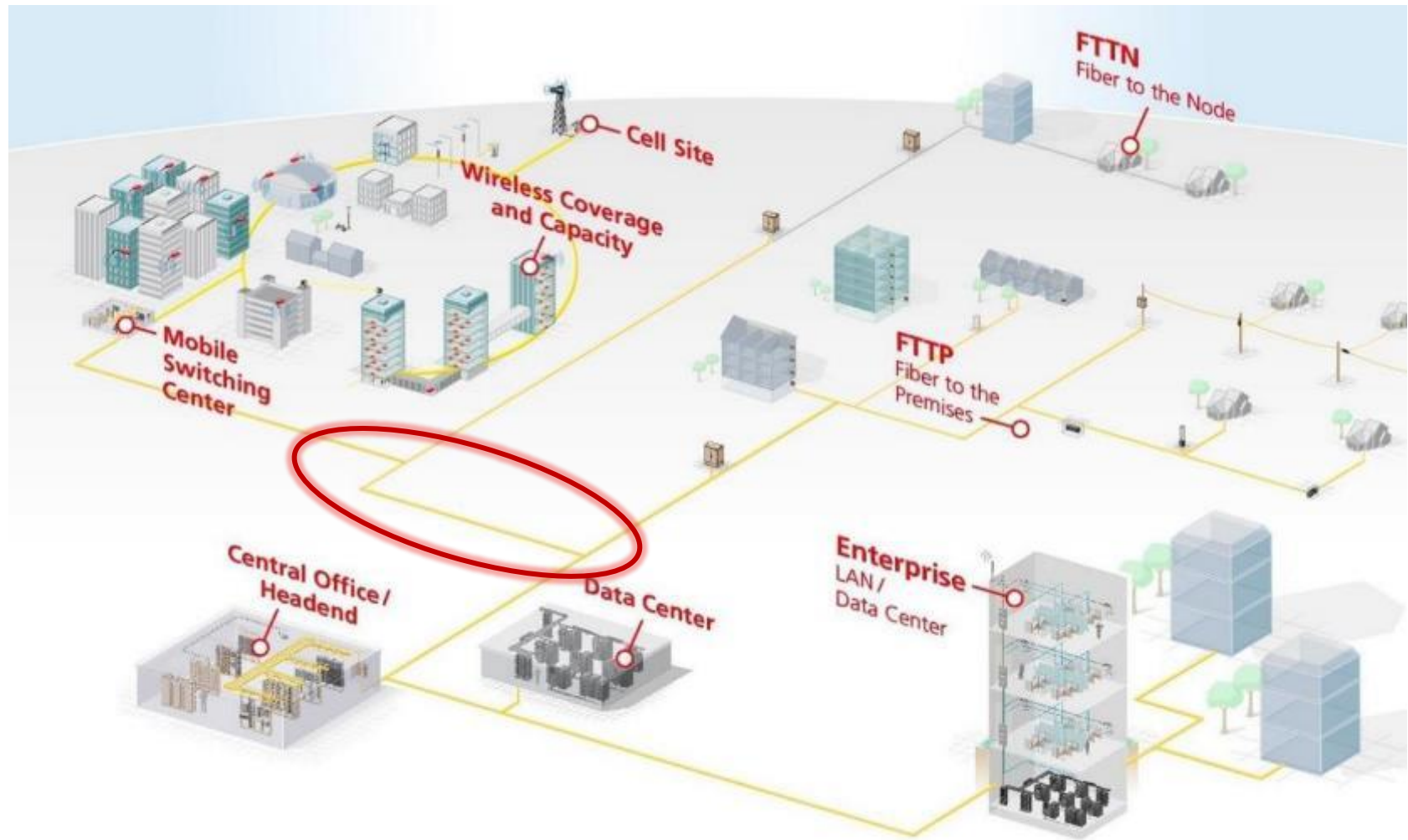


# Datacenter - Central Office - Hauptverteiler

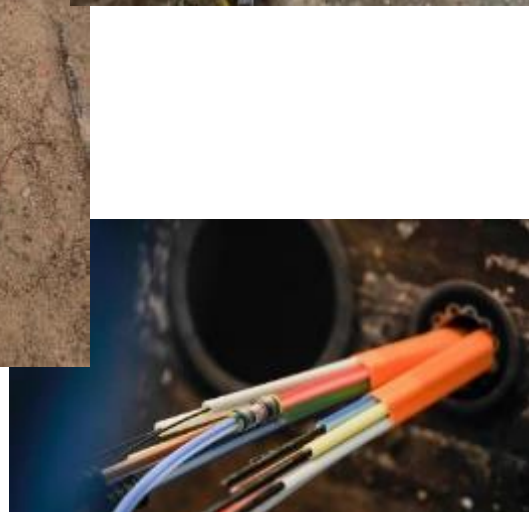


**Verteilertechnik**

# Leerrohrsysteme

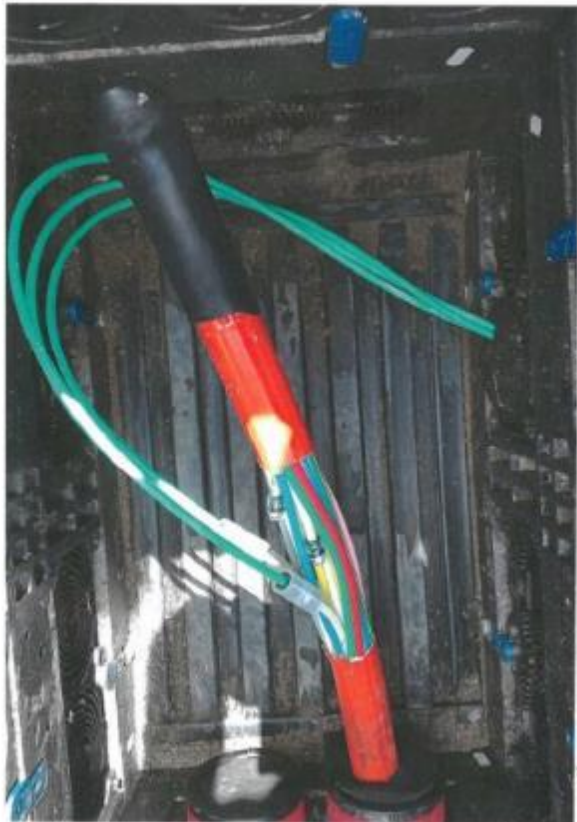


# Leerrohrsysteme

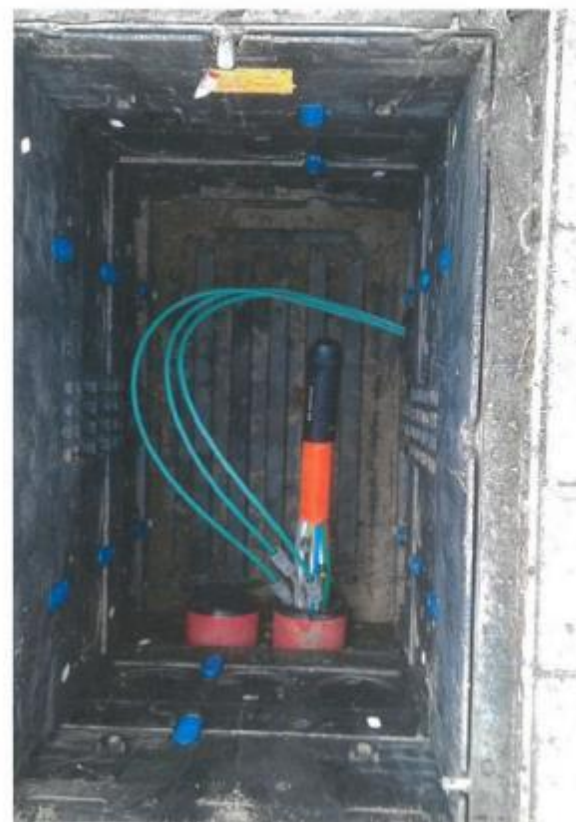




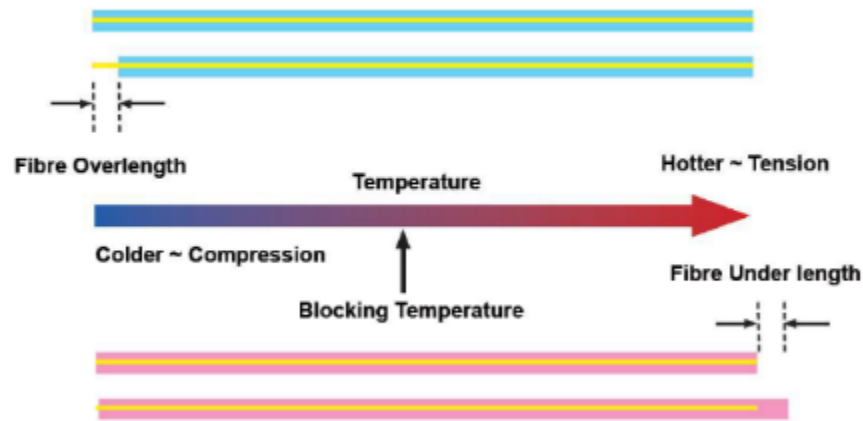
Tag 1 nach der Installation



Tag 2 nach 24 Stunden

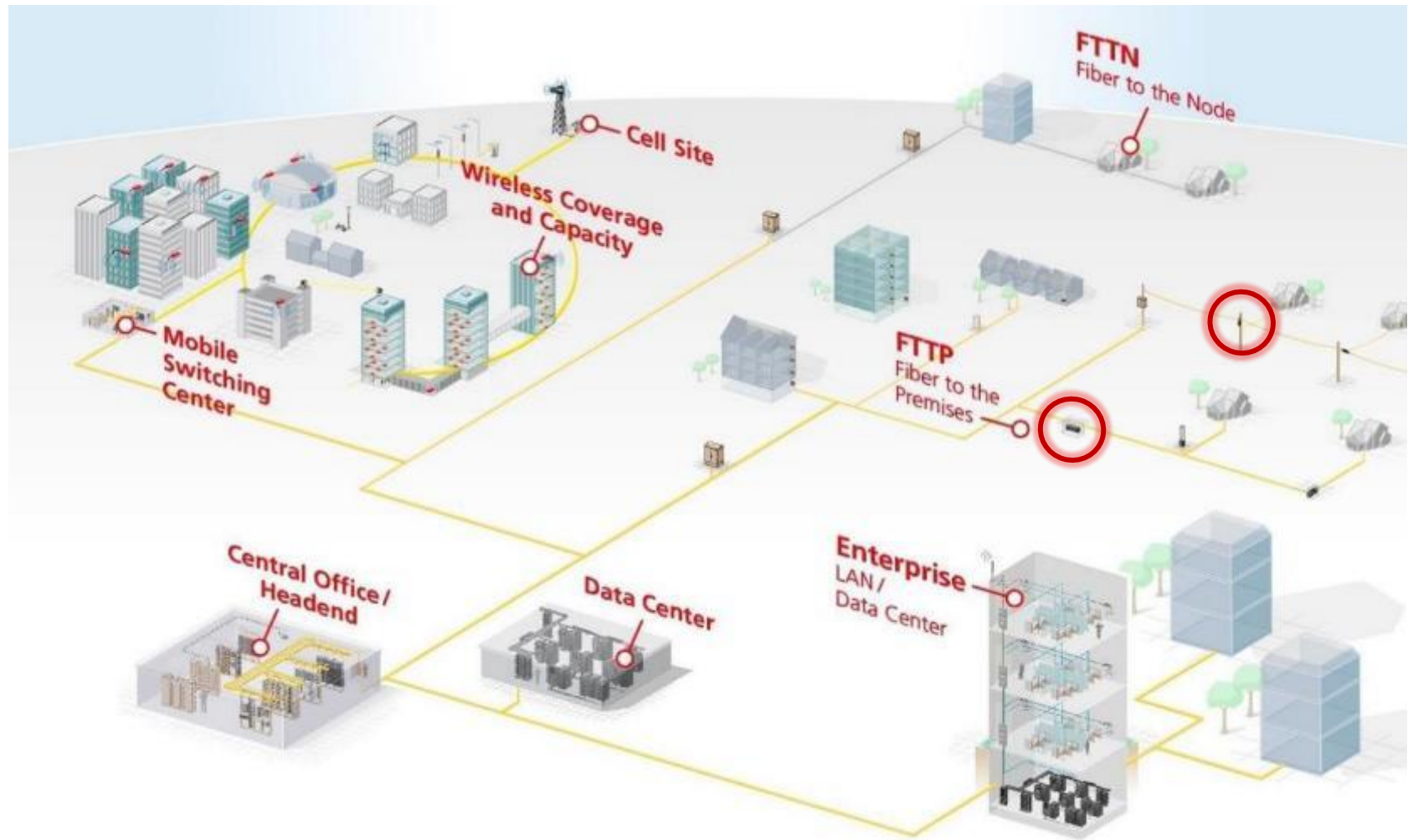


## PE & Silica Glass Expansion Comparison



100m Röhrenlänge bis zu 50cm Längenunterschied bei  $\Delta 20^\circ$

# Muffen





# Muffen



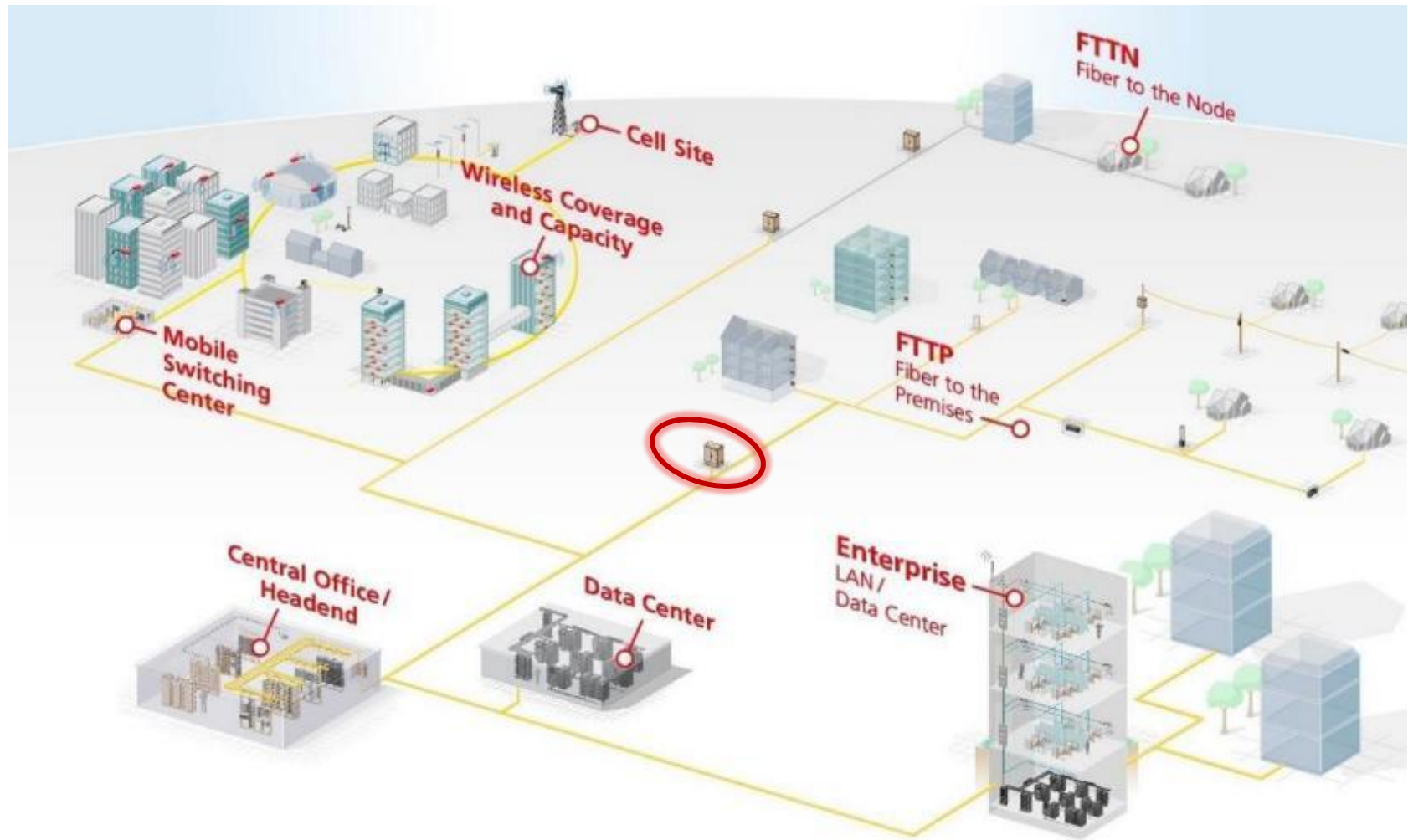
# Muffen



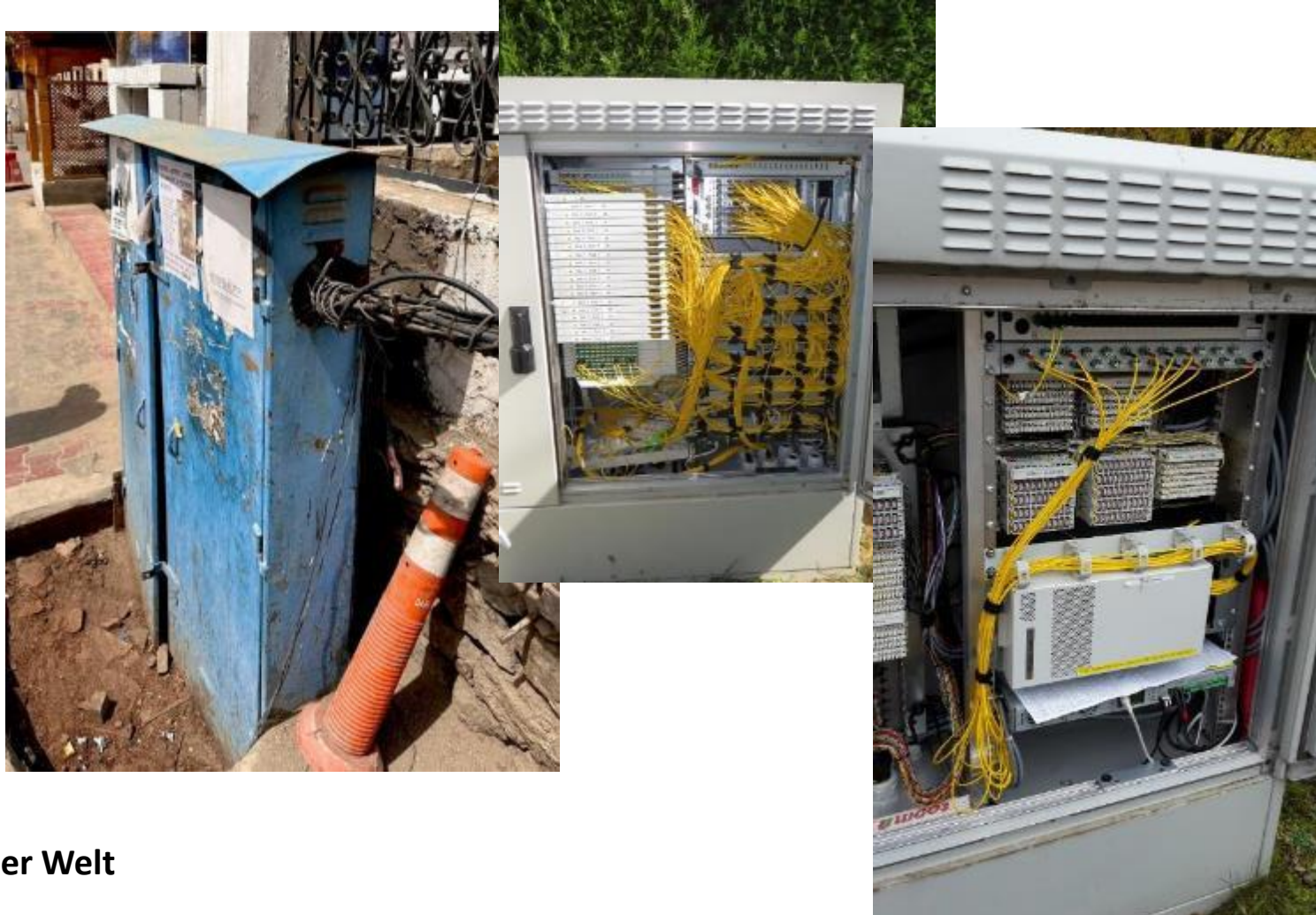
- **Wasserdruck**
- **Erdreich**
- **Nagetierschutz**



# Leerrohrsysteme





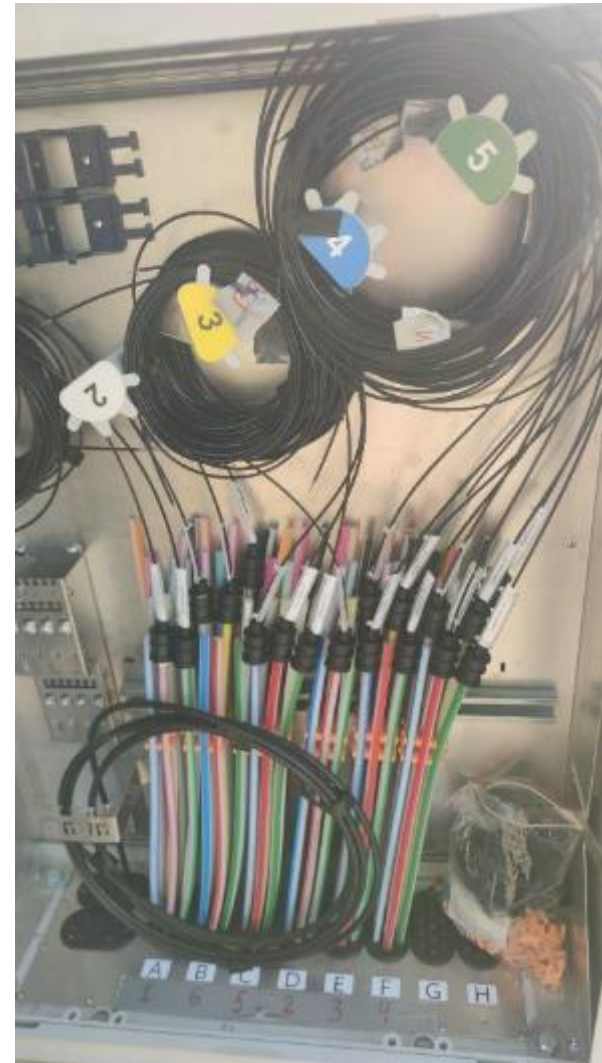


Aus aller Welt



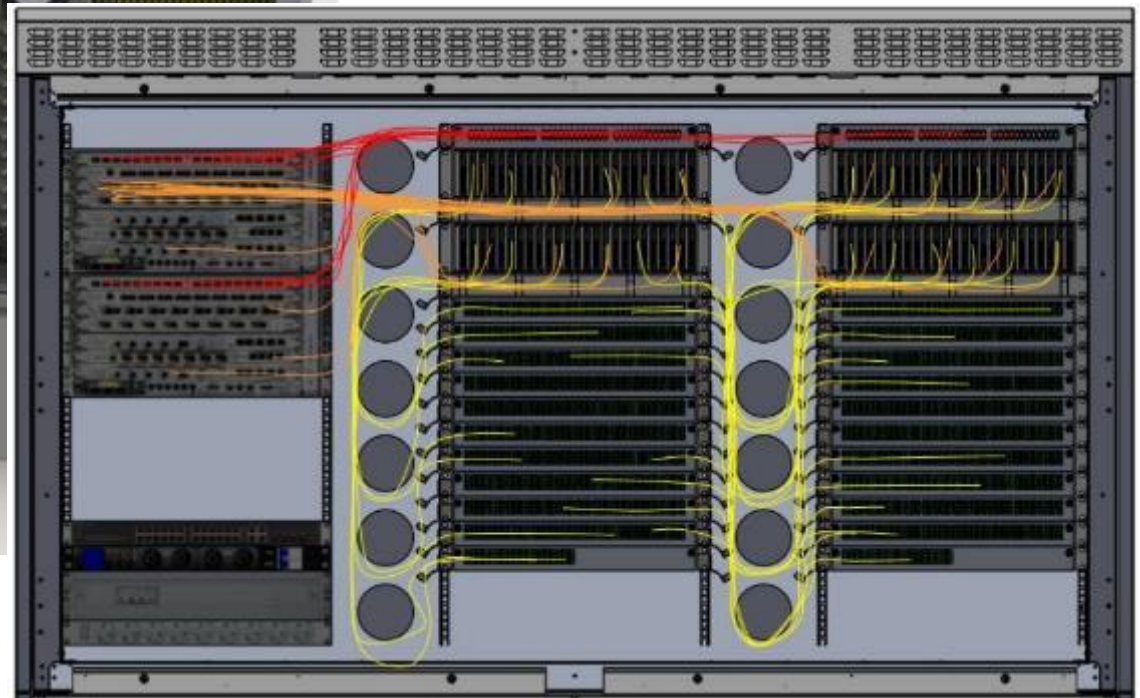
Plan vs. Realität





- **Spleißebene**
- **Kabelmanagement**





- **Struktur**
- **Kabelmanagement**



- Patchkabelführung
- Schwenkbox vs. Schublade

# Kabelabfangung



- Kabeleinführung

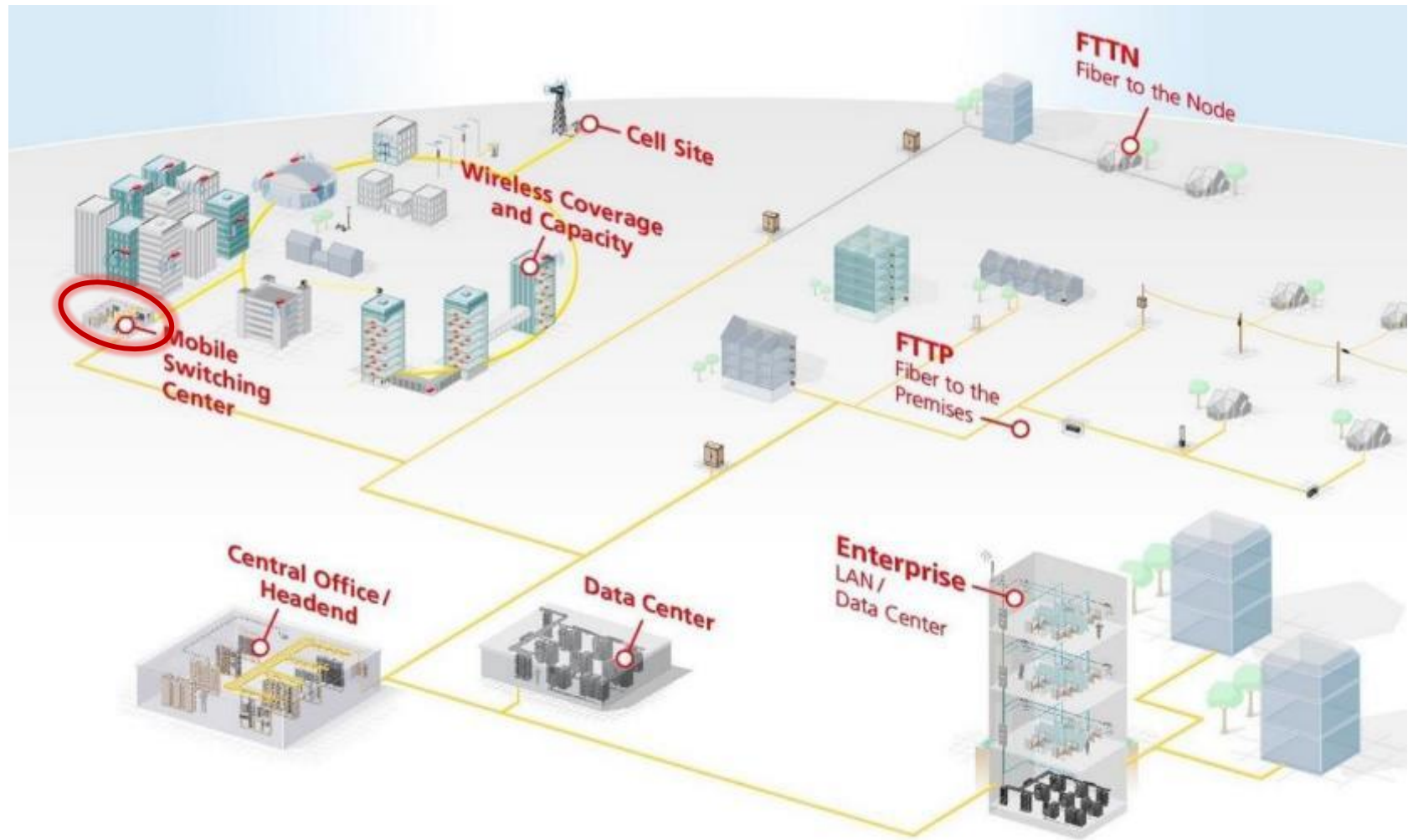


# Kabelabfangung



- „No-Go’s“

# PoP



# PoP



- Plug and Play

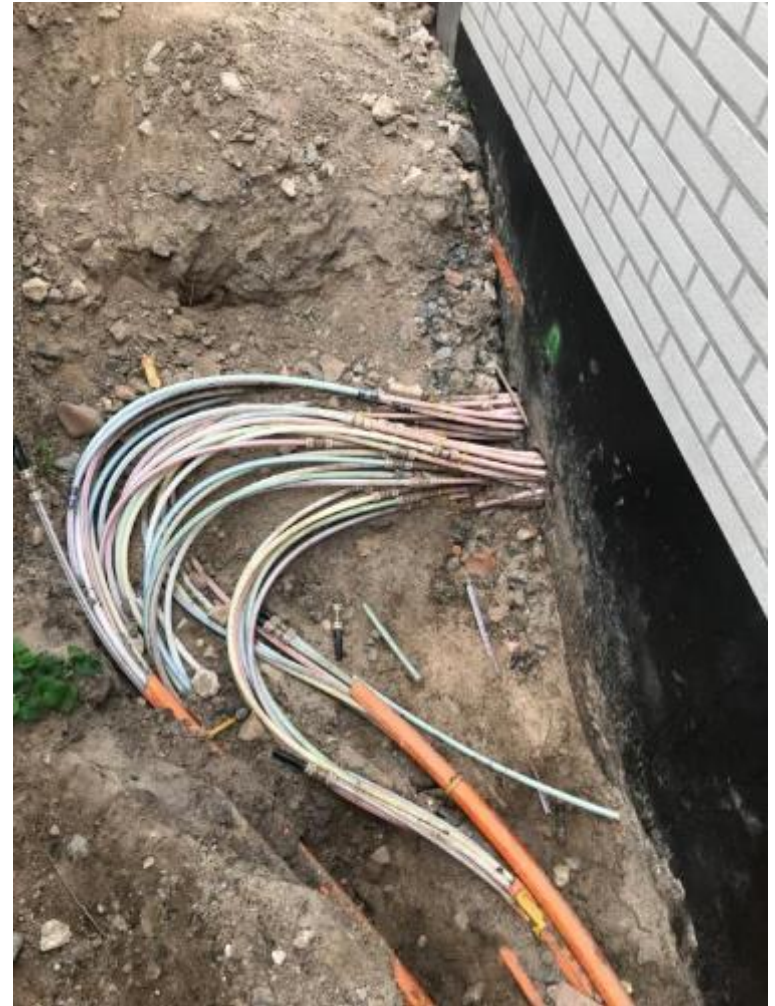


# Kabeleinführung



- **Abdichtung**

# Kabeleinführung



- „No-Go’s“



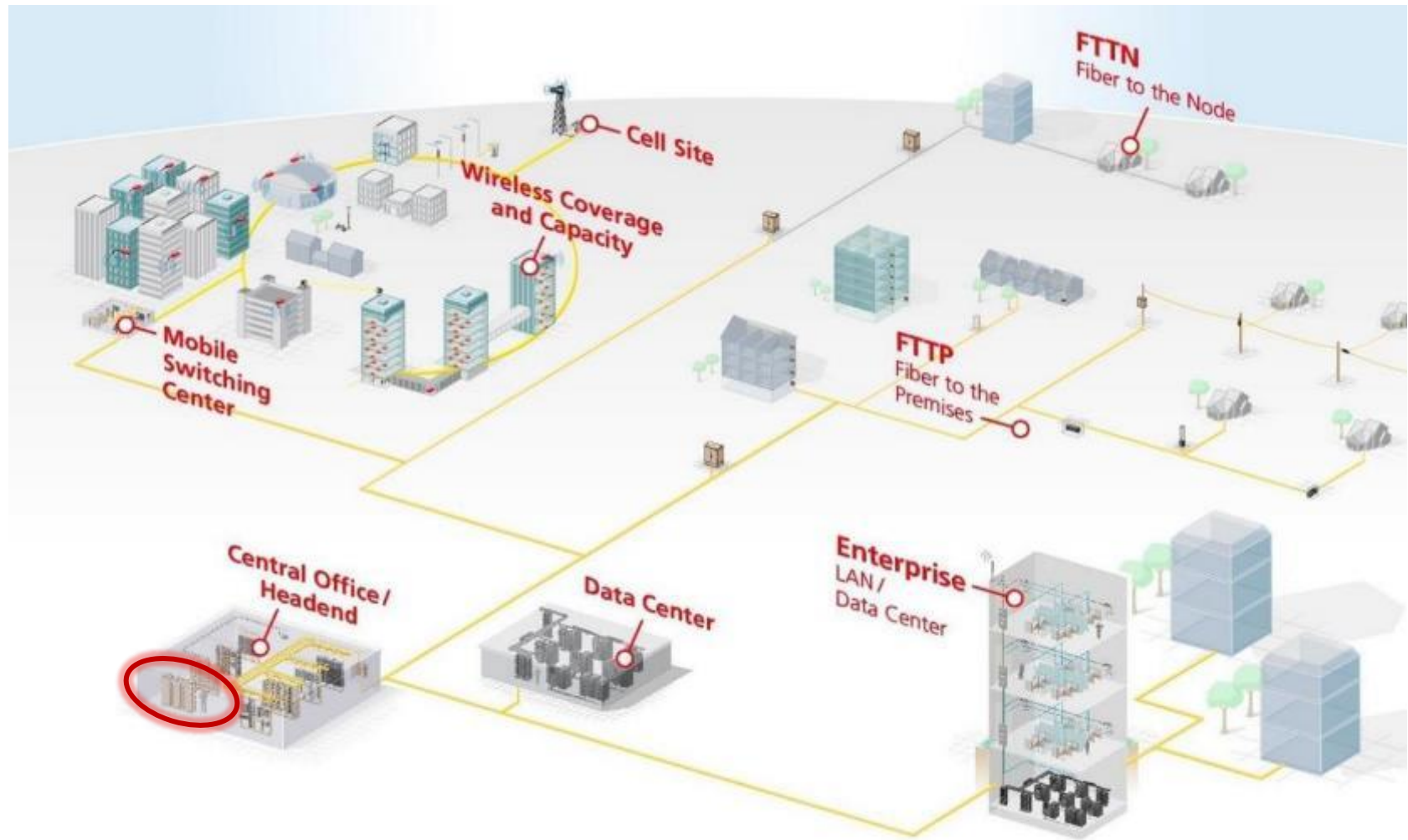
# Kabelführung



- **Kabelreserven**



# ODF - HVt



# ODF - HVt

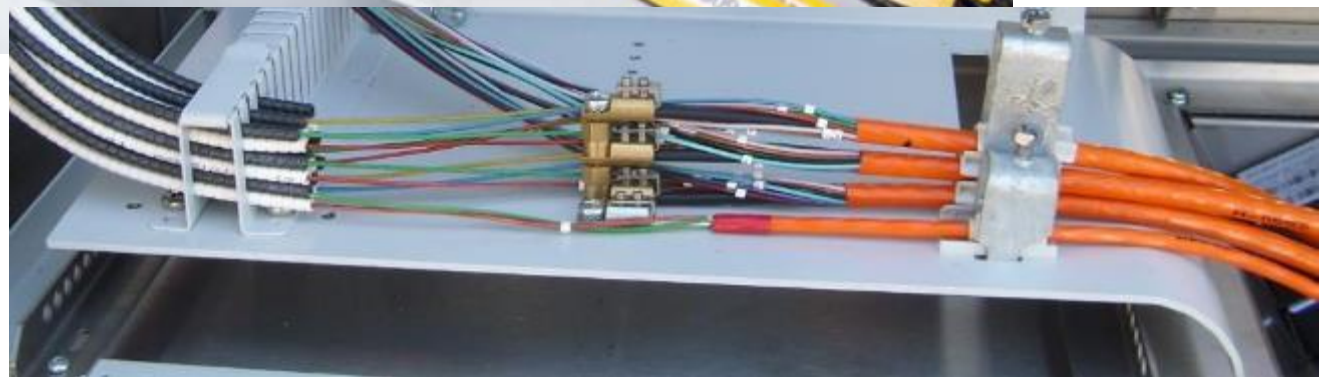


**ETSI-Gestell**  
**900x300x2200**



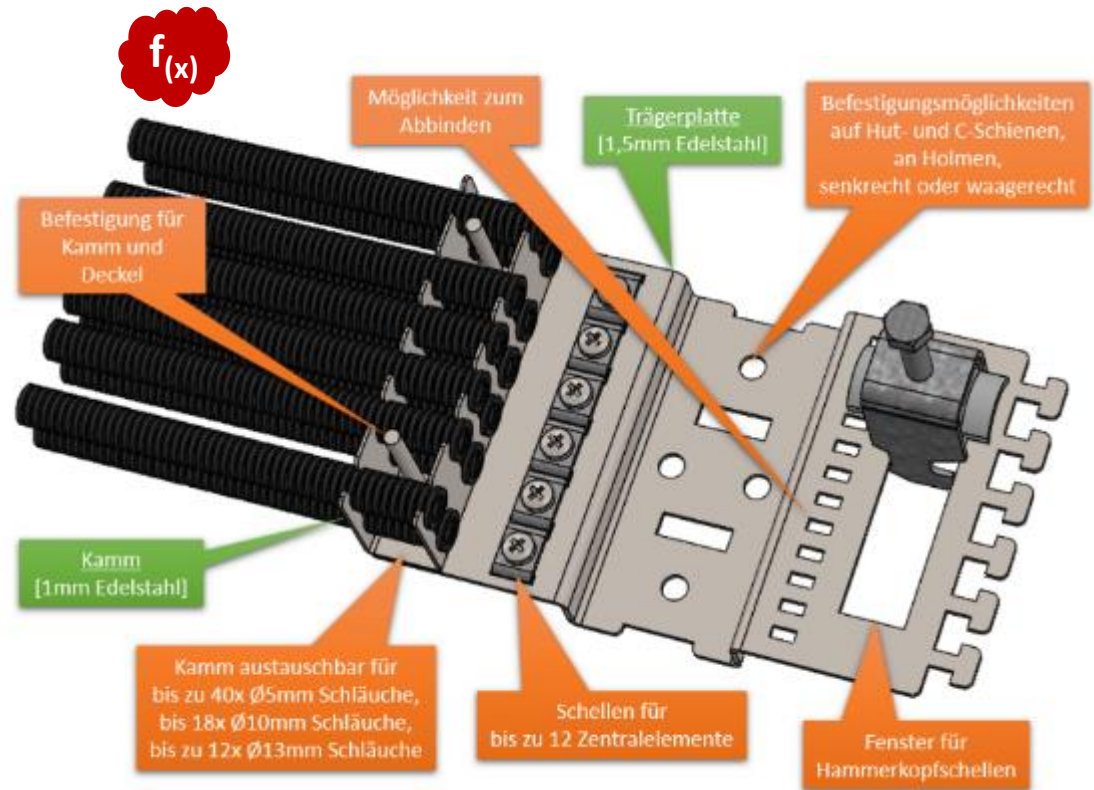
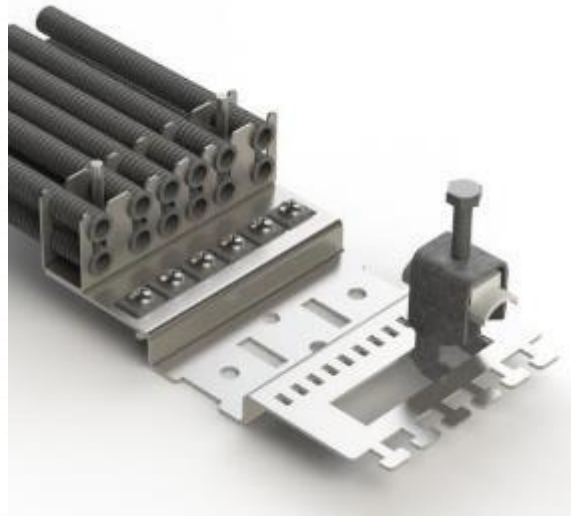
**19"-Gestell**  
**800x600x2000**

# Kabelabfangung

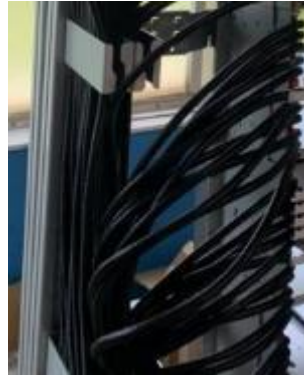
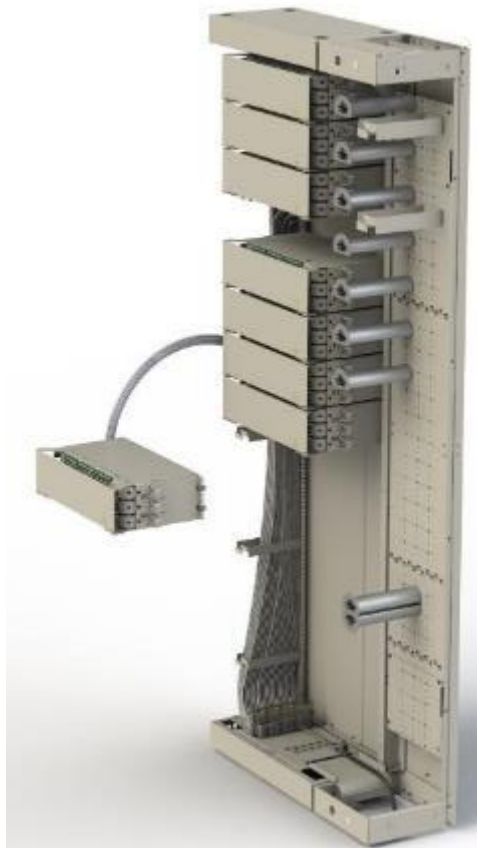


- Zentralelement
- Röhrrchen

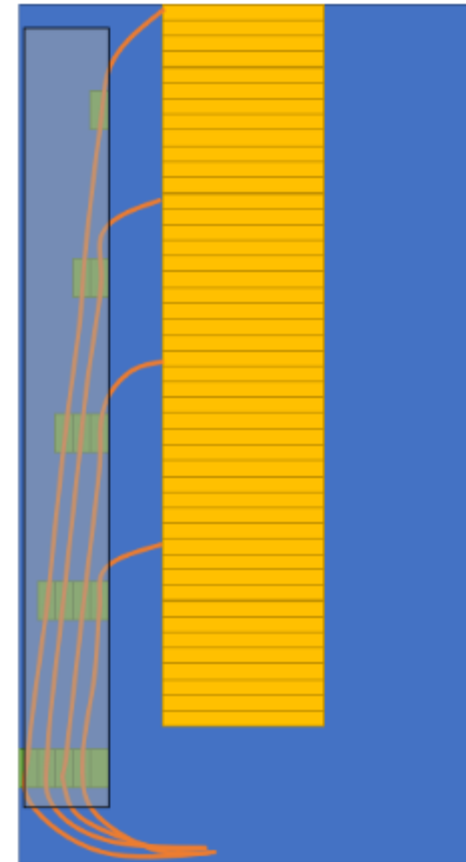




## - Kabelaufteiler

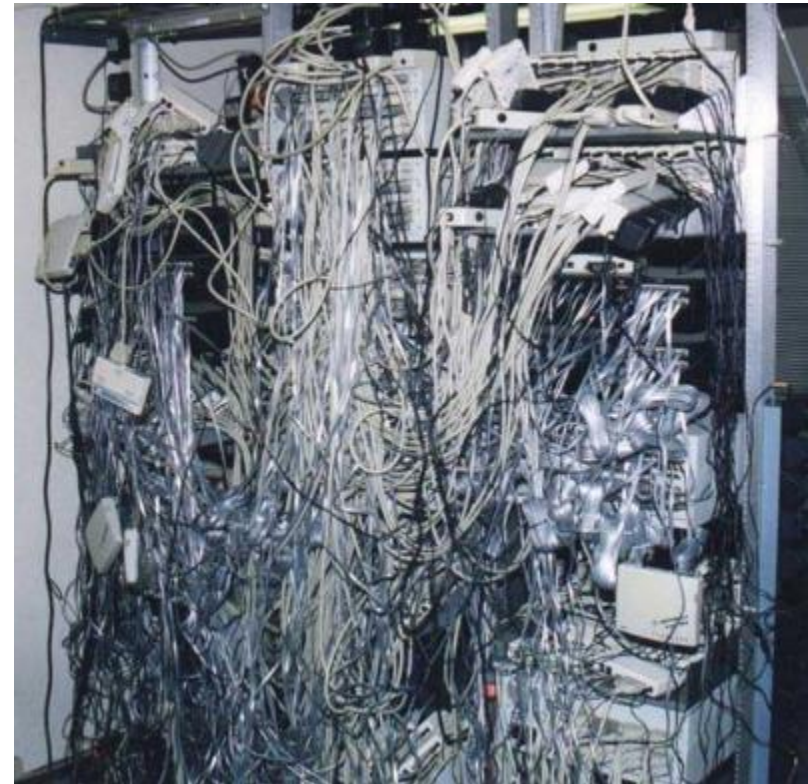
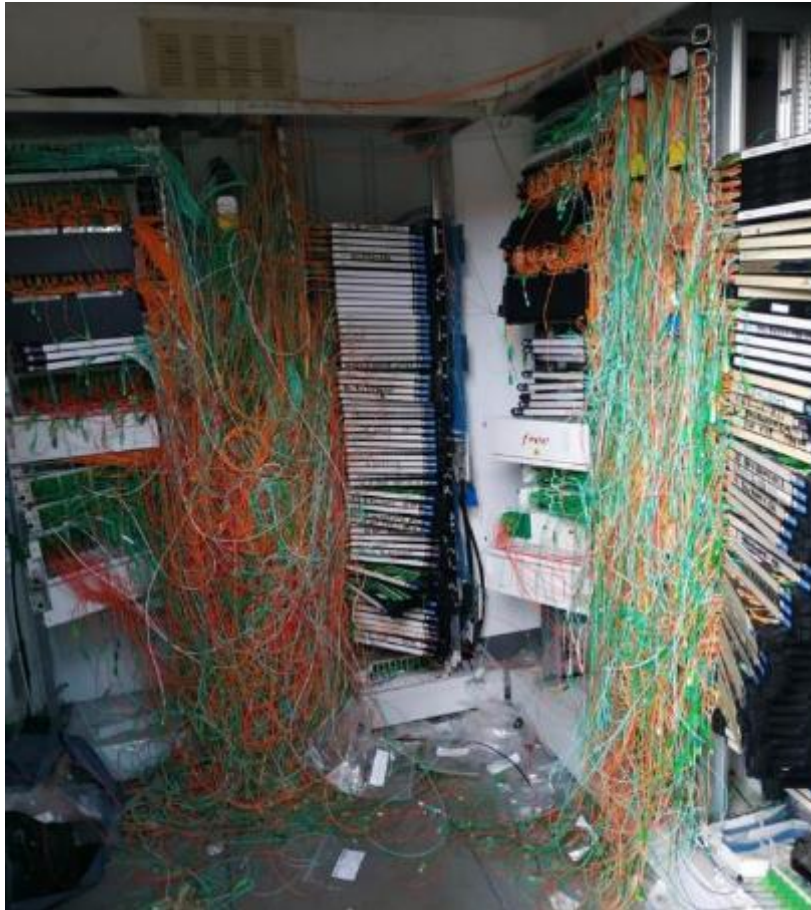


$f(x)$



- **Ausbau Module mit Fasern**

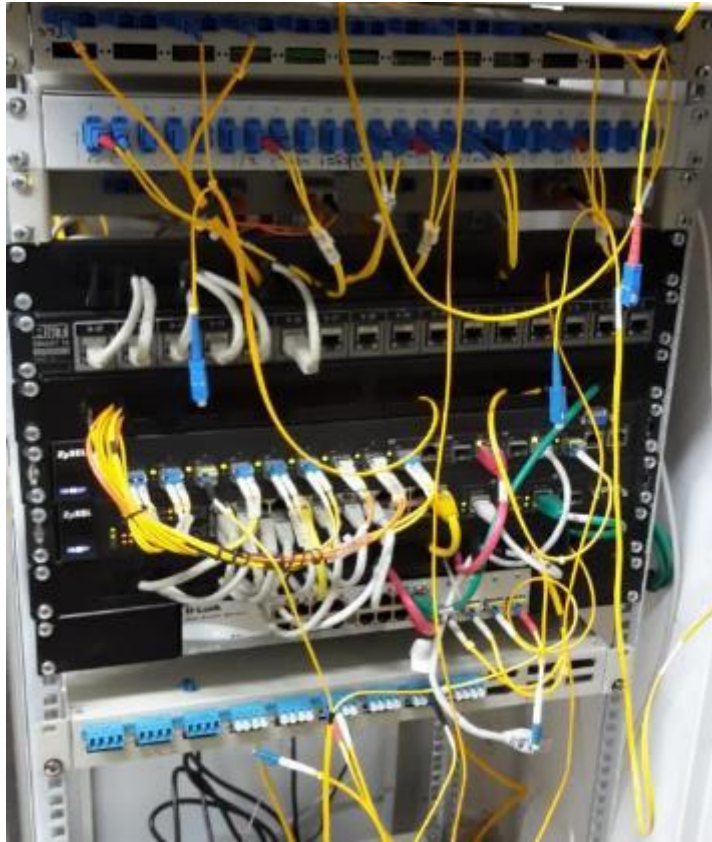
# Patchkabelmanagement



„No-Go's“



# Patchkabelmanagement



„No-Go's“

# Patchkabelmanagement



„No-Go's“

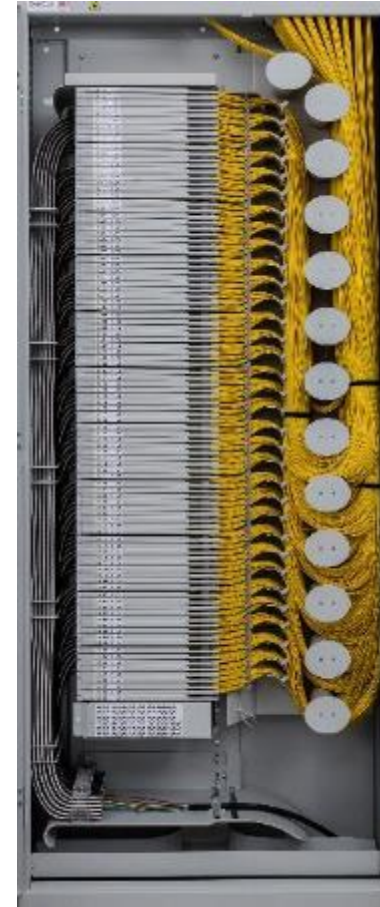


# Patchkabelmanagement



- Führungsebenen





- **Schwenkmodul – Umlenkung – Längenausgleich**



- Schwenkmodul – Umlenkung

# Patchkabelmanagement



- Längenausgleich



# Schwenkrahmen



- ETSI-Schrank

# Schwenkrahmen



- Rittal-Schrank



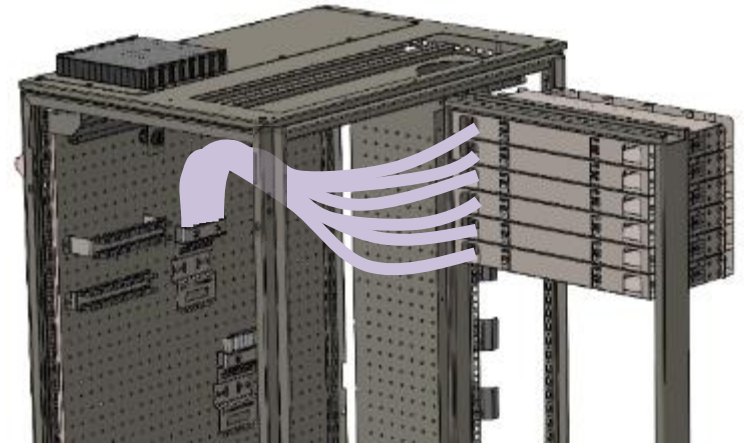
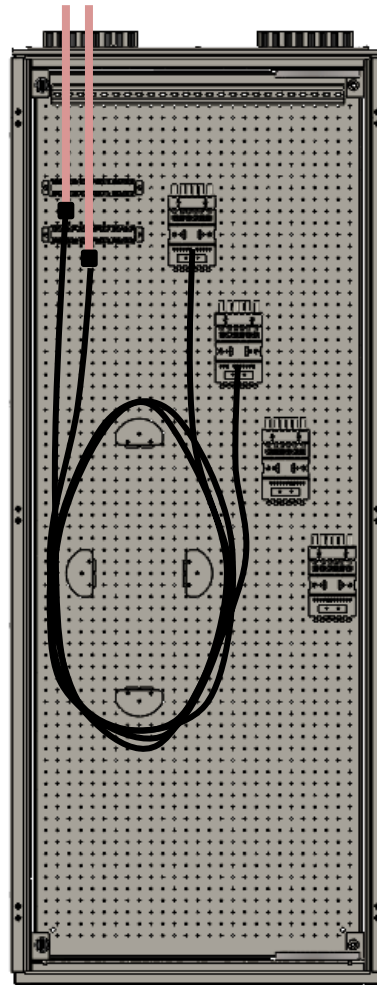
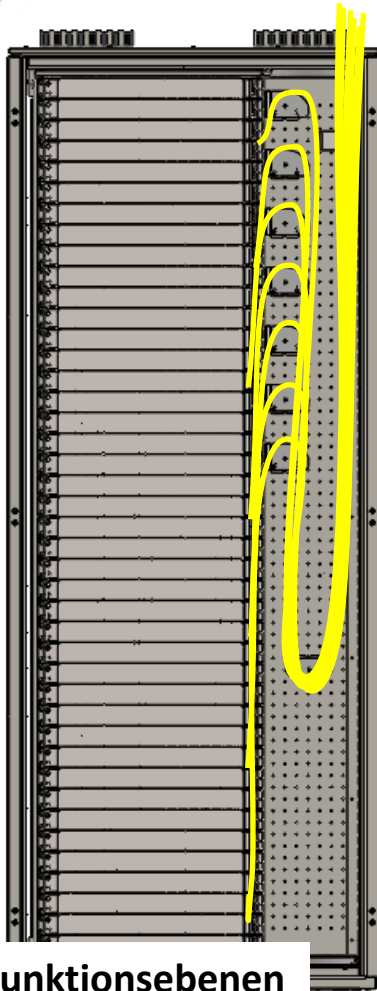
# Schwenkrahmen



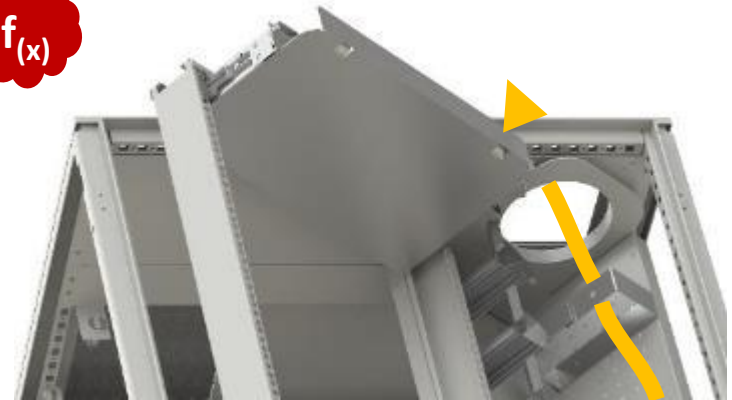
- FOC-Schrank



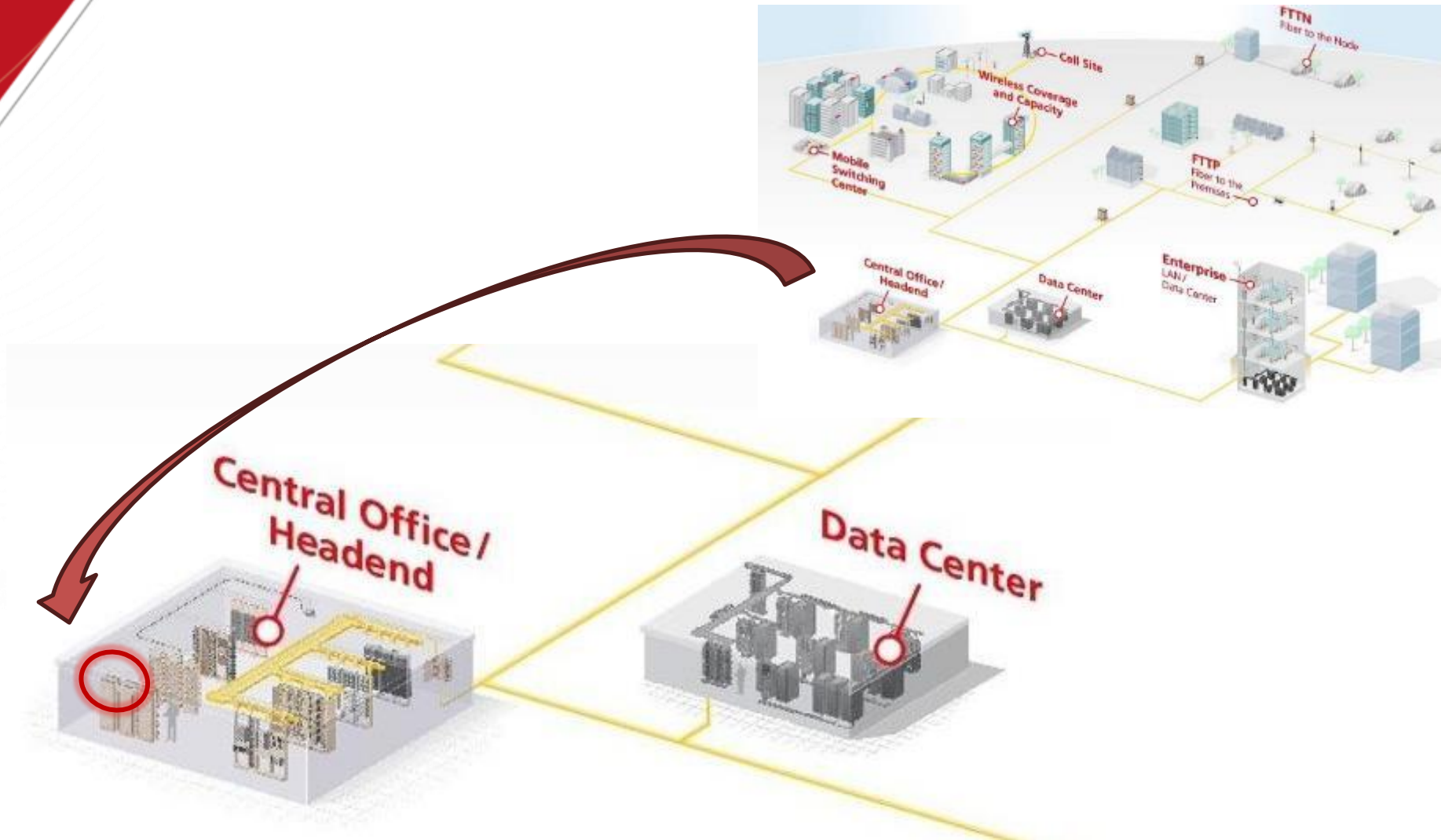
# Schwenkrahmen



$f(x)$



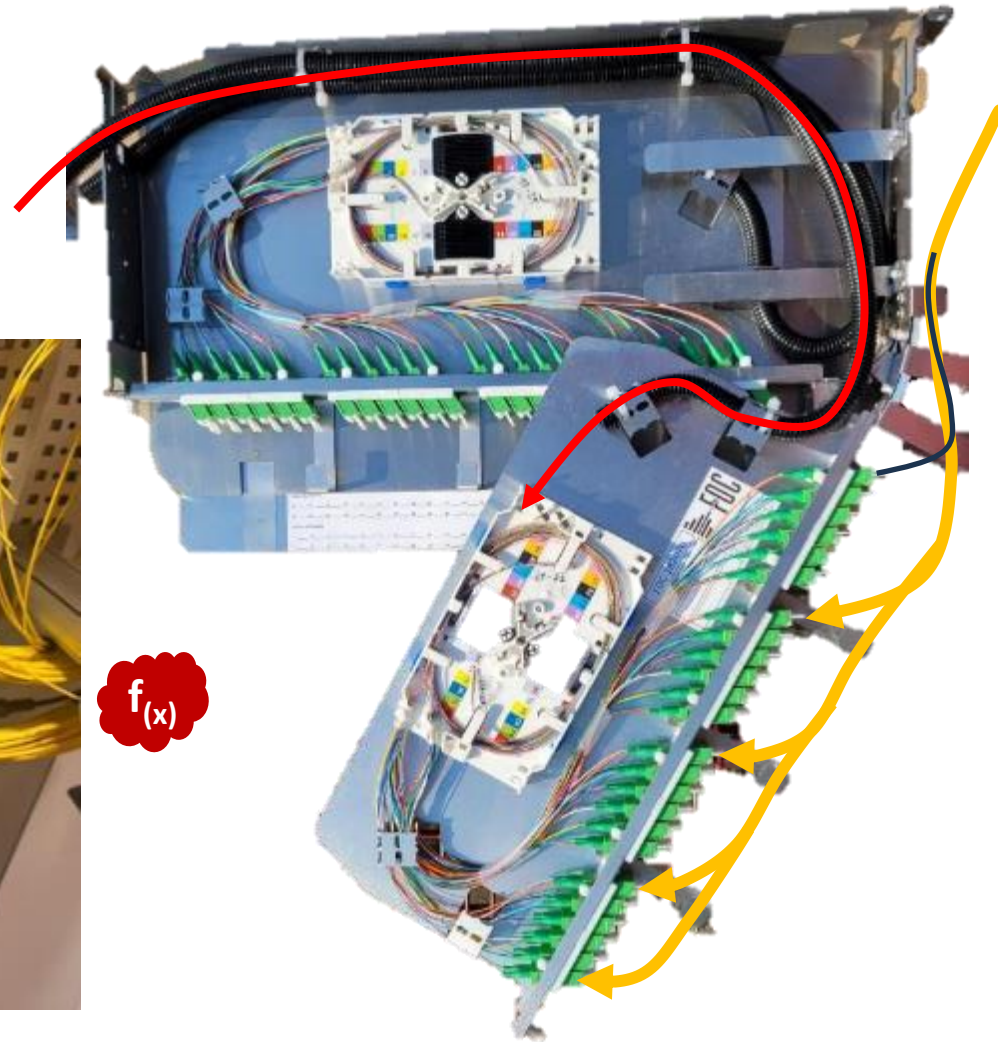
# Verteilerfelder



# Schwenkbox HD



- Chassis in 0,5HE Größen
- Rechtsanschlag / Linksanschlag
- Verstellbare Befestigung Vorne / Hinten
- 12x LSH/0,5HE oder 24x LC/0,5HE

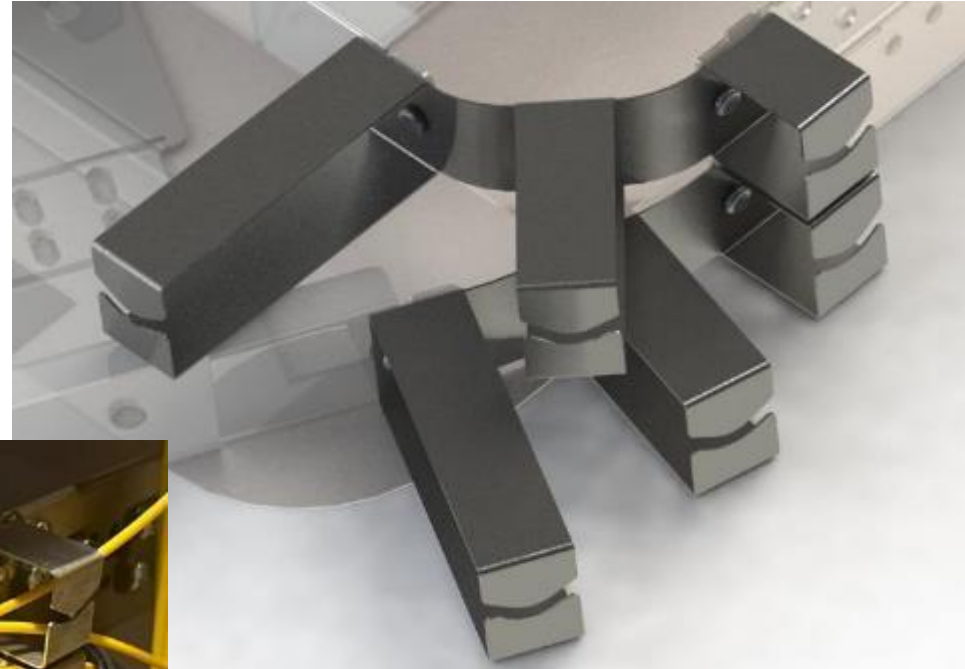




# Schwenkbox HD



- Patentiertes Federscharnier
- Nahezu keine Kabelbewegung
- Sichere Führung

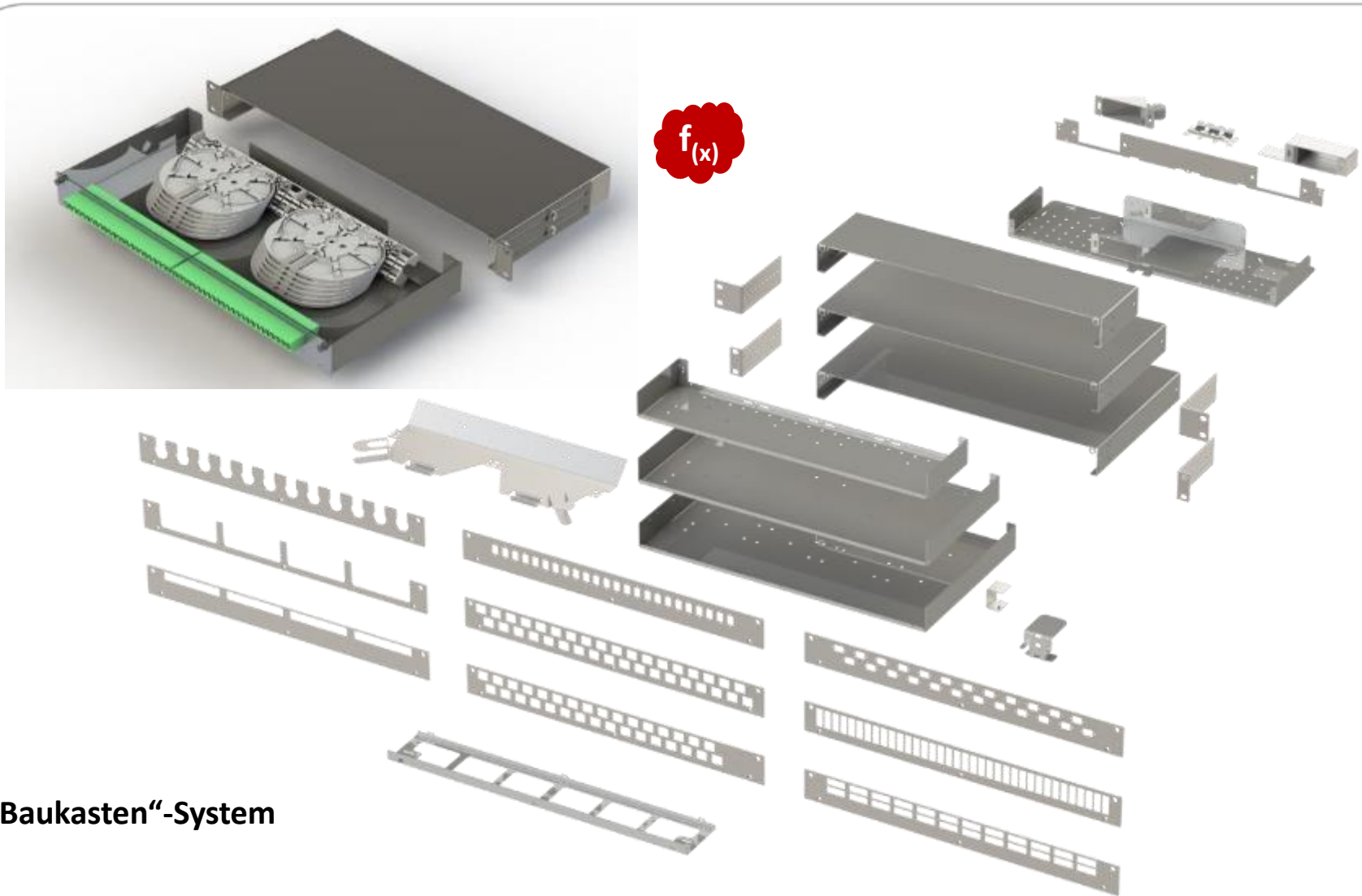


# Lightbox



- **0,5HE/1HE/2HE/3HE – LSH/SC/LC – 19"/EZSI – Front-/Back-Mounting**

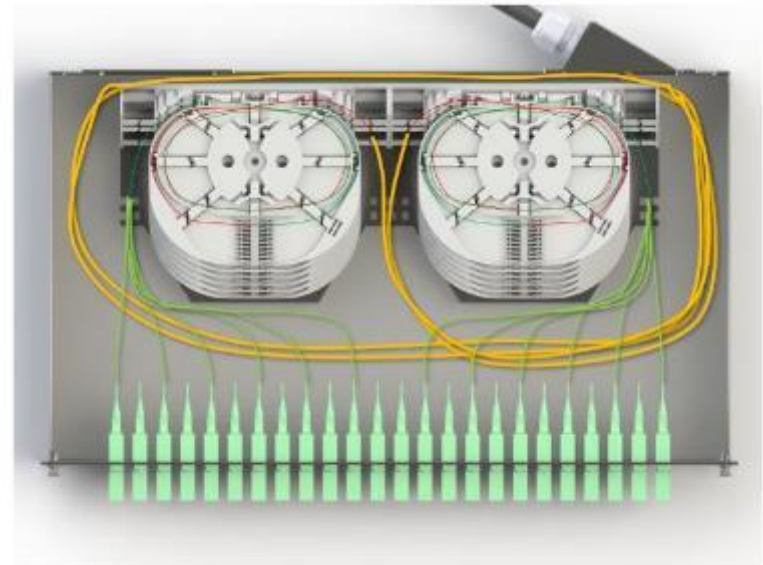
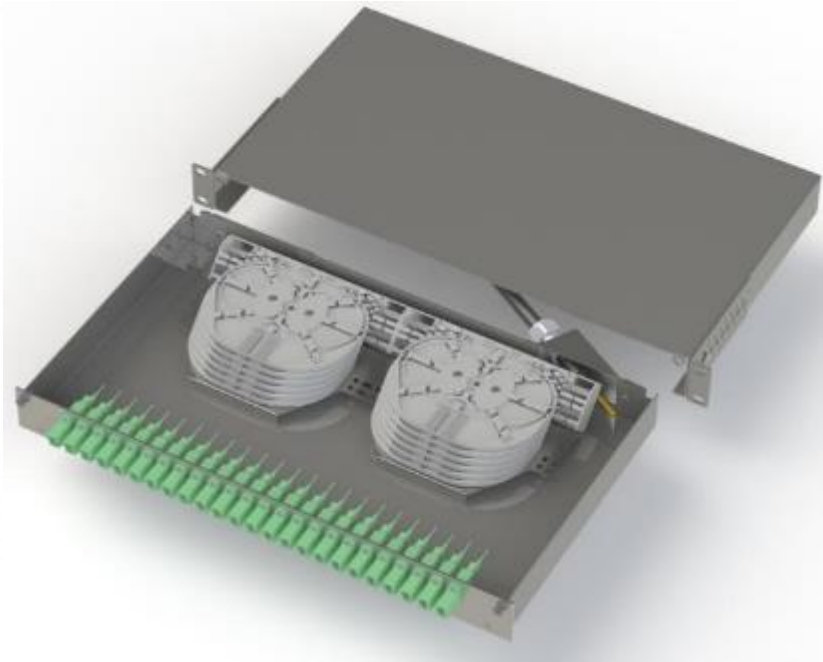
# Lightbox HD



- „Baukasten“-System



# Lightbox HD



- **EFM (Einzelfasermanagement)**
- **MFM (Mehrfasermanagement)**

## Baugruppenträger



- **3HE Baugruppenträger mit 84TE (1TE=5,08mm) passend für 12x 7TE-Kompaktmodule**
- **48 Port LC oder 24 Port LSH / Kompaktmodul  $\cong$  576x LC / 288x LSH auf 3HE**

# Baugruppenträger



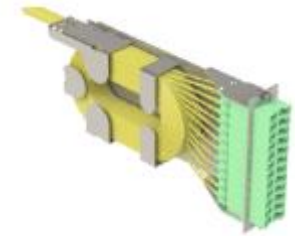
Mit einer Spielkassette für 12 oder 24 Splice.  
Ideal für 1 x 12er, 1 x 24er, 2 x 12er Bündel.



Mit zwei Spielkassetten für 12, 24 oder 48 Splice.  
Ideal für 2 x 12er, 2 x 24er, 4 x 12er Bündel.



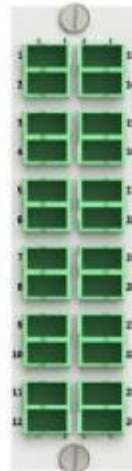
Als reines Splice-Modul mit bis zu drei Spielkassetten  
für max. 72 Splice.



Als Jumper-Modul für die Aufnahme  
von Breakout-Kabeln.



24 Port  
12 x LSH lp dx  
Zählweise  
waagrecht



24 Port  
12 x LSH cp dx  
Zählweise  
senkrecht



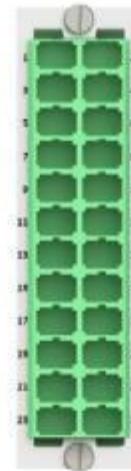
12 Port  
12 x LSH sx  
Beschriftungsstreifen  
links oder rechts



48 Port\*  
12 x LC quad  
Zählweise  
senkrecht



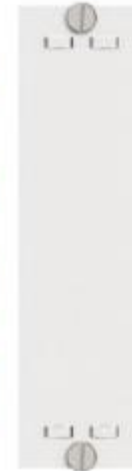
24 Port  
12 x LC dx  
Zählweise  
waagrecht



24 Port\*  
12 x SC dx  
Zählweise  
waagrecht



12 Port  
12 x SC sx  
12 x ST sx  
12 x LSH sx

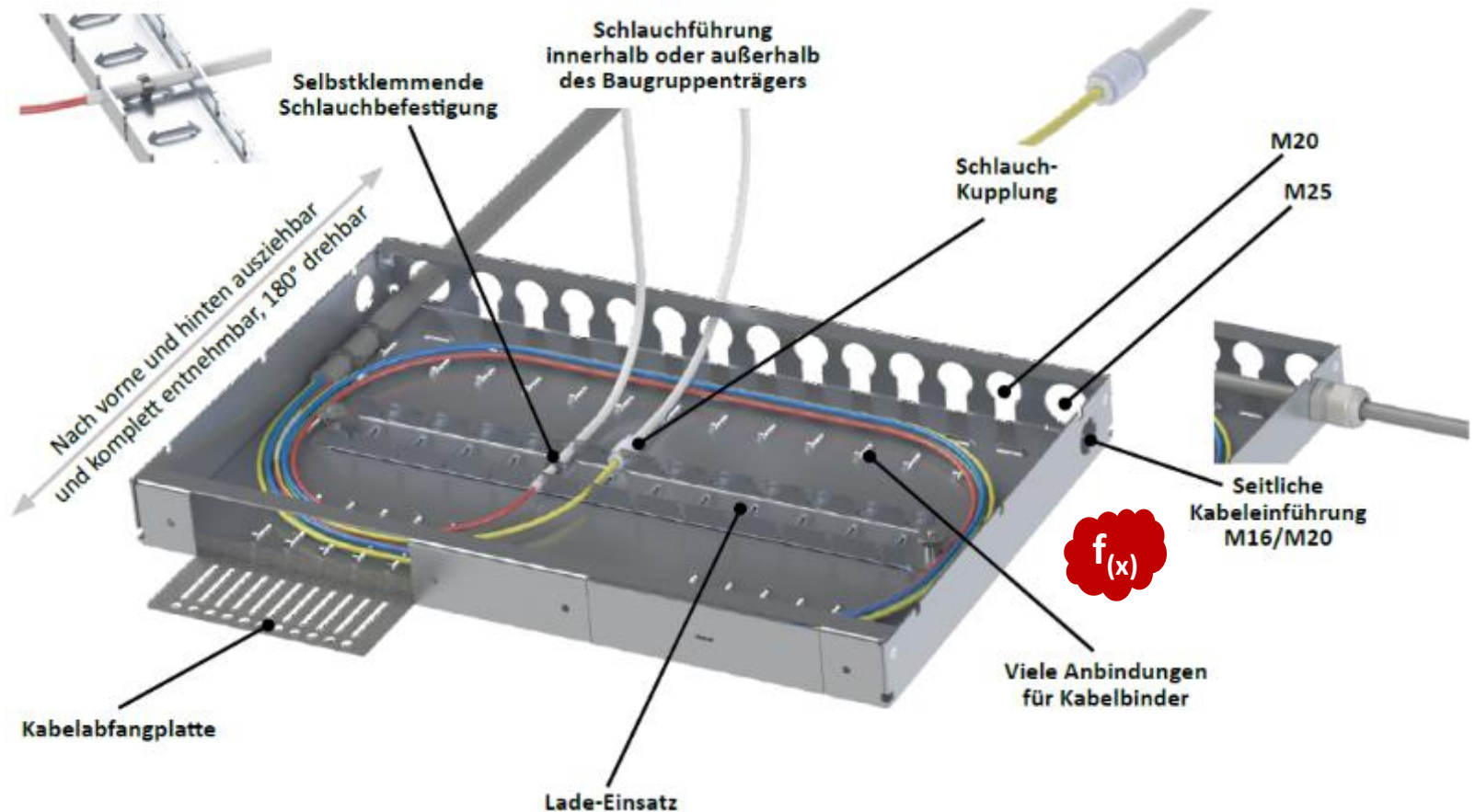


Blindplatte

- Kompaktmodule für LC-, SC-, LSH-Kupplungen, Breakoutmodule, Splice-Module und Blindplatten

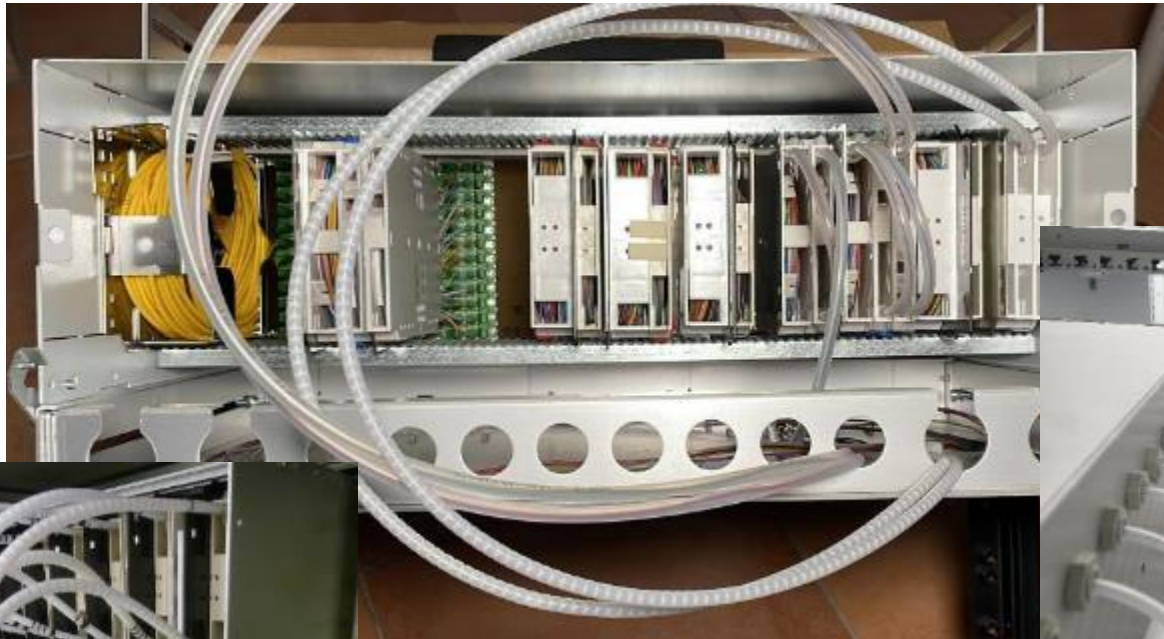


# Baugruppenträger



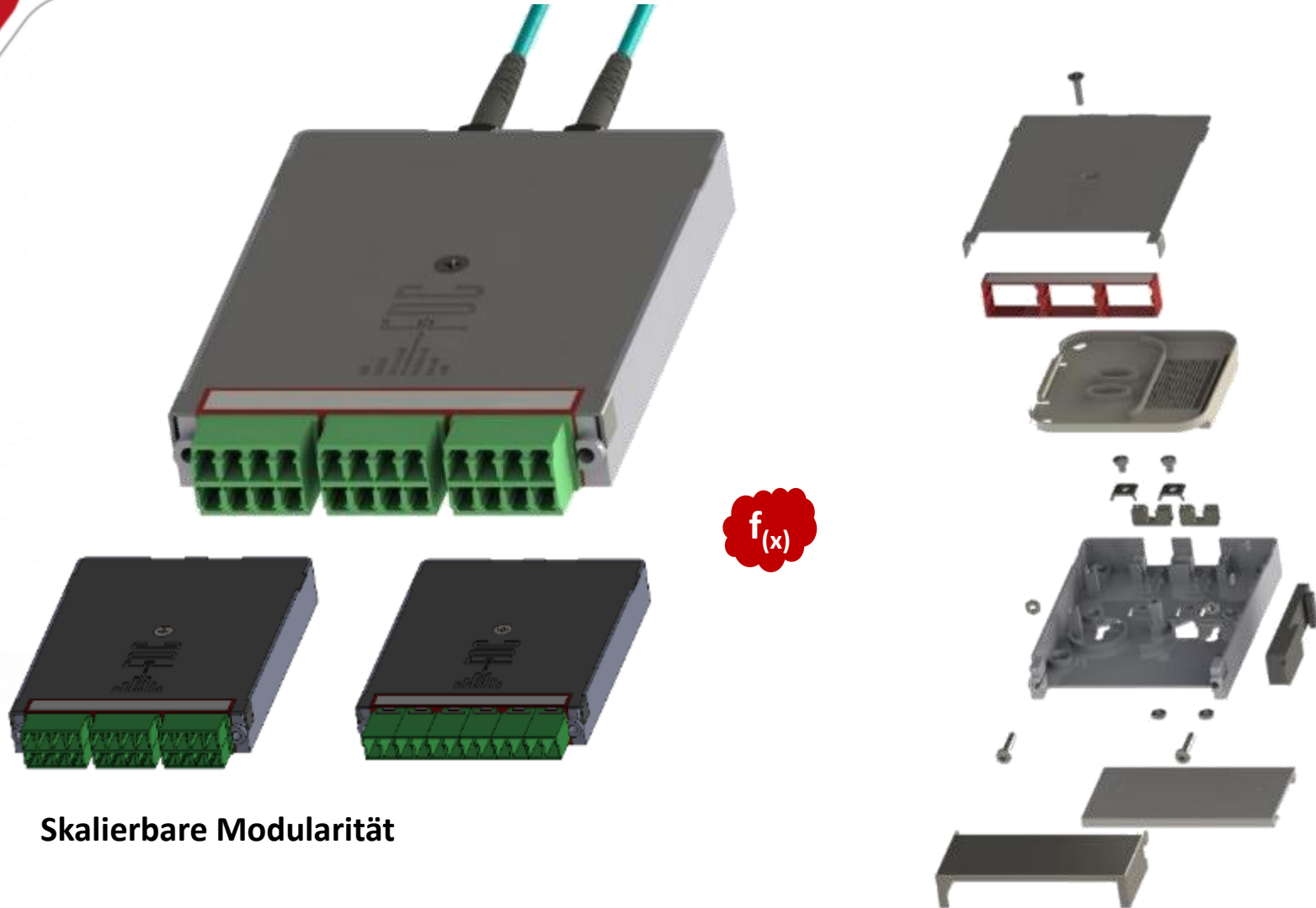
- Multifunktionales Überlängenfach

# Baugruppenträger



- **Verschiedene Möglichkeiten zur Röhrcchenführung**

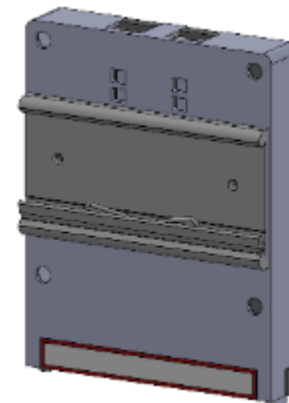
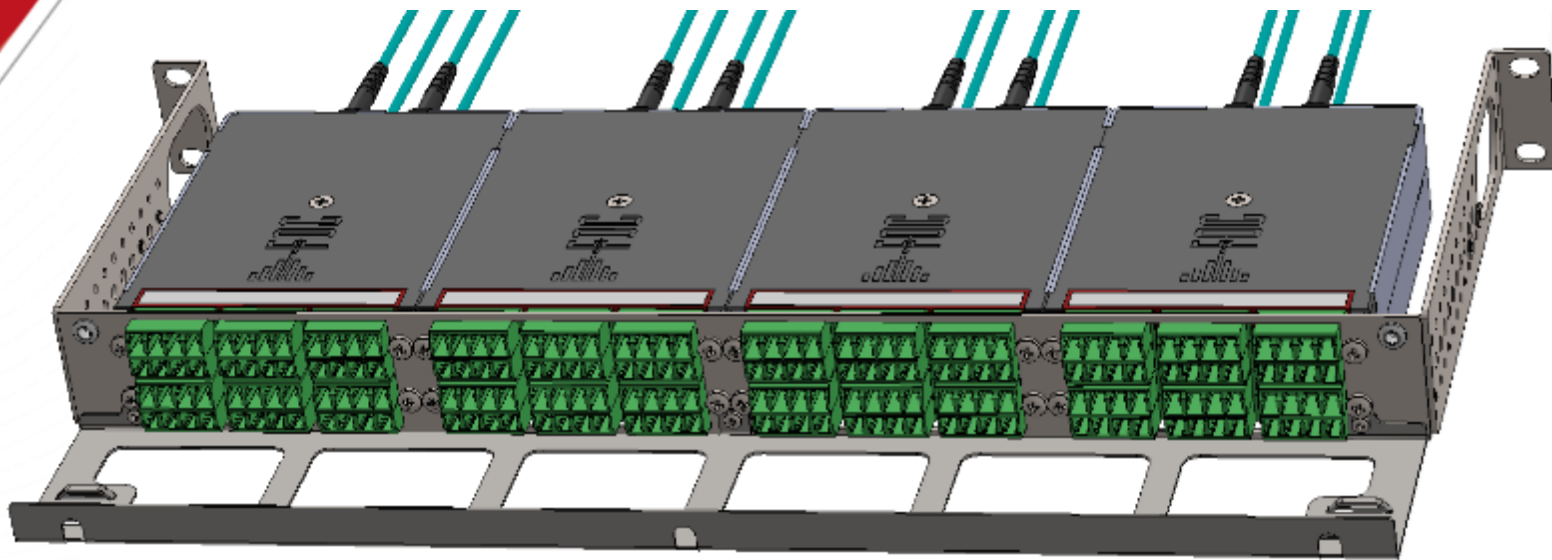
# Microspleißbox



- Skalierbare Modularität



# Microspleißbox

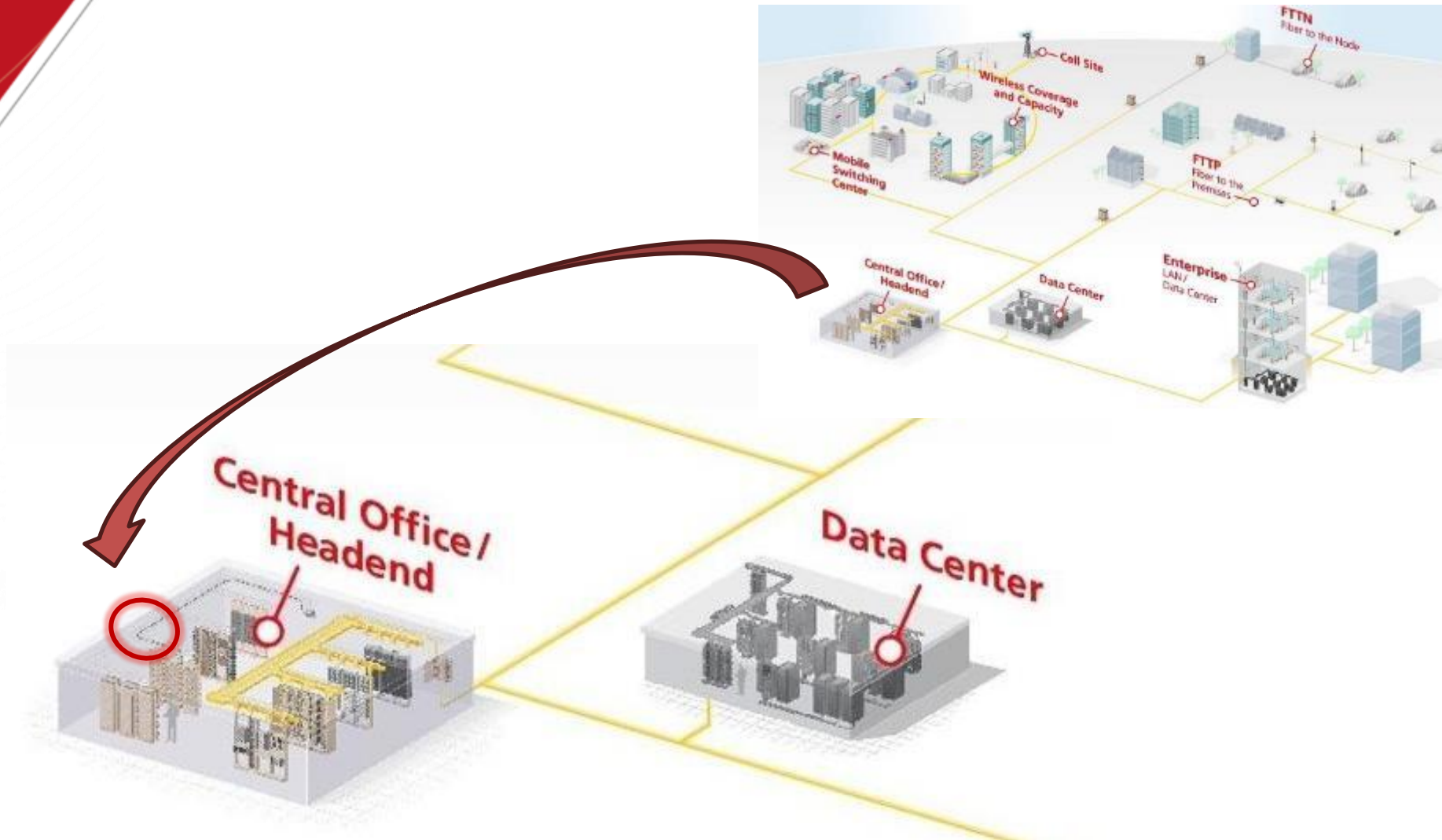


- Multifunktional



- Verkabelungssystem

# Verkabelungssysteme

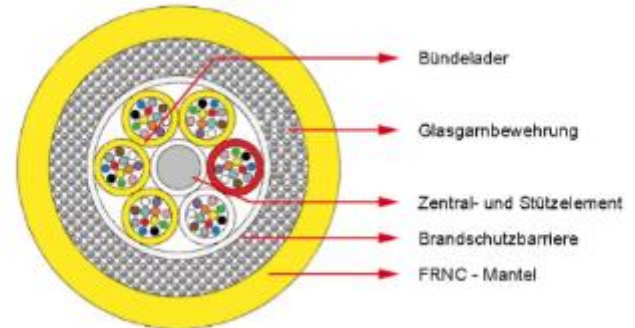
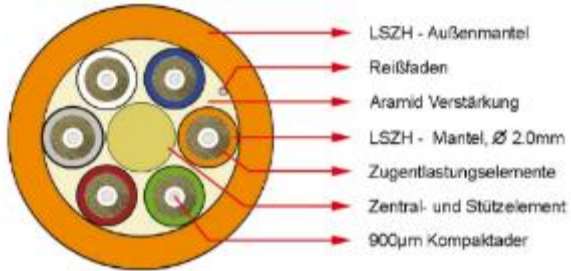




# Breakout- / Fanout-Kabel



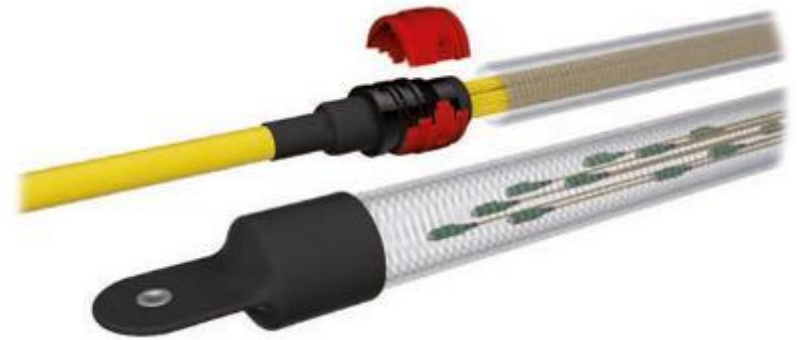
f(x)



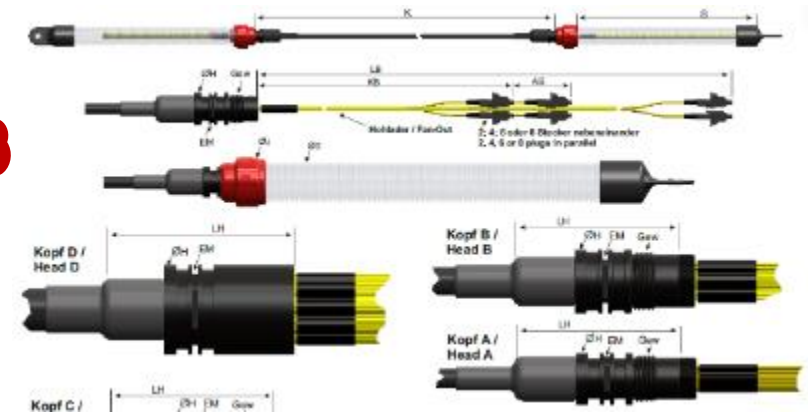
**Breakoutkabel**

**Fanoutkabel**

# Breakout- / Fanout-Kabel

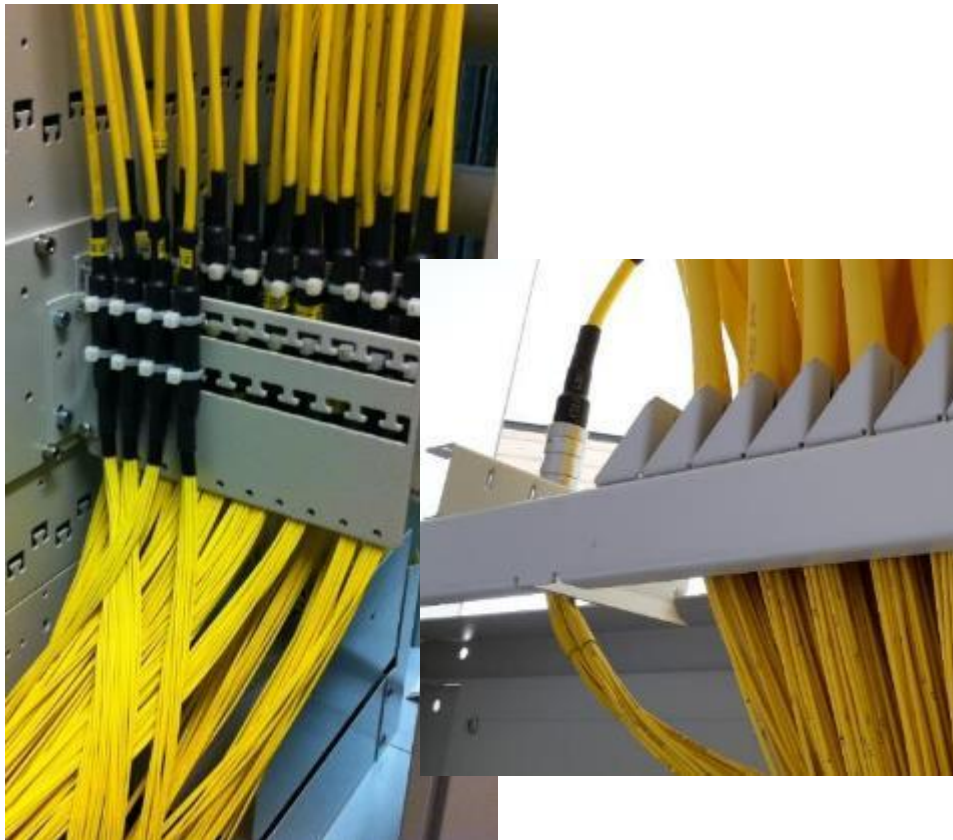


f(x)



- Verschiedene Bauformen und Kabelaufbauten

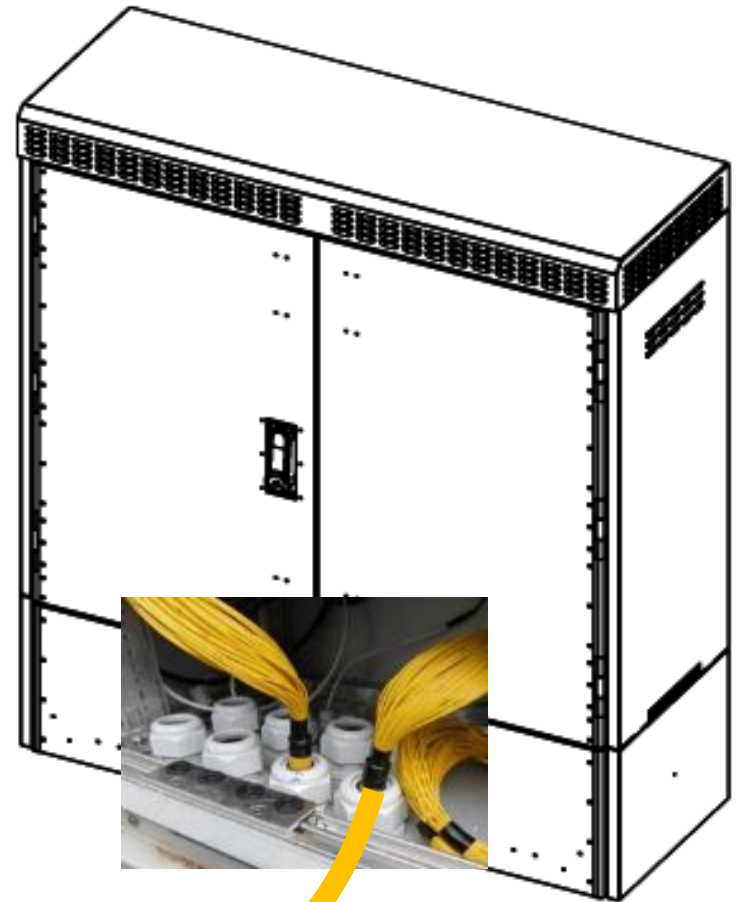
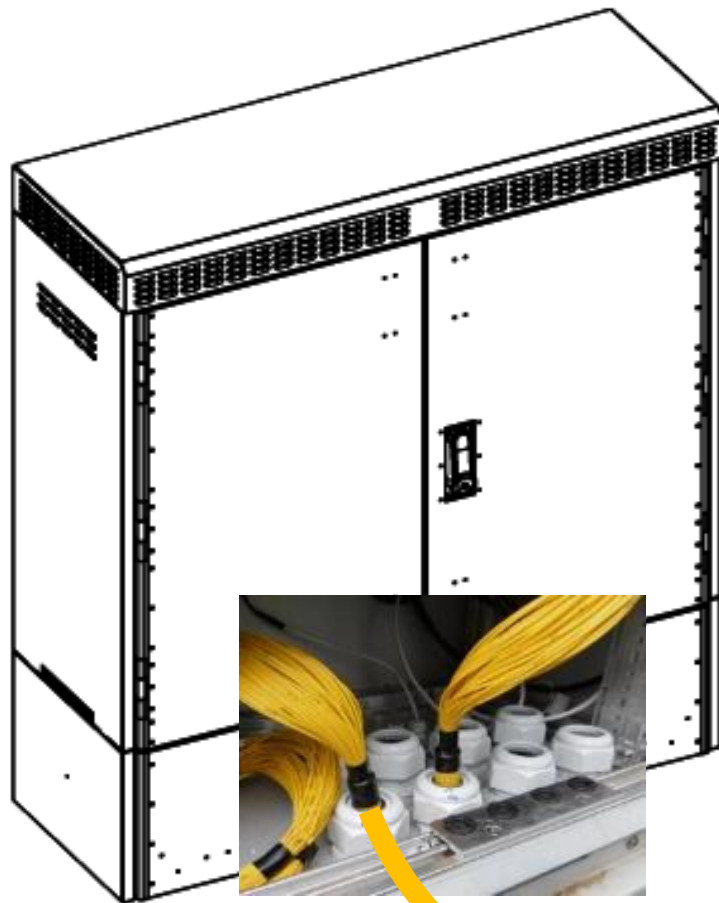
# Breakout- / Fanout-Kabel



## - Anwendungen

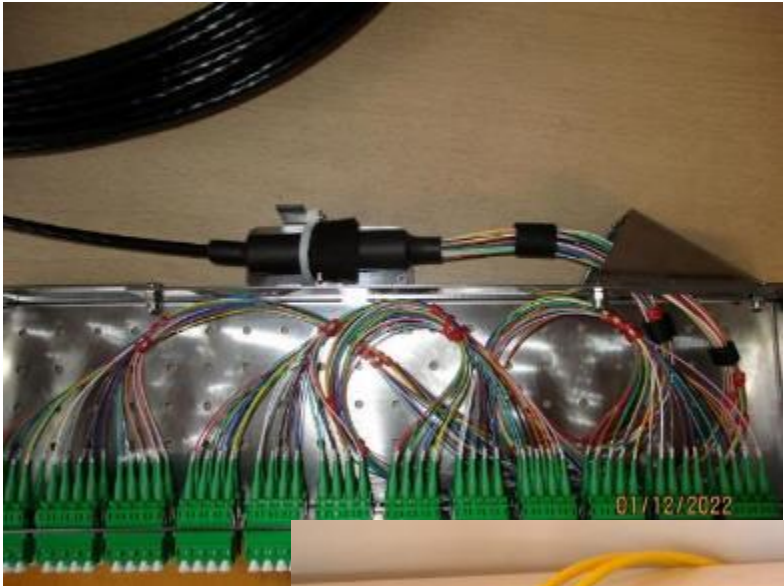


# Breakout- / Fanout-Kabel



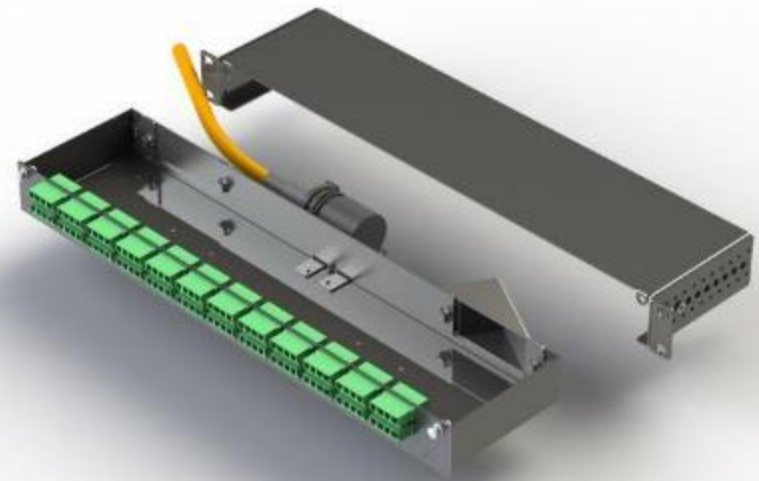
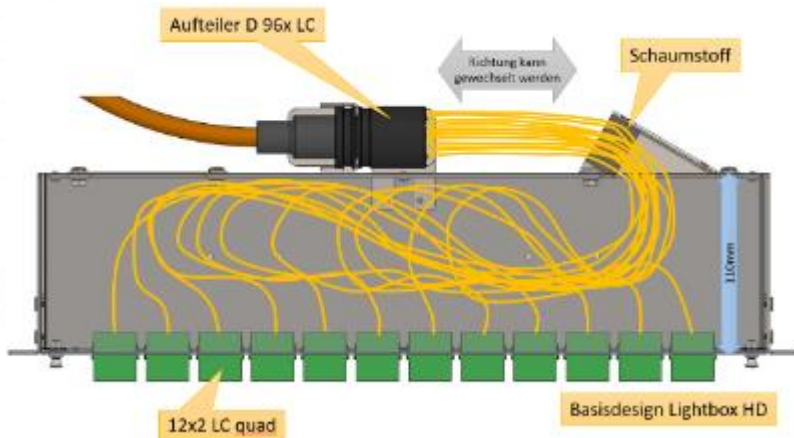
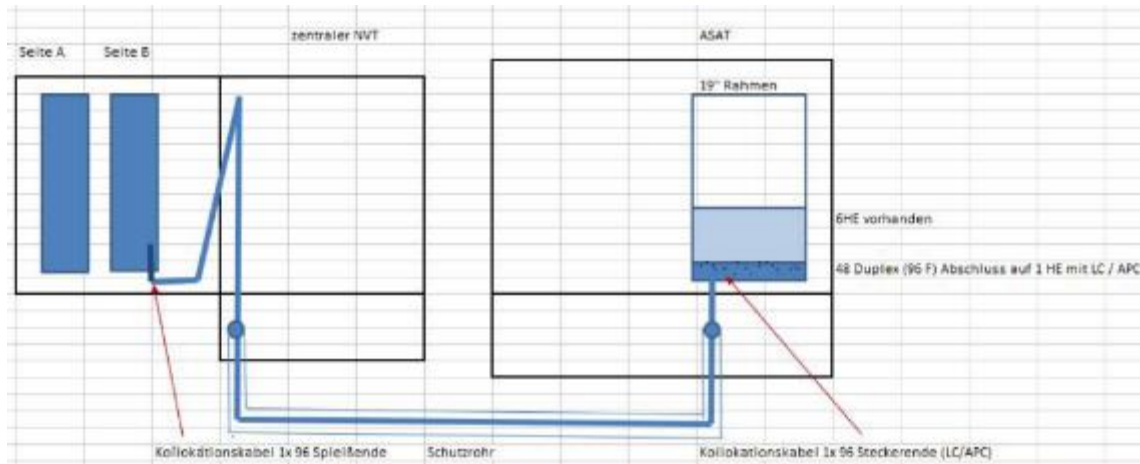
## - Anwendungen

# Breakout- / Fanout-Kabel



- „In the Box“

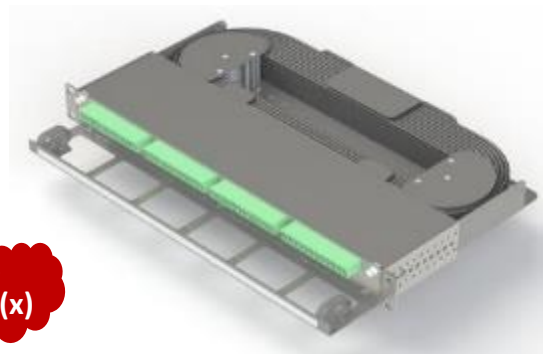
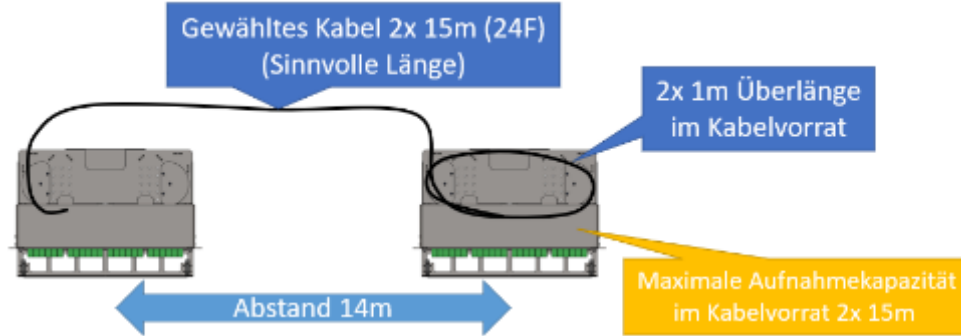
# Breakout- / Fanout-Kabel



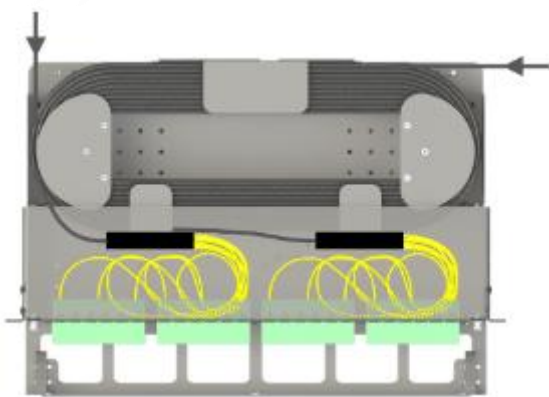
- „In the Box“



# Breakout- / Fanout-Kabel



$f(x)$

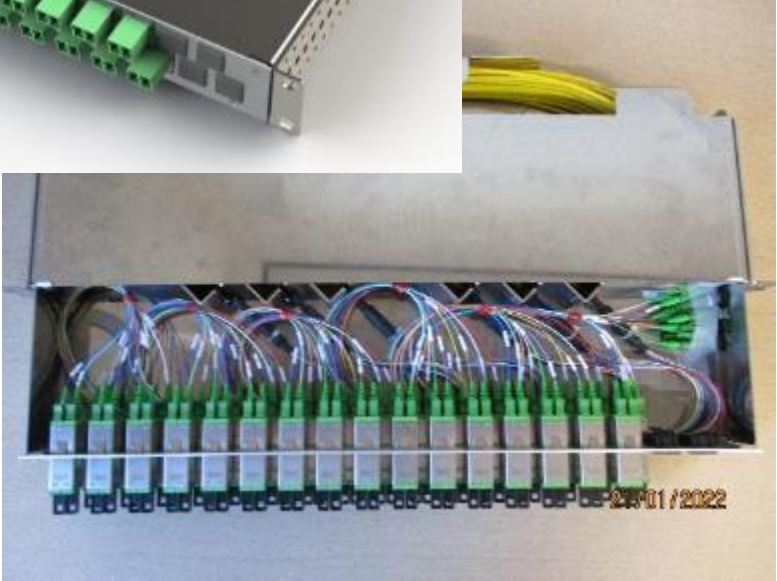
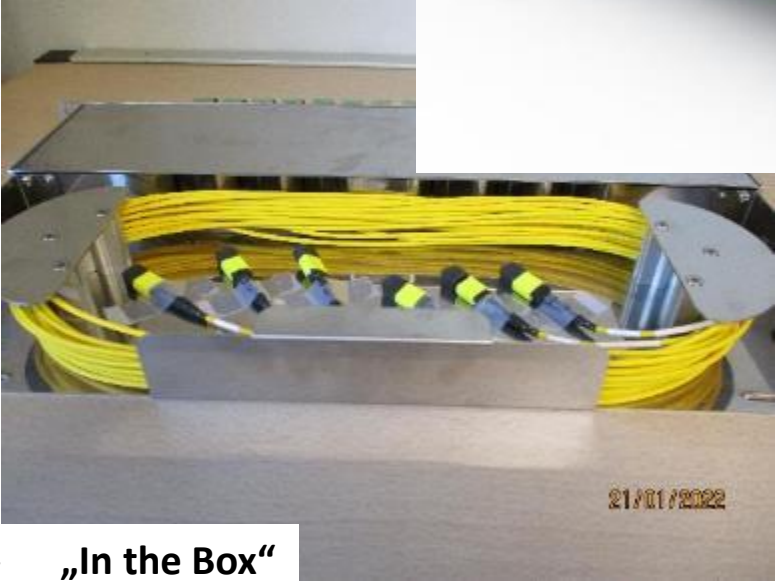


### Auswahltabelle Kabellänge Jumperbox

Typ	Kapazität	Abstand der Boxen in [m]																																																	
		Mögliche Länge					Sinnvolle Länge					Mögliche Länge					Sinnvolle Länge					Mögliche Länge					Sinnvolle Länge																								
48x LC / 24x LSH	ø3mm Kabel; 12F, max 60m ≙ 4x 15m ø5mm Kabel; 24F, max 30m ≙ 2x 15m	1-2	1-3	1-4	1-5	1-6	1-14	1-15	1-16	1-17	1-18	1-21	1-22	1-23	1-24	1-25	1-31	1-32	1-33	1-34	1-35	1-41	1-42	1-43	1-44	1-45	1-49	1-50	1-51	1-52	1-53	1-54	1-55																		
		4x 5m (12F) 2x 5m (24F)					4x 15m (12F) 2x 15m (24F)																																												
		4x 10m (12F) 2x 10m (24F)																																																	
		4x 20m (12F) 2x 20m (24F)																																																	
		4x 25m (12F) 2x 25m (24F)																																																	
		4x 30m (12F) 2x 30m (24F)																																																	
		4x 35m (12F) 2x 35m (24F)																																																	
		4x 40m (12F) 2x 40m (24F)																																																	
		4x 45m (12F) 2x 45m (24F)																																																	
		4x 50m (12F) 2x 50m (24F)																																																	

- „In the Box“

# MPO-Box



- „In the Box“

# MPO-Box

Aktivtechnik/SFP



SFP: Male/Key-up



Verteiler Kupplung:  
Außen: Key-up  
Innen: Key-up

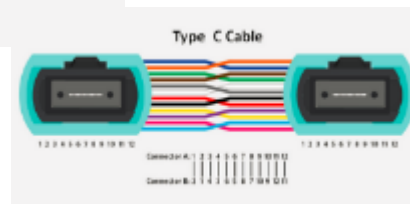
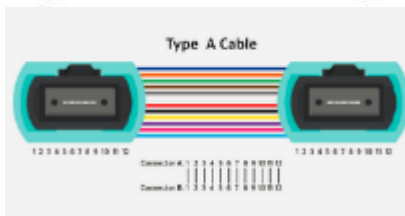


Patchkabel: Typ A  
Female/Key-up, beidseitig

Infrastruktur



Verteiler Kupplung:  
Außen: Key-up  
Innen: Key-up



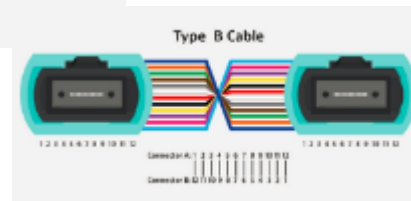
Aktivtechnik/SFP



SFP: Male/Key-up



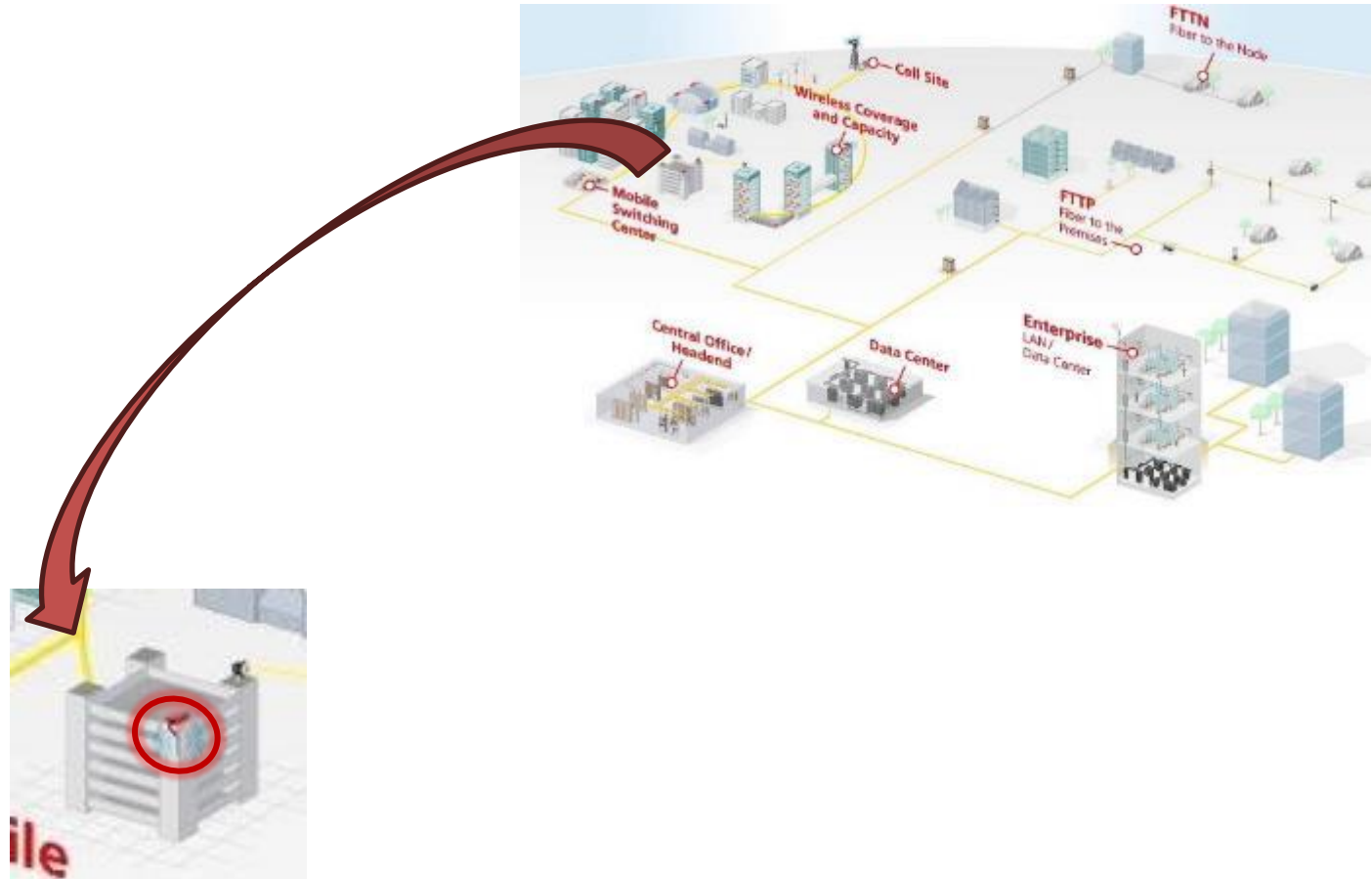
Patchkabel: Typ B  
Female/Key-up, beidseitig



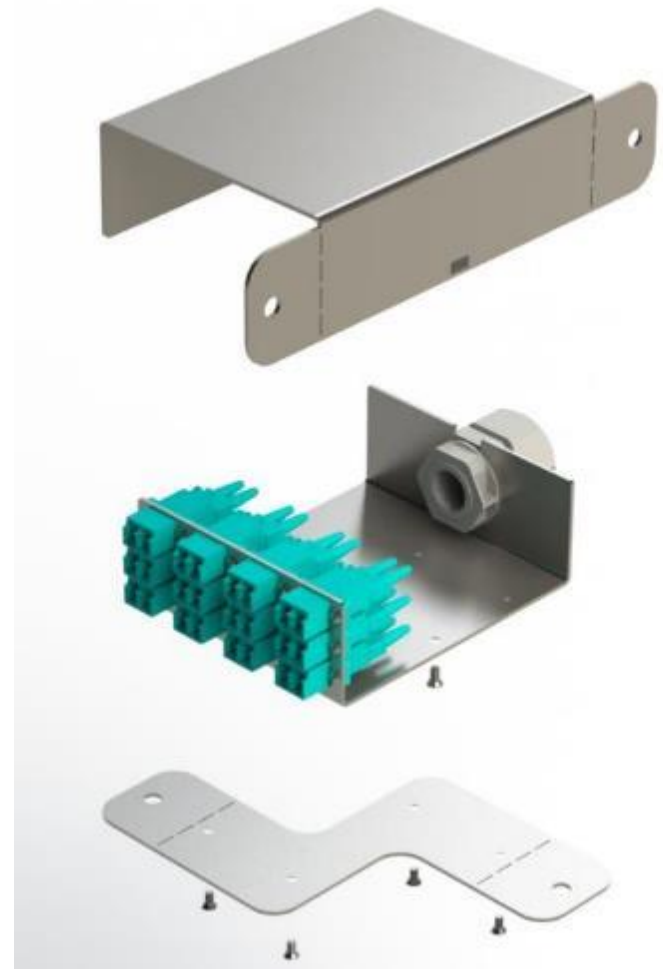
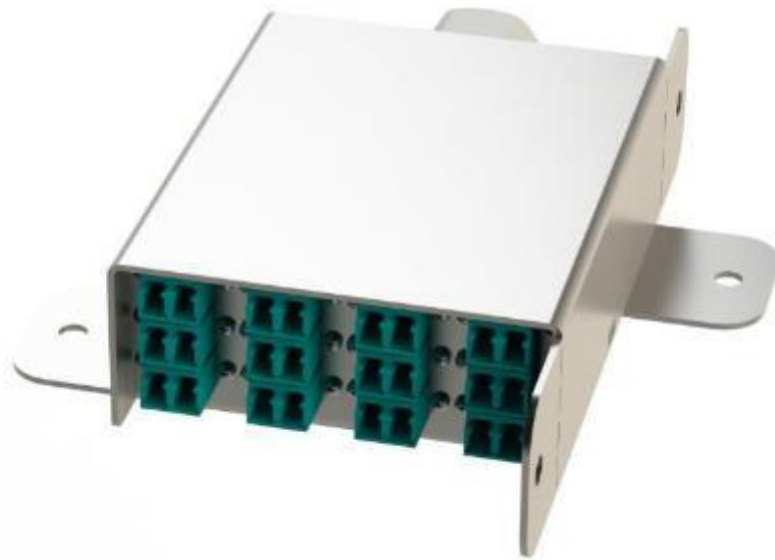
- System



# Campus

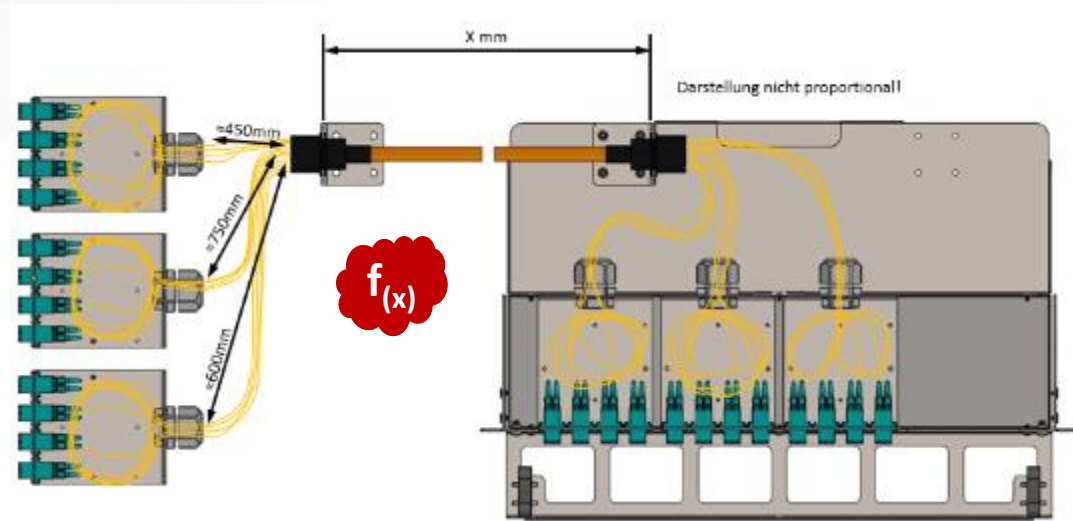
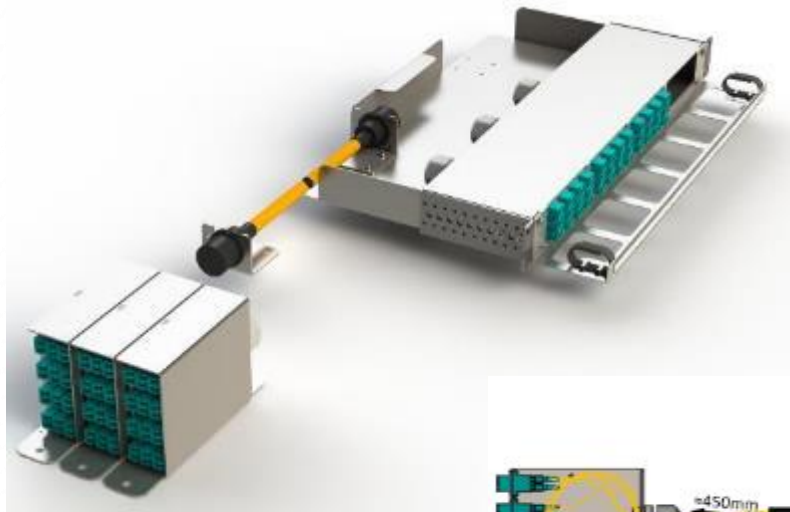


# Flexbox



- Schnelle, mobile Glasfaseranbindung

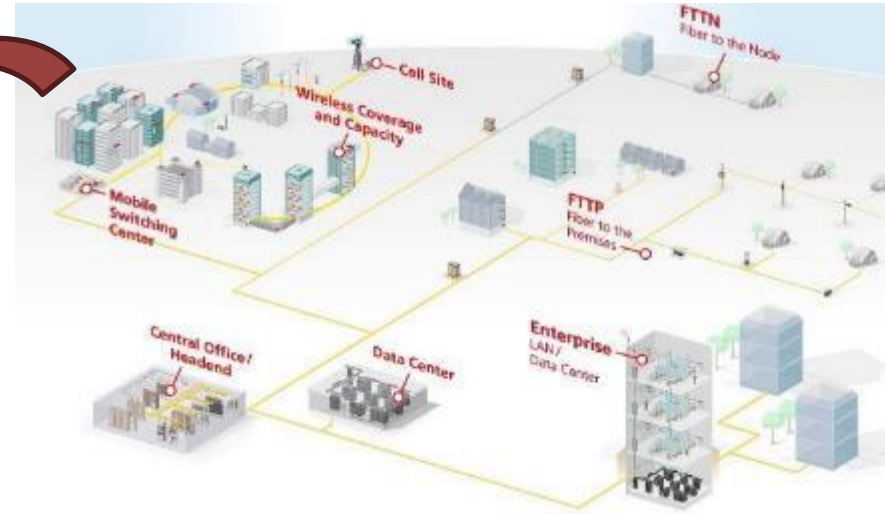
# Flexbox



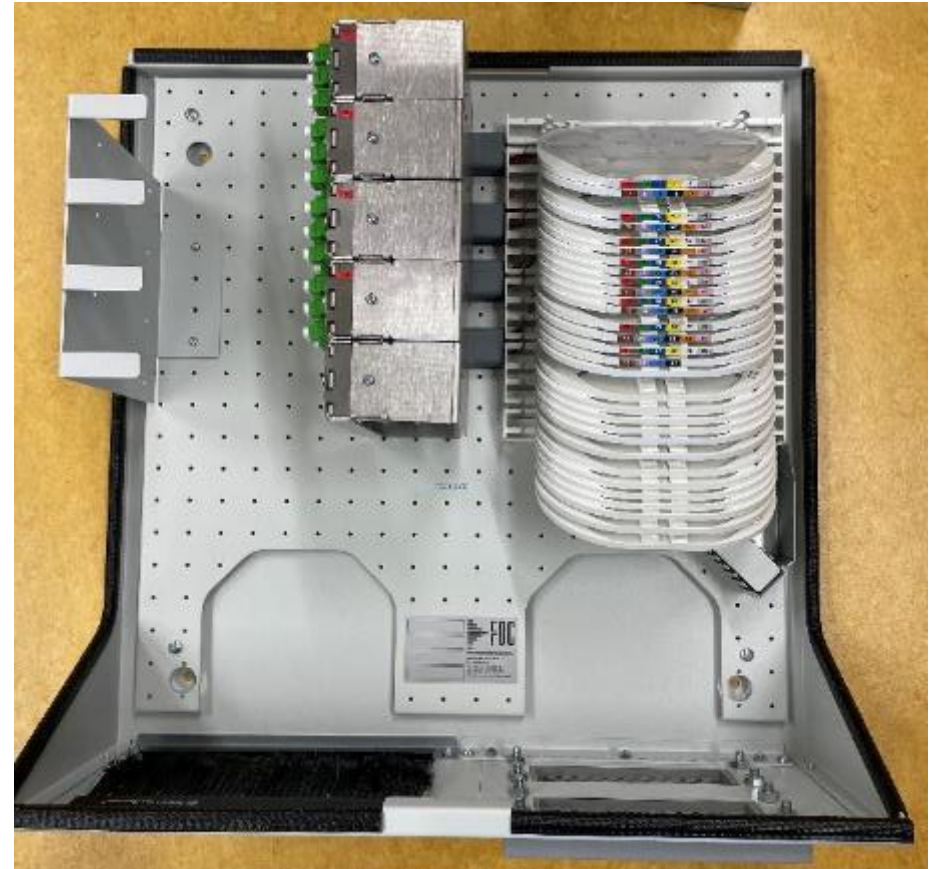
- Im Verteilersystem



# Wandverteiler

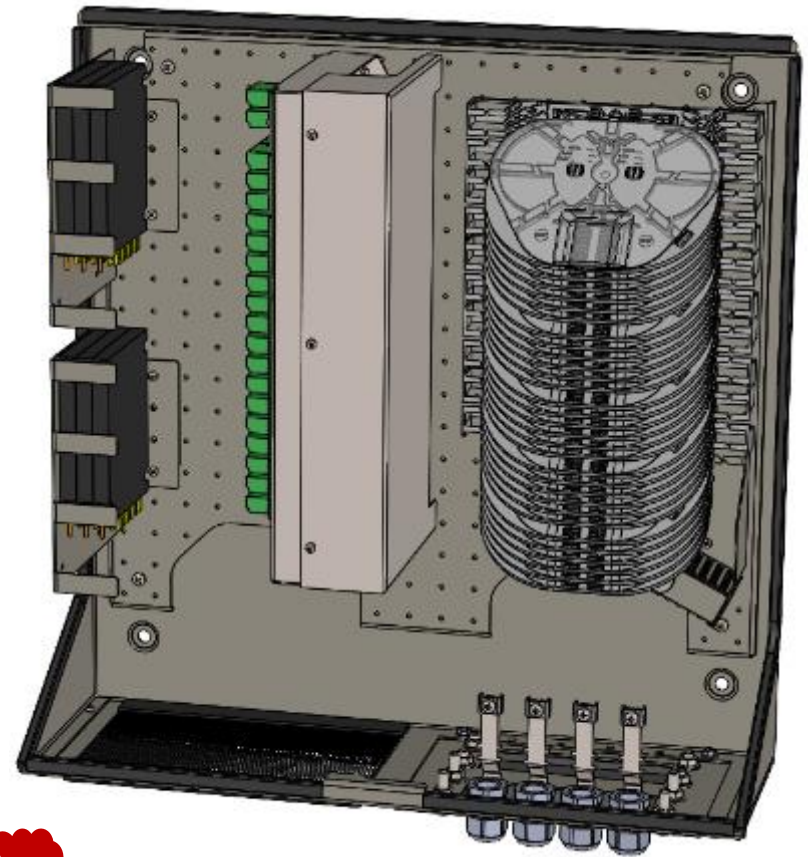
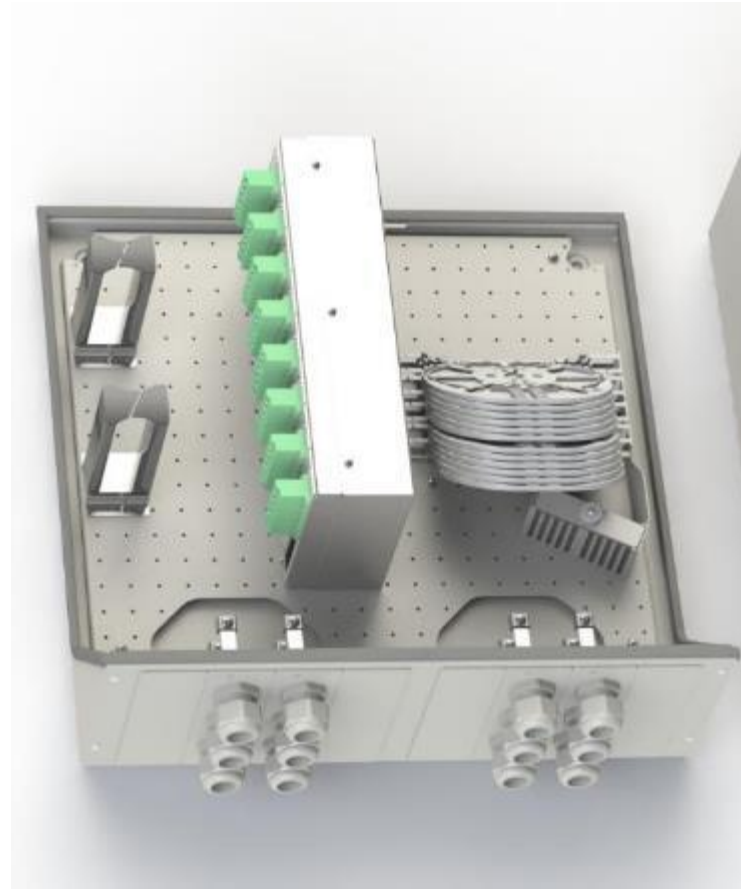


text



- Kann man auch gut machen

text



- Kabelführung / Splitter



text



- **IP 66 Gehäuse**
- **Kunststoff / Metall**



Vielen Dank für Ihre  
Aufmerksamkeit!

Reinhard Feltgen

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