MicroTechnology for Future-Proof Fibre Networks

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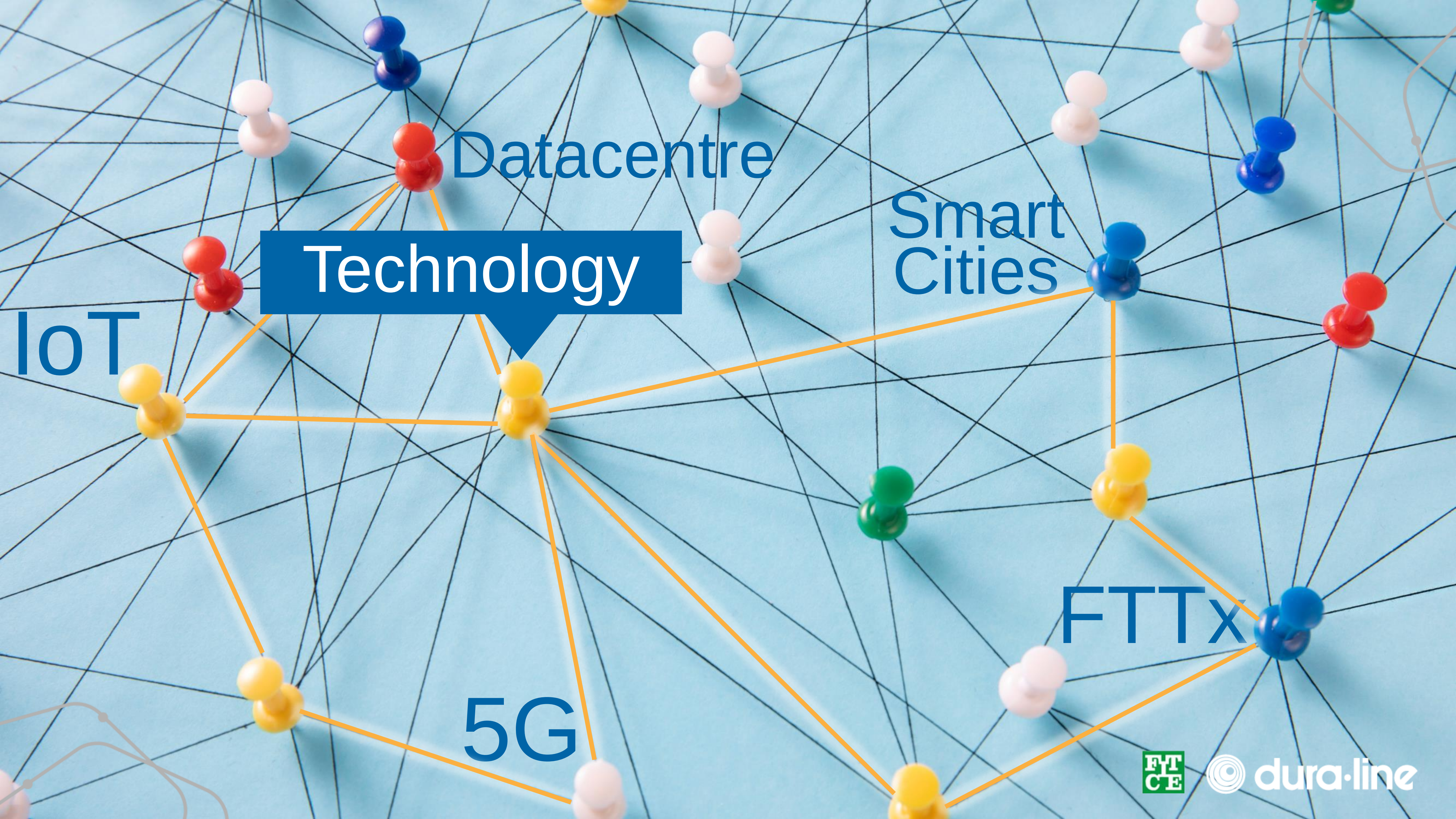
FITCE, 17th December 2022


Datacentre
Technology
Smart
Cities
IoT
FTTx
5G
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- Slow, expensive installations
- Limited underground space
- Lack of upgrade pathways
- Unpredictable future needs
- Labour and skills shortages

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MicroTechnology is <u>THE</u> solution

Why?

- Flexibility and scalability
- Cost-effective construction, upgrades, and maintenance
- Utilization of existing assets
- Solutions for any installation scenario

MicroTechnology is THE solution

How?

- Smaller cables
- Smaller ducts and components
- Innovative installation methods:
  - Dig Once
  - Overrides
  - Microtrenching
  - In-building MicroDucts

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Why micro cables?

Size
60% smaller
70% lighter

Density
Up to 864
fibres

Ecosystem
Smaller ducts
& components

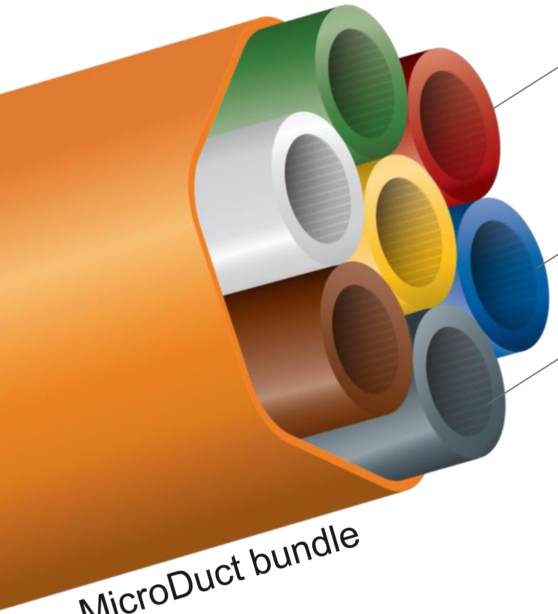
Transport
More km on a
reel or truck

Handling
Easier handling,
smaller crews

Speed
High-speed
cable jetting

Image: Corning

Why MicroDucts?



MicroDuct bundle

More pathways in same/smaller footprint

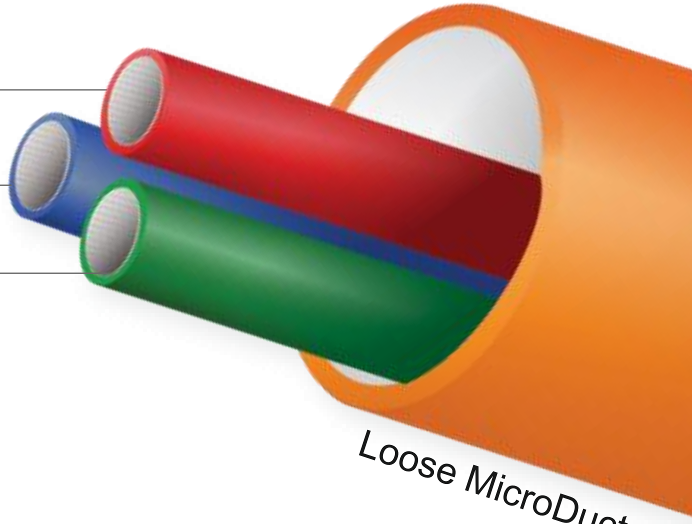
Easy sharing/leasing business models

Dig-free, permit-free upgrades

Efficient use of existing ducts

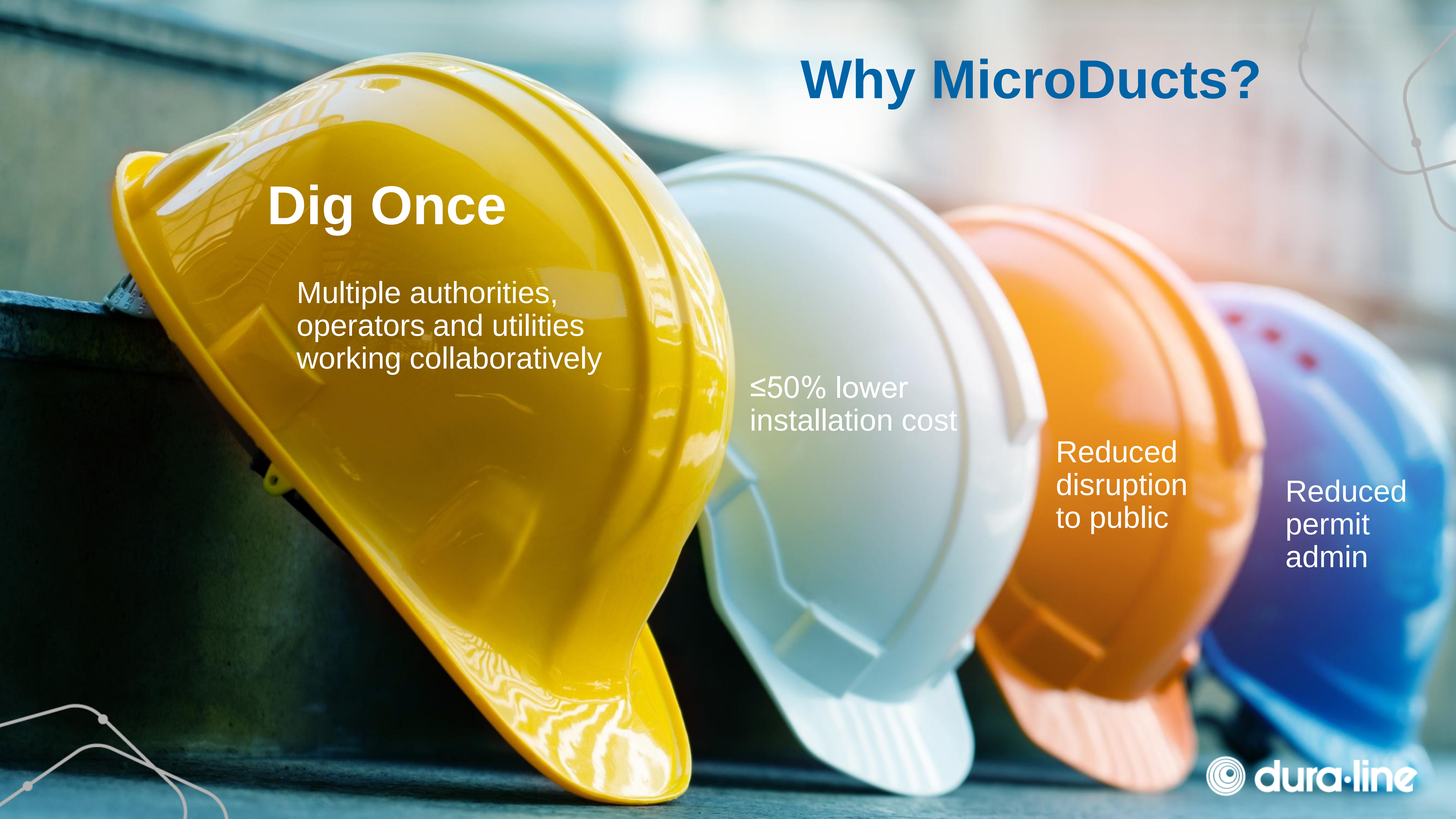
Easy routing to distributed locations

Fast cable jetting over 2km+ distances



Loose MicroDucts

Why MicroDucts?



Dig Once

Multiple authorities, operators and utilities working collaboratively

≤50% lower installation cost

Reduced disruption to public

Reduced permit admin

MicroDuct solutions for any installation scenario

DuraMicro HDPE

Override in existing duct

DuraMulti HDPE

Existing duct or direct burial

DuraFlat HDPE

Last mile & microtrenching

DuraPack HDPE

Existing duct or direct burial

DuraDrill HDPE

Directional drill & pulled

DuraAir

Aerial drop

DuraMicro LSHF

In-Building

DuraMulti LSHF

In-Building

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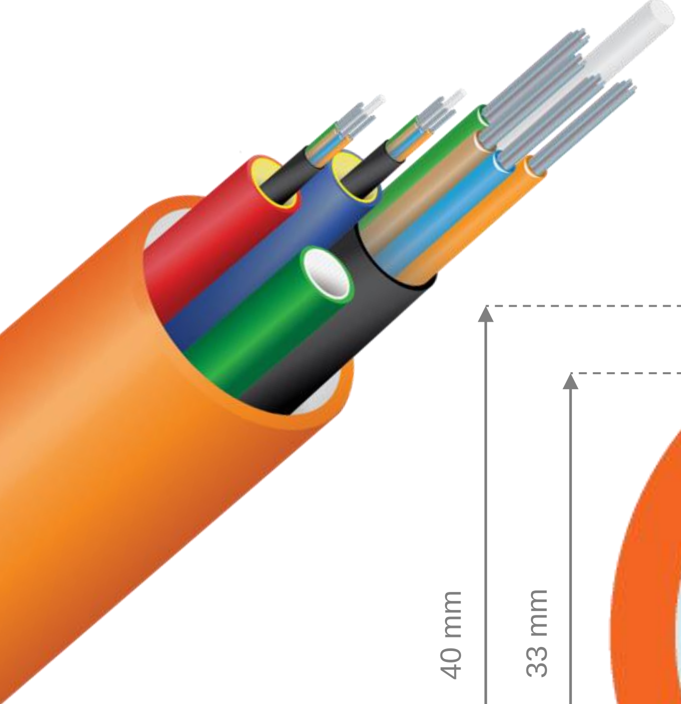
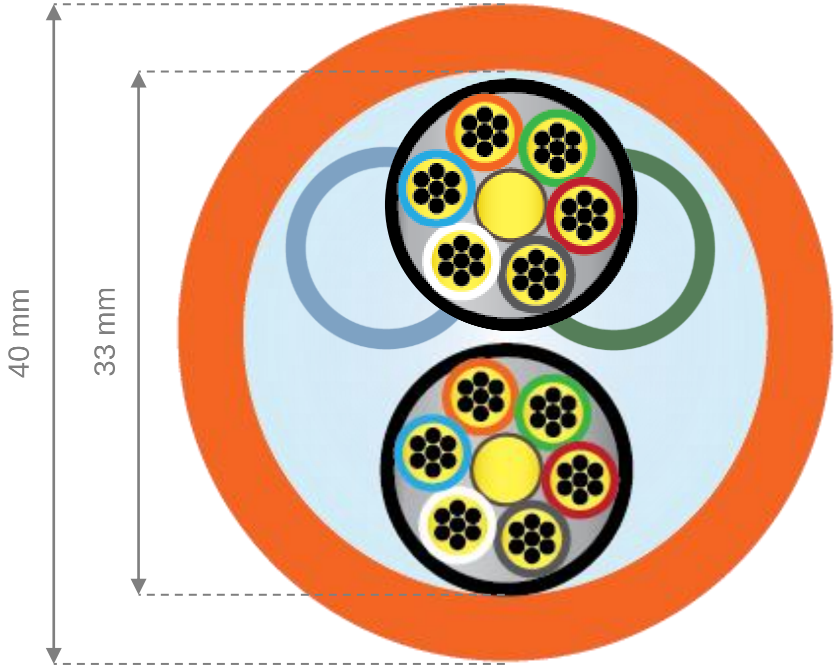
MicroDuct overrides

A simple, cost-effective, dig-free upgrade solution for existing networks





Assumption: 72F cable (10.5mm) in 40/33mm duct

Upgrade options:

Traditional Method

- **Install:** additional 72F cable
- **Total fibre count:** 144
- **Capacity increase:** 100%

Micro Method

- ○ 2 x 10/8mm microducts
- ○ 2x 144F micro cables
- **Total fibre count:** 360
- **Capacity increase:** 400%

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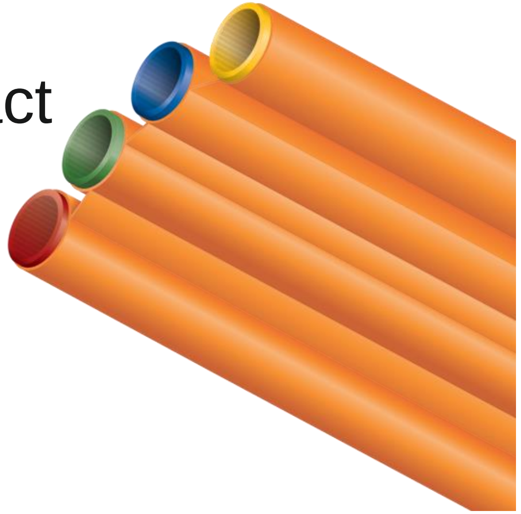
Microtrenching

- Enable flat microducts
- Multiple kilometres per day
- >50% cost savings
- Lower environmental impact
- National standards



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MicroDucts for in-building applications

Multi-Dwelling Units (MDUs) represent >60% of all residential premises in Greece

(source: Statista)

Specialised, flame-retardant products are needed to connect MDU subscribers

MicroDucts for in-building applications

- Low Smoke Halogen Free (LSHF)
- Easy fibre routing to individual floors & units
- Installable in walls (wood & concrete), structural cavities, suspended ceilings, underground

Dura-Line's LSHF product range meets the highest fire classification in Europe: EN 135001-1+A1:2010 – **B s1 d0**

MicroTechnology is THE solution:

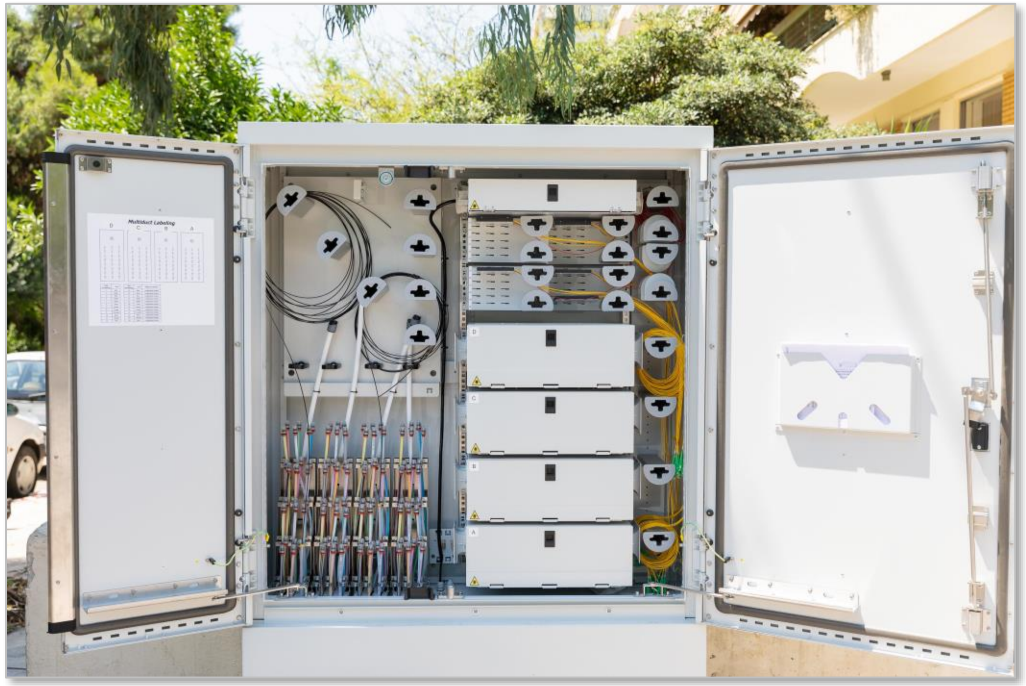
Summary:

- Flexibility and scalability
- Cost-effective construction, upgrades, and maintenance
- Utilization of existing assets
- Solutions for any installation scenario
- Innovative installation methods

- Strong global footprint
- 3 manufacturing facilities in Europe
- Comprehensive product portfolio
- Technical & logistical customer support

Dura-Line is ready to support UFBB II

Dura-Line products are already widely-used and proven in Greece:



Thank you.

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DuraMicro LSHF VDE Certificate

- DuraMicro 7/4, LSHF VDE-REG. Nr. F179
- Classification code DIN 61386-22 (VDE 0605 Part 22) - 3-3-2-1-2-0-0-0-0-0-1-0

Verwendung nach DIN VDE 0100-520:2013-06			
		allowed	not allowed
Installation outdoor	unprotected installation	x	
Installation in the building	unprotected installation (on plaster)	x	
	undeground installation (screed)	x	
Laid in	concrete	x	
	hollow wall/ wood (flamable materials)	x	
	plaster	x	
	structural cavities	x	
	suspended ceilings	x	
	ceiling installation (installation distance > 0,80m)	x	