



Applying the Science of Networking

**Enabling Cyber-Hardened,
Rapid deployment Networking
for All IoT “Things” and Locations**

Germany Roadshow Sep 2022

Actelis at a Glance

Provider of Gigabit-Grade, Cybersafe, Rapid Deployment IoT Networking



>300

Customers

*Cities, Rail,
Roads, Military*



>30

Countries



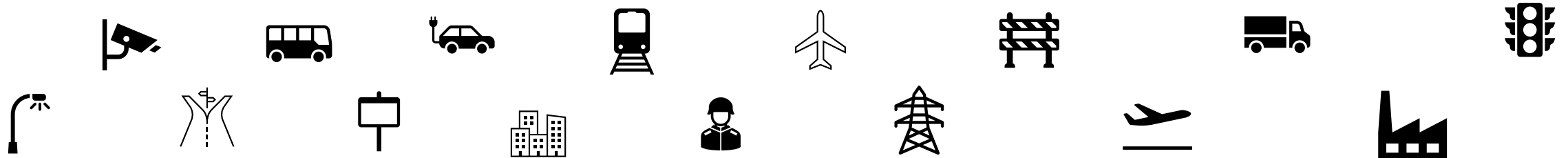
30+

Global Patents

*+More on-going
new applications*

Global Internet of Things (IoT) Market Size to Hit \$1.8 Trillion in 2028 at 24.5% CAGR (1)

Smart City Market at \$696 Billion by 2028 with CAGR of 29.3% (2)



Smart Traffic (ITS)

Lights
Cameras
Lane Management
Signs
V2V

Smart City

Parking
Security
Wi-Fi
Garbage
Transportation

Smart Rail

Signaling
Obstacle detect
Controls
Security
Ticketing

Military and Gov.

Perimeter security
Weapons control
Energy
Radars
Airports

Power, Water, Oil

Substations
Generators
Oil/gas flow
Perimeter security
Water plants

Industry, Education

Robotics
Warehouse
Access control
Security
Parking

(1) Facts and Factors Jan. 2022

(2) Grand View Research May. 2021

IoT Connectivity Modernization Needs Growing Exponentially

Major efforts to Securely Connect Tens of Millions of Locations at High-Speed

- Billions of devices currently connected with copper cables
Historically low speed, low reliability, not secure
- New Fiber Optic cables are being installed
Reliable, fast, but expensive and slow to deploy
- Wireless is getting faster
Historically very low speed, lowest reliability and security



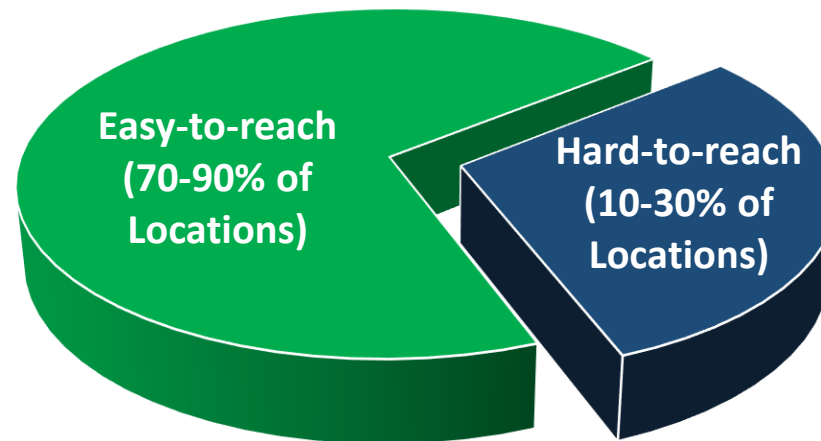
Obstacles to IoT Development – – Hybrid Fiber/Copper is Key

Making the Case for Hybrid Networks (Example)

Connectivity consumes over 70% of IoT network's cost and time

Easy to reach locations:

- Fiber is laid on existing poles @ ~\$26K/Mile
- (work takes days/weeks)*



Hard to reach locations:

- Fiber needs boring, trenching, permits, right-of-way @\$70K-\$400K/Mile
- (work takes months)*

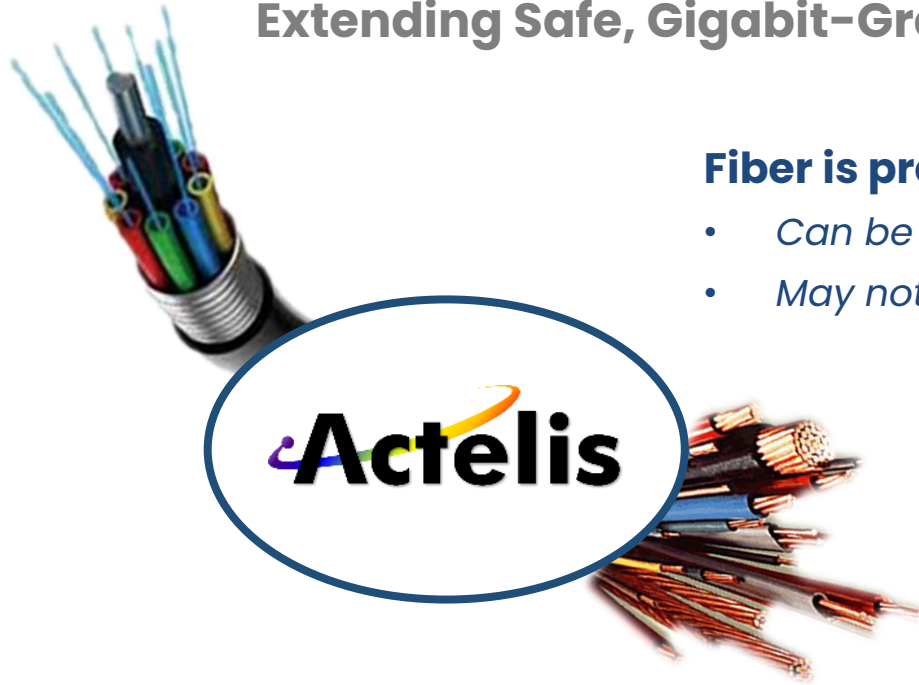
...Connecting Fiber to Hard-to-Reach Locations May Cost **50%** of all Project Budget and **may cause Months of Delay****

(*) – Analysis by Columbia Telecommunications Corporation

(**)- Fiber Availability is 31%/12%/11% of in US/UK/ Germany, respectively; (FTTH council, Europe, 4/2020)

Hybrid Architecture Makes Existing Network Part of the Digital Future

Extending Safe, Gigabit-Grade Connectivity over Fiber + Enhanced Existing Wires



Fiber is preferred for performance and reliability, but:

- *Can be very slow to deploy in many locations*
- *May not be possible economically in many hard-to-reach locations*

Existing coax/wires connect billions of locations/devices and are instantly available at no cost, but:

- *Historically suffer from low speed and low reliability*
- *Are unprotected from hacking and cyber attacks*
- *Actelis' technology enhances wires securely to Gigabit-Grade*

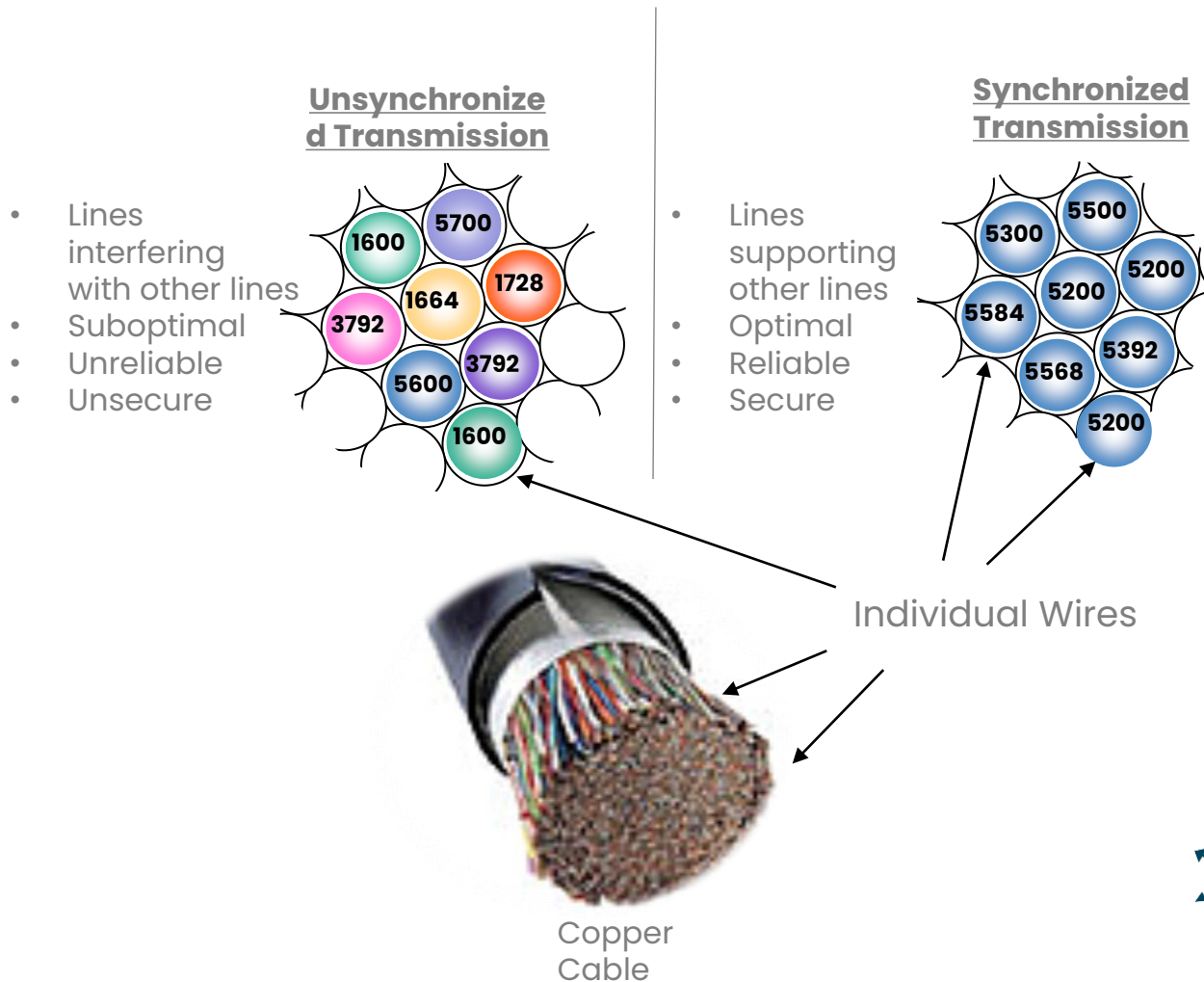
Actelis' Hybrid Fiber-Copper Networking Solutions are Combing the Best of Both:

1 + 1

- Providing Cyber-Safe, Gigabit-Grade connectivity combining Fiber and enhanced existing wires
- Eliminating deployment obstacles in challenging locations
- **Helping IoT projects converge on time and budget**

MetaLIGHT Unique Signal Processing and Coding Technology

Combining 100X Wire⁽⁵⁾ Performance Boost with Triple-Shield Security



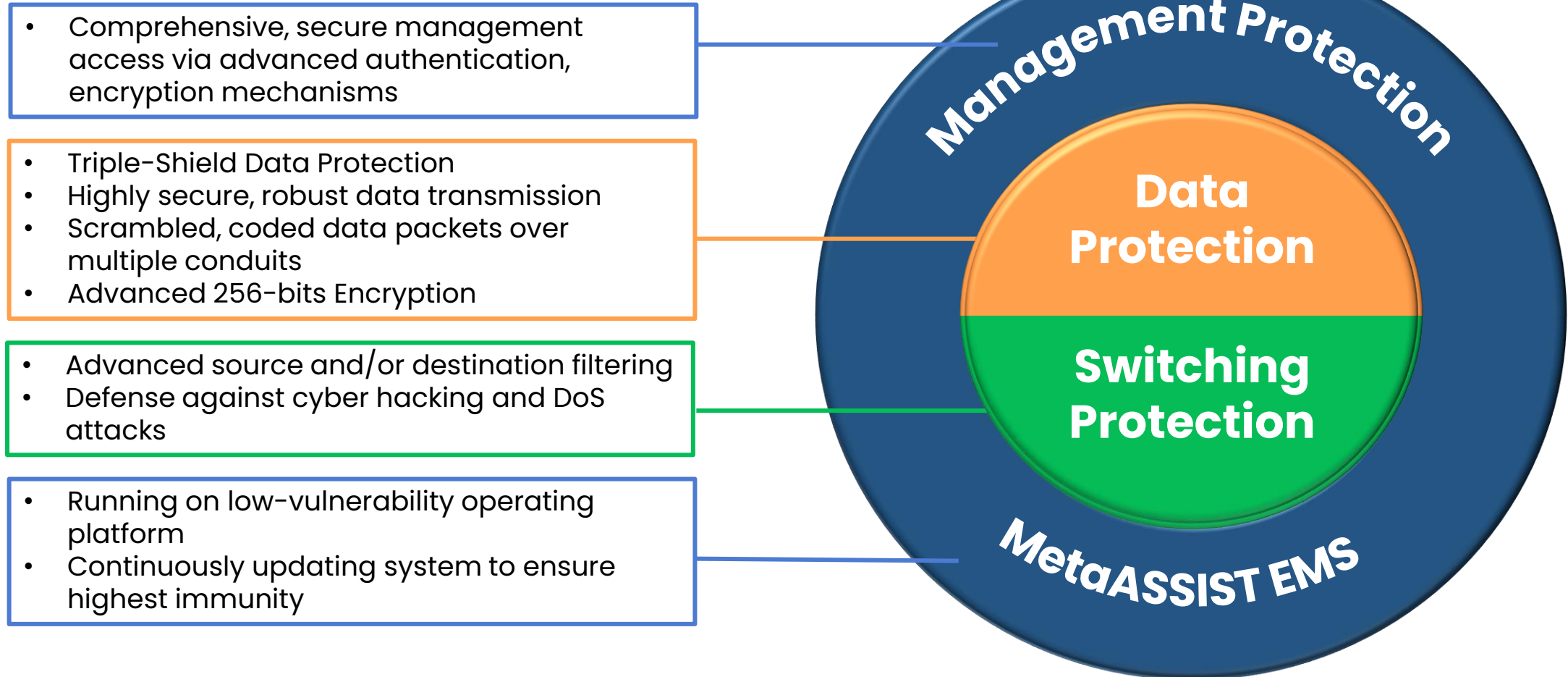
- Optimal synchronization of multi-line signals
- Elimination of interference to boost speed
- Data line coding for resilience, security ⁽¹⁾
- Multi-line scrambling for low latency, security ⁽²⁾
- 256-bit encryption of transmission ⁽³⁾
- Multi-line modulation for up to 10Gbps ⁽⁴⁾
- Spectrally compliant reach extenders to 100Km
- Remote powering + Data to 4G/5G base stations

(1), (2), (3) – Components of Triple Shield Protection
(4) – 10Gbps available in 2023
(5) – Vs. single wire performance in cable



MetaLIGHT Software 360° System Level Security

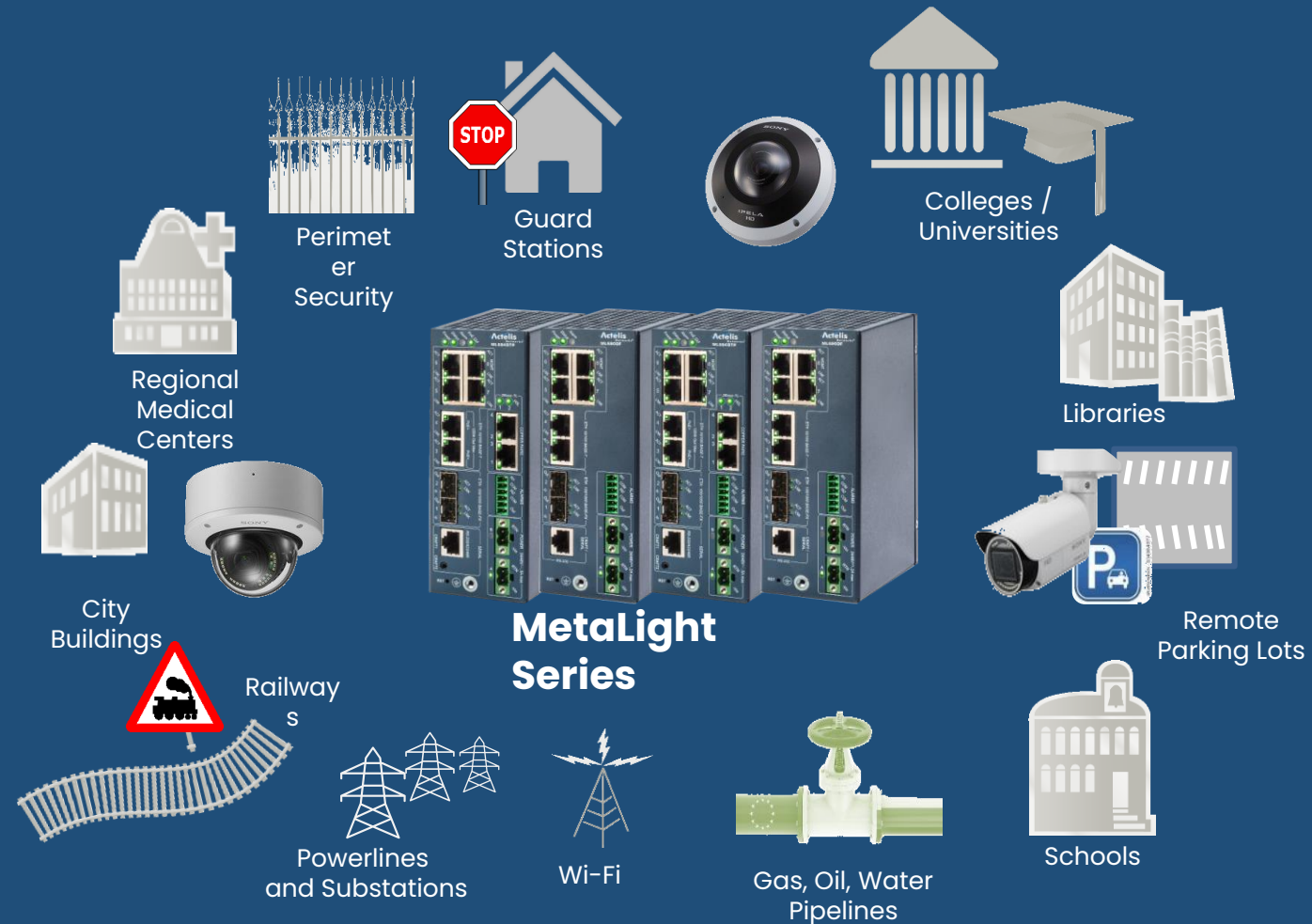
Approved for Deployment by US DoD



Actelis' MetaLIGHT Building Blocks Enable Seamless Hybrid Networks

MetaLIGHT offers Compact, Safe, Universal Building Blocks Saving Space and Power

- **CONNECTIVITY:** Any mix of Fiber, Copper, 5G
- **CYBER SAFETY:** Triple Shield Data Protection; and 360° System Security Software
- **UBIQUITY:** Supports all cameras, sensors, meters on new IP or legacy networks
- **HIGH DENSITY:** Packs up to 11 network functions in one device; saving space, power and cost
- **REMOTE POWERING Over Copper:** For cameras, sensors, 5G base stations, saving power connection cost
- **LOW-TOUCH NETWORK MANAGEMENT SW:** Automated Configuration, Zero touch provisioning

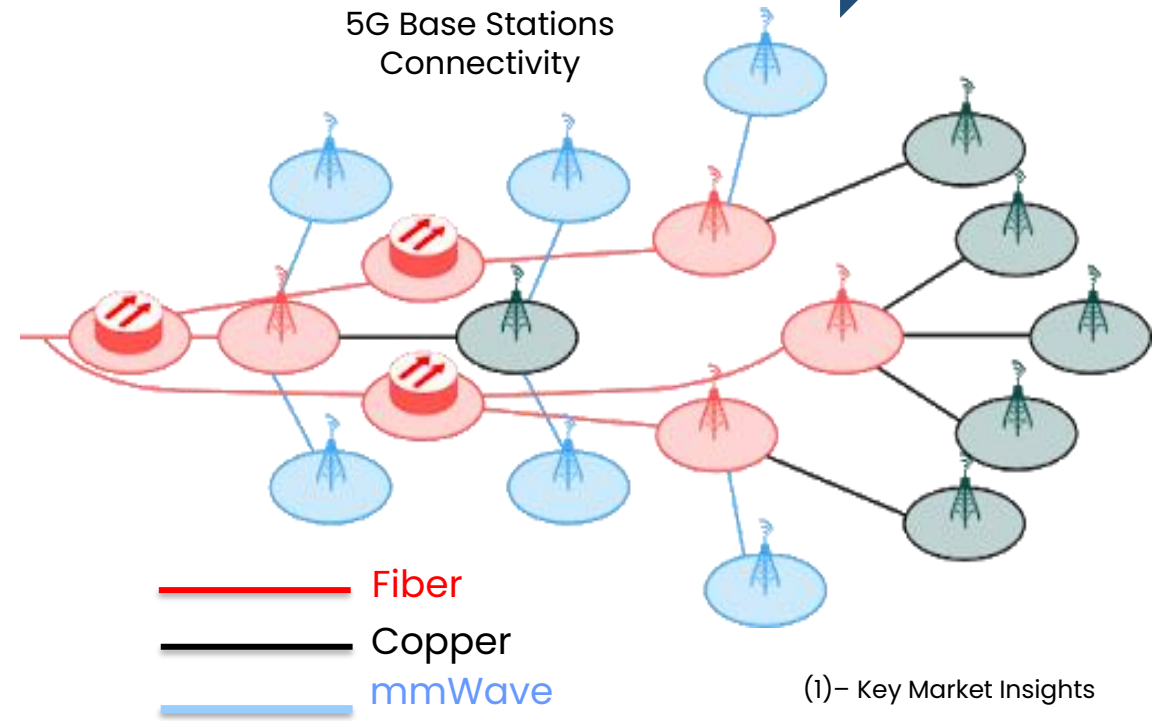


Actelis' Hybrid Networks Enable 5G in Smart Cities and on Roads

5G Expected to Grow at 54.4% CAGR 2021-2028 (1)

5G...to dramatically improve quality of life with high data-rate, low latency, for mobile, eHealth, autonomous vehicles, smart cities, smart homes, Industrial IoT... (1)

- 5G Requires 10X-100X cell grid density
- Requires Fiber, Copper or mmWave at Gigabit speeds to 14.2M locations by 2027
- Many locations are hard-to-reach with Fiber, out-of-sight for mmWave, but are on wires
- Hybrid Networking makes 5G practical with connectivity + remote powering



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