



CORNING

# Stay Connected

## When the Lights Go Out

### Cellular that's there when you need it most

In an emergency, reliable FirstNet® Public Safety and commercial cellular can protect the lives of both citizens and first responders. Coverage is becoming a requirement for most governments, enterprises, and venues, with service demands increasing every day. Now, the connectivity needs of all types of first responders in buildings of all sizes can be cost-efficiently addressed. A Corning SpiderCloud® enterprise radio access network (E-RAN) combined with SD-LAN and protected power offers building owners an easy path to keeping cellular services operating, even in a blackout.

To **learn more** about solutions that fit your needs and comply with local regulations, visit [corning.com/flexibility](http://corning.com/flexibility)



### What is FirstNet?

The First Responder Network Authority is an independent authority within the U.S. Department of Commerce. Chartered in 2012, its mission is to ensure the building, deployment, and operation of the nationwide broadband network that equips first responders to save lives and protect U.S. communities.

Learn more at [firstnet.gov](http://firstnet.gov)

## Introduction to power-protected cellular services

### What is an enterprise radio access network (E-RAN)?

An E-RAN provides reliable cellular coverage and capacity inside buildings.

### How does an E-RAN work?

An SD-LAN is made up of a software-defined data plane (SDDP) that manages the software-defined access nodes (SDAN) that are attached to it. An SDAN with four or eight 1 Gbps PoE+ ports installs on a ceiling or wall adjacent to the radio nodes connected to it. Composite fiber cable runs from the SDAN to shared equipment. The shared equipment – remote voltage, and SDDP – connects all SDANs in the building. E-RANs for FirstNet® and commercial frequencies also connect to their radio nodes via the shared equipment.

### What is protected power?

Protected power provides uninterrupted AC power for all systems that are plugged into it, even when there's a loss of utility power. There are two options:

#### 1. Generator system with minimal battery capacity:

The batteries in this system are sized to provide power until the generator starts.

2. **Uninterruptible power supply (UPS):** This battery backup system stores power for use during a power outage. The system is sized to provide power for planned period of time based on the requirements of the equipment plugged into it.

### How many virtual networks need to be supported on an SD-LAN?

Each E-RAN requires its own virtual LAN, or VLAN. A 4-port SDAN can deliver up to four PoE+ ports on four separate networks to connect E-RAN radio nodes. An 8-port SDAN can deliver a maximum of eight ports.

### What is composite fiber?

Composite fiber is cabling composed of optical fibers and copper conductors. The copper conductors carry power while optical fibers carry communications signals.

### What is the distance limitation from shared equipment to an SDAN?

The maximum length is approximately 2,000 feet. This supports most commercial buildings.

### Does Corning offer composite fiber?

Yes, ActiFi® cable.

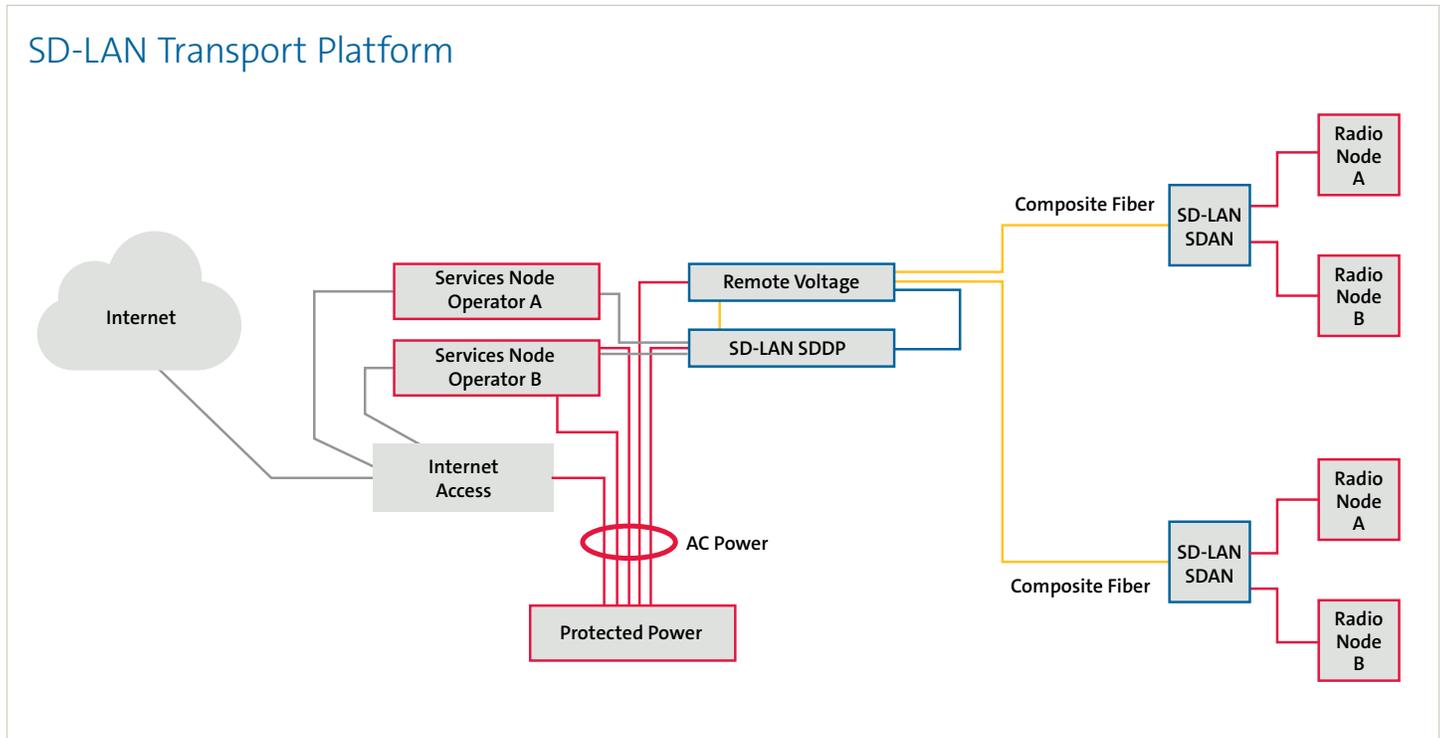
The diagram below provides an example of how the SD-LAN transport platform can be used to centralize equipment requiring utility power.

### Configuration features

- E-RAN for Public Safety and the commercial spectrum of mobile operator A
- E-RAN for the commercial spectrum of mobile operator B
- An SD-LAN with remote voltage provides both E-RANs with virtual networks (radio nodes and services node)

### E-RANs

- Composite fiber connected to SDANs is installed throughout the building
- Each SDAN has a radio node for E-RAN operator A and E-RAN operator B
- All equipment for this configuration, including the internet router, plug into protected power





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