# Distribution Automation

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**Central Hudson Electric Distribution Planning – Smart Grid**

# What is Distribution Automation?

The process by which distribution-level data is collected, automated, analyzed, and used to control Central Hudson electrical grid functions.

- Communication – Radio, Cellular, Microwave, Fiber
- Data – Collected throughout circuits
- Reaction – To outages, voltage, and power flow changes
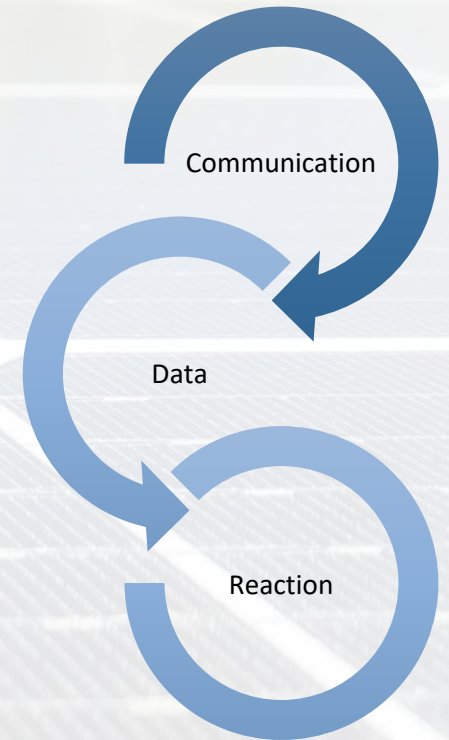
# Why?

- Implement Conservation Voltage Reduction (CVR) to reduce energy usage

- Fault Location, Isolation, and Service Restoration (FLISR) to reduce the number of outages from a fault

- The grid was not designed for reverse power flow from DER

- To coordinate DER with system infrastructure and controls

*"If you can measure it, you can understand it. If you can understand it, you can manage it. If you can manage it, you can improve it"*

*– Jeff Smith, EPRI Senior Program Manager*

# How?

1. **Distribution Management System (DMS)**
   - Real time system model
   - Integrated Distributed Energy Resources
2. **System infrastructure upgrades**
   - Reduce Losses
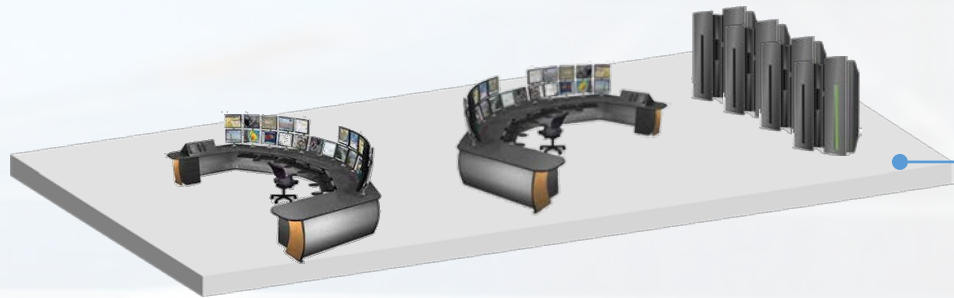   - Improve Operational Flexibility
3. **Intelligent devices/sensors**
   - Conservation Voltage Reduction (CVR)
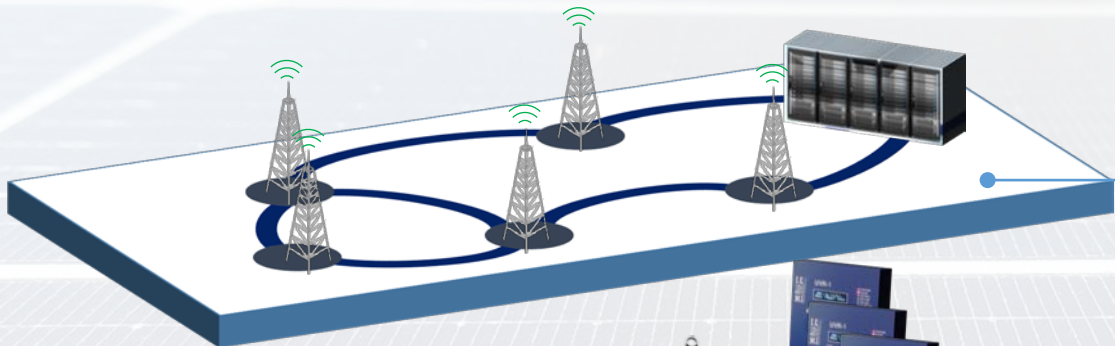   - Fault Location, Isolation, and Service Restoration (FLISR)
4. **Network Strategy**
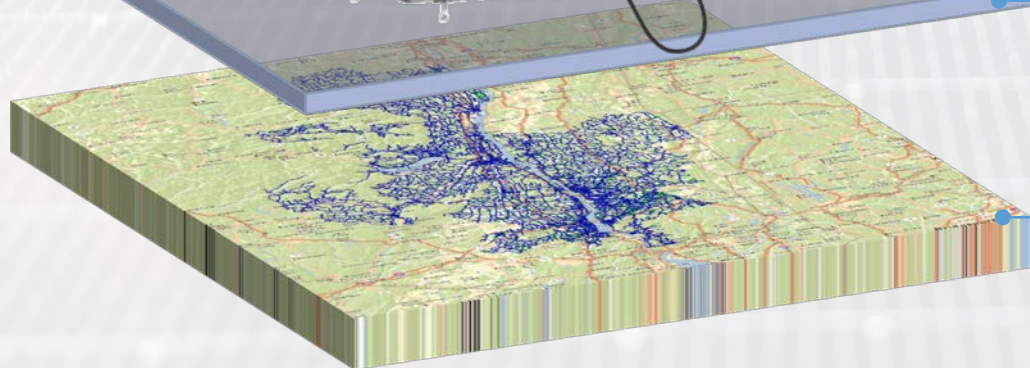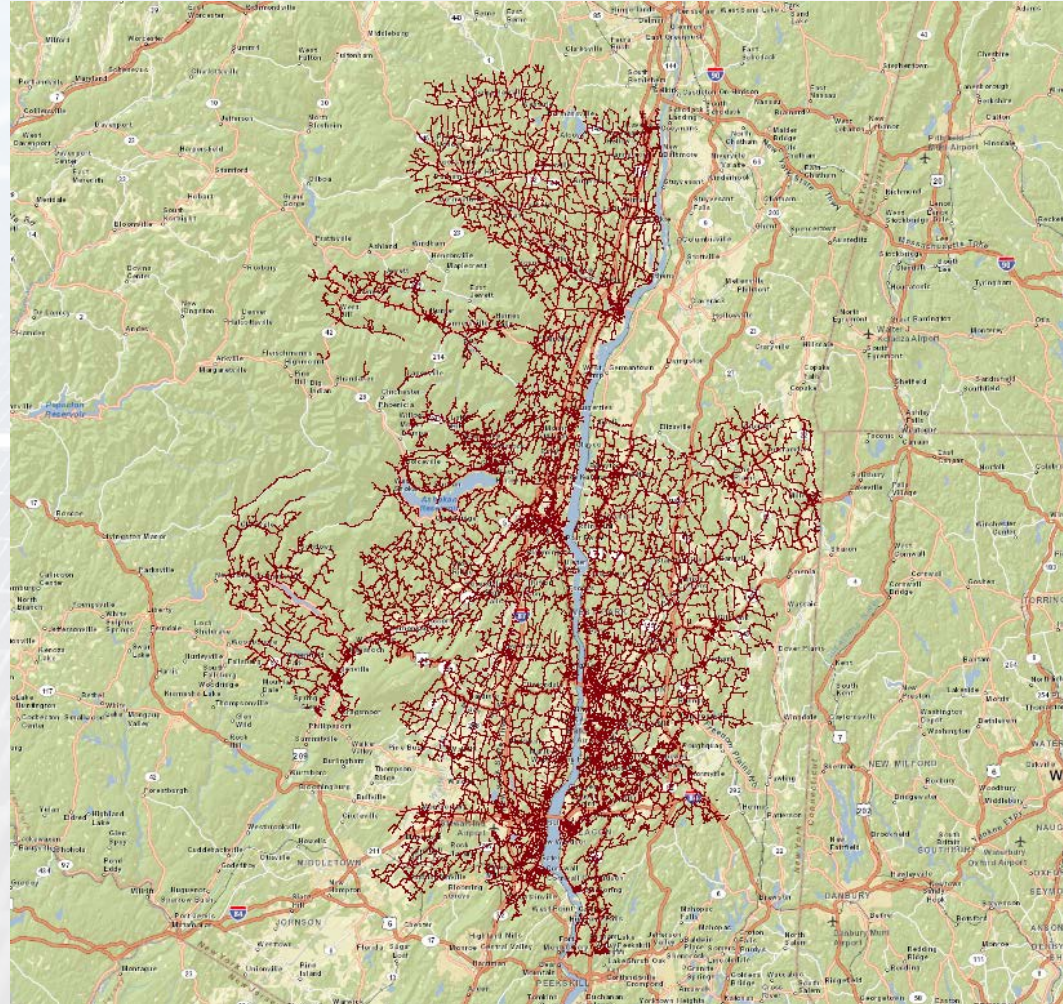   - Communication Mesh Network

DMS

Network
Strategy

Feeder
Intelligence

ESRI GIS

People. Power. Possibilities.

Central Hudson
A FORTIS COMPANY

# ESRI GIS (Asset Model)
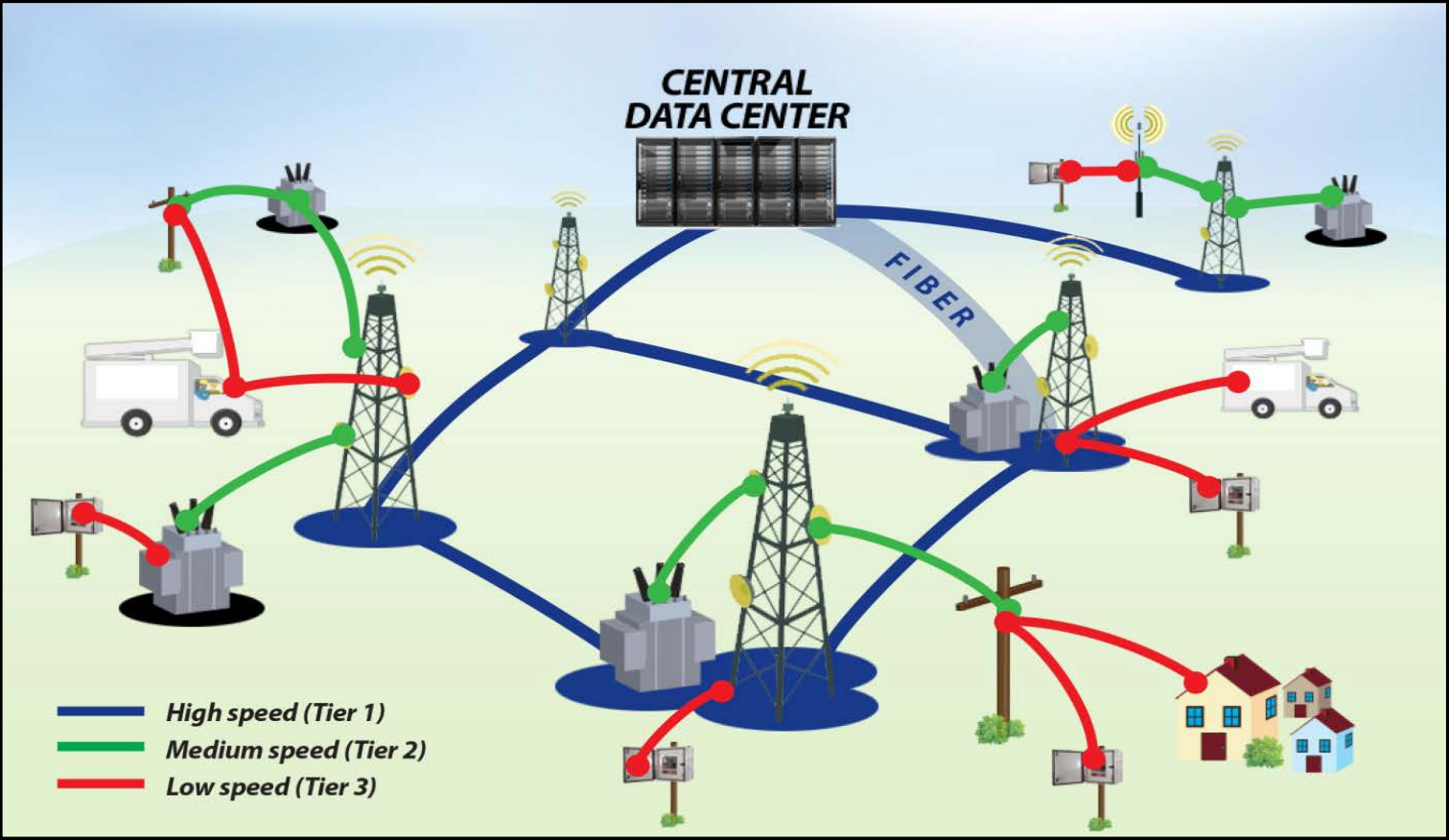
# Feeder Intelligence

- Primary Line Sensors

- Fixed Capacitors Sensors

- Switched Capacitors

- Electronic Reclosers

- Voltage Monitors

- Voltage Regulators

# Voltage Regulators

# Network Strategy



Legend:
- High speed (Tier 1)
- Medium speed (Tier 2)
- Low speed (Tier 3)

# DMS

# Fault Location, Isolation, and Service Restoration (FLISR) Demo

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Questions?