



DELAWARE ELECTRIC CO-OP

"We Keep the Lights On"

Leveraging Data from Multiple Sources

- Leroy Sverduk P.E.

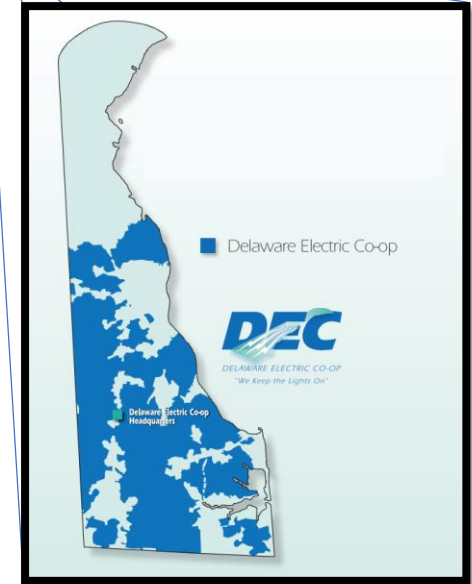
Delaware Electric Co-op

Manager of Metering and Power Supply



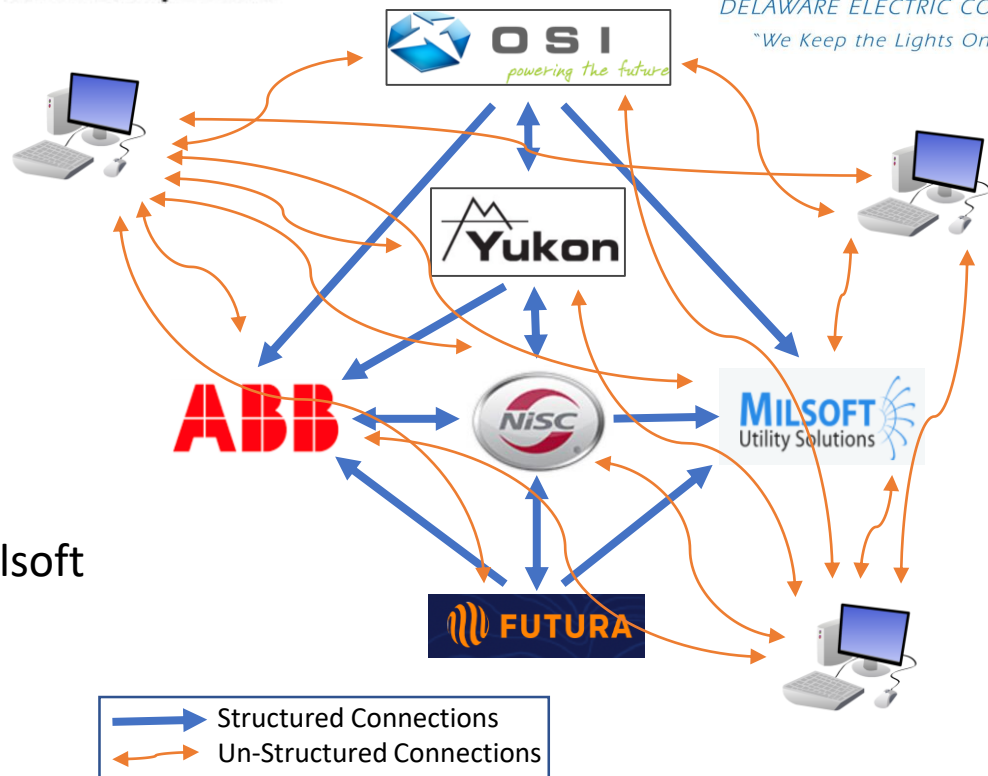
Delaware Electric Coop

- Delaware's Only Electric Coop
- 100,000 meters
 - 91% of members are Residential
 - 82% of load is residential
- Member of Utility Analytics Institute



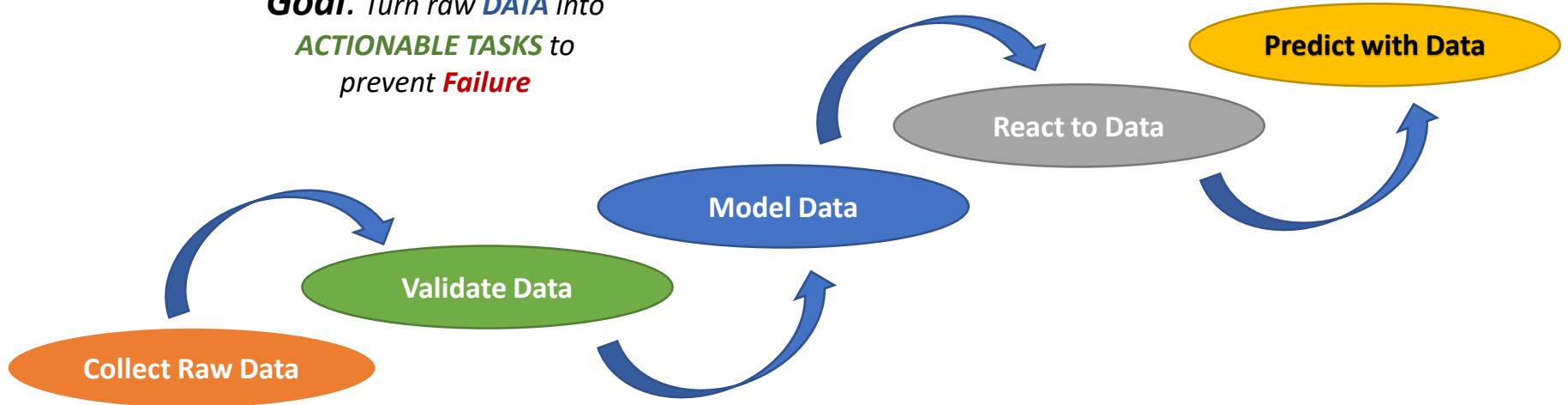
Data Sources

- AMI - Meter Data – Eaton’s Yukon
- CIS – Customer Data - NISC
- GIS – Map Data - Futura
- SCADA – System Data - OSI
- OMS – Outage Data - ABB
- EA – Engineering Analysis Data - Milsoft

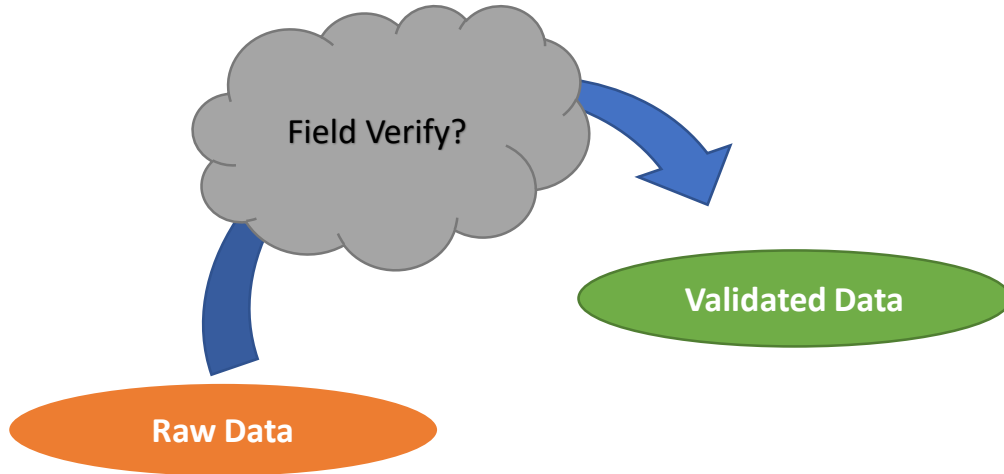


Data Chain

Goal: Turn raw **DATA** into
ACTIONABLE TASKS to
prevent **Failure**



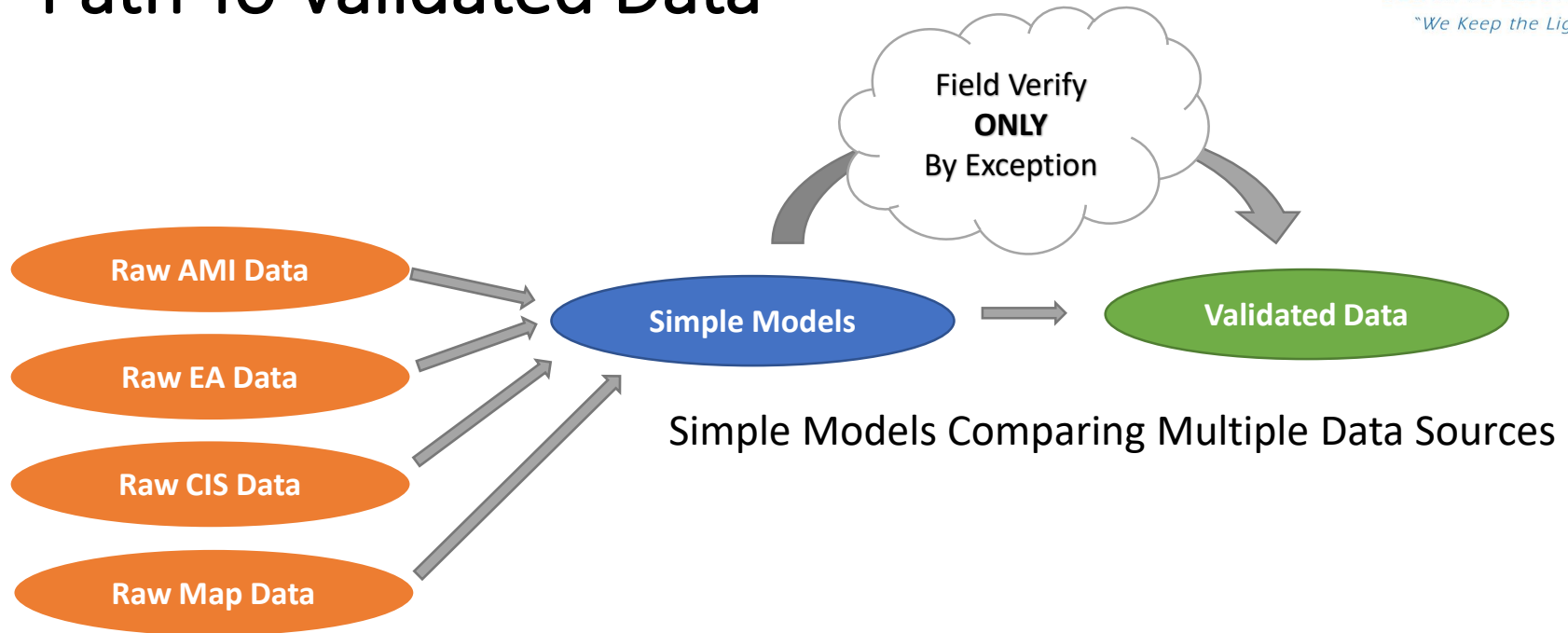
Path To Validated Data



Field Verification

- Labor Intensive
- Costly
- Discouraging

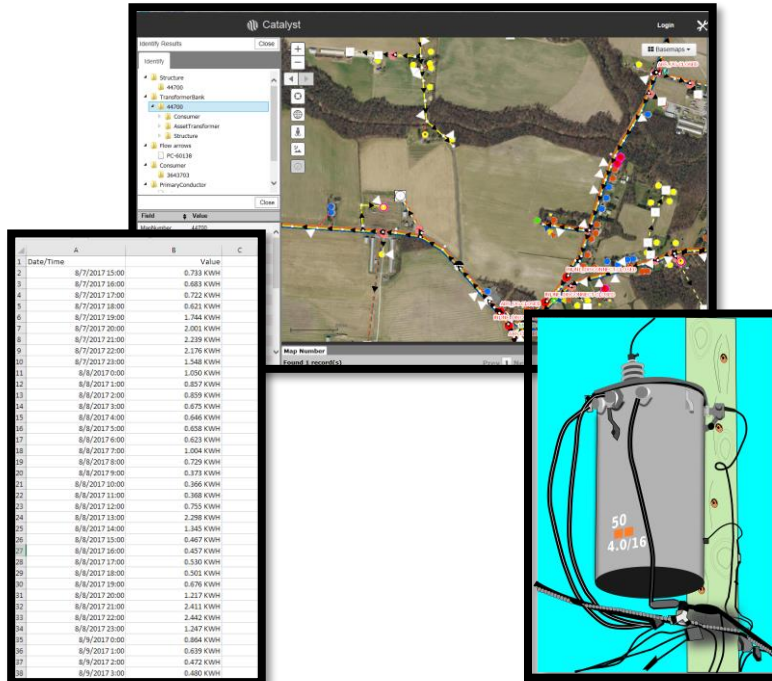
Path To Validated Data



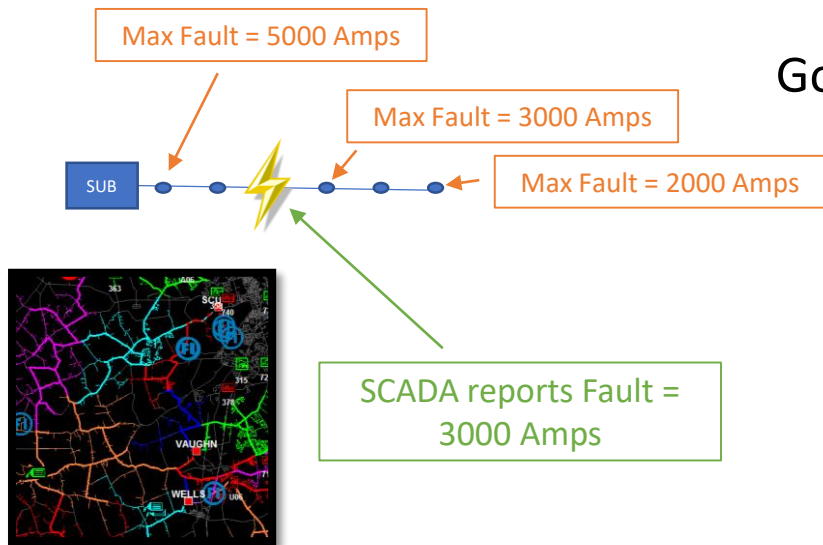
Example 1: Transformer Sizing in GIS

Goal: Validate Transformer Sizing in GIS Map

- Data Available
 - Usage Data from CIS/AMI
 - Unvalidated Transformer Sizing
- Process
 - Calculate % loading of each transformer
 - Field Verify outliers
 - 1000% overloaded
 - 10% unloaded
- Enter Results into GIS



Example 2: Simple Fault Location



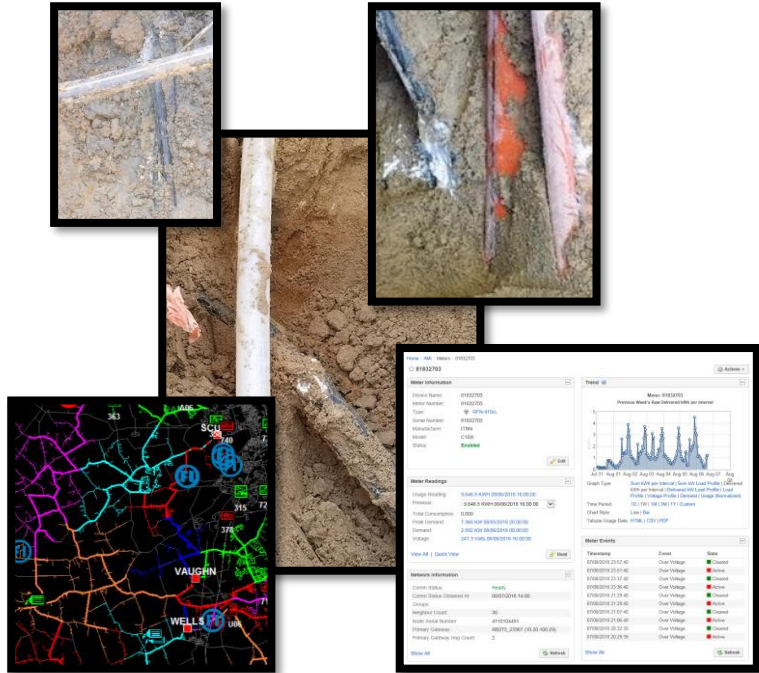
Goal: Identify where Lineman should look for system faults

- Data Available
 - EA System Max Fault Value
 - GIS Pole Locations
 - SCADA Fault value
- Process
 - Calculate Max Fault Value for each pole
 - Put Max Fault values on GIS Map
 - Locate Scada Fault Value on Map
- Search from Sub to Max Fault Value

Example 3: Early Secondary Fault Detection

Goal: Detect Secondary Faults with Meter Data

- Data Available
 - AMI blink/voltage data
 - SCADA Device Operation Data
 - OMS Outage Data
- Process
 - Compare AMI Blink Data vs Device Operations
 - Keep running total of blinks in past 28 days
 - Investigate devices with unexplained excessive blinks
- Replace Faulty Equipment



Looking at the Data?



- Are You Storing Data?
 - If not, **START**
- Is Someone looking at your data?
 - If not, **START**
- Do you have ideas to look for?
 - Share Your Ideas
 - We are only limited by our Imagination
 - Easy Wins

With all of this data, the questions are:
"What do you want to see?"
"How do you link to the data sources?"
"What is the simple model that you run?"
"Who is going to Look at the Data?"

Questions?

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