Los Angeles Department of Water & Power

CUSTOMERS FIRST

LADWP Distribution Automation

Building a bridge to each customer

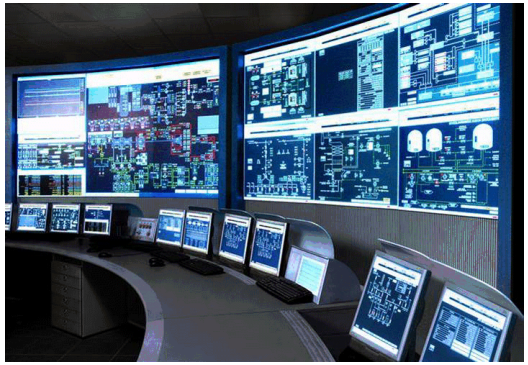
Board of Water and Power Commissioners
February 12, 2019

Agenda

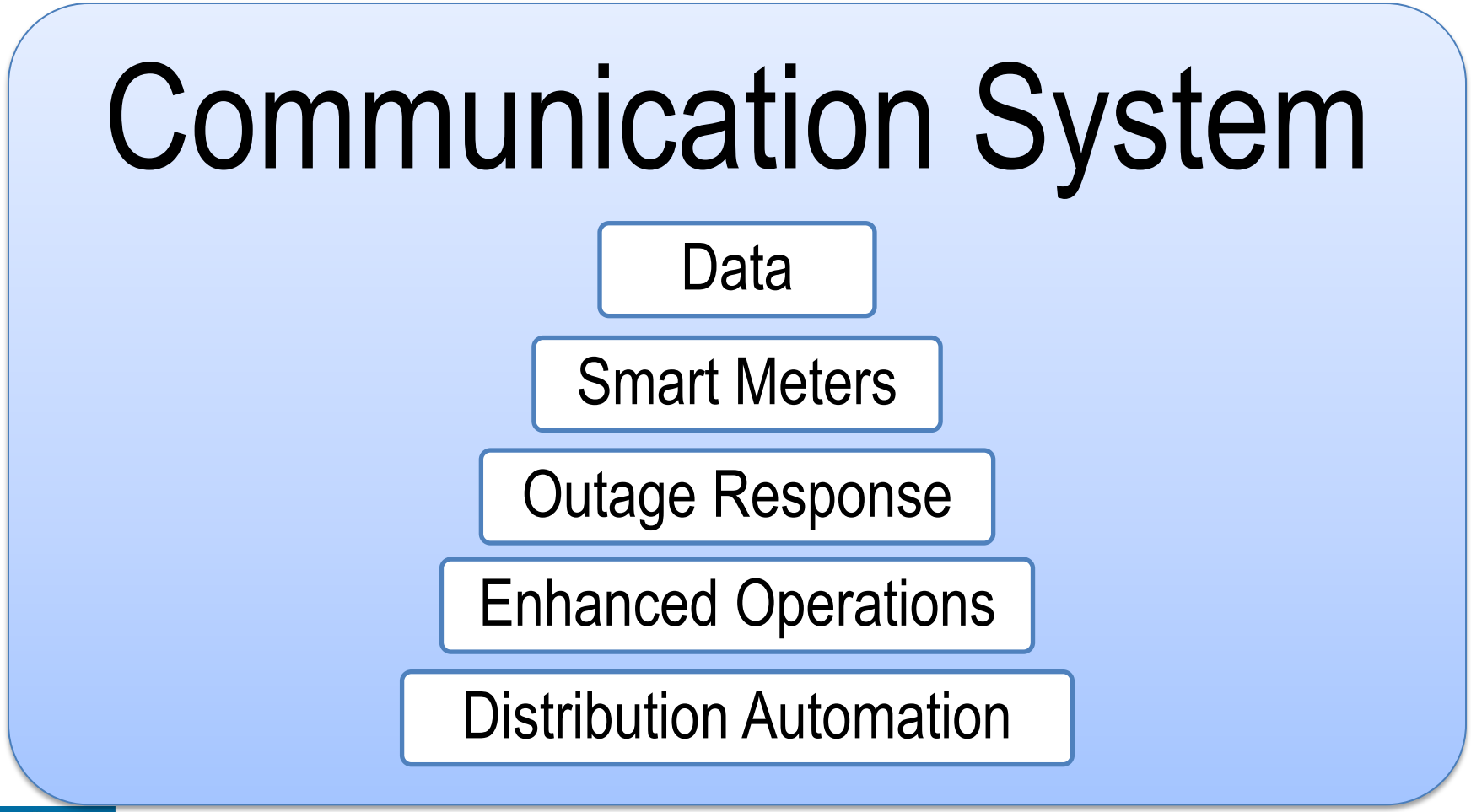
- What is Distribution Automation?
- Gateway to Smart Grid
- Why do we need Distribution Automation?
- Current and Future State of Distribution Automation
- Phase 1 Timeline
- Progress and accomplishments
- Q&A

What is Distribution Automation (DA)?

- Begins with a robust communication network
- Sensors and devices with remote control
- System and equipment health monitoring
- More effective management of our electric distribution system
- Integrated data to operational systems
- Communication platform to deploy smart meters



Gateway to Smart Grid

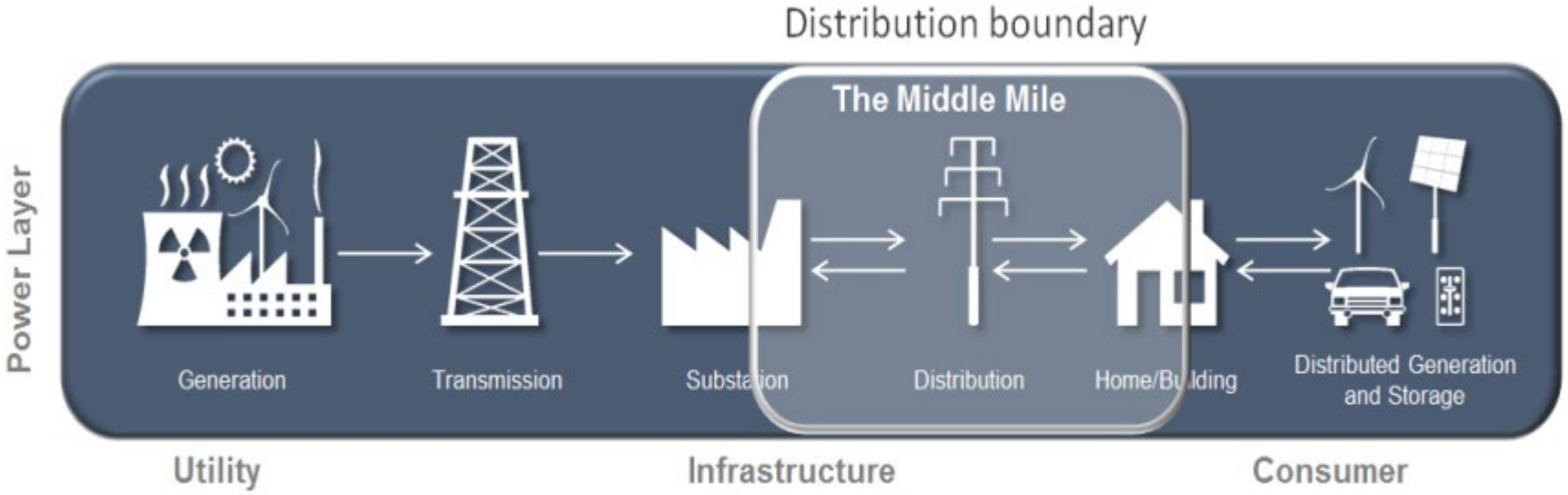


Why Do We Need Distribution Automation?

1. Improve Electric Distribution System Reliability and Resiliency
2. Improve Distribution System Operational Efficiency
3. Improve Situational Awareness and Distribution Grid Visibility
4. Improve Customer Service

Current State of Distribution Operations

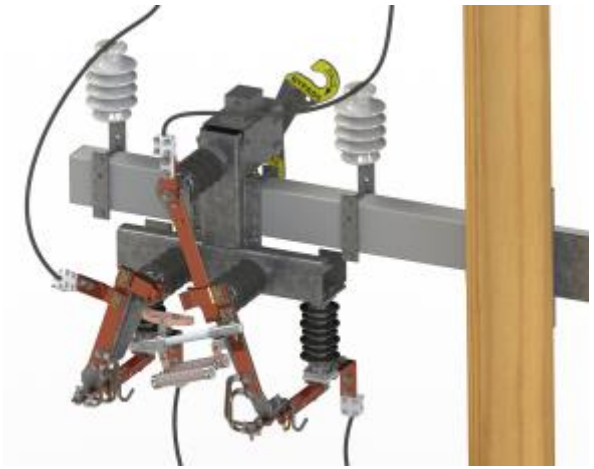
- Substations are monitored and controlled



- Little to no visibility outside the stations – "The Middle Mile"
- 1705-4.8kV circuits and 639-34.5kV circuits

Future State of Distribution Operations

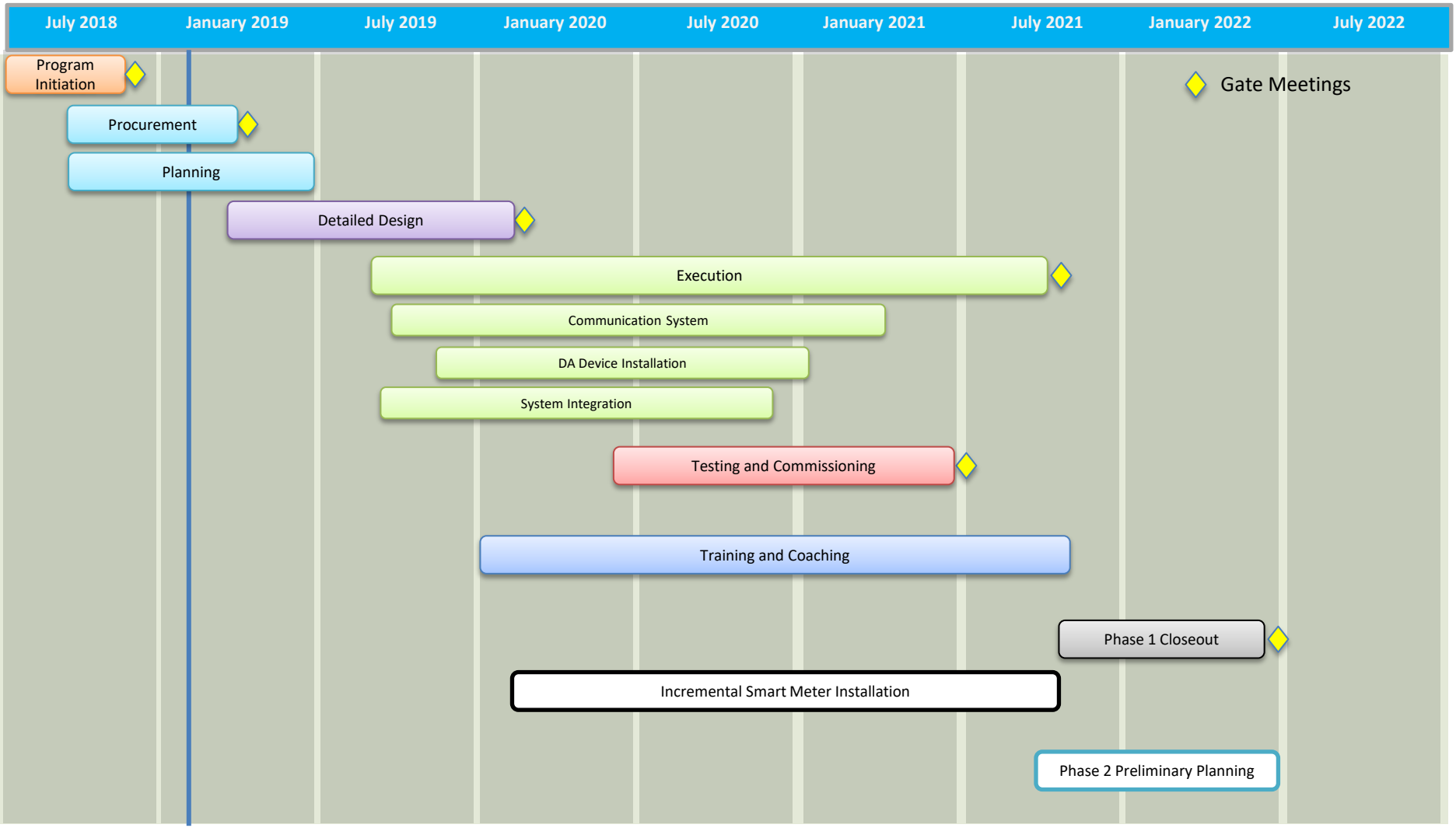
- Wireless communication network throughout LADWP's service territory
- Install sensors and devices in target locations
- Bring field data into various systems



Foundation for the Future

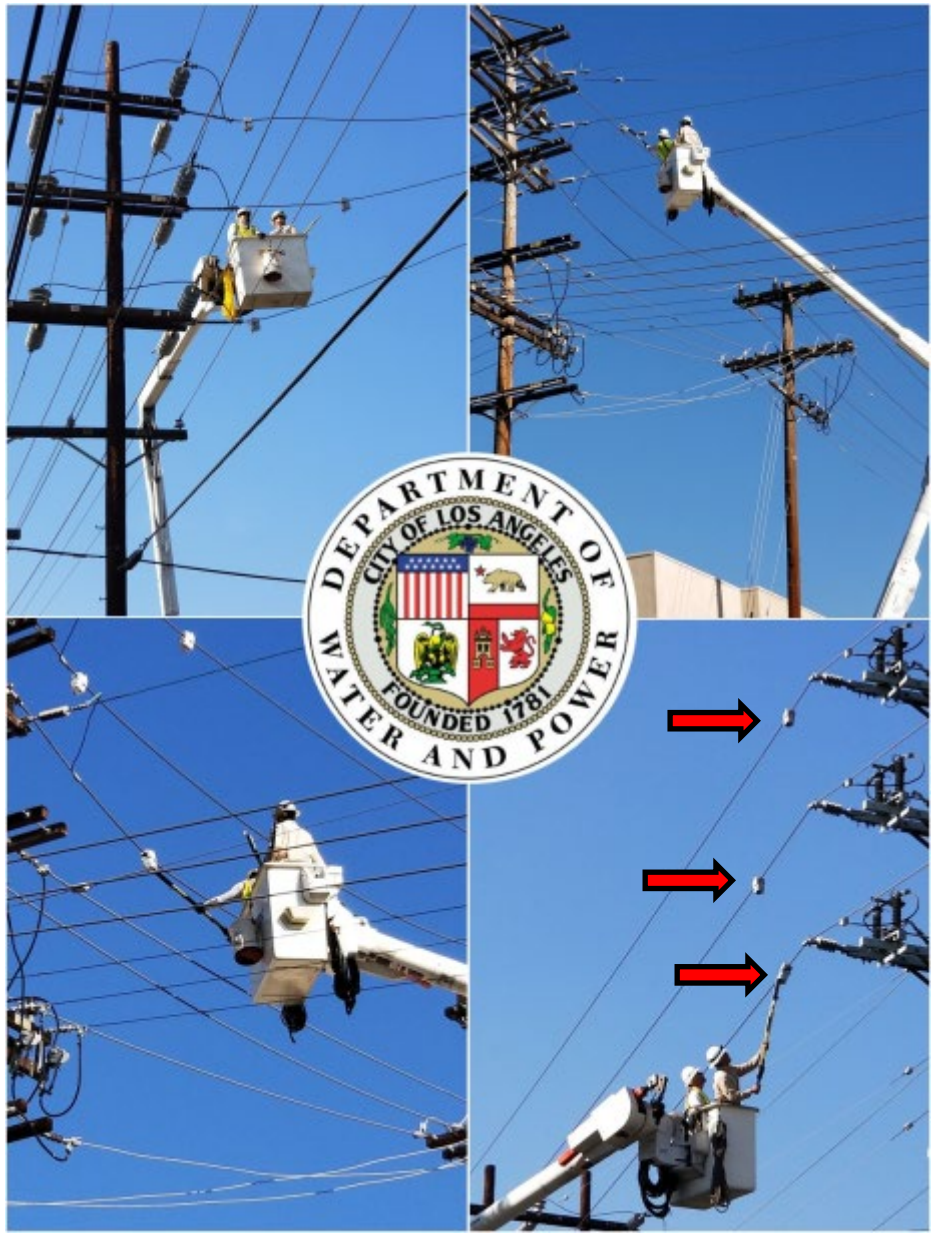
- Begin smart meter deployment
- Foundation for smart city initiatives

Phase 1 Timeline



Progress and Accomplishments

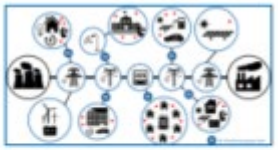
- Installed line monitors on various 34.5kV and 4.8kV circuits
- Began on December 11, 2018
- All installed by LADWP crews
- Collecting data and alerts
- Began process to integrate data into operational systems

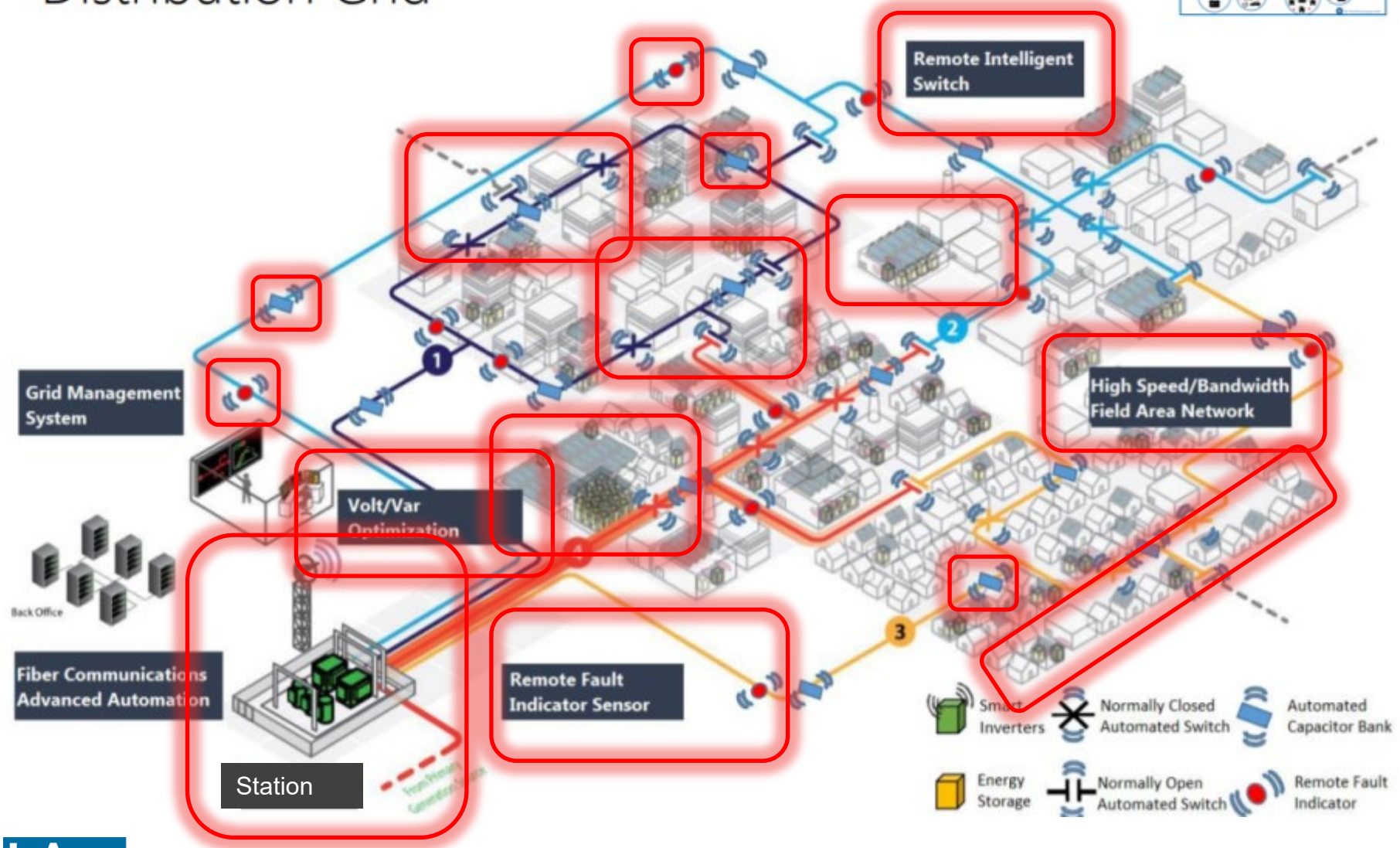


Progress and Accomplishments

- ✓ Program Charter
- ✓ PMO support
- ✓ Stakeholder requirements
- ✓ Line Monitor kickoff - Dec 3
- ✓ Voltage Optimization – Proposals Received
- ✓ RFP 90491 – Proposals Received 12/10/18
  - ❑ Board Consideration April 2019
- ❑ Begin procurement of smart meters

Enabling an Integrated and Flexible Distribution Grid



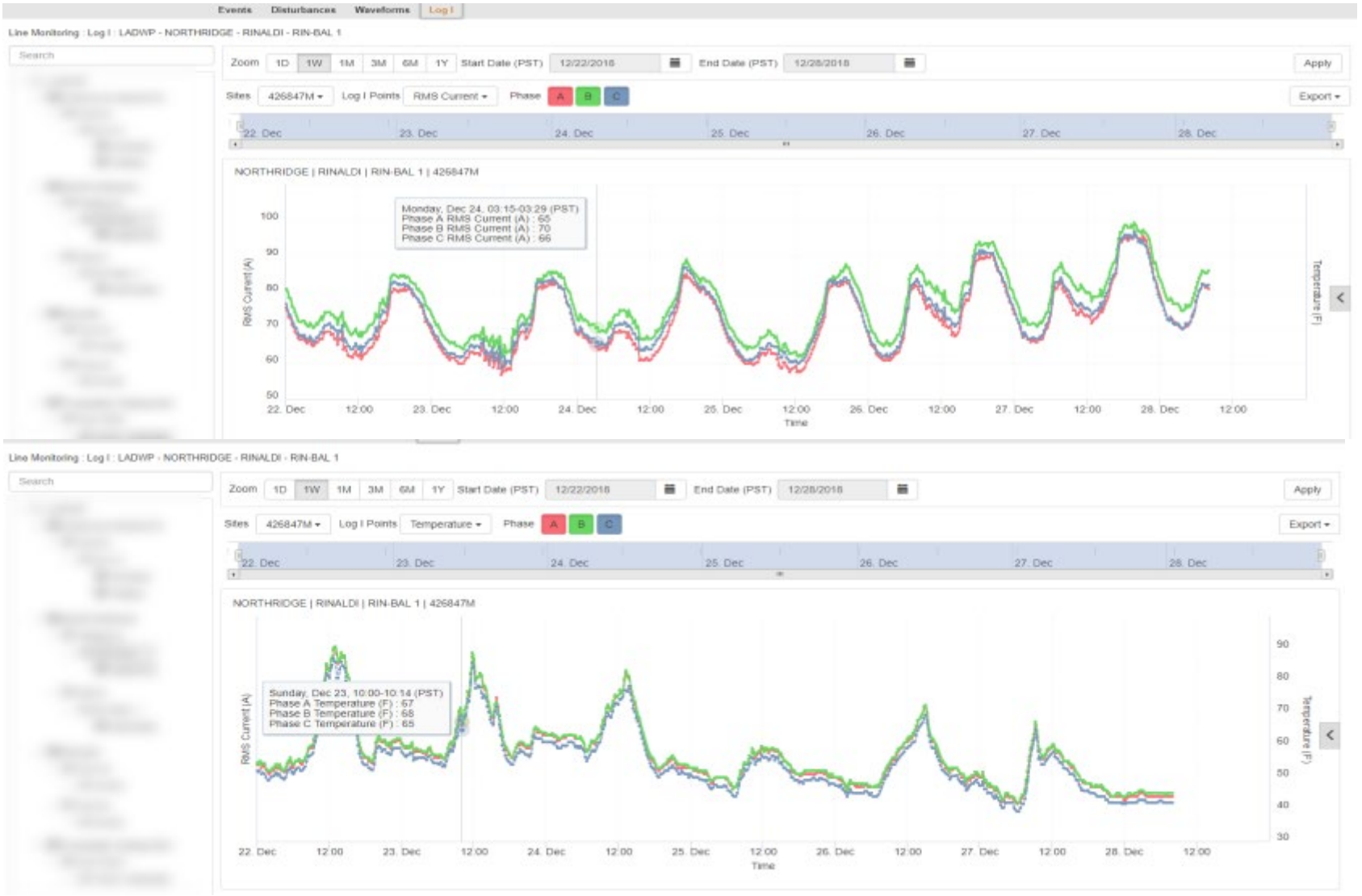


Thank You!

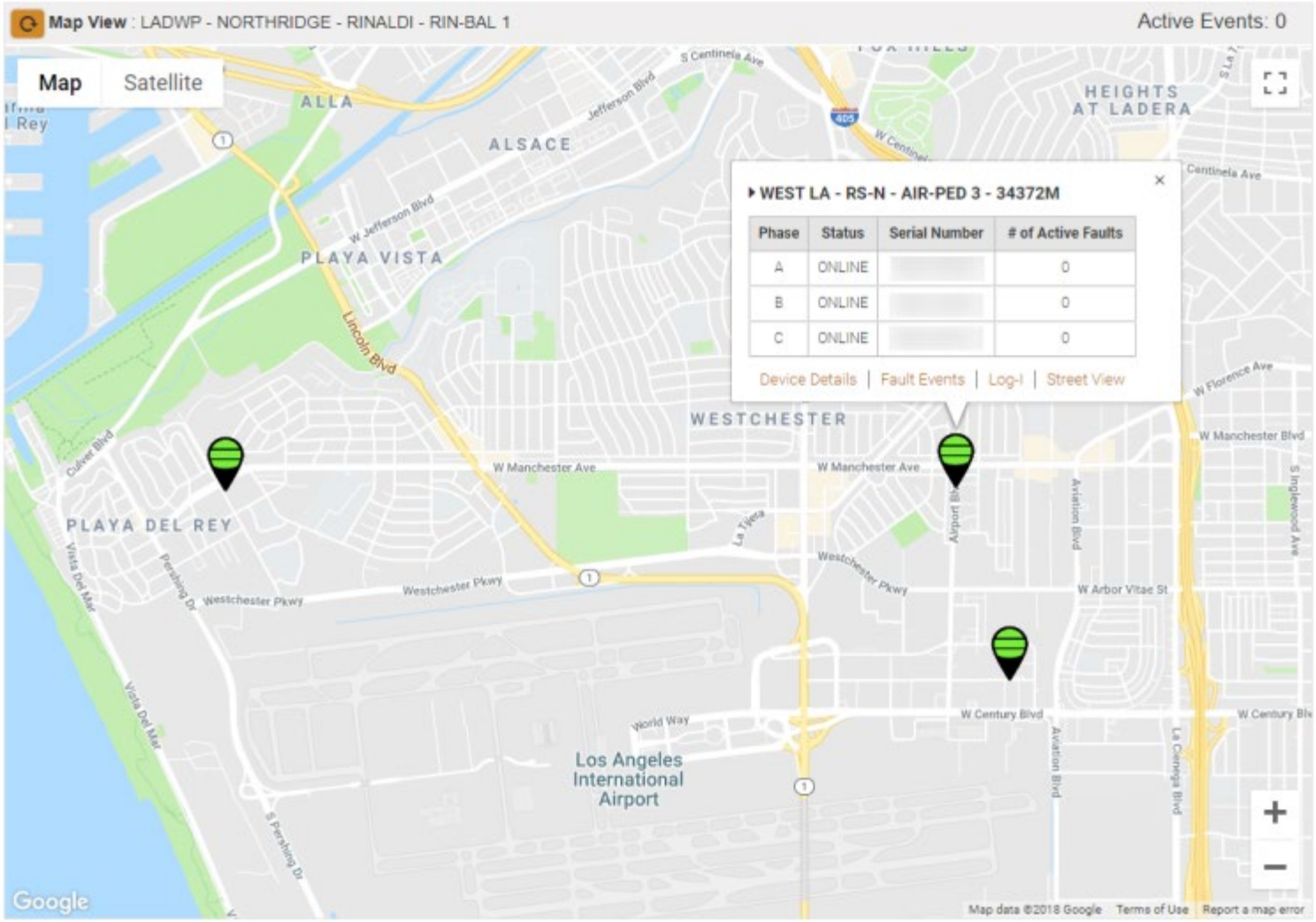
Questions or Comments?

Line Monitor – Peak Load & Unbalance

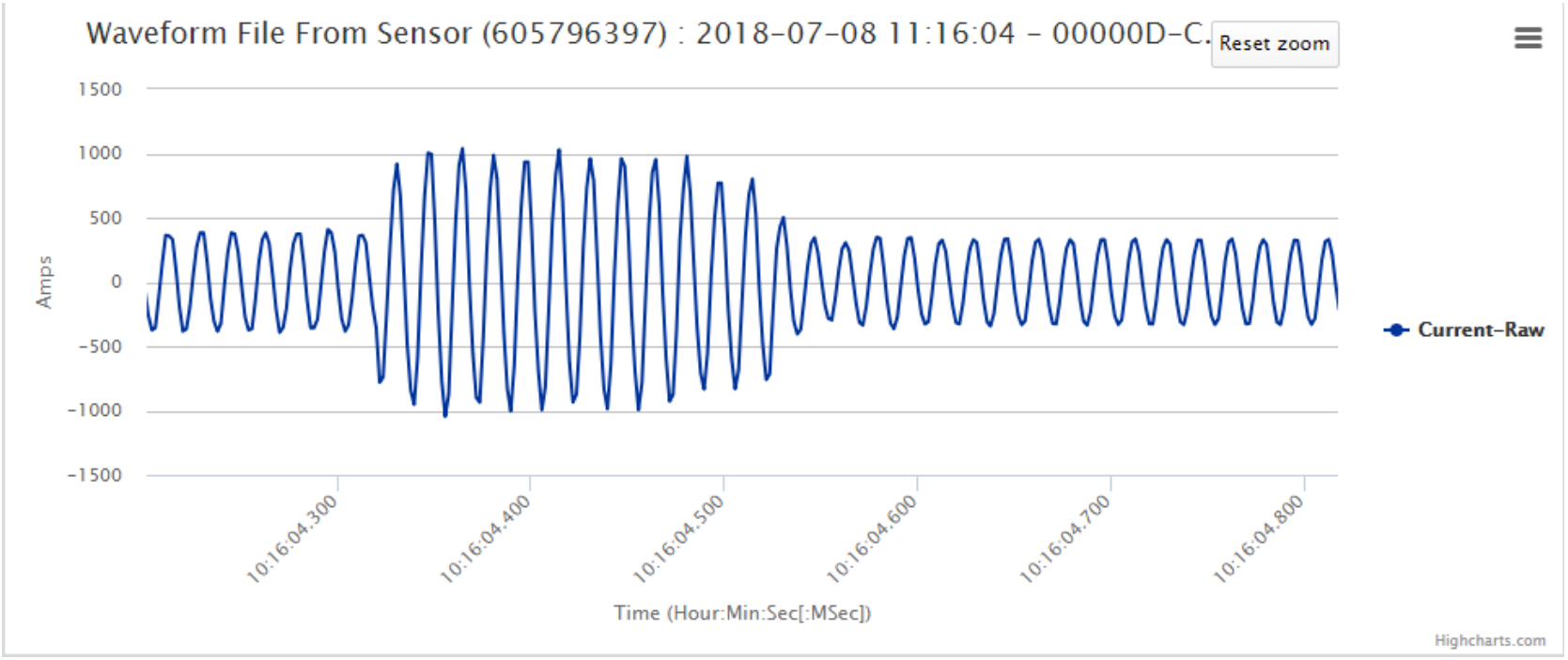
Line Monitor – Real Time Current/Temperature



Line Monitor – Map View



Line Monitor – Fault Waveform



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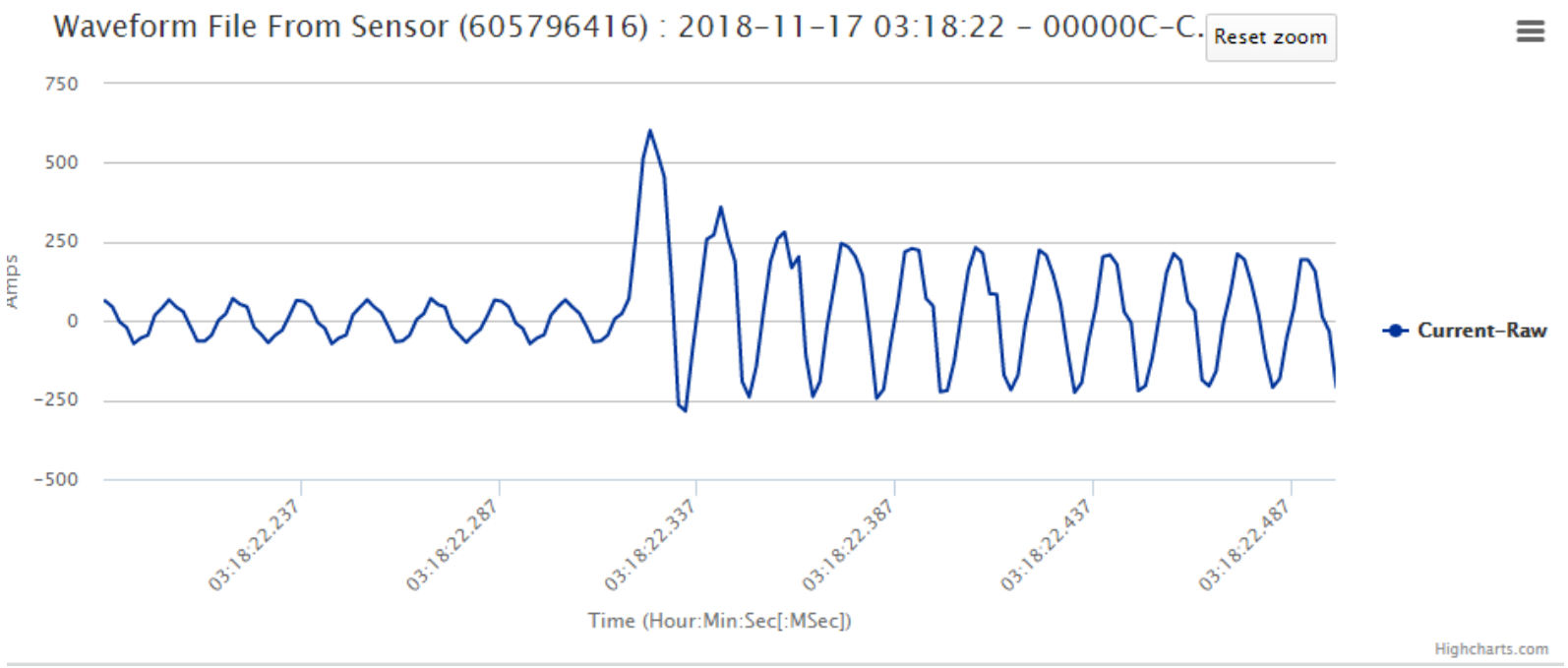

Line Monitor - Data

Circuit Interruptions

Interrupt No	11052
Circuit Name	TAL-RUN 1
Date	12/13/2018
Time	1523
Log Page	34663
Outage Type	Short Circuit and Ground, then Relayed On Test
RS	N
Section	A
Relayed At	RS-N
Relayed Receiving End	DS-
Relayed Other	
Relayed On Test	From DS-137 after 10 secs via AR
Station 1 Reclosed	From DS-137 @ 1642 via SSO
Station 2 Reclosed	From DS-139 @ 1526 via RTU
Targets	DS-137: C-phase 51 target DS-139: C-phase 51 target
Ground Current	RS-N Bank A: 4000A @ 34.5kV/720A @ 138kV
Outage Duration Hrs	0
Outage Duration Mins	3
Outage Duration Secs	0
Cause	Crow got into lightning arrestors @ P257452M Loc. F/O 7301 World Way West
Location	P257452M Loc. F/O 7301 World Way West
District 1	WLA
District 2	
Clearance Holder	None
Clearance Limits	N/A
Gas Alarms	None
Repairs	None
Comments	DS-137 out of scan at time of relay
Unusual Occurrence	N