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# Project Overview



Demonstrate how Future Grid's software leverages AMI 2.0 smart meter data (voltage and power quality) to provide secondary grid diagnostics that enrich grid operations and grid planning as DER adoption increases.

## What we aim to learn

Demonstrate how AMI 2.0 data supports network planning and operations with :

1. Secondary network visualization of customer power quality
2. Identifying transformer capacity and utilization issues
3. Detection of new loads such as EVs in the network

## Our next steps ...

1. Scale up to the entire distribution network
2. Perform further EV detection training and machine learning on larger data sets for improved load detection
3. Work with operational users to further understand how to integrate to daily processes

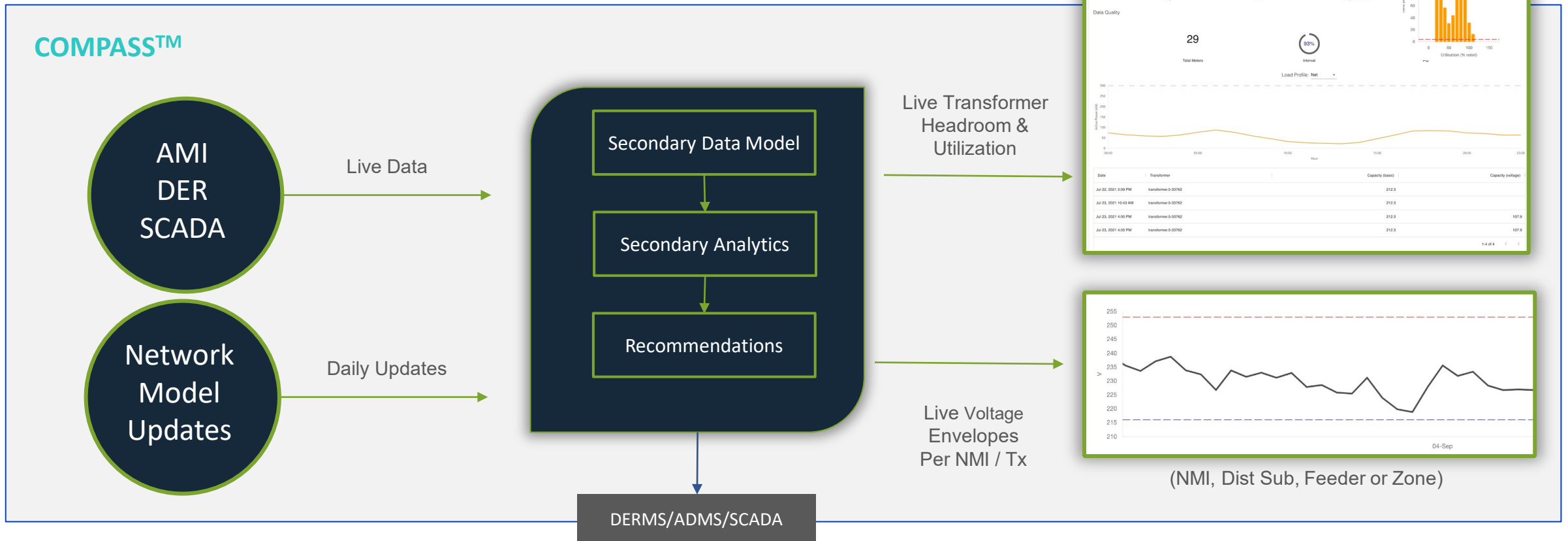


# Project Learnings



- 01** Hourly voltage data was sufficient to provide power quality visibility. Higher granularity more ideal.
- 02** EV detection required more training samples than planned (actions in next steps)
- 03** Able to determine Transformer Hosting Capacity to support upgrade and investment planning
- 04** Once IT effort was completed it was easy to load, reload data to test new analytics
- 05** AMI meters reported multiple voltages. This increase visualization complexity.

# How we managed secondary assets



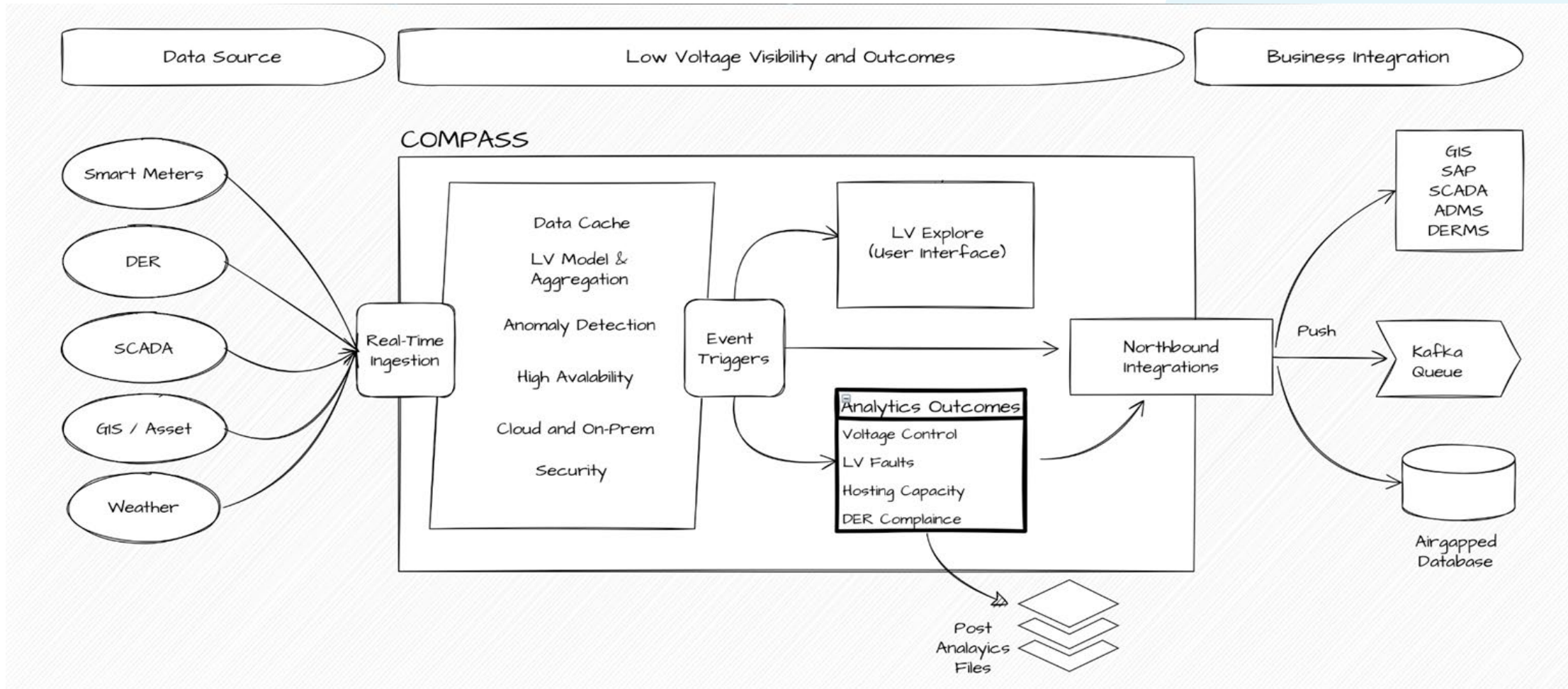
# Pilot Screenshots



Transformer Utilization

Power Quality Visualization

# Pilot System Overview



# Future Grid Benefits



## Network Operations

**01** Secondary network visibility for investment planning

**02** Customer supply voltage compliance

**03** Live fault detection & safety

**04** DER/EV Detection and compliance

**05** Asset Location and Phase Identification

## Network Planning