

TTU SYNCHROPHASOR NETWORK

R&D PROJECT

INDUSTRY PARTNERS:

- > Texas Tech University
- > National Instruments
- > Sandia National Laboratories
- > Southwest Power Pool

PROJECT TERM:

- > Ongoing

INDUSTRY PROBLEM:

- > Critical need to monitor the grid variability due to wind resources
 - o Provide real-time dynamic information (i.e. voltage, frequency, location and time) on large-scale wind resources and their impact on the transmission grid
- > Detect and identify potential undesirable conditions on the grid and enable ERCOT operators to make adjustments to resolve the conditions
- > Provide faster and improved forensic analysis following a disturbance
- > Assist grid planners in validating their dynamic models

SOLUTION:

- > The TTU Synchrophasor Network allows for positioning of PMUs at sites that have value for both wide area monitoring and for gathering data on individual generation or load assets. This ensures that the data set will be extremely useful for a wide variety of wind-related research.
- > It improves the overall operating reliability of the grid, and provides economic value by increasing the amount of wind that can be successfully integrated with the transmission grid.
- > The GLEAMM team is identifying events such as generation trips and sub-harmonic oscillations and correlating those events with Southwest Power Pool (SPP) wind energy contribution data and the operation of specific wind generation assets.