Synchrophasor Test System
Schweitzer Engineering Laboratories
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Historically, electric power system data has been communicated with polled SCADA protocols. Recently, precisely timestamped synchrophasor data has become available. Synchrophasor data is streamed with the IEEE C37.118 protocol. Schweitzer Engineering Laboratories (SEL) produces a variety of synchrophasor measuring devices and software. For software testing, SEL applies a combination of techniques, including customizable synchrophasor generation software applications. However, a new protocol (STTP) is in development, and SEL wants to update their test software with the new protocol. Unfortunately, the protocol wasn’t released in time for our team to use it. However, we focused on building a strong CSV parser and user interface that will readily support STTP when it becomes available.

Requirements
- Human centered design process
- Develop logger
- Software must comply with C37.118 Protocol
- Must allow a user to upload a CSV for parsing
- Drag and drop support
- The user shall be able to specify port numbers for each station
- The system shall allow a user to specify a connection.

Testing and Continuous Integration

User Interface

Architecture

Glossary
- Synchrophasor: A monitoring device that provides real-time measurements of electrical quantities from across the power system
- Gitlab: A code hosting database similar to Github
- STTP: A publish-subscribe data transfer protocol that has been optimized for exchanging streaming time series data
- SCADA (Supervisory Control and Data Acquisition): The combination of telemetry and data acquisition
- C37.118: A protocol that defines the transmission format for reporting synchronized phasor measurements in power systems

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