

UW Bothell STEM Students design embedded controller for three phase voltage source converter (VSC)

A **Capstone Project** is a culminating senior project facilitated by the Electrical Engineering (EE) department and sponsored by a company in a related industry. The goal is for graduating seniors to demonstrate proficiency and skill in multiple EE areas.

The Challenge:

The Capstone project, sponsored by **Anderson Electric Controls (AEC)**, required the student team to design a new VSC control system that could be integrated with AEC's custom power modules. The converter will be used to provide a highly regulated DC power bus for adjustable speed drives, DC choppers, and other dynamic loads.

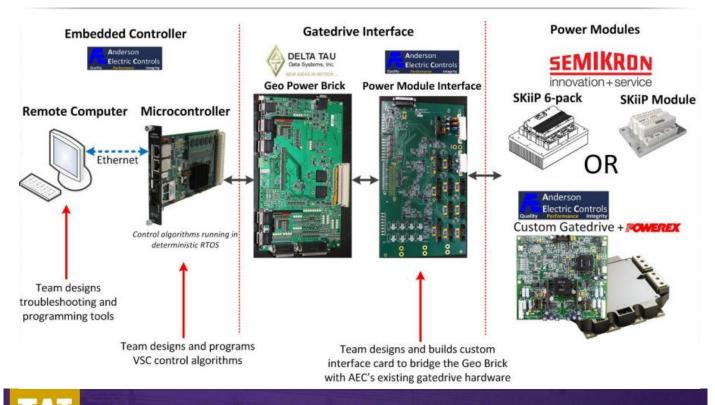
What I will value most going forward is a sense that any challenge, no matter how daunting it may at first appear, can be achieved by those with the courage to dare, and the fortitude to continue.

The Results:

- The system was implemented on an actual 36kW VSC.
- · Testing revealed excellent overall performance
- Improvements over current control system were very apparent.
- Voltage regulation and power factor correction gains of a factor of five or more over specification were measured.
- AEC is already receiving interest in the system from its clients, and the transformation from technology demonstrator to full product is underway.

Student Team Member





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