Overview
Volvo did not have a problem with a current product or project, but wanted a team of three Penn State students and three Chalmers Students to work internationally. The two teams worked as one to research a patent owned by Volvo. The project was to create and test prototypes of a split van design. The idea was to see if the efficiency of the radiator fan would increase with a different design.

Objectives
The objective was to reduce fuel consumption for Volvo trucks by examine new, more effective, fans for the cooling system, and testing them against the current design. Volvo introduced the international project team to a patent for a divided fan blade that claims to be much more effective than the existing solution.

Approach
- Obtain background information on the current design Volvo uses
- Research the patent provided, other patents, and radiator fans
- Come up with designs that may be looked into farther or created and tested
- Finalize which aspects of the fan are to be researched and tested
- Create CAD models for testing in CFD and small scale prototypes
- Create small scale prototypes
- Test the nine prototypes for efficiency
- Efficiency of the nine prototypes were gathered and the best parameters found
- After looking at the data from both prototype testing and CFD a final design was selected
- A final prototype is to be made in Sweden and tested at Volvo

Outcomes
- Volvo will know have background information and will either continue the project on their own or create a capstone project that extends this one
- A 1/4th scale prototype with an efficiency of 30% was created
- The best design parameters were selected.
- Volvo can now decide if the design should be further looked into which could lead to their radiator fans becoming more efficient.