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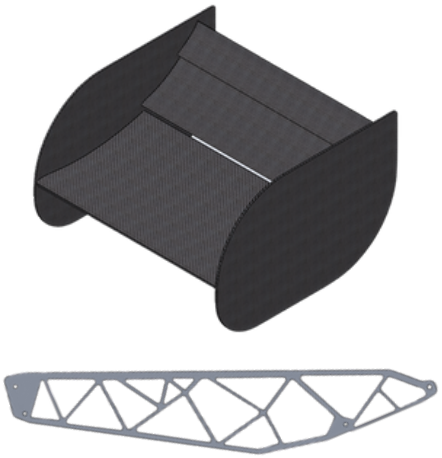
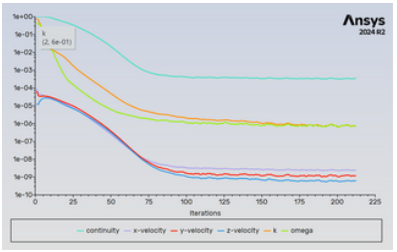
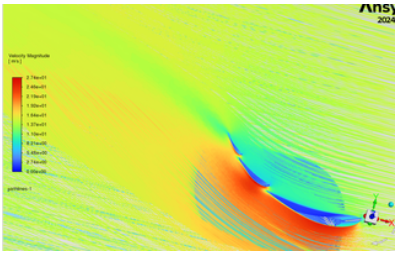
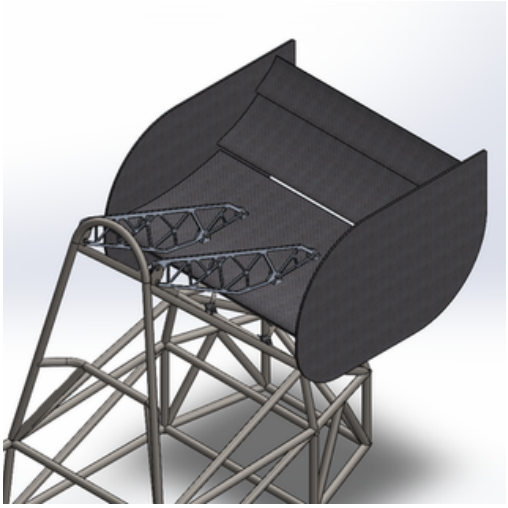
FSAE REAR WING - TRITON RACING









What?

- Design and optimize aerodynamic surfaces for **TR-26's rear wings** to **maximize downforce efficiency** and **improve** vehicle cornering **stability**
- Designed swan-neck mount and hinges fit for RW integration
- Performed a **needs analysis** to define aerodynamic performance targets, including **lift-to-drag ratio**, stability requirements, and competition constraints

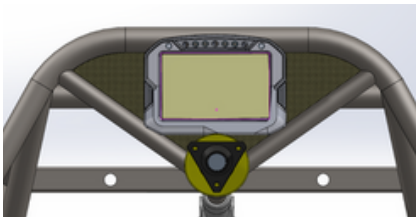
How?

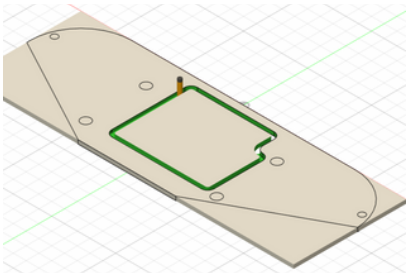
- Used **ANSYS Fluent** to evaluate multiple airfoil geometries via CFD simulations
- Analyzed **parametric studies on airfoil camber, and AOA**
- Conducted FEA studies on swan neck mount to **reduce weight from 2.9lbs to 0.93lbs** with a **FOS of 4.2**

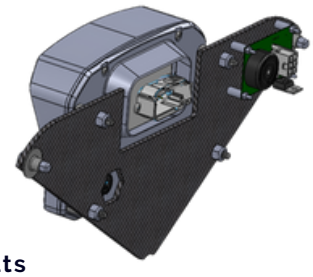
Results

- Achieved a **12% increase in lift-to-drag ratio**
- Improved overall vehicle **cornering stability and aerodynamic efficiency**
- Delivered a **validated wing configuration** ready for chassis integration
- Manufacturing WIP

FSAE DASH PLATE & ENCLOSURE - TRITON RACING







What?

- **Designed, CAM and CNC routed dashboard** TR-24 to ensure reliable driver interface integration and repeatable production quality
- Used **SolidWorks** to design dashplate
- Implemented **DFA principles** to reduce product assembly cost

How?

- Defined functional requirements for **ergonomic layout, electrical component interfaces**, and manufacturing constraints
- **Performed post-cure routing on carbon fiber** using CNC router
- Utilized **Fusion 360** to generate and post-processed **G-code** operations

Results

- Created a dashboard and enclosure that protected electrical components without sacrificing driver comfortability
- Implemented **DFM** principles to reduce overall part production cost
- Created **GD&T-compliant** CAD drawings for dashboard