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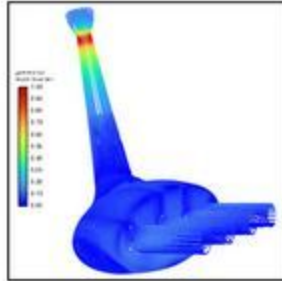
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## INTAKE SYSTEM - FSAE



### What?

- Redesign a **lighter, cost-efficient, and higher-performing system**.
- Comply with competition regulations and space constraints.
- Perform **calculations** for optimization.

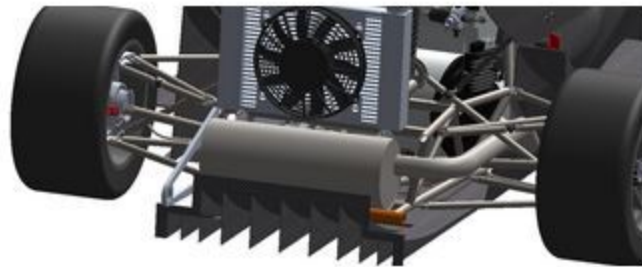
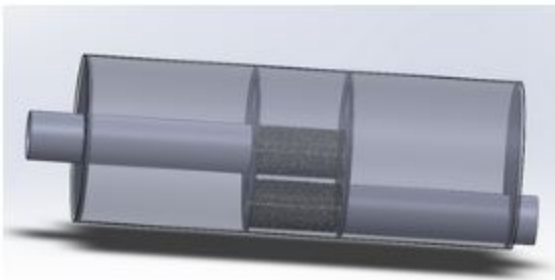
### How?

- Used **SolidWorks** and **Ansys Fluent** to produce a **CAD model** and CFD analysis.
- Used Nylon-12 **SLS printing** to create a lightweight and **reliable** product.

### Results

- **CFD analysis** and performance testing proved more even airflow and greater performance.
- Created a higher-performing system used in competition.

## EXHAUST SYSTEM - FSAE



### What?

- **Research and Design** a muffler and exhaust tubing to adhere to **regulations and performance needs**.
- Utilize **lightweight** and **reliable** material.

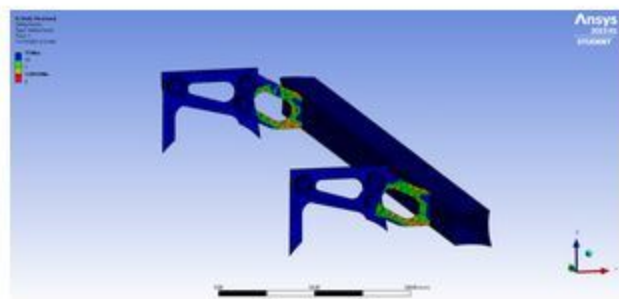
### How?

- Design and test different iterations.
- Analyze **CFD** results to select the most effective design.
- **Source and manufacture** 304 Stainless Steel to satisfy stress, temperature, and sound requirements.

### Results

- Designed an effective and lightweight system used in competition.
- Simple **manufacturability and servicing**.
- **Reliable** in all conditions.

## CHASSIS TABS - FSAE



### What?

- **Design and manufacture** a tab to withstand stress and vibrations from the muffler and chassis.
- Improved **weight and cost-efficiency** through **topology optimization**.

### How?

- Design using **SolidWorks** and ran **FEA** using Ansys.
- **Water-jet** cut steel tab with a **safety factor** of 1.3.
- TIG welded.