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Problem Statement

- Vehicle design focuses on lightweight materials, efficient powertrains, and aerodynamics
- Incorporation of driver assistance and energy recovery systems further enhances fuel efficiency and obstacle navigation

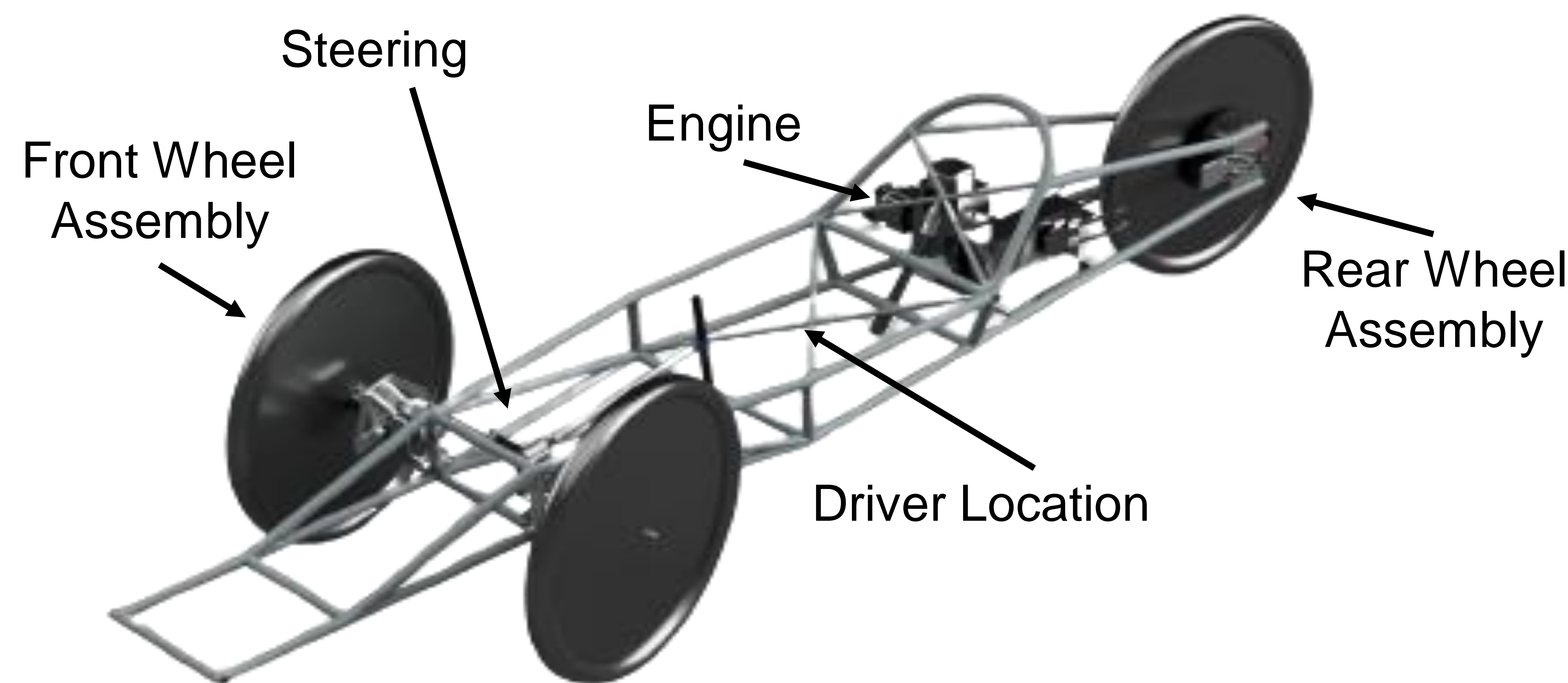
Design And Analysis

- Sequential design of aerodynamic body, drivetrain, and chassis engineering
- Computation fluid mechanics of the body
- Finite element analysis of components
- Fuel Map stoichiometric air-to-fuel mixture to ensure efficiency

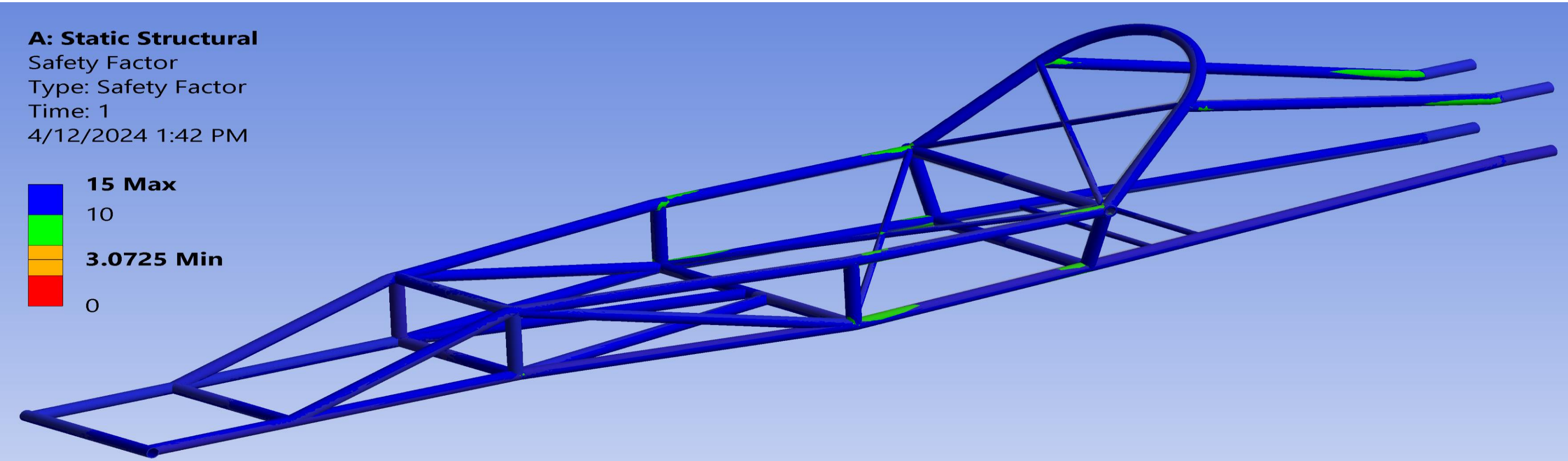
Final Vehicle With Body



Final Vehicle Without Body



Side Impact Chassis Analysis



Jig to Weld the Chassis

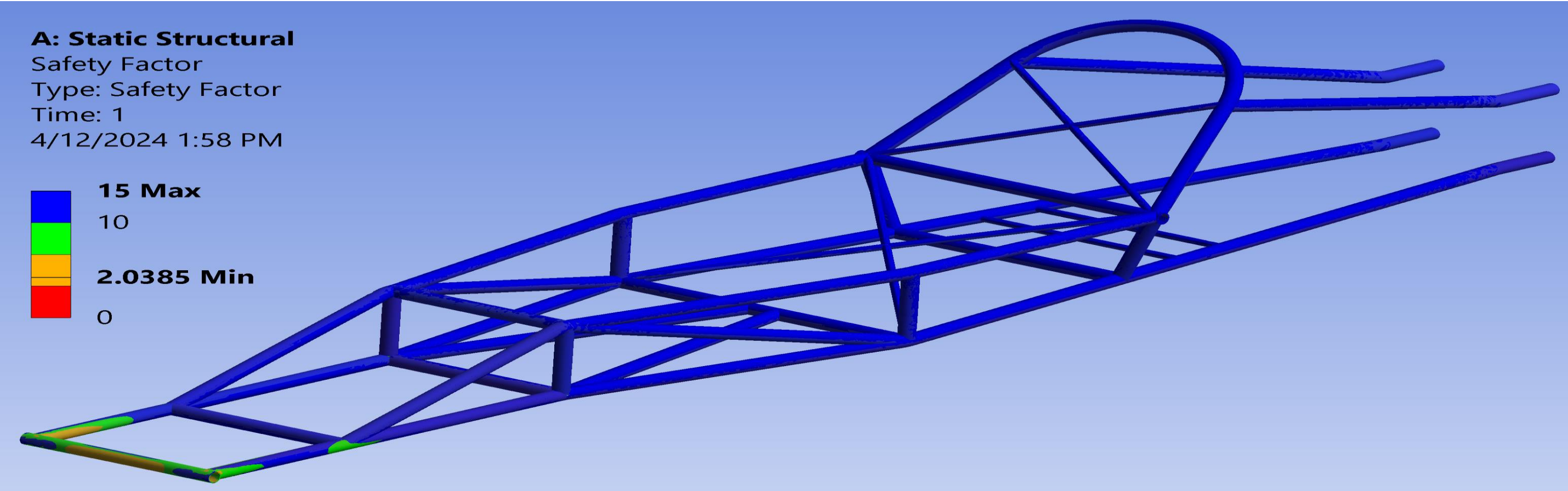


Fuel Map for Engine

Target Lambda Table Output Output: ---- AFR

RPM (RPM)	Manifold Pressure (psi/inHg)									
	-26.6	-23.6	-20.7	-17.7	-14.8	-11.8	-8.9	-5.9	-3.0	0.0
7500	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	11.9	11.9
7000	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.0	12.0
6500	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
6000	12.5	12.5	12.5	12.5	12.4	12.3	12.2	12.1	12.1	12.1
5500	12.8	12.8	12.8	12.8	12.6	12.4	12.3	12.2	12.1	12.1
5000	13.6	13.6	13.6	13.2	13.0	12.8	12.6	12.3	12.2	12.2
4500	14.2	14.2	14.2	14.2	14.2	13.0	12.7	12.4	12.2	12.2
4000	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	12.5
3500	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	12.5
3000	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	12.5
2500	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	12.8
2000	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	12.8
1500	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	12.8
1000	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	12.8
500	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	12.8
0	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	12.8

Front Impact Chassis Analysis



Future Works

- Reducing friction in the drivetrain
- Design a body that covers the wheels to reduce drag
- Use an engine with an output shaft

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