

Customer Interview

1. Why is downforce important to the Formula SAE car?
 - Provides a greater normal load on the tires, allowing for more grip
 - Leads to being able to corner harder and go faster, decreasing overall lap times
2. What are attributes of the system that are important to you?
 - Reliability
 - Low weight
 - Rear wing with DRS: < 10 lbs
 - Whole package: < 30 lbs
 - Effectiveness
 - Optimize drag, downforce, and weight
 - Safely Stiff
3. What research has been done?
 - Aero profile selection
 - Wing height
 - Angle of attack
 - Lap time simulator
 - Endplate sizing
 - CFD optimization
 - Size of elements, chord length
 - Other FSAE teams' similar designs
4. Is there an updated budget for the project?
 - PRP states \$2000
 - Now \$1500 + materials
5. Are there any specific time constraints beyond the senior design schedule?
 - March 1st, 2014: Working prototype
6. Can you describe the current system?
 - Dual elements on front and rear wings
 - All adjustable except for front main
 - Undercar diffuser
 - Adjustability
 - AoA
 - Rear wing height
 - 400 lbs of downforce at 60 mph
 - 2.3 L/D
 - Carbon fiber

7. What are the pros / cons of the current system?
 - Pros
 - Simple
 - Lightweight
 - Cons
 - Difficult to adjust
 - No on-course adjustability
 - Fixed while driving
 - Unreliable RW mounting
 - Not enough downforce
8. Are there any extra design constraints beyond those mentioned in the PRP?
 - Meets FSAE rules
9. How do the goals of the aero package play into the goals of the whole car?
 - Make the car faster
 - More reliable
10. What manufacturing methods / resources are available for this project?
 - Carbon fiber manufacturing methods
 - CNC mold capabilities
 - In-house oven

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