



Purpose

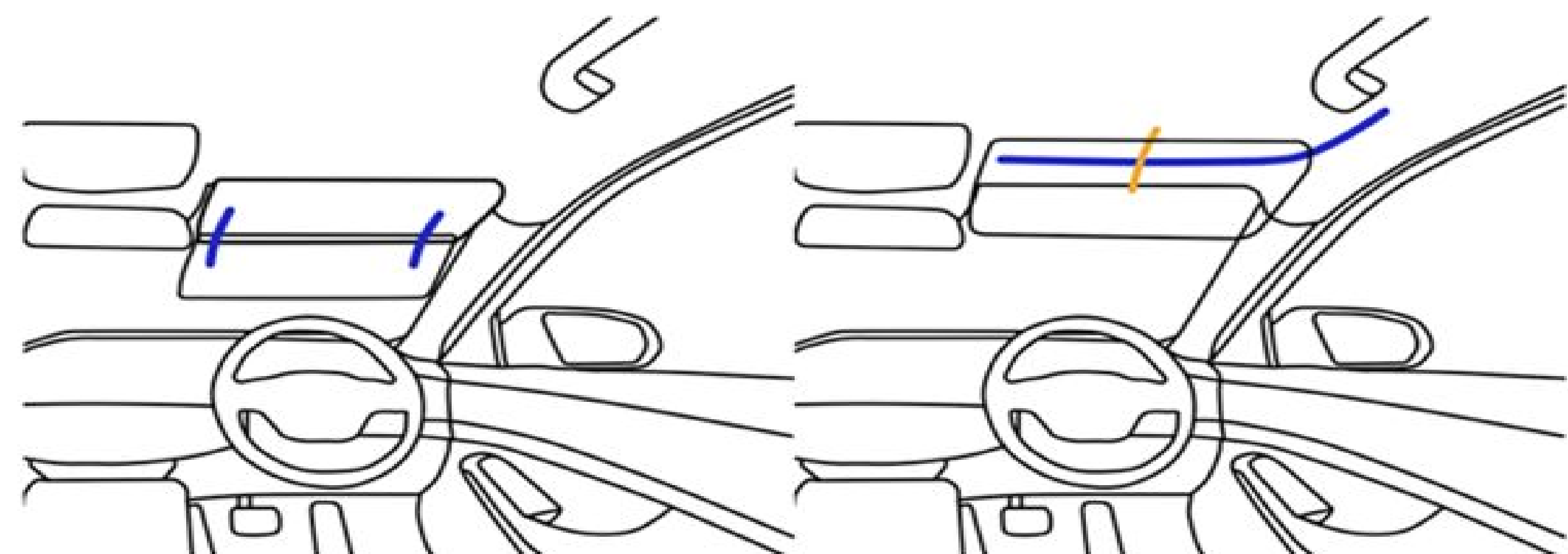
Anyone who has ever driven or been in a vehicle will have undoubtedly encountered the bane of morning and evening commutes: the sun. Ranging from a minor inconvenience for the passenger to a legitimate safety concern for the driver, the sun shining directly in your eyes is a burden to drive against. We, at Trap Bird Technologies, believe that there is untapped potential innovation in the traditional car sun visor. Our collective purpose, as a company, is to bring the car sun visor on par with the other technological advancements seen in modern cars today.

Current Sun Visors

- Manual effort to operate
- Constant fidgeting to set varying angle
- Swings in front of face when moving from the front to side
- Never left down
- Would rather wear sunglasses

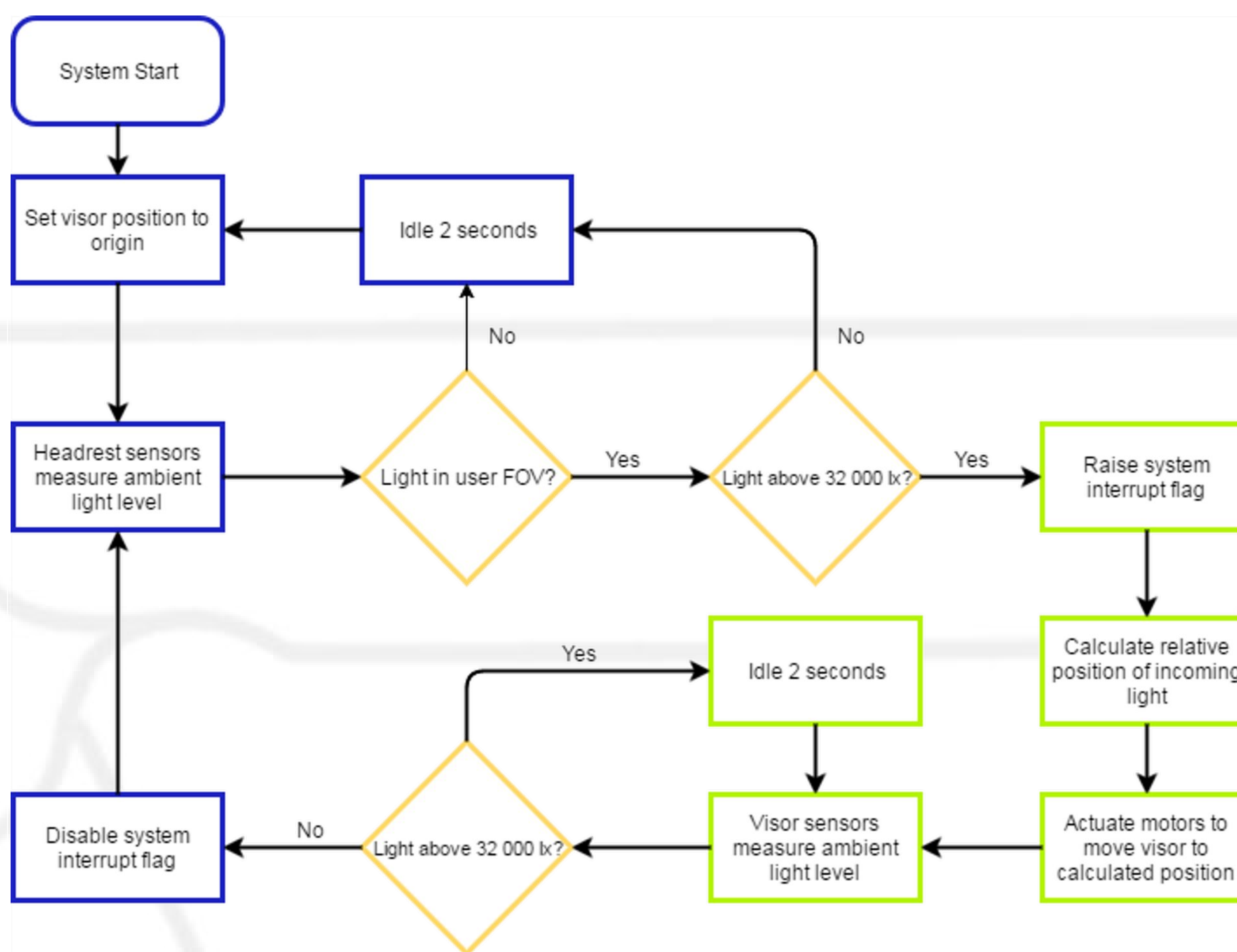
MotoVise

- Complete automation
- Optimized visor positioning for maximum blockage and road visibility
- Seamless transition from front to side of vehicle
- Constant coverage



Design Features

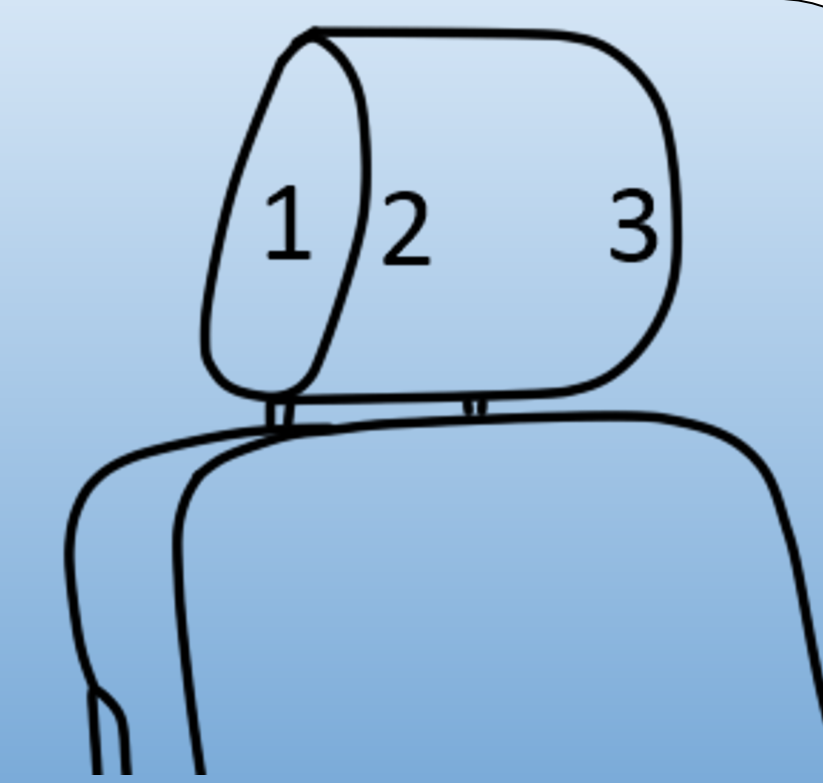
Trap Bird Technologies plans to administer three main deliverables in the scope of the proposed design prototype of MotoVise.



System Operation Flowchart

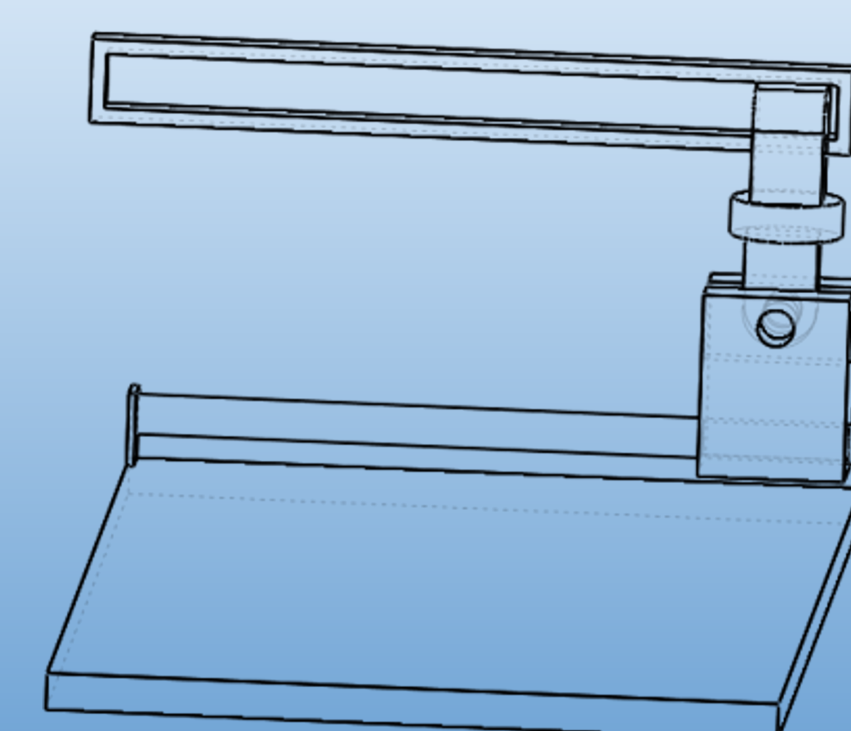
Sun Tracking

- Detect location of sun relative to passenger eye-level
- Detect intensity of incoming sunlight into vehicle cabin



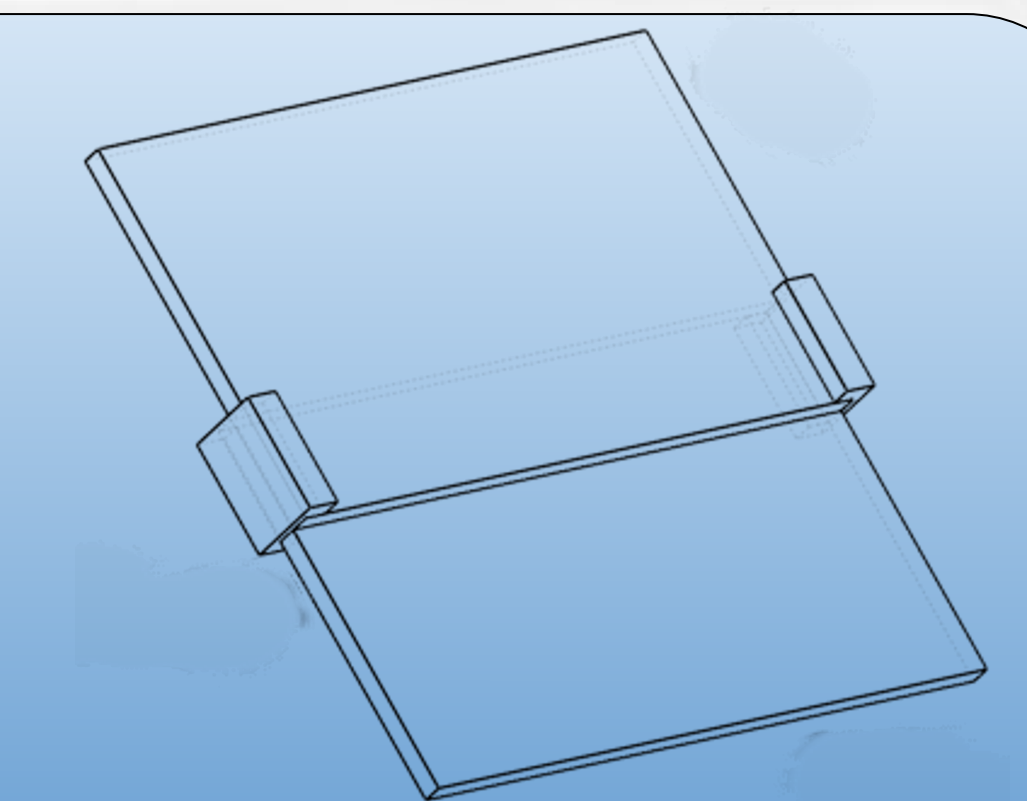
Automatic Visor Positioning

- Autonomous extension/retraction of sun visor to provide coverage in real time
- Translatable from windshield to side window



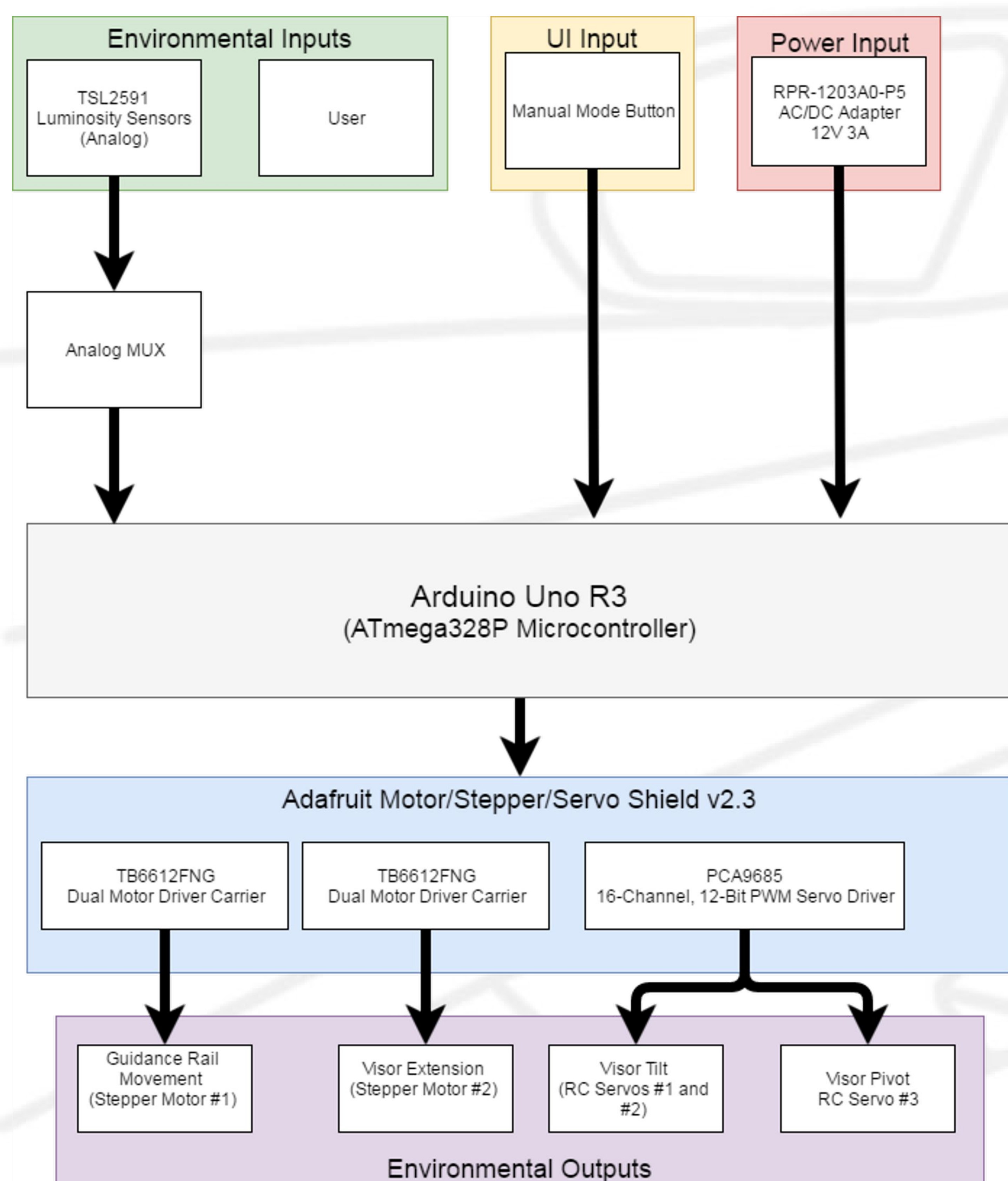
Extendable Sunshade

- Retractable sunshade extension to cover windshield when parked

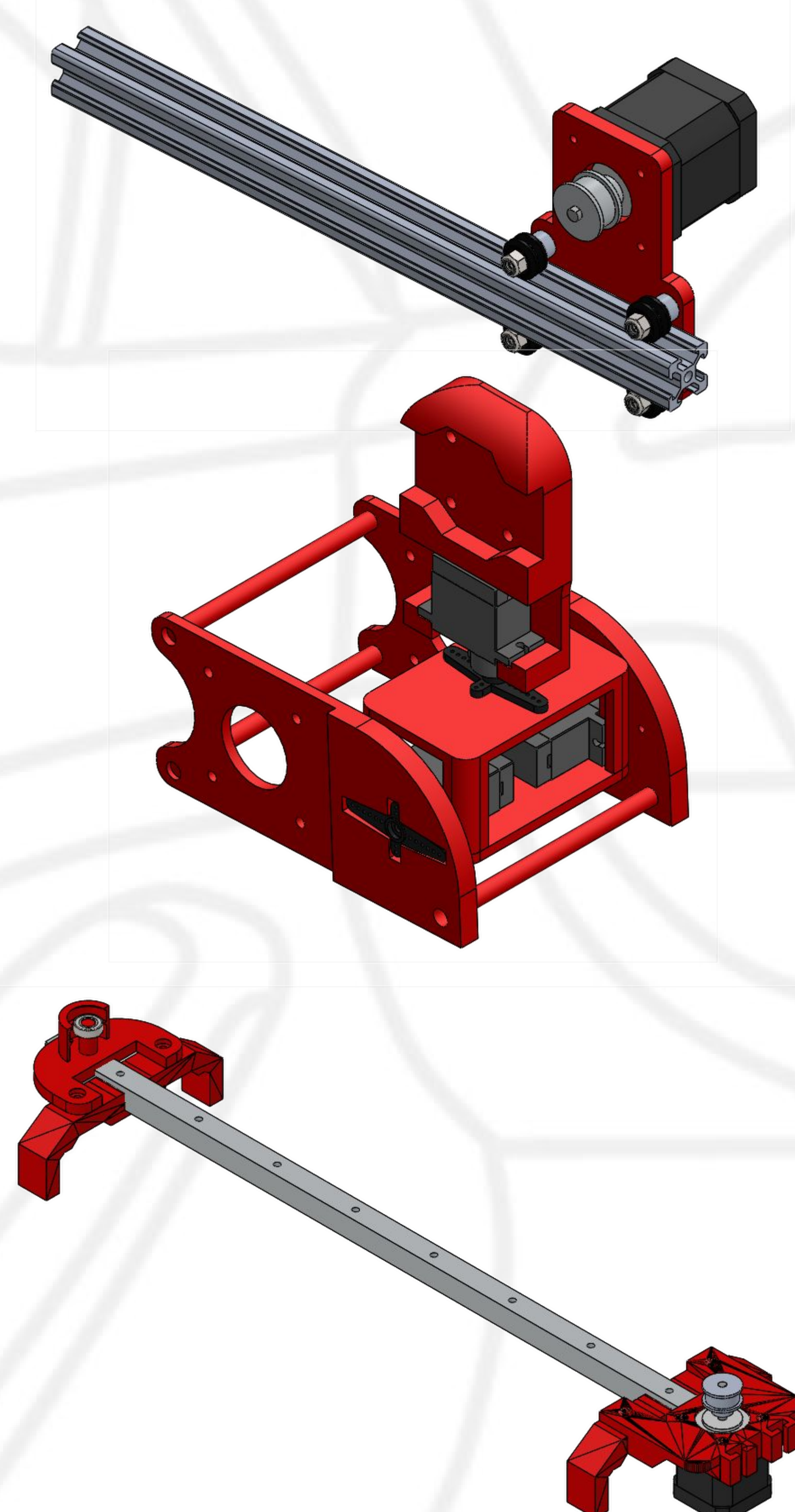


Proof-of-Concept Model for MotoVise

System Block Diagram



Actuation Components



Research & Results

Safety Standards:

- BC Laws - Motor Vehicle Act Regulations: material & size restrictions
- Transport Canada: Size restraints
- IEEE: software development

Durability:

- Last entire lifespan of vehicle (several decades)
- Use of lighter materials

Fail-Safes:

- Mechanical lock when system is disabled manually

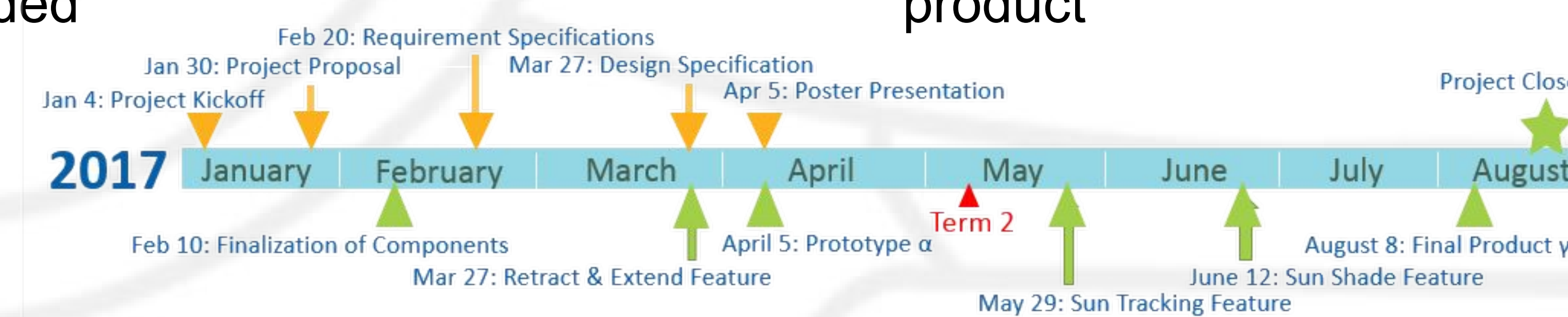
Future Work

Improvements

- Full sun tracking will be implemented
- Reduced sound during movement by using low voltage stepper motors
- New aesthetic enclosure
- Retractable sunshade functionality will be added

Testing

- Safety testing for individual parts
- Unit testing for software and hardware components
- Indoor system testing
- In-field/outdoor system testing of final product



Conclusion

- MotoVise will be a market game changer, similar to powered windows & mirrors
- MotoVise is effective, modern, and the gen-next way to block sun
- Minimal user input to satisfy needs
- Proof of concept achieved
- Work on Beta version has started