

# Progress and requirements of the instrumentation section

UAM Baja SAE team 2023

## **Instrumentation section:**

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# Parameters to measure

List of the parameters that we are considering.

- Engine and CVT temperature.
- Engine and CVT RPM.
- Position af the shock absorbers.
- Speed of the wheels (vehicle).
- Tire pressure and temperature.
- Steering angle.
- Brake pressure.
- Laps data logging.
- Localization (GPS-Data Fusion).
- Inertial measurement unit.



# Test of the speed sensors

A hall sensor was proposed.

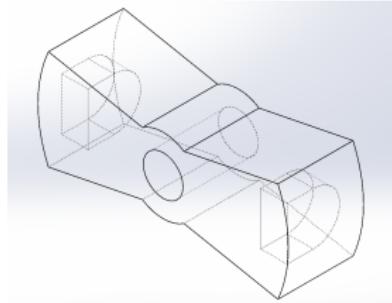
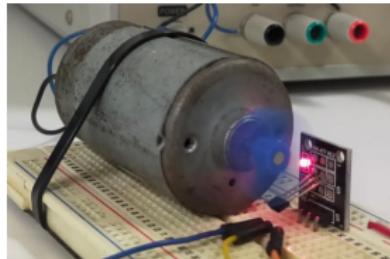


Figure 1: Test of the sensor hall with a CD motor.



# Collector designs

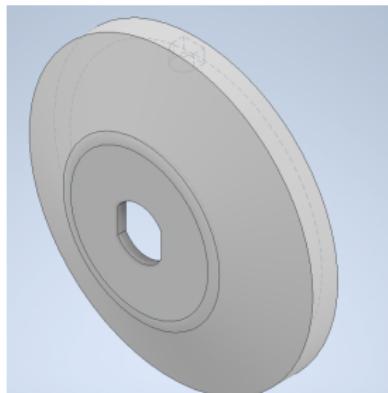
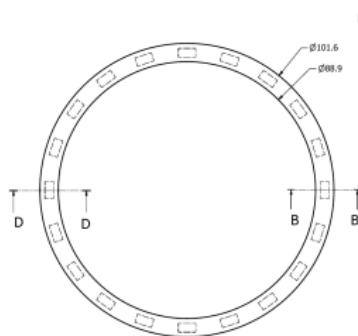


Figure 2: Prototypes of the collectors.



# Communication test

The range obtained was of the 130m.

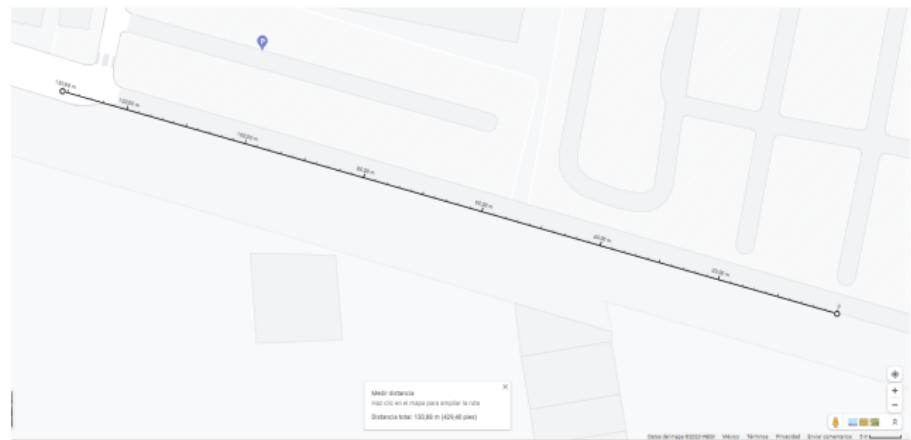


Figure 3: Range test.



# Height sensor test

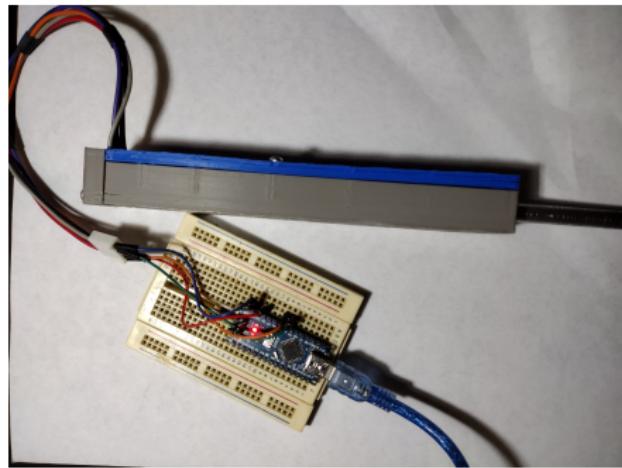
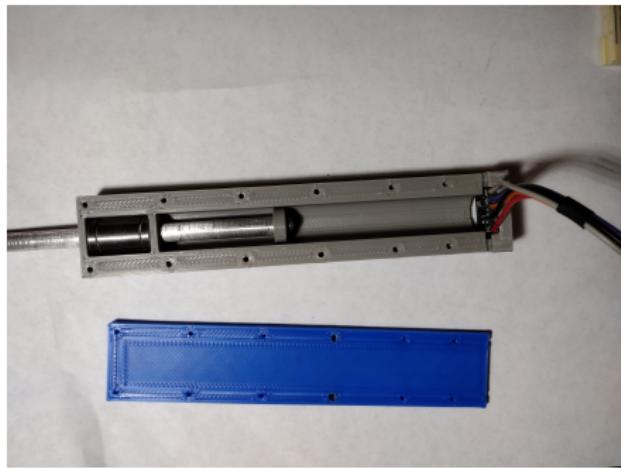


Figure 4: Height sensor prototype.



# Interface prototype

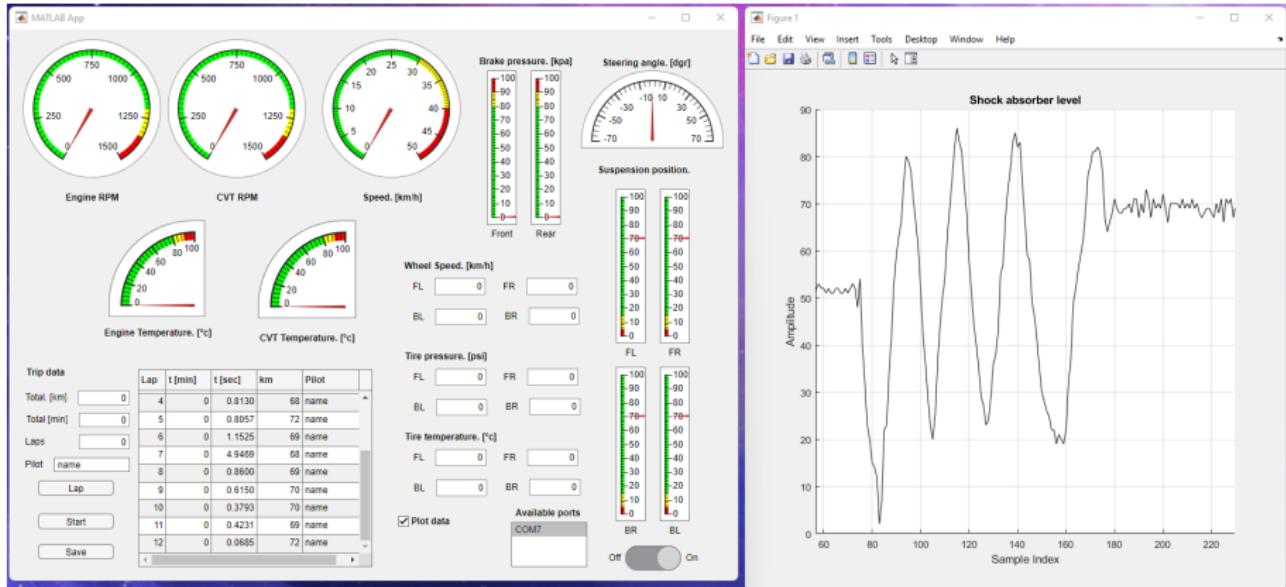


Figure 5: Test of the GUI.

# Schematic diagram

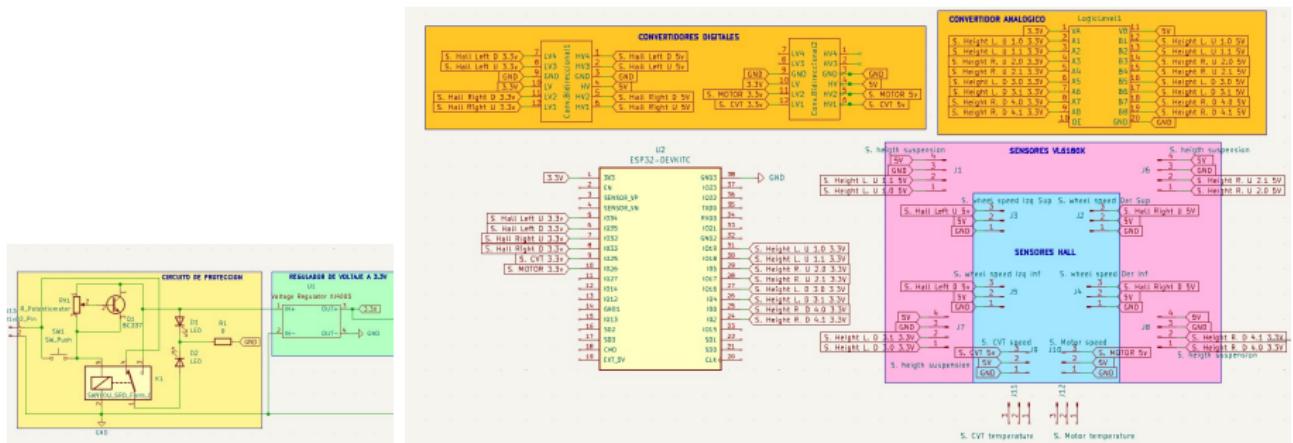


Figure 6: Designs of the electronic circuit.



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# Collaborative work proposals

- We need to manufacture the engine collector and to know the clearance between the engine and the cover of the future design.
- We need to know if some teams require the data of another variable.

