



Solar Car: Powertrain Control System

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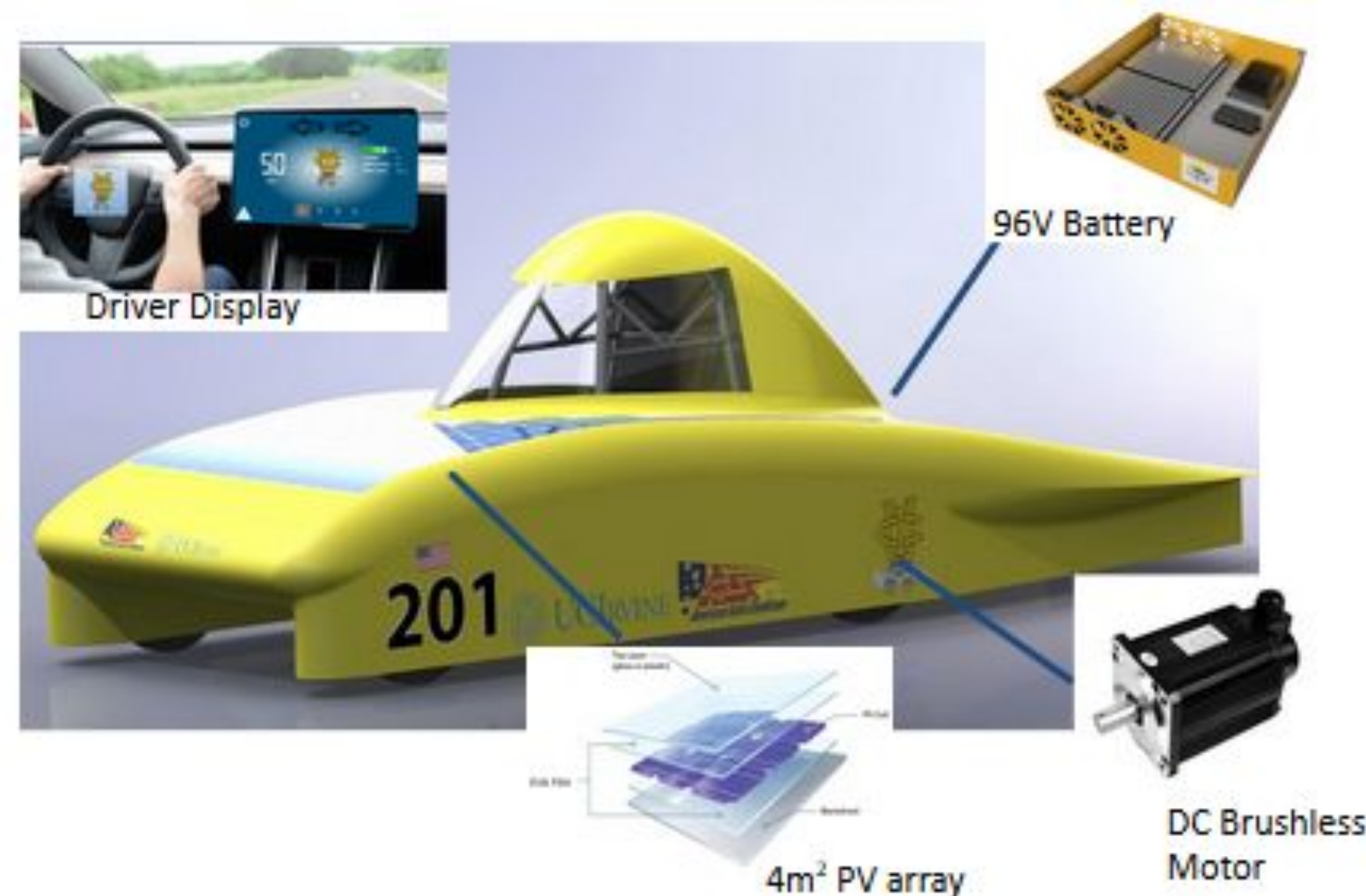
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Objective: The goal of this project is to design a small scale version of a powertrain control systems of a solar powered vehicle. The small scale system will encompass safety circuits, integration of electronic control units, and Controller Area Network communication.

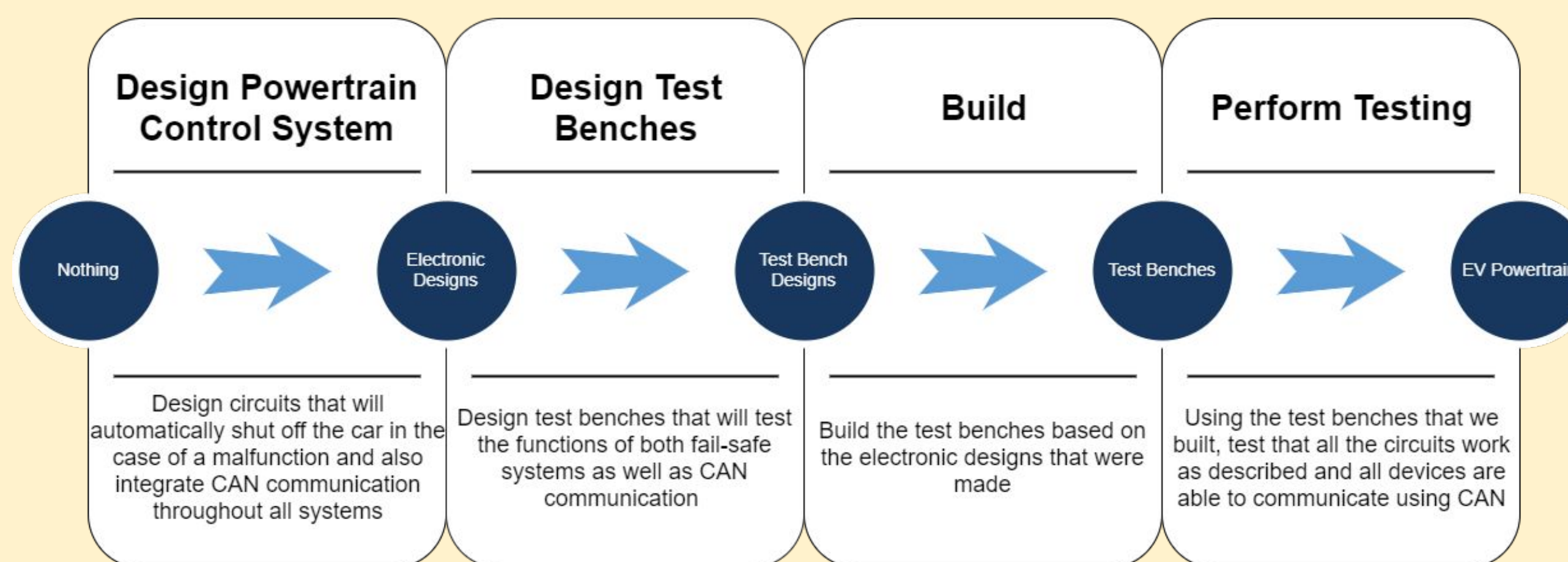
Background: Cars are a major necessity, but their reliance on fossil fuel make them large contributors to increasing global temperatures.¹ Although traditional internal combustion vehicles are being replaced by electric vehicles, even the latter is not completely “green” due to the still environmentally harmful processing of Li-on and carbon footprint left from generating electricity to power the vehicle.² A “greener” solution can come in the form of solar powered vehicles.

References:

1. The Sources and Solutions: Fossil Fuels. (2019, February 4).
2. Emissions from Hybrid and Plug-In Electric Vehicles.



Milestones:



Materials Needed:

1. Microcomputer
2. Microcontroller
3. User Interface
4. 12V System Components
5. CAN System

Achievements:

1. Designed safety circuits and automatic shutdowns
2. Human interface display
3. Front end for GUI display
4. Designed transmission control unit hardware
5. CAN communication with some hardware

Future Goals:

1. Test and program transmission control unit
2. Test safety circuits on 12V system
3. CAN integration with other controllers
4. Test Pican2