Weightless. Wait less.

**OVERVIEW**

In 2013, Elon Musk proposed a futuristic transportation system: the Hyperloop, a high-speed levitating pod propelled through a low pressure vacuum tube to minimize air drag and friction.

To bring the Hyperloop concept to life, SpaceX hosts a head-to-head competition where teams from all over the world come to compete with their own Hyperloop pod designs.

This year, the team is competing in the Levitation Competition, in which the pod must levitate and translate in a there-and-back lap down a 150 ft l-beam track. The fastest pod wins!

**THE SHELL**

- Stiff and lightweight carbon fiber serves as combined structural frame and aerodynamic shell
- Honeycomb core offers higher strength-to-weight ratio than carbon laminates alone

**MAGNETIC LEVITATION**

- Four custom maglev hover engines generate lift and propulsion
- Servos control the tilt angle of the maglev engines for precise control of forward and reverse acceleration

**ELECTRONIC CONTROLS UNDER THE SHELL**

- **LIDAR**
  - Uses laser to detect nearby wall and engage emergency

- **PCB**
  - Primary control unit and sensor monitoring system

- **BMS**
  - Monitors battery & protects from over-current and over-discharge

- **IMU**
  - Gives acceleration and rotation of pod in all 3 axes

- **Battery**
  - Lithium-Polymer

- **GPS**
  - Gives position of pod along l-beam in real time

**STABILITY**

- Double wishbone vertical suspension stabilizes height, pitch, and roll
- Leaf spring suspension stabilizes yaw and lateral movement
- Fail-safe brake skids safely bring the pod to a stop in the case of failure

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