

# Sensory Driving Simulator (SDS)

## Quick User Guide

The Sensory Driving Simulator or SDS is a system that allows the user to experience the sensations of driving in some manner.

There will be 5 pieces of the Sensory Driving Simulator.

- Computer Case
- Monitor
- Dashboard
- Joystick
- Foot Pedals

**The Computer Case** is the “brain” of the Sensory Driving Simulator. It will have a standard power button, and this will be the only part that any user shall use. Pressing the power button will tell the computer to turn on or off, depending on whether it is on or off currently.

**The Monitor** will hook up to the case through a standard video cable. The case should offer VGA, DVI, and HDMI output. Any connector should suffice to generate the video.

**The Dashboard** shall hook to the Computer Case. The Dashboard will present several interfaces to the user.

- **Steering Wheel**
  - The Steering Wheel shall control the direction of the virtual vehicle in the simulation.
  - Turning the wheel to the left shall turn the virtual vehicle to the left.
  - Turning the wheel to the right shall turn the virtual vehicle to the right.
  - Pressing down in the center of the wheel shall cause a horn to go off.
  - The Steering Wheel shall vibrate slightly if the user is not driving on a road.
- **5 Radio Station Buttons**
  - The Radio Station Buttons shall manipulate the current style of music being played.
  - The styles of music to be played are still under development.
- **1 Light Toggle Button**
  - There will be two headlights that shall shine away from the steering wheel (and therefore the user), which shall be turned either on or off according to this button. This state may be reflected in the simulation.
- **2 Fans**
  - The fans at the front of the Dashboard shall spin at speeds in proportion to the user's speed in the simulation. This shall make the user feel as though they are driving fast.
- **Speaker Output**
  - The speakers shall be hooked up to the driving simulation and will supply appropriate vehicle and motor noise as well as background music as selected from the current radio station.
- **Headphone Jack & Volume Control**
  - In the back of the dashboard, and therefore not accessible to a typical user, there shall be a volume knob and a headphone jack, allowing for a headphone-capable user to experience the SDS on their own and for a supervisor to control the overall volume of the speakers.

**The Joystick** shall be an alternative to both the Steering Wheel from the Dashboard and the Foot Pedals. This will allow users who do not have the physical control or reach to use the Steering Wheel to still take control of the Sensory Driving Simulator.

**The Foot Pedals** control only the speed of the vehicle within the simulation.

- The right foot pedal shall cause the vehicle within the simulation to accelerate.
- The left foot pedal shall cause the vehicle within the simulation to slow down.