

# Project Proposal

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## "Gentle Driver Box"



### Objective

To design a device that can remind the bus driver not to drive too wildly (i.e. make fast and sharp turn, jump start, break harshly).

### Solution

- Arduino
- Accelerometer Sensor
- Micro Speaker
- LED
- Portable Power
- Device Packaging

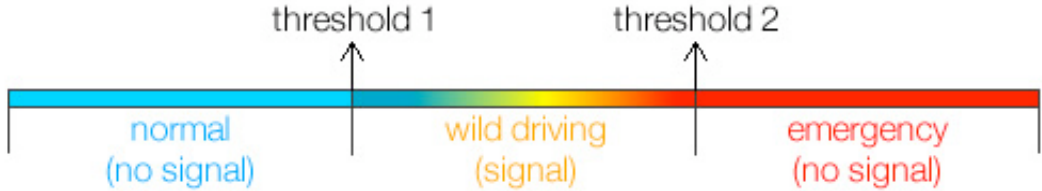
### Detail

A lot of bus drivers tend to drive wildly (i.e., make unnecessary “jump” starts and harsh breaks). We can design an accelerometer sensor based bus driver driving behavior regulator to remind the driver in time when a wild driving behavior is detected (the reading of the accelerometer reaches certain thresholds). The design is intended to regulate the driving behaviors of the bus drivers, and improve riding experience. Potential benefits may include increase of bus ridership, less fuel consumption and noise.

I would see this device as a messenger for the passengers: when the bus becomes “fury”, whether the driver is intentional or not about the driving behavior, he/she should be remind of, in such a way that it doesn't feel too embarrassed or like being under surveillance all the time, but that it raises the driver's consideration of the feeling of passengers, and the obligation of gentle driving.

With these in mind, I envision a device which provides both visual and auditory signals to remind the driver ONLY when absolutely necessary, i.e. when the acceleration of the bus exceeds a threshold beyond which most of the passengers feel uncomfortable and unsafe about the bus driver's driving. When the accelerometer reading exceeds this threshold, the micro speaker would generate alerting sound with different frequency which would be proportion to the degree of the acceleration (e.g. the harsher break or sharper turn, the quicker sound pattern). The same goes to the flashing red LED. However, when emergent situation comes under which emergent break is necessary, the device should stop signaling to avoid distract/panic the driver. A second threshold could be set to handle this problem. The visual and auditory alert should ONLY be received clearly by the driver in order to avoid embarrassing the driver in front of the passengers.

The following diagram illustrates this concept.



The following image illustrates the looking of the device.

