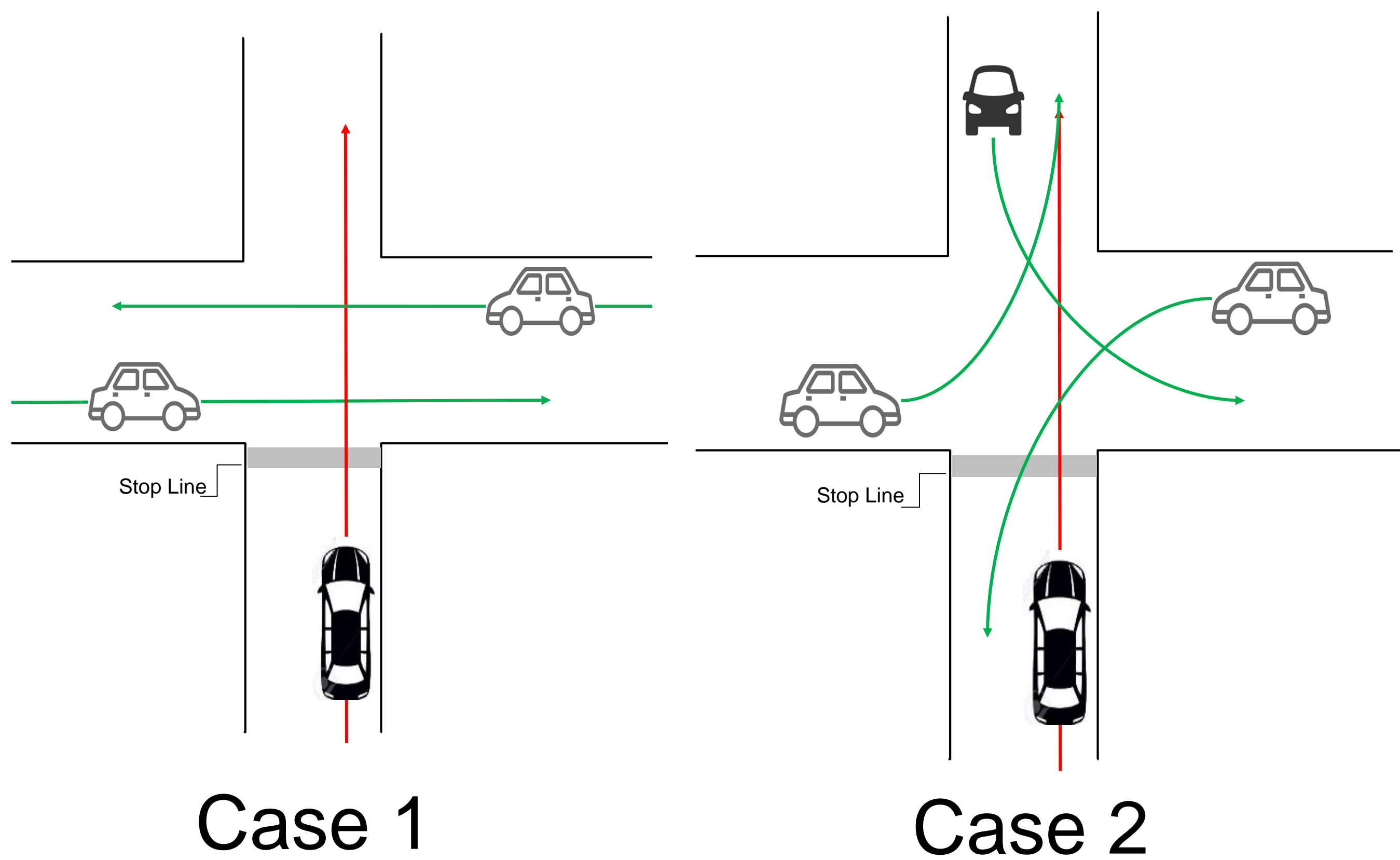


Red Light Running Detect System

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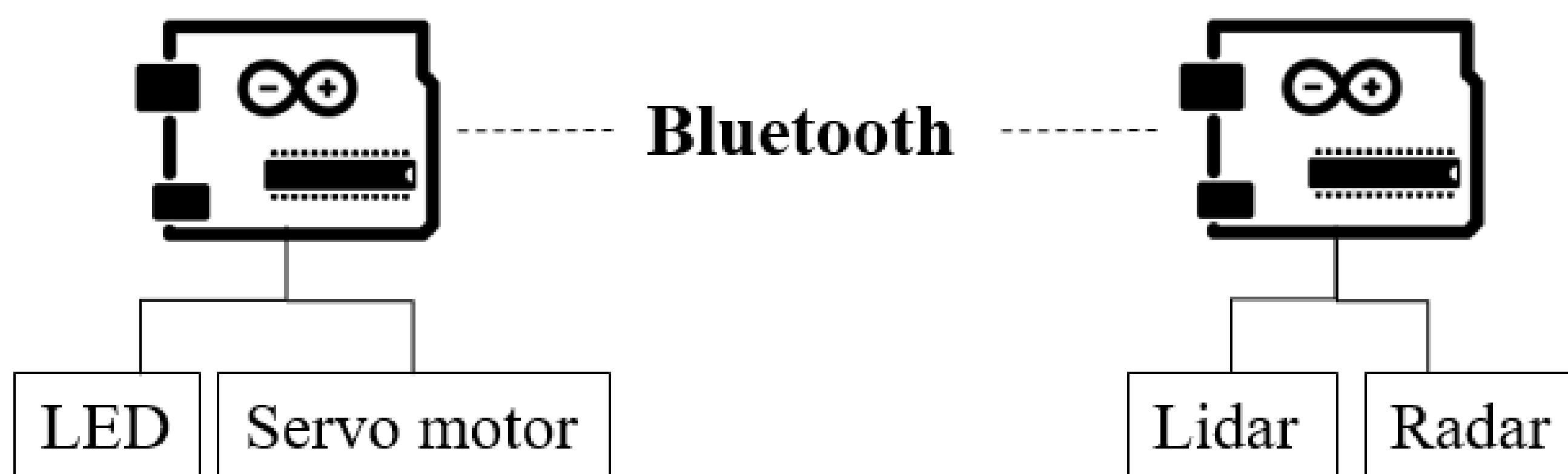
Introduction

Red Light Running is A behavior that drivers run through the red light even though the regulations indicate that driers must stop their vehicles as soon as the traffic light turns red.



Methods

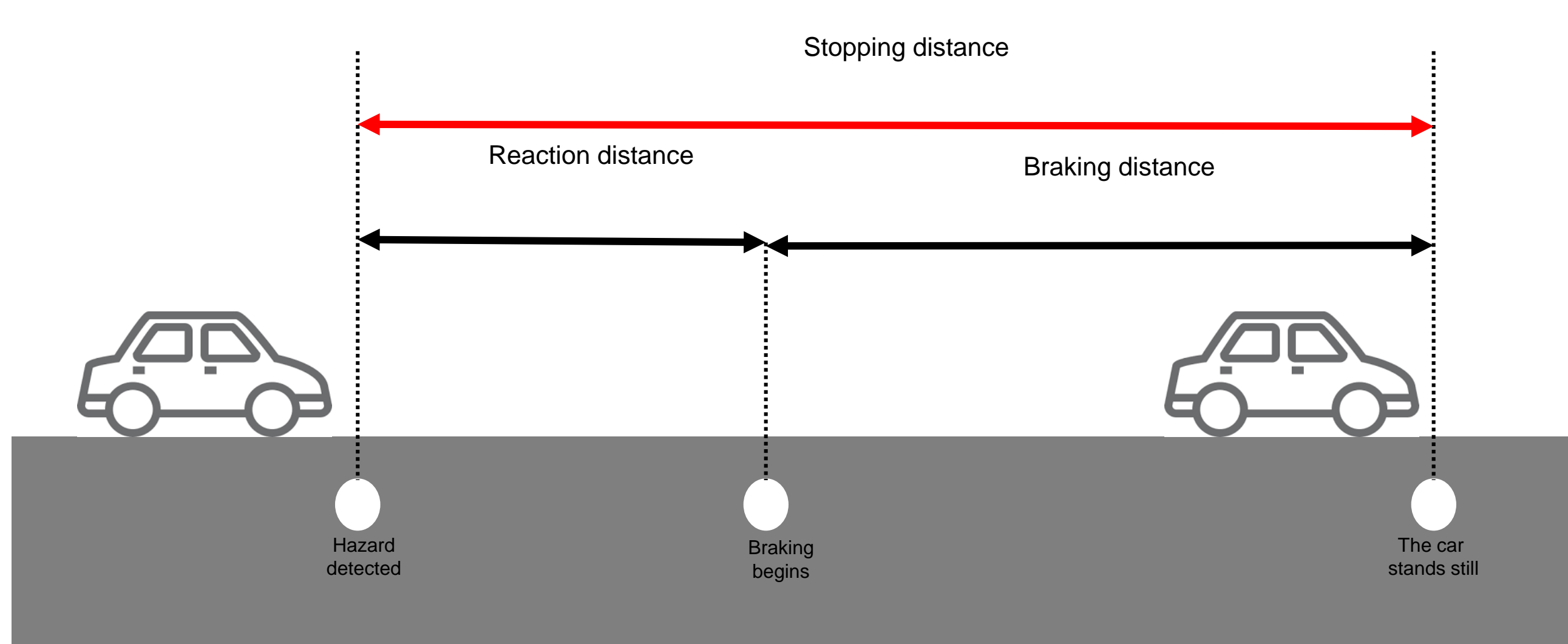
System Diagram



Sensors used in study



Stopping Sight Distance (SSD)



$$SSD = d_{pr} + d_M \quad (1)$$

$$= 0.278V_t + 0.039 \frac{V^2}{a} \quad (2)$$

where :

V = design speed, m/s

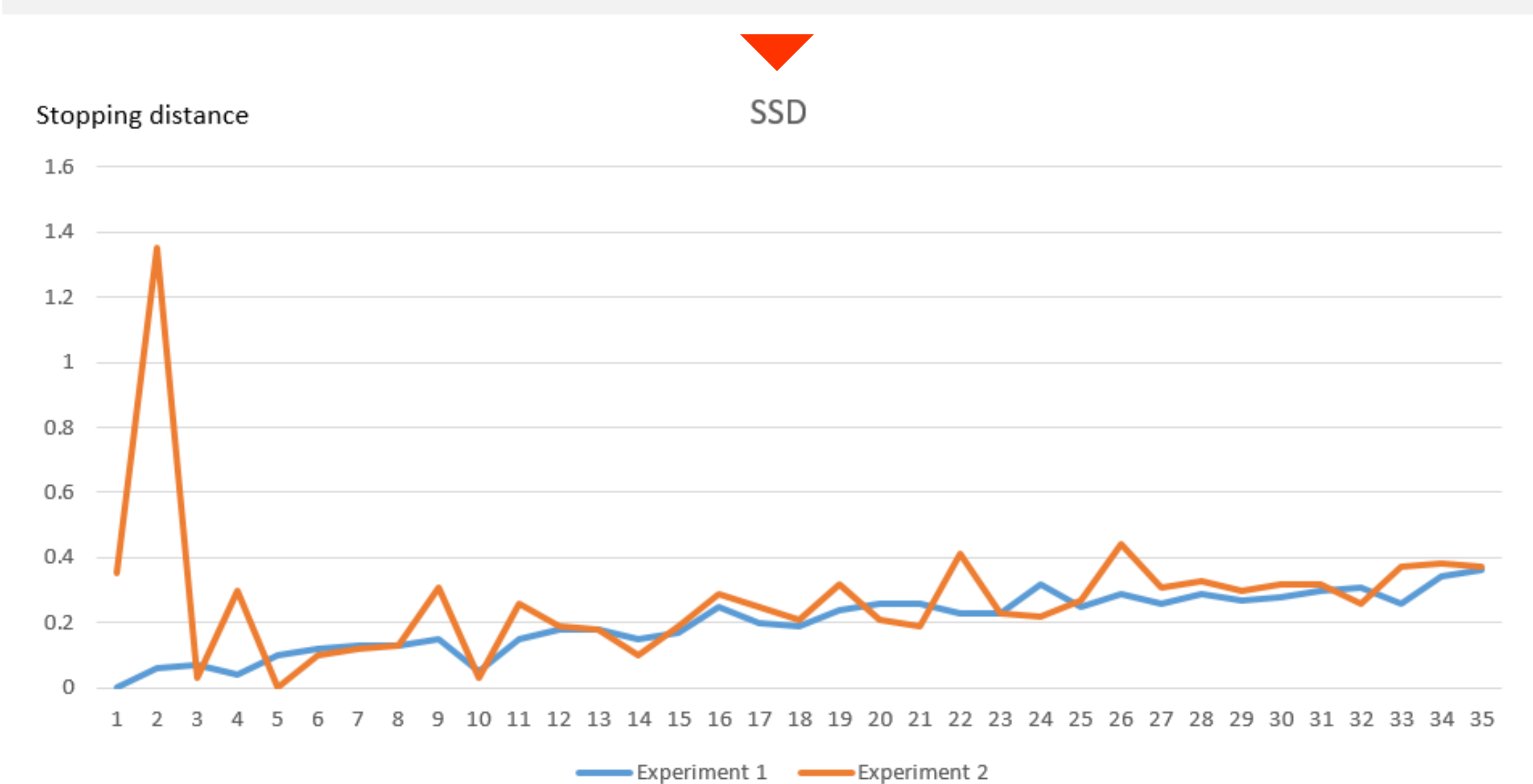
t = brake reaction time, 2.5sec,

a = deceleration rate, m/s²

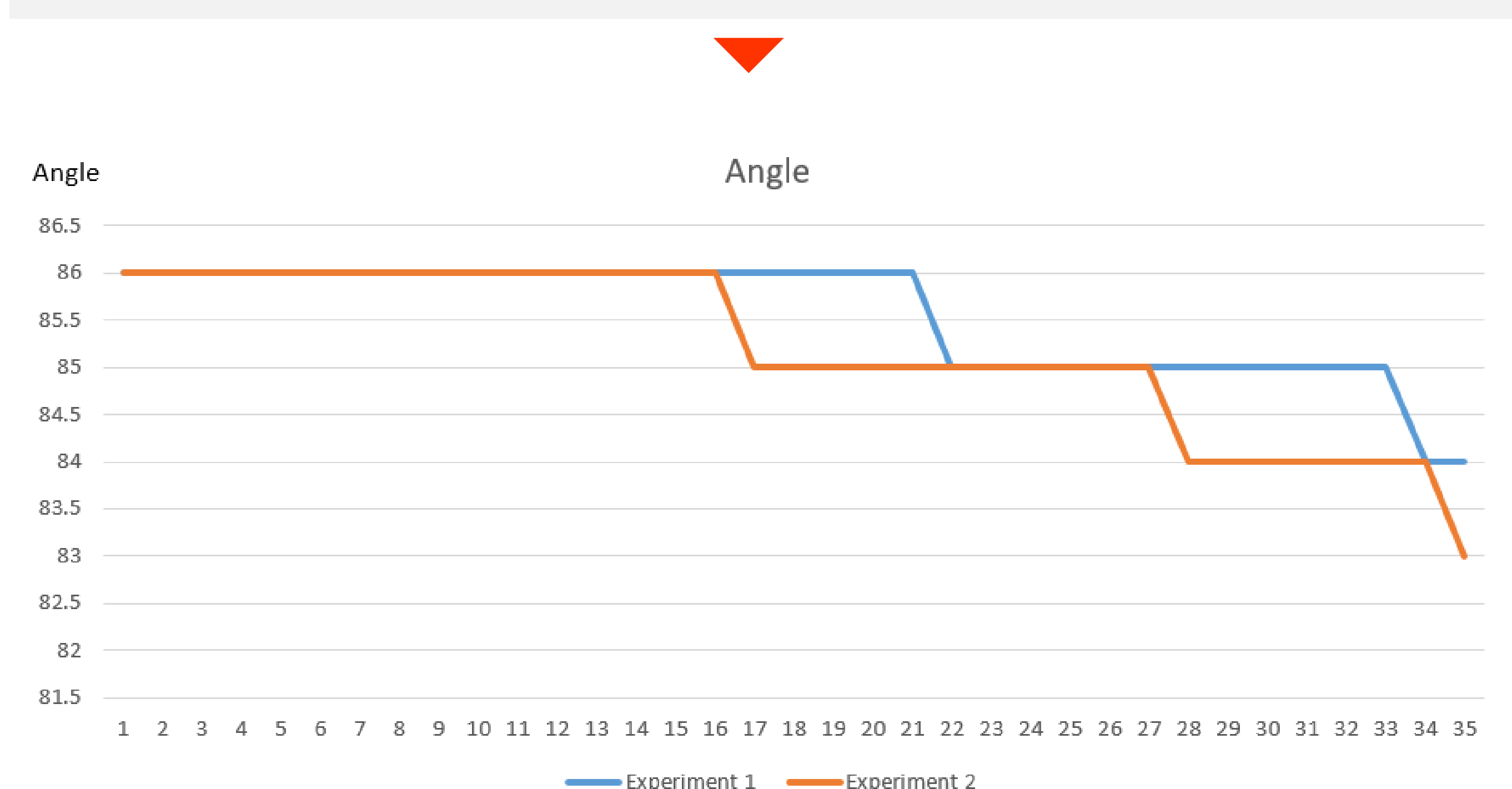
$$\theta = \tan^{-1} \frac{|D_1 - SSD|}{H_1}$$

Results

Experiment 1. Get Stopping Sight Distance



Experiment 2. Get an angle



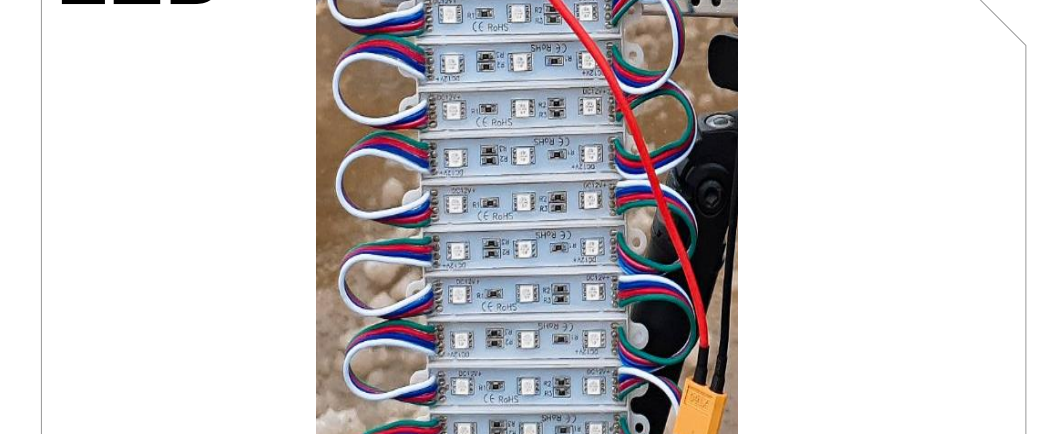
Conclusions

To solve Red Light Running

Laser pointer



LED



Reference

- Yuting Zhang, Xuedong Yan, Xiaoming Li, Jiawei Wu, and Vinayak V. Dixit. *International Journal of Environmental Research and Public Health*. "Red-Light-Running Crashes' Classification, Comparison, and Risk Analysis Based on General Estimates System (GES) Crash Database". Published June 4, 2018. Retrieved at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6025625>