ABSTRACT

The operational procedure says there is no car allowed to step into level crossing area when the gate is closed, if potentional crash hazard situation detected, the gateway guard will rise the flag and communicate the situation to headquarter to relay command to locomotive driver to stop the train. Response time for acquition until communication between guard and headquarter takes roughly 3 second, added with visual disturbance perceived by locomotive driver to see the flag makes the train braking process late and would be cause into the crash, whereas braking range needs 27.64% allowance to stop the train effectively.

Obstacle detection system consist of image processing, Raspberry pi and Lora Communication installed in city or suburban level crossing, this system designed as complementary of level crossing guard and low-cost product, and to reduce hazard detection and communication response time, as recorded the system can detect car crossing hazard with 89% success rate and successfully send the actual alarm message to Headquarter

Keywords :Raspberry Pi, Lora, Image Processing, Level Crossing