

PLC Based Automatic Railway Crossing System for India

Authors : Tapan Upadhyay, Aqib Siddiqui, Sameer Khan

Abstract : Railway crossing system in India is a manually operated level crossing system, either manned or unmanned. The main aim is to protect pedestrians and vehicles from colliding with trains, which pass at regular intervals, as India has the largest and busiest railway network. But because of human error and negligence, every year thousands of lives are lost due to accidents at railway crossings. To avoid this, we suggest a solution, by using Programmable Logical Controller (PLC) based automatic system, which will automatically control the barrier as well as roadblocks to stop people from crossing while security warning is given. Often people avoid security warning, and pass two-wheelers from beneath the barrier, while the train is at a distance away. This paper aims at reducing the fatality and accident rate by controlling barrier and roadblocks using sensors which sense the incoming train and vehicles and sends a signal to PLC. The PLC in return sends a signal to barrier and roadblocks. Once the train passes, the barrier and roadblocks retrieve back, and the passage is clear for vehicles and pedestrians to cross. PLC's are used because they are very flexible, cost effective, space efficient, reduces complexity and minimises errors. Supervisory Control And Data Acquisition (SCADA) is used to monitor the functioning.

Keywords : level crossing, PLC, sensors, SCADA

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020