069

Traffic Operational Simulation of Railroad Highway Crossing

Highway-Rail Grade crossing (HRGC) are intersections where a highway crosses a railroad at-grade. Crashes at highway-rail grade crossings can result in severe injuries and fatalities to vehicle occupants. Theses crashes are mostly due to traffic operation at HRGC. Providing advance features at HRGC signal systems that can improve the problem of queue formation, bottleneck, delays and blockage is therefore warranted. Research utilized Microsimulation for figuring out operations and conflicts at RHGC. Traffic simulation has proven to model detailed traffic behavior, ability to modify the model to incorporate intelligent transportation system (ITS) devices and ability to use hardware-in-the-loop (HIL) techniques to test traffic signal controllers. Research attempted to solve railroad safety and operational needs through simulation, by evaluating railroad preemption phasing that can provide extra green time, advance warning, queue mitigation. Behavior and operations of traffic when approaching intersections and Railroad-Highway Grade Crossing are coded to reflect real world scenarios and how they communicate with infrastructure.