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A Proactive Traffic Signal Control System Based on a Phase-time Network through an Open Computing Box Supplemental to Traffic Signal Controllers

AzTE Case #M16-104P

Background

Traffic signal control systems are inefficient for simulating traffic and constrain both research and development. Proposed traffic control systems require high computing power or physical replacement of hardware, which results in high manufacturing costs. Therefore, there is a need for a centralized traffic control system that quickly simulates traffic flow and permits remote update.

Invention Description

Researchers at ASU have developed a proactive traffic light control system that provides quick simulation and permits hardware and software updates. The system uses external hardware programming code and adaptive signal control, providing more flexibility for implementing control logic. Furthermore, the signal control system supports traffic simulation in real-time. In effect, the innovative system centralizes and streamlines traffic light control, simplifying research and stimulating development.

Potential Applications

- Traffic Control Systems
- Simulation Software
- Aerospace and Computer Network Management

Benefits and Advantages

- **Centralized Architecture** – The architecture provides rapid, real-time simulation for different traffic configurations to better provide an optimal light sequence
- **Innovative** –
 - o The framework permits retrofitting software to incorporate buses, pedestrians, and bikers
 - o With a reliable, low-latency network connection, the system can support remote access and control of the system, sustaining future development

Intellectual Property Status:

Pending

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