

Intelligent Transportation Systems



Centrally controlled traffic signal intersections improve the efficiency of vehicle movement through a city, keeping a steady state of traffic and maintaining minimal wait times at signals. Intelligent Transportation Systems collect information at signals, correlating real-time data and automatically regulating citywide traffic.

BENEFITS

- ❖ Reduces traffic congestion and improves traffic flow
- ❖ Reduces accident incidences
- ❖ Lowers vehicle emissions
- ❖ Enables real-time signal timing coordination
- ❖ Citywide information dissemination on transit schedules, accidents, and other traffic conditions

Improving Traffic Flow

Traffic signals affect us daily as we travel to and from work, school, shopping, and around town. As cities grapple with ever increasing traffic congestion on city streets, intelligent signals have been proven to have a significant impact on the safety and efficiency of drivers and vehicles.

Key benefits of Intelligent Transportation Systems

- ❖ Optimized timing of signals improves air quality, reduces fuel consumption, decreases traffic congestion
- ❖ Effective retiming of signals reduces aggressive driving behavior and as a result the number of severe accidents
- ❖ Enables on-demand changes to traffic signal timing as communities grow and traffic patterns change due to school schedules, special events, etc.
- ❖ Detection of approaching transit vehicles to alter signal timings, improving transit schedule performance
- ❖ Communicates city vehicles' transit times all around the city and over the Internet so passengers are better informed about service schedules
- ❖ Supports high bandwidth video applications that are used for passenger analytics, and video surveillance, red light runner detection, etc.

ITS applications which can also run over the wireless broadband network include highway advisory signs, emergency evacuation, speed limit enforcement, fleet management, dynamic scheduling, lane management, accident management and highway traffic reports.

"We used to rely on phone lines to monitor and transmit traffic information. By owning the network infrastructure, Tucson is now saving approximately \$200,000 per year in telecommunication fees and also taking advantage of video transmission which was not possible using phone lines."

Francisco Leyva
Project Manager, Tucson Transportation Department

Multi-use Network

Tropos' wireless broadband network solutions provide a reliable and secure foundation for delivery of multiple simultaneous applications on the same cost-effective physical infrastructure. A single network can be designed to securely support a range of municipal applications.

- ❖ **Mobile public safety** — Enabling police, fire and emergency service personnel to effectively communicate and obtain real-time video and data from the field.
- ❖ **Utility meter reading** — Centralized monitoring of water, electric and gas meters, providing fast alerts to problems and accurate meter readings any time.
- ❖ **Mobile city workforce** — Allows fast, easy access to records and filing of reports from anywhere around town, improving worker efficiency and productivity



Tropos MetroMesh Solution Partners

- ❖ **Novax**

Tropos Technology Differentiators

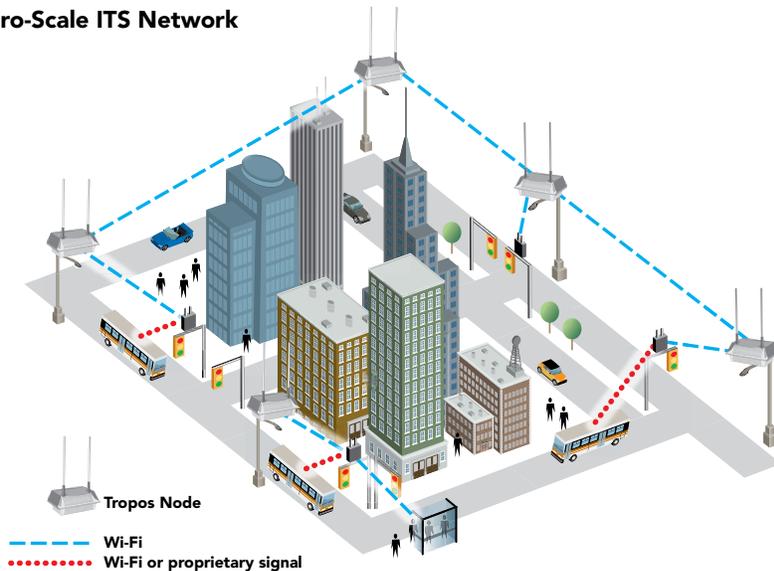
- ❖ **System Scalability** – One, two or three radios
- ❖ **Flexibility** – Fixed and mobile radios
- ❖ **Reliability** – Always-on dual redundant paths
- ❖ **Dynamic Routing** – IP, RF and multicast
- ❖ **Mobility** – Seamless handoff without session disconnect

Intelligent Transportation Systems Building Blocks

Intelligent signal coordination based on real time traffic statistics is an integral part of an intelligent transportation system solution. Traffic signal controllers collect information from sensors that measure vehicle speed, traffic profiles, pre-emption alarms, and other traffic related information. The delay sensitive field data is communicated over a reliable Tropos wireless broadband network to the back office for correlation and analysis. Data received from various sensors run through sophisticated algorithms sending information back to the controllers over the Wi-Fi network.

Additionally, the Tropos mobile router offers the ability to outfit city transit vehicles with Wi-Fi so they can transmit location information, transit time and delays to the central office, while also offering Wi-Fi access to commuters.

Tropos Metro-Scale ITS Network



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