EMTRAC

Transit Signal Priority (TSP) System

The EMTRAC system utilizes reliable positioning technology and secure frequency-hopping spread spectrum radio to enable mass transit vehicles to request priority through signalized intersections.

Vehicles with the EMTRAC system transmit a priority request to equipped intersections when passing through detection zones. The traffic cabinet at the intersection contains an EMTRAC Priority Detector, which relays the priority request call to the traffic controller.

EMTRAC is completely automatic and requires no driver interaction. In addition, EMTRAC can be configured to allow priority control based on time of day, route-schedule adherence, passenger load, direction traveled, or other factors.

EMTRAC Vehicle Computer Unit

EMTRAC Priority Detector

EMTRAC Priority Control Performance

Municipalities and transit agencies have reported the following benefits using the EMTRAC system:

- **Santa Clara, California**: Valley Transportation Authority buses receiving signal priority traveled 18.4 percent faster than those without priority. Further, buses receiving priority using the EMTRAC system traveled 23 percent faster than those without priority.
- **Washington DC**: Bus journey times decreased by an average of 20 to 22 percent.
- **Brampton, Ontario**: Currently installing the first adaptive ETA signal priority system in North America. This system will not interfere with signal coordination.

EMTRAC TSP Capabilities

- **Adaptive Priority**: Request priority based on any number of predetermined conditions, such as amount of time behind schedule, current traffic conditions, door status, passenger load, and more.
- **Bus Rapid Transit (BRT)**: Take full advantage of BRT benefits by utilizing lane-specific actuated priority, near and far-side priority calls, and roadway access gates.
- **Central Monitoring**: EMTRAC software enables monitoring personnel to see real-time vehicle and intersection activity on a map display, as well as in detailed activity logs.
- **Flexibility**: The same EMTRAC equipment is used for transit and first response applications, offering a cost advantage that may be shared by multiple agencies.
- **Precision Positioning**: Utilizes the latest satellite and inertial technology to ensure location accuracy and reliability, even in difficult environments such as tunnels.

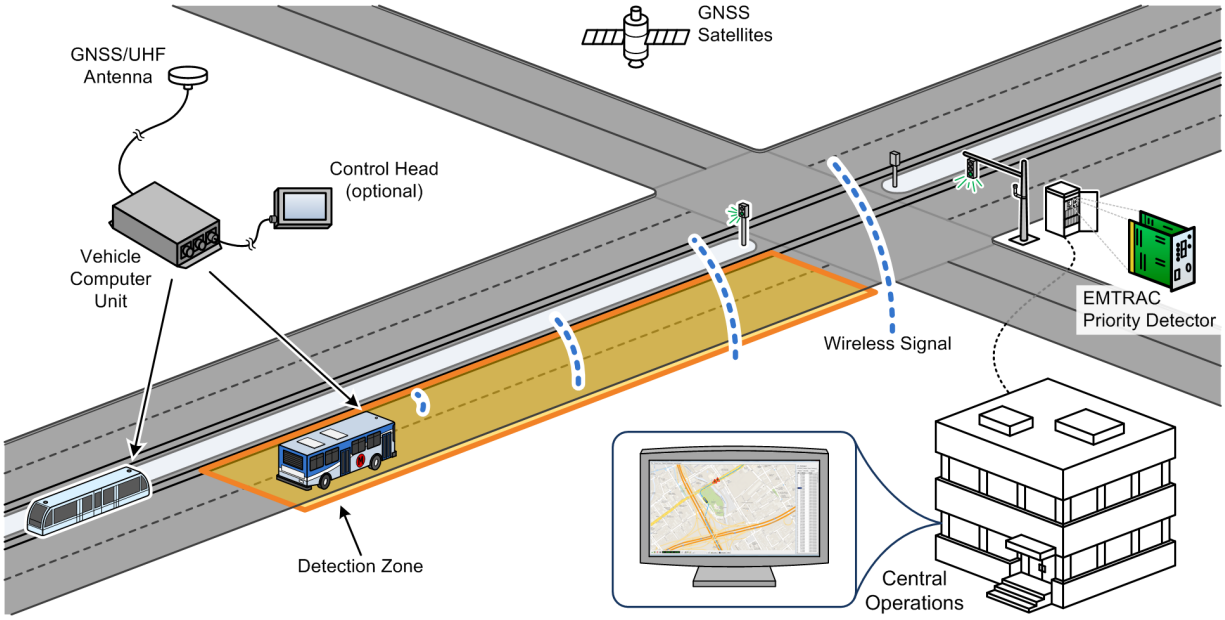

Illustration of Bicycle-Detection Components and Functionality

EMTRAC Components

- **Vehicle Computer Unit**: Compact, yet rugged, enclosure is easily concealed behind interior panels. It utilizes secure 900 MHz radio to enable both vehicle-to-intersection and vehicle-to-vehicle communication.
- **Combo GNSS/UHF Antenna**: Low-profile antenna mounts on the top of the vehicles.
- **Priority Detector**: Installed in wayside cabinets, this unit is available in either a rack-mount version (for Model 170 controllers) or a shelf-mount version (for NEMA controllers).
- **Omni-Directional Antenna**: Mounts on a traffic pole (or traffic cabinet) at each equipped intersection and is available in multiple configurations.
- **Control Head (optional)**: Cab-mounted component notifies the operator of current system status or when there is an immediate safety issue to address.