EMTRAC

Rail Worker Safety System

About the EMTRAC System

As the number of rail lines through metro areas increases, so does the potential for pedestrian accidents—and wayside rail workers are often in the most vulnerable locations.

By utilizing precise satellite positioning and secure frequency-hopping spread spectrum radio, the EMTRAC Personal Notification Unit (PNU) alerts rail workers when an approaching train is within a specified distance. When the train reaches this distance, the PNU flashes an ultra-bright LED, sounds a pulsed alarm, and/or vibrates to alert the worker of the approaching train.

Personal Notification Unit (PNU)

The PNU may be carried on a belt or in a vest pocket and includes precision multi-constellation satellite and inertial navigation, a UHF transceiver, and a panic button that enables workers to notify team members of critical situations.

Each PNU has its own ID, which may be assigned based on worker IDs. The PNU logs worker activity, alert details, and the ID and speed of approaching trains.

Alerts may also be customized to activate based on the Estimated Time of Arrival (for the train to reach the worker).

The PNUs ship with charging components and contain a 12-hour lithium-ion rechargeable battery to ensure reliable operation through work shifts.

Personal Notification Unit (PNU)
other case styles available
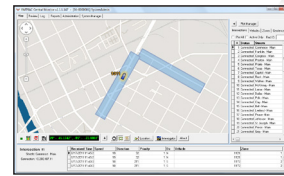
Additional EMTRAC System Components

Vehicle Computer Unit & Antenna

Vehicle Control Head

Wayside Detector
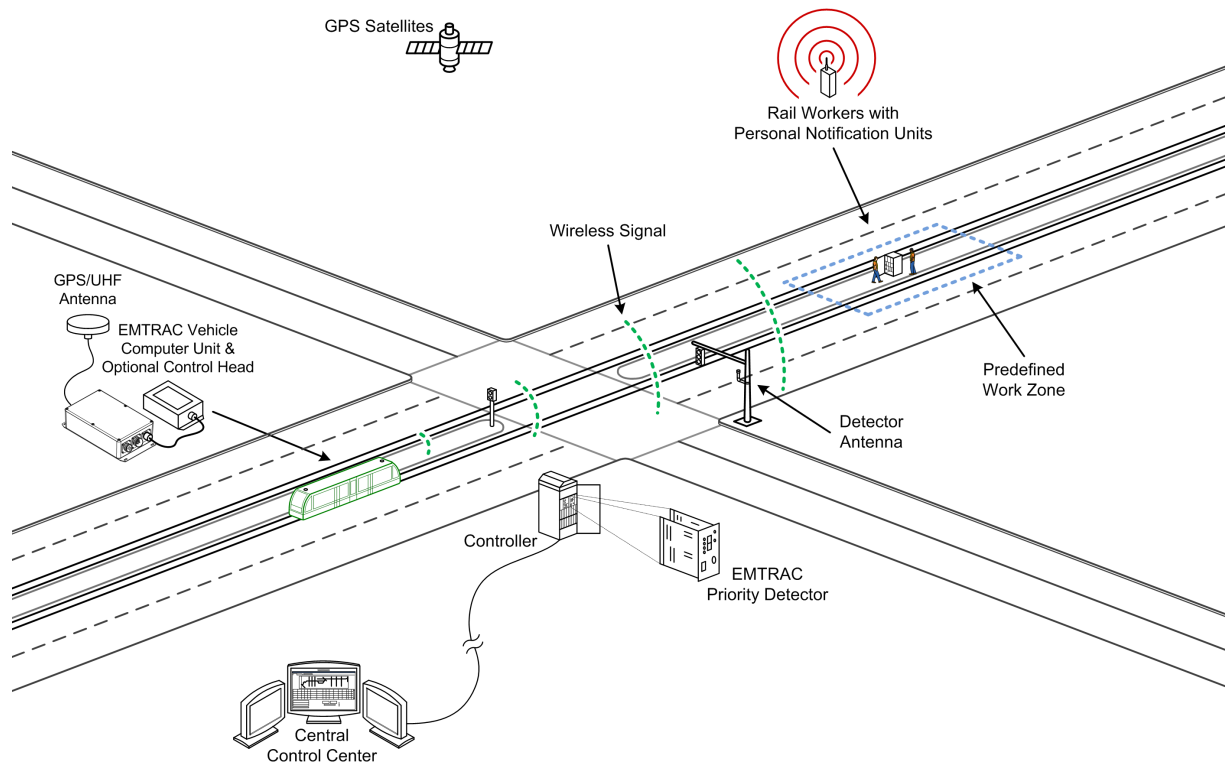

Central Monitor Software

Vehicle Computer Unit (VCU): On-board unit tracks real-time vehicle location, transmits approaching-vehicle alerts, and stores activity logs. Among other functions, the VCU can transmit TSP requests.

Vehicle Control Head: Cab-mounted unit displays real-time activity data and alerts train operators upon detecting PNUs.

Wayside Detector (optional): Network-connected dual-card unit, installed in wayside cabinets, forwards real-time vehicle and worker activity to central locations running the EMTRAC Central Monitor software.

Central Monitor Software: Installed on server and workstations at operations centers to display real-time vehicle and worker activity, retrieve activity logs, program updates, and configure system settings.

EMTRAC Interrogator (not shown): Network-connected unit installed at charging stations automatically downloads activity logs and uploads firmware or database updates.

GPS Satellites

Rail Workers with Personal Notification Units

Wireless Signal

GPS/UHF Antenna

EMTRAC Vehicle Computer Unit & Optional Control Head

Predefined Work Zone

Detector Antenna

Controller

EMTRAC Priority Detector

Central Control Center

About EMTRAC

EMTRAC equipment is proven for not only rail applications, but in support of Transit Signal Priority (TSP), Emergency Vehicle Preemption (EVP), and other municipal applications. For more information about how the EMTRAC Systems can help improve safety for your agency, please contact us for a presentation or for an on-site demonstration.