Eliminator™

Where Science & Safety Intersect

Distributed *exclusively* in Indiana by MGI Traffic

317-835-9212
Two technologies, one platform: same price

- **Preemption**
  - Occurs up to a maximum distance of one mile (distance is programmable)
  - Traffic signals recognize the emergency vehicle and turn green in its direction of travel

- **Collision Avoidance**
  - Warns equipped Emergency Vehicles of an impending collision
  - Audible alarm & Flashing LED light
  - Other preemption systems do not have this feature
Existing preemption technologies

- Optical
- Acoustic
- GPS
- Radio
Optical

- Preempts traffic signals:
  - Using an infra-red optical "emitter" or strobe
  - Under ideal conditions (line of sight)
Optical - Advantages

- Cost effective
Drawbacks - Optical

- Preempts traffic signals:
  - Works only under ideal conditions (line of sight)
  - Requires four receivers at a typical intersection (greater installation cost)
  - Reliability is susceptible to visual obstructions
  - Can be “blinded” by direct sunlight
  - Maintenance requirements are large (realignment due to winds, cleaning due to dust)
  - Locks up traffic signals unless disengaged
  - Susceptible to pirating
Acoustic

- Use EV siren as the “emitter”
- Siren must attain decibel level of 1,200 db.
- Requires four directional microphones for typical intersections

Directional Microphone showing two (2) approaches
Advantages of acoustic preemption

• Use EV siren as the “emitter”
• Makes this the most cost effective preemption solution (emitter is already “built in”)

Drawbacks - Acoustic

- Siren must attain decibel level of 1,200 dB.
- Requires four directional microphones for typical intersections (installation is 4 times more time consuming)
- Reliability is susceptible to:
  - reflected waves
  - ambient noise
  - Loud (1200dB) car/truck horns
GPS

- System creates preemption “zones” (rectangles) at each approach to the intersection.

- When the system determines that an EV has entered the preemption “zone” prior to each intersection, it preempts the traffic signal.
Advantages - GPS

• Overcomes the reliability problems of acoustic and optical preemption systems.
Drawbacks - GPS

- The GPS technology platform has it’s own inherent limitations:
  - System requires huge “learning curve” – each vehicle and intersection must be “taught”. Process can take several weeks to several months to fine tune.
  - Requires separate “traffic management software” package.
  - Requires satellite triangulation – reliability is compromised unless immediate satellite triangulation is constantly maintained. “Dish TV” or “Tom-tom” users are probably already aware that system is “blind” when triangulation is lost. Reacquisition time is considerable exiting firehouse.
Radio

• Uses a built in compass to determine it’s direction of travel.
• Relays that information to the traffic signal to initiate preemption.
Drawbacks - Radio

• Radio Interference: Anything else operating on the same frequency can compromise communication with the traffic signal.
Until now


Intelligently hops around any radio interference present.
• Does not require constant satellite triangulation as do GPS systems
• Only one omni-directional antenna needed per intersection
• Variable power lets operator adjust between high and low settings “on the fly”
• Overcomes all limitations of:
  – Optical systems
  – Acoustical systems
  – GPS systems
Eliminator™

- Preempts traffic signals:
  - Under adverse weather conditions
  - Reliably in heavy fog/snow/rain/dust
  - Through obstructions: buildings, buses, semis, foliage, bridges
  - Around curves in roadway
- Does not require realignment after heavy winds
- Provides 360° protection against collision with other emergency vehicles; even at unsignalized intersections
- Supports software encryption to thwart “pirating”
- Cannot be “blinded” by direct sunlight
Collision Avoidance

- Gives advanced warning (both audible and visual) of impending collisions before they occur
- Can calculate and display multiple impending collisions simultaneously
- Shows the direction of the impending collision with an accuracy of $\pm 4\frac{1}{2}$ degrees
- “Tells” you audibly from what direction the collision will impend
- Resolves conflicts at signalized intersections
- Indicates potential collisions even at unsignalized intersections
Collision Avoidance

• Why is collision avoidance important?
• Nearly half (40%) of all firefighter fatalities occur enroute to the scene.
• Even when Opticom was in use in St. Louis, the following collision injured 7 firefighters.