ELIMINATOR™

BY COLLISION CONTROL COMMUNICATIONS

*THE ONLY PATENTED COLLISION AVOIDANCE SYSTEM ON THE MARKET**

OB TRAFFIC

GPS INTERSECTION SYSTEM EQUIPMENT

Getting emergency responders to the scene quickly and safely

Description

The Eliminator GPS Traffic Signal Preemption and Collision Avoidance System enables authorized vehicles to preempt equipped intersections, thereby providing them temporary right-of-way via common traffic controller functions. It simultaneously gives collision avoidance warnings of impending collisions with other similarly equipped authorized vehicles.

How it works

The Eliminator GPS Vehicle System equipment is installed in the authorized vehicle. Its GPS receiver obtains information from the constellation of global positioning satellites. In event GPS triangulation is unreliable, the Eliminator Inertial Measurement Unit (IMU) takes over. This information is used to compute the location, speed and heading of the vehicle. This information, along with a priority request, vehicle class, vehicle ID and the status of various vehicle systems (turn signal, light bar, parking brake, etc.) are securely transmitted to nearby intersections (V2I) and similarly equipped vehicles (V2V). This information is transmitted using the Industrial, Science and Medical (900 MHz FHSS) band and is updated and rebroadcast multiple times per second. The Eliminator intersection equipment receives this information and determines at what point the preemption sequence will commence according to parameters that are set in the controller such as minimum pedestrian clearance time, intersection flush time, minimum green time in opposing directions, etc. The intersection equipment can make this determination based on the Estimated Time of Arrival (ETA) of the vehicle or upon whether or not the authorized vehicle has entered the appropriate geo-window corresponding to its approach.

Intersections can be configured separately or globally, if desired. When all parameters are satisfied the corresponding phase selector output is activated. This output is connected to the traffic controller which cycles to grant the green light to the appropriate direction, or holds the green allowing the vehicle(s) to pass through the intersection. Other equipped vehicles also receive information regarding the vehicle's location, speed, heading, priority request, vehicle class, vehicle ID and vehicle system status and, if the vehicles are calculated to cross paths within a narrow collision "window" (5 seconds for example), then each vehicle (equipped with a GUI) receives a collision avoidance alert, a red circle is drawn around the offending vehicle(s) and the time to collision with each is displayed on a countdown clock. The collision avoidance "window" can be individually configured for each vehicle, or done globally if desired.

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Intersection System Features

- All Preemption configuration information is stored at the traffic signal units (e.g. ETA settings and Geowindows). When changes are made no vehicle updates are needed
- Four channels of detection
- "First-come, first-served" priority within each priority level
- Turn signal status automatically relayed to nearby traffic signals, allowing for quicker reaction (including "flush times") at neighboring intersections before turn is made
- RJ45 Jack
- Cellular connectivity is not required (avoiding monthly fees)
- Transceivers are fully FCC licensed and FCC Part 15 compliant
- No GPS receiver is required at the intersection
- System can be managed from a vehicle unit or a laptop with a USB radio, or direct connection via RJ45 jack
- Configuration and software stored on removable module
- Vehicles from nearby jurisdictions may be included (for multi-jurisdictional interoperability) or excluded, if desired
- Many advanced configuration options:
    - Preemption setting by department/vehicle type with overrides
    - Different ETA or Geowindows may be configured for each approach
    - Up to 16 Geowindows per approach
    - Approach angles are used for ETA and Geowindows
    - Approach angle cones are configurable at two distances
- Works reliably under adverse weather conditions (heavy fog, snow, rain, dust).
- FHSS encrypted radio transmissions avoid pirating and interference
- Logs are easily exported wirelessly or via RJ45 jack
- Logs are exported from database in a very simple, easy to understand CSV format

Intersection Equipment

1. EliminatorTM Model 830 GPS 4 Channel Phase Selector
    a. Length: 6.50 in; 16.51 cm
    b. Width: 2.50 in; 7.62 cm
    c. Height: 4.50 in; 11.43 cm
    d. Weight: 1.20 lb; 544 g

2. EliminatorTM Model 3300 900 MHz Frequency Hopping Spread Spectrum (FHSS) Radio Antenna Box
    a. Length: 2.50 in; 6.35 cm
    b. Width: 4.50 in; 11.43 cm
    c. Height: 6.00 in; 15.24 cm
    d. Weight: 0.40 lb; 181 g

3. EliminatorTM Model 1300 GPS Pole Cable
    a. Length: 100 ft; 30.48 m
    b. Diameter: 0.25 inches; 6.35 mm
    c. Weight: 4.00 lb; 1810 g

Operating Parameters

- Voltage: 120V AC
- Temperature -34 C to + 74 C (-30 F to + 165 F)
- Humidity: 5% to 95% relative
- Unobstructed transmission distance: two (2) miles
- NEMA TS-2 compliant
- FCC certified
- CE certified

ADVANTAGES	THE ELIMINATOR	THE COMPETITOR
Interactive, touch screen graphic user interface	✓	✗
Collision Avoidance	✓	✗
GPS supported by Inertial Measurement Unit	✓	✗
Touch Screen Graphical User Interface	✓	✗
Operates without GPS signal	✓	✗
Easy Installation	✓	✗
Significantly less expensive than comparable systems	✓	✗
Collision avoidance can be turned on or off on all models	✓	✗
MULTIPLE SCREEN OPTIONS	**THE ELIMINATOR**	**THE COMPETITOR**
No screen option with toggle switch for preemption	✓	✗
7" Screen	✓	✗
4" Screen	✓	✗
Color-blind friendly system & screen	✓	✗
Can use existing Laptop/Tablet as the screen	✓	✗
Can send information to CAD (Computer Aided Dispatch) system	✓	✗

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