

How does it work?

The ATMA follows a leader vehicle which transmits high-accuracy position, speed, heading. The ATMA matches leader's movements using steering, throttle, brake actuators. A front mounted radar on the ATMA provides obstacle detection.

The system was developed as a collaboration between Kratos Defense and Security Solutions and Royal Truck and Equipment Inc. It has been successfully field deployed in Colorado.

Why look into this?

TMA's are designed to deflect vehicles and get hit repeatedly, putting their drivers at a greater risk of being involved in a crash. ATMA's harness self-driving technology to eliminate the need for a driver in the vehicle, taking them out of harm's way while still effectively protecting roadside workers.

Equipment Retrofit?

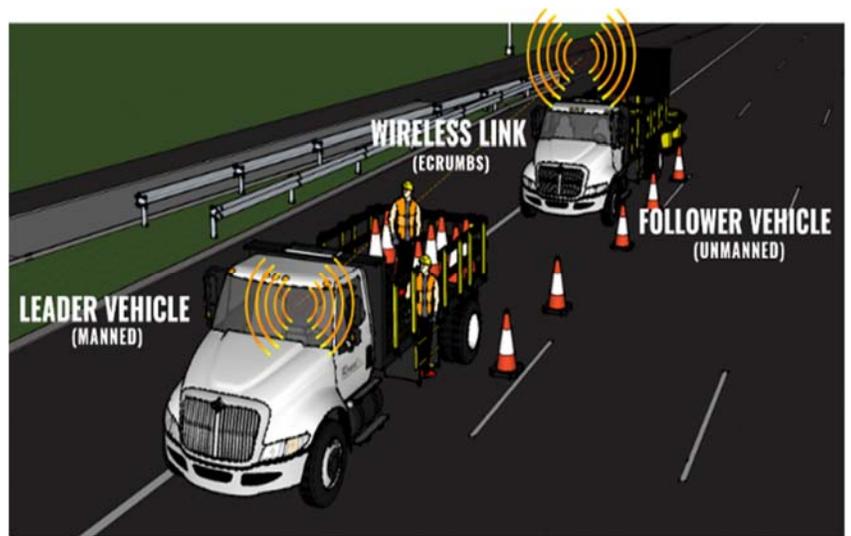
The leader vehicles require installation of communications and GPS antennae, control module and emergency stop controls. The follower vehicle systems come pre-installed on purchased vehicle but can also be retrofitted into existing TMA's.

What else can this be adapted to?

Mostly slow moving (7mph to 15mph) operations. The paint truck is particularly well suited for testing purposes due to presence of a "dog house" in the rear which helps provide a redundant level of human oversight. In the future, this technology could be adapted to sweeping, mowing, weed spraying, setting traffic control and installing Raised Pavement Markers (RPM's).

What to watch for?

Constant Gap – The gap between the lead vehicle and the follower vehicle. Is it adjustable in the field?



Traffic Signals – If the lead vehicle goes through an intersection during a yellow/all red interval, will the follower vehicle follow and proceed, even on red, or stop?

Turn Signal Activation – Does the follower vehicle's turn signal activate simultaneously with the lead vehicle's turn signal?

Radar Around Corners – How does the system behave around tight corners? Does the follower vehicle read the lead vehicle as an obstacle and activate emergency stop?

GPS Denied Environments – Does the system work in environments with no GPS signals and under overpasses or in tunnels?

Maintenance – What are the maintenance requirements? Will the system require on-going software maintenance along with regular equipment maintenance?

What's next?

This technology is still under-going some enhancements. California and Missouri are actively considering bringing it to their respective DOT's. Colorado DOT is seeking other states to participate in a Pooled Fund study of the technology, and Maryland DOT is engaging.