

REGULATORY JUSTIFICATION BRIEF

For DOT, FMCSA, FHWA, and NHTSA Review

Regulatory Justification Brief

IMAMS Intelligent Motorist Alert Messaging System

1. Purpose

This brief outlines the regulatory justification for adopting IMAMS as a recognized alternative to physical warning devices required under **49 CFR 392.22(b)(2)** for disabled commercial motor vehicles.

2. Background

49 CFR 392.22(b)(2) requires three warning devices (reflective triangles, flares, or lamps) to be physically placed beside and behind a disabled truck.

Challenges:

- **Autonomous trucks cannot deploy physical markers** without a human operator.
 - **Drivers are put at risk** when exiting the vehicle on high-speed roadways.
 - Physical markers offer **limited visibility**, especially on curves, hills, and low-light conditions.
 - **Proposed Strobe lights** by AV companies don't adequately address the issue, provides no clear direct messaging and has far fewer safety features than the IMAMS Emergency Alert Messenger.
-

3. IMAMS System Description

IMAMS integrates a high-mounted LED display capable of showing:

- **Alert/ Move Over / Slow Down/ Disable Vehicle** directional safety warnings
- **Disabled vehicle ahead** alerts
- **Crash ahead** warnings
- **Rear End Collision Alerts**
- **High-Mount 3rd Brake light**
- **High-mount Directive Turn Arrows**
- **Rear View Camera, Backup Beeper**
- **Environmental Sensor**
- **DOT-authorized alerts** (Amber Alerts, weather warnings, road closures)

- **Automatic activation upon roadside disablement**
 - **GPS-enabled location reporting**
 - **4G Communications**
 - **Visibility is far greater than low-elevation triangles**
 - **Can be quickly adopted across all fleets and supported with simple ads revenue incentive**
-

4. Regulatory Alignment

4.1 Meets the Intent of 49 CFR 392.22

The purpose of the regulation is to:

- Warn approaching motorists
- Prevent secondary crashes
- Increase disabled vehicle conspicuity

IMAMS exceeds these criteria by providing:

- Immediate activation (no 10-minute deployment delay)
- Elevated “line of sight” visibility hundreds of feet earlier
- Dynamic arrows, clear directive messaging
- Automatic detection and activation (for AVs)

4.2 Supports FMCSA Safety Priorities

- Reduces driver exposure in dangerous roadside conditions
- Increases advance warning time for motorists
- Aligns with FMCSA’s Connected Vehicle initiatives

4.3 Supports NHTSA Crash Mitigation Standards

- Enhances rear conspicuity
- Reduces multi-vehicle pileups
- Provides automated crash-ahead warning integrated with onboard sensors

4.4 Enhances DOT Public Safety Messaging

IMAMS can relay:

- Amber Alerts
- Severe weather alerts
- Road closures
- Travel advisories

This aligns with DOT intelligent transportation systems (ITS) objectives.

5. Autonomous Vehicle Readiness

AV fleet companies cannot fully deploy driverless trucks without an alternative to physical warning triangles. Limited high-mount strobe lights lack clear direction to motorist leaving them unclear what action they need to take to stay safe..

IMAMS enables:

- Fully autonomous roadside safety compliance
- Instant directive messaging without human involvement
- Integration with AV sensor outputs

This accelerates the responsible deployment of AV commercial trucks.

6. Retrofit Potential

The system can be installed on existing fleets to enhance safety and reduce fatalities, complementing FMCSA's ongoing crash-reduction initiatives. Connects to 7-pin wiring junction box.

7. Conclusion

IMAMS provides a technologically superior, automated, and safer alternative to traditional emergency warning devices required under 49 CFR 392.22(b)(2), or proposed strobe lights. Adoption or pilot approval by FMCSA and DOT would:

- Increase roadway safety
- Reduce driver injuries and fatalities
- Advance autonomous vehicle safety standards
- Support modern, digital intelligent transportation systems