



# THE NEXT GENERATION OF SAFETY

The World's 1<sup>st</sup> Autonomous TMA Truck

# THERE ARE 764 DEATHS PER YEAR IN WORK ZONES

Source: Fatality Analysis Reporting System (FARS) 2016 ARF, NHTSA



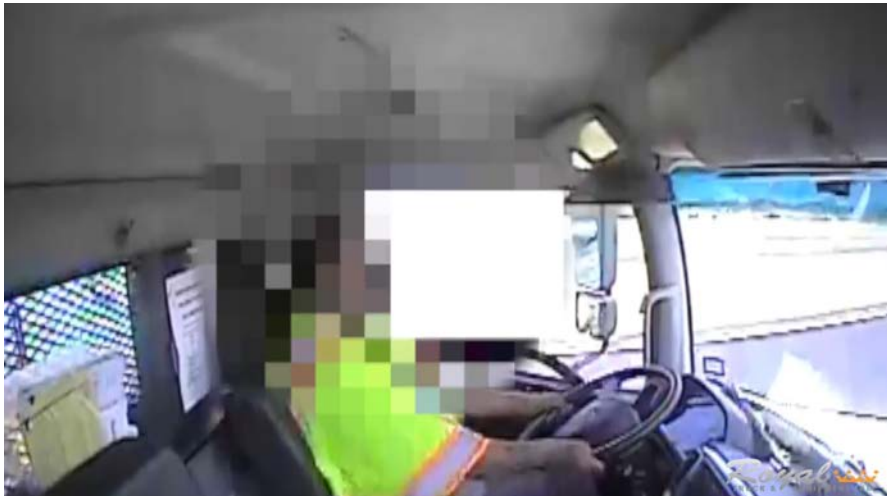
# TOP 3 REASONS TO REMOVE A TMA TRUCK DRIVER



#1 Save the driver from injury or death

#2 Remove human instinct

#3 Remove human error





# TOP THREE TMA TRUCK BEST PRACTICES



# AUTONOMOUS TMA TRUCK **BENEFITS**

- ✓ Increase Safety For Workers
- ✓ Cost Reductions
- ✓ Safer Work Site
- ✓ Work Zone Optimization
- ✓ Use For Rolling Operations





# TWO CURRENT PROGRAMS USING THE NEW TECHNOLOGY

Colorado Department of Transportation | Fort Collins, CO



Colas Ltd. | London, UK



AFTER 2000 MILES OF TESTING – NOW IN OPERATION!

**Royal**  
TRUCK & EQUIPMENT INC.

**KRATOS**  
DEFENSE & SECURITY SOLUTIONS  
FROM STRENGTH TO SUCCESS™

# ATMA LEADER/FOLLOWER SYSTEM – HOW IT WORKS!

## Leader Vehicle Kit



Operator Control Unit



Vehicle Control Module



GPS & Datalink Antenna

## INSTALLATION



Steering Actuator



Brake/Accel. Actuators



GPS Antenna



Obstacle Detection



Operator Control Unit



Vehicle Control Module



E-Stop



Datalink Antenna



# ROYAL NEXTGEN ATMA SYSTEM 2019



## ADDED CAPABILITIES

- Advanced Navigation: Dead Reckoning for GPS denied environments
- Side View Obstacle Detection
- System Redundancy: Navigation, Obstacle Detection and Radios
- V2V Communications: Encrypted and Frequency Hopping
- Advanced User interface

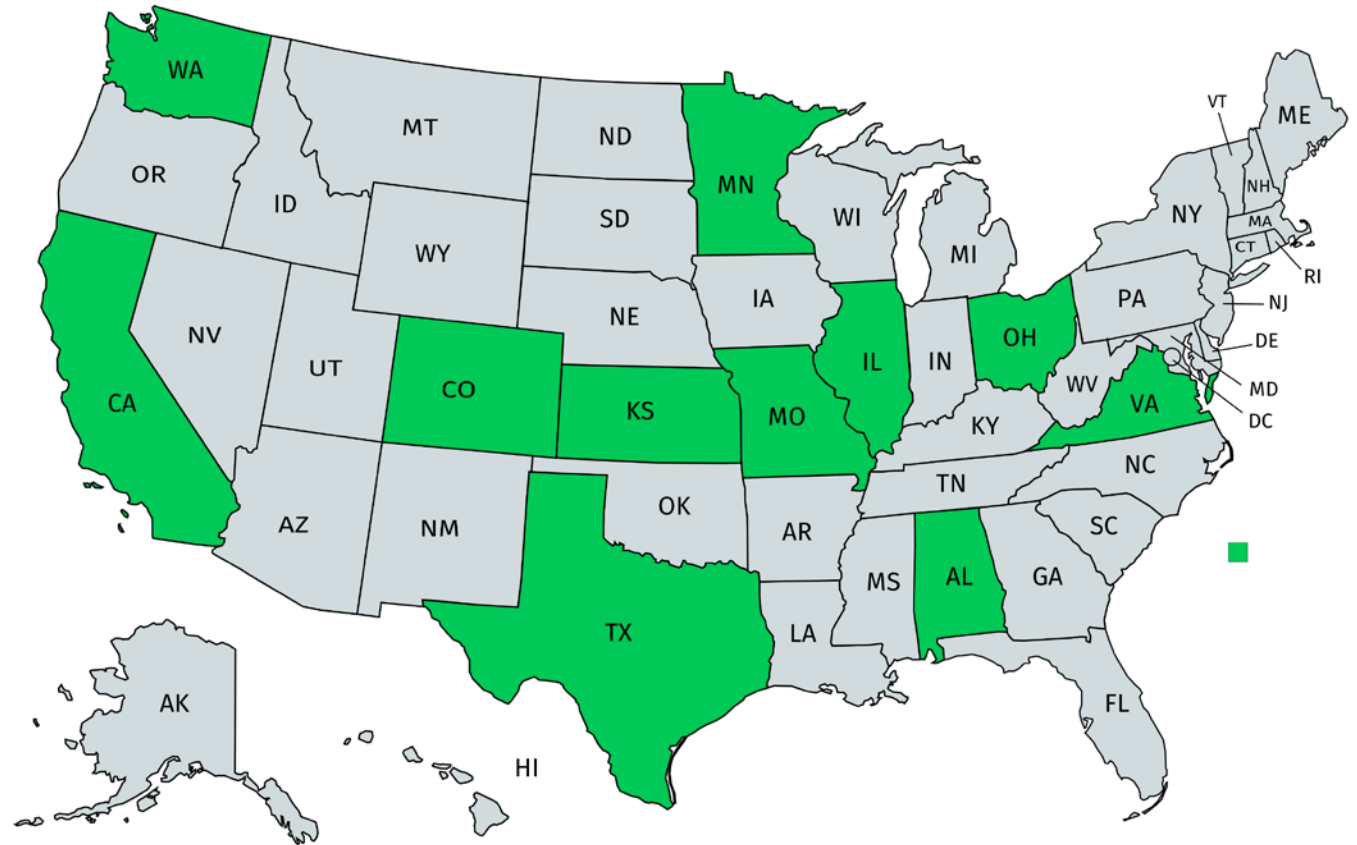


# POOLED FUND PROGRAM PARTICIPATION 11 STATES

## SCOPE OF WORK

The group will fund research and development efforts to achieve the program goals, with initial proposed research focusing on:

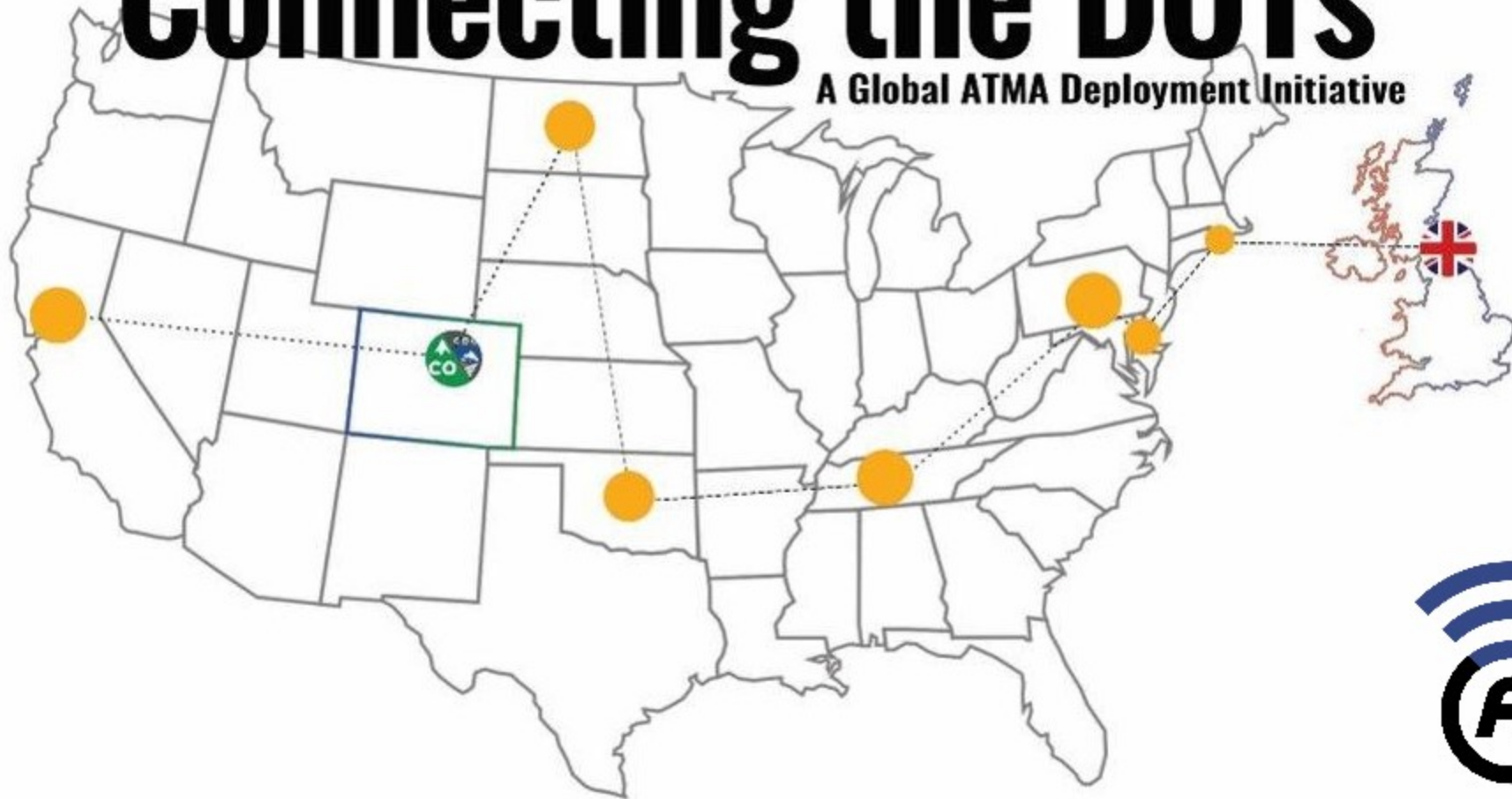
- Improvements on existing ATMA/AIPV platforms (Autonomous Truck Mounted Attenuator/Impact Protection Vehicle)
- Expansion of use of ATMA/AIPV platforms beyond striping  
Refining policy and operational procedures for autonomous work vehicles.
- Investigate additional applications for autonomous vehicles in maintenance operations
- Other New Technology



AUTONOMOUS REGULATION CHANGES WILL **SAVE** LIVES

# Connecting the DOTs™

A Global ATMA Deployment Initiative





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# THANK YOU

Keep updated on the ATMA by visiting:

[www.royaltruckandequipment.com/autonomous](http://www.royaltruckandequipment.com/autonomous)