Autonomous TMA Truck (ATMA)

Verifying Performance
System Testing

- Initial testing and safety analysis performed by Kratos
- Colas UK partnered to conduct further tests and development
Scenario-Based Evaluation

- Developed set of scenarios to verify the system’s capabilities
- Focused on verifying safe, predictable operation
- Ran on a closed track over two weeks

Goals:
- Confirm system safety
- Understand capabilities and how the system reacts
- Determine additional needed capabilities
- Build comfort with the system
- Discover any anomalies/limitations
Closed Track Environment
..And That Means Handing it Over to our Tame Racing Driver
Sample Scenarios

- Verify all e-stops
- Performance under hard braking & acceleration of leader
- Obstacle detection capabilities
- Lateral accuracy
- Tight turns
- Loss of GPS
- Loss of communications
- Bump Steer
- Sensitivity to passing vehicles
Results

• Consistent and safe e-stop performance
  • Stops in about 2m at striping speed
• Cross track error below ±4 in.
  • ±1.6 in. at 7mph, ±3.1 in. at 15mph
• Consistent gap distance
• Safe radar detection distance
• Programming changes implemented and verified

Goals:
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Gap Control Sample Results

Actual Gap Distance and Speed (Automated System)

Actual Gap Distance and Speed (Human Driver)
Cross Track Error Sample Results

![Cross Track Error (7mph, Straightaway)]
E-Stop Sample Results
Videos
Questions?