Motor Carrier Perspectives on Advanced Driver Assistance Systems

The American Transportation Research Institute (ATRI) – working with the Federal Motor Carrier Safety Administration and other trucking industry stakeholders – is researching advanced driver assistance system (ADAS) technologies, relating to awareness, deployment rates, perspectives, and concerns. Results of this survey — which is part of a four-year Phase Two follow-up to the original **TechCelerate Now** research will provide the trucking industry with important insight into active safety systems.

TechCelerate Now Phase Two is interested in assessing the following safety systems, organized by user and technology data availability.

You can access the online version of this survey here - https://www.research.net/r/TCN-Ph1-Review.

Tier 1 (High Data Availability)
- Road-facing Cameras
- Lane Keep Assistance
- Blind Spot Intervention
- Lane Departure Warning
- Forward Collision Warning
- Automatic Emergency Braking
- Rear/Backing Automatic Emergency Braking

Tier 2 (Moderate Data Availability)
- Lane Centering Assistance
- Pedestrian Automatic Emergency Braking
- Adaptive Steering Control
- Adaptive Headlamps
- Driver Drowsiness detection
- Parking Assistance

Tier 3 (Limited Data Availability)
- Traffic Sign/Light Recognition
- Traffic Sign/Light Indicator
- 360° Visibility
- Night Vision
- Automatic Crash Notification
- Front/Rear Cross Traffic Alert
- Electric Vehicle Warning Sounds
- Brake Hold Mode
- Lane Change Assistance
- Crosswind Stabilization
- Lane Keep Intervention
- Lane Change Intervention
- Automatic Emergency Steering
- Remote Parking
- Lane Centering Intervention
- Hill Descent Control

Your input on the following questions will provide critical insight on assessing trucking industry perspectives for accelerating the adoption of ADAS. The last few questions ask about your crashes and miles over the past year.

Your survey responses will be kept completely CONFIDENTIAL and only reported in the aggregate. Thank you for participating in this important research.

Demographics

1. Please indicate your primary role in trucking:
   - ❑ Truck Driver
   - ❑ Safety Manager
   - ❑ Maintenance / Engineering
   - ❑ Operations
   - ❑ Accounting & Finance
   - ❑ Senior Executive
   - ❑ Other (please specify):

2. What is your age?

3. What is your gender?
   - ❑ Male
   - ❑ Female
   - ❑ Other

4. How many years have you worked in the trucking industry?

5. How many power units are operated by your fleet? (check one)
   - ❑ Less than 5
   - ❑ 6-15
   - ❑ 16-50
   - ❑ 51-250
   - ❑ 251-500
   - ❑ 501-1000
   - ❑ 1,000+
   - ❑ Don't know

6. Which sector of the trucking industry do you operate in? (check one)
   - ❑ For-hire
   - ❑ Private
   - ❑ Don't know

7. If you operate in the for-hire sector, what is your primary type of business? (check one)
   - ❑ Truckload
   - ❑ Less-than-Truckload
   - ❑ Specialized
   - ❑ Other (please specify):

8. What is the primary vehicle configuration that you <u>typically</u> operate, or is used in your fleets? (check one)

❑ 5-axle Dry Van
❑ 5-axle Refrigerated Trailer
❑ 5-axle Flatbed
❑ 5-axle Tanker/HazMat
❑ 5-axle Bulk/Food
❑ Straight Truck
❑ Longer Combination Vehicles (Doubles, Triples, etc.)
❑ Other (please specify): _____

9. What is your <u>average</u> length of haul? (check one)

❑ Local (less than 100 miles per trip)
❑ Regional (100-499 miles per trip)
❑ Inter-regional (500-999 miles per trip)
❑ Long-Haul (1,000+ miles per trip)

10. Have you heard of FMCSA's **TechCelerate Now** Program (check one)?

❑ Yes
❑ No
❑ Uncertain

11. If you are aware of **TechCelerate Now**, how did you hear about it? (check all that apply)

❑ News article (print and/or online)
❑ Industry Meeting
❑ Website
❑ Online Ad
❑ Radio Program
❑ Podcast
❑ Eblast
❑ Association Outreach (TMC / ATA / OOIDA / etc.)
❑ Other (please specify): _____

12. Have you seen or downloaded any ADAS videos or brochures produced by **TechCelerate Now**? (check one)

❑ Yes
❑ No
❑ Uncertain

13. Has the **TechCelerate Now** program information been helpful to you in understanding and/or purchasing safety technologies?

❑ Yes
❑ No
❑ Uncertain

14. Please describe your awareness / knowledge level for the following **TechCelerate Now** ADAS technologies:

Technology	Have never heard of it	Slightly familiar	Mostly familiar	Very familiar	Expert on it
Automatic Emergency Braking	❑	❑	❑	❑	❑
Adaptive Cruise Control	❑	❑	❑	❑	❑
Active Lane Keep Assist	❑	❑	❑	❑	❑
Active Lane Centering Assist	❑	❑	❑	❑	❑
Adaptive Steering Control	❑	❑	❑	❑	❑
Lane Departure Warning	❑	❑	❑	❑	❑
Forward Collision Warning	❑	❑	❑	❑	❑
Blind Spot Warning	❑	❑	❑	❑	❑
Driver-Facing Camera	❑	❑	❑	❑	❑
Road-Facing Camera	❑	❑	❑	❑	❑
Camera-Based Mirror System	❑	❑	❑	❑	❑

15. Please rank-order which **TechCelerate Now** ADAS technologies you think will see large-scale industry adoption from 1st to 11th (1 = first adopted; 11th is last)

Technology	Rank
Automatic Emergency Braking	
Adaptive Cruise Control	
Active Lane Keep Assist	
Active Lane Centering Assist	
Adaptive Steering Control	
Lane Departure Warning	
Forward Collision Warning	
Blind Spot Warning	
Driver-Facing Camera	
Road-Facing Camera	
Camera-Based Mirror System	

16. Please indicate which **TechCelerate Now** ADAS technologies are most effective in improving on-the-road **safety**:

Technology	Will harm safety	Little to no improvement	Slight improvement in safety	Moderate improvement in Safety	Very large improvement in safety
Automatic Emergency Braking	❑	❑	❑	❑	❑
Adaptive Cruise Control	❑	❑	❑	❑	❑
Active Lane Keep Assist	❑	❑	❑	❑	❑
Active Lane Centering Assist	❑	❑	❑	❑	❑
Adaptive Steering Control	❑	❑	❑	❑	❑
Lane Departure Warning	❑	❑	❑	❑	❑
Forward Collision Warning	❑	❑	❑	❑	❑
Blind Spot Warning	❑	❑	❑	❑	❑
Driver-Facing Camera	❑	❑	❑	❑	❑
Road-Facing Camera	❑	❑	❑	❑	❑
Camera-Based Mirror System	❑	❑	❑	❑	❑

17. Please indicate the percentage of truck tractors in your fleet that have **TechCelerate Now** ADAS technologies already installed:

Technology	Percentage of Trucks Installed					
	0%	1-10%	10-25%	25-50%	50-75%	75-100%
Automatic Emergency Braking	○	○	○	○	○	○
Adaptive Cruise Control	○	○	○	○	○	○
Active Lane Keep Assist	○	○	○	○	○	○
Active Lane Centering Assist	○	○	○	○	○	○
Adaptive Steering Control	○	○	○	○	○	○
Lane Departure Warning	○	○	○	○	○	○
Forward Collision Warning	○	○	○	○	○	○
Blind Spot Warning	○	○	○	○	○	○
Driver-Facing Camera	○	○	○	○	○	○
Road-Facing Camera	○	○	○	○	○	○
Camera-Based Mirror System	○	○	○	○	○	○

18. Please rank order the following benefits that would influence your decision to purchase and use any or all **TechCelerate Now** ADAS technologies (1 = highest importance; 8 – lowest importance).

Reason for Adoption	Ranking
Technology Purchase Costs	
Tax Deduction/Credits	
Lower Insurance Premiums	
Required by Shippers & Receivers	
Driver Acceptance	
Enforcement / Inspection Bypass	
Lower / Better CSA Scores	
Technology Maintenance Issues	
OTHER:	

19. In your truck driver recruitment efforts, what ADAS technologies have / might **_discouraged_** truck drivers from working for your company? Please rank-order from 1st to 13th (1 = most likely to discourage a prospective driver; 13th = least likely to discourage a prospective driver) Leave blank if none.

Technology	Rank order 1st - 13th
Automatic emergency braking	
Adaptive cruise control	
Active lane keep assist	
Active lane centering assist	
Adaptive steering control	
Lane departure warning	
Forward collision warning	
Blind spot warning	
Driver-facing camera	
Road-facing camera	
Camera-based mirror system	
OTHER:	

20. If your company decided to ___not___ purchase any or all of these ADAS technologies, please rank-order from 1st to 7th the following factors that influenced your company's decision to ___not___ purchase: (1 = Most Influential, 7 = Least Influential)

Technology	Rank order 1st - 7th
Technology purchase cost	
Technology maintenance issues	
Driver unacceptance	
Driver's control compromised (i.e., AEB, ACC, or the like taking control from the driver)	
Reliability	
If you were not able to deactivate the technology	
Possibility of no safety return-on-investment	
OTHER:	

21. Please tell us if you have experienced difficulties in purchasing **TechCelerate Now** ADAS technologies on new trucks or for aftermarket add-ons?

22. Can you provide your fleet's DOT-reportable crash numbers and mileage from the previous year, separated by crash type (such as rear-end, run-off-road, sideswipe, etc.) and crash severity (property damage only, injury, and fatal)?
    ❑ Yes
    ❑ No

23. How many IFTA miles did your fleet travel in the previous year? _____

24. If yes, how total many crashes did your fleet have in the previous year? _____

Crash Type	Total	# of PDO Crashes	# of Injury Crashes	# of Fatal Crashes
Total Crashes				
Preventable				
Rear-end				
Run off Road				
Sideswipe				
Head-on				
Rollover				
Pedestrian				

25. Do you have any additional thoughts or comments on the use or impact of **TechCelerate Now** ADAS technologies in safety performance, productivity and compliance?

If you would like an advance copy of this research report, please provide:

Name:	
Company:	
Email:	

Thank You! We greatly appreciate your participation.

Please return completed survey to ATRI via
fax (**651-631-9500)** or email (mailto:dmurray@trucking.org)