

**Department of Transportation  
Federal Motor Carrier Safety Administration**

**SUPPORTING STATEMENT PART A  
Trucking Fleet Concept of Operations (CONOPS) for Managing Mixed Fleets**

**SUMMARY**

- This is a new ICR, a voluntary survey, which focuses on the development and demonstration of a Trucking Fleet Concept of Operations (CONOPS) for automated driving systems (ADS)-equipped trucks to provide the trucking industry with clear guidelines on how to safely deploy and benefit from ADS-equipped trucks.
- The study will consist of up to four roadshows hosted by Virginia Tech Transportation Institute (VTTI) to be held alongside existing truck shows and conferences, with a phase I (a pre-road show) and a phase II (a post roadshow) to reach 6 different types of respondents: fleet managers, industry engineers, CMV sales, CMV drivers, State and Federal government, and researchers. Each roadshow will include multiple hands-on demonstrations provided by various ADS vendors.

**INTRODUCTION**

This is to request the Office of Management and Budget's (OMB's) review and approval of a new Federal Motor Carrier Safety Administration (FMCSA) information collection request (ICR) titled Trucking Fleet Concept of Operations (CONOPS) for Managing Mixed Fleets.

**Part A. Justification**

**1. CIRCUMSTANCES THAT MAKE THE COLLECTION OF INFORMATION NECESSARY**

Increasing demand for consumer goods and just-in-time inventory strategies (i.e., receiving goods only as they are needed) place a significant demand on truck drivers and the U.S. highway system as increasing amounts of goods are delivered by trucks. In 2016, the American Trucking Association estimated the truck driver shortage at roughly 63,000 drivers; the driver shortage is now the trucking industry's top concern. The development of a readily accessible automated driving systems (ADS) will help mitigate the driver shortage concerns.

Although ADS-equipped trucks hold the promise of increased safety, productivity, and efficiency, it is not clear how these vehicles should be integrated into fleet operations with conventional trucks for mixed-fleet operations. Reflecting this issue is a question frequently asked by trucking executives: *How can I integrate ADS into my fleet operations?* FMCSA needs information from truck industry representatives regarding their opinions and perception of ADS.

The introduction of ADS technology on heavy trucks (Class 8 vehicles) will profoundly affect all commerce in the U.S., as the U.S. moves more than 70% of all goods by truck. However, existing stakeholders in the road freight ecosystem (primarily for-hire and private truck fleets, but also shippers, brokers, truck manufacturers, and service and maintenance providers) do not have a clear picture of how they will implement ADS in their daily operations. At present, technical progress in this nascent but promising technology is outstripping the ability of truck

fleets to keep up and plan for ADS deployment. This may adversely affect adoption by truck fleets and associated industries, resulting in the delayed achievement of safety, productivity, and efficiency benefits of ADS-equipped trucks. If ADS technology is to gain traction in the U.S. trucking industry, current stakeholders and new entrants need a rigorous, data driven CONOPS.

This project focuses on the development and demonstration of a CONOPS for ADS-equipped trucks, which will ensure the results translate directly to real-world settings that are of practical importance to the trucking industry, regulators, and the public at large. Part of the CONOPS includes a series of outreach events where the public, with a focus on truck drivers and truck fleet managers, will have the opportunity to meet ADS technology developers and original equipment manufacturers. The outreach will also provide opportunities to participate in hands-on technology demonstrations, such as in-vehicle demonstrations and closed-course scenarios. Lessons learned from this demonstration will influence all three phases of the research to ensure the CONOPS developed is true to real-life fleet operations. Thus, the purpose of the hands-on demonstrations is three-fold: (1) expose truck fleet managers and other personnel, truck drivers, government officials, insurance and inspection personnel, and the general public to ADS; (2) collect valuable qualitative data on participants' opinions and perceptions regarding ADS; and (3) use the data to ensure the CONOPS covers major industry concerns.

The Secretary of Transportation's authority to conduct studies pertaining to commercial motor vehicle safety are located in 49 U.S.C. 504, 31133, 31136, 31502, and 49 CFR 1.73 (see Attachments A–E, respectively).

This information collection supports the USDOT Strategic Goal of "Safety."

FMCSA conducted a pilot test with some of the proposed end-users. This pilot test included six end users, including 2 researchers, 1 government employee, 1 commercial motor vehicle fleet representative, and 2 commercial driver's license holders. Participants completed the Pre-Roadshow Questionnaire and Post-Roadshow Questionnaire, timing completion of each and reviewing for content and/or comprehension issues. Based on this pilot test, FMCSA revised the Pre-Roadshow Questionnaire and Post-Roadshow Questionnaire. Pilot test participants indicated mean completion times of 3.5 minutes and 4.4 minutes for the Pre-Roadshow Questionnaire and Post-Roadshow Questionnaire, respectively.

## **2. HOW, BY WHOM, AND FOR WHAT PURPOSE IS THE INFORMATION USED**

### **2.1 How Information Will Be Collected**

Data will be collected from CMV drivers (hereafter referred to as "driver"), CMV fleet managers, industry engineers, CMV sales personnel, researchers, and State and Federal government personnel at four roadshows. The roadshows will coincide with large conferences, for example, the Technology Maintenance Council (TMC) Annual Meeting, North American Commercial Vehicle Show, SAE Commercial Vehicle Engineering Congress, and Automated Vehicle Symposium. The questionnaire data collected in Phase I of the study (pre-roadshow) will allow us to gather baseline opinions regarding ADS technologies. Once respondents participate in the hands-on demonstrations at the roadshow, we will see if their opinions on the technologies have changed (Phase 2 or post-roadshow). Potential respondents can participate in the roadshow for free and there is no obligation to complete the Phases 1 and 2 questionnaires.

We anticipate a convenience sample of 500 participants in each of the four roadshows (2,000 total respondents). Below is a breakdown of potential survey respondents at each roadshow:

- TMC Annual Meeting (500 respondents)
  - 50% CMV fleet managers, 30% industry engineers, 10% CMV sales personnel, and 10% State and Federal government
- North American Commercial Vehicle Show (500 respondents)
  - 50% CMV fleet managers, 10% industry engineers, 20% CMV sales personnel, 20% CMV drivers
- SAE COMVEC (500 respondents)
  - 25% CMV fleet managers, 50% industry engineers, and 25% State and Federal government
- Automated Vehicle Symposium (500 respondents)
  - 30% researchers, 30% State and Federal government, 30% industry engineers, and 10% CMV fleet managers

The data collected during each phase is outlined below.

### **2.1.1 Phase 1 (Pre-Roadshow)**

As attendees enter the roadshow area, they will be asked to complete the questionnaires (see Attachment E for the recruitment script). Potential respondents will be asked to complete a pre-roadshow questionnaire (see Attachment F). Participants will provide implied consent by completing the questionnaires. They will be asked to create an anonymous ID (e.g., first two letters of first name, first two letters of last name, and day of birth) and enter that ID on each questionnaire so questionnaires may be tied together.

The research team will use cell phones to collect participant data. The pre-roadshow questionnaire will be loaded onto a cell phone which will be distributed to participants at the beginning of the roadshow. Each questionnaire will be loaded in an app format. Once the participants submit their answers, the data will be stored on the phone and will not be accessible until researchers download the data to a computer. The phones will not require a password for participants to use, but a password will be required for researchers to access the submitted data. Once downloaded, the questionnaire data will be stored on a secure Virginia Tech Transportation Institute (VTTI) server.

Questionnaires will be downloaded from the cell phones to the VTTI secure servers after the roadshow is complete using a wired connection. No personally identifiable information (PII) will be collected in this phase of the study. Participants will create an anonymous ID to tie the different questionnaires together. There will be no way to tie questionnaires back to individual participants. The information collected for this effort is not considered sensitive information about the individual. We are simply collecting their opinions about the technology presented during the roadshow. Participants can answer any question with the response 'I prefer not to answer this question' or opt out of submitting the questionnaires if they choose to do so.

The research team will ask several demographic questions to collect data about the participants. These are included in the pre-roadshow questionnaire: participant demographics (background and previous exposure to ADS) and pre-roadshow ADS trust/acceptance.

### **2.1.2 Phase 2 (Post-Roadshow)**

As attendees leave the roadshow area, they will be asked to complete the questionnaire. Potential respondents will be asked to complete a post-roadshow questionnaire (Attachment G). Participants will provide implied consent by completing the questionnaires. They will input their unique anonymous ID from Phase 1. Again, the research team will use cell phones to collect participant data. The post-roadshow questionnaire will be loaded onto a cell phone which will be distributed to participants at the end of the roadshow. Each questionnaire will be loaded in an app format. Once the participants submit their answers, the data will be stored on the phone and will not be accessible until researchers download the data to a computer. The phones will not require a password for participants to use, but a password will be required for researchers to access the submitted data. Once downloaded, the questionnaire data will be stored on a secure VTTI server.

Questionnaires will be downloaded from the cell phones to the VTTI secure servers after the roadshow is complete using a wired connection. No PII will be collected in this phase of the study. The anonymous IDs tie the Phase 1 and 2 questionnaires together. There will be no way to tie questionnaires back to individual participants. The information collected for this effort is not considered sensitive information about the individual. We are simply collecting their opinions about the technology presented during the roadshow. Participants can answer any question with the response 'I prefer not to answer this question' or opt out of submitting the questionnaires if they choose to do so.

## **2.2 Who Will Collect the Information**

FMCSA has contracted with the VTTI at the Virginia Polytechnic Institute and State University to administer this study and analyze its results. The investigators currently performing this study are Drs. Rich Hanowski, Martin Walker, Jeffrey Hickman, and Rebecca Hammond from VTTI.

In accordance with USDOT's policy on research involving human subjects, this study was reviewed and approved by Virginia Tech's Institutional Review Board (IRB) prior to beginning data collection (Attachment I).

## **2.3 Purpose of the Information Collection Effort**

Although ADS-equipped trucks hold the promise of increased safety, productivity, and efficiency, it is not clear how these vehicles should be integrated into fleet operations with conventional trucks. The primary goal of this study is to develop and demonstrate a pragmatic Fleet Concept of Operations or CONOPS. This CONOPS will provide the trucking industry with clear guidelines on how to safely deploy and benefit from ADS-equipped trucks. To assist in these efforts, VTTI will host up to four roadshows to be held alongside existing truck shows and conferences. Each roadshow will include multiple hands-on demonstrations provided by various ADS vendors. As part of the roadshow, VTTI will distribute pre- and post-roadshow questionnaires to obtain opinions about the ADS technologies from members of the trucking industry who are attending the roadshows. The data collected will allow us to gather baseline opinions that members of the trucking fleet have regarding ADS technologies. Once respondents participate in the hands-on demonstrations, we will see if their opinions on the technologies have

changed. This will allow us to generalize the acceptability of these technologies into the trucking industry. The primary goal of the questionnaires is to inform the CONOPS that will be developed, to improve clarity and completeness from the end user's perspective.

### **3. EXTENT OF AUTOMATED INFORMATION COLLECTION**

The pre- and post-roadshow questionnaires will be loaded onto VTTI owned cell phones (no cellular service or wi-fi capabilities). Once the participants submit their answers, the data will be stored on the phone and will not be accessible until researchers download the data to a computer. The phones will not require a password for participants to use, but a password will be required for researchers to access the submitted data. Questionnaires will be downloaded from the cell phones to VTTI secure servers using a wired connection. Cellphones are used for data collection for the ease of managing data collection materials and to secure the data while traveling with the data to the VTTI from roadshows. Using electronic entry for data collection also eliminates data entry error later needed for analysis.

### **4. EFFORTS TO IDENTIFY DUPLICATION**

FMCSA and the VTTI research team are unaware of other research conducted currently or in the past that could be used to fulfill the research goals of Trucking Fleet CONOPS for Managing Mixed Fleets. Previous research has been performed with passenger car drivers;<sup>(1,2)</sup> however, there has not been research aimed at CMV drivers. Moreover, (a) ADS have advanced in recent years, so any prior assessment is outdated and will not reflect the specific ADS displayed at the roadshow in this project and, (b) here we propose to assess a mix of end-user respondents, including CMV drivers, CMV fleet managers, industry engineers, CMV sales personnel, researchers, and State and Federal government personnel.

### **5. EFFORTS TO MINIMIZE THE BURDEN ON SMALL BUSINESSES**

This study will involve a convenience sample with no efforts to target specific types or sizes or carriers. Roadshow participants are not required to participate in this study. Participation in the study is voluntary, so no small business will have an imposed burden that it is not willing to bear.

### **6. IMPACT OF LESS FREQUENT COLLECTION OF INFORMATION**

FMCSA has determined that this collection of information is necessary for study completion; currently, there is no existing data set that can be used for this project. This is a request for a single collection of information for this project. While the study will space out data collection over a period of approximately 18 months, data collection will only occur over 2 to 4 days (with each respondent's participation limited to their time spent at the roadshow).

---

<sup>1</sup> Van der Laan, J.D., Heino, A., & De Waard, D. (1997). A simple procedure for the assessment of acceptance of advanced transport telematics.

*Transportation Research - Part C: Emerging Technologies*, 5, 1-10

<sup>2</sup> Jian, J., Bisantz, A. M., & Drury, C. G. (2000). Foundations for an empirically determined scale of trust in automated systems. *International Journal of Cognitive Ergonomics*, 4, 53-71.

Respondents will be asked to participate in the qualitative study for up to 20 minutes. Using a convenience sample, the research team plans to collect data from a maximum of 2,000 respondents (a mix of CMV drivers, CMV fleet managers, industry engineers, CMV sales personnel, researchers, and State and Federal government personnel). Participation in the pre- and post-roadshow questionnaires lasting approximately 10 minutes each. During these 10-minute participation periods, drivers will be asked to complete the data collection requirements described in Section 2.1.

## **7. SPECIAL CIRCUMSTANCES**

There are no special circumstances related to this information collection.

## **8. COMPLIANCE WITH 5 CFR 1320.8:**

FMCSA published a notice in the Federal Register with a 60-day public comment period to announce this proposed information collection on November 3, 2020 (85 FR 69678, Attachment J). The comment period closed on January 4, 2021. The agency received eight comments in response to this notice.<sup>3</sup>

Seven of the comments expressed concern for the safety of ADS technologies and the potential job losses associated with this technology. The remaining comment indicated concern for real-world ADS testing as opposed to using simulations. FMCSA appreciates the commenters taking the time to provide feedback, but these comments are beyond the scope of the information collection itself.

## **9. PAYMENTS OR GIFTS TO RESPONDENTS**

Participants will not receive compensation for study participation.

## **10. ASSURANCE OF CONFIDENTIALITY**

PII will not be collected at any time. Participants will make an ID# for themselves based on the first two letters of their first name, first two letters of their last name, and the day they were born as two digits. This combination of information is not considered personally identifying. Respondents may answer any of the questions with the option 'I prefer not to answer this question' if they do not feel comfortable answering. Respondents may also choose not to submit the questionnaire if they change their mind about participating. Questionnaires will be downloaded from the cell phones to VTTI secure servers using a wired connection. Cellphones are used for data collection for the ease of managing data collection materials and to secure the data while traveling with the data to the VTTI from roadshows.

## **11. JUSTIFICATION FOR COLLECTION OF SENSITIVE INFORMATION**

---

<sup>3</sup> There were 9 submissions to the docket, but one was blank.

No questions of a sensitive nature will be asked for this data collection.

## **12. ESTIMATE OF BURDEN HOURS FOR INFORMATION REQUESTED**

The pre- and post-roadshow questionnaires will be available to all respondents who attend the roadshows and are interested in participating in the Trucking Fleet CONOPS for Managing Mixed Fleets. Based on attendance at each of the conferences where the proposed roadshows will take place, we expect 500 respondents will complete the pre- and post-roadshow questionnaires.

**The total number of respondents is 2,000 with an expected breakdown as follows:**

- o 675 CMV fleet managers,
- o 600 Industry engineers,
- o 150 CMV sales,
- o 100 CMV drivers,
- o 325 State and Federal government, and
- o 150 Researchers.

Respondent burden is associated with completing the pre- and post-roadshow questionnaires. All 2,000 respondents will spend 3.5 minutes each completing the pre-roadshow questionnaire and 4.4 minutes each completing the post-roadshow questionnaire. The estimates of burden hours for the participating respondents are presented below in Table 1. Pilot test participants indicated mean completion times of 3.5 minutes and 4.4 minutes for the Pre-Roadshow Questionnaire and Post Roadshow Questionnaire, respectively (see Supporting Statement Part B).

**Table 1. Respondent tasks.**

<b>Task</b>	<b>Respondents</b>	<b>Responses per Respondent</b>	<b>Annualized Total Responses</b>	<b>Burden per Response</b>	<b>Annualized Total Burden Hours*</b>
Pre-roadshow Questionnaire: CMV Fleet Managers	675	1	455.5	3.5 minutes	26.6
Post-roadshow Questionnaire: CMV Fleet Managers	675	1	455.5	4.4 minutes	33.4
Pre-roadshow Questionnaire: Industry Engineers	600	1	396	3.5 minutes	23.1
Post-roadshow Questionnaire: Industry Engineers	600	1	396	4.4 minutes	29
Pre-roadshow Questionnaire: CMV Sales Personnel	150	1	99	3.5 minutes	5.8
Post-roadshow Questionnaire: CMV Sales Personnel	150	1	99	4.4 minutes	7.3
Pre-roadshow Questionnaire: CMV Drivers	100	1	66	3.5 minutes	3.9
Post-roadshow Questionnaire: CMV Drivers	100	1	66	4.4 minutes	4.8
Pre-roadshow Questionnaire: State and Federal Personnel	325	1	214.5	3.5 minutes	12.5
Post-roadshow Questionnaire: State and Federal Personnel	325	1	214.5	4.4 minutes	15.7
Pre-roadshow Questionnaire: Researchers	150	1	99	3.5 minutes	5.8
Post-roadshow Questionnaire: Researchers	150	1	99	4.4 minutes	7.3
<b>Annualized Total*</b>	–	–	<b>2,660</b>	–	<b>175.2</b>
<b>Study Total**</b>	–	–	<b>3,990</b>	–	<b>263</b>

\*Total may not equal the sum of previous items due to rounding.

\*\* The research team plans to collect data from a maximum of 2,000 respondents over 18 months.

The total annual number of responses is 2,660. The total annual burden is 175 hours.



It is assumed that CMV fleet personnel will undertake the tasks. Error: Reference source not found shows the costs of carrier participation agreements. The mean hourly wage (\$28.73) of First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators for the Truck Transportation industry (NAICS code 531040) is taken from the U.S. Bureau of Labor Statistics (BLS) May 2019 National Industry-Specific Occupational Employment and Wage Estimates.<sup>(4)</sup> To arrive at a loaded wage, we first estimated a load factor of 1.421 by dividing the total cost of compensation for private industry workers of the trade, transportation, and utilities industry (\$29.46) by the average cost of hourly wages and salaries (\$19.31) as reported by the BLS in its Employer Costs for Employee Compensation for May 2019 ( $\$27.44 \div \$19.31 = 1.421$ ).<sup>(5)</sup> Multiplying the mean hourly wage by the load factor results in a loaded hourly wage of \$40.37 ( $\$28.73 \times 1.421 = \$40.37$ ).

We assume that the impacted CMV driver occupation corresponds to the BLS Occupational Employment Statistics is Heavy and Tractor-Trailer Truck Drivers, which has a mean hourly wage of \$22.93 for the Truck Transportation industry (NAICS code 533032), also from the BLS May 2019 National Industry-Specific Occupational Employment and Wage Estimates.<sup>(6)</sup> Using the same load factor (1.421), we arrive at a loaded hourly wage of \$32.58, shown in Table 2 below.

We assume that the impacted CMV sales occupation corresponds to the BLS Occupational Sales Representatives, Wholesale and Manufacturing, which has a mean hourly wage of \$36.15 for the Sales and Related Occupations (NAICS code 410000), also from the BLS May 2019 National Industry-Specific Occupational Employment and Wage Estimates.<sup>(7)</sup> Using the same load factor (1.421), we arrive at a loaded hourly wage of \$51.36, shown in Table 2 below.

We assume that the impacted industry engineers occupation corresponds to the BLS Software and Web Developers, Programmers, and Tester, which has a mean hourly wage of \$51.83 for the Computer and Mathematical Occupations (NAICS code 150000), also from the BLS May 2019 National Industry-Specific Occupational Employment and Wage Estimates.<sup>(8)</sup> Using the same load factor (1.421), we arrive at a loaded hourly wage of \$73.65, shown in Table 2 below.

We assume that the impacted researchers occupation corresponds to the BLS Postsecondary Teachers, which has a mean hourly wage of \$43.66 for the Postsecondary Teachers (NAICS

---

<sup>4</sup> Bureau of Labor Statistics, U.S. Department of Labor, May 2016 National Industry-Specific Occupational Employment and Wage Estimates for NAICS 484000 - Truck Transportation, accessed July 19, 2017.

<sup>5</sup> Bureau of Labor Statistics, U.S. Department of Labor, Employer Costs for Employee Compensation – March 2017, Table 10. Private industry, by industry group, accessed July 19, 2017.

<sup>6</sup> Bureau of Labor Statistics, U.S. Department of Labor, May 2019 National Industry-Specific Occupational Employment and Wage Estimates for NAICS 484000 - Truck Transportation.

<sup>7</sup> Bureau of Labor Statistics, U.S. Department of Labor, May 2019 National Industry-Specific Occupational Employment and Wage Estimates for NAICS 414000 - Sales and Related Occupations.

<sup>8</sup> Bureau of Labor Statistics, U.S. Department of Labor, May 2019 National Industry-Specific Occupational Employment and Wage Estimates for NAICS 150000 – Computer and Mathematical.

code 251000), also from the BLS May 2019 National Industry-Specific Occupational Employment and Wage Estimates.<sup>(9)</sup> Using the same load factor (1.421), we arrive at a loaded hourly wage of \$62.05, shown in Table 2 below.

We assume that the impacted State and Federal personnel corresponds to the BLS Other Management Occupations, which has a mean hourly wage of \$43.90 for the Other Management Occupations (NAICS code 119000), also from the BLS May 2019 National Industry-Specific Occupational Employment and Wage Estimates.<sup>(10)</sup> Using the same load factor (1.421), we arrive at a loaded hourly wage of \$62.38, shown in Table 2 below.

**Table 2. Respondent occupation and wage.**

<b>BLS OES Occupation Code</b>	<b>BLS OES Occupation Description</b>	<b>Mean Hourly Wage</b>	<b>Load Factor</b>	<b>Loaded Hourly Wage</b>
53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	\$28.73	1.421	\$40.83
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$22.93	1.421	\$32.58
25-1000	Postsecondary Teachers	\$43.66	1.421	\$62.05
11-9000	Other Management Occupations	\$43.90	1.421	\$62.38
41-4010	Sales Representatives, Wholesale and Manufacturing	\$31.15	1.421	\$51.36
15-1250	Software and Web Developers, Programmers, and Tester	\$51.83	1.421	\$73.65

The loaded hourly wage for each respondent task was applied to the number of respondents and the burden per response to arrive at an annualized cost per task. In total, these tasks involve 3,990 responses and cost \$14,361.00 over 18 months, which are annualized at 2,660 responses and \$9,574.00, as shown in .

<sup>9</sup> Bureau of Labor Statistics, U.S. Department of Labor, May 2019 National Industry-Specific Occupational Employment and Wage Estimates for NAICS 251000 – Educational Instruction and Library Occupations.

<sup>10</sup> Bureau of Labor Statistics, U.S. Department of Labor, May 2016 National Industry-Specific Occupational Employment and Wage Estimates for NAICS 119000 - Other Management Occupations

**Table 3. IC2: Respondent task annualized costs.**

<b>Respondent Task</b>	<b>Loaded Hourly Wage</b>	<b>Respondents</b>	<b>Responses per Respondent</b>	<b>Annualized Total Responses</b>	<b>Burden per Response</b>	<b>Annualized Cost per Task</b>
Pre-roadshow Questionnaire: CMV Fleet Managers	\$40.83	675	1	455.5	3.5 minutes	\$1,086.08
Post-roadshow Questionnaire: CMV Fleet Managers	\$40.83	675	1	455.5	4.4 minutes	\$1,363.72
Pre-roadshow Questionnaire: Industry Engineers	\$73.65	600	1	396	3.5 minutes	\$1,701.32
Post-roadshow Questionnaire: Industry Engineers	\$73.65	600	1	396	4.4 minutes	\$2,135.85
Pre-roadshow Questionnaire: CMV Sales	\$51.36	150	1	99	3.5 minutes	\$297.89
Post-roadshow Questionnaire: CMV Sales	\$51.36	150	1	99	4.4 minutes	\$374.93
Pre-roadshow Questionnaire: CMV Drivers	\$32.58	100	1	66	3.5 minutes	\$127.06
Post-roadshow Questionnaire: CMV Drivers	\$32.58	100	1	66	4.4 minutes	\$156.38
Pre-roadshow Questionnaire: State and Federal Personnel	\$62.38	325	1	214.5	3.5 minutes	\$779.75
Post-roadshow Questionnaire: State and Federal Personnel	\$62.38	325	1	214.5	4.4 minutes	\$979.37
Pre-roadshow Questionnaire: Researchers	\$43.66	150	1	99	3.5 minutes	\$253.23
Post-roadshow Questionnaire: Researchers	\$43.66	150	1	99	4.4 minutes	\$318.72
<b>Annualized Total*</b>	–	–	–	<b>2,660*</b>	–	<b>\$9,574*</b>
<b>Study Total**</b>	–	–	–	<b>3,990**</b>	–	<b>\$14,361**</b>

\*Totals may not equal the sum of previous items due to rounding

\*\*The study total (an 18-month period) is equal to 1.5 times the annualized total

**Totals for this ICR:**

- **Estimated Total Annual Burden Hours:** 175 hours
- **Estimated Total Annual Responses:** 2,660 responses
- **Estimated Total Respondents:** 2,000 respondents
- **Estimated Total Annual Burden Costs:** \$9,574.00

**13. ESTIMATE OF TOTAL ANNUAL COSTS TO RESPONDENTS**

There are no additional costs to respondents beyond those associated with the hourly burden presented above.

**14. ESTIMATE OF COST TO THE FEDERAL GOVERNMENT**

The research design, protocol development, and implementation of the research methods will be completed between FY 2021 and FY 2022. The total cost for the entire study/contract is \$7,500,000 (note this cost includes other aspects of the study that are not described in the ICR, which includes data analysis explained in Part B). There is no specific cost to the government for government personnel incurred by this study, as all government personnel are working within their normal position duties. It is estimated the contracting officer’s representative (COR)/project lead will spend an average of 2 percent of their time on this part of the project throughout the period of performance, which is 18 months. Hourly employee compensation for the COR is shown in Table 4.

**Table 4. Estimate of hourly employee compensation (Federal Government).<sup>(11)</sup>**

<b>Federal Wage Series</b>	<b>Occupation</b>	<b>General Schedule Designation</b>	<b>Hourly Wage</b>	<b>Locality Benefit</b>	<b>Hourly Cost</b>
1529	Mathematical Statistician	13 Step 5	\$42.73	24.78%	\$53.32

The COR will spend approximately 3.2 hours a month on this project, which is equivalent to 58 hours over the 18 months, or 38 annualized hours. This leads to an estimated annualized cost of \$2,026 (38 annualized hours x \$53.32 = \$2,026) which leads to a total cost of \$3,093 over the life of the study (\$2,026 annualized x 1.5 years = \$3,039).

<sup>11</sup> Office of Personnel Management, “2019 General Schedule (GS) Locality Pay Tables”. <https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/2019/general-schedule>.

**Table 5. Estimated annualized and total cost of Federal Labor.**

<b>Federal Wage Series</b>	<b>Occupation</b>	<b>General Schedule Designation</b>	<b>Yearly Hours Worked</b>	<b>Annualized Cost to Government</b>	<b>Total Cost to Government</b>
1529	Mathematical Statistician	13 Step 5	38	\$2,026	\$3,093

**15. EXPLANATION OF PROGRAM CHANGES OR ADJUSTMENTS**

This is a new information collection.

**16. PUBLICATION OF RESULTS OF DATA COLLECTION**

The results of this information collection will be documented in a technical report to be delivered to and maintained by FMCSA. The report will detail the data relied upon, analyses, results, and conclusions which helped form the guidelines for the trucking industry on how to safely implement and benefit from ADS-equipped trucks. All data collected in this effort will be reported in general terms such as “Only 27% of suppliers felt that ADS were desirable before experiencing a demonstration versus 87% after an ADS demonstration.” In addition, a public-use data set will be produced for the project data repository, CONOPS Dataverse. As there is no identifying information, the entire dataset will be included in this repository. The data will be collected over an 18-month period directly following OMB approval (subject to the return of in-person conference attendance). Data will be uploaded to the CONOPS Dataverse in near real time, with final publication in fiscal year 2022.

**17. APPROVAL FOR NOT DISPLAYING THE EXPIRATION DATE OF OMB APPROVAL**

No such approval is being requested.

**18. EXCEPTIONS TO CERTIFICATION STATEMENT**

None.

**ATTACHMENTS:**

- A. Title 49 U.S.C. § 504 titled, “*Reports and records.*”
- B. Title 49 U.S.C. § 31133 titled, “*General powers of the Secretary of Transportation.*”
- C. Title 49 U.S.C. § 31136 titled, “*United States Government regulations.*”
- D. Title 49 U.S.C. § 31502 titled, “*Requirements for qualification, hours of service, safety, and equipment standards.*”
- E. Title 49 CFR § 1.87 titled, “*Delegation to the Federal Motor Carrier Safety Administrator.*”
- F. Respondent recruitment script.
- G. Pre-Roadshow Questionnaire
- H. Post-Roadshow Questionnaire
- I. Virginia Tech IRB approval letter.

J. Federal Register 60-day notice (85 FR 69678), November 3, 2020.