



U.S. Department of Transportation

Privacy Impact Assessment

**Federal Motor Carrier Safety Administration
FMCSA**

Flexible Sleeper Berth Pilot Program (FSB Pilot Program)

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Executive Summary

In response to Executive Order 14286, “Enforcing Commonsense Rules of the Road for America’s Truck Drivers,” the U.S. Secretary of Transportation announced a new pilot program designed to improve drivers’ working conditions and quality of life by providing more flexibility in how drivers may split sleeper berth time. The Flexible Sleeper Berth (FSB) Pilot Program will provide participating drivers with an exemption that reduces the longer period in the sleeper berth to a minimum of five consecutive hours.

To carry out this pilot program, the Federal Motor Carrier Safety Administration (FMCSA) contracted with the Virginia Tech Transportation Institute (VTTI) to assess the safety and performance impacts of additional flexibility for CMV drivers to use split sleeper berth periods. Specifically, the study will collect multiple sources of data from a broad sample of carriers to examine driver fatigue and driving performance while operating under current Hours of Service (HOS) regulations and while operating under FSB exemptions. This Privacy Impact Assessment is being conducted to address the risks associated with VTTI collecting, processing, and maintaining Personally Identifiable Information (PII) from study participants on behalf of FMCSA.

What is a Privacy Impact Assessment?

The Privacy Act of 1974 articulates concepts for how the federal government should treat individuals and their information and imposes duties upon federal agencies regarding the collection, use, dissemination, and maintenance of personally identifiable information (PII). The E-Government Act of 2002, Section 208, establishes the requirement for agencies to conduct privacy impact assessments (PIAs) for electronic information systems and collections. The assessment is a practical method for evaluating privacy in information systems and collections, and documented assurance that privacy issues have been identified and adequately addressed. The PIA is an analysis of how information is handled to—i) ensure handling conforms to applicable legal, regulatory, and policy requirements regarding privacy; ii) determine the risks and effects of collecting, maintaining and disseminating information in identifiable form in an electronic information system; and iii) examine and evaluate protections and alternative processes for handling information to mitigate potential privacy risks.¹

Conducting a PIA ensures compliance with laws and regulations governing privacy and demonstrates the DOT’s commitment to protect the privacy of any personal information we collect, store, retrieve, use and share. It is a comprehensive analysis of how the DOT’s

¹Office of Management and Budget’s (OMB) definition of the PIA taken from guidance on implementing the privacy provisions of the E-Government Act of 2002 (see OMB memo of M-03-22 dated September 26, 2003).



electronic information systems and collections handle personally identifiable information (PII). The goals accomplished in completing a PIA include:

- *Making informed policy and system design or procurement decisions. These decisions must be based on an understanding of privacy risk, and of options available for mitigating that risk;*
- *Accountability for privacy issues;*
- *Analyzing both technical and legal compliance with applicable privacy law and regulations, as well as accepted privacy policy; and*
- *Providing documentation on the flow of personal information and information requirements within DOT systems.*

Upon reviewing the PIA, you should have a broad understanding of the risks and potential effects associated with the Department activities, processes, and systems described and approaches taken to mitigate any potential privacy risks.

Introduction & System Overview

In response to Executive Order 14286, “Enforcing Commonsense Rules of the Road for America’s Truck Drivers,” the U.S. Secretary of Transportation announced a new pilot program designed to improve drivers’ working conditions and quality of life by providing more flexibility in how drivers may split sleeper berth time. The FSB Pilot Program will provide participating drivers with an exemption that reduces the longer period in the sleeper berth to a minimum of 5 consecutive hours. This will allow participating drivers to utilize a “5/5” split, “6/4” split, or any split in between to obtain the equivalent of 10 consecutive hours off-duty.

FMCSA has contracted with VTTI at the Virginia Polytechnic Institute and State University (VT) to administer this study and analyze its results. This Pilot Program study will consist of on-road data collection from Commercial Motor Vehicle (CMV) drivers who utilize the FSB exemptions during revenue producing operations. As such, this study will assess the safety and performance impacts of additional flexibility for CMV drivers to use split sleeper berth periods.

Participant Selection

This study aims to gather safety, performance, and operating data from up to 256 CMV drivers as they operate under current HOS regulations during a baseline period and under pilot program regulations, granted with an exemption, during an intervention period. Participation in the study is voluntary for drivers. The study is not selecting random CMV drivers from the general population. The study will use effective recruitment strategies to improve representation of the carrier population within the sampling pool and will aim to recruit small, medium, and large carriers, as well as owner-operators, to participate. The study will use a convenience sampling approach, where carriers and drivers interested in



participating are selected from a sampling pool for pre-screening on a rolling basis with consideration of carrier size.

The study will be announced through multiple resources, including social media, podcasts, FMCSA's website, and at industry events. Interested carriers and drivers will be directed to a recruitment website where they may learn about the study. From the website, interested carriers can submit basic carrier information (e.g. carrier name, DOT number, point of contact) to the research team to receive more information about the program and determine if they meet carrier eligibility criteria. Interested drivers will be asked to complete the screening questionnaire, which the study team will use to determine if individual drivers are eligible for participation. If a driver is eligible, the study team will make arrangements to meet with the driver in person for enrollment. This approach is expected to attract drivers who are likely to use the exemption, which is key to obtaining sufficient data during the exemption period and maximizing statistical power for analyses. It is anticipated that both carriers and drivers may express interest in the study during study recruitment. An individual driver is eligible to participate in the study regardless of whether other drivers from the carrier elect to participate; however, they may only participate if their carrier is eligible and has agreed to the participation.

Although the study participants are drivers and not carriers, the study includes eligibility requirements that carriers must meet for their drivers to be eligible for study participation (to be checked during pre-screening):

1. Must have applicable interstate operating authority and registration.
2. Must have the minimum levels of financial responsibility under Title 49 of the Code of Federal Regulations (CFR) part 387, if applicable.
3. Must not be a high or moderate risk carrier, as defined in the Agency's *Federal Register* notice titled "Notification of Changes to the Definition of a High-Risk Motor Carrier and Associated Investigation Procedures" (81 FR 11875 (Mar. 7, 2016)).
4. Must not have a "Conditional" or "Unsatisfactory" safety rating.
5. Must not have any FMCSA enforcement actions within the past three years.¹
6. Must not have a driver out-of-service (OOS) rating above the National average.
7. Must not have a vehicle OOS rate above the National average.
8. Unpaid civil penalties may be grounds to be disapproved from participating in the pilot program.

Carriers who meet the above eligibility requirements must agree to the following study participation requirements (to be confirmed during a recruitment call with the carrier):



- Grant permission for drivers to participate in the applicable pilot program.
- Agree to comply with all pilot program procedures, which will be made available in written form to motor carrier applicants prior to initiation of a pilot program.
- Grant permission for VTTI to gather record of duty status (RODS) information for each participating driver throughout the study duration, which will allow VTTI to determine whether drivers are utilizing the exemption and how.
- Grant permission for drivers participating in the study to operate under the applicable exemption.

Drivers must meet the following eligibility requirements in order to participate:

- Possess a valid Commercial Driver's License (CDL) (confirmed during study enrollment).
- Maintain a valid medical certificate from a healthcare professional on the Agency's National Registry of Certified Medical Examiners while participating in the pilot program (confirmed during study enrollment).
- Be employed by a motor carrier who has been approved for participation in the pilot program and/or certify as an owner-operator,
- Agree to the release of specific information to FMCSA for purposes of the pilot.
- Agree to comply with all study procedures, including the use of actigraphs and RODS.

In addition, a driver will be ineligible for participation if they are identified in FMCSA's Drug and Alcohol Clearinghouse, regardless of whether the driver has completed the return-to-duty process or, during the two-year period immediately preceding the date of participation, the driver had their license suspended, revoked, cancelled, or has been disqualified for a conviction of one of the disqualifying offenses listed in §383.51.

During the screening process, carriers and drivers will be asked to assess their likelihood of using the FSB exemption during an intervention period based on their current operating procedures. To collect sufficient data to answer the research questions, the study will prioritize carriers and drivers who report a high likelihood to use the exemption.

Study Participation

Data will be collected from each participating driver over 16 weeks. During the first four weeks of data collection, drivers will operate under the baseline condition (i.e., using the current HOS regulations). During the next 12 weeks, drivers will operate under the exemption condition (i.e., using the allowable FSB splits).



Prior to data collection, VTTI will meet with each participating driver at a predetermined and agreed-upon date and time once the driver's eligibility has been confirmed. First, the driver will read and sign a paper copy of the study's informed consent form describing the requirements for participating in the FSB pilot program. If the driver consents to participate in the study, they will complete the W-9 form for compensation purposes. Then the driver will be asked to complete a brief pre-study survey that covers (1) driver demographics, (2) typical sleep and schedule, (3) applicable sleep disorders, (4) typical caffeine consumption, and (5) general health-related behaviors (i.e., tobacco use and daily exercise). All participating drivers will be assigned an anonymous Driver ID (e.g., Participant 001, 002, etc.) that will be used to link all datasets across the 16-week study. The key information linking the Driver ID to the driver and the key information linking the driver to the PII data does not leave VTTI. Key information is stored in a limited access project folder. This key information is deleted at the end of the study. Access to data is determined by the role of the users of the data, ensuring that access is only granted to individuals for necessary and defined purposes. Data is managed such that only the minimum level of access necessary to perform required functions is granted to individual users.

During this initial meeting, the participating drivers will also be provided with the data collection tools that will be used throughout the 16-week study. These include (1) a study-provided tablet that will be used to complete daily three-minute psychomotor vigilance tests (PVTs) and exemption use questions, (2) a wrist actigraph device, and (3) a Cambridge Mobile Telematics Tag Max. Finally, all drivers will be provided training materials for use during the pilot program.

All data collected by the study app will be automatically saved and securely transmitted to VTTI servers via cellular communication. Drivers will be asked to complete the tasks in the app every day, including days they do not drive. A question will be added at the beginning of the app asking drivers if they drove for work that day. If they answer 'no', there will be no additional questions. On days they drive, they will be asked to complete the tasks at the start of their day (defined by the driver) and at the beginning of each of their rest breaks (either a sleeper berth provision break or the 10-hour off-duty break). Drivers will be instructed to complete the tasks only when they are not driving.

Across the 16-week study, participants will be instructed to wear a wrist actigraphy device to measure sleep timing, quantity, and quality and assess patterns of sleep and wakefulness. The ActiGraph LEAP[®] device to be used in this study uses the CentrePoint cloud-based software portfolio. CentrePoint was designed for decentralized studies to help with the management of the study. With CentrePoint, the study is set up prior to data collection and is created based on the study protocol. This allows for quick plug-and-play device deployment, which greatly reduces site training. Drivers will transfer their data from the watch to the CentrePoint Connect app daily, which will be preinstalled on the study-



provided tablet. The data will then be automatically transferred to the CentrePoint portal over cellular service.

Participating drivers will provide the study team with electronic copies of their record of duty status (RODS). RODS data will provide the primary independent measure in this study. Variables related to driver status (timing/duration of driving, on-duty, off-duty, and sleeper berth) will be extracted from the RODS sent from each driver. Drivers will be asked to electronically send their RODS through the eRODS software using a study-specific code. This will automatically send their RODS directly to FMCSA. Drivers will be asked to transfer their RODS twice per week after certification. The RODS data will then be copied by FMCSA to a Google drive where VTTI has access to retrieve the files and copy them to a limited-access project folder on a secure server. Once received, the study team will upload the RODS to a database for consistent formatting, compliance checking, and analysis preparation. Once the RODS data has been loaded to a database, it will be manually reviewed for accuracy and cleaned for consistent formatting and consistent annotations used to identify use of the exemption. Approximately once per day, the study team will run an automatic script to check for compliance. That is, code will be developed to look for participating driver IDs and driving dates (cross-referencing dates drivers indicate they are working from the study app). A summary will be created flagging potential study procedure compliance issues for manual review and follow-up with the driver. A separate code will also be used to calculate the driver's workday and identify use of the exemptions. This data will be used for analysis.

To assess driving performance, the Cambridge Mobile Telematics (CMT) Tag Max, a solar-powered, non-camera, telematics system, will be installed in each participating driver's CMV. The system is powered by sunlight (with backup charging capabilities) and sends data directly to a secure portal where VTTI can access the data for analysis.

In standard mode, Tag Max provides accelerometer data at 10 hertz and GPS at 1 hertz once the first location is retrieved. Key metrics from the Tag Max data will include distance driven, vehicle speed, lateral acceleration, and longitudinal acceleration. Drivers will operate their vehicles with the Tag Max installed during both baseline and exemption conditions. The data collected via Tag Max will be used to assess and compare driver performance during both conditions. Driver performance will include flagged safety-related events of hard braking, harsh cornering, and speeding. These events will be identified through CMT Tag Max algorithms. However, VTTI will also receive raw metric data.

A Tag Max will be installed on the inside windshield of each participant vehicle. Each device comes with adhesive on the back and is applied to a clean windshield, in a location that receives sun (i.e., not behind windshield wipers or shaded part of the windshield). If a participating driver needs to permanently change vehicles, the Tag Max can easily be



removed from one windshield and applied to another. A VTTI researcher will call the participant and walk them through the process should it be necessary.

Finally, at the end of the 16-week study, drivers will complete the post-study survey. This survey will gather additional information on factors drivers consider when choosing to utilize a split sleeper berth schedule (e.g., fatigue, loading/unloading delays, traffic).

Study Termination

All study data is maintained or destroyed in accordance with the approved Record Disposition Schedule (RDS) N1-557-06-001 Item 3, Correspondence Files, Item 7A, Publications and Completed Research Products - Record Copy, Item 7B, Publications and Completed Research Products - All other copies and Item 9, Reference Files. After the study ends, administrative data is destroyed at a predetermined date annually; this data includes participants' names, addresses, SSNs, etc. Administrative data is used to administer the study and ensure participant payment is lawfully completed.

Only VTTI and FMCSA will have access to the data once the project is complete. The key code will be deleted once all drivers have been identified in the data, or one year after the last vehicle exits the road, whichever happens last.

Fair Information Practice Principles (FIPPs) Analysis

The DOT PIA template is based on the fair information practice principles (FIPPs). The FIPPs, rooted in the tenets of the Privacy Act, are mirrored in the laws of many U.S. states, as well as many foreign nations and international organizations. The FIPPs provide a framework that will support DOT efforts to appropriately identify and mitigate privacy risk. The FIPPs-based analysis conducted by DOT is predicated on the privacy control families articulated in the Federal Enterprise Architecture Security and Privacy Profile (FEA-SPP) v3², sponsored by the National Institute of Standards and Technology (NIST), the Office of Management and Budget (OMB), and the Federal Chief Information Officers Council and the Privacy Controls articulated in Appendix J of the NIST Special Publication 800-53 Security and Privacy Controls for Federal Information Systems and Organizations³.

Transparency

Sections 522a(e)(3) and (e)(4) of the Privacy Act and Section 208 of the E-Government Act require public notice of an organization's information practices and the privacy impact of government programs and activities. Accordingly, DOT is open and transparent about policies, procedures, and technologies that directly affect individuals and/or their

² <http://www.cio.gov/documents/FEA-Security-Privacy-Profile-v3-09-30-2010.pdf>

³ http://csrc.nist.gov/publications/drafts/800-53-Appendix-J/IPDraft_800-53-privacy-appendix-J.pdf



personally identifiable information (PII). Additionally, the Department should not maintain any system of records the existence of which is not known to the public.

As this study requires the collection of data about human subjects, approval from Virginia Tech's IRB is required before data collection begins. This study was reviewed and approved by Virginia Tech's IRB (IRB #25-988). As part of the IRB process, an Informed Consent Form (ICF) was developed which details the participant's role in the study and how their data is protected.

Individual Participation and Redress

DOT provides a reasonable opportunity and capability for individuals to make informed decisions about the collection, use, and disclosure of their PII. As required by the Privacy Act, individuals should be active participants in the decision-making process regarding the collection and use of their PII and they are provided reasonable access to their PII and the opportunity to have their PII corrected, amended, or deleted, as appropriate.

Before opting into participation in the study, prospective participants are informed on what information is collected from participants. This is in addition to the information provided during the informed consent process to ensure the participant is capable of making an informed decision regarding the collection, use, and disclosure of their PII.

Purpose Specification

DOT should (i) identify the legal bases that authorize a particular PII collection, activity, or technology that impacts privacy; and (ii) specify the purpose(s) for which it collects, uses, maintains, or disseminates PII. The PII contained in PTB is utilized for transit subsidy usage reconciliation, reporting for the agency, monitoring, and tracking participant usage.

FMCSA has authority under Title 49 of the United States Code (U.S.C.) 31315(c) to conduct pilot programs. These programs are research studies where one or more temporary exemptions are granted to a person or class of persons subject to certain Federal Motor Carrier Safety Regulations (FMCSRs) to allow for the testing of innovative alternatives to those regulations (49 U.S.C. 31315(c)(1); see also 49 CFR 381.400).

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 the FSB Pilot Program project. In fact, the American Trucking Associations and the Minnesota Trucking Association submitted a joint proposal for a "flexible sleeper-berth pilot program" to FMCSA for consideration in 2013.

In 2010, the Agency held three listening sessions intended to solicit comments and information on potential HOS regulations (see 75 Federal Register [FR] 285 [Jan. 5, 2010],



75 FR 2467 [Jan. 15, 2010], and 75 FR 9376 [Mar. 10, 2010]). Many drivers said they would like some regulatory flexibility (i.e., an exemption from consolidated sleeper berth time) to be able to sleep when they get tired or as a countermeasure to traffic congestion. Although the Agency's 2011 final rule (76 FR 81134 [Dec. 27, 2011]) did not include a provision allowing sleeper berth time to be taken non-consecutively ("split"), FMCSA determined that the issue should be explored in greater depth to determine whether additional flexibility achieves an equivalent or improved level of safety relative to compliance with the current regulations.

Additionally, FMCSA has conducted several studies to explore the topic of split sleep. Past research on how split sleep periods may affect driver performance, fatigue, and quality and quantity of sleep suggests that sleep split into multiple segments is restorative, does not negatively affect daytime "neurobehavioral performance" when compared to a consolidated sleep period of the same total duration, and does not negatively impact performance when implemented strategically. More recent studies provide evidence that the circadian rhythm affects fatigue more than splitting sleep does, and that splitting sleep may be more beneficial than sleeping in a single rest period during daylight hours. As such, this study will assess the safety and performance impacts of additional flexibility for CMV drivers to use split sleeper berth periods.

Data Minimization & Retention

DOT should collect, use, and retain only PII that is relevant and necessary for the specified purpose for which it was originally collected.

FMCSA determined that this collection of information is necessary for study completion; currently, there is no existing dataset that can be used for this project. Participant data is anonymized by assigning each participant a Driver ID (e.g., Driver 001) at the start of data collection. That driver ID is then linked to all CMT data, RODS, PVT, and questionnaire data. The only data collected during the study is the data that is needed to meet the study's objectives.

Participant data falls under the research record retention requirements found in the Department of Health and Human Services (HHS) regulations for Protection of Human Research Subjects at 45 CFR 46. The HHS protection of human subjects regulations require institutions to retain records of IRB activities and certain other records frequently held by investigators for at least three years after completion of the research (45 CFR 46.115(b)).

Use Limitation

DOT shall limit the scope of its PII use to ensure that the Department does not use PII in any manner that is not specified in notices, incompatible with the specified purposes for which the information was collected, or for any purpose not otherwise permitted by law.



The IRB process requires the researcher to provide a detailed protocol explaining the purpose of the study, how the data is collected and stored and who may have access to the data in the future. Each study also includes an ICF signed by each participant. The ICF details the types of data collected and who may have access to the data in the future. This study only collects the data necessary to answer the research questions and that have been approved by Virginia Tech's IRB and via the Paperwork Reduction Act (PRA).

Data Quality and Integrity

In accordance with Section 552a(e)(2) of the Privacy Act of 1974, DOT should ensure that any PII collected and maintained by the organization is accurate, relevant, timely, and complete for the purpose for which it is to be used, as specified in the Department's public notice(s).

The non-invasive CMT telematics device allows for the collection of high-quality behavioral data throughout the Pilot program. RODS are collected from participants via FMCSA eRODS systems. Sleep data is collected via the Actigraph's secure Centerpointe data management system. PVT and exemption use data is collected through VTTI's tablet app. Questionnaire data is collected directly from study participants and is assumed to be accurately reported by them.

Security

DOT shall implement administrative, technical, and physical measures to protect PII collected or maintained by the Department against loss, unauthorized access, or disclosure, as required by the Privacy Act, and to ensure that organizational planning and responses to privacy incidents comply with OMB policies and guidance.

PII is protected by reasonable security safeguards against loss or unauthorized access, destruction, usage, modification, or disclosure. These safeguards incorporate standards and practices required for Federal information systems under the Federal Information System Management Act (FISMA) and are detailed in Federal Information Processing Standards (FIPS) Publication 200, Minimum Security Requirements for Federal Information and Information Systems, dated March 2006, and NIST Special Publication (SP) 800-53 Rev. 5, Security and Privacy Controls for Federal Information Systems and Organizations, dated September 2020. FMCSA has a comprehensive information security program that contains management, operational, and technical safeguards that are appropriate for the protection of PII. These safeguards are designed to achieve the following objectives:

- Ensure the security, integrity, and confidentiality of PII;
- Protect against any reasonably anticipated threats or hazards to the security or integrity of PII; and
- Protect against unauthorized access to or use of PII.



Accountability and Auditing

DOT shall implement effective governance controls, monitoring controls, risk management, and assessment controls to demonstrate that the Department is complying with all applicable privacy protection requirements and minimizing the privacy risk to individuals.

Regular testing of information systems security is performed by VTTI information technology personnel. These tests include the use of assessment and scoring tools provided by the [Center for Internet Security](#). FMCSA personnel and FMCSA contractors are required to attend security and privacy awareness training and role-based training offered by DOT/FMCSA. This training allows individuals with varying roles to understand how privacy impacts their role and retain knowledge of how to properly and securely act in situations where they may use PII in the course of performing their duties.

Responsible Official

Samuel White
System Owner
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Approval and Signature

Karyn Gorman
Chief Privacy Officer
Office of the Chief Information Officer

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