when used as inert ingredients in pesticide formulations applied under 40 CFR 180.910. The petitioner believes no analytical method is needed because it is not required for an exemption from the requirement of a tolerance. *Contact:* RD

D. New Tolerances for Non-Inerts

1. *PP 1F8922.* (EPA–HQ–OPP–2021–0433). Valent U.S.A. LLC, 4600 Norris Canyon Road, San Ramon, CA 94583, requests to establish a tolerance in 40 CFR part 180 for residues of the fungicide, inpyrfluxam in or on cotton, undelinted seed at 0.01 ppm, cotton, gin byproducts (gin trash) at 0.02 ppm. The analytical method RM–50C–1 LC/MS/MS and external standardization) is used to measure and evaluate the chemical inpyrfluxam. *Contact:* RD.

2. *PP 1F8924.* (EPA–HQ–OPP–2021–0433). Valent U.S.A. LLC, 4600 Norris Canyon Road, San Ramon, CA 94583, requests to establish a tolerance in 40 CFR part 180 for residues of the fungicide, inpyrfluxam in or on wheat, forage at 0.01 ppm, wheat, grain at 0.01 ppm, wheat, hay at 1.5 ppm, and wheat, straw at 0.3 ppm. The analytical method RM–50C–1 LC/MS/MS and external standardization) is used to measure and evaluate the chemical inpyrfluxam. *Contact:* RD.

3. *PP 1F8942.* (EPA–HQ–OPP–2021–0833). Valent U.S.A. LLC, 4600 Norris Canyon Road, San Ramon, CA 94583, requests to establish a tolerance in 40 CFR part 180 for residues of the fungicide, inpyrfluxam in or on rapeseed, seed (crop subgroup 20A) at 0.01 ppm. The analytical method RM–50C–1 LC/MS/MS and external standardization) is used to measure and evaluate the chemical inpyrfluxam. *Contact:* RD.

4. *PP 1F8979.* (EPA–HQ–OPP–2022–0452). Gowan Company, LLC., 370 South Main Street, Yuma, AZ 85364, requests to establish a tolerance in 40 CFR part 180 for residues of the miticide Acynonapyr, 3-*endo*-[2-propoxy-4-(trifluoromethyl)phenoxy]-9-[5-(trifluoromethyl)-2-pyridyloxy]-9-azabicyclo[3.3.1]nonane) and its metabolites AP, 3-*endo*-[2-propoxy-4-(trifluoromethyl)phenoxy]-9-azabicyclo[3.3.1]nonane, and AY, 5-(trifluoromethyl)-2-pyridinol in or on almond at 0.03 ppm; almond, hulls at 4.0 ppm; crop group 10, citrus fruits at 0.3 ppm; citrus, oil at 15.0 ppm; orange, dried pulp at 0.7 ppm; grape at 0.6 ppm; raisins at 3.0 ppm; hops at 50.0 ppm; crop group 11, pome fruits at 0.2 ppm; and apple, wet pomace at 0.4 ppm. LC/MS/MS is used to measure and evaluate the chemical acynonapyr and its metabolites (AP, AP–2, AY, AY–3, and AY–1-Glc). *Contact:* RD.

5. *PP 2F8996.* (EPA–HQ–OPP–2021–0787). SePRO Corporation, 11550 North Meridian Street, Suite 600, Carmel, IN 46032, requests to establish tolerances in 40 CFR part 180.420(a)(2) for residues of the herbicide fluridone, 1-methyl-3-phenyl-5-[3-(trifluoromethyl)phenyl]-4(1H)-pyridinone, including its metabolites and degradates, in or on the raw agricultural commodities of peanut at 0.1 ppm and peanut, hay at 0.15 ppm. ELISA, HLPC/UV, LC/MS/MS, and QuEChERS are used to measure and evaluate the chemical residues. *Contact:* RD.

(Authority: 21 U.S.C. 346a)

Dated: June 10, 2022.

Delores Barber,

Director, Information Technology and Resources Management Division, Office of Program Support.

[FR Doc. 2022–13291 Filed 6–21–22; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 563

[Docket No. NHTSA–2022–0021]

RIN 2127–AM12

Event Data Recorders

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT).

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: NHTSA is proposing to amend its regulations regarding Event Data Recorders (EDRs) to extend the EDR recording period for timed data metrics from 5 seconds of pre-crash data at a frequency of 2 Hz to 20 seconds of pre-crash data at a frequency of 10 Hz (*i.e.,* increase from 2 samples per second to 10 samples per second). This NPRM begins the process of fulfilling the mandate of the Fixing America's Surface Transportation Act (FAST Act) to establish the appropriate recording period in NHTSA's EDR regulation.

DATES: You should submit your comments early enough to be received not later than August 22, 2022. We are proposing an effective date of the first September 1st one year from the publication of the final rule.

ADDRESSES: You may submit comments to the docket number identified in the heading of this document by any of the following methods:

- *Federal eRulemaking Portal:* Go to *https://www.regulations.gov*. Follow the online instructions for submitting comments.
- *Mail: Docket Management Facility:* U.S. Department of Transportation, 1200 New Jersey Avenue SE, West Building Ground Floor, Room W12–140, Washington, DC 20590–0001.
- *Hand Delivery or Courier:* 1200 New Jersey Avenue SE, West Building Ground Floor, Room W12–140, between 9 a.m. and 5 p.m. ET, Monday through Friday, except Federal holidays.
- *Fax:* 202–493–2251.

Instructions: All submissions must include the agency name and docket number. Note that all comments received will be posted without change to *http://www.regulations.gov,* including any personal information provided. Please see the Privacy Act discussion below. We will consider all comments received before the close of business on the comment closing date indicated above. To the extent possible, we will also consider comments filed after the closing date.

Docket: For access to the docket to read background documents or comments received, go to *https://www.regulations.gov* at any time or to 1200 New Jersey Avenue SE, West Building Ground Floor, Room W12–140, Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal Holidays. Telephone: 202–366–9826.

Privacy Act: In accordance with 5 U.S.C. 553(c), DOT solicits comments from the public to better inform its decision-making process. DOT posts these comments, without edit, including any personal information the commenter provides, to *www.regulations.gov,* as described in the system of records notice (DOT/ALL–14 FDMS), which can be reviewed at *www.transportation.gov/privacy*. In order to facilitate comment tracking and response, we encourage commenters to provide their name, or the name of their organization; however, submission of names is completely optional. Whether or not commenters identify themselves, all timely comments will be fully considered.

Confidential Business Information: If you wish to submit any information under a claim of confidentiality, you should submit three copies of your complete submission, including the information you claim to be confidential business information, to the Chief Counsel, NHTSA, at the address given under **FOR FURTHER INFORMATION CONTACT**. In addition, you should submit two copies, from which you have deleted the claimed confidential

business information, to the Docket at the address given above. When you send a comment containing information claimed to be confidential business information, you should include a cover letter setting forth the information specified in our confidential business information regulation (49 CFR part 512).

FOR FURTHER INFORMATION CONTACT: For technical questions, please contact Ms. Carla Rush, Office of Crashworthiness Standards, National Highway Traffic Safety Administration, 1200 New Jersey Avenue SE, Washington, DC 20590 (telephone: 202–366–1740, fax: 202–493–2739). For legal questions, please contact Ms. Sara Bennett, Office of Chief Counsel, National Highway Traffic Safety Administration, 1200 New Jersey Avenue SE, Washington, DC 20590 (telephone: 202–366–2992, fax: 202–366–3820).

SUPPLEMENTARY INFORMATION:

Table of Contents

I. Background

A. Overview of Event Data Recorder Technology and Regulatory History

Event data recorders (EDRs) are devices that are used to record safety information about motor vehicle crashes immediately before and during a crash. The recorded information can aid crash investigators to assess the performance of specific safety equipment before and during a crash. This information can assist the agency and others with identifying potential opportunities for safety improvement in vehicles already on the road, as well as contributing to improve future vehicle designs and more effective safety regulations. This information could also aid first responders in assessing the severity of a crash and estimating the probability of serious injury in vehicles equipped with Advanced Automatic Crash Notification (AACN) systems and can improve defect investigations and crash data collection quality. (See the 2006 final rule establishing the EDR regulation (discussed below) for further details. (71 FR 50998.)

In August 2006, NHTSA established 49 CFR part 563 (part 563), which sets forth requirements for data elements, data capture and format, data retrieval, and data crash survivability for EDRs. (71 FR 50998.) Part 563 does not mandate that vehicles have EDRs, but is instead an ''if equipped'' standard that applies only to light vehicles required to have frontal air bags that a manufacturer chooses to voluntarily equip with EDRs.[1] Part 563 ensures that all EDRs subject to the regulation capture the same core set of data elements in a crash, standardizes the parameters (format, duration, etc.) of captured data elements, and sets minimum requirements for data survivability.[2] Part 563 further requires that manufacturers of vehicles with EDRs that are subject to part 563 make commercially available a tool for the purpose of imaging [3] the data collected by the EDR.

Tables I and II of part 563 list the various data elements that are covered under the standard. Table I lists data elements that all EDRs subject to part 563 are required to record, along with the recording interval (duration) and sampling frequency. Table II lists data elements that EDRs subject to part 563 are not *required* to record, but that are subject to part 563 *if* they are recorded. Table II also provides the recording interval (duration) and sampling frequency for each listed data element. In addition, all data elements in Tables I and II must be reported according to the range, accuracy, and resolution in Table III. As is relevant to this rulemaking, several data elements in both Table I and Table II must be captured for a duration of 5 seconds prior to the crash (speed, engine throttle, service brake, engine RPM, ABS activity, stability control, steering input). NHTSA established this 5-second duration because the agency concluded that it would be long enough to ensure the usefulness of the data in crash reconstruction while also minimizing the risk that the data capture process would over-tax the EDR's microprocessor, which could cause a malfunction that could lead to a loss of data.[4]

Part 563 became fully effective on September 1, 2012. The agency estimates that 99.5 percent of model year 2021 passenger cars and other vehicles with a gross vehicle weight rating (GVWR) of 3,855 kilograms (kg) (8,500 pounds) or less have part 563 compliant EDRs.[5]

B. The Fixing America's Surface Transportation Act

Section 24303 of the Fixing America's Surface Transportation Act (FAST Act), Public Law 119–14 (Dec. 4, 2015), requires NHTSA to conduct a study ''to determine the amount of time event data recorders installed in passenger motor vehicles should capture and record for retrieval [of] vehicle-related data in conjunction with an event in order to provide sufficient information to investigate the cause of motor vehicle crashes,'' and to submit a report containing the findings of this study to Congress. Further, within two years of submitting this report to Congress, NHTSA ''shall promulgate regulations to establish the appropriate period during which event data recorders installed in passenger motor vehicles may capture and record for retrieval vehicle-related data to the time necessary to provide accident investigators with vehicle-related information pertinent to crashes involving such motor vehicles.''

As discussed in detail in section C below, NHTSA completed the Event Data Recorders Duration Study required by Section 24303. On September 28, 2018, NHTSA submitted a Report to Congress summarizing the results of the study to the House Committee on Energy and Commerce and the Senate Committee on Commerce, Science, and Transportation.[6] This NPRM begins the process of promulgating regulations to establish appropriate EDR data recording durations as mandated under the FAST Act.

[1] In 2012, NHTSA proposed to convert part 563's ''if equipped'' requirements for EDRs into a new Federal Motor Vehicle Safety Standard (FMVSS) mandating the installation of EDRs in most light vehicles. The NPRM did not propose making any changes to the current EDR regulation's performance requirements, including those for the required data elements (77 FR 74145). In 2019, NHTSA withdrew this proposal due to the near universal installation of EDRs on light vehicles (84 FR 2804).

[2] Part 563 requires EDR data to survive the crash tests in FMVSS Nos. 208, ''Occupant crash protection,'' and 214, ''Side impact protection.''

[3] For the purposes herein, we are using the term ''imaging'' to refer to the process by which data are retrieved from an EDR. When imaging the data on an EDR, the original data set remains intact and unchanged in the memory banks of the EDR.

[4] NHTSA had originally proposed an 8-second duration in the NPRM. 69 FR 32942 (June 14, 2004). However, NHTSA decided to reduce the duration in response to public comments. 71 FR 51020 (Aug. 28, 2006).

[5] In the 2012 NPRM it was estimated that about 92 percent of model year 2010 light vehicles had some EDR capability.

[6] National Highway Traffic Safety Administration. (2022, March) Results of event data recorders pre-crash duration study: A report to Congress (Report No. DOT HS 813 082A).

C. Event Data Recorders Duration Study

To meet the agency's obligations under Section 24303 of the FAST Act, NHTSA contracted with researchers at Virginia Polytechnic Institute and State University (Virginia Tech) to conduct a study to determine the recording duration that would be necessary for EDRs to provide sufficient vehicle-related data to investigate the cause of motor vehicle crashes (the ''EDR Duration Study'').[7] Because crash investigators must understand the events leading up to a crash to determine crash causation, the EDR Duration Study sought to determine the necessary recording duration to encompass a vehicle's relevant maneuvers for three crash types that could benefit from more than 5 seconds of pre-crash recording time: rear-end, intersection, and road departure crashes.[8] For all three of these crash types, the study hypothesizes that it is necessary to capture the initiation of crash avoidance maneuvers by the driver, if any, to better determine causation. The specific crash avoidance maneuvers examined in the study were the driver's release of the accelerator, and the initiation of pre-crash braking and evasive steering. In addition, for intersection crashes, it is also necessary to capture vehicle data for the duration that the vehicle is approaching and traversing an intersection, since intersection crashes often have complex causes that extend back further than when the driver begins making crash avoidance maneuvers (*e.g.,* a rolling stop at the stop sign or any indication of erratic driving during the approach).

The EDR Duration Study was conducted in two phases. Phase I provided an estimate of how often EDRs fail to record a sufficient duration of pre-crash data; however, this analysis did not provide insight into what duration beyond 5 seconds of pre-crash data is needed to capture crash causation. The emphasis in Phase II was on using driver actions in normal driving to determine the complete duration of driver pre-crash actions.

Phase I used cumulative distributions of the EDR data pulled from NHTSA's National Automotive Sampling System Crashworthiness Data System (NASS–CDS) database [9] [10] to estimate how frequently the current 5-second EDR duration requirement failed to capture the initiation of pre-crash driver maneuvers in rear-end, intersection, and road departure crashes. The Phase I study also estimated how frequently the 5-second duration did not capture the vehicle's approach and traversal phase of an intersection or road departure.[11] The results of Phase I helped establish the need for an increase in the EDR recording duration by proving the inadequacy of the 5-second recording duration.

For Phase II of the EDR Duration Study, researchers used data from two previously conducted naturalistic driving studies (NDS) to understand the complete duration (5 seconds or longer) of driver pre-crash actions and estimate the recording duration that would be necessary to capture the initiation of these actions in the same three types of crash scenarios examined in Phase I.[12]

1. Phase I Study

The purpose of the Phase I study was to determine the frequency with which EDRs with a 5-second recording duration fail to record a sufficient duration of pre-crash data to determine crash causation for rear-end,[13] intersection, and roadway departure crashes. Using EDR data pulled from NHTSA's NASS–CDS database from 2000–2015,[14] Phase I researchers examined 1,583 raw cases. Of these cases, 329 were rear-end crashes, 839 were intersection crashes, and 415 were road departure crashes. Based on these cases, researchers found that the current 5-second recording duration required under part 563 failed to capture the initiation of driver crash avoidance maneuvers for a certain percentage of all three selected crash types. These findings are good indications that a 5-second pre-crash recording duration is inadequate if the goal is to capture the complete pre-crash time history—principally the driver's pre-crash behavior—so that NHTSA, crash investigators, and manufacturers can better understand the crash causation.

To determine whether the EDR had captured an entire crash event, Phase I researchers examined the status of the available EDR pre-crash data elements—vehicle's accelerator pedal, service brakes, and steering angle—over the course of the 5 seconds of data. The initiation of the crash event would be indicated by the release of the accelerator pedal, the initiation of braking, or a change in the steering angle from zero degrees. Again, cumulative distributions of the data were used to determine the percentage of crashes where the initiation of the driver's pre-crash maneuver falls outside the 5-second pre-crash recording duration.

For rear-end crashes, the Phase I researchers found that the current 5-second EDR recording duration failed to capture 9% of accelerator pedal releases, 35% of pre-crash braking initiations, and 80% of evasive steering initiations. For intersection crashes, the 5-second recording duration failed to capture 4% of accelerator pedal release instances, 35% of pre-crash braking initiations, and 64% of evasive steering initiations. In addition, it did not capture 13% of initial intersection boundary crossings.[15] Finally, for road departure crashes, the 5-second recording duration failed to capture 8% of accelerator pedal releases, 35% of pre-crash braking initiations, and 88% of evasive steering initiations. However, the analysis of road departure traversal time shows that, in nearly all road departure events, the time period between initial road departure to final rest was less than 5 seconds, which indicates that the pre-crash maneuvers that were not recorded by the 5-second duration likely took place before the vehicle went off-road. Table 1 below summarizes the Phase I findings.

[7] Chen, R.J., Tatem, W.M., & Gabler, H.C. (2022, March) Event data recorder duration study (Appendix to a Report to Congress. Report No. DOT HS 813 082B). National Highway Traffic Safety Administration.

[8] Ibid. Phase I did not analyze lane departure behavior prior to a road departure crash.

[9] NASS–CDS was utilized because it contains over 9,000 EDR downloads. NASS–CDS sampling weights were used in the calculations unless otherwise specified.

[10] The National Motor Vehicle Crash Causation Study (NMVCCS) was also analyzed, but due to the small sample size distributions of pre-crash maneuvers were not conducted. However, the NMVCCS dataset was analyzed to determine the frequency of vehicle malfunctions in crashes, and none of the 50 vehicles in the final dataset were reported as having a vehicle malfunction by the on-site investigator.

[11] Intersection traversal time is not directly measured by a vehicle's EDR; researchers calculated traversal time for this study by reconstructing crash events.

[12] The two studies used were a 100-Car NDS conducted by Virginia Tech Transportation Institute [Neale, V.L., Klauer, S.G., Knipling, R.R., Dingus, T.A., Holbrook, G.T., and Petersen, A. (2002) The 100-Car Naturalistic Driving Study, Phase 1—Experimental Design. (DOT Report HS 809 536) Washington, DC: National Highway Traffic Safety Administration], and the Second Strategic Highway Research Program (SHRP–2) NDS conducted by the Transportation Research Board of The National Academies, [Hankey, J.M., M.A. Perez, and J.A. McClafferty. Description of the SHRP 2 naturalistic database and the crash, near-crash, and baseline data sets, Task Report, Virginia Tech Transportation Institute, Blacksburg, VA, 2016].

[13] For rear-end crashes the striking vehicle was examined.

[14] Up until 2015, NASS was comprised of two probability sampling systems: the General Estimates System (GES) and CDS. Then in 2016, the Crash Investigation Sampling System (CISS) replaced the CDS.

[15] Intersection boundaries were used as a reference point to divide the approach and traversal phase of an intersection (*e.g.,* the edge of the stop bar or cross walk marking closest to the center of the intersection was used as the boundary).

TABLE 1—PERCENTAGE OF EVENTS FOR WHICH 5 SECONDS OF EDR RECORDING DURATION WAS INSUFFICIENT FROM NASS–CDS

Driver pre-crash maneuver	EDR failed to record maneuver initiation (percent)
Rear-End:	
Braking Input	35%
Steering Input	80
Accelerator Release	9
Intersection:	
Braking Input	35
Steering Input	64
Accelerator Release	5
Road Departure:	
Braking Input	35
Steering Input	88
Accelerator Release	8

Based on these findings, the EDR Duration Study concluded that in many cases, the 5-second recording duration may not be sufficient to determine the factors that led to the crash or the pre-crash actions taken by the driver to avoid the collision, meaning that EDRs currently would not always provide investigators crash-related information that could assist in the determination of crash causation.

2. Phase II Study

The purpose of the Phase II study was to determine an appropriate EDR recording duration to provide crash investigators with sufficient data to determine crash causation. NDS data were analyzed to understand the complete duration (5 seconds or longer) of driver pre-crash actions in car following, intersection traversal, and lane departure crashes. The Phase II study used data from two previously conducted naturalistic driving studies: a 2002 100-Car study conducted by Virginia Tech, and the 2016 Second Strategic Highway Research Program (SHRP–2) NDS conducted by the Transportation Research Board of The National Academies.[16] To estimate the recording duration needed to capture the initiation of a crash event, the Phase II researchers analyzed near-miss driving events as proxies for actual crash avoidance driving maneuvers that were analyzed in the Phase I study.[17] The main finding in Phase II of the study was that 20 seconds of pre-crash data would encompass the 90th percentile recording duration required for the three crash modes and the crash avoidance maneuvers analyzed. A ''90th percentile recording duration'' means that, based on the cumulative distributions for all three crash modes and crash avoidance maneuvers analyzed, a minimum of 20 seconds of pre-crash data recording is necessary to investigate crash causation, as this period captures the driver pre-crash actions in 90% of the dataset.[18]

To determine the recording duration needed to capture rear-end crashes, the Phase II researchers examined the duration of ''car following'' braking events from the 100-car NDS. By looking at the time duration between the start of the braking event (*i.e.,* when the driver applies the brake) and the vehicle's closest approach to the lead vehicle, the Phase II researchers were able to approximate the duration of a rear-end crash event. The results were different depending on whether the lead vehicle was stopped or travelling (*e.g.,* events with stopped lead vehicle are associated with longer time to closest approach). The findings in the study are that for braking events with a stopped lead vehicle, the median was 4.5 seconds and the 90th percentile time to closest approach [19] was 12.3 seconds. The SHRP–2 dataset was also used to characterize driver pre-crash behavior in striking rear-end crash events. The approach was to use striking rear-end crash events from the SHRP–2 NDS to provide a threshold to determine the required time duration to fully capture driver pre-crash behavior.[20] The analysis of rear-end crashes in the SHRP–2 NDS resulted in 90th percentile distributions of final accelerator release, brake initiation, and evasive steering durations of 12, 10, and 3 seconds, respectively.[21]

To determine the recording duration needed to capture intersection crashes, the Phase II researchers examined the time duration for drivers to approach and traverse through an intersection during normal driving.[22] This analysis used the 100-Car NDS data, and found that the current EDR pre-crash recording time of 5 seconds captures less than 1 percent of the total intersection event time. The results of this analysis support that a recording time of 15 seconds would capture approximately 50 percent of the total intersection event time, and 18.6 seconds would capture 90 percent.[23] The proposed recording

[16] A naturalistic driving study is a research method that involves equipping vehicles with unobtrusive cameras and instrumentation to record real-world driver behavior and performance.

[17] Phase II of the study assumed that the driver's behavior in near-miss driving events would correlate to actual crash avoidance driving maneuvers.

[18] This duration is influenced heavily by the inclusion of intersection crashes. Without the inclusion of intersection crashes 12.3 seconds of data would encompass the 90th percentile recording duration for rear-end and road departure crashes.

[19] The time to closest approach is calculated as the time between driver brake applications to time when the instrumented vehicle is at the closest longitudinal distance with respect to the lead vehicle.

[20] SHRP–2 data were used to better capture the diversity of driver behavior nationwide.

[21] Final accelerator release was calculated as the time point prior to impact, where impact is time 0, when the driver releases the accelerator (accelerator status ''0'') for the final time. Final brake initiation was calculated as the time point prior to impact when the driver depresses the brake pedal. Time of evasive steering initiation was calculated as the time point prior to impact when the driver's steering rate equaled or exceeded 500°/s for the first time. These metrics were not collected in the 100-car NDS.

[22] The sequence of driver actions leading to and resulting in an intersection collision can be divided into four phases: the approach phase, the traversal phase, any evasive action, and finally the impact. For almost all intersection crash types, the driver actions which lead to the crash, *e.g.* running a red light, occurred during the approach phase. In most crashes once in the intersection, the error has already been committed. If an EDR can capture the approach phase of an intersection crash then the entire crash will be captured. However, EDRs, which record the time of transition between the approach and traversal phase, can capture stop sign running, rolling stops, and red-light running.

[23] Cumulative distributions for the approach, traversal, and total times were analyzed for each traffic control device type, approach action, traversal action, and lane size.

time of 20 seconds would capture approximately 99 percent of the total intersection event time.

To determine the recording duration needed to capture road departure crashes, the Phase II researchers examined ''lane excursion'' events (*i.e.,* minor lane departures which occur as a result of normal lane keeping behavior that do not result in crashes) in the 100-Car NDS. The duration of a lane excursion event was calculated as the time from the moment a vehicle began to drift, depart the lane, to the time when the vehicle fully recovers back within the lane lines. The finding of the study was that the median duration of all lane excursion events was about 3.2 seconds, and the 90th percentile of the distribution was 6 seconds. The analysis of 14 road-departure crashes in SHRP–2 NDS showed that the median accelerator pedal release time to road departure was 23 seconds, the median brake application was at 1.9 seconds after road departure, but as early as 21 seconds prior to road departure.[24]

Table 2 summarizes the pertinent Phase II findings:

TABLE 2—SUMMARY OF TYPICAL DRIVER MANEUVER TIME

Driver pre-crash maneuver	Duration of driver action (seconds)	
	50th percentile	90th percentile
Rear-End:		
Time to Closest Approach	4.5	12.3
Intersection:		
Approach + Traversal	12.6–15.1	[25] 16.0–18.6
Road Departure: *		
Drift out of lane to Recovery	3.2	6.0

* Lane excursion events were examined in the 100-car NDS.

II. Proposal

A. Pre-Crash EDR Recording Duration

Widespread deployment of EDRs offers an opportunity to use EDR data to assist in the determination of crash causation and better understand driver pre-crash behavior. EDRs can provide a comprehensive snapshot of the driver inputs in the seconds prior to a crash (*e.g.,* acceleration, brake application, and steering inputs).

Pursuant to Section 24303 of the FAST Act, and in light of the conclusions of the EDR Duration Study, NHTSA is proposing to extend the EDR recording duration for timed data elements from 5 seconds of pre-crash data to 20 seconds.

As noted above, Phase I of the EDR Duration Study found that, in a substantial percentage of crashes in which the EDR is triggered, the currently required 5-second recording duration was insufficient to record important information that would assist investigators with crash reconstruction, such as the initiation of crash avoidance driving maneuvers, *e.g.,* pre-crash braking. Phase II of the EDR Duration Study found that 20 seconds of pre-crash data would encompass the 90th percentile recording duration required for the three crash modes and the crash avoidance maneuvers analyzed.

The EDR Duration Study has determined that the 5-second recording duration is a limitation of current EDRs for the purposes of investigating crash causation. To assist investigators and vehicle manufacturers in determining crash causation, the research indicated that the EDR needs to be able to capture the driver's pre-crash behavior. The study found that a better understanding of the driver's pre-crash behavior will also assist in the evaluation of emerging crash avoidance systems (*e.g.,* lane departure warning, lane keeping assist, forward collision avoidance, automatic emergency braking, and intersection safety assistance systems).[26] Based on the study, it appears that extending the EDR recording duration to 20 seconds would help ensure that critical pre-crash data are captured. Therefore, based on the conclusions of the EDR Duration Study, NHTSA believes it is reasonable to propose requiring a minimum of 20 seconds of pre-crash data.

Further, this proposal is also based on information NHTSA has learned from its defects investigation experience that EDR data can be used to assist the agency in assessing whether the vehicle was operating properly at the time of the event, or to help detect undesirable operations. For example, in March 2010, NHTSA began to obtain data from Toyota EDRs as part of its inquiry into allegations of unintended acceleration (UA), and as a follow-up to the recalls of some Toyota models for sticking and entrapped accelerator pedals. The Toyota unintended acceleration study helped determine the root cause of each crash.[27] For NHTSA, this served as affirmation of the significant value that EDR pre-crash data can have.

Finally, we believe a 20 second pre-crash recording duration is feasible. We are aware that, previously, several manufacturers' EDRs recorded pre-crash data in excess of the minimum time intervals required in part 563. For example, a 2007 Ford was shown to have reported over 25 seconds of data (23.6 seconds pre-crash and 1.6 seconds post-crash) on five separate data elements, at a frequency of 5 data points per second (5 Hz).[28] This includes all three required Table I elements and two optional Table II elements. We are seeking comment on the need and practicability of increasing the pre-crash recording duration.

[24] Both lane and road departures were analyzed, because, while most normal lane excursions do not result in crashes, lane excursions can lead to road departure crashes if the driver does not initiate corrective measures in time. Therefore, a characterization of normal lane excursions duration provides a baseline to establish sufficient EDR recording duration in order to capture driver lane keeping behavior prior to road departure crashes.

[25] Note the range of time shown for intersection was derived from intersections with different number of lanes. The lower bound represents time for 2-lane intersections while the upper bound for 7-lane intersections.

[26] We note that, although SAE has specifications on them and some vehicle manufacturers have started to record crash avoidance EDR data elements, there are no required or optional EDR data elements specific to these crash avoidance technologies. However, knowing the status of required data elements such as service brake application and accelerator pedal percent and optional data elements such as steering input, will assist in understanding the performance of these technologies.

[27] NHTSA Report No. NHTSA–NVS–2011–ETC, ''Technical Assessment of Toyota electronic Throttle Control (ETC) Systems,'' January 2011.

[28] NHTSA, Special Crash Investigation No. IN10013. *https://crashviewer.nhtsa.dot.gov/nass-sci/GetBinary.aspx?Report&ReportID=804261920&CaseID=804261915&Version=-1.*

B. Pre-Crash EDR Recording Frequency

The current Table I in part 563 requires an EDR to capture pre-crash data at a sample rate of 2 samples per second (Hz). The same sample rate applies to Table II elements of engine revolutions per minute (RPM), anti-lock braking system (ABS) status, electronic stability control (ESC) status and steering input. Generally, 5 seconds worth of pre-crash event data at 2 Hz sampling rate has been sufficient for the agency's crash investigators to better understand the vehicle speed and driver inputs prior to the event. However, from the agency's experience investigating allegations of unintended acceleration, NHTSA identified a need for the agency to consider improving the pre-crash data sample rate. Increasing the sampling rate in addition to the pre-crash recording duration, will be critical in determining crash causation.

NHTSA believes that increasing the EDR sampling frequency would provide the agency with a more detailed representation of pre-crash actions because in some crash circumstances, 2 Hz may be insufficient to identify crash causation factors and lead to misinterpretation of the data. For example, NHTSA is concerned that it is possible for rapid vehicle control inputs (*e.g.,* brake application and release or rapid reversals in steering input of less than 0.5 seconds,) to be completely missed by an EDR that records data at 2 Hz. Thus, although more crash causation information will be captured with the 20 second time duration, there is a concern that it could be misinterpreted without a refinement in acquisition frequency. An improved data sampling rate is also needed because of how fast the sequence of events leading to crashes can happen and how fast the vehicle's systems need to activate, such as the activations of crash avoidance technologies (*e.g.,* Anti-lock Braking System, and Electronic Stability Control). The current sampling rate is well below the timing necessary to understand the performance and effectiveness of such systems.

In addition, the EDR output for the pre-crash data elements are not synchronized,[29] even at the sampling rate of 2 Hz, which could result in uncertainty when it becomes necessary to compare the data at specific points in time with precision. A greater sampling rate for the pre-crash data elements would reduce the potential uncertainty related to the relative timing of data elements, specifically for correlating the driver's commands and the vehicle's performance.

Furthermore, at least one vehicle manufacturer (Honda) has begun to voluntarily collect EDR data on the status and operation of advanced driver assistance systems, like the activation of forward crash warning alerts, automatic emergency braking activations, and similar lane keeping assist technologies. Generally, manufacturers have adopted the sampling rate used for pre-crash data elements that are voluntarily recorded by the EDR. An improved sampling rate of 10 Hz will provide the resolution to understand the real-world performance and effectiveness of these advanced crash avoidance systems that is not currently possible with the current 2 Hz sampling rate and non-synchronized data collection. The combination of manufacturers' voluntary integration of advanced driver assistance system data elements and the increased sampling frequency would provide valuable insight on the performance of new technologies.

We believe a 10 Hz pre-crash recording frequency is feasible. We are aware of 10 Hz pre-crash recordings for steering angle and electronic stability control as far back as 2010.[30] 2012 EDRs in Chrysler vehicles recorded all Table I data elements and 5 Table II elements at 10 Hz.[31] [32] Also pointing to the practicability and appropriateness of 10 Hz sampling are statements of vehicle manufacturers and suppliers made to Virginia Tech researchers during the 2011–2013 timeframe (EDR Technology Study).[33] When asked about near-term plans for EDR designs, these manufacturers and suppliers stated, ''Higher sampling frequency and longer recording interval for pre-crash data, *i.e.,* sampling frequency better than 1/10 of a second.'' [34]

As with the increased recording duration, we welcome comments on the need and practicability of increasing the sampling rate.

C. Benefits

Based on the EDR Duration Study findings, the current 5 second EDR pre-crash recording duration did not capture the initiation of pre-crash braking and steering maneuvers in a substantial percentage of cases. The proposed increased recording time for the pre-crash data would help ensure that data on the initiation of pre-crash actions and maneuvers are captured for most crashes. This increased data will enhance the usefulness of the recorded information and potentially lead to further improvements in the safety of current and future vehicles.

The increase in data recording frequency will clarify the interpretation of recorded pre-crash information. Specifically, this proposed refinement in acquisition frequency can capture rapid vehicle control inputs (*e.g.,* brake application and release or rapid reversals in steering input of less than 0.5 seconds) and activation of crash avoidance technologies that would otherwise be completely missed in the data stream under the current 2 Hz frequency sampling rate. Furthermore, without the increase in the data recording frequency, even with the proposed 20 second duration, crash investigators and researchers could still misinterpret the recorded data.

As discussed in past EDR rulemaking notices, EDR data improve crash investigations and crash data collection quality to assist safety researchers, vehicle manufacturers, and the agency to understand vehicle crashes better and to help determine crash causation.[35] Similarly, vehicle manufacturers can utilize EDR data in improving vehicle designs and developing more effective vehicle safety countermeasures. In addition, the data can be used, by the vehicle manufacturers or the agency, to assess whether the vehicle was operating properly at the time of the event, or to help detect undesirable operations. For example, as discussed previously in Section II.A, the Toyota unintended acceleration study [36] served as affirmation of the significant value that EDR pre-crash data can have.

EDR data can also aid in the improvement of existing safety standards and the development of new

[29] The individual data elements collected from various sensors and modules may be running at different clock and processor speeds, and when recorded by the EDR during an event, they may not be precisely timed. A greater sampling rate for the pre-crash data elements can reduce the potential uncertainty related to the relative timing of data elements, specifically for correlating the driver's commands and the vehicle's performance.

[30] NASS CDS Case 2010–82–045. EDR download FTP site: *https://www.nhtsa.gov/node/97996/2921.* Download nass2010.zip.

[31] DOT HS 812 929, Pg. 18.

[32] NASS CDS Case 2012–12–075. EDR download FTP site: *https://www.nhtsa.gov/node/97996/2921.* Download nass2012.zip.

[33] Five vehicle manufacturers and three suppliers were interviewed as part of the study.

[34] DOT HS 812 929, Pg. 39.

[35] Even though crash investigators gather insightful information about the dynamics of crashes, some parameters cannot be determined or cannot be as accurately measured (such as the change in velocity) by traditional post-crash investigation procedures, such as visually examining and evaluating physical evidence, *e.g.,* the crash-involved vehicles and skid marks.

[36] NHTSA Report No. NHTSA–NVS–2011–ETC, ''Technical Assessment of Toyota electronic Throttle Control (ETC) Systems,'' January 2011.

ones. For example, the requirement for EDRs to record parameters of advanced restraint systems during an event of interest could help industry and the agency monitor the real-world performance of these systems and detect injury trends. As a result, vehicle manufacturers could more quickly improve advanced restraint systems and other occupant protection countermeasures. The agency would promulgate the necessary vehicle standards to further protect vehicle occupants. An increasing number of vehicles in the fleet today have advanced safety technologies, including advanced driver assistance system technologies. We anticipate that a better understanding of driver pre-crash behavior may assist in the evaluation of these emerging crash avoidance systems (*e.g.,* lane departure warning, lane keeping assist, forward collision avoidance, automatic emergency braking, and intersection safety assistance systems).

D. Costs

Increasing the recording time of the pre-crash data would improve the current part 563 data collection requirements, but could add additional cost for increased memory if there is little or no excess memory in the module. Another study on EDRs recently published by the agency (referred to throughout this document as the EDR Technologies Study) reported from information provided by industry that a typical recorded event requires about 2 kilobytes (Kb) of memory depending on the manufacturer.[37] Information from manufacturers also indicated that the typical microprocessor used in vehicle applications, in approximately the 2013 timeframe, had 32 Kb or 64 Kb of flash data as part of the air bag control module (ACM) and that only a fraction of the memory is dedicated to the EDR data. This study also estimated the total memory usage for all Table I[38] and Table II[39] data elements recorded for the minimum duration and frequency requirements in part 563. It reported that to record Table I and II data elements would require 0.072 Kb and 0.858 Kb of memory storage, respectively.[40] This would represent the baseline memory, both required (0.072 Kb) and optional (0.858 Kb), needed for complying with part 563 and would account for only about 1.45 percent [0.93/64] of a 64 Kb microprocessor's memory and 2.9 percent [0.93/32] of a 32 Kb microprocessor's memory.

The table below specifies the Table I and II pre-crash data element memory usage under the current regulation (baseline memory) as well as the proposed increase in pre-crash recording duration from 5 seconds to 20 seconds with no change in the 2 Hz frequency and the second scenario is an increase in recording frequency from 2 Hz to 10 Hz, for a 20 second duration. The pre-crash duration-only increase requires 0.21 Kb [1.14 Kb–0.93 Kb] of additional memory (a factor of 1.23 increase from the baseline).[41] An increase in pre-crash recording duration from 5 seconds to 20 seconds with an increase in recording frequency from 2 Hz to 10 Hz would require 1.33 Kb of additional memory (a factor of 2.43 increase from the baseline).[42]

The EDR Technologies Study reported that the cost of flash memory (the type that could be used to permanently store an EDR image) was 0.000072 $/Kb (0.072 ¢/megabyte (Mb)) in 2013, with the projection of a drop to .00003 $/Kb (0.03 ¢/Mb) by 2020. Cost estimates from the Federal Motor Carrier Safety Administration (FMCSA) for flash memory for commercial vehicle data recorders from 2005 gave a memory cost at $0.002/Kb (200 ¢/Mb).[43] This estimate is more than 15 years old and likely overestimates current EDR memory cost. Nonetheless, if we use this conservative estimate, the cost of additional memory needed for 20 seconds of pre-crash data collected at 10 Hz would be $.003 [$.002/Kb x (2.26–0.93) Kb] per vehicle.

TABLE 3—PRE-CRASH ELEMENT MEMORY USAGE

Configuration	Pre-crash elements		Required EDR memory (Kb)			
	Duration	Frequency (Hz)	Table I	Table II	Total	Increase factor
Current Regulation	5	2	0.072	0.858	0.930	
Duration Increase	20	2	0.162	1.019	1.140	1.23
Duration and Frequency Increase	20	10	0.642	1.819	2.260	2.43

According to the EDR Technology Study, the typical microprocessor used in vehicle applications for the ACM had 32Kb or 64Kb of flash data. The baseline EDR Table I and II data elements only represent about 1.45 percent of a 64 Kb microprocessor's memory and 2.9 percent of a 32 Kb microprocessor's memory. Increasing the duration to 20 seconds and frequency to 10 Hz would utilize 3.5 percent [2.26/64] of a 64 Kb microprocessor's memory and 7.06 percent [2.26/32] of a 32 Kb microprocessor's memory.

Given how slight the proposed increase in memory would be, the agency believes that memory changes needed to accommodate the added EDR data storage can be incorporated into the existing or planned memory design in vehicles.[44] NHTSA believes that in most cases the amount of additional memory necessary to comply with the proposed requirements would be less than the unused memory on a vehicle's ACM chip. In such cases, there should be zero increase in memory cost. The rare exception to this would be a situation where an ACM is at its full memory usage (*i.e.,* due to the collection of optional data elements) that does not have a few percent of memory to spare. In this situation, it is possible that there could be an additional cost to move to

[37] DOT HS 812 929, Pg. 23.

[38] See Table 20 in DOT HS 812 929.

[39] See Table 21 in DOT HS 812 929.

[40] There are 3 data elements in Table I and 4 in Table II that are frequency based. We assume 1 Byte of memory for each data sample (11 Bytes for each data element). This results in 33 and 44 Bytes of frequency-based data in Tables I and II, respectively.

[41] The frequency-based pre-crash data are assumed to increase from 11 to 41 Bytes per data element, based on a factor of 4 increase in duration.

[42] The frequency-based pre-crash data are assumed to increase from 11 to 201 Bytes per data element, based on a factor of 4 increase in duration and a factor of 5 increase in recording frequency.

[43] Kreeb, R.M. and B.T. Nicosia (2005). ''Vehicle Data Recorders,'' (FMCSA–PSV–06–001). Federal Motor Carrier Safety Administration, Washington, DC.

[44] Specifically, more memory and faster processors are critical to the performance of advanced driver assistance systems (ADAS), highly automated driving functions, and other electronic subsystems (such infotainment, navigation, communication) in vehicles.

a larger chip.[45] Vehicle manufacturers could alternatively reduce the number of optional Table II data elements being recorded, until such time that the ACM chip is being enlarged for other reasons. We seek comment on whether current EDRs will need to increase their memory capacity or change the memory implementation strategy (*i.e.,* short term memory buffer verse long-term storage) to meet the new requirements. We also seek comment on our cost estimates and whether our assumptions are accurate. Are there other costs (*e.g.,* redesign for a larger unit, additional capacity for Random-Access Memory (RAM), etc.),[46] or other factors we need to consider?

Finally, we do not anticipate there being any additional processor speed or backup power needs associated with the proposed greater recording duration and frequency increase. As found in the EDR Technologies Study, more than a decade ago at least one vehicle manufacturer was recording 20 seconds of data at 5 Hz. Since that time, manufacturers may have improved the processing speed of their ACM in order to handle additional crash deployable components, such as ejection mitigation curtains. Thus, the proposed changes would not be expected to burden the speed of the processor. Nonetheless, we seek comment on the potential impact on the ACM processor and associated cost.

E. Lead Time

We are proposing an effective date of the first September 1st one year from the publication of the final rule. For example, if the final rule is published on October 1, 2022, the effective date is September 1, 2024. The agency estimates that 99.5 percent of model year 2021 passenger cars and other vehicles with a GVWR of 3,855 kg or less have part 563-compliant EDRs. As discussed in the cost section, the agency believes that increasing the required pre-crash data recording time will not require any additional hardware or substantial redesign of the EDR or the vehicle and will likely only require minimal software changes. With that in mind, the agency believes a year of lead time is reasonable. Comments are requested on this proposed lead time.

III. Rulemaking Analyses and Notices

Executive Order 12866, Executive Order 13563, and DOT Regulatory Policies and Procedures

We have considered the potential impact of this proposed rule under Executive Order 12866, Executive Order 13563, and DOT Order 2100.6A. This NPRM is nonsignificant under E.O. 12866 and was not reviewed by the Office of Management and Budget. It is also not considered ''of special note to the Department'' under DOT Order 2100.6A, *Rulemaking and Guidance Procedures.*

As discussed in this NPRM, the additional pre-crash data that would be collected by EDRs under the proposed rule would be valuable for the advancement of vehicle safety by enhancing and facilitating crash investigations, the evaluation of safety countermeasures, advanced restraint and safety countermeasure research and development, and certain safety defect investigations. Improvements in vehicle safety could occur indirectly from the collection of these data.

We estimate that about that 99.5 percent of model year 2021 passenger cars and other vehicles with a GVWR of 3,855 kg or less are already equipped with part 563-compliant EDRs. As discussed in the above section on the cost impacts of this NPRM, the agency believes that no additional hardware would be required by the proposed amendment and that the compliance costs would be negligible, and we are seeking comment on the costs of the proposed rule.

Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.,* as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency is required to publish a notice of proposed rulemaking or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (*i.e.,* small businesses, small organizations, and small governmental jurisdictions). The Small Business Administration's regulations at 13 CFR part 121 define a small business, in part, as a business entity ''which operates primarily within the United States.'' (13 CFR 121.105(a)(1)). No regulatory flexibility analysis is required if the head of an agency certifies the proposed or final rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a proposed or final rule will not have a significant economic impact on a substantial number of small entities.

This action proposes minor amendments to 49 CFR part 563, Event Data Recorders (EDRs) to extend the recording period for pre-crash elements in voluntarily installed EDRs from 5 seconds of pre-crash data at a frequency of 2 Hz to 20 seconds of pre-crash data at a frequency of 10 Hz. The proposed rule applies to vehicle manufacturers who produce light vehicles with a GVWR not greater than 3,855 kg (8,500 pounds) and voluntarily install EDRs in their vehicles. It also applies to final-stage manufacturers and alterers. NHTSA analyzed current small manufacturers in detail in the accompanying Preliminary Regulatory Evaluation (PRE) [47] and found that none of the entities listed in the analysis would be impacted by this proposal. If adopted, the proposal would directly affect 20 single stage motor vehicle manufacturers.[48] None of these are qualified as small business. However, NHTSA analyzed current small manufacturers, multistage manufacturers, and alterers that currently have part 563 compliant EDRs and found that 13 motor vehicle manufacturers affected by this proposal would qualify as small businesses. While these 13 motor vehicle manufacturers qualify as small businesses, none of them would be significantly affected by this rulemaking for several reasons. First, vehicles that contain EDRs are already required to comply with part 563. This proposed rule would not require hardware changes, but would require adjusting the recording time and sampling rate for up to seven pre-crash data elements. The agency believes current or planned systems are capable of accommodating these changes. Additionally, NHTSA believes the market for the vehicle products of the 13 small vehicle manufacturers is highly inelastic, meaning that purchasers of their products are enticed by the desire to

[45] In this situation, there could be an additional cost to move to a larger chip. According to the EDR Technologies Study reported that the cost of flash memory (the type that could be used to permanently store an EDR image) was 0.00072 $/megabyte (Mb) in 2013, with the projection of a drop to 0.0004 $/Mb by 2017.

[46] An internet search for automotive grade microprocessor chips with 64 Kb and 128 Kb flash memory capacity indicate that they also had 4 Kb of available Static Random-Access Memory (SRAM) integrated with the chip. SRAM is a popular choice for volatile storage because of its speed, reliability, low-power consumption and low cost (*e.g.,* ideal for applications involving continuous data transfer, buffering, data logging, audio, video and other math- and data-intensive functions). *https://www.microchip.com/wwwproducts/en/AT90CAN64.*

[47] The PRE is available in the same docket as this proposal.

[48] BMW, Fiat/Chrysler (Ferrari and Maserati), Ford, Geely (Volvo), General Motors, Honda (Acura), Hyundai, Kia, Lotus, Mazda, Mercedes, Mitsubishi, Nissan (Infiniti), Porsche, Subaru, Suzuki, Tata (Jaguar and Land Rover), Tesla, Toyota (Lexus), and Volkswagen/Audi.

have a highly customized vehicle. Generally, under this circumstance, if any price increase, the price of competitor's models will also need to be raised by a similar amount, since all light vehicles must comply with the standards. Therefore, any reasonable price increase will not have any effect on sales of these vehicles. Thus, I hereby certify that this proposed rule would not have a significant economic impact on a substantial number of small entities. Additional details related to the basis of this finding can be found in the PRE for this rulemaking proposal.

Executive Order 13132

NHTSA has examined today's proposed rule pursuant to Executive Order 13132 (64 FR 43255, August 10, 1999) and concludes that no additional consultation with states, local governments or their representatives is mandated beyond the rulemaking process. This NPRM proposes minor technical amendments to an already existing regulation.[49] When 49 CFR part 563 was promulgated in 2006, NHTSA explained its view that any state laws or regulations that would require or prohibit the types of EDRs addressed by part 563, or that would affect their design or operations, would create a conflict and therefore be preempted. As a result, regarding this NPRM, NHTSA does not believe there are current state laws or regulations for EDRs that conflict with part 563 or with the overall minor change to capture time proposed by this document. Further, the amendments proposed by this NPRM are directed by the FAST Act, which directs NHTSA to conduct a study to determine the amount of time EDRs should capture and record data to provide sufficient information for crash investigators, and conduct a rulemaking based on this study to establish the appropriate recording period in part 563. NHTSA conducted an EDR Duration Study and submitted a Report to Congress summarizing the results of this study in September 2018. This NPRM initiates the rulemaking mandated by the FAST Act. To the extent there are state laws with different capture times than that proposed by this NPRM, Congress made the determination in the FAST Act that the capture time required by part 563 should be extended. NHTSA is issuing this NPRM in accordance with that statutory mandate. NHTSA requests stakeholder input on this issue.

[49] The 2006 final rule promulgating 49 CFR part 563 discussed preemption at length. 71 FR 50907, 51029 (Aug. 28, 2006).

Executive Order 12988 (Civil Justice Reform)

When promulgating a regulation, Executive Order 12988 specifically requires that the agency must make every reasonable effort to ensure that the regulation, as appropriate: (1) Specifies in clear language the preemptive effect; (2) specifies in clear language the effect on existing Federal law or regulation, including all provisions repealed, circumscribed, displaced, impaired, or modified; (3) provides a clear legal standard for affected conduct rather than a general standard, while promoting simplification and burden reduction; (4) specifies in clear language the retroactive effect; (5) specifies whether administrative proceedings are to be required before parties may file suit in court; (6) explicitly or implicitly defines key terms; and (7) addresses other important issues affecting clarity and general draftsmanship of regulations.

Pursuant to this Order, NHTSA notes as follows. The preemptive effect of this proposed rule is discussed above in connection with E.O. 13132. NHTSA notes further that there is no requirement that individuals submit a petition for reconsideration or pursue other administrative proceeding before they may file suit in court.

Executive Order 13609 (Promoting International Regulatory Cooperation)

Executive Order 13609, ''Promoting International Regulatory Cooperation,'' promotes international regulatory cooperation to meet shared challenges involving health, safety, labor, security, environmental, and other issues and to reduce, eliminate, or prevent unnecessary differences in regulatory requirements.

The agency is currently participating in the negotiation and development of technical standards for Event Data Recorders in the United Nations Economic Commission for Europe (UNECE) World Forum for Harmonization of Vehicle Regulations (WP.29). As a signatory member, NHTSA is obligated to initiate rulemaking to incorporate safety requirements and options specified in Global Technical Regulations (GTRs) if the U.S. votes in the affirmative to establish the GTR. No GTR for EDRs has been developed at this time. NHTSA has analyzed this proposed rule under the policies and agency responsibilities of Executive Order 13609, and has determined this proposal would have no effect on international regulatory cooperation.

National Environmental Policy Act

NHTSA has analyzed this NPRM for the purposes of the National Environmental Policy Act. The agency has determined that implementation of this action would not have any significant impact on the quality of the human environment.

Paperwork Reduction Act

Under the Paperwork Reduction Act of 1995 (PRA), a person is not required to respond to a collection of information by a Federal agency unless the collection displays a valid Office of Management and Budget (OMB) control number. This NPRM proposes requirements that relate to an information collection that is subject to the PRA, but the proposed requirements are not expected to increase the burden associated with the information collection. NHTSA is currently in the process of seeking approval for OMB for the information collection. In compliance with the requirements of the PRA, NHTSA published a notice in the **Federal Register** on August 26, 2021 (86 FR 47719), seeking public comment and providing a 60-day comment period. NHTSA has now followed up with a second notice, published a notice on March 17, 2022 (87 FR 15302), announcing that the agency is submitting the information collection request to OMB for approval.

National Technology Transfer and Advancement Act

Under the National Technology Transfer and Advancement Act of 1995 (NTTAA) (Pub. L. 104–113), ''all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments.'' Voluntary consensus standards are technical standards (*e.g.,* materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies, such as SAE International (SAE). The NTTAA directs us to provide Congress, through OMB, explanations when we decide not to use available and applicable voluntary consensus standards. The NTTAA requires agencies to use voluntary consensus standards in lieu of government-unique standards except where inconsistent with law or otherwise impractical.

There are several consensus standards related to EDRs, most notably those standards published by SAE (J1698—

Event Data Recorder) and Institute of Electrical and Electronics Engineers (IEEE) (Standard 1616, IEEE Standard for Motor Vehicle Event Data Recorder). NHTSA carefully considered the consensus standards applicable to EDR data elements in establishing part 563. Consensus standards for recording time/intervals, data sample rates, data retrieval, data reliability, data range, accuracy and precision, and EDR crash survivability were evaluated by NHTSA and adopted when appropriate. The FAST Act directed NHTSA to conduct a study to determine the amount of time EDRs should capture and record pre-crash data to provide sufficient information for crash investigators, and to conduct a rulemaking based on this study to establish the appropriate recording period in NHTSA's EDR regulation. NHTSA conducted the EDR Duration Study and submitted a Report to Congress summarizing the results of this study in September 2018. This particular rulemaking exceeds the pre-crash data recording durations of the SAE and IEEE standards (*i.e.,* SAE and IEEE recommend recording 8 seconds of pre-crash data) based upon the new information obtained from the EDR Duration Study. The results of the study on EDR recording duration suggest that the recommended recording duration by these standards would not capture the initiation of crash avoidance maneuvers. NHTSA declines to adopt the voluntary consensus standards for the pre-crash recording because such a decision would be inconsistent with the best available information to the agency and conflict with the outcome of a study required by the FAST Act.

Unfunded Mandates Reform Act

Section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA) requires Federal agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of more than $100 million annually (adjusted for inflation with base year of 1995). Adjusting this amount by the implicit gross domestic product price deflator for the year 2020 results in $158 million (113.625/71.868 = 1.581). Before promulgating a rule for which a written statement is needed, section 205 of the UMRA generally requires the agency to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows the agency to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the agency publishes with the final rule an explanation of why that alternative was not adopted.

This NPRM would not result in expenditures by State, local, or tribal governments, in the aggregate, or by the private sector in excess of $158 million (in 2020 dollars) annually. As a result, the requirements of Section 202 of the Act do not apply.

Executive Order 13045 (Protection of Children From Environmental Health and Safety Risks)

Executive Order 13045, ''Protection of Children from Environmental Health and Safety Risks,'' (62 FR 19885, April 23, 1997) applies to any proposed or final rule that: (1) Is determined to be ''economically significant,'' as defined in E.O. 12866, and (2) concerns an environmental health or safety risk that NHTSA has reason to believe may have a disproportionate effect on children. If a rule meets both criteria, the agency must evaluate the environmental health or safety effects of the rule on children and explain why the rule is preferable to other potentially effective and reasonably feasible alternatives considered by the agency.

This rulemaking is not subject to the Executive order because it is not economically significant as defined in E.O. 12866.

Executive Order 13211

Executive Order 13211 (66 FR 28355, May 18, 2001) applies to any rulemaking that: (1) is determined to be economically significant as defined under E.O. 12866, and is likely to have a significantly adverse effect on the supply of, distribution of, or use of energy; or (2) that is designated by the Administrator of the Office of Information and Regulatory Affairs as a significant energy action. This rulemaking is not subject to E.O. 13211.

Privacy

The E-Government Act of 2002, Public Law 107–347, sec. 208, 116 Stat. 2899, 2921 (Dec. 17, 2002), requires Federal agencies to conduct a Privacy Impact Assessment when they develop or procure new information technology involving the collection, maintenance, or dissemination of information in identifiable form or they make substantial changes to existing information technology that manages information in identifiable form. A PIA is an analysis of how information in identifiable form is collected, stored, protected, shared, and managed. The purpose of a PIA is to demonstrate that system owners and developers have incorporated privacy protections throughout the entire life cycle of a system.

The Agency submitted a Privacy Threshold Analysis analyzing this rulemaking to the DOT, Office of the Secretary's Privacy Office (DOT Privacy Office). The DOT Privacy Office has tentatively determined that this rulemaking does not create privacy risk because no new or substantially changed technology would collect, maintain, or disseminate information in an identifiable form because of this proposed rule. Even so, the Agency requests comment on this determination.

Plain Language

Executive Order 12866 requires each agency to write all rules in plain language. Application of the principles of plain language includes consideration of the following questions:

- Have we organized the material to suit the public's needs?
- Are the requirements in the rule clearly stated?
- Does the rule contain technical language or jargon that isn't clear?
- Would a different format (grouping and order of sections, use of headings, paragraphing) make the rule easier to understand?
- Would more (but shorter) sections be better?
- Could we improve clarity by adding tables, lists, or diagrams?
- What else could we do to make the rule easier to understand?

If you have any responses to these questions, please include them in your comments on this proposal.

Regulation Identifier Number (RIN)

The Department of Transportation assigns a regulation identifier number (RIN) to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. You may use the RIN contained in the heading at the beginning of this document to find this action in the Unified Agenda.

Proposed Regulatory Text

List of Subjects in 49 CFR Part 563

Motor vehicle safety, Motor vehicles, Reporting and record keeping requirements.

In consideration of the forgoing, NHTSA is proposing to amend 49 CFR part 563 as follows:

PART 563—EVENT DATA RECORDERS

■ 1. Revise the authority citation for part 563 to read as follows:

Authority: 49 U.S.C. 322, 30101, 30111, 30115, 30117, 30166, 30168; delegation of authority at 49 CFR 1.95.

■ 2. Revise § 563.3 to read as follows:

§ 563.3 Application.

This part applies to the following vehicles manufactured on or after [the first September 1st one year after publication of final rule], if they are equipped with an event data recorder: passenger cars, multipurpose passenger vehicles, trucks, and buses with a gross vehicle weight rating (GVWR) of 3,855 kg (8,500 pounds) or less and an unloaded vehicle weight of 2,495 kg (5,500 pounds) or less, except for walk-in van-type trucks or vehicles designed to be sold exclusively to the U.S. Postal Service. This part also applies to manufacturers of those vehicles. However, vehicles manufactured before September 1, 2013, that are manufactured in two or more stages or that are altered (within the meaning of 49 CFR 567.7) after having been previously certified to the Federal motor vehicle safety standards (FMVSS) in accordance with part 567 of this chapter need not meet the requirements of this part.

■ 3. In § 563.7, revise Table I in paragraph (a) and Table II in paragraph (b) to read as follows:

§ 563.7 Data elements.

(a) * * *

TABLE I—DATA ELEMENTS REQUIRED FOR ALL VEHICLES EQUIPPED WITH AN EDR

Data element	Recording interval/time [1] (relative to time zero)	Data sample rate (samples per second)
Delta-V, longitudinal	0 to 250 ms or 0 to End of Event Time plus 30 ms, whichever is shorter.	100
Maximum delta-V, longitudinal	0–300 ms or 0 to End of Event Time plus 30 ms, whichever is shorter.	N/A
Time, maximum delta-V	0–300 ms or 0 to End of Event Time plus 30 ms, whichever is shorter.	N/A
Speed, vehicle indicated	−20.0 to 0 sec	10
Engine throttle, % full (or accelerator pedal, % full)	−20.0 to 0 sec	10
Service brake, on/off	−20.0 to 0 sec	10
Ignition cycle, crash	−1.0 sec	N/A
Ignition cycle, download	At time of download [3]	N/A
Safety belt status, driver	−1.0 sec	N/A
Frontal air bag warning lamp, on/off [2]	−1.0 sec	N/A
Frontal air bag deployment, time to deploy, in the case of a single stage air bag, or time to first stage deployment, in the case of a multi-stage air bag, driver.	Event	N/A
Frontal air bag deployment, time to deploy, in the case of a single stage air bag, or time to first stage deployment, in the case of a multi-stage air bag, right front passenger.	Event	N/A
Multi-event, number of event	Event	N/A
Time from event 1 to 2	As needed	N/A
Complete file recorded (yes, no)	Following other data	N/A

[1] Pre-crash data and crash data are asynchronous. The sample time accuracy requirement for pre-crash time is −0.1 to 1.0 sec (e.g., T = −1 would need to occur between −1.1 and 0 seconds).

[2] The frontal air bag warning lamp is the readiness indicator specified in S4.5.2 of FMVSS No. 208, and may also illuminate to indicate a malfunction in another part of the deployable restraint system.

[3] The ignition cycle at the time of download is not required to be recorded at the time of the crash, but shall be reported during the download process.

(b) * * *

TABLE II—DATA ELEMENTS REQUIRED FOR VEHICLES UNDER SPECIFIED MINIMUM CONDITIONS

Data element name	Condition for requirement	Recording interval/time [1] (relative to time zero)	Data sample rate (per second)
Lateral acceleration	If recorded [2]	N/A	N/A
Longitudinal acceleration	If recorded	N/A	N/A
Normal acceleration	If recorded	N/A	N/A
Delta-V, lateral	If recorded	0–250 ms, or 0 to End of Event Time plus 30 ms, whichever is shorter.	100
Maximum delta-V, lateral	If recorded	0–300 ms, or 0 to End of Event Time plus 30 ms, whichever is shorter.	N/A
Time, maximum delta-V, lateral	If recorded	0–300 ms, or 0 to End of Event Time plus 30 ms, whichever is shorter.	N/A
Time, maximum delta-V, resultant	If recorded	0–300 ms, or 0 to End of Event Time plus 30 ms, whichever is shorter.	N/A

TABLE II—DATA ELEMENTS REQUIRED FOR VEHICLES UNDER SPECIFIED MINIMUM CONDITIONS—Continued

Data element name	Condition for requirement	Recording interval/time [1] (relative to time zero)	Data sample rate (per second)
Engine RPM	If recorded	−20.0 to 0 sec	10
Vehicle roll angle	If recorded	−1.0 up to 5.0 sec [3]	10
ABS activity (engaged, non-engaged)	If recorded	−20.0 to 0 sec	10
Stability control (on, off, engaged)	If recorded	−20.0 to 0 sec	10
Steering input	If recorded	−20.0 to 0 sec	10
Safety belt status, right front passenger (buckled, not buckled).	If recorded	−1.0 sec	N/A
Frontal air bag suppression switch status, right front passenger (on, off, or auto).	If recorded	−1.0 sec	N/A
Frontal air bag deployment, time to nth stage, driver [4].	If equipped with a driver's frontal air bag with a multi-stage inflator.	Event	N/A
Frontal air bag deployment, time to nth stage, right front passenger [4].	If equipped with a right front passenger's frontal air bag with a multi-stage inflator.	Event	N/A
Frontal air bag deployment, nth stage disposal, driver, Y/N (whether the nth stage deployment was for occupant restraint or propellant disposal purposes).	If recorded	Event	N/A
Frontal air bag deployment, nth stage disposal, right front passenger, Y/N (whether the nth stage deployment was for occupant restraint or propellant disposal purposes).	If recorded	Event	N/A
Side air bag deployment, time to deploy, driver	If recorded	Event	N/A
Side air bag deployment, time to deploy, right front passenger.	If recorded	Event	N/A
Side curtain/tube air bag deployment, time to deploy, driver side.	If recorded	Event	N/A
Side curtain/tube air bag deployment, time to deploy, right side.	If recorded	Event	N/A
Pretensioner deployment, time to fire, driver	If recorded	Event	N/A
Pretensioner deployment, time to fire, right front passenger.	If recorded	Event	N/A
Seat track position switch, foremost, status, driver	If recorded	−1.0 sec	N/A
Seat track position switch, foremost, right front passenger.	If recorded	−1.0 sec	N/A
Occupant size classification, driver	If recorded	−1.0 sec	N/A
Occupant size classification, right front passenger	If recorded	−1.0 sec	N/A
Occupant position classification, driver	If recorded	−1.0 sec	N/A
Occupant position classification, right front passenger.	If recorded	−1.0 sec	N/A

[1] Pre-crash data and crash data are asynchronous. The sample time accuracy requirement for pre-crash time is −0.1 to 1.0 sec (e.g., T = −1 would need to occur between −1.1 and 0 seconds).
[2] "If recorded" means if the data are recorded in non-volatile memory for the purpose of subsequent downloading.
[3] "Vehicle roll angle" may be recorded in any time duration −1.0 to 5.0 seconds is suggested.
[4] List this element n − 1 times, once for each stage of a multi-stage air bag system.

Issued in Washington, DC, under authority delegated in 49 CFR 1.95 and 501.8.

Steven S. Cliff,

Administrator.

[FR Doc. 2022–12860 Filed 6–21–22; 8:45 am]

BILLING CODE 4910–59–P