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Office of the Administrator
c/o Steven Cliff, Deputy Administrator

National Highway Traffic Safety Administration (NHTSA)
Docket Management Facility
U.S. Department of Transportation
1200 New Jersey Avenue SE
West Building, Ground Floor, Room W12-140
Washington, DC 20590-0001

Submitted electronically via www.regulations.gov

**Re: Notice and Request for Comments; Request for approval of Event Data Recorder Information Collection by the Office of Management and Budget (OMB) for Docket No. NHTSA– 2021–0058**

Thank you for the opportunity to provide comments on the request for approval from the Office of Management and Budget (OMB) for Notice and Request for Comments; Event Data Recorders (EDRs).[1] The Center for Auto Safety (CAS), founded in 1970, is an independent, member supported, non-profit consumer advocacy organization dedicated to improving vehicle safety, quality, and fuel economy. In 2020, we celebrated 50 years of advocacy for automotive safety and consumer protection. Motor vehicle crash data supplied by EDRs is a critical component for investigators and researchers evaluating current tragedies in hopes of preventing them in the future. To that end, the Center is pleased to provide the responses below.

***Whether the proposed collection of information is necessary for the proper performance of the functions of the Department, including whether the information will have practical utility***

CAS believes that the proposed collection of information is necessary for the proper performance of the functions of the Department, and that the information will have practical utility. The numbers of deaths and injuries from vehicle crashes remains stubbornly, unacceptably high. 2020 saw a reversal in the decades-long trend of decreasing motor vehicle death rates,[2] and preliminary data for 2021 indicates the death rates are continuing to trend in the wrong

[1] Agency Information Collection Activities; Notice and Request for Comments; Event Data Recorders, Federal Register 8/26/2021, https://www.federalregister.gov/documents/2021/08/26/2021-18420/agency-information-collection-activities-notice-and-request-for-comments-event-data-recorders

[2] 2020 Fatality Data Show Increased Traffic Fatalities During Pandemic, NHTSA, June 3, 2021, https://www.nhtsa.gov/press-releases/2020-fatality-data-show-increased-traffic-fatalities-during-pandemic

direction.[3] Therefore, all available tools must be employed by both the government and industry to address the continued and accelerating highway carnage. EDR data is an important tool that greatly contributes to our understanding of the causes of motor vehicle crashes. EDRs function as a silent witness to events that frequently have no living witness and are indispensable to law enforcement and other federal and state government safety agencies as they evaluate factors contributing to crash deaths and injuries. Data recorded by EDRs is often critical to a full understanding of the circumstances involved.

***Ways to enhance the quality, utility and clarity of the information to be collected***

NHTSA's EDR regulation, Part 563, is badly in need of updates to capture crash data involving modern vehicle technology. There has been no update to Part 563 since 2006, a very long time in the world of automotive technology.

Additionally, Part 563 established an applicable EDR standard, but as yet does not require inclusion of EDRs in vehicles. The fact that many manufacturers currently voluntarily include EDRs in their offerings is no assurance of their future inclusion. Some commercially available light vehicles do not include EDRs. Without EDRs, collision investigations involving those vehicles may be severely hampered, impacting the safety of their own customers and the general public. CAS agrees with the National Transportation Safety Board's (NTSB) 2004 recommendation that EDR use should be mandatory and not elective.[4]

Yet, beyond simply mandating the inclusion of EDRs in new vehicles, an update is particularly urgent in light of the ubiquitous extensive safety-critical functionality dependent upon data collection and processing, features, and capabilities unknown and unknowable in 2006. Advancements since then have greatly increased the complexity of causal factors for crashes related to safety technology in general; electronics, sensors, and software/firmware updates and distribution. As NTSB formally recommended to NHTSA in 2017, an upgrade to the EDR systems is needed to:

> Define the data parameters needed to understand the automated vehicle control systems involved in a crash. The parameters must reflect the vehicle's control status and the frequency and duration of control actions to adequately characterize driver and vehicle performance before and during a crash.[5]

Again, earlier this year, NTSB in the aftermath of investigating several crashes involving automated technology, urged NHTSA to "advance its efforts to modernize and improve EDR regulations so they focus on the performance of advanced safety features."[6] The time to act on these reasonable recommendations is now, as many of these features have been commercially available for over a decade, and include automatic emergency braking, lane departure, and adaptive cruise control, amongst others. Moreover, current EDRs based on Part 563 do not

[3] Early Estimate of Motor Vehicle Traffic Fatalities for the First Quarter of 2021, NHTSA, August 2021, https://www.nhtsa.gov/sites/nhtsa.gov/files/2021-09/Early-Estimate-Motor-Vehicle-Traffic-Fatalities-Q1-2021.pdf
[4] NTSB Safety Recommendation H-04-026, https://data.ntsb.gov/carol-main-public/sr-details/H-04-026
[5] NTSB Safety Recommendation H-17-037. https://data.ntsb.gov/carol-main-public/sr-details/H-17-037
[6] NTSB Comment to Docket No. DOT-NHTSA-2020-0106, February 1, 2021.

capture whether the vehicle is using any of the commercially available 'semi-autonomous modes' more accurately known as Advanced Driver Assist Systems. Therefore, investigators do not have the necessary tools to accurately reconstruct crashes based on currently available EDR data and must frequently rely on the least objective party after a crash – the manufacturer.

The increasing sophistication and complexity of automotive controls, especially sensor suites, electronic and data-driven safety-critical control functionality, warrant a reevaluation of the scope and duration of data collected and stored by EDRs. Data stored in an EDR must be sufficient to allow identification and mitigation of both mechanical and functional defects identified in the current Part 563 standard, and also the novel aspects of automatic driver assistance systems, self-driving features, and other highly automated functionality. The current standard calls for coverage for only brief moments before and after a crash. Digital data-processing can fail because of faulty inputs, timing issues, algorithmic defects, artificial intelligence limitations, memory saturation, random electronic component faults, connector faults, and cybersecurity breaches among other reasons. The faults may occur long before their existence results in a crash. Ideally, EDR data collection coverage would encompass all configuration and time-dependent events that have the demonstrated ability or reasonable potential to affect vehicle safety.

There are no statutory or engineering limits to the safety-critical functionality that depends on a vehicle's electronic design and data processing capabilities. Such functionality may depend on the original software and on logic-bearing components or updates that may have happened since vehicle manufacture. Part 563 should include relevant records of data processing architecture, components, and design operating margins, including data processing and electronic control unit hardware, software, and logic-bearing devices. These may differ from the original documented configuration and have potential impact on safety-critical functionality. In the event of a crash, knowledge of the actual configuration, including post-manufacture modifications, is needed to, as stated in Part 563, "… help ensure that EDRs record, in a readily usable manner, data valuable for effective crash investigations and for analysis of safety equipment performance." To assure the utility of EDR data to accomplish this goal the information stored in the EDR should record the software/firmware actually (not presumptively) deployed to an individual vehicle, a novel vehicle safety factor not existing in 2006. It is not possible to perform a complete analysis of computerized safety-critical functionality efficacy without accurate knowledge of the data processing configuration and safety-critical control logic as well as the mechanical configuration actually in use at the time of a crash.

Similarly, sensors such as LiDARs, RADARS, electronic cameras, and ultrasonic sensors that enable safety-critical functionality in modern vehicles were not deployed in any meaningful numbers on production vehicles in 2006. Such sensors are now ubiquitous and in everyday use for automatic emergency braking, automatic lane keeping, and blind spot detection. They are used in automated driver assistance systems as well as likely to be used in future highly or fully automated vehicles. Their contribution to vehicle safety can be an important factor in crash analysis and reconstruction. Their presence and status at the time of a crash should also be included in modern EDRs to provide data valuable for effective crash investigations and analysis of safety equipment performance, and potentially assisting with long term regulatory development. These data would help provide a better understanding of the circumstances in

which crashes and injuries occur and will lead to safer vehicles, consistent with the stated purpose of Part 563.

While comprehensive EDR data has obvious value to crash investigators, the utility of EDR data could also be exploited by manufacturers and researchers to promote and ease trend analysis. For just one example, EDRs could record deviations from expected performance such as close encounters with pedestrians or vehicles that do not result in crashes but violate design safety margins. That data could contribute to a comprehensive database useful to identify needed algorithmic or parameter modifications such as modification of vehicle/pedestrian physical object event and detection response logic or separation limit parameters. Fatal crashes of vehicles using automated technology have been caused by such algorithmic failures, and evidence a failure to appreciate the risks associated with an operational design domain.[7] Widely deployed EDRs that collect consistent relevant data could increase EDR utility by enabling identification of preemptive safety modifications, which could lead to a beneficial use of artificial intelligence - saving lives.

***Conclusion***

Thank you for the opportunity to present our views on this request for approval of the EDR information collection from the Office of Management and Budget (OMB) via this Notice and Request for Comments. Summarizing, CAS supports the NHTSA request for approval, and believe that current EDRs are necessary for the proper performance of the functions of the Department and have great practical utility. However, there remains a significant list of ways to enhance the quality, utility, and clarity of the information to be collected in EDRs, as well as the quality, utility, and clarity of the vehicle configuration/operational information to be collected. We urge use of such data to enhance highway safety by way of the long overdue update to Part 563 - making EDR inclusion in motor vehicles mandatory and updating required data collection requirements to reflect the reality of modern vehicle data processing architectures, propulsion, and safety-critical electrical/electronic components.

[7] Tesla Crash Investigation Yields 9 NTSB Safety Recommendations, NTSB, 2/25/2020 https://www.ntsb.gov/news/press-releases/Pages/NR20200225.aspx