

**HONDA**

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August 22, 2022

Dr. Steven Cliff  
Administrator  
National Highway Traffic Safety Administration  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
West Bldg., Ground Floor, Docket Room W12-140  
Washington, DC 20590

**Re: Docket No. NHTSA-2022-0021  
Federal Register: 87 FR 37289 (June 22, 2022)  
Notice of Proposed Rulemaking  
Event Data Recorders**

Dear Dr. Steven Cliff:

Enclosed are the comments of American Honda Motor Co., Inc. regarding the above-referenced docket and Federal Register notice.

We thank you for this opportunity to provide our comments. If you have any questions, require additional data or further clarification, please contact us at your earliest convenience.

Sincerely,

American Honda Motor Co., Inc.



Jeff Chang  
Senior Manager  
Product Regulatory Office

JC:dl

Enclosure

American Honda Motor, Co., Inc.  
Comments on the Event Data Recorder NPRM  
[Docket No. NHTSA-2022-0021]  
[Federal Register: 87 FR 37289 (June 22, 2022)]  
[Submitted Aug 22, 2022]

## Introduction

Honda appreciates this opportunity to comment on the NPRM to amend the Part 563 requirements for Event Data Recorders (“EDRs”). EDRs provide valuable data to facilitate effective crash investigations and analysis of safety equipment. To further leverage the benefits of EDRs, Honda began equipping our vehicles with EDRs that go above and beyond the current Part 563 requirements. Starting from 2016 MY, Honda and Acura EDRs began recording active safety data elements to support the application of our Honda Sensing® and AcuraWatch™ advanced safety and driver-assistive technologies. Today, over 6 million vehicles on U.S. roads are equipped with Honda Sensing® or AcuraWatch™.

While Honda supports the benefits that EDRs provide, we have several concerns with the NPRM proposal to extend the pre-crash recording duration from 5 to 20 seconds and increase the recording frequency from 2 Hz to 10 Hz. Consistent with the stated purpose of Part 563, global efforts are already underway to adopt next generation EDR regulations to modernize the data requirements and keep pace with advancements in vehicle safety equipment in the form of crash avoidance technologies. Given the Agency’s significant interests in facilitating the deployment of crash avoidance technologies, these efforts are the most prudent path forward to ensure EDRs continue to facilitate effective crash investigations by capturing the performance of today’s latest vehicle safety technologies and will lead to greater real-world safety benefit. We are concerned that the NPRM is pursuing a direction that is inconsistent with these advancements in vehicle safety and the WP.29 efforts to establish harmonized EDR regulations that include crash avoidance data elements. In contrast, the NPRM is pursuing a completely different direction that will require significant changes, require completely new EDR ECU platform developments, create something of less value to the Agency, and likely require additional rulemaking in the near future to amend EDR regulations again to be consistent with WP.29.

We strongly support the comments provided by the Alliance for Automotive Innovation and SAE International, including the following concerns:

- The proposed increase in pre-crash recording duration and frequency does not provide substantial benefit beyond the current Part 563 requirements. The current 5 sec duration and 2 Hz frequency have been adequate for crash investigations.
- The NPRM requirements will significantly impact the cost and size/packaging of the airbag control modules that contain the EDR functionality.
- The proposal for approximately one-year leadtime is insufficient given the significant changes needed to EDR systems.
- Alternatively, the Agency should continue efforts in UN ECE WP.29 to develop harmonized EDR regulations.

Honda wishes to provide additional information in this response regarding the general direction of the NPRM to meet the stated purpose of EDRs, the impact of the NPRM proposal, and the necessary lead time.

### **Direction of the NPRM and Harmonization**

Honda recognizes NHTSA's statutory requirement under the FAST Act "to establish the appropriate period" for EDRs to record data. However, we challenge the assumptions under which the proposed duration was deemed "appropriate." The appropriateness of an increased time duration becomes a moot point if the data elements do not capture the operation of modern safety equipment on the vehicle. As the Agency is well aware, the landscape of safety technologies has evolved dramatically since the FAST Act was enacted in 2015. Adoption of advanced safety and crash avoidance technologies has accelerated significantly, with technologies like AEB becoming nearly universal on new cars today.

The stated purpose of Part 563 "is to help ensure that EDRs record, in a readily usable manner, data valuable for effective crash investigations and for analysis of safety equipment performance (e.g., advanced restraint systems). These data will help provide a better understanding of the circumstances in which crashes and injuries occur and will lead to safer vehicle designs." However, the NPRM proposal does not consider the role of modern safety equipment, like crash avoidance. Crash avoidance technologies today play a significant role in reducing the risks of injury in crashes and are an integral component of a modern vehicle's safety equipment. EDR data on crash avoidance technologies has the potential to lead to safer vehicle designs just as it has done for advanced restraint systems.

The existing Part 563 data elements, and the EDR duration study which is the basis for this NPRM, focus primarily on driver pre-crash maneuvers. This approach inherently focuses crash causation on the driver actions, and vitally misses valuable data that could drive improvements for other driver assistive safety technologies. There is far greater value that can be obtained from an EDR by incorporating crash avoidance data

elements, in contrast to the NPRM proposal to extend the time duration and sampling frequency of the current data elements.

For these reasons, the NPRM proposal does not provide additional value beyond what is already being considered in other EDR regulations globally. And given the substantial changes and lead time needed to meet the NPRM, we urge the agency to re-evaluate the NPRM direction, and continue efforts underway in the WP.29 GRSG EDR IWG to adopt a single global EDR regulation that includes crash avoidance data elements. As the agency is well aware, UN R160-01 has already decided to adopt additional data elements for modern safety technologies and will go into effect in July 2024. UN R160-01 strikes a far more appropriate balance between the potential benefits of additional data elements for modern safety technologies, and the impact of changes needed to redesign current EDR systems. Honda urges the Agency to continue work in the WP.29 GRSG to create a single, global EDR regulation instead of proceeding with the NPRM proposal.

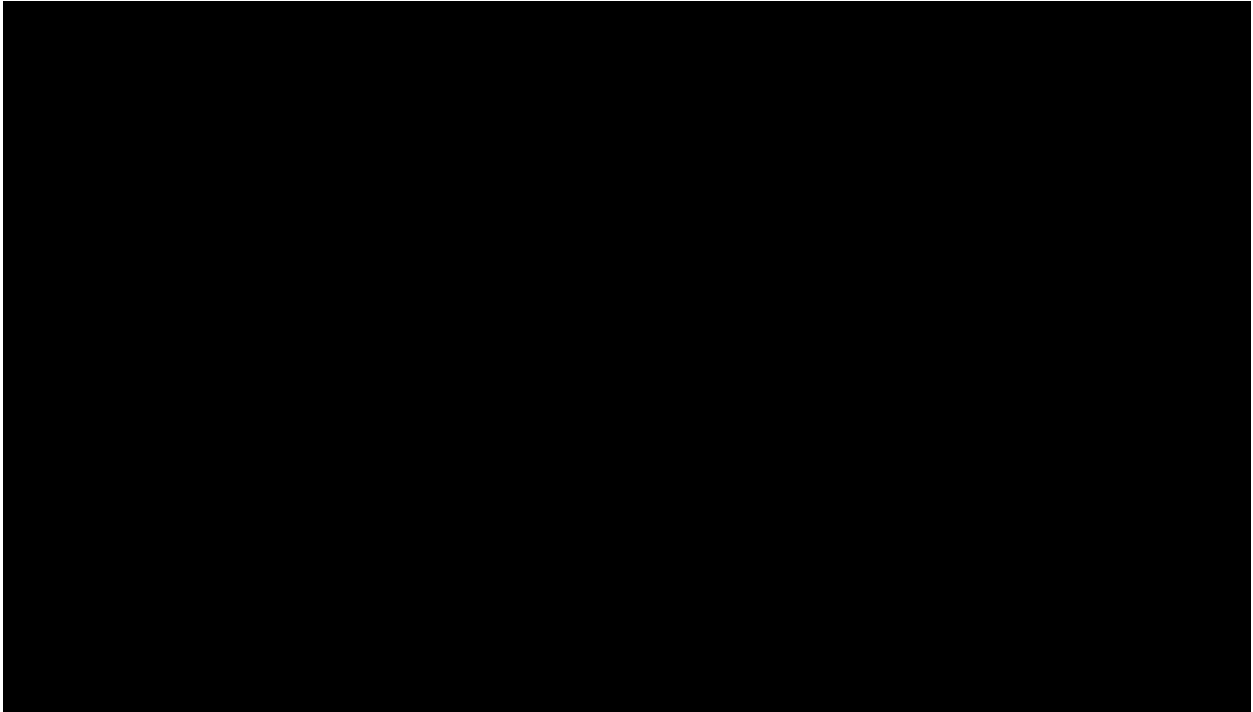
### **Impact of the NPRM Proposal**

Honda's EDR functionality is contained in our electronic control unit ("ECU") for our Supplemental Restraint System ("SRS"), more commonly referred to in industry as the Airbag Control Module ("ACM"). For the sake of simplicity, these comments refer to Honda's EDR system as the "EDR ECU" or "ECU". The Agency contends that the proposed increase in pre-crash recording duration and frequency would require limited memory changes that can be incorporated into existing or planned memory design in vehicles, such as leveraging the unused memory on a vehicle's ACM chip. The Agency also anticipates that there would not be a need for additional processor capacity or backup power. However, we strongly disagree with the assumptions presented in the NPRM. Our assessment has determined that the majority of our existing and latest EDR systems will require changes that amount to a completely new EDR ECU platform development. To meet the requirements proposed in the NPRM for increased time duration and sampling frequency, substantial changes are needed in the following areas:

1. **Energy reserve increase:** This functionality is designed to guarantee airbag deployment and record EDR data in the event of battery damage due to a crash. The NPRM requires a huge increase in data recording which will require significantly more reserve energy capacity. A physically larger **capacitor** and/or an additional capacitor are needed to accomplish this.
2. **Microprocessor – Buffer memory increase:** The increased time duration and sampling frequency increases the necessary buffer memory size and microprocessor load. Additional microprocessor random access memory (RAM) size is needed to store the increased data, which requires a physically larger and higher performance **microprocessor** specification.

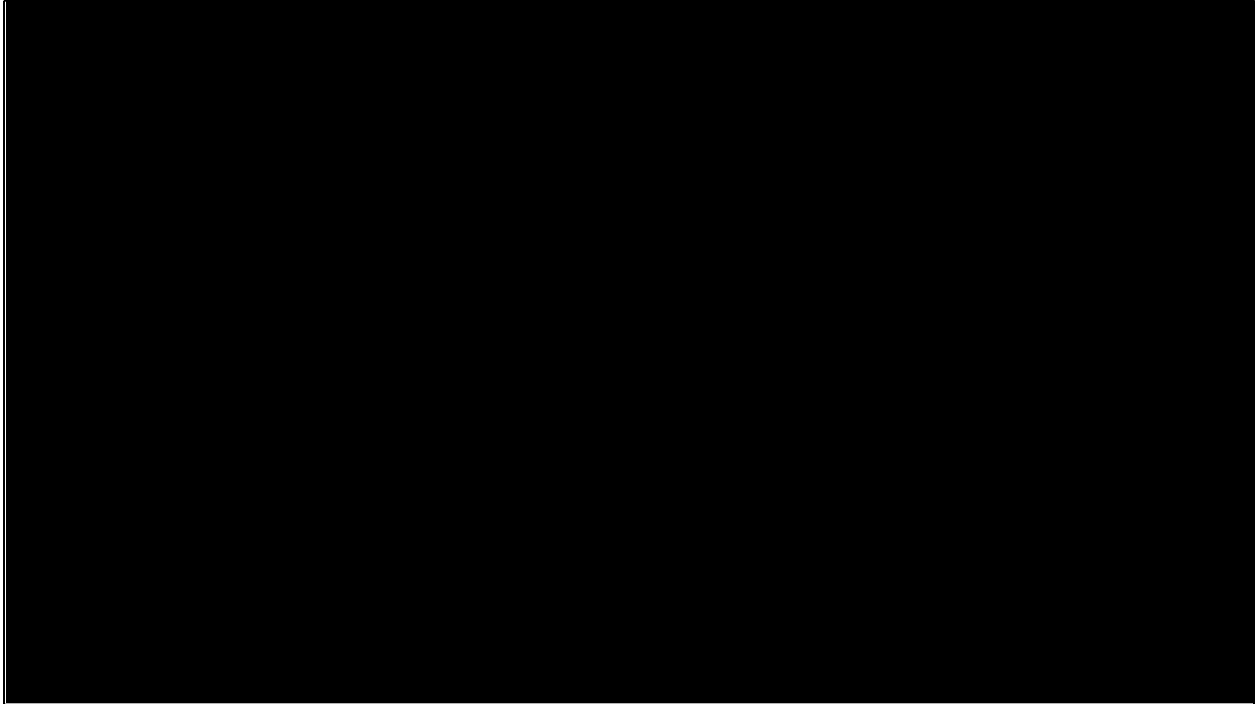
3. **Microprocessor – Processing capabilities change:** In addition to increased buffer memory size, the additional data requires increased microprocessor read only memory (ROM) size and processor performance (e.g. clock speed). A physically larger and higher performance **microprocessor** specification is needed to accommodate this.
4. **Non-volatile memory size increase:** In order to record the increased amount of EDR data, additional capacity is needed for non-volatile memory, such as in a physically larger electrically erasable programmable read-only memory (**EEPROM**) chip .
5. **System impact of any module package size increase:** Due to physical changes to the aforementioned hardware (capacitor, microprocessor, EEPROM) inside the ECU, it may not be possible to accommodate the larger internals on existing circuit boards and/or within existing ECU housings themselves. This may require a redesign to a larger ECU size with subsequent changes to ensure compatibility with the connector/harness and vehicle body attachment structure.
6. **Increased module(s) cost**
7. **EDR System validation:** The aforementioned changes would constitute a new platform development for an ECU that performs a critical safety function. Complete development from the ground up would be needed to validate the performance of supplemental restraint systems and EDR systems.

Honda assessed three existing high-volume ECU platforms, which are collectively applied to approximately 60% of our current U.S. vehicle sales volume, to determine the extent of the above changes needed to meet the NPRM. The results of this assessment are shown below in Table 1.

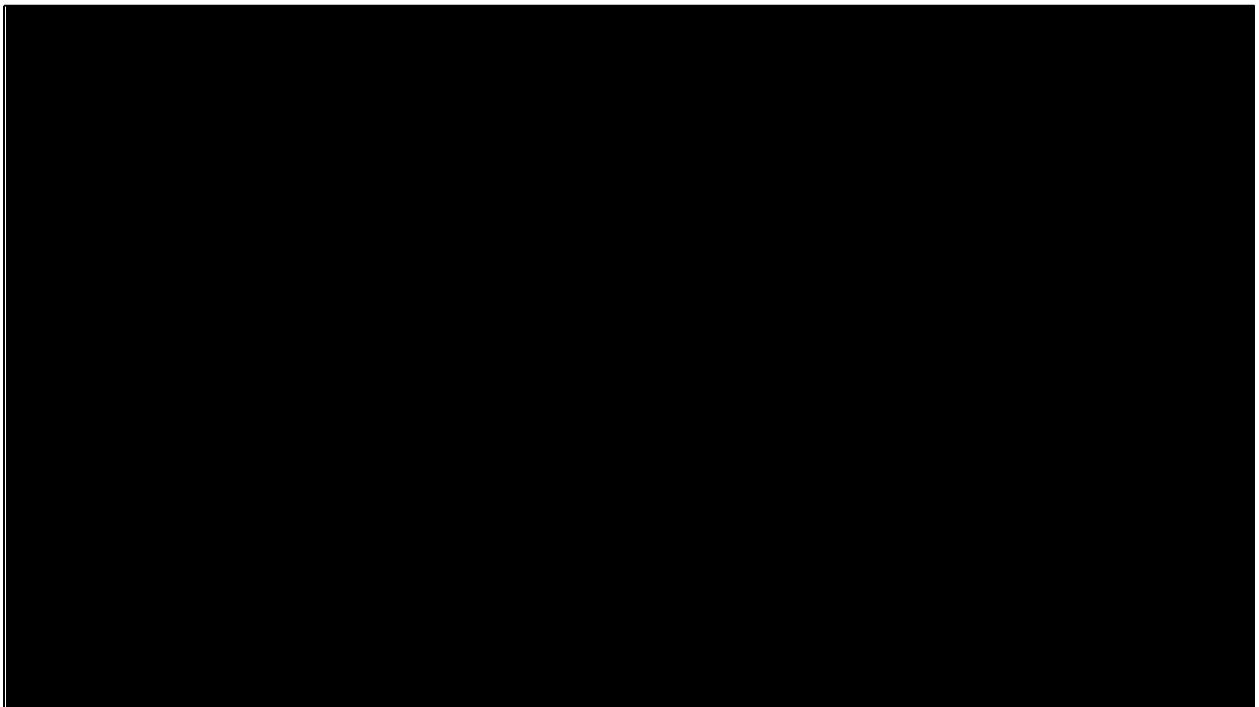


*Figure 1. Changes required to existing ECU platforms to meet the NPRM proposal*  
*[CONFIDENTIAL BUSINESS INFORMATION]*

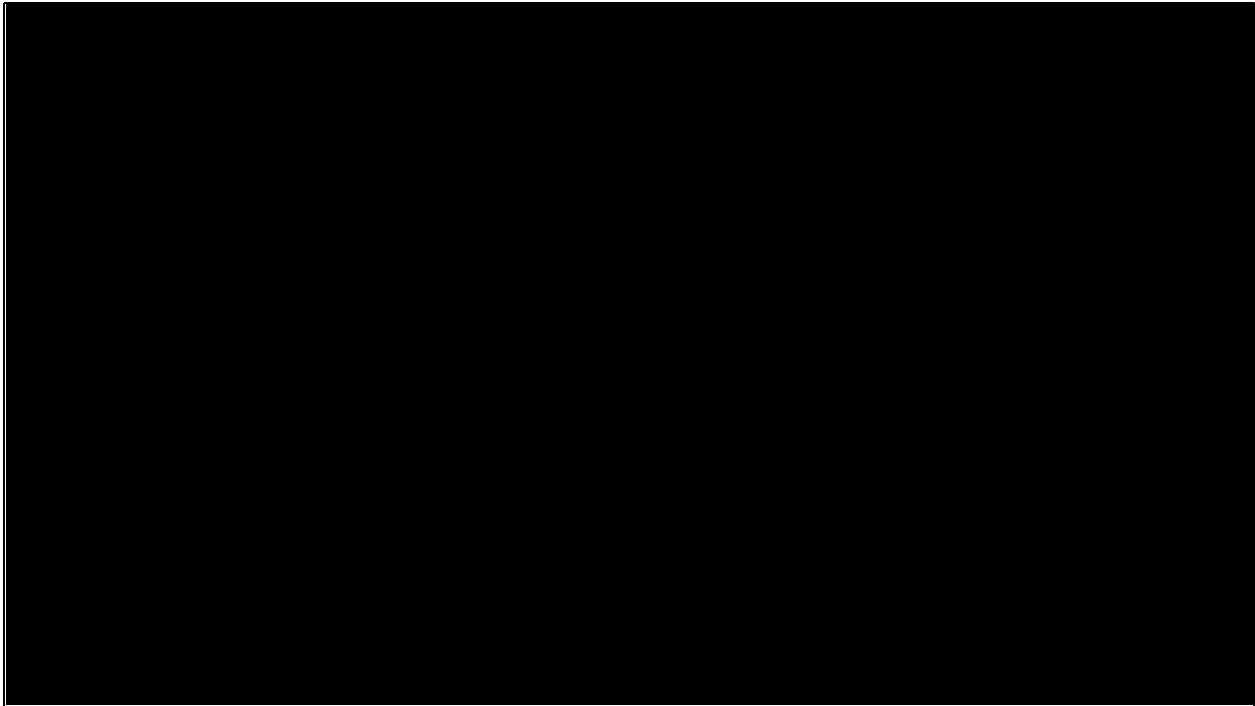
This assessment has determined that our ECU platforms will certainly require significant changes in areas that the Agency assumed would have limited or no changes. Further, some of our systems will require significant changes in areas that were not considered in the NPRM, including new satellite sensor hardware and a new production line to accommodate that. Figures 2, 3, and 4 below provide additional explanation on such required changes needed for the EDR Type A platform described in Figure 1.



*Figure 2. Changes required to current EDR Type A platform system to meet the NPRM proposal*  
*[CONFIDENTIAL BUSINESS INFORMATION]*



*Figure 3. Changes required to current EDR Type A sensors to meet the NPRM proposal*  
*[CONFIDENTIAL BUSINESS INFORMATION]*



*Figure 4. Changes required to current EDR Type A ECU & Sensors necessitate a new production line for new generation sensors [CONFIDENTIAL BUSINESS INFORMATION]*

### **Leadtime Needed**

Given the substantial changes needed to meet the NPRM, the proposal to provide approximately one year of lead time is insufficient. We are also concerned that such a short lead time would not only encourage, but also potentially force, EDR systems to be disabled until they can be redesigned to comply with Part 563. This outcome is not consistent with Honda's interests, nor do we believe with NHTSA's.

Honda currently has numerous ECU platforms that are in existence or in planned development, across 3 different suppliers. These ECU platform developments are largely completed prior to, or in some cases in parallel to, the vehicle developments to which they will be applied. Each of these ECU platforms are uniquely developed to accommodate not only U.S. Part 563 requirements, but also the various EDR regulations for China (EDR Phase 2: Level A data elements, and EDR Phase 3: Level A+B data elements) and UN R160 (00 and 01 Series) that will be in effect over the next three years. Further interleaved into those regulatory requirements, our ECU platforms also need to incorporate changes to facilitate planned new vehicle and powertrain platform developments.



In the case of one of our suppliers, there are currently six ECU platforms being developed in parallel. Due to significant changes needed, we anticipate that a new ECU platform designed to meet the NPRM cannot practicably be completed until 2026 MY. This new ECU platform development would subsequently be incorporated into our planned vehicle developments. Based on the above, we anticipate that the majority, but not all, Honda and Acura vehicle developments could meet the NPRM requirements if provided a four year lead time. Exceptions to this would need to be addressed with an emergency mid-cycle vehicle development. Therefore, Honda urges the Agency to provide at least four years of lead time after the final rule.

### **Summary**

Honda supports the benefits of EDRs but the appropriate time duration is irrelevant if the EDR does not capture the operation of modern safety equipment, such as crash avoidance technologies. Given the above, we urge the agency to reconsider the NPRM direction and alternatively continue work in the WP.29 GRSG to create a single, global EDR regulation that includes crash avoidance data elements. Additionally, the NPRM greatly underestimates the changes that would be required with existing or planned EDR systems. Meeting the NRPM would require a new ECU platform development and, if the Agency is unwilling to reconsider the NPRM direction, we urge the Agency to provide at least 4 years of lead time. .