Light Vehicle AEB Rulemaking

Meeting with OMB

Product Regulatory Office American Honda Motor Co., Ltd.





Key Topics

- 1. Honda supports the core goal of the AEB/PAEB rulemaking
- 2. Impact of the proposed requirements should be reconsidered, especially for AEB performance and Visual warning location
- 3. Honda comments to NPRM proposing alternatives aligned with goal of the rulemaking
- 4. Auto Innovators completed an in-depth impact analysis to inform NHTSA and OMB analyses



Honda Supports the Core Goal of the AEB Rulemaking

Honda has a longstanding commitment to Safety for Everyone, inside and outside our vehicles

In 2003, Honda developed the world's first AEB system

- Today, Honda's suite of ADAS technologies, including AEB, are standard on every vehicle
- Nearly 8 million Honda/Acura vehicles on US roads equipped

Honda has also set a goal to achieve zero traffic fatalities involving Honda vehicles by 2050

 Honda Sensing[®] and AcuraWatch[™] systems will continue to evolve towards the elimination of all crash scenarios, especially high severity crash scenarios beyond AEB for forward collisions

Safety for Everyone

Honda SENSING standard on all vehicles today

Advancement of ADAS functions



SENSING



Honda SENSING 360 standard on all vehicles by 2030



Impact Analysis of the AEB Requirements

- > NPRM estimates only software changes needed
 - Estimated cost: \$82 per vehicle
- Current AEB systems cannot reliably avoid contact at higher vehicle speeds
- To do so, next generation AEB architecture is needed with much greater sensing range, accuracy, and compute capacity
- Even with large-scale generational changes, aggressive AEB braking would interfere with human steering and diminish high consumer acceptance¹

Allowing reduced contact speeds would address safety needs without putting the benefits of AEB out of reach for consumers ²



AEB architecture changes needed to meet NPRM:

- High-resolution camera and long-range radar sensors for object detection at high speed
- High-capacity processor for those sensors and processing AEB function in short timeframes*
- High reliability fail-safe architecture to mitigate system failure and meet stringent functional safety requirements



*High-capacity processor needs:

- Expanded detection range
- Increased number of objects to identify in same timeframe
- Processor capacity must be substantially increased

- 1. NHTSA studies have shown that Honda AEB systems were kept "On" 99% of the time.
- 2. Considering a frontal crash delta V speed reduction from 80 km/h to 56 km/h: the risk of fatality is reduced from approximately 23% to 3%, the risk of MAIS4+ is reduced from 38% to 5%. We assume that this is a conservative estimate and the reduction in risks would be greater since delta V in a frontal crash is potentially less than the actual impact speed.



Impact Analysis of the Visual Warning Requirements

- Honda strongly supports use of visual warning to supplement the audible warning
- NPRM proposes visual warning located directly ahead of driver, but costs not considered
- Current AEB visual warnings located in instrument cluster with all other safety information
- To meet NPRM, Heads-Up Display (HUD) must be added
 Substantially higher cost of AEB to consumers

Permitting visual warnings to remain in instrument cluster would maintain safety benefits of AEB at a more reasonable cost to consumers



Visual warning currently located in instrument cluster



Visual warning in Heads-Up Display to meet NPRM



Impact Analysis & Summary

Based on Auto Innovators survey, submitted March 26, 2024

Cost per Vehicle Actually 5x Greater

- > NPRM estimates \$82 per vehicle
- Industry survey estimates \$421 average low per vehicle 1
- Actual cost per vehicle more than 5x higher
- Majority of cost due to HUD



Total Annual Cost Actually 20x Greater

- > NPRM estimates total annual cost of \$282M
- Assuming \$421 per vehicle, total annual fleet cost is over \$6B²
- > Actual total annual cost more than 20x higher
- Majority of cost due to HUD



Alternatively, Honda's proposal maintains NPRM cost estimate, achieves similar safety outcome

- 1. The PRIA assumes that only software changes are needed, and HUD was not considered. The industry survey estimates the cost impact for the entire AEB system and addition of HUD.
- 2. Assuming the combined average low cost per vehicle for AEB and HUD, with an annual US fleet sales volume of 15 million units. These changes are not limited to software and therefore cannot be spread out over multiple years of a vehicle design cycle, as assumed in the PRIA.

