



DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA-2015-0002]

3D Surrogate Vehicle Scanning Event

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

ACTION: Announcement of Public Meeting.

SUMMARY: NHTSA is announcing a public meeting to seek stakeholder feedback on a full-size 3-dimensional surrogate vehicle being developed to better support the evaluation of advanced crash avoidance technologies. NHTSA, Euro NCAP, Thatcham, and the Insurance Institute for Highway Safety (IIHS) have been collaboratively working to develop this surrogate; however, confirmation that it appears as realistic to the sensors used in automotive safety systems requires feedback from industry experts.

DATES: NHTSA will hold the public meeting July 13-14, 2016, in East Liberty, OH. Each day the meeting will start at 9:00 a.m. and continue until 5:00 p.m., local time. Check-in will begin at 8:00 a.m. All attendees for the meeting are required to register by following the instructions under FOR FURTHER INFORMATION CONTACT no later than June 24, 2016. Admission onto the facility will not be permitted without advanced registration.

Following the event, participants are requested to submit all written feedback and supporting information pertaining to their 3D surrogate vehicle measurements no later than August 5, 2016.

ADDRESSES: The meeting will be held on the test track at the Transportation Research Center, Inc., 10820 SR 347, East Liberty, OH 43319.

Written Comments: Written feedback and supporting information should be submitted not later than August 5, 2016, by any of the following methods:

- Federal Rulemaking Portal: Go to <http://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, Washington, DC 20590-0001, between 9 a.m. and 5 p.m. ET, Monday through Friday, except Federal Holidays.
- Fax: 202-366-1767.

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.

Docket: For access to the docket go to <http://www.regulations.gov> at any time or to 1200 New Jersey Avenue, SE, West Building, Ground Floor, Room W12-140, Washington, DC 20590, between 9:00 a.m. and 5:00 p.m., Monday through Friday, except Federal Holidays. Telephone: 202-366-9826.

Privacy Act: Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477-78), or you may visit <http://www.regulations.gov/privacy.html>.

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, 1200 New Jersey Ave S.E., Washington, DC 20590. In addition, you should submit two copies, from which you have deleted the claimed confidential business information, to Docket Management at the address given above. When you send a comment containing information claimed to be confidential business information, you should submit a cover letter setting forth the information specified in our confidential business information regulation (49 CFR Part 512).

FOR FURTHER INFORMATION CONTACT: Attendees should register at <http://goo.gl/forms/C6tj0oRj1QIS4qNy2> not later than June 24, 2016. Admission onto the facility will not be permitted without advanced registration. Should it be necessary to cancel the meeting due to inclement weather or other emergency, NHTSA will take available measures to notify registered participants. If you have questions about the public meeting, please contact 3dsurrogate@dot.gov.

SUPPLEMENTARY INFORMATION:

To date, multiple iterative efforts have been made to produce a 3D surrogate vehicle that not only emulates a passenger car from any approach angle, but one that can be safely and repeatedly struck by an actual light or heavy vehicle without harm. In Europe, vehicle manufacturers and suppliers were presented with two opportunities to measure the appearance of multiple surrogate designs during similar test events hosted by Thatcham in the UK. The feedback received from these companies has been invaluable, and has helped refine the surrogate to its current characteristics.

On July 13-14, 2016, NHTSA will be hosting a US-based test event featuring the most recent iteration of the collaboratively-developed 3D surrogate vehicle and up to two robotic platforms (the surrogate vehicle is secured to a shallow self-propelled robotic platform to facilitate accurate longitudinal and lateral movement during testing). During this two-day meeting, vehicle manufacturers and suppliers will have an opportunity to measure the appearance of the 3D surrogate vehicle from multiple approach angles using vehicle-based sensors (e.g., radar, lidar, cameras, etc.). Feedback from the first day of testing will be used to make adjustments to the surrogate ahead of the second day's tests. Results from the second testing day will be used to help finalize the surrogate's design. The stated goal is to identify a final design by December 2016.

Feedback from the participants will be beneficial in finalizing the design of the surrogate. Meeting participants will have the opportunity to provide results from the measurements collected with their respective test equipment, and to provide specific recommendations about how the surrogate vehicle's appearance, to any sensor, could be improved. When providing these recommendations, participants are asked to consider the balance between realism and practicality. While it is very important the surrogate look as realistic as possible, it must also remain strikeable from any approach angle, over a broad range of impact speeds, without affecting the safety of those using it or harming the vehicle being evaluated.

Draft Agenda. (in local time)

Wednesday, July 13, 2016

08:00 - 09:00 Arrival/Check-In

09:00 - 09:30 Brief presentations describing the need for 3D surrogate vehicles, and development efforts to date.

09:30 - 09:45 Descriptions of the event test layout and choreography

09:45 - 12:00 Morning testing

12:00 - 13:00 Lunch break

13:00 - 16:00 Afternoon testing

16:00 - 17:00 Discuss the day's testing. Agree on what changes are to be made ahead of the next day's evaluations.

17:00 Adjourn

Thursday, July 14, 2016

08:00 - 08:30 Arrival/Check-In

08:30 - 12:00 Morning testing

12:00 - 13:00 Lunch break

13:00 - 15:30 Afternoon testing

15:30 - 17:00 Discuss preliminary results from the event's testing and how the results will be collected, consolidated, and disseminated.

17:00 Adjourn

Public Meeting Topics.

Discussions pertaining to the 3D surrogate vehicle will be focused on what features, if any, will need to be adjusted to allow it to appear realistic to automotive sensing systems. NHTSA does not intend to discuss how it may use 3D surrogate vehicles beyond inclusion in its research programs.

Surrogate vehicle feedback forms will be available on-site, and will request information about, but not be limited to, the following topics:

1. Are the radar return characteristics of the surrogate, including radar cross section (RCS), adequately realistic from each approach angle, depth, and height relative to the ground?
2. Are the visual characteristics, including the overall shape, reflectivity, contrasting features, of the surrogate adequately realistic?
3. Is the surrogate able to adequately support lidar-based safety systems?
4. Is the presence of the robotic platform beneath the surrogate apparent to the automotive sensing system (radar, visual, etc.)? If so, what effect will the platform's presence expected to have on safety system performance?
5. How consistent is the classification of the surrogate (e.g., distance to the surrogate at which the safety system classifies the surrogate as being an actual vehicle, and does the classification remain stable during the test vehicle's approach to the surrogate). How does this consistency compare to that expected by the overall light vehicle population? What effect does the panel misalignment have on surrogate classification?
6. From an industry perspective, what is the preferred rank order of the following: absolute surrogate vehicle realism, strikeability/durability, or ease of reassembly?

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under authority delegated by 49 CFR 1.95.

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