



DEPARTMENT OF TRANSPORTATION

[Docket Number: DOT-OST-2020-0254]

Request for Information for the Inclusive Design Reference Hub

AGENCY: Office of the Secretary of Transportation (OST), Department of Transportation.

ACTION: Notice; request for information (RFI).

SUMMARY: In July 2020, as part of an event celebrating the 30th anniversary of the Americans with Disabilities Act, DOT committed to undertake a new initiative to establish a library of resources for accessibility in automation, and work with outside experts to study voluntary best practices for ensuring accessibility in automated vehicles. DOT invites stakeholders to provide input on critical first steps in this process, the qualifications of entities that are best suited to perform this work, and considerations to ensure long-term sustainability of this initiative. This notice is not a Solicitation, and it does not seek the submission of formal, binding quotations/proposals. In the event OST-P determines that services will be procured, a formal Request for Quote/Proposal will be issued. OST-P cannot and will not reimburse any organization for its time, effort, or costs expended in responding to this RFI.

DATES: Responses to the RFI must be received by **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**, no later than 5:00 p.m. (ET) to ensure consideration of your views.

ADDRESSES: Written comments may be submitted using any one of the following methods:

- Electronic mail: Email comments to inclusivedesign@dot.gov with a courtesy copy to Robin.Gates@dot.gov. Responses must be provided as attachments to an email. It is recommended that attachments with file sizes exceeding 25MB be compressed (i.e., zipped) to ensure message delivery. Responses must be provided as a Microsoft Word

(.docx) attachment to the email, and be no more than 5 pages in length, with 12-point font and 1-inch margins.

- Internet: To submit comments electronically, go to the Federal regulations Web site at <http://www.regulations.gov>. Search by using the docket number (DOT-OST-2020-0254).

Follow the online instructions for submitting comments.

Respondents may answer as many or as few questions (see the questions below) as they wish.

DOT will not respond to individual submissions or publish publicly a compendium of responses.

A response to this RFI will not be viewed as a binding commitment to develop or pursue the project or ideas discussed.

Respondents are requested to provide the following information at the beginning of their response to this RFI:

- Company / institution name
- Company / institution contact
- Contact's address, phone number, and email address

Proprietary Information

Because information received in response to this RFI may be used to structure future programs and/or otherwise be made available to the public, respondents are strongly advised to NOT include any information in their responses that might be considered business sensitive, proprietary, or otherwise confidential. However, respondents may choose to include such information in their submissions if they believe it will significantly assist DOT in the design of the program.

Responses containing confidential, proprietary, or privileged information must be conspicuously marked as described below. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under the Freedom of Information Act, 5 U.S.C. 552.

If a response contains trade secrets or confidential commercial or financial information, the respondent must include a cover sheet identifying the specific pages containing that information. The cover sheet must also provide evidence that the respondent actually or customarily treats the information as private.

In addition, the respondent must (1) mark the header and footer of every page that contains trade secrets or confidential commercial or financial information with “Contains Confidential Information Exempt from Public Disclosure” and (2) identify every line and paragraph containing such information with double brackets or highlighting.

FOR FURTHER INFORMATION CONTACT:

The monitored inbox at inclusivedesign@dot.gov. You may also contact the Contracting Officer, Robin Gates, at Robin.Gates@dot.gov or (202) 366-1408.

Please reference “RFI for Inclusive Design Reference Hub” in the subject line when submitting your response.

DOT looks forward to your submission in response to this notice.

SUPPLEMENTARY INFORMATION:

Summary

The purpose of this RFI is to collect input on a proposed initiative to establish and curate a *library* of existing technical specifications, voluntary consensus or consortia standards, and best practices and a *roadmap* of such resources that may be needed to enable accessibility of automated vehicles for persons with physical, sensory, and cognitive disabilities. This initiative, tentatively entitled the *Inclusive Design Reference Hub*, will involve consultation with a range of stakeholders. This RFI will serve to refine DOT’s vision, next steps, and long-term ownership

and maintenance plan for this initiative. Respondents are encouraged to visit <https://www.transportation.gov/accessibility> for more information on DOT's accessibility initiatives.

Background

As transportation evolves, DOT is committed to a more accessible future and exploring accessibility opportunities that may materialize as vehicles and mobility services evolve. DOT encourages research into technologies that have the potential to remove barriers to accessibility in the transportation system and will seek to complement research done by leading academic institutions, the private sector and other entities to fill gaps that industry is not already covering. To this end, DOT recently announced its intent to establish a library of resources for accessibility in automation, and to work with outside experts to study voluntary best practices for ensuring accessibility in automated vehicles.

Needs Statement

DOT has made early investments intended to begin unlocking this potential through its Accessible Transportation Technologies Research Initiative (ATTRI), the Inclusive Design Challenge, the Complete Trip - ITS4US Deployment Program, and numerous research projects.

Industry stakeholders and others have reported difficulty in finding existing technical specifications and best practices for designing accessible vehicle features, or in prioritizing development of new resources where there are knowledge gaps. In addition, the expertise for developing such resources is fragmented across traditional organizational and sectoral bounds, making it difficult to begin new technical resource development. Early and widespread action by a coalition of industry, disability advocacy, academia, and government partners can help ensure shared understanding of the needs of individuals with a range of disabilities and corresponding technical specifications and best practices. An open and inclusive partnership to develop voluntary, consensus-based technical specifications, best practices, and standards can provide a

foundation for consistently and comprehensively meeting the needs of people with disabilities and inform the design of future automated vehicles (AVs).

A robust research pipeline can accelerate the accumulation of knowledge and encourage private sector experimentation. Tracking and sharing less mature, early stage research through technical specifications and best practices – in addition to developing and maintaining published technical standards – can help clarify where technical consensus is emerging and where investment and attention is most needed to fill long-term gaps.

Numerous voluntary consensus standards, technical specifications, recommended practices, and other technical resources currently exist that relate either directly to vehicle accessibility or could indirectly inform future automated vehicle accessibility. For example, the former category includes numerous voluntary consensus standards focused on the safety, functionality, and interoperability of wheelchair-accessible vehicles, while the latter includes voluntary consensus and consortia standards from the consumer electronics sector that provide insights into how to design interfaces that are useable by people with sensory or cognitive disabilities. A list of such resources is included at the end of this RFI for reference. While these existing resources form a starting point for considering the accessibility of passenger vehicles, DOT also recognizes that gaps likely exist between current technical standards and specifications and best practices and a set of resources that would comprehensively address the physical, sensory, and cognitive accessibility needs of future vehicle users, including users of automated vehicles.

Proposed Approach

This initiative will serve as a “one-stop shop” for engineers, designers, and individuals with disabilities to find and to collaborate on technical resources for an inclusive future. The *Hub* could either be a stand-alone resource or built within an existing platform. All content will need to be compliant with requirements stated in Section 508 of the Rehabilitation Act of 1973 and accompanying standards developed by the U.S. Access Board.

An initial investment to launch this initiative will seek to establish a process to maintain this resource in regular consultation with stakeholders, including relevant standards development organizations, primarily through existing forums. DOT will assess potential approaches in terms of how likely they are to result in a self-sustaining long-term effort that includes active participation from all stakeholders with relevant expertise and perspective.

REQUEST FOR INFORMATION

In launching the proposed initiative outlined above, DOT is seeking input from its stakeholders and potential partners on defining its scope, the most critical first steps, the necessary qualifications and expertise to support it, and how to ensure long-term ownership and maintenance of the resulting resources. To clarify input provided in response to this notice, DOT may seek additional follow-up information. Through this notice specifically, DOT seeks input on the following questions:

Background and Current Condition Information

1. What existing initiatives, industry activities, best practices, or other resources/actions could help to inform this initiative?
2. What existing technical standards and specifications and best practices are relevant or potentially relevant to the accessibility of vehicles for people with physical, sensory, and cognitive disabilities? What dependencies exist between existing resources and needed resources?
3. What information could help stakeholders understand the user population, potential market, and business case for inclusive design solutions? What information does not exist but could potentially help fill gaps in knowledge regarding the user population, potential market, and business case for inclusive design solutions?
4. What existing and needed resources are applicable to all vehicles? What existing and needed resources are specific to automated vehicles and when will they be needed?

5. How can this initiative support improved accessibility of conventional vehicles in the short-term while also enabling the accessibility of automated vehicles in the long-term?

Initiative Scope, Focus, and Proposed Initial Steps

1. Are there any technical references in this area that do not currently exist and should be prioritized for development?
 - a) Please describe the need and ways to expedite the development of needed references with relevant stakeholders, including consumers.
 - b) Please also discuss the extent to which the topic(s) identified are at an appropriate stage for voluntary standards development in terms of industry consensus and technological maturity.
2. Are there any existing resources or programs on which DOT could build or model this effort? Should the Inclusive Design Reference Hub be developed as a stand-alone resource, or integrated into an existing platform?
3. Are there any aspects of DOT's vision for this effort that could be clarified or improved ahead of a potential procurement?
4. Should the DOT directly host the resource, or should it be hosted by a third-party organization or coalition of organizations serving as the convener(s) and technical curator(s) on behalf of DOT?
5. How can this initiative be maintained in the long term with more limited federal involvement? What conditions need to be met in order for partner organizations to continue support for this initiative following an initial phase?
6. How could DOT assess the success of this activity over a two-year period? How can processes to support long-term sustainability be established in this timeframe?

Performing Organization Qualifications – General Input

1. What entities, organizations, groups, or Government agencies are most qualified and appropriate to perform this work?
2. What perspectives need to be represented in the execution of this initiative? Which groups should represent these perspectives?
3. What partnerships are critical?
4. What organizations currently play a role with respect to the development of standards around automated vehicles, transportation accessibility, and the intersection of the two? For responding organizations that currently have a role, please discuss your organizational and technical capabilities and experience in this area. Please also discuss how you might augment your qualifications with those of potential partner organizations.

ADDITIONAL INFORMATION

Below are existing resources that might be featured in the *Inclusive Design Reference Hub*.

- **Automated Driving Systems:**
 - SAE J3171: Identifying Automated Driving Systems-Dedicated Vehicles (ADS-DVs) Passenger Issues for Persons with Disabilities (SAE)
- **Vehicles:**
 - 49 CFR 571.141: Minimum Sound Requirements for Hybrid and Electric Vehicles (NHTSA)
 - 49 CFR 571.206: Door locks and door retention components (NHTSA)
 - 49 CFR 571.222: School bus passenger seating and crash protection (NHTSA)
 - 49 CFR 571.403: Platform Lift Systems for Motor Vehicles (NHTSA)
 - 49 CFR 571.404: Platform Lift Installations in Motor Vehicles (NHTSA)
 - 49 CFR part 38: Americans With Disabilities Act (ADA) – Accessibility Specifications For Transportation Vehicles (U.S. Access Board/U.S. DOT)

- QAP-103: National Mobility Equipment Dealers Association Quality Assurance Program Guidelines (NMEDA)
- SAE J1725: Structural Modification for Personally Licensed Vehicles to Meet the Transportation Needs of Persons with Disabilities (SAE)
- SAE J1903: Automotive Adaptive Driver Controls, Manual (SAE)
- SAE J2092: Testing of Wheelchair Lifts for Entry to or Exit from a Personally Licensed Vehicle (SAE)
- SAE J2093: Design Considerations for Wheelchair Lifts for Entry to or Exit from a Personally Licensed Vehicle (SAE)
- SAE J2094: Vehicle and Control Modifications for Drivers with Physical Disabilities Terminology (SAE)
- SAE J2603: Recommended Practice for Powered Gas Brake Control Systems (SAE)
- **Mobility Equipment:**
 - ANSI/RESNA WC-4:2017: Wheelchairs and Transportation (RESNA)
 - ISO 10542-1: Technical systems and aids for disabled or handicapped persons — Wheelchair tiedown and occupant-restraint systems (ISO)
 - ISO 10865: Wheelchair containment and occupant retention systems for accessible transport vehicles designed for use by both sitting and standing passengers (ISO)
 - ISO 10865: Part 1: Systems for rearward-facing wheelchair-seated passengers (ISO)
 - ISO 10865: Part 2: Systems for forward-facing wheelchair-seated passengers (ISO)
 - ISO 16840-4: Wheelchair seating — Part 4: Seating systems for use in motor vehicles (ISO)

- ISO 7176-19: Wheeled mobility devices for use as seats in motor vehicles (ISO)
- RESNA SP-3 (under development): Universal Docking Interface Guidelines (UDIG) (RESNA)
- SAE J2249: Wheelchair Tiedown and Occupant Restraint Systems for Use in Motor Vehicles (SAE)
- **Electronic Interfaces/Devices:**
 - 36 CFR 1194.1: Standards for Section 508 of the Rehabilitation Act (U.S. Access Board)
 - ANSI/RESNA CA-1: Universal Criteria for Reporting the Cognitive Accessibility of Products and Technologies (RESNA)
 - CTA-CEB27: Recommended Practice for Audio Accessibility of Audiovisual Devices (CTA)
 - ISO 21801-1: Cognitive accessibility – Part 1: General guidelines (ISO)
 - ISO 9241-171: Ergonomics of human-system interaction – Part 171: Guidance on software accessibility (ISO)
 - ISO/IEC 24786: Information Technology – User interfaces – Accessible user interface for accessibility settings (ISO/IEC)
 - ISO/IEC 29138-1: Information technology – User interface accessibility – Part 1: User accessibility needs (ISO/IEC)
 - ISO/IEC TS 20071-21:2015: Information technology – User interface component accessibility – Part 21: Guidance on audio descriptions (ISO/IEC)
 - WCAG 2.1: Web Content Accessibility Guidelines Overview (W3C)
- **General Product Usability and Accessibility:**
 - ISO/IEC 20282: Ease of operation of everyday products (ISO)
 - ISO/IEC 20282-1: Part 1: Design requirements for context and use and user characteristics (ISO)

- ISO/IEC 20282-2: Part 2: Summative test method (ISO)
- ISO/IEC 20282-3: Part 3: Test method for consumer products (ISO)
- ISO/IEC 20282-3: Part 4: Test method for the installation of consumer products (ISO)
- ISO/IEC 24756: Framework for specifying a common access profile (CAP) of needs and capabilities of users, systems, and their environments (ISO)

Issued on: December 15, 2020.

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