

Inclusive Design Challenge Webinar

Speaker Notes

Slide 1: Before our Webinar Begins . . .

Slide 2: Inclusive Design Challenge Informational Webinar

- Welcome everyone, and thank you for joining us today to learn about the U.S. Department of Transportation's Inclusive Design Challenge.
- The Challenge was announced on April 21st and we are now accepting Stage I proposals through October 30th.
- I'm Dave Perlman with U.S. DOT and I'll be your moderator today.

Slide 3: Webinar Logistics

- Please note that all phone lines will be muted during this webinar. For connection stability, you may want to disconnect from any VPN while using Adobe Connect.
- As time permits, after the presenters are done speaking, we will answer questions submitted through the Question and Answer pod in the web room.
- If you have trouble submitting through the webinar system, questions can alternatively be submitted via email to inclusivedesign@dot.gov.
- Also, feel free to share ideas with each other in the Networking Chat Pod.
- Later this month, presentation materials and a recording will be posted to the Inclusive Design Challenge website.
- Additionally, questions received in the chat pod and via email will be reviewed following the webinar. For questions not already answered in the existing challenge materials, we will work to provide responses on our website over the next few weeks.

Slide 4: Poll Everywhere Instructions

- We also have some questions for all of you that we'll be presenting throughout today's webinar. These questions are optional and can be answered via text message or through the website, following the instructions here. When we present our questions, you can text your response to 22333 or go to the website www.pollev.com/IDChallenge to answer. These questions are optional, but help us better understand who is attending today.

Slide 5: Poll Question 1

- To start, we would like to get a sense of who is on the call today with a few brief poll questions.
- Please let us know what state you are joining us from today. If you're outside the U.S. right now, feel free to type in the country name.
- [Moderator summarized results from word cloud.]

Slide 6: Poll Question 2

- For our next question, please choose the option that best describes your interest in the challenge:
 - Choose (A) if you are interested in submitting an idea to the Challenge.
 - (B) if you are interested in advising a team.
 - (C) if you want to promote the Challenge to others.
 - (D) if you are not sure yet, but you want to learn more.
- [Moderator summarized results.]

Slide 7: Presenters

- Thank you for participating. We'll have a couple more questions for you later in today's webinar. With that, I would like to introduce today's speakers.
- Finch Fulton is Deputy Assistant Secretary for Transportation Policy. He served as a member of the President's Transition Team, focusing on Transportation and Infrastructure Policy, and with the Department of Transportation as a Special Advisor to the Secretary on Transportation Policy. He has served in the House of Representatives under Congressman Jim McCrery and Congressman John Fleming, M.D. and in the Senate for Senator Jeff Sessions. In addition, he has worked in public affairs at VOX Global, devising and executing integrated policy and advocacy campaigns. He is a native of Mobile, Alabama, a graduate of the University of Alabama, received his MBA from Johns Hopkins University and was most recently a resident of Dallas, Texas.
- Sofia Gallo is Special Assistant for Policy, Office of the Secretary, where she works on the Administration's priorities on accessibility in transportation and on a broad array of transportation policy issues. Previously, she was a Research Assistant at the American Enterprise Institute and wrote about accessibility in the technology sector for Equal Entry. She graduated magna cum laude from Princeton University with a Bachelor of Arts in politics.
- Lindsey Teel is a policy advisor on detail to the Office of the Secretary of Transportation where she works on accessible transportation initiatives. At her home agency at the U.S. Department of Labor, Lindsey led a policy initiative called "Autonomous Vehicles: Driving Employment for People with Disabilities." With the support of DOL leadership, Lindsey engaged a broad array of stakeholders and built a coalition around AVs aimed at bridging transportation gaps and connecting the disability community to jobs.
- Steve Polzin is the Senior Advisor for Research and Technology in the Office of the Assistant Secretary for Research and Technology at the US Department of Transportation. Before his appointment at US DOT in June 2019, he served as Director of Mobility Policy Research at the Center for Urban Transportation Research at the University of South Florida. His current research interests include the implications of emerging trends on travel behavior. Dr. Polzin is a Civil Engineer with a BSCE from the University of Wisconsin-Madison, and Master's and Ph.D. degrees from Northwestern University.
- Now, it's my pleasure to introduce our first speaker, Deputy Assistant Secretary Finch Fulton.

Slide 8: USDOT Secretary Chao's Priority: Expanding Access to Transportation

- Thank you, Dave. Thank you all for joining us today. The Inclusive Design Challenge provides a unique opportunity to help us all plan for the future of automation with the goal of developing truly inclusive approaches to passenger vehicles so everyone can benefit.
- To set the stage for why we are prioritizing accessibility, 25.5 million Americans have disabilities that make traveling outside the home difficult.
- While access to critical services, including medical care, is a vital need at all times, the COVID-19 pandemic has made this need particularly evident.
- As a response to these challenges, the USDOT is increasing its investments in innovations that enhance access and mobility for all travelers. One of these efforts is the Complete Trip Portfolio, which will identify ways to provide more affordable, efficient and accessible transportation to underserved communities.
- To that end, at the October 2019 Access and Mobility for All Summit, Secretary Chao announced \$50 million in new initiatives as part of the Complete Trip Portfolio to develop and deploy innovations in technology and further interagency partnerships to improve mobility. This includes:
 - \$3.5M for the Federal Transit Administration's Mobility for All Pilot Program
 - \$40M for the Complete Trip - ITS4US Deployment Program
 - \$5M for the Inclusive Design Challenge, which is the subject of today's presentation.

Slide 9: Inclusive Design Challenge

- The Inclusive Design Challenge is a prize competition that rewards innovative ideas and design solutions to enable people with disabilities to use automated vehicles independently.
- By using a prize competition format, DOT seeks to:
 - Draw attention to the topic of passenger vehicle accessibility;
 - Encourage new cross-disciplinary collaborations;
 - Incentivize the development of new approaches and technologies to improve mobility; and
 - Tap into the creativity and knowledge of the disability community, researchers, advocates, manufacturers, and entrepreneurs.
- Technology has already changed how most of us get around. This Challenge seeks to ensure that these new technology-driven mobility options are inclusive of *all* Americans.
- Finally, I want to thank you again for your interest. I hope you will join us in spreading the word about this opportunity and submit your best ideas to help this be successful. Now, I'll turn it over to Sofia Gallo, who will tell you about the Inclusive Design Challenge in more detail.

Slide 10: Today's Agenda

- Thank you, Finch.
- First, let's go over today's agenda. We'll start with an overview of the Challenge timeline and structure. Later, we'll talk about some features of the Challenge in detail. Then, we'll discuss

the rules and submission requirements for Stage I and discuss available resources. At the end we will take some time to answer any questions you may have

Slide 11: Overview

- Let's begin by highlighting some key aspects of the Challenge Statement. This Challenge seeks innovative design solutions that can enable people with physical, sensory, and cognitive disabilities to use automated vehicles independently.
- Solutions can consist of physical hardware designs, human-machine interface designs, or a combination of both.
- The Challenge is structured as two separate stages of competition. In the first Stage, we are looking for brief technical proposals for inclusive design features, which will then be demonstrated and evaluated in prototype form in Stage II.
- Throughout the length of the Challenge, up to five million dollars in cash prizes will be awarded.

Slide 12: Challenge Structure

- As mentioned before, the Challenge is structured as two separate stages of competition.
- The first stage is the “proof-of-concept” stage, which asks participants to submit proposals describing their inclusive design feature.
- Then, in the second Stage, semifinalists advancing from Stage I will have approximately eighteen months to build a functional prototype of their proposed solution. This stage is the “prototype demonstration” stage.
- During the second Stage, one or more design charrettes will be held. These are an opportunity for semifinalists to interact with subject matter experts from industry and the disability community and get feedback on their ideas. At the end of the second Stage, teams will be invited to Washington, D.C. to demonstrate their prototypes. After this, the final prize selections will be announced.

Slide 13: Inclusive Design Challenge Timeline

- This slide shows the challenge timeline. Stage I is currently open for submissions.
- All Stage I entries must be received no later than October 30th at 5 PM Eastern time. We anticipate that the selection of semifinalists will be announced in early 2021.
- We anticipate the Stage II charrettes will occur in the summer of 2021, with the final demonstrations and prize selections occurring in the summer of 2022. More details on the charrettes will be announced as they are finalized.

Slide 14: Prizes

- Teams submitting entries into the Challenge will compete for an overall prize purse of up to five million dollars. This total prize will be awarded as follows:
- At the end of the first Stage, up to ten semifinalists will be selected to each receive a \$300,000 cash prize. Those receiving a prize will advance to Stage II of competition.
- Then, at the end of Stage II, three finalists will be selected to receive a cash prize.
 - The first place winner will receive \$1,000,000.

- The second place winner will receive \$700,000, and,
- The third place winner will receive \$300,000.

Slide 15: Today's Agenda

- Next, I will turn it over to Lindsey Teel, who will dive deeper into the Challenge details and review what you should consider when developing your proposal.
- But first, we have another audience poll question for you all. Dave, would you like to read the next question?

Slide 16: Poll Question 4

- Thanks, Sofia. Next, we'd like you to share, in 1-2 words, what is the biggest opportunity you think automated vehicles present for people with disabilities?
- [Moderator summarized results from word cloud]. Feel free to continue this conversation in the Networking Chat Pod.
- Now, let's turn it over to Lindsey, for more details about the Challenge.

Slide 17: Challenge Details to Consider

- Thanks, Dave. There are several elements that you should consider when developing your proposed solution, including:
 - Design,
 - Vehicle platform,
 - End users,
 - Vehicle uses, and
 - Production feasibility
- On the following slides, we'll cover specific considerations for each of these elements in greater detail.

Slide 18: Design

- When developing a proposed solution, the first element that teams should consider is the overall design.
- As the primary goal of the Challenge, we seek inclusive features that will enable future AVs to meet the needs of people with disabilities in a safe, efficient, and effective manner.
- These solutions might be human-machine interfaces, physical hardware or components, or a combination of both. They can be proposed as standalone features, or you can integrate them into a holistic vehicle design.
- While the solutions should be capable of being integrated into an AV, the Challenge is not looking for participants to design the automation technologies themselves. Therefore, an entry will solely be judged on its ability to further the goal of the Challenge, rather than the sophistication of any AV system the entry might use as a reference platform.
- For the best chances of success, teams should ensure that their solution clearly aligns with each of these design objectives. We also encourage you to consider validating your idea with those in the disability community to help ensure it aligns with a need.

Slide 19: Design (continued)

- If you are selected as a semifinalist and move on to Stage II, you will develop your concept into a functional prototype, which may include one or more of the following options listed here. We will not require semifinalists to demonstrate their proposed feature(s) on an actual vehicle, although a team may determine that doing so is necessary and/or advantageous to demonstrate their features. These options include:
- A full-size physical prototype, either:
 - Integrated into a vehicle, or
 - A full-size, standalone demonstration separate from a vehicle.
- A software prototype,
- A scale physical-model, or
- A virtual prototype such as a 3D model, computer-aided design drawings, or schematics of physical solutions. If participants use virtual prototypes, they will be strongly encouraged to consider other primary means of demonstrating their solution(s).

Slide 20: Vehicle Platform

- The next element to consider is the vehicle platform. Participants have flexibility in choosing a vehicle to use as a reference when developing their solution. However, all solutions should be designed so that they may be incorporated into passenger vehicles capable of operating at highway speeds.
- This Challenge focuses specifically on Automated Driving System—Dedicated Vehicles, commonly referred to by their acronym ADS-DV.
- ADS-DVs require a level of automation where human occupants are not expected to serve as a fallback, as long as the vehicle remains within the system’s operational design domain.
- The vehicle type you choose to reference with your idea could function either as a personal vehicle or as part of a shared private fleet. However, participants should keep in mind that the focus of the Challenge is accessibility innovation for passenger vehicles.

Slide 21: End Users

- The next element to consider is the end user of the design feature.
- Solutions should be designed for use by one or more of the following audiences:
 - People with physical disabilities,
 - People with sensory disabilities,
 - People with cognitive disabilities, or
 - People with multiple types of disabilities.
 - If you want to learn more about how these disabilities affect travel, check out our Resources page on the Challenge website. It provides a variety of reports that have looked at these topics closely from various perspectives.
- A key part of designing for the end user is understanding the end user’s needs. For this reason, we highly encourage participants to partner with those from the disability community to better understand the tailoring of the solution.

- Participants should demonstrate working engagement with representatives from the disability community throughout their design process. Your proposal should describe how you sought input from stakeholders to help inform your design.
- Now, I'll turn it over to my colleague, Steve Polzin, who will discuss a few more details, before talking about the rules and submission requirements for Stage I.

Slide 22: Vehicle Use

Thank you, Lindsey. Now we will focus on vehicle uses. Participants should develop inclusive design solutions to address one or more tasks that an AV user with a disability will need to complete. Tasks may include the following:

- Locating an AV, such as, navigating to the correct vehicle;
- Entering an AV, such as, opening a vehicle door and deploying or stowing ramps;
- Securing passengers and mobility equipment, such as, securing seatbelts or wheelchairs;
- Inputting information, such as, entering or changing a destination;
- Interacting with the vehicle in routine and emergency situations, such as, altering climate controls or requesting passenger assistance; or,
- Exiting an AV, such as, identifying when it is safe to exit a vehicle, or opening the vehicle door.

The examples I've described are just a handful out of many possible vehicle uses that could be addressed by your solution. The vehicle uses addressed by the design solution should clearly be stated in your proposal.

Slide 23: Production Feasibility

- The last detail we'll discuss before moving on to the challenge rules is production feasibility. While we don't expect your solutions to be rolling off of production lines right away, we are looking for concepts that strike a balance between innovation and near-term implementation. Implementation could include incorporation into original equipment, integration through aftermarket modification, or holistically reimagining vehicle design.
- In your proposals, you'll be expected to discuss factors related to the feasibility of producing your solutions. This includes the maturity of the underlying technology as well as cost and other production considerations.
- Similar to Lindsey's comment about engaging the disability community, this also serves as a prime opportunity to engage the automotive industry. We encourage you to do this to help inform the production feasibility aspect and aid in how you design your solutions. Like in the earlier case, your proposal should also seek to describe how you sought input from the automotive industry to help inform your design.

Slide 24: Today's Agenda

- Next, we'll highlight some of the rules and submission requirements for entering Stage I of the Challenge. But first, let's have one final poll question for the audience. Dave, could you read the next question?

Slide 25: Poll Question 5

- Sure, Steve. For our last question of the afternoon, we want to know, in 1-2 words, what is a challenge you expect will need to be addressed to enable use of automated vehicles by people with disabilities?
- [Moderator summarized results from word cloud]. Now, back to you, Steve, for information about the Challenge rules and requirements.

Slide 26: Rules

- Thanks, Dave. The Challenge is open to individuals and teams from the academic, research, and business communities
- The Challenge Statement includes all of the official rules and regulations for the Challenge. You can find this by going to our “Challenge Statement” on the DOT’s Inclusive Design Challenge website or on Challenge.gov. If you have questions about eligibility, restrictions, or requirements, be sure to read the Challenge Statement for full details on the rules.
- As we discussed in the previous section, it’s important to keep in mind that strong proposals will be well-informed by a rich understanding of user needs and industry conditions. Show us this by describing how you have engaged with stakeholders to understand their needs and constraints.

Slide 27: How to Enter

- Now, let’s go over what you need to submit to enter Stage I of the Challenge. This is just an overview, so make sure you read the full Challenge Statement before sending in your submission. The submission site can be found by going to the Inclusive Design Challenge website and clicking “Submit a Proposal”.
- The most important part of your submission is your concept paper, which will describe your idea. Required components include:
 - A detailed technical description,
 - An explanation of your idea’s alignment with the Challenge’s objectives and judging criteria,
 - Your approach for ensuring safety,
 - A description of the anticipated user experience,
 - A discussion of production feasibility, and
 - A plan for developing your idea if you are selected for Stage II.
 - These components combined cannot exceed ten pages, so be concise!
- Your submission package should also include a cover page, biographical information about your team, and any supporting data or figures you wish to include.
- Additionally, you will need to upload a one-page executive summary of your idea in a separate file.
- All of these requirements are described in the Challenge Statement and in the proposal submission site.

Slide 28: Judging Criteria- Stage I

- The judging panel will consider each submission's alignment with the following three criteria before making semifinalist recommendations to the Secretary of Transportation.

- The first criterion is TECHNICAL MERIT. This includes innovation – does your submission advance the state of the practice in meeting the needs of users with disabilities? Another component is technical detail and understanding – do you know the engineering needs and understand your solution’s limitations? Solutions must also be user driven: did you seek direct input from relevant communities? The makeup of your team also affects this criterion: how does your background support your project’s development?
- The second criterion is PRODUCTION FEASIBILITY. Did you describe how your solution can be integrated into a production vehicle? Have you identified risks and challenges? Have you considered the safety of occupants and other road users? What is your solution’s expected cost?
- The third and final criterion is IMPACT or BENEFIT. How inclusive is your solution? Did you demonstrate or describe the potential benefit to one or more target user groups?

Slide 29: Entry & Judging: Stage II

- Submission requirements for Stage II will be provided to the semifinalists upon advancing to the next stage and will also be posted on the DOT’s Inclusive Design Challenge website.
- We anticipate that the three criteria from Stage I will carry over to the judging of Stage II submissions. However, in this stage, there will be more of a focus on prototype development and maturity. We’ll go over these briefly, since more details will be finalized when the semifinalists are announced.
 - On TECHNICAL MERIT: factors include technical approach, the makeup of the team, design and desirability, and whether the prototype functions as intended.
 - On PRODUCTION FEASIBILITY: factors include a demonstrated path to production, the testing and deployment approach, and a self-assessment of the submission’s technology readiness level.
 - On IMPACT/BENEFIT: factors will evaluate the extent to which submissions are intuitive, inclusive, and beneficial.

Slide 30: Resources and Tools

- Earlier in this webinar, we mentioned the resources page on our website. If you are looking for more background on the transportation needs of people with disabilities, how AVs might address those needs, and relevant design considerations, we have posted some resources on our website. To find them, go to the Inclusive Design Challenge website and click on the “Resources” tab.
- You might also be wondering how to get in touch with the disability community or industry to inform your submission. You can look into local community programs or chapters of national organizations that might be able to get you in touch with potential advisors in your community.
- I’ll now turn it back over to Dave.

Slide 31: Questions?

- Thank you, Sofia and Steve for reviewing these important details about the Challenge. This concludes the formal presentation portion of this webinar. We will now turn to the question and answer portion.
- While we are reviewing your questions with the time that remains, please be aware that we have a Frequently Asked Questions section on our website which we encourage you to review.
- We plan to add to the FAQs after this webinar to reflect the questions posed today and will provide the date updated at the top of the page to reflect when this happens. To sign up for our mailing list, where we will announce updates to the FAQs, scroll to the bottom of our webpage and click on “sign up for email alerts”.
- Also, as a reminder, if you do not want to use the chat pod, we will review emails received to the Challenge email address after today’s webinar. That email is: inclusivedesign@dot.gov.
- [Question & Answer session]

Slide 32: Contact Information

- This concludes today’s webinar on the Inclusive Design Challenge.
- For additional information, please visit the challenge website: <https://www.transportation.gov/accessibility/inclusivedesign>
- Please help us promote the challenge! Click on the “Media Toolkit” tab on our website to find promotional images, sample social media posts, and email language you can use to share with your networks.
- Submit additional questions to InclusiveDesign@dot.gov
- Thank you!