



# US DOT Future of Transportation Summit

## Technology Demonstration Proposal Form

Thank you for your interest in participating in the 2024 US DOT Future of Transportation Summit (FoT Summit 2024) Technology Demonstration Session. Our goal is to have all transportation modes represented in these technology demonstrations, i.e., surface and air mobility (including freight, rail, and unmanned aircraft systems), and maritime.

Demonstrations can be virtual, physical, or a combination thereof. Demos can be conducted indoors or outdoors. UTCs are encouraged to showcase projects at FoT Summit 2024 undertaken in partnership with stakeholders beyond USDOT, such as relevant research funded by other federal agencies, as well as state and private entities. UTC Directors are requested to select which project(s) are proposed for live demonstration to best represent their UTCs' accomplishments. The intent of this form is to collect information about potential demonstrations so that the organizing committee can appropriately plan for logistical support including space requirements and schedule constraints.

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## Timeline

Please submit this form by COB April 26, 2024. You will receive notification regarding the next steps for your demonstration proposal by May 17, 2024.

## Contacts

Contact Information (for any questions related to the technology demonstrations):  
Ronnie Chowdhury (mac@clermson.edu) and Henry Liu (henryliu@umich.edu).

### Demonstrator Name \*

First Name

Last Name

### Email \*

### Name of UTC \*

Maximum of 50 characters

### UTC Focus Area \*



### UTC Funding Source \*



### Other Funding Source(s) if Applicable



**Title of Demonstration (max 25 words) \***

Enhancing Safety-Cost-Aware Vehicle Inspection Planning through Human-Machine Integration

0/25

**Description of Demonstration (max 200 words) \***

This project presents an innovative approach to vehicle inspection planning that integrates human expertise with machine learning technology, aiming to identify higher-risk vehicles using limited inspection resources. Machine learning methods alone fail to establish accurate correlations for identifying risky vehicles. However, human knowledge can effectively guide machine learning models toward more accurate determinations. At the core of our study is a survey involving fleet managers and vehicle inspectors, designed to capture deep human insights into the vehicle inspection decision-making

0/200

**Innovation and Impact (max 100 words) \***

The innovation lies in the seamless integration of human intuitive knowledge with advanced machine learning algorithms within a decision tree framework. This approach significantly improves the identification of necessary vehicle inspections by combining the detailed reasoning of human experts with the comprehensive data analysis capabilities of machines. Such a strategy not only enhances the accuracy and efficiency of vehicle inspections but also reduces operational costs and improves safety measures across transportation networks. The hybrid model sets a new standard for predictive

Describe the innovative aspect of your technology and its potential impact on transportation.

0/100

**Will this demonstration be indoor or outdoor? \***

Indoor

Type of Demonstration \*

On-site stationary prototype (ie.g. ▼

Logistical needs for the demonstration, if any (please provide as much detail as possible):

Any questions, comments, or concerns?



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