

Request for Information from the Florida Dept. of Transportation

The Florida Department of Transportation (FDOT), Transportation Data and Analytics Office (TDA), is requesting information from vendors interested in participating in a Driver Assistive Truck Platooning Pilot Project (DATP).

Description of services:

This invitation is provided to the commercial vehicle industry to seek expressions of interest in participating in a pilot test of Driver Assistive Truck Platooning (DATP). This document provides a proposed approach to the Pilot, for which we seek comments, revisions, and alternative approaches that would make the Pilot attractive to industry while still attaining the State's objectives.

Specific Information Requested:

Introduction and Objective:

The goal of the pilot project is for trucking industry firms and/or technology developers to demonstrate Driver Assistive Truck Platooning (DATP) technologies to State of Florida transportation stakeholders.

DATP is defined in Florida statute 316.003 as "*Vehicle automation and safety technology that integrates sensor array, wireless vehicle-to-vehicle communications, active safety systems, and specialized software to link safety systems and synchronize acceleration and braking between two vehicles while leaving each vehicle's steering control and systems command in the control of the vehicle's driver in compliance with the National Highway Traffic Safety Administration rules regarding vehicle-to-vehicle communications.*"

The pilot project will highlight performance and safety considerations throughout a set of operational scenarios. More specifically, the pilot project will:

- Evaluate impacts on surrounding traffic of DATP, in terms of safety and traffic flow.
- Evaluate impacts of DATP on infrastructure.
- Evaluate feasibility of conducting enforcement responsibilities when DATP trucks are operating.
- Evaluate administrative aspects of permitting DATP systems.

The pilot project will be comprised of two components, i.e. a Demonstration Phase and an Operational Phase. In the demonstration phase, participants will show the procedures for forming and dissolving platooning operation as well as the ability of the platooning vehicles to respond to cut-ins by light vehicles. The closed course location for the demonstration will be selected by the Florida Department of Transportation (FDOT) and the Florida Turnpike Enterprise (FTE) from within the Central Florida Automated Vehicle Proving Ground (CFAVPG) (as designated by USDOT) resources, in consultation with private sector participants. The Florida Department of Highway Safety and Motor Vehicles (DHSVM) and the Florida Highway Patrol (FHP) will also provide input and support of this pilot project.

The Operational Phase is envisioned to be conducted during a period determined by the Department and based on discussions with the participants; it will include an intensive review at a minimum of one week observing approximately 1,000-2000 miles of DATP operation. DATP operations will be reviewed in varying conditions available, including but not limited to, sunny, dry, wet/rainy, foggy and dark conditions.

In coordination with CFAVPG, operations will occur on portions of the Florida Turnpike which provide the desired traffic conditions and infrastructure configurations, as well as being relevant to regular freight runs conducted by participating fleets. In the Operational Phase, trucks equipped for DATP will operate in these selected road segments in regular revenue service. Industry firms may participate in the Demonstration Phase alone, or in both the Demonstration and Operational Phases of the project.

Freight carrier applicants may partner with technology providers and participate as a team. In addition, FDOT is open to participation from multiple teams.

Administrative Requirements for Pilot Program

1. Per statute (F.S. 316.0896), before the start of the pilot project, participants must submit to the Department of Highway Safety and Motor Vehicles (DHSMV) an instrument of insurance, a surety bond, or proof of self-insurance acceptable to the DHSMV in the amount of \$5 million.
2. A minimal cost permit will be issued to each participant for the operational phase of the pilot project. The Department will assist the participant in obtaining the necessary permit.
3. Any legal trailer types are allowed.
4. Vehicles will be labeled so that other vehicles and monitoring staff can readily identify the trucks as being capable of DATP operation.

Demonstration Phase

The Demonstration Phase will begin with a full description of system operation provided to the State of Florida by the participant. Particular items of interest are:

1. How does the system select which truck is to be in the lead?
2. How does the DATP system react if communication is disrupted between the vehicles?
3. What operational restrictions exist with regard to weather conditions, evacuation orders, traffic density, etc., if any?
4. How is DATP operation handled through interchanges, geometric changes, operational differences (curve ahead, speed limit changes), etc.?

The closed-course portion will demonstrate the following capabilities:

1. **Procedure that establishes communication link between vehicles.** Participants will show how information is provided to drivers about procedures needed to establish platooning and how drivers are notified when platooning is in effect.
2. **Ability of follower truck to maintain commanded separation distance as lead truck varies velocity.** Participants will measure and report separation distances.
3. **Ability of the follower truck to adjust the separation distance.** The participant will demonstrate how the separation distance is established and maintained, plus the capability of the drivers of the trucks to set the separation distance, if any.
4. **Ability of either driver to disengage DATP.** The participant will demonstrate what actions either driver can take to disengage DATP operations.
5. **Ability of follower truck to rapidly apply braking in response to lead vehicle sudden deceleration.** The participant will show how the following vehicle responds when a large braking effort is applied to the lead vehicle. A large braking event is defined as approximately 50% of braking effort applied by the lead truck (this threshold may be refined based on discussions with participants)
6. **Ability of system to notify other drivers that DATP operation is ongoing.** The participant will show how other motorists on the highway can be notified that the two trucks are actively performing DATP operation, if this feature exists.
7. **Ability of follower vehicle to adjust following distance appropriately when a car cuts in to the space between the trucks.** The car will be driven by a professional test driver. The participants will demonstrate how their DATP system responds to this situation to maintain safety.
8. **Safe response of both trucks if communication link is corrupted/interrupted and not yet reestablished after a period of time designated by the participant.** The participant will demonstrate how their DATP system reacts if communication is disrupted between the vehicles. They will also report what length of time constitutes a disruption of communication.
9. **Procedure for ending platooning operation.** The participant will show how DATP operation is terminated allowing both trucks to return to manual operation.

Procedures and actions will be documented by video recording and/or other data collection methodologies. This data collection is intended to have no impact on the normal DATP operations of the Demonstration Phase participant; any concerns regarding proprietary data can be discussed further with RFI respondents.

Based on the Demonstration, FDOT, FTE, DHSMV and FHP will make a determination as to whether the DATP system demonstrated has demonstrated these capabilities at an appropriate performance and safety level. If so, activities with the participant will proceed to the Operational Phase.

In addition, participants are welcome to provide any data or video from prior testing that demonstrates the performance items listed above. The State of Florida, after carefully evaluating this information, may waive the requirement for a participant to perform the demonstration phase prior to proceeding to the Operational Phase.

Operational Phase

DATP operations will be conducted during daytime and/or nighttime on limited access highway segments of the Florida Turnpike, to be identified by the State of Florida and FTE in collaboration with industry partners. The roads will have either two or three lanes in the travel direction. Highway traffic will not be restricted.

A Safety Management Plan developed by FTE will be implemented; participants will have an opportunity to review the plan and discuss any changes with FTE.

The operational scenario is outlined as follows:

1. Trucks equipped for DATP operate in selected road segments in regular revenue service.
2. The fleet operator (alone or with a third party) organizes equipped vehicles to rendezvous on road, providing guidance to drivers as needed.
3. Drivers use a human-machine interface provided by technology developer to “link up”.
4. The fleet sets gap and speed, based on conditions and their safety protocols. Gaps and speed will vary based on conditions.
5. DATP vehicles operate within normal traffic stream, changing lanes as desired (via manual steering).

DATP operations are intended for runs occurring over a consistent route. Data and video will be collected by the participant and analyzed with emphasis on the following:

1. All cut-ins are noted and related truck spacing adjustments are noted.
2. All hard braking events (see Section 3) are noted, to include GPS and video data, for possible later analysis.
3. How interchanges or geometric changes affect DATP operations.

FTE has full video coverage of the entire Turnpike. Video of interactions between platooning trucks and other vehicles will be captured and analyzed to assess any traffic impediments or improvements. FTE may collect data regarding bridge loading as DATP platooning cross. FTE will lead public education regarding DATP testing.

Report Generation

Participants in the Operational Phase will be required to provide a monthly high-level performance/operational report for the duration of the pilot project. This report will provide high-level analysis of data and information collected as listed in Section 4. The format of this submission will be coordinated with the Department. This report should be free of any proprietary or identifying information not related to the testing purposes.

The State of Florida will generate a report based on the data and results of the Demonstration Phase and the Operational Phase of the pilot project. The report will be public and delivered to the Florida legislature.

Application Procedure to Participate in Pilot Program

The contact person representing the State of Florida for this pilot project is Mr. Ed Hutchinson of FDOT (contact information is below).

For those interested in participating in the pilot project, please provide responses to the following:

1. Would you like to present a demonstration, operation, or both demonstration and pilot testing operation phases?
2. What type of freight operations (long haul, short haul) are of interest?
3. What area / highway segments are desired?
4. What dates are preferable to do the testing?
5. What time of day would you prefer to do the testing?
6. What duration / mileage is desired?
7. Would you be willing to operate in varying conditions, including but not limited to, sunny, dry, wet/rainy, foggy and dark conditions?
8. With what range of traffic conditions (light, medium, heavy) and infrastructure configurations (urban highway, rural highway, etc) would you like to conduct the test? Do you seek a police escort or other methods to “cushion” your operations from regular traffic?
9. How would you suggest handling the question of “signing” of platooning, i.e. a placard on the truck tractor indicating a DATP-capable vehicle, an indicator for when platooning is active, etc?
10. What type of trailer configurations would you use?
11. What aspects of DATP would you like to evaluate?
12. What data would you be willing to provide at the conclusion of the Operational Phase?
13. Are you willing for selected data from your Operational Phase analysis to be made part of an FDOT report?

Contact for Questions/Clarification:

Please send an email to Ed Hutchinson, Project Manager @ Ed.Hutchinson@dot.state.fl.us with any questions or comments.

The RFI is open ended and email submissions are preferred.

The requested information must be received by 5:00 pm (EST) on Friday October 20, 2017.

PLEASE NOTE:

- Responses to this Request for Information (RFI) will be reviewed by the agency for informational purposes, and will not be considered as offers to be accepted by the agency to form a binding contract.
- Information obtained in response to this RFI is subject to public record as defined by F.S. Chapter 119.
- In accordance with F.S. 287.057, information obtained in response to this RFI may be used to develop scope and solicitation documents for future procurements at the discretion of the Department. Respondents to this RFI will remain eligible for any subsequent contract with the agency.
- Advertisement of any subsequent competitive solicitation that may result from this RFI will be posted on the Florida Vendor Bid System.