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Summary: Request for Public Comments for Petition of Testing an Electric Package Delivery Vehicle with a Fully Automated Driving System on Public Roads

Agency: National Highway Traffic Safety Administration (NHTSA)

Parent Agency: Department of Transportation (DOT)

Date Published: March 19, 2019

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Action:

Notice of request for public comments

Action Reply: Public Submission

Date Posted: April 02, 2019

Comments Submitted By:

David DeVeau

DEVCO Design & Development

Westfield, MA 01085

Attachments: (File Name)

DOT-NHTSA-ADS-Package-Testing-Levels_David-DeVeau.pdf

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Introductory

The following public comments are not intended to address the approval, postponement or rejection of this petition. These comments are only within the capacity of an independent advocate for public safety.

This petition is for the use of an electric vehicle to be used as a fully automated test vehicle for package delivery at low speeds with no occupants or driver and no related human interface on public roads.

These comments are in regards toward support of cooperation for the DOT / NHTSA / NCAP Rating System for all road vehicles that by nature of specifying applicable testing will clarify safety requirements or exemptions and will further budgets for engineering designs and engineered testing.

The level of these tests are defined by the petitioner at driving capacity Level-4 as defined by SAE International Levels of Automation as specified in SAE-J3016.

SAE-J3016 is a standard for design feature descriptions and conditions of use at levels from human driver to full automation.

NHTSA is a DOT safety administrator of all road vehicles to include testing and approval of all safety features.

To expedite the development of all vehicle safety innovations for crash protection features and for collision avoidance at all levels of automated vehicle features, all types of testing must be perfectly clear.

As to any developing innovation being tested on public roads, there must be a minimum requirement for public safety that must be proven and therefore tested by an independent NHTSA certified testing facility.

Further self-certification of minimum public safety requirements must not be allowable for any level of permitted public road testing.

Therefor in the interest of this and like petitions the testing levels and testing conditions must be defined as per the following examples.

All Testing Levels

YEAR – MAKE – MODEL

Crash Protection Levels:

L0: Occupant Safety Systems (Not Applicable, Package Delivery Only)
Structural Absorption and or Diversion for Compartment Integrity
Personal Restraints and or Movement Absorption for All Seat Locations

L0-P: Pedestrian Safety Systems
Structural Absorption and or Diversion

Collision Avoidance Levels:

L1: Warning Systems (Not Applicable, Package Delivery Only)
Audio and or Visual and or Tactile Vibration Alerts

L1-P: Pedestrian Warning Systems
External Audio and or Visual Alerts

L2: Assist Systems (Not Applicable, Package Delivery Only)
Tactile Resistance and or Initial Intervention
Directional and or Speed Counter Measures

L3: Automatic Systems (Not Applicable, Package Delivery Only)
Complete Intervention and or Activation
Directional and or Speed Control

L4: Autonomous Systems
Directional and or Speed Control
No Human Driver Interface and or Intervention

ADS Collision Avoidance Measurements

AUTOMATED DRIVING SYSTEMS:

Autonomous Directional and Speed Control
No Human Driver Interface or Intervention

CONDITIONS:

- Autonomous Systems Are Measured On Ability To Anticipate and or Calculate Course and Perform Actions
- All Systems Are Measured On Ability To Perform Specific Tasks On Specified Road Types Within A Range of Environmental Conditions Up To Speed Specified.
- Laboratory Conditions Simulate Actual Collision Conditions Within 80%

ADS Testing Request Conditions

YEAR – MAKE – MODEL

Forward / Rearward Brake:

Automatic: Brake Control; Moderate Weather; Day Only; City Street Traffic Conditions; Other Vehicle, Pedestrian, and Bicycle Recognition; Collision Avoidance Abilities
Proximity; Front 45 feet from 29 to 0 mph / Rear 20 feet from 19 to 0 mph
Note: Braked Stopping Ability Is Dependent On Conditions and or Obstacles Introduced

Speed Control:

Warning: External Audio & Visual Alerts; Moderate Weather; Day Only; City Street Traffic Conditions; Other Vehicle, Pedestrian, and Bicycle Recognition; Collision Warning Abilities
Automatic: Speed Control; Moderate Weather; Day Only; City Street Traffic Conditions; Other Vehicle, Pedestrian, and Bicycle Recognition; Course Awareness Abilities
Speed Range; Front 0 to 29 / Rear 0 to 19 mph
Note: Forward / Rearward Brake Is Active

Lane Keep / Lane Departure:

Warning: External Audio & Visual Alerts; Moderate Weather; Day Only; City Street Traffic Conditions; Other Vehicle, Pedestrian, and Bicycle Recognition; Lane Change Warning Abilities
Automatic: Lane Keep / Lane Departure Steering Control; Day Only; City Street Traffic Conditions; Other Vehicle, Pedestrian, and Bicycle Recognition; Course Maneuvering Abilities
Speed Range; Front 0 to 29 / Rear 0 to 19 mph
Note: Forward / Rearward Brake and Speed Control Are Active

Note:

Additional Information May Be Required To Cite Exemption To Existing Law and Explain ADS Substitute Safety Feature


All Testing Request Levels

YEAR – MAKE – MODEL

DOT Testing Level	DOT Testing Speed	Testing Conditions Vehicle Direction of Travel and/or Area Location of Vehicle Impact	SAE-J3016 Design Level
L0	31 to 39 mph	Front; Center to 3/4 / Absorption Of Other Vehicle Impact Forces	Not Applicable
L0	21 to 29 mph	Rear; Center to 3/4 / Absorption Of Other Vehicle Impact Forces	Not Applicable
L0	21 to 29 mph	Side; Center to 3/4 / Absorption Of Other Vehicle Impact Forces	Not Applicable
L0p	11 to 19 mph	All; Absorption and/or Diversion Of Pedestrian Impact Forces	Not Applicable
L1p	21 to 29 mph	Front; Pedestrian Warning	L0
L1p	11 to 19 mph	Rear; Pedestrian Warning	L0
L4	0 to 29 mph	All; Fully Automated Driver – No Human Driver Interface	L4
L4	0 to 29 mph	All; Course Ability / City Street & Traffic Conditions	L4
L4	21 to 29 mph	Front; Pedestrian & Bicycle Collision Avoidance	L4
L4	11 to 19 mph	Rear; Pedestrian & Bicycle Collision Avoidance	L4

DOT / NHTSA / NCAP Safety Rating Sticker

YEAR – MAKE – MODEL

YEAR - MAKE - MODEL				
	Crash / Collision - Safety Ratings- (Standard or Regulated / Optional / Other Colors)			
	Protection	Avoidance		Safety Features
105mph ★				
95mph ★				
85mph ★				
75mph ★				
65mph ★				
55mph ★				
45mph ★				500LB Load Capacity
35mph ★	Front Center-3/4			Crash Absorption
25mph ★	Rear Center-3/4	Side Center-3/4	ALL Traffic Automatic	2-1/2 Hour Run Time
15mph ★	Front Pedestrian	Rear Pedestrian		
			Front Pedestrian Automatic	
			Rear Pedestrian Automatic	

National Highway Traffic Safety Administration (NHTSA)
 Crash / Collision Tests Are Under Laboratory Conditions At Speed Indicated +/- 4mph
 Crash Protection For Other Vehicle Passengers At 100% Survival
 Collision Avoidance Technology Has 100% Proof Of Function
 Actual Crash / Collision Conditions Are Simulated Within 80%
 For Additional Information Go To www.SaferCar.gov

SILVER 55+ Years
BLUE Family Needs
GOLD Performance

Example: Package Delivery Vehicle Safety Rating Sticker

Protection / Avoidance

Are Relative To Other Vehicles and Pedestrians that are also Inclusive of Bicycle and Like Pedestrian Operated Vehicles As Rated by Official Authority with Applicable Statements

Safety Features

Are Included By Manufacturer and Relative To This Vehicle Only

Note:

Speed Based Rating System Equals More Stars For Faster Safer Cars

Conclusion

As stated in this introductory the SAE-J3016 Standard from its initial implementation and throughout its revision process is only about the levels of design perimeters. Although proving to be very useful for design engineering, is lacking in clarity for testing engineering.

Test design engineering can not have overlapping levels. A division of testing levels must be clearly defined for accurate and provable testing. Further manufacturing engineers must have clear testing directives for achievements of provable safety design innovations at all levels.

As shown in this proposal by implementing a DOT Testing Level Standard in conjunction with the SAE J3016 Design Level Standard all design and testing conditions in interest with compliance to the Safety Act are clearly addressed as follows:

- Applicable Testing Levels are clearly distinguished per vehicle design
- Applicable Testing Conditions are clearly defined per vehicle design
- Replaces the Manufacturer Petition with NHTSA Certified Testing
- Expedites Competitive Development of Safety Innovations at All Levels
- SAE J3016 is clarified as a Engineering Design Standard Reference
- NHTSA Crash / Collision Testing is clarified as a simplified Standard
- DOT / NHTSA / NCAP Speed Based Rating System is Perfectly Clear



DOT / NHTSA / NCAP 10 Star Speed Based Rating System For All Levels Of Public Road Vehicle Safety From Prototype Testing To Production Certified Officially Proven Public Safety