**FEDERAL REGISTER Document Number:** 2020-25930 **Summary:** NHTSA is requesting comment on the development of a framework for Automated Driving System (ADS) safety. The framework would objectively define, assess, and manage the safety of ADS performance while ensuring the needed flexibility to enable further innovation. The Agency is seeking to draw upon existing Federal and non-Federal foundational efforts and tools in structuring the framework as ADS continue to develop. NHTSA seeks specific feedback on key components that can meet the need for motor vehicle safety while enabling innovative designs, in a manner consistent with agency authorities.

Agency: National Highway Traffic Safety Administration Parent Agency: Department Of Transportation Date Published: December 03, 2020 Docket Number: NHTSA-2020-0106

## Action:

Advance notice of proposed rulemaking (ANPRM): Request for Comments

# Action Reply:

Comments

## Date Submitted: January 15, 2021 Comments Submitted By:

David DeVeau DEVCO Design & Development Westfield, MA 01085 **Attachments:** (File Name) DOT-NHTSA-NCAP-ADS-Safety-Framework\_David-DeVeau.pdf Title-49-USC-32302-Vehicle-Information\_David-DeVeau.pdf Title-49-USC-30114-30115-Special-Exemptions\_David-DeVeau.pdf Federal-State-Vehicle-Safety-Inspections\_David-DeVeau.pdf

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## Introduction

This submittal is in favor of utilizing updates to the NHTSA NCAP Crash / Collision Safety Ratings System in which the Primary Purpose is to Add Collision Avoidance Next To Crash Protection and To Define All Safety Features on the Safety Rating Sticker that is mandatory on all New Vehicles sold in The United States of America.

To continue verification of the manufacturer's certification requirements per the Safety Act at point of delivery to the distributor or dealer and to assist FMVSS to develop test procedures and the NHTSA to establish performance measurements of existing and new safety innovations.

The main objective is to advance safety in a clear manner that will remain consistent throughout all the levels of development from prototype testing to approval for production with a basic oversight ability without inhibiting the advancement of all types of increased safety innovations.

The clearest approach is already defined in 49 USC §32302: Passenger Motor Vehicle Information; damage susceptibility, crashworthiness and crash avoidance are based on performance of conditions at rates of speed.

The following will demonstrate how the NHTSA / NCAP Ratings System can be effectively utilized to enable safely advancing today's Driver Assist Technology and inspire a firm leadership into the unlimited future of Automated Driving Systems.

### **Crash Protection Measurement**

PASS: External Bruising and AbrasionsPASS: Internal Joint SprainsPASS: Internal Organ BruisingFAIL: External or Internal Damage

ALL MAIN SEAT LOCATIONS: (Nearest to Doors or Windows) Humanoid Crash Dummy 225 Pound Male Adult 180 Pound Female Adult 80 Pound Adolescent Child

ANY SECONDARY SEAT LOCATION: (In the Middle or Center) Humanoid Crash Dummy In Additional Safety Seat Up to 80 Pound Child

#### CONDITIONS:

- Vehicle Areas Defined Collide At Speed Specified
- Occupant Compartment Is Measured For Intrusion Of Occupational Areas
- All Occupants Are Measured and Visually Inspected For Crash Results
- Laboratory Conditions Simulate Actual Crash Conditions Within 80%

### **Collision Avoidance Measurement**

WARNING Systems: Audio and or Visual and or Tactile Vibration Alerts

ASSIST Systems: Tactile Resistance and or Initial Intervention

AUTOMATIC Systems: Complete Intervention and or Activation

AUTONOMOUS Systems: Automated Directional and or Speed Control

#### CONDITIONS:

• Warnings and Assist Systems Are Measured On Ability Within A Minimum Measurement of Distance

• Automatic and 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%

## **Testing Measurement Levels**

### **Crash Protection Levels:**

**L0:** Occupant Safety Systems 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 Pedestrian and or Pedestrian Operated Vehicles

#### **Collision Avoidance Levels:**

L1: Warning Systems Audio and or Visual Alerts and or Tactile Vibrations Automated and or Selected Safety Features

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

L2: Assist Systems Tactile Resistance and or Initial Intervention Directional and or Speed Counter Measures

L3: Automatic Systems 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

#### EXAMPLE: BASIC MODEL

		ction		dance	or Regulated / Optional / Other Colors) Safety Features
105mph 🖕					Drive Paddle Shift
95mph	Front Center-3/4				Separable Safety Cage
85mph			Front Collision Warning	Side Lane Departure Warning	High-Speed Warnings
75mph	Front 1/2-1/4	Rear Center-3/4			
65mph	Side Center-3/4	Rear 1/2-1/4	and the second se		
55mph					Automatic Hi/Low Beam
45mph			Front / Side Traction Automatic		
35mph			Front Brake Stop Automatic		
25mph	Front Pedestrian			Front Pedestrian Warning	Front Seatbelt Airbag
15mph	Rear Pedestrian		Rear Brake Stop Automatic	Rear Pedestrian Warning	Parking Assist
	sion Tests A h Protection Collision Ave	re Under Lab For Passeng bidance Tech	ic Safety Administration oratory Condictions At S ers In All Seat Location nology Has 100% Proof conditions Are Simulated	Speed Indicated +/- 4mph s At 100% Surival Of Function	SILVER 55 + Years BLUE Family Needs GOLD Performance

#### Regulatory Oversight Authority & Conditions

National Highway Traffic Safety Administration (NHTSA) Crash / Collision Tests Are Under Laboratory Conditions At Speed Indicated +/-4mph Crash Protection For Passengers In All Seat Locations At 100% Survival Collision Avoidance Technology Has 100% Proof Of Function Actual Crash / Collision Conditions Are Simulated Within 80%

Sticker Must Be Displayed On New Vehicles Sold In The U.S. Per 49 USC §32302

### EXAMPLE: BASIC MODEL OPTIONS

		ction		dance	or Regulated / Optional / Other Colors) Safety Features
105mph					Drive Paddle Shift
95mph	Front Center-3/4				Separable Safety Cage
85mph			Front Collision Warning	Side Lane Departure Warning	<b>High-Speed Warnings</b>
75mph	Front 1/2-1/4	Rear Center-3/4	Front Brake Stop Assist	Front Lane Keep Assist	
65mph	Side Center-3/4	Rear 1/2-1/4	Front Driver Speed Assist	Side Lane Departure Assist	Highway Assist
55mph					Automatic Hi/Low Beam
45mph			Front / Side Traction Automatic		
35mph			Front Brake Stop Automatic	Front Traffic Automatic	Low-Speed Highway
25mph	Front Pedestrian			Front Pedestrian Warning	Front Seatbelt Airbag
15mph	Rear Pedestrian		Rear Brake Stop Automatic	Rear Pedestrian Warning	Parking Assist
	sion Tests A h Protection Collision Av Actual Cras	re Under Lab For Passeng oidance Tech h / Collision C	ic Safety Administration oratory Condictions At S ers In All Seat Location nology Has 100% Proof conditions Are Simulated ation Go To www.Safer	Speed Indicated +/- 4mph s At 100% Surival Of Function I Within 80%	SILVER 55 + Years BLUE Family Needs GOLD Performance

#### Crash Protection / Collision Avoidance / Model Safety Features

Expansive Main Categories with Clear and Targeted Safety Features

### EXAMPLE: BASIC MODEL OPTIONS ALTERNATE

		ction		dance	or Regulated / Optional / Other Colors) Safety Features
105mph 🖕					Drive Paddle Shift
95mph	Front Center-3/4				Separable Safety Cage
85mph			Front Collision Warning	Side Lane Departure Warning	<b>High-Speed Warnings</b>
75mph	Front 1/2-1/4	Rear Center-3/4	Front Brake Stop Assist	Front Lane Keep Assist	
65mph	Side Center-3/4	Rear 1/2-1/4	Front Driver Speed Assist	Side Lane Departure Assist	Travel Congested Highways?
55mph					<b>Automatic Hi/Low Beam</b>
45mph			Front / Side Traction Automatic		
35mph			Front Brake Stop Automatic	Front Traffic Automatic	Highway Commute Stop & Go?
25mph	Front Pedestrian			Front Pedestrian Warning	Front Seatbelt Airbag
15mph	Rear Pedestrian		Rear Brake Stop Automatic	Rear Pedestrian Warning	Parking Assist
	sion Tests A h Protection Collision Av Actual Cras	re Under Lab For Passeng oidance Tech h / Collision C	ic Safety Administration oratory Condictions At S ers In All Seat Location nology Has 100% Proof conditions Are Simulated ation Go To www.Safer	Speed Indicated +/- 4mph s At 100% Surival Of Function I Within 80%	SILVER 55 + Years BLUE Family Needs GOLD Performance

#### Crash Protection / Collision Avoidance / Model Safety Features

Flexible Ability to Clearly Optimize Target Demographics

### EXAMPLE: LUXURY MODEL

		ction		dance	or Regulated / Optional / Other Colors) Safety Features
105mph 🖕					Drive Paddle Shift
95mph	Front Center-3/4				Separable Safety Cage
85mph			Front Collision Warning	Side Lane Departure Warning	High-Speed Warnings
75mph	Front 1/2-1/4	Rear Center-3/4	Front Brake Stop Assist	Front Lane Keep Assist	
65mph	Side Center-3/4	Rear 1/2-1/4	Front Speed Assist	Side Lane Departure Assist	Highway Assist
55mph					Automatic Hi/Low Beam
45mph			Front / Side Traction Automatic		
35mph ☆			Front Brake Stop Automatic	Front Traffic Automatic	Low-Speed Highway
25mph	Front Pedestrian			Front Pedestrian Warning	Front Seatbelt Airbag
15mph 🕁	Rear Pedestrian		Rear Brake Stop Automatic	Rear Pedestrian Warning	<b>Automatic Parking</b>
Cras	sion Tests A h Protection Collision Av Actual Cras	re Under Lab For Passeng bidance Tech h / Collision C	ic Safety Administration oratory Condictions At S ers In All Seat Location nology Has 100% Proof conditions Are Simulated ation Go To www.Safer	Speed Indicated +/- 4mph s At 100% Surival Of Function I Within 80%	SILVER 55 + Years BLUE Family Needs GOLD Performance

## Clearly Defined Ability At Speed Specified

Competitive Inspiration To Go Faster Safer

# **Production Vehicle Testing Request Levels**

## YEAR – MAKE – MODEL

DOT Testing Level	DOT Testing Speed	Testing Conditions Vehicle Direction of Travel Area Location of Vehicle Impact
LO	91 to 99 mph	Front; Center to 3/4
LO	71 to 79 mph	Front; 1/2 to 1/4 / Rear; Center to 3/4
LO	61 to 69 mph	Side; Center to 3/4 / Rear; 1/2 to 1/4
L0p	21 to 29 mph	Front; Center to 3/4
L0p	11 to 19 mph	Rear; Center to 3/4
L1	41 to 89 mph	Front; Collision Warning / Side; Lane Departure Warning
L1p	1 to 29 mph	Front; Pedestrian Warning
L1p	1 to 19 mph	Rear; Pedestrian Warning
L2	41 to 79 mph	Front; Brake Stop Assist / Lane Keep Assist
L2	41 to 69 mph	Front; Speed Assist / Side; Lane Departure Assist
L3	1 to 49 mph	Front / Side; Traction Automatic
L3	1 to 39 mph	Front; Brake Stop Automatic
L3	1 to 19 mph	Rear; Brake Stop Automatic
L4	1 to 39 mph	Front; Traffic Automatic / Speed Control / Lane Keep Control
L4	1 to 19 mph	Side; Traffic Automatic / Lane Change Management
L4	1 to 19 mph	All; Parking Automatic

# **Production Vehicle Testing Request Conditions**

### YEAR – MAKE – MODEL

Forward / Rearward Brake: Warning: Audio & Visual & Tactile Alerts; Always Active Assist: Initial Measure; Selective Proximity; Front 35 Feet / Rear 15 Feet Automatic: Applicable with ADS Traffic Automatic

Speed Control:

Warning: Audio & Visual & Tactile Alerts; When Active Assist: Initial Counter Measure; Selective Speed Limit Range and or Excessive Speed Control; Selective Proximity; Front 35 Feet / Rear 15 Feet / Side 5 Feet Automatic: Applicable with ADS Traffic Automatic

Lane Keep / Lane Departure:

Warning: Audio & Visual & Tactile Alerts; Always Active Assist: Initial Counter Measure; Selective and/or Activated with Lane Change Signal Proximity; Front 25 Feet / Rear 15 Feet / Side 5 Feet Automatic: Applicable with ADS Traffic Automatic

### Traffic Automatic:

Warning: Audio & Visual & Tactile Alerts; When Active Assist: Initial Counter Measure; Selective Proximity; Front 25 Feet / Rear 15 Feet / Side 5 Feet

ADS: Autonomous; Speed Control / Lane Keep Control; Selective Lane Departure / Lane Change Steering Control; Selective with Lane Change Signal Limited Access Roadways; Moderate Weather; Day/Night

#### Parking Automatic:

Warning: Audio & Visual & Tactile Alerts; When Active Assist: Initial Counter Measure; Selective Proximity; Front / Rear / Side, 15 Feet ADS: Autonomous; Speed Control / Lane Change Control / Limited Stagnant Space Management; Selective

Limited Stagnant Space Management; Selective All Access Roadways and Parking Lots; Parallel / Perpendicular Moderate Weather; Day/Night / Extreme Weather; Day/Night/Extra Lighting

### EXAMPLE: LUXURY MODEL PROTOTYPE

2020	Crash	/ Collis		atings - (Standard	2 Seat Luxury or Regulated / Optional / Other Colors)
	Prote	ction	Avoi	dance	Safety Features
105mph	Front				Drive Paddle Shift
95mph	Center-3/4				Separable Safety Cage
85mph			Front Collision Warning	Side Lane Departure Warning	High-Speed Warnings
75mph☆	Front 1/2-1/4	Rear Center-3/4	Front Brake Stop Assist	Front Lane Keep Assist	Automatic Highway
65mph	Side Center-3/4	Rear 1/2-1/4	Front Speed Assist	Side Lane Departure Assist	Highway Assist
55mph					<b>Automatic Hi/Low Beam</b>
45mph	1		Front / Side Traction Automatic		Automatic City
35mph	1		Front Brake Stop Automatic	Front Traffic Automatic	Low-Speed Highway
25mph	Front Pedestrian			Front Pedestrian Warning	Front Seatbelt Airbag
15mph	Rear Pedestrian		Rear Brake Stop Automatic	Rear Pedestrian Warning	<b>Automatic Parking</b>
Cras	sion Tests A h Protection Collision Ave Actual Crasl	re Under Lab For Passeng bidance Tech h / Collision C	ic Safety Administration oratory Condictions At S ers In All Seat Location: nology Has 100% Proof conditions Are Simulated ation Go To www.Safer	Speed Indicated +/- 4mph s At 100% Surival Of Function Within 80%	SILVER 55 + Years BLUE Family Needs GOLD Performance

## Clearly Defined Prototype Technology

Sticker Must Be Displayed On All Public Road Test Vehicles Per 49 USC §30114-30115

# **Production Vehicle Prototype Testing Request Levels**

### YEAR – MAKE – MODEL

DOT	DOT	Testing Conditions
Testing	Testing	Vehicle Direction of Travel
Level	Speed	Area Location of Vehicle Impact
L4	51 to 79 mph	Front / Side; Automatic Highway
L4	1 to 49mph	All; Automatic City

# **Production Vehicle Prototype Testing Request Conditions**

#### YEAR – MAKE – MODEL

Automatic Highway:

Warning: Audio & Visual & Tactile Alerts; When Active

ADS: Autonomous; Speed Control / Lane Keep Control; Selective Autonomous; Lane Departure / Lane Change Steering Control; Selective Proximity Front; 100 Feet / Rear; 35 Feet / Side; 15 Feet Limited Access Roadways; Moderate Weather; Day/Night

Automatic City:

Warning: Audio & Visual & Tactile Alerts; When Active

ADS: Autonomous; Speed Control / Lane Keep Control / Lane Departure Control / Signal Recognition / Signage Recognition / Cross Traffic Management / Pedestrian Management / Pedestrian Operated Vehicle Management; Selective Proximity; Front / Side 75 Feet / Rear 25 Feet All Access Roadways; Moderate Weather; Day/Night

## EXAMPLE: LUXURY MODEL PROTOTYPE STATE CERTIFIED

2020	the second second	Contraction of the second	ommuter Co	-710	2 Seat Luxury
		ction		dance	or Regulated / Optional / Other Colors) Safety Features
05mph					Drive Paddle Shift
5mph	Front Center-3/4				Separable Safety Cage
5mph 🕁			Front Collision Warning	Side Lane Departure Warning	High-Speed Warnings
75mph	Front 1/2-1/4	Rear Center-3/4	Front Brake Stop Assist	Front Lane Keep Assist	Automatic Highway
5mph	Side Center-3/4	Rear 1/2-1/4	Front Speed Assist	Side Lane Departure Assist	Highway Assist
5mph					Automatic Hi/Low Bear
5mph			Front / Side Traction Automatic		Automatic City
5mph			Front Brake Stop Automatic	Front Traffic Automatic	Low-Speed Highway
A	Front			Front Pedestrian Warning	Front Seatbelt Airbag
5mph	Pedestrian				
sh / Collisi Crash	Rear Pedestrian National H ion Tests Ar Protection	re Under Labo For Passenge	ers In All Seat Locations	s At 100% Surival	
sh / Collis Crash	Rear Pedestrian National H ion Tests An Protection Collision Avo Actual Crash	re Under Labo For Passeng oidance Techi h / Collision C	Brake Stop Automatic ic Safety Administration oratory Condictions At S	Pedestrian Warning (NHTSA) speed Indicated +/- 4mph s At 100% Surival Of Function Within 80%	QUIVED 55+ Vaara
sh / Collis Crash	Rear Pedestrian National H ion Tests Au Protection Collision Avo Actual Crash For Add	re Under Labo For Passeng oidance Tech h / Collision C litional Inform	Brake Stop Automatic ic Safety Administration oratory Condictions At S ers In All Seat Locations nology Has 100% Proof conditions Are Simulated ation Go To www.Safer	Pedestrian Warning (NHTSA) Speed Indicated +/- 4mph s At 100% Surival Of Function Within 80% Car.gov	SILVER 55+ Years BLUE Family Needs
sh / Collis Crash	Rear Pedestrian National H ion Tests Ar Protection Collision Avo Actual Crass For Add	re Under Labo For Passeng oidance Techi h / Collision C litional Information Prot	Brake Stop Automatic Tic Safety Administration oratory Condictions At S ers In All Seat Locations nology Has 100% Proof conditions Are Simulated ation Go To www.Safer	Pedestrian Warning (NHTSA) Speed Indicated +/- 4mph s At 100% Surival Of Function Within 80% Car.gov	SILVER 55+ Years BLUE Family Needs GOLD Performance
sh / Collis Crash	Rear Pedestrian National H ion Tests Ar Protection Collision Avo Actual Crass For Add	re Under Labo For Passeng oidance Techi h / Collision C litional Information Prot	Brake Stop Automatic Tic Safety Administration oratory Condictions At S ers In All Seat Locations nology Has 100% Proof conditions Are Simulated ation Go To www.Safer	Pedestrian Warning (NHTSA) Speed Indicated +/- 4mph s At 100% Surival Of Function Within 80% Car.gov	SILVER 55+ Years BLUE Family Needs GOLD Performance
sh / Collis Crash	Rear Pedestrian National H ion Tests Ar Protection Collision Avo Actual Crass For Add	re Under Labo For Passeng oidance Techi h / Collision C litional Information Prot	Brake Stop Automatic Tic Safety Administration oratory Condictions At S ers In All Seat Locations nology Has 100% Proof conditions Are Simulated ation Go To www.Safer	Pedestrian Warning (NHTSA) Speed Indicated +/- 4mph s At 100% Surival Of Function Within 80% Car.gov	SILVER 55+Years BLUE Family Needs GOLD Performance
15mph 🛧 rash / Collisi Crash	Rear Pedestrian National H ion Tests Ar Protection Collision Avo Actual Crass For Add	re Under Labo For Passeng oidance Techi h / Collision C litional Information Prot	Brake Stop Automatic Tic Safety Administration oratory Condictions At S ers In All Seat Locations nology Has 100% Proof conditions Are Simulated ation Go To www.Safer	Pedestrian Warning (NHTSA) Speed Indicated +/- 4mph s At 100% Surival Of Function Within 80% Car.gov	SILVER 55+ Years BLUE Family Needs GOLD Performance
15mph 🛠	Rear Pedestrian National H ion Tests An Protection Collision Avd Actual Crass For Add	re Under Labo For Passeng oldance Techn h / Collision C litional Information Prof TE	Brake Stop Automatic Tic Safety Administration for a condictions At S ers In All Seat Locations nology Has 100% Proof conditions Are Simulated ation Go To www.Safer STYPE ST	Pedestrian Warning (NHTSA) Speed Indicated +/- 4mph s At 100% Surival Of Function Within 80% Car.gov Tech VEH	SILVER 55+ Years BLUE Family Needs GOLD Performance

# **State Certified Prototype Testing Conditions**

### YEAR – MAKE – MODEL

Automatic Highway:

ADS: Limited Access Roadways, Limited Locations, Limited Times Controlled Number of Licensed Vehicles Prototype Technology State Certified Safety Test Driver(s)

Automatic City:

ADS: Full Access Roadways, Limited Locations, Limited Times Controlled Number of Licensed Vehicles Prototype Technology State Certified Safety Test Driver(s)

Go To NHTSA AV Test Tracking Tool Web Site To Look Up Your State, City or Town for Additional Testing Information https://www.nhtsa.gov/automated-vehicles-safety/av-test-initiative-tracking-tool

Note:

State Test Vehicle Number Enables Clear Tracking & Reporting

### EXAMPLE: PROTOTYPE PASSENGER TRANSPORT VEHICLE

	Crash		ion - Safety Ra Avoid		or Regulated / Optional / Other Colors)
05mph					
5mph					
5mph					
75mph					
55mph 🕁	Front Center-3/4				Separable Safety Cage
55mph					<b>Remote Safety Driver</b>
5mph	Front 1/2-1/4	Rear Center-3/4	Front Pedestrian Automatic	ALL Traffic Automatic	Automatic City
35mph	Side Center-3/4	Rear 1/2-1/4			All Full Seat Airbags
25mph	Front Pedestrian				4-1/2 Hour Run Time
15mph	Rear Pedestrian		Rear Pedestrian Automatic		
Cras	sion Tests Au h Protection Collision Avo Actual Crast	e Under Lab For Passeng bidance Tech / Collision C	ic Safety Administration ( oratory Condictions At Sp ers In All Seat Locations nology Has 100% Proof ( conditions Are Simulated 1 ation Go To www.SaferC	eed Indicated +/- 4mp At 100% Surival Of Function Within 80%	BLUE Family Needs

### Clearly Defined Prototype Technology

Sticker Must Be Displayed On All Public Road Test Vehicles Per 49 USC §30114-30115

# **Testing Request Prototype Levels**

### YEAR – MAKE – MODEL

DOT	DOT	Testing Conditions
Testing	Testing	Vehicle Direction of Travel
Level	Speed	Area Location of Vehicle Impact
L4	1 to 49mph	All; Automatic City

# **Testing Request Prototype Conditions**

### YEAR – MAKE – MODEL

Automatic City: Warning: Audio & Visual External & Remote Assist: Remote Safety Driver Overriding Control ADS: Autonomous; Speed Control / Lane Keep Control / Lane Departure Control / Signal Recognition / Signage Recognition / Cross Traffic Management / Pedestrian Management / Pedestrian Operated Vehicle Management Proximity; Front / Side 75 Feet / Rear 25 Feet All Access Roadways; Moderate Weather; Day/Night

### EXAMPLE: PROTOTYPE PACKAGE TRANSPORT DELIVERY VEHICLE

2020	and the second s		tings - (Standard	Local Delivery
05mph	Protectio	n Avoid	ance	Safety Features
5mph				
5mph				Crash Absorption
5mph				<b>Remote Safety Drive</b>
5mph	Front Pedestrian	Front Pedestrian Automatic	ALL Traffic Automatic	Automatic City
5mph 🕁	and the second se	Rear Pedestrian Automatic		4-1/2 Hour Run Time
ash / Collis Crast	National Highway ion Tests Are Unde Protection For Par Collision Avoidance Actual Crash / Colli	r Traffic Safety Administration ( r Laboratory Condictions At Sp sengers In All Seat Locations Technology Has 100% Proof C sion Conditions Are Simulated V nformation Go To www.SaferC	eed Indicated +/- 4mp At 100% Surival Of Function Within 80%	BLUE Family Needs GOLD Performance

### Clearly Defined Prototype Technology

Sticker Must Be Displayed On All Public Road Test Vehicles Per 49 USC §30114-30115

# **Testing Request Prototype Levels**

### YEAR – MAKE – MODEL

DOT	DOT	Testing Conditions
Testing	Testing	Vehicle Direction of Travel
Level	Speed	Area Location of Vehicle Impact
L4	1 to 29mph	All; Automatic City

# **Testing Request Prototype Conditions**

### YEAR – MAKE – MODEL

Automatic City: Warning: Audio & Visual External & Remote Assist: Remote Safety Driver Overriding Control ADS: Autonomous; Speed Control / Lane Keep Control / Lane Departure Control / Signal Recognition / Signage Recognition / Cross Traffic Management / Pedestrian Management / Pedestrian Operated Vehicle Management Proximity; Front / Side 75 Feet / Rear 25 Feet All Access Roadways; Moderate Weather; Day/Night

# Conclusion

This NHTSA NCAP 10 Star Speed Safety Rating System addresses the following:

- A. Questions About a Safety Framework
  - 1. Simplifies Engineering Measures
  - 2. Simplifies Agency Oversight
  - 3. Simplifies Manufacturers Assessment of Core Safety
  - 4. Assists NHTSA Engagement without hampering innovation
  - 5. Assures Agency Assessment of Manufacturers Safety Priority
  - 6. Ensures Core Elements within definition of Crash Protection and Collision Avoidance by separation of types of technologies
  - 7. Uses DOT / NHTSA Measurement Levels and Conditions for Testing
  - 8. Effectively moves paths from Prototype Testing to Safety Standards
  - 9. Ensures consistent NHTSA validation of Safety Standards within Legal Obligations
  - 10. Assures Consumer Confidence of NHTSA Assessments of Safety
  - 11. Ensures Continued Performance Evaluations and Agency Control by; Federal-State-Vehicle-Safety-Inspections\_David-DeVeau.pdf
  - 12. Enables Reliable Demonstrations of Safety Performance Levels and
  - 13. Persuasive Demonstrations of Core Safety Function Performance
- B. Question About NHTSA Research
  - 14. Generates Increased Budgets necessary to conduct continued research and oversight by charging fees for NHTSA Certification of Independent Testing Facilities and by implementing a Fee Based Testing Structure for Manufacturers to Validate Safety Performance that is compliant with existing FMVSS and/or is as defined in the DOT / NHTSA Level Testing Requests
- C. Questions About Administrative Mechanisms
  - 15-19. Answers administrative mechanisms in this document
  - 20. Enables positive cooperation with FMVSS compliance pathways
  - 21. See B.14 for both NHTSA and FMVSS Regulatory Oversight
- D. Question About Statutory Authority
  - 22-25. Answers all regulatory compliance questions of Rulemaking, Enforcement, Guidance, and Authority under the Vehicle Safety Act