Future Automotive Regulations
- AAPC's Vision -

Driving Vision News Workshop

January 16, 2019

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AMERICAN AUTOMOTIVE POLICY COUNCIL

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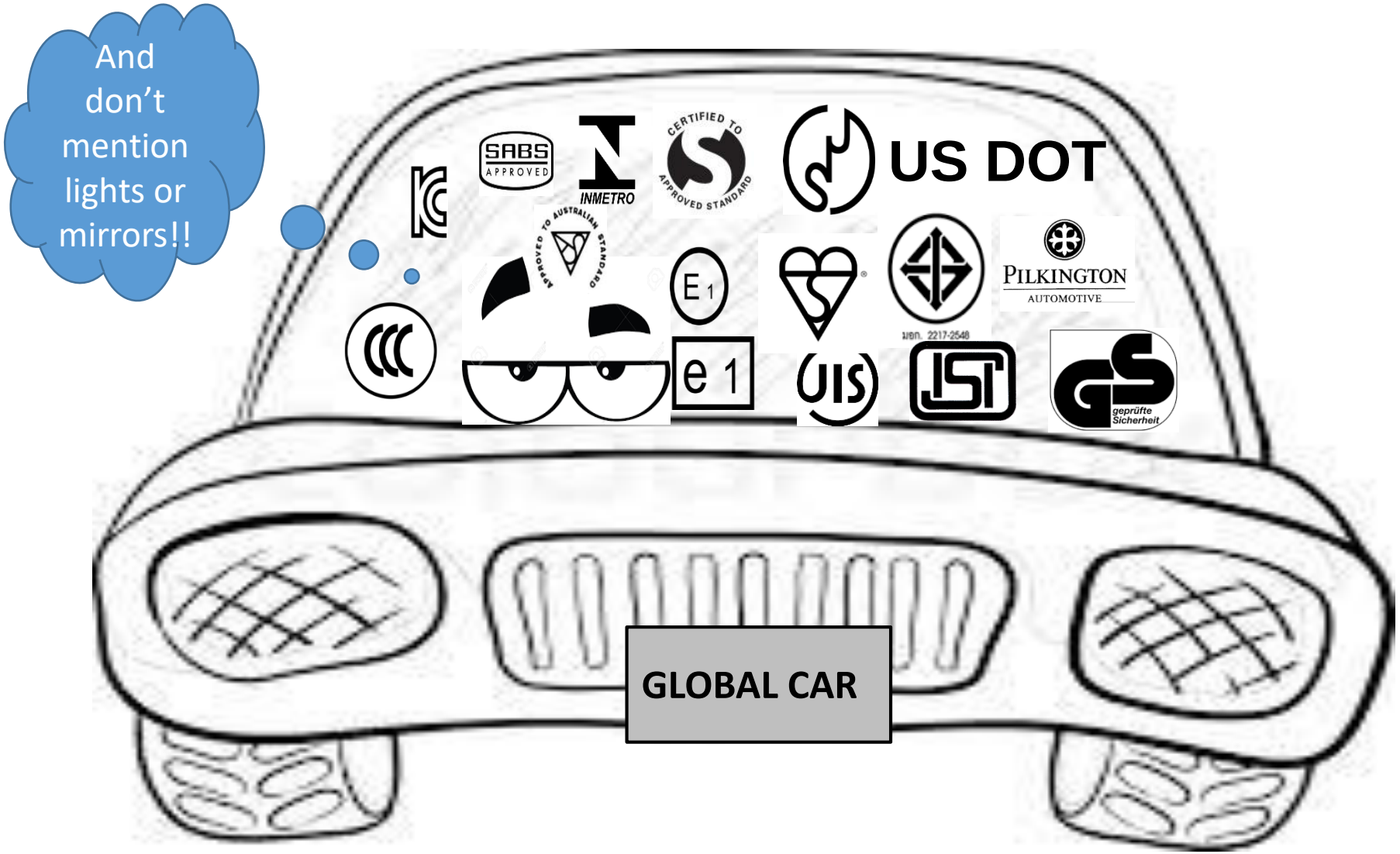
AAPC's Role in Automotive Standards/Regulations

AAPC is:

- An industry association representing the common public policy interests of its member companies – FCA US, Ford Motor Company and General Motors Company.
- Based in Washington, AAPC interacts extensively with the U.S. Government.
- Focuses on trade and international economic and regulatory policy matters.
- Maintains extensive contacts with its counterpart auto associations across the globe.
- Increasingly engaged on international technical auto safety and environmental standards.

I can’t see anything… but I feel safe!



- **E / e** marks – EU
- **CCC** mark – China
- **KC** mark – Korea
- **TISI** mark – Thailand
- **DOT** mark – USA
- **SABS** mark – S. Africa
- **JIS** mark – Japan
- **AS** mark – Australia
- **S** mark – NZ
- **BS** mark – British
- **Inmetro** mark– Brazil

Homologation (after the fact) is Difficult

Manufacturers invest to meet regulatory requirements.
Homologation (after the fact) can entail costly modifications to product design and manufacturing without delivering corresponding public benefits.

Europe

glass curvature

text warning

U.S. / Canada

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New Technology Opportunity: "Get It Right the First Time"

- New technologies, especially in vehicle automation and electrification, are fundamentally transforming the global auto industry.
- Many of these technology advances require changes to regulatory requirements and methods.
- When developed and implemented wisely, regulations improve public welfare, promote trade, foster innovation, and facilitate dissemination of new advanced technologies.
- International regulatory cooperation, especially via the UNECE Working Party 29 (WP.29) in Geneva, reduces the risk of erecting regulatory barriers.

FMVSS & UNECE Standards/Regulations Overlap

U.S. - EU side-by-side comparison of auto safety standards/regulations (Cars)

US FMVSS	UNECE
FMVSS No. 101 - Controls and Displays 49 CFR 393.82 & 49 CFR 32704 & Ex. Virginia State law	R 39 Speedometer R 121 Identification of controls, tell-tales & indicators
FMVSS No. 102 - Transmission Shift Lever Sequence, Starter Interlock, and Transmission Braking Effect	R 35 Foot controls R 116 Anti-theft and alarm systems
FMVSS No. 103 - Windshield Defrosting and Defogging Systems	R 122 Heating system R 125 Forward field of vision of drivers
FMVSS No. 104 - Windshield Wiping and Washing Systems	R 125 Forward field of vision of drivers
FMVSS No. 106 - Hydraulic, Air, and Vacuum Brake Hose, Brake Hose Assemblies, and Brake Hose End Fittings	___
FMVSS No. 108 - Lamps, Reflective Devices, and Associated Equipment(e.g., Headlamps (different types), Reflective devices, direction indicators, license plate illumination, stop lamps, etc.	R 3, R 4, R 6, R 7, R 8, R 19, R 20, R 23, R 27, R 37, R 38,R 45,R 48, R 50, R 53, R 69, R 70, R 74, R 77, R 87, R 88, R 91, R 98,R 99,R 104, R 112,R 113, R 119, R 123, R 128,
FMVSS No. 109 - New Pneumatic & Certain Specialty Tires	R 30 Tires for passenger cars and their trailers R 54 Tires for commercial vehicles and trailers
FMVSS No. 110 - Tire Selection and Rims	----
FMVSS No. 111 - Rearview Mirrors	R 46 Devices for indirect vision
FMVSS No. 113 - Hood Latch System	----
FMVSS No. 114 - Theft Protection & Rollaway Prevention Note: more of a economic than a safety issue.	R 18, Anti-theft of motor vehicles R 97 Vehicle alarm systems
FMVSS No. 116 - Motor Vehicle Brake Fluids	----
FMVSS No. 117 - Retreaded Pneumatic Tires	R 108 Retreaded tires for passenger cars & their trailers
FMVSS No. 118 - Power- Window, Partition, & Roof Panel	R 21, Interior fittings
FMVSS No. 119 - New Pneumatic Tires	R 54 Tires for commercial vehicles and their trailers
FMVSS No. 124 - Accelerator Control Systems	R 89, Speed limitation of devices
FMVSS No. 126 – Electronic Stability Control(Aligned with GTR 8)	R140 Electronic Stability Control Systems
FMVSS No. 129 - New Non-Pneumatic Tires for Pass. Cars	R 30, Pneumatic Tires
FMVSS No. 135 - Light Vehicle Brake Systems	R 13-H Braking of passenger cars
FMVSS No. 138 – Tire Pressure Monitoring System	R 64, Temporary use spare unit, run flat tires
FMVSS No. 139 – New Pneumatic Radial Tires	R 30, Pneumatic Tires R 54 Tires for commercial vehicles and their trailers
FMVSS No. 141 Minimum Sound requirements for vehicles	R 138 Quiet Road Transport Vehicles
FMVSS No. 201 - Occupant Protection in Interior Impact	R 21, Interior fittings
FMVSS No. 202/202a - Head Restraints & GTR No. 7)	R 17 Seats Strength, their anchorages & head restraints R 25 Head restraints (headrests) R 32 Foot controls,
FMVSS No. 203 - Impact Protection from - Steering Control System	R 12, Steering mechanism
FMVSS No. 204 - Steering Control Rearward Displacement	----
FMVSS No. 205 - Glazing Materials (aligned with Global technical regulation No. 6)	R 43, Safety glazing
FMVSS No. 206 - Door Locks & Door Retention Components (GTR 1)	R 11, Door latches and hinges

US FMVSS	UNECE
FMVSS No. 208 - Occupant Crash Protection (Front)	R 33 Head-on collision R 94 Frontal collision protection
FMVSS No. 209 - Seat Belt Assemblies	R 16 Safety-belts R 44 Child Restraint Systems
FMVSS No. 210 - Seat Belt Assembly Anchorages	R 14 Safety-belt anchorages R 16 Safety-belts
FMVSS No. 212/202a - Windshield Mounting	----
FMVSS No. 214 - Side Impact Protection	R 95, Lateral collision protection
FMVSS No. 216/216a - Roof Crush Resistance	----
FMVSS No. 219 - Windshield Zone Intrusion	----
FMVSS No. 225 – Child Restraint Anchorage Systems	R 14 Safety-belt anchorages R 16 Safety-belts R44 Child Restraint Systems
FMVSS No. 226 – Ejection Mitigation	----
FMVSS No. 301 - Fuel System Integrity	R 34 Prevention of fire risks
FMVSS No. 302 - Flammability of Interior Materials	R 118, Fire resistance of interior materials
FMVSS No. 303 - - Fuel System Integrity of Compressed Natural Gas Vehicles	R 34 Prevention of fire risks, R 110, CNG and LNG vehicles
FMVSS No. 304 - Compressed Natural Gas Fuel Container Integrity	R 110, R 67, CNG and LNG vehicles
FMVSS No. 305 – Electric-powered Vehicle: electrolyte spillage and electrical shock	R 100, Electric power trained vehicles
49 CFR Part 581 Bumper Standard	R 42 Front and rear protection devices
-----	R 89 Speed Limiting Device
___ Given the proprietary nature of the vehicle electrical architecture, in the U.S. each vehicle manufacturer conducts their own series of tests for EMC).	R 10 Electromagnetic compatibility
___ The need for smooth aerodynamic exteriors to meet fuel economy demands have resulted in exterior designs that meet much of the intent of the GTR 9 ped. safety.)	R 26 (GTR 9) External projections
FMVSS 101 (see above) and U.S. State law (e.g., Texas) The universal installation of a horn is required by U.S. state laws that mandate a horn on any motor vehicle operating on their roadways. And is also recognized in FMVSS 101 by its required identification	R 28 Audible signals
The fitment of a steering wheel and in connection through a steering system is inherent in all vehicle designs. Steering equipment as a standard fitment is recognized by the crash protection requirements for contained in FMVSS 203 and 204 and also cited in FMVSS 101	R 79 Steering equipment
___ 40 CFR Part 575: The US DOT/ NHTSA has not promulgated yet, but expected in 2019.	R 117: Tires, rolling resistance, rolling noise and wet grip

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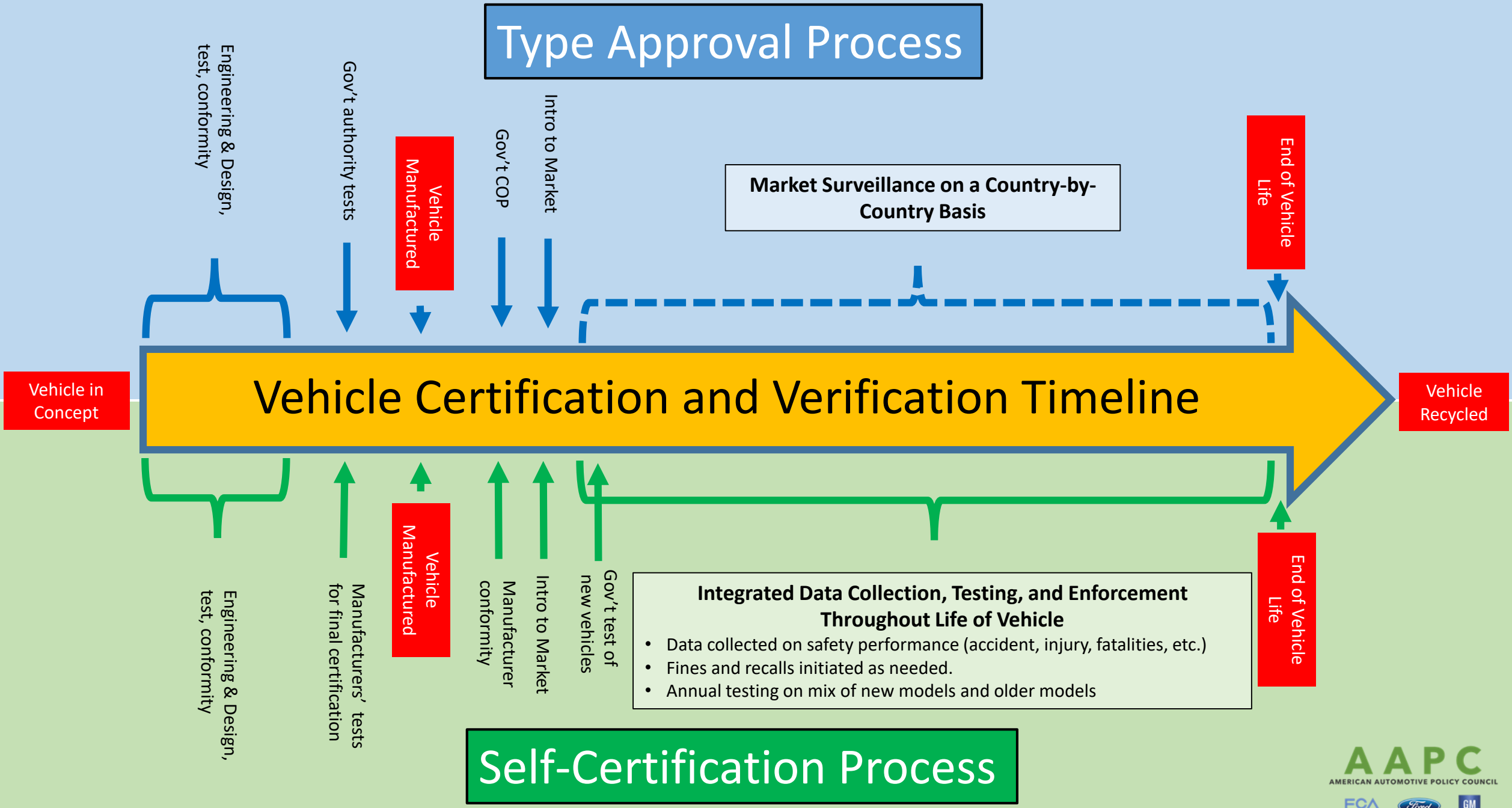

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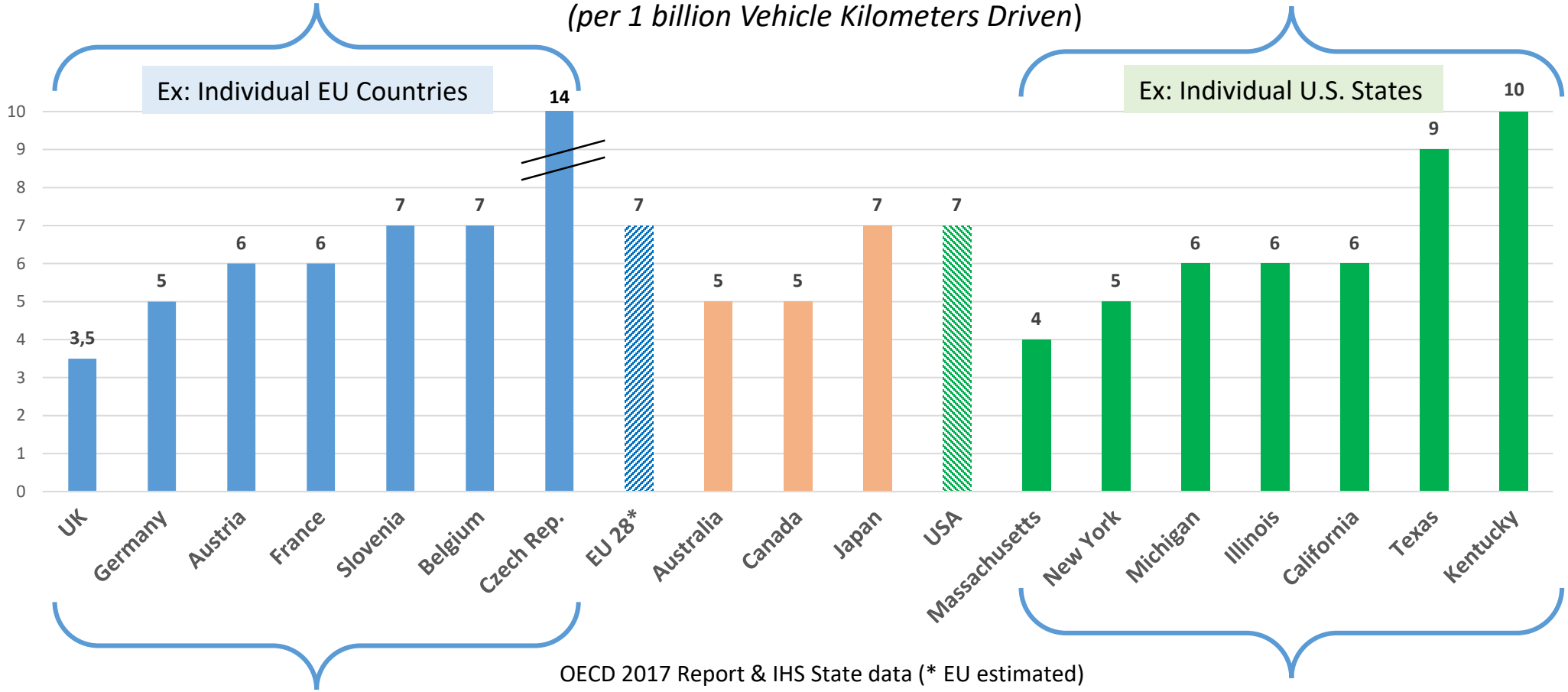
Comparison of Road Fatality Rates

(per 1 billion Vehicle Kilometers Driven)



OECD 2017 Report & IHS State data (* EU estimated)

- Despite outliers like the UK (3.5 persons per vehicle kilometer traveled (VkmT) and the U.S. state of Massachusetts (4 persons per billion VkmT) on the lower side, and the Czech Republic (14 Persons per VkmT) and Kentucky with 10 persons per VkmT on the higher side, the U.S. and the EU share similar safety performance outcomes.
- The two regions have also experienced similar trends towards safer roads, even as the vehicle miles traveled have increased.

World Forum for the Harmonization of Vehicle Regulations (WP.29)

- Two main systems for vehicle safety certification
  - Type Approval: Government certification via written approval from a contracting party or designated authority
  - Self-Certification: Manufacturer certification verified via government checks
- WP.29 administers international agreements for regulatory cooperation
  - 1958 Agreement: International trading system based on type approvals
  - 1998 Agreement: Mechanism for global cooperation on uniform test procedures and performance requirements
  - 1997 Agreement: International acceptance of vehicle inspection certificates

1998 Agreement produces Global Technical Regulations applicable under all certification systems with no additional obligations.

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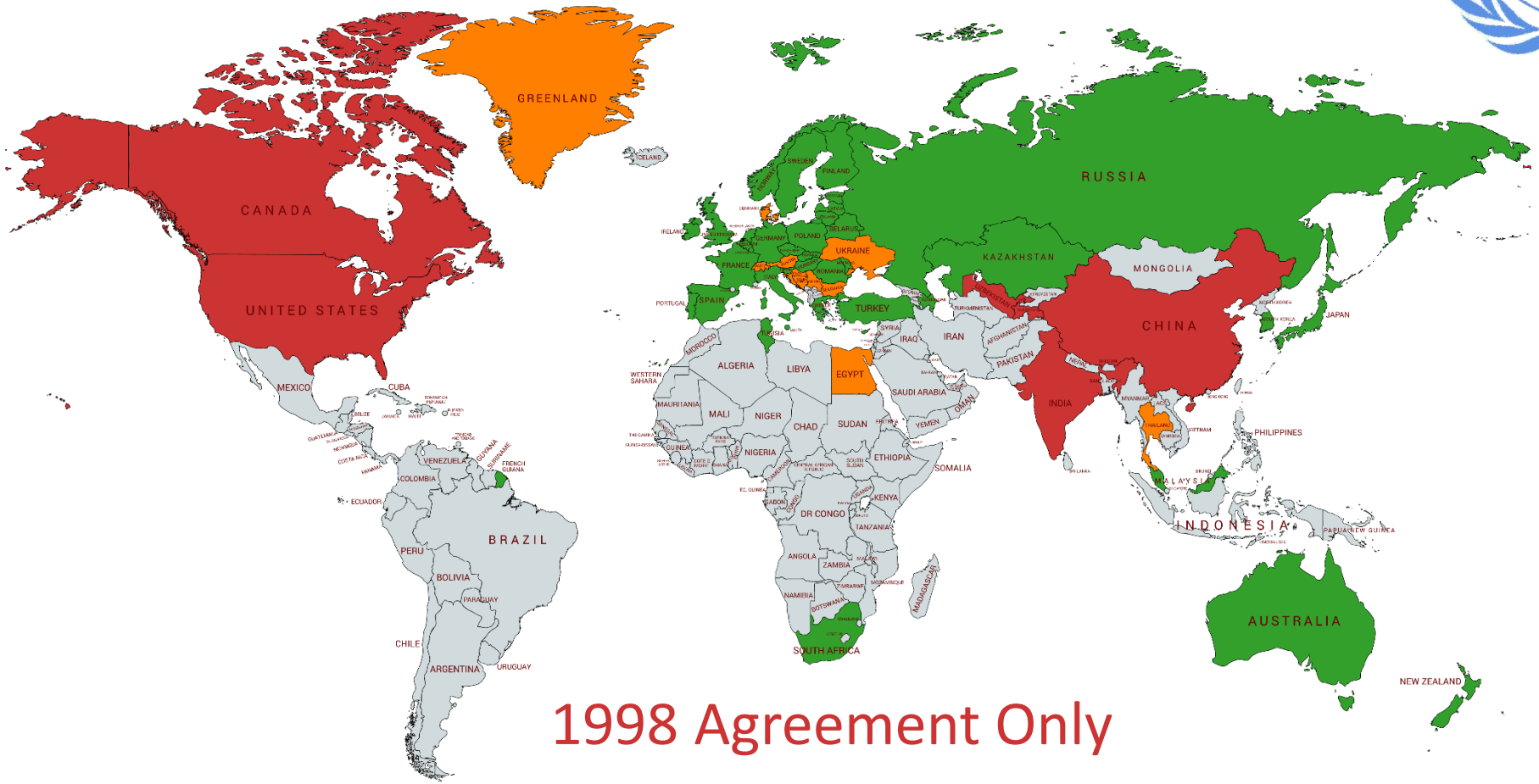
Reach of WP.29 Agreements



1998 Agreement Only

1958 and 1998 Agreements

1958 Agreement Only

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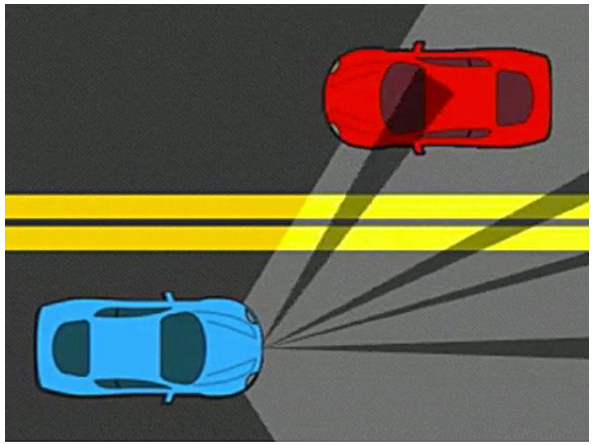
New Auto Standards/Regulations – Important Elements

- We believe that auto safety technical regulatory requirements across markets must meet a safety need and ideally be:
  - **Practicable** (both technologically and economically)
  - **Objectively determined** (measurable not subjective opinion)
  - **Technology-neutral**
  - **Performance-based**
  - **Testable** (in a manner that is capable of producing identical results when test conditions are exactly duplicated), and
  - **Internationally compatible** (if not completely uniform)
- New standards/regulations must also be crafted in such a way to allow for their application under any enforcement system (e.g., type approval or self-certification).

Adaptive Driving Beam Regulations



Adaptive Driving Beam (ADB) Regulations:

- **UN R123 (2012)** – The EU spearheaded regulations on Adaptive Front-lighting Systems (AFS), which includes ADB technologies.
- **SAE J3069 (2016)** – SAE developed this standard for ADB headlamps, which paved the way for broader usage and harmonized testing, and perhaps more importantly, new ADB standards by Canada and the U.S.
- **Canada CMVSS 108 (2018)** – Canada approved amendments to CMVSS 108 to permit ADB headlamps. The close alignment of Canadian auto regulation's with U.S. regulations underscores the need for the U.S. to move on this matter.
- **NHTSA's Proposed Rulemaking to amend FMVSS 108 (2018)** – Delayed in part by the U.S. requirement for low- and high-beam lights, NHTSA issued a Notice of Proposed Rulemaking late last year and it is hoped that it will finalize the ADB standards/regulations in 2020.

COMPLETED

COMPLETED

COMPLETED

IN PROGRESS

AAPC's Auto Regulatory Vision

- AAPC's value added is to bring a clear U.S. OEM perspective to the U.S. government – calling for their active engagement in global regulatory process.
- AAPC supports new regulations where justified and beneficial (such as the new GTR 20, which established uniform global specifications for electric vehicle safety).
- <u>Our vision:</u>
  - **Requirements for new technologies should be developed through WP.29** to avoid unnecessary and harmful divergence across markets.
  - **Use of the 1998 Agreement to provide global solutions** across certification systems.
  - **Testing must be Practicable, Objectively determined, Technology-neutral,, Performance-based, and Internationally compatible, with tests that can be easily duplicated.**
  - Harmonization is difficult, demanding efforts to **enable the 1998 Agreement to achieve its promise**.
- ADB presents a technology shift conducive to harmonization, especially as the U.S. pursues its NPRM rulemaking on ADB.
- Vehicle electrification (Phase 2 of EV GTR 20) and Automated Vehicle technology offer important opportunities to "get it right the first time".

Thank You

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