PLENARY SESSION THREE

Presentation 1

Relation between PTI regulations and type approval regulations using the example of advanced driver assist systems

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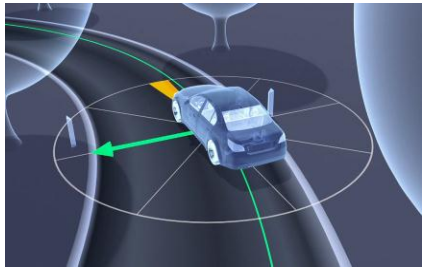
CITA Conference, Seville, Spain – Plenary Session Three

Dr. Roland Krause, 13rd May 2013

Relation between PTI regulations and Type Approval regulations using the example of Advanced Driver Assistance Systems



Spanner Fairies on board

Source: AutoBild.de

Electronic Spanner Fairies on board

Source: MOST Cooperation

Milestones of the international road policy from the EU point of view

1926

International agreement on road traffic

1968

Agreement on road traffic

Vienna

1971

European supplementary agreement

Type Approval

1970

70/156/EEC (vehicles and trailers)

1974

74/150/EEC (agriculture or forestry trucks)

1992

92/61/EEC (2- or 3-wheeled vehicles)

Technical Inspection

1977

77/143/EEC

1996

96/96/EC (consolidation)

2009

2009/40/EU (consolidation)

2010

2010/48/EU (further developm.)

Vehicle Documents

1999

1999/37/EC

2003

2003/127/EC (ISO-smartcard)

Type Approval

2007

2007/46/EC (vehicles and trailers)

(framework directive)

Milestones of the international road policy from the UN/ECE point of view

1926

International agreement on road traffic

Type Approval

1958

(European) Agreement concerning the adaption of uniform technical prescriptions for vehicles, equipment and parts and the conditions for reciprocal recognition of approvals

1968

International agreement on road traffic

Vienna

1971

European supplementary agreement

Technical Inspection

1997

(European) Agreement about the standardised technical conditions for the periodical technical inspection of registered vehicles

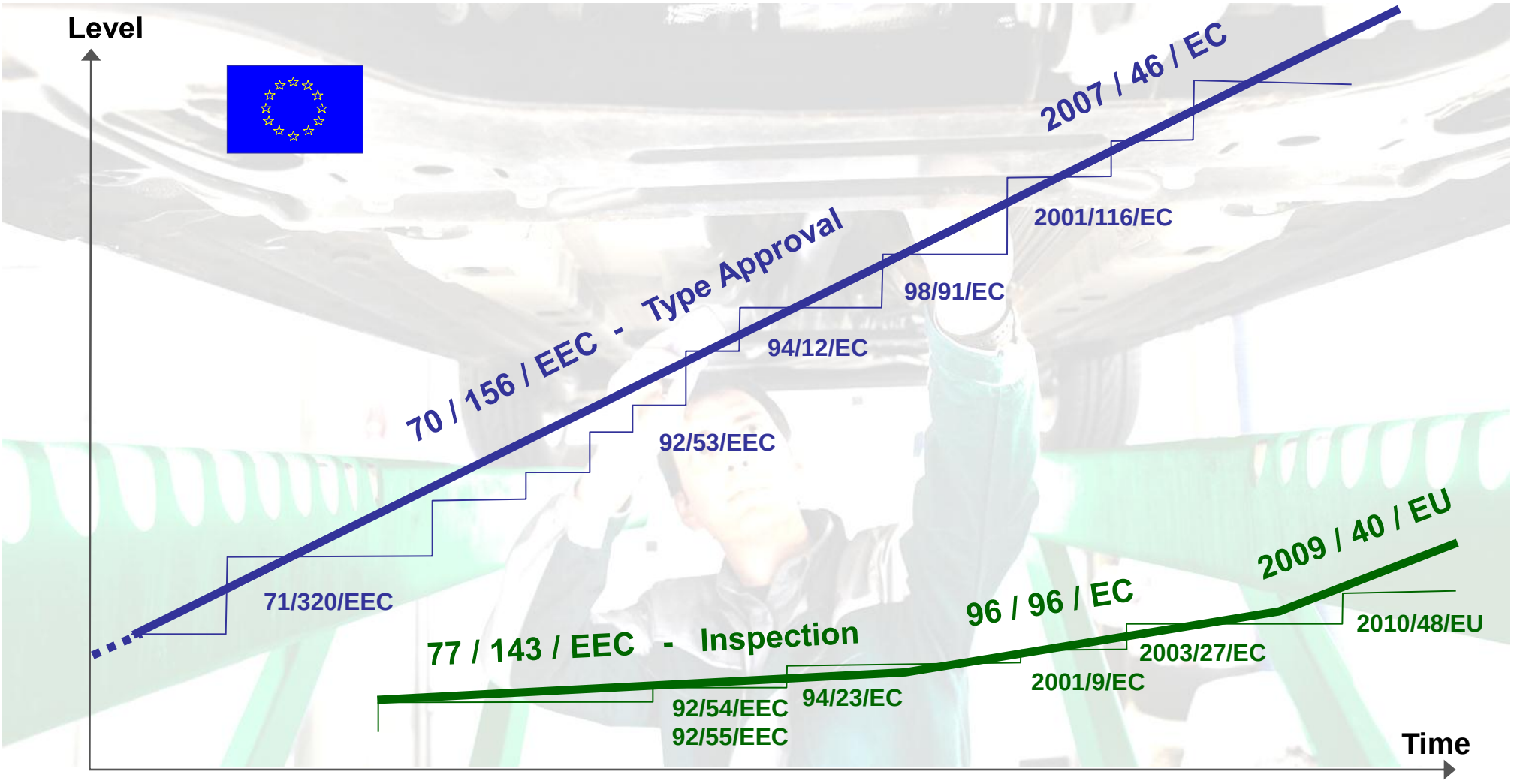
Type Approval

1998

(Global) Agreement concerning the establishing of global technical regulations for vehicles, equipment and parts

(“Parallel agreement”)

Updating level of Type Approval and inspection regulations

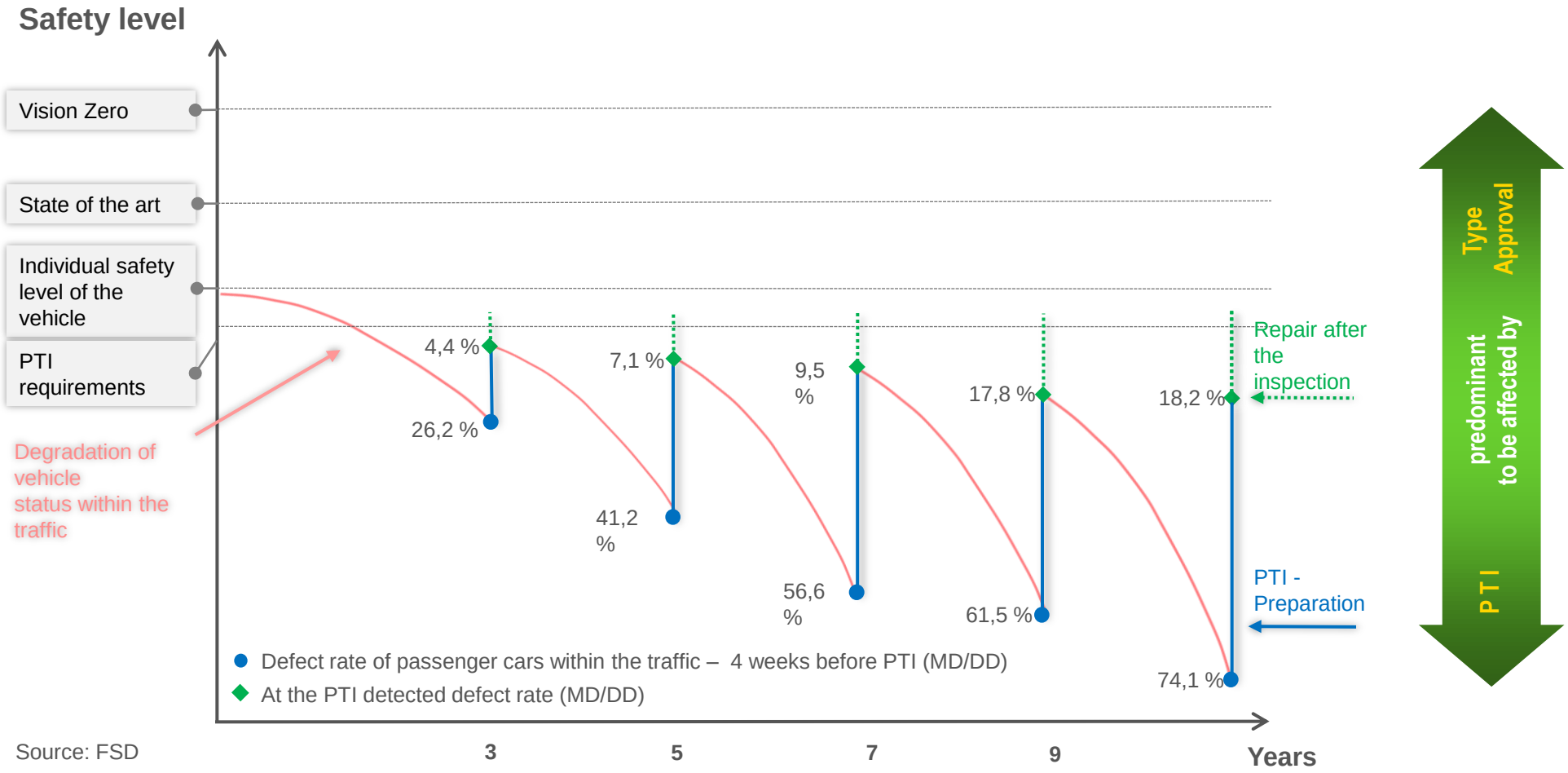


Necessary steps for the successful further development

	Advanced Driver Assistance Systems (ADAS)	
Target	**Attainment of fast penetration of the vehicle market with safety relevant vehicle functions and systems**	**Inspection of such systems at P T I – Creation of conditions**
Path	Mandatory assembly of safety relevant vehicle functions and systems *and* Campaigns about usage and safety potentials of ADAS	Description of the function of ADAS within the homologation regulations for vehicles and components
Require-ment	Rules within the Type Approval regulations Subsequent frequent inspection in the frame of P T I	Provision of additional information about the homologation documents *or* Provision of inspection specifications by the inspection institutions

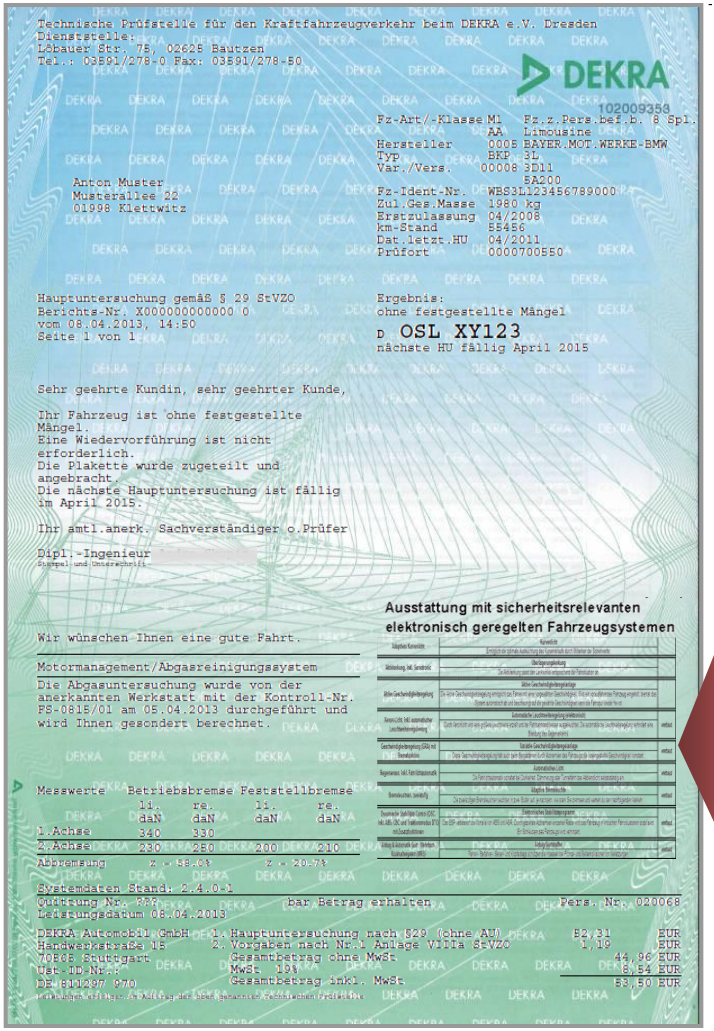
Essential to hit the ambitious targets

Development of vehicle condition during the life time cycle



Source: FSD

ADAS installation information on the PTI report (until now not realised draft)



Technische Prüfstelle für den Kraftfahrzeugverkehr beim DEKRA e.V. Dresden
Dienststelle:
Löbauer Str. 75, 02625 Bautzen
Tel.: 03591/278-0 Fax: 03591/278-50

DEKRA

102009358

Fz-Art/-Klasse M1 Fz.z.Pers.bef.b. 8 Spl.
AA Limousine
Hersteller 0005 BAYER.MOT.WERKE-BMW
Typ BKP 3L
Var./Vers. 00008 3D11
5A200
Fz-Ident-Nr. WBS3L123456789000
Zul.Ges.Masse 1980 kg
Erstzulassung 04/2008
km-Stand 55456
Dat.letzt.HU 04/2011
Prüfort 0000700550

Anton Muster
Musterallee 22
01998 Klettwitz

Hauptuntersuchung gemäß § 29 StVZO
Berichts-Nr. X000000000000 0
vom 08.04.2013, 14:50
Seite 1 von 1

Ergebnis:
ohne festgestellte Mängel

D OSL XY123
nächste HU fällig April 2015

Sehr geehrte Kundin, sehr geehrter Kunde,

Ihr Fahrzeug ist ohne festgestellte Mängel.
Eine Wiedervorführung ist nicht erforderlich.
Die Plakette wurde zugeteilt und angebracht.
Die nächste Hauptuntersuchung ist fällig im April 2015.

Ihr amtl.anerk. Sachverständiger o.Prüfer

Dipl.-Ingenieur
Stempel und Unterschrift

Ausstattung mit sicherheitsrelevanten elektronisch geregelten Fahrzeugsystemen

Wir wünschen Ihnen eine gute Fahrt.

Motormanagement/Abgasreinigungssystem

Die Abgasuntersuchung wurde von der anerkannten Werkstatt mit der Kontroll-Nr. FS-0815/01 am 05.04.2013 durchgeführt und wird Ihnen gesondert berechnet.

Messwerte	Betriebsbremse li. daN	Betriebsbremse re. daN	Feststellbremse li. daN	Feststellbremse re. daN
1.Achse	340	330		
2.Achse	230	250	200	210

Abbremsung z = 58.6% z = 20.7%

Systemdaten Stand: 2.4.0-1
Quittung Nr. ??? bar Betrag erhalten Pers. Nr. 020068
Leistungsdatum 08.04.2013

DEKRA Automobil GmbH
Handwerkstraße 15
70565 Stuttgart
Ust-ID-Nr.:
DE 811287 970

1. Hauptuntersuchung nach §29 (ohne AU) 82,31 EUR
2. Vorgaben nach Nr.1 Anlage VIIIa StVZO 1,19 EUR
Gesamtbetrag ohne MwSt 44,96 EUR
MwSt. 19% 8,54 EUR
Gesamtbetrag inkl. MwSt 53,50 EUR

Configuration with safety relevant electronic controlled vehicle systems

The PTI report may inform additional about the equipment level of the individual vehicle regarding ADAS (subsequent use of existing data):

- Which serial and special equipment **is plugged** (and in the frame of the PTI noticed as fully functional)
- Which maximum equipment **would be available** for this type of vehicle
- Which **safety advantages** provide these systems

Dynamic Bending light	**Bending light** During cornering and depending on the steering angle and speed, the light beam is swivelled and/or an additional headlight is activated.	*available!*
Active Steering, incl. Servotronic	**Steering assist** Depending on the driving situation, the steering angle is automatically changed, without intervention by the driver.	*available!*
Adaptive Cruise Control	**Adaptive Cruise Control** The system maintains the vehicle´s speed, depending on preferred speed and distance to the vehicle in front.	*available!*
Xenon light, incl. Automatic headlamp levelling	**Automatic headlamp levelling** Depending on the load and (optional) pitch angle, the system regulates the headlamp´s vertical aim.	***plugged***
Speed limiter with break function	**Speed limiter** Whilst driving, the system prevents exceeding a defined maximum speed. Relevant, if mandatory.	***plugged***
Rain sensor, incl. Automatic light	**Automatic light** Depending on the ambient brightness, the system automatically switches on and off the driving light.	***plugged***
Emergency Stop Signal (ESS)	**Emergency braking signal** In case of tight deceleration, hazard warning lights or flashing brake lights are activated and so the following traffic is warned.	***plugged***
Electronic stability program (DSC, ABS, CBC, DTC)	**Electronic stability program** The system stabilizes the vehicle or the complete vehicle train in critical dynamic driving situations.	***plugged***
Passive occupant restraint system	**Passive occupant restraint system** Driver and co-driver head airbags as well as sidebags protect passengers in case of frontal or side impact.	***plugged***

Description of the function of ADAS within the regulations of Type Approval – basic requirement for the PTI

Examples

- braking
- lengthwise, across and yaw dynamic stabilisation of vehicle movements
- to hold on the vehicle
- change of direction
- change of intensity of the illumination of road
- change of signal aspects of the lighting technology facility of the vehicle
- adherence and/or shoring of traffic participants
- covering of the survival space of traffic participants
- avoidance of accidental deployment of safe guards for traffic participants
- change of the springing and damping behaviour
- control of the regulation of the tyre pressure
- change of the air deflector devices
- electrical drive concept for the operation of the vehicle
- improvement and strengthening of the visibility

Recent PTI test technologies / tools under embedding of Type Approval information

Effective and efficient examination of the vehicle inspection through

- application of state of the art inspection technology and tools e.g.
  - PTI Adapter in connection with
  - mobile end devices like laptops, tablet pc or smart phones

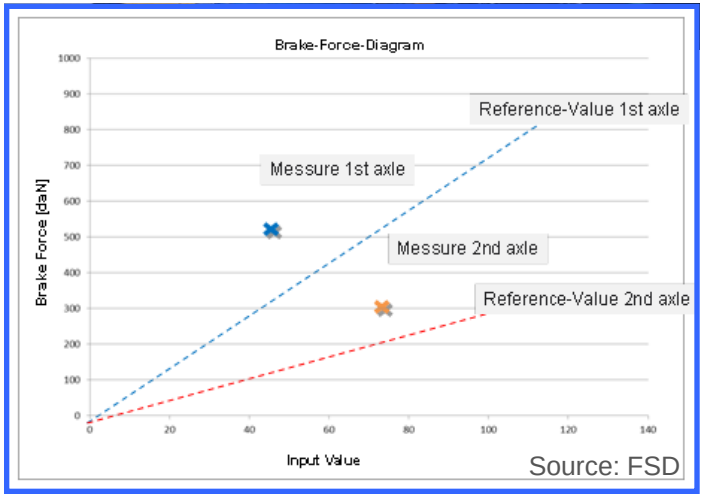
  in connection with the

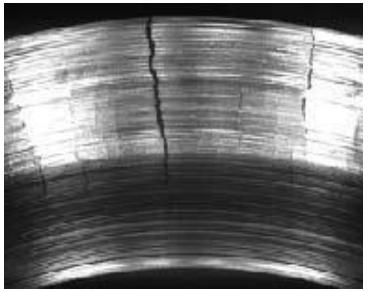
- provision of selected information about the Type Approval documents

Provision of additional information for the PTI out of Type Approval documentations

Supporting information for brake tests at PTI should already be fixed during Type Approval and provided during each individual PTI.

Reference value / reference brake force





Inspection of vehicles after accident repairs

Safety risks

- ⇨ because of aging and wear of vehicles
- ⇨ growing with increased vehicle age because of increasing bad maintenance and missing repairs

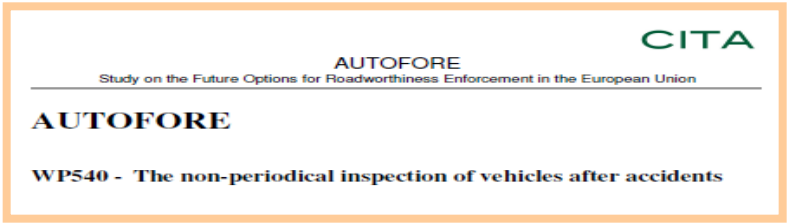
Safety risks

- ⇨ through false or not executed repairs of accident damages
- ⇨ **higher risk at vehicles with ADAS**

Successful risk limitation

about frequent development of the PTI regulations

Regulation approach:


CITA

AUTOFORE

Study on the Future Options for Roadworthiness Enforcement in the European Union

AUTOFORE

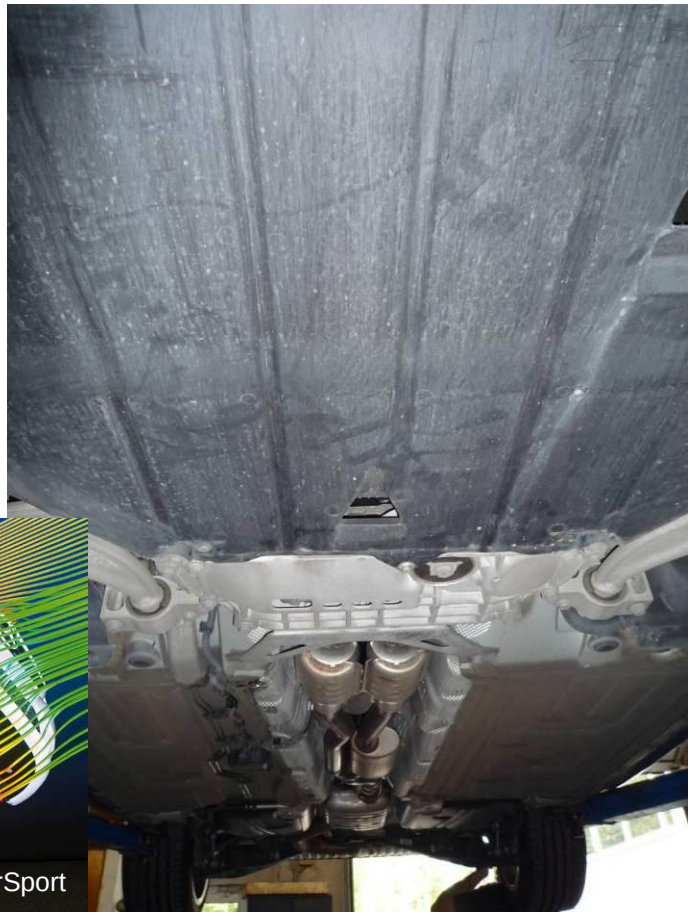
WP540 - The non-periodical inspection of vehicles after accidents

Interaction of PTI regulations and Type Approval regulations

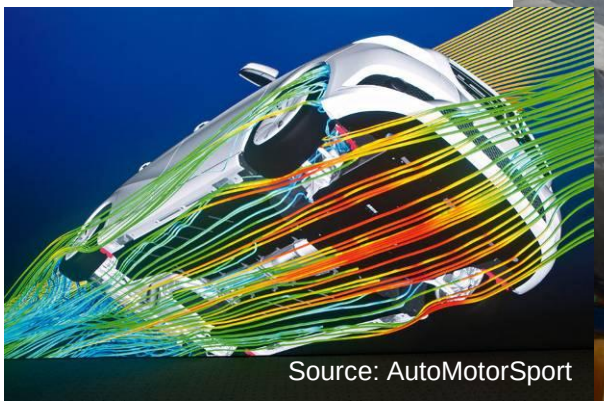
Environment regulations vs. Inspection regulations?!

To conform with the stringent emission standards in the future, complex underbody constructions are necessary.

For the conformance of the Inspection regulations appropriate **inspection openings/claps** are required for the visual inspection of safety relevant parts (particularly braking systems).



Integration into the
Type Approval regulations



Source: AutoMotorSport

DEKRA
On the safe side.

Thank you for your attention !

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