Future Vehicle Safety Technologies Influencers and Trends

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VM Priorities

Vehicle Manufacturers looking at 3 main strategic priorities – Challenges for Insurers

Automated Assisted and Automated

Connected Connected vehicles and Cyber Security

Electric Electric powertrains and lightweight structures



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Electric Platform Technology

VW MEB



Passive Safety Testing



Frontal Offset Deformable Mobile Barrier (Since 1997)



Frontal Full-width Rigid Barrier (Since 2015)

Side Mobile Deformable Barrier (Since 1997, updated 2015)

Side Pole (Since 2001, updated 2015)







Active Safety Testing



Roadmap to Drive Change





Euro NCAP

IN PURSUIT OF VISION ZERO



A Definition of Automation

ASSISTED	 1.Driver retains for responsibility and shares control with the vehicle 2.Vehicle and Driver share Object and Event detection and response (OEDR) 3.Driver may not perform secondary tasks over and above those permitted in normal driving
AUTOMATED	 Vehicle has full responsibility for control in an Operation Design Domain (ODD) defined by the VM. Vehicle performs (OEDR) Driver may perform certain other non driving secondary tasks Driver needs to be available for transition of control – but not to maintain safety
AUTONOMOUS	1.Vehicle has full responsibility for control in an Operation Design Domain (ODD) defined by the VM.2.Vehicle performs (OEDR)3.Driver is effectively a passenger4.Driver has no ability to control apart from a mode change

Assisted Driving Systems

The best systems offer a balance between the amount of assistance they provide and the level of driver engagement and should be supported by an effective safety backup



"An assistance system is only as good in addressing critical situations as the driver who operates it – hence Driver Engagement limits the overall verdict"



Testing Automation



>Development of Assisted Driving grading tests

2020 2020 VERY GOOD 2020 VERY GOOD GOOD BMW 3 Series Audi Q8 Ford Kuga Adaptive Cruise Assist Driving Assistant Professional 0 Co-Pilot 360 ∞





2020 Euro NCAP Assisted Ratings





Assisted Driving Ratings





Assisted Automated Autonomous

SAE Definitions and Timeline



Global Automation

> US and Europe at different speeds on the same journey



Automated Lane Keeping Systems

- > ALKS first L3 system 2021
- > Automated Driving is seen as a key part of UK Transport Strategy and will be instrumental in reducing emissions, congestion and road casualties.
- > UK Insurers support the adoption of **Safe Automation** and have been keen advocates of the **AEVA**
- > The adoption of Automated Driving will follow type approval work at the **UN ECE**
- > DFT issued a request-for-comment to understand safety implications although they are on record as saying "*The UK will be first to allow automated driving.....*
- > Legal to use in various countries by mid 2021







Driver Monitoring Systems (DMS)



Indirect – inferred drowsiness

Time Steering and lane position



Direct – real-time drowsiness and attentiveness

Camera/radar



Direct advanced – driver cognisance



Driver Monitoring Tech and Testing



Inattention



Drowsiness



eScooter testing



e-scooter target

Nearside testing – Tesla

Future Vehicle

- Sovernment environmental pledges The Green economy set the pace of change
- > EV's the major VM goal giga-factory's
- New vehicle designs allow new architecture and new features – Connectivity and Automation
- > Assisted, Automated and Autonomous
- > Assisted Ratings push driver/vehicle balance
- > Automation (limited) here with us this year but is it automated?
- > DMS a key part of this evolution
- > New mobility solutions new challenges
- Consumer ratings continue to set the pace of change



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