

Welcome



"The Future of VGRR (Vehicle glass repair & replacement)"

Sean Brookes MIMI

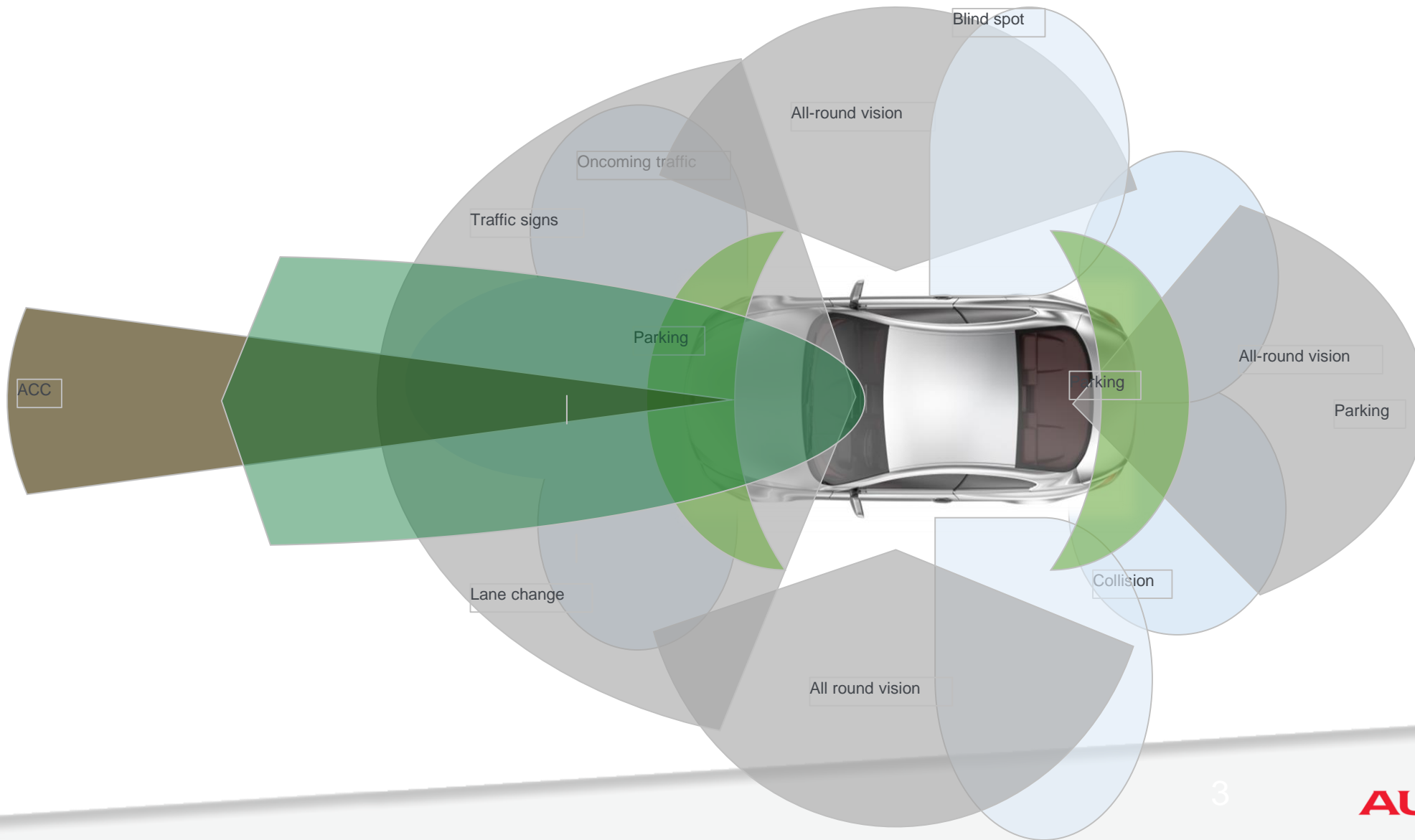


ADAS/RADAR Uncovered

"It's not just a piece of glass"



ADAS Uncovered



Stereo Camera



Med Radar



LR Radar

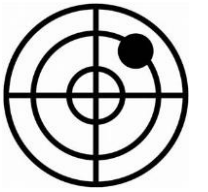


LiDaR

Introduction To The World Of ADAS



ADAS Technology



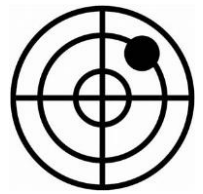
- Distance measurement....ACC, ETC



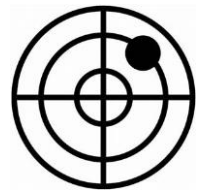
Uses Long Range Radar
With a range of around upto 800m



ADAS Technology

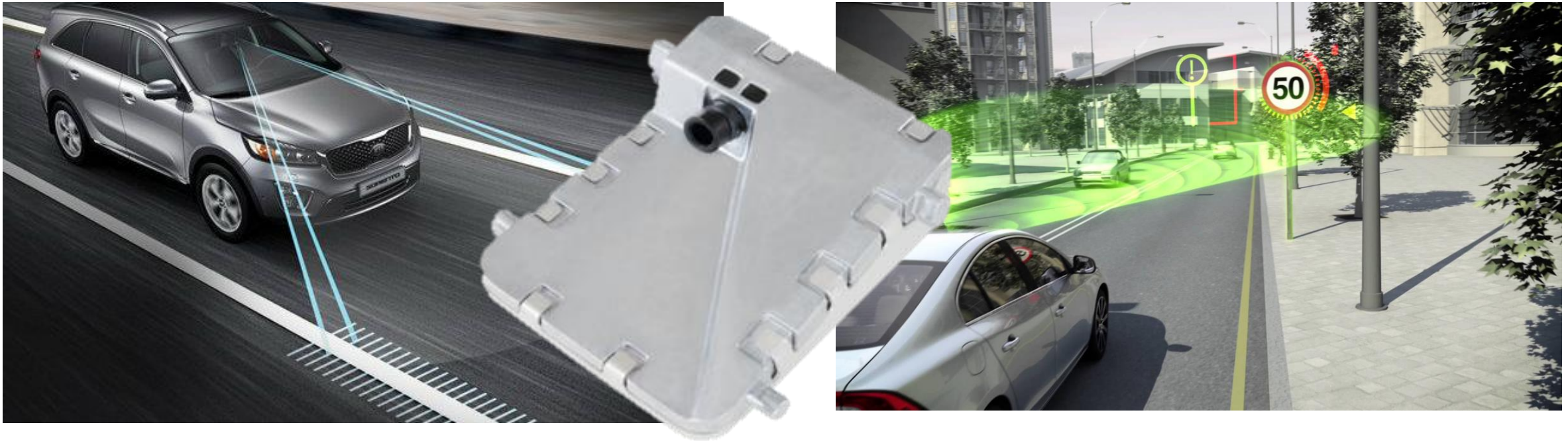


ADAS Technology



ADAS Technology

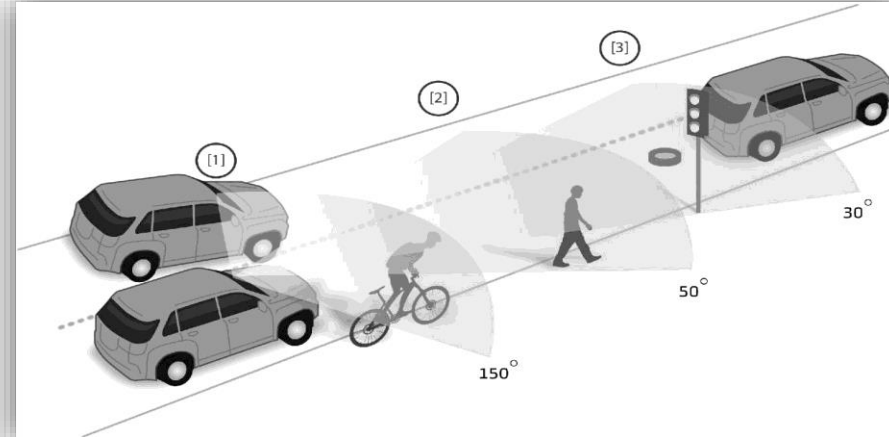
- Windscreen camera systems include LKA/LKW & TSR.



New OEM Technology: Trifocal cameras



BMW 3 Series, X5, X7, 8 Series



1) short, 2) mid, 3) long-range Field of View (FOV)

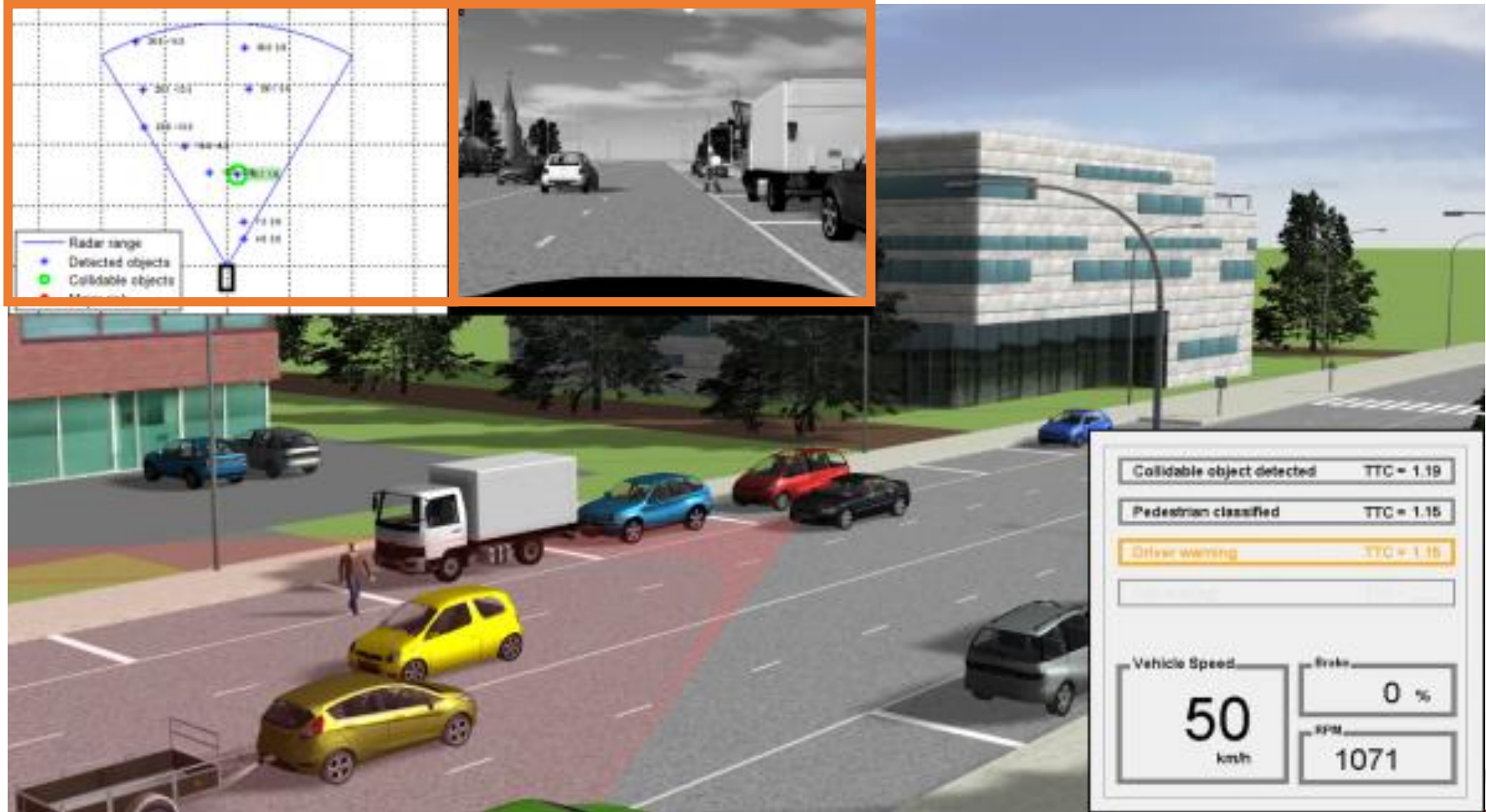


Volvo

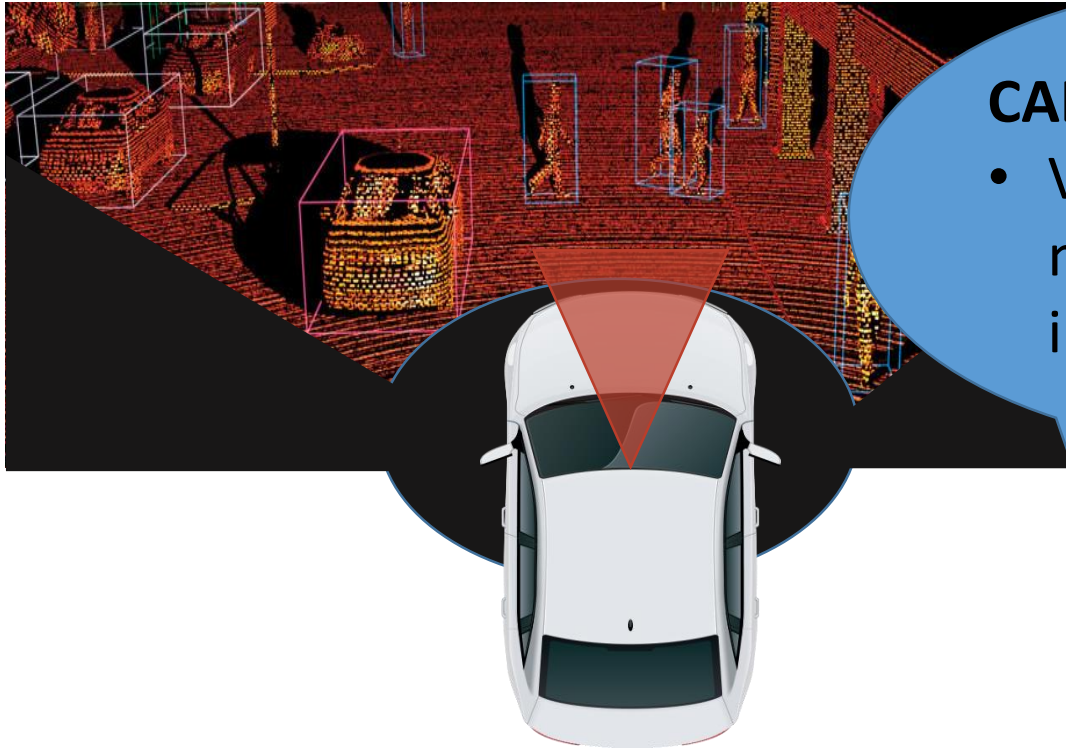


Tesla Model X

Example Of Sensors Working Together



Distance Measurement And Camera Examples

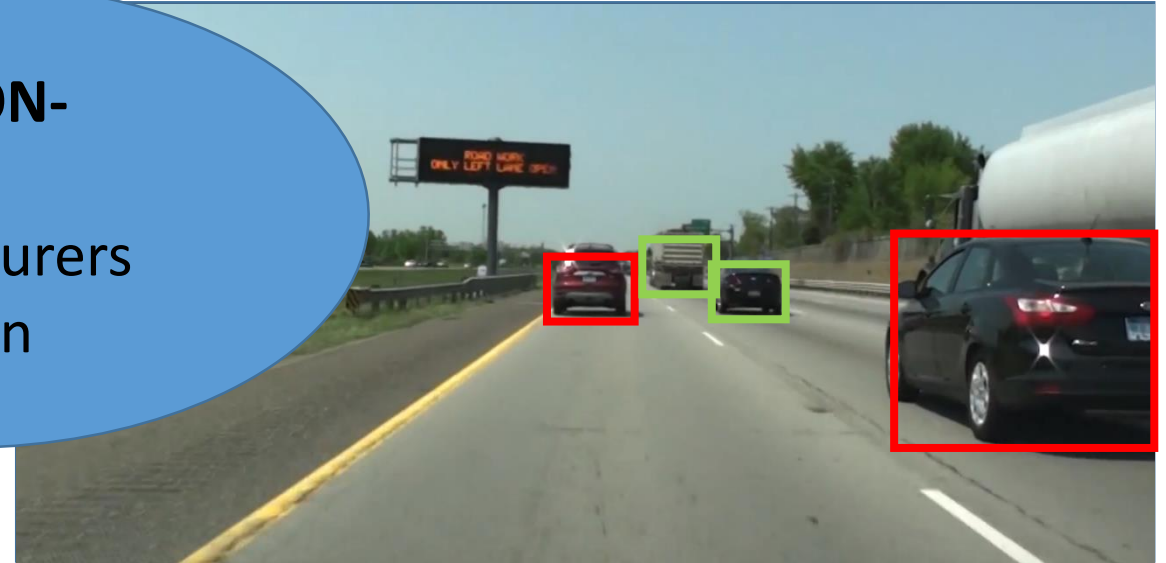


LIDAR- Light Detection and Ranging

- Distance measurement and plotting using infra red light
- 3D
- Can be affected by light & weather conditions

CALIBRATION-

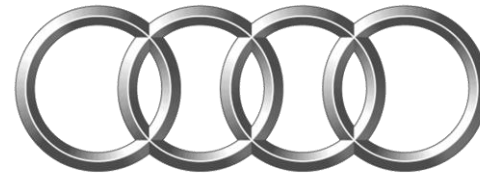
- Vehicle manufacturers instruction



RADAR – Radio Detection and Ranging

- Distance measurement using radio waves
- Only 2D, requires camera for object recognition
- Can see in poor visibility & at night
- Different ranges of distance affects angle of field of vision

Calibration Manufacturers Instructions



Audi A3 2016

- Calibrate front radar- when front reinforcement panel has been moved, removed or damaged
- Calibrate rear radar- **when the rear bumper has been removed**
- Calibrate front camera- When camera has been removed & refitted or windscreen has been removed / refitted



Mercedes-Benz

Mercedes C-Class 2014

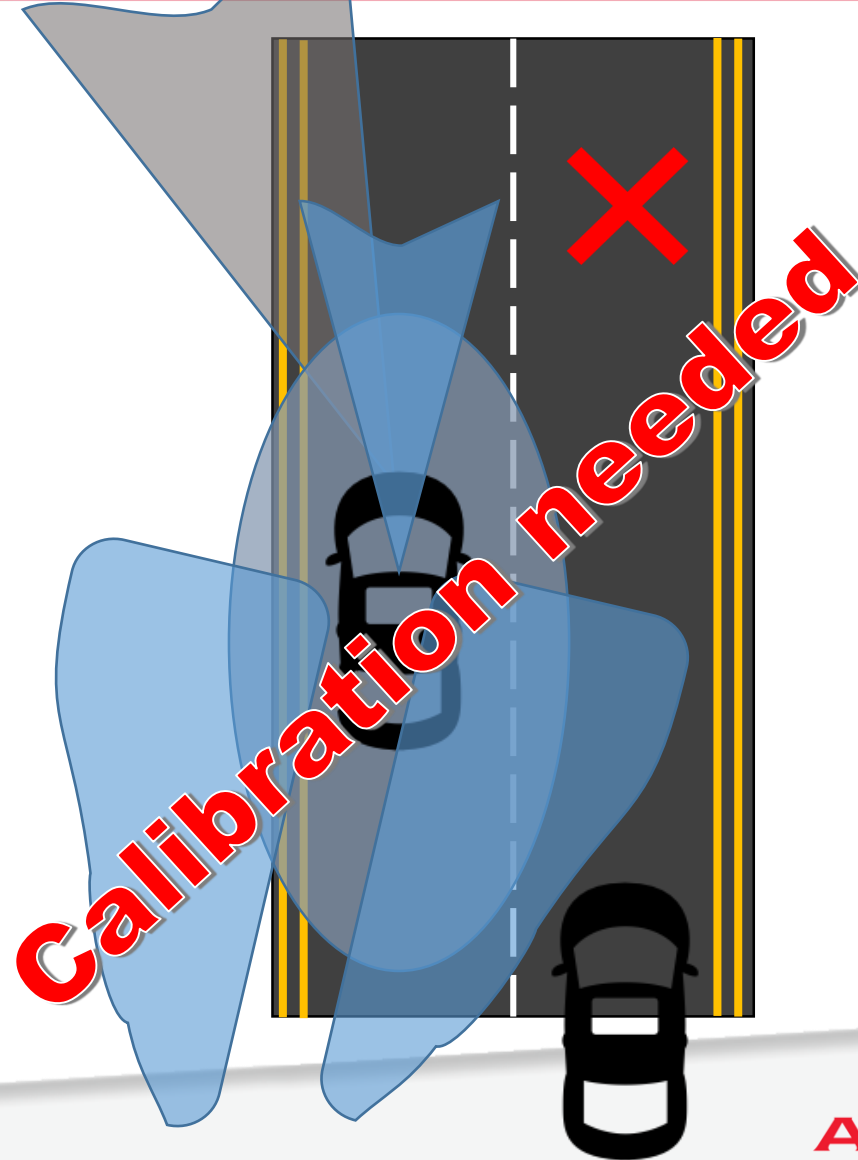
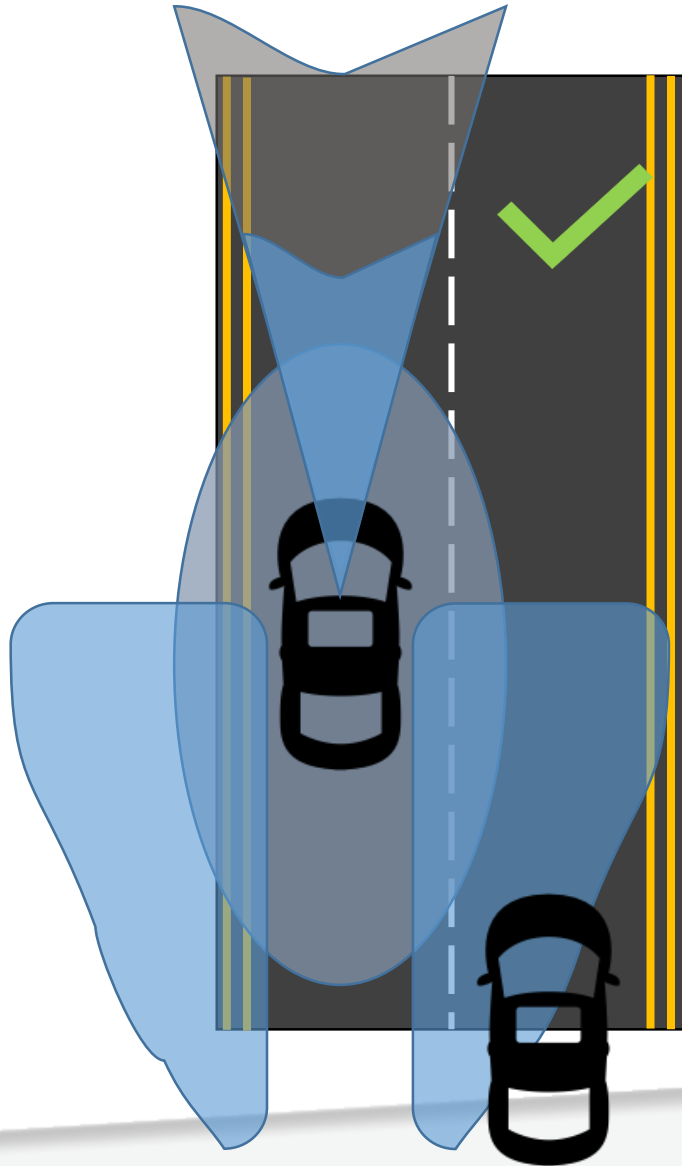
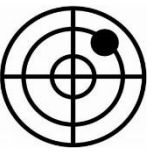
- Calibrate Front Radar- when**After ANY accident repair in the front area** or after wheel alignment
- Calibrate front camera- When camera has been removed & refitted or windscreen has been removed / refitted

Sensors Under Cover

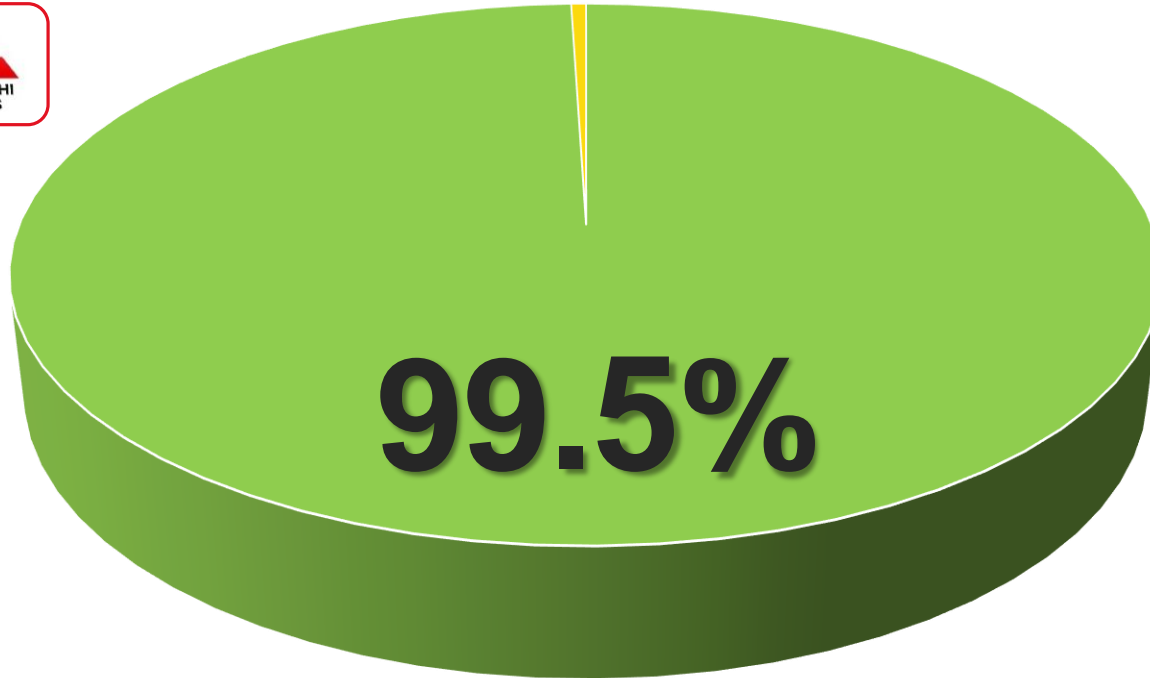
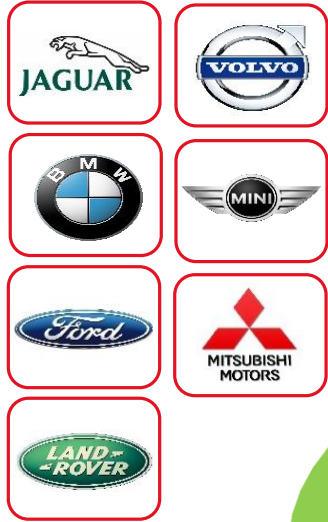


Calibration needed

Can Your Vehicle Sensors Lie?

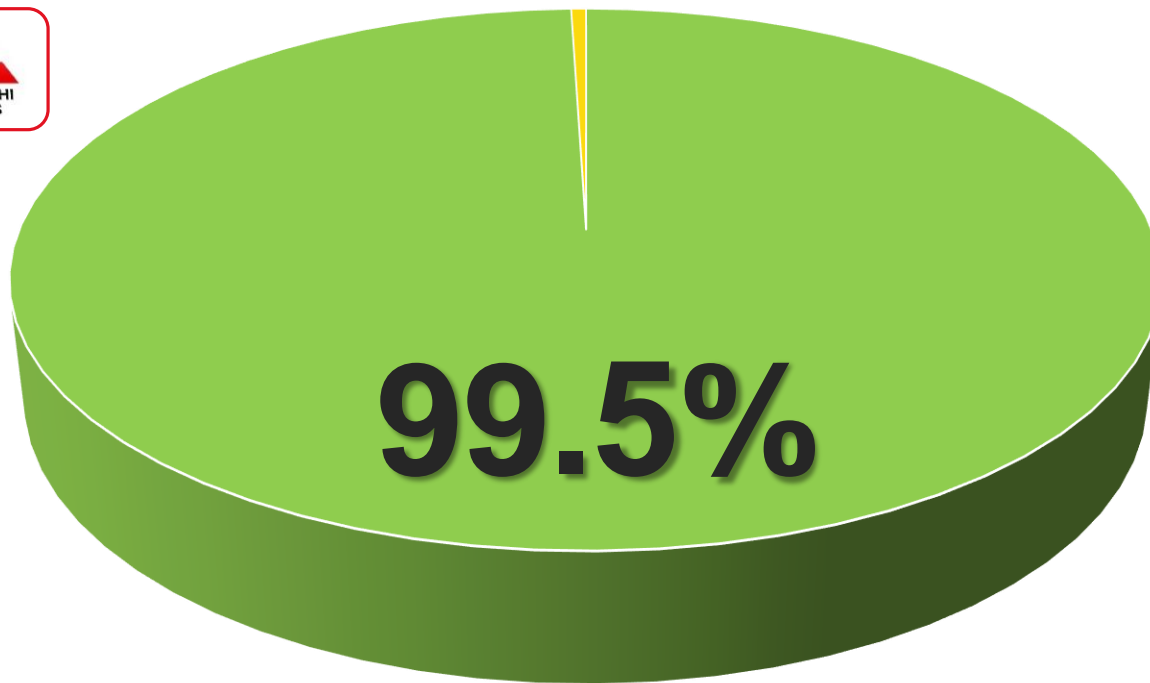
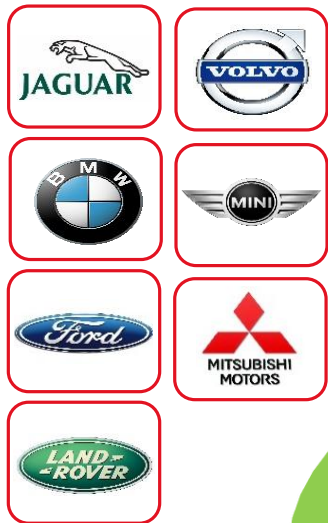


Make/Models Needing calibration



Source: Compiled by Belron Technical for Europe, North America and Australasia (up to August 2018)
Based on Belron volume and Vehicle Manufacturer workshop manual information where available

Make/Models Needing calibration

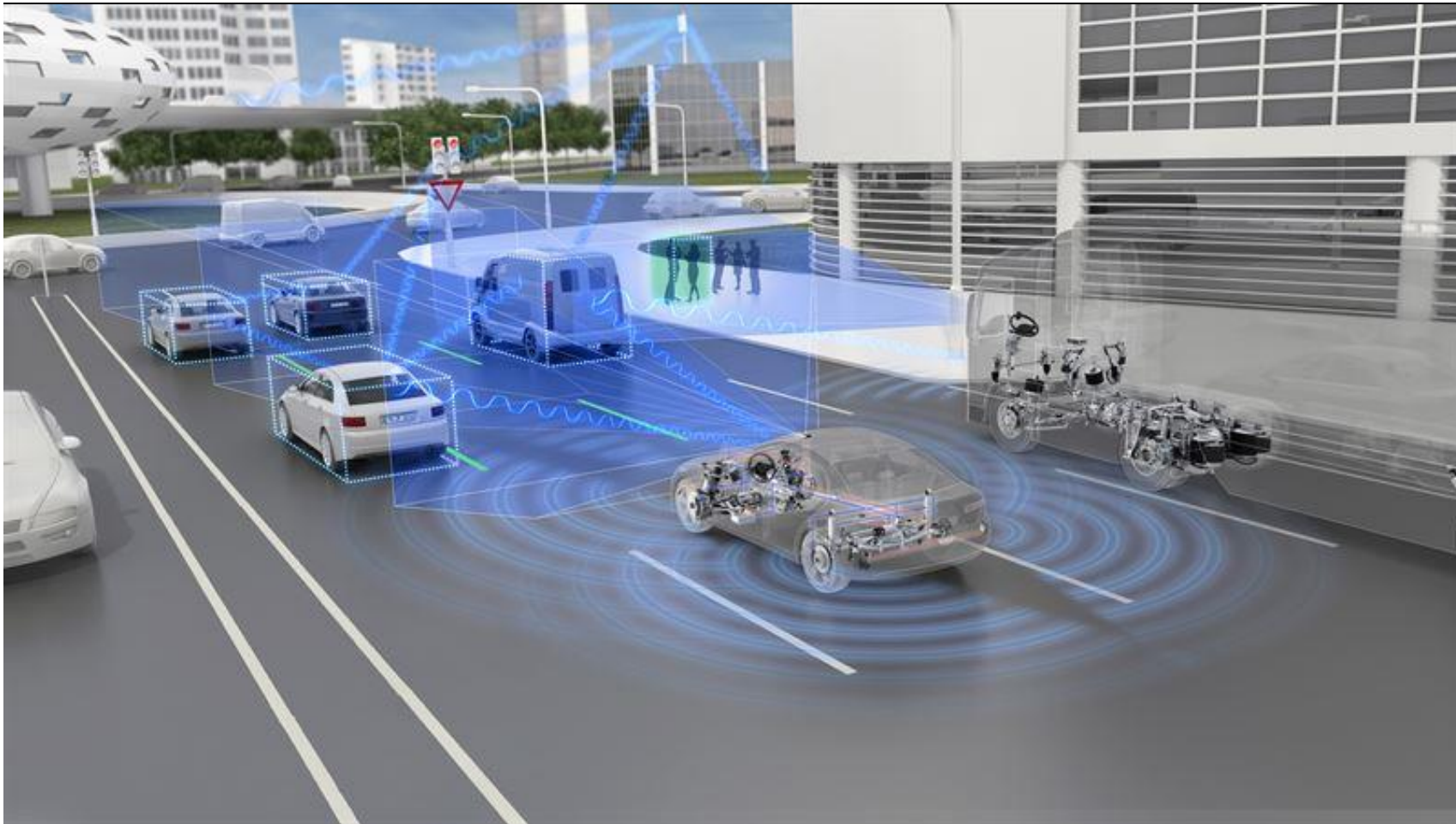


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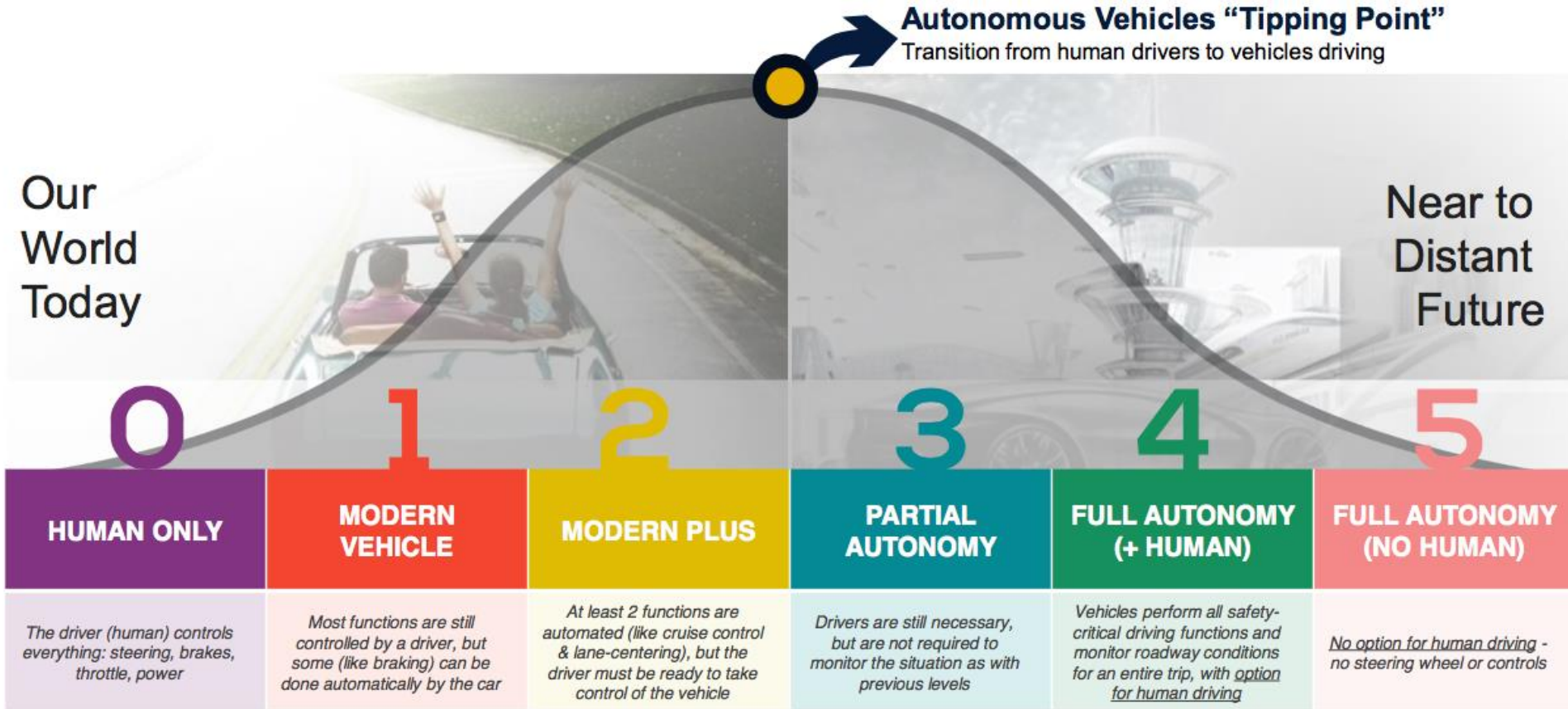
What Is Static Calibration?



Static Calibration Video



Journey To Autonomy



01101001 → 01 1101

0010110011



<http://www.techrepublic.com/article/autonomous-driving-levels-0-to-5-understanding-the-differences/>

A COX AUTOMOTIVE BRAND

0110110101 → ↑↑↑ ↑↑↑



Examples-

0



4 ?



1



2



3



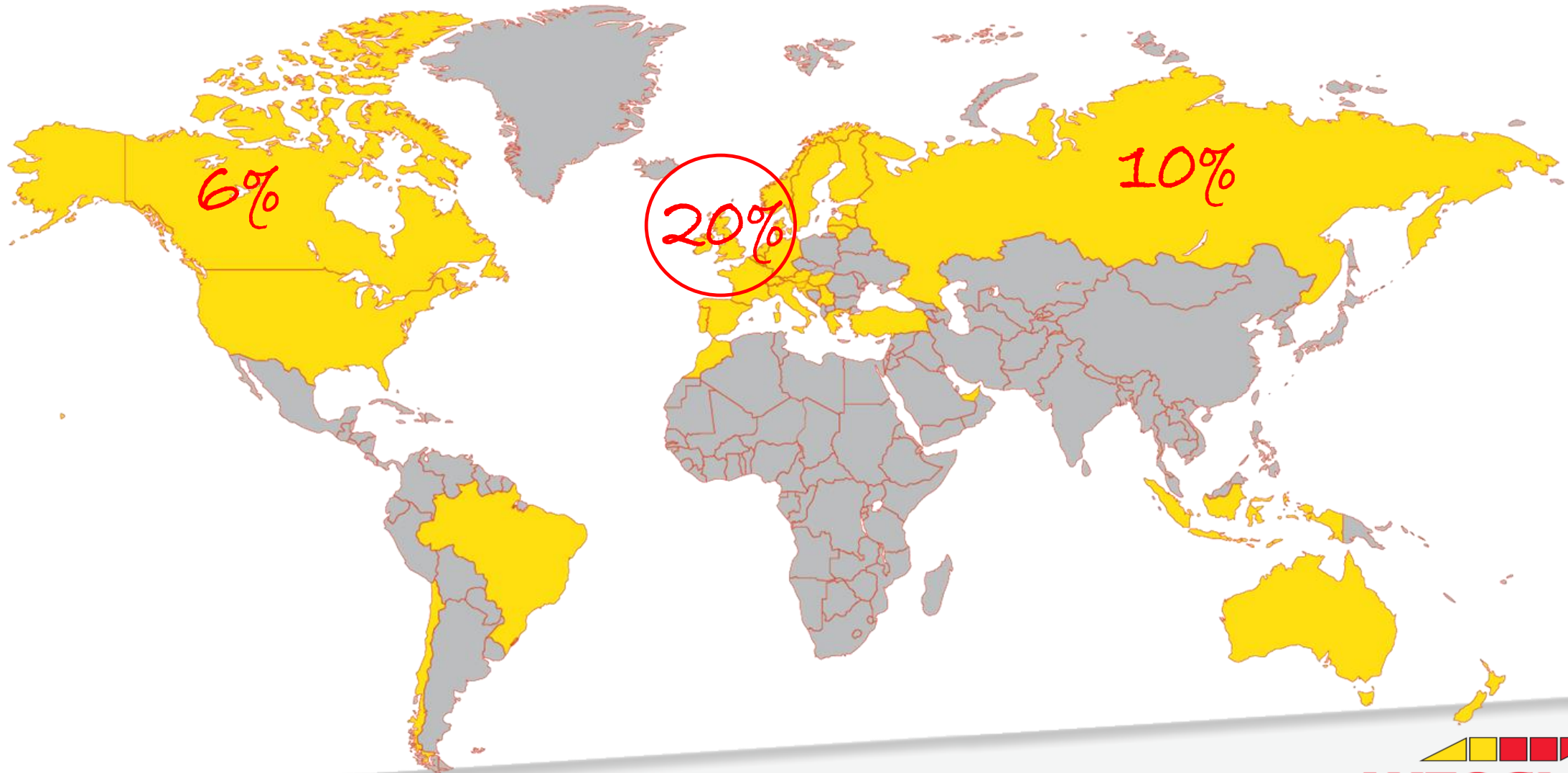


Solution

"It's not just a piece of glass"



Belron[®] ADAS Camera Calibration Forecast



(*) Based on forecast by OC&C and internal Belron ADAS camera calibration growth between 2014 - 2017

Autoglass® Capabilities

OVER 70,000 CALIBRATIONS LAST YEAR...

OVER 404,000 CALIBRATIONS GLOBALLY...

TRUE CALIBRATION EXPERTS - ACROSS BELRON®

BELRON® RESEARCH KEY IN DEVELOPING THATCHAM CODE OF PRACTICE

98% COVERAGE OF UK MARKET

CAPABILITY TO CALIBRATE LiDAR AND RADAR SYSTEMS

FURTHER INVESTMENT IN FOOTPRINT AND SOFTWARE UPDATES



Aiming For 100% Coverage



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Stay on top of advanced vehicle technology at your convenience with IMI's eLearning solution for ADAS (Advance Driving Assistant System)

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MOTOR INDUSTRY**

IMI ACCREDITATION

**ADVANCED
DRIVER
ASSISTANCE
SYSTEMS
(ADAS)**



“Safety As Standard”

Transport Research Laboratory
Creating the future of transport



The calibration processes were found to give identical results in ten repeated tests on all five vehicles (100 tests; 50 back-to-back tests in total). In all these cases, the calibration procedure carried out with the Hella Gutmann tool resulted in exactly the same calibration process and outcome as with the respective OEM tool. This was verified by TRL witnessing calibrations and through the comparison of identical 'key data bytes' in the messages from the ECU which reported the calibration outcome.

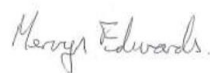
¹ OEM = Original Equipment Manufacturer – i.e. the tool confirmed to be used by the relevant vehicle manufacturer

Quality approved:

Julie Austin
(Project Manager)



Mervyn Edwards
(Technical Referee)



Autoglass®

Key Points-

- ✓ Awareness is Critical
- ✓ Calibration Is Vital
- ✓ Trusted Brand Experts





Thank You and Questions

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