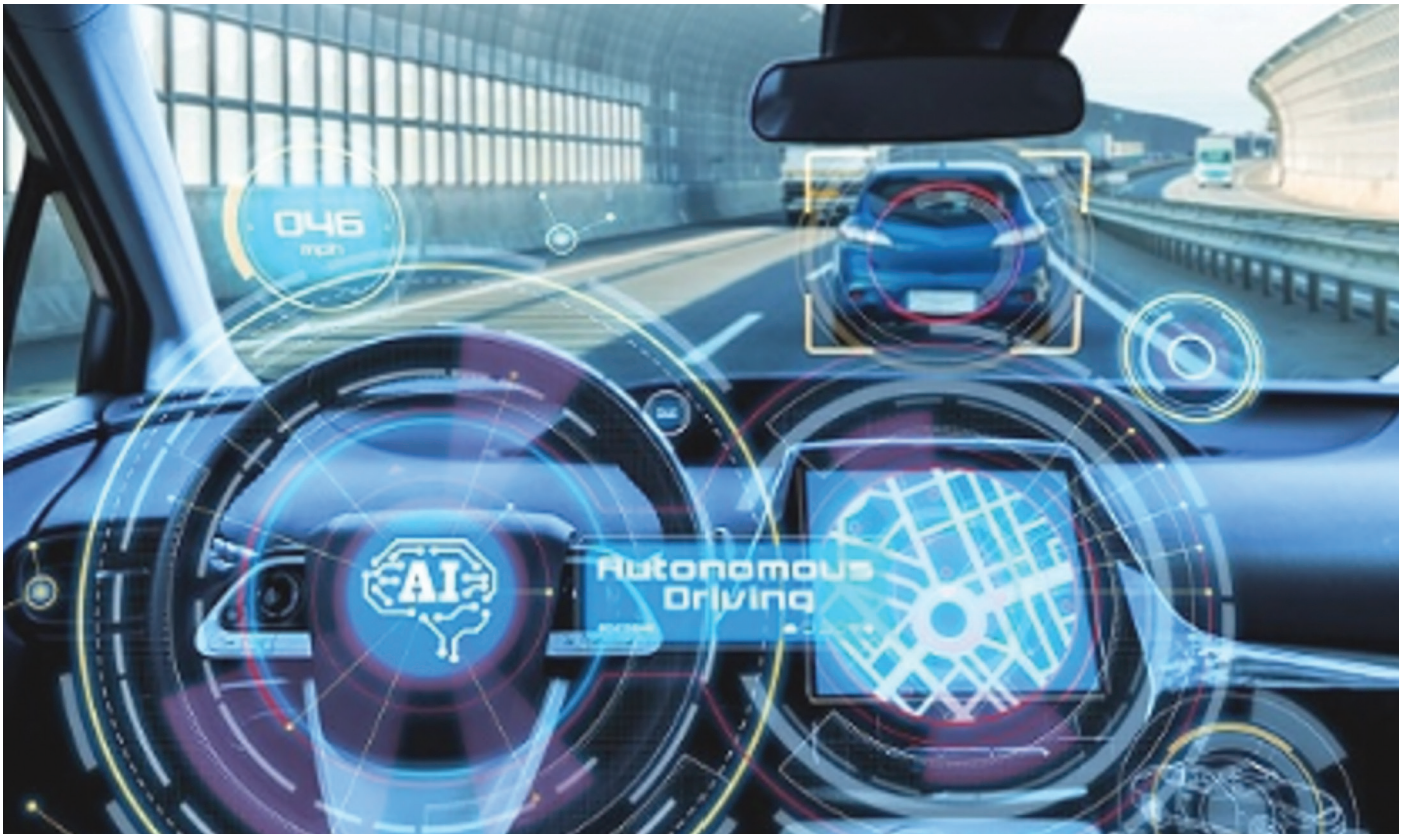


TECHNICAL REPORT



SCANNING AND CALIBRATION

AN UPDATE AND
REMINDER FOR THE
COLLISION REPAIR
INDUSTRY



In a previous Panel talk edition, we featured an article on electronic awareness – in particular, the need for pre and post scans to be performed, as well as identifying re- calibration requirements.

18 months on from (but also prior to) the release of that article, many collision repairers, dealership service departments, auto electricians, glaziers, and mechanical workshops, have had to work through a myriad of issues that arise when removing / replacing parts, as well as completing repairs and re-finishing operations on an ever-increasing number of newer vehicles that feature what we now refer to as **ADAS** or **Advanced Driver Assistance Systems**.

Safety enhancements in the automotive universe are classified as being either “Passive” or “Active” – to better understand this: -

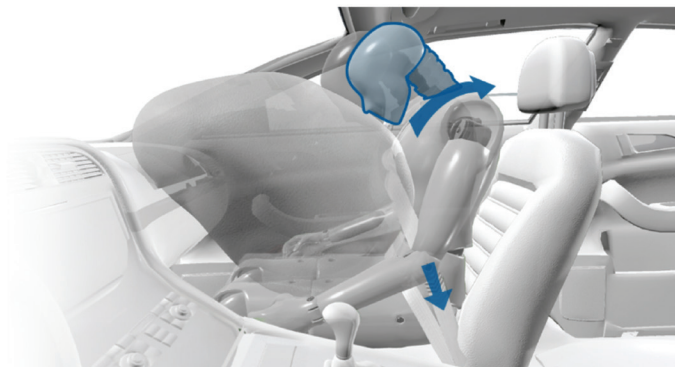
The Resene logo, featuring the word 'Resene' in a white serif font, with 'Automotive & Light Industrial' in a smaller blue font below it.
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The Cromax logo, featuring the word 'Cromax' in a red, stylized font.
The STANDOX logo, featuring the word 'STANDOX' in a blue, stylized font.

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“Passive” safety describes systems and technologies that lay “dormant” in the vehicle and are only engaged when the active safety systems (as below), have been compromised or overwhelmed. SRS airbags, pretensioner seat belts, vehicle construction methods and advanced materials (UHSS, Aluminium etc.), are all features that come into play to protect the occupant(s) after a collision or impact has occurred.



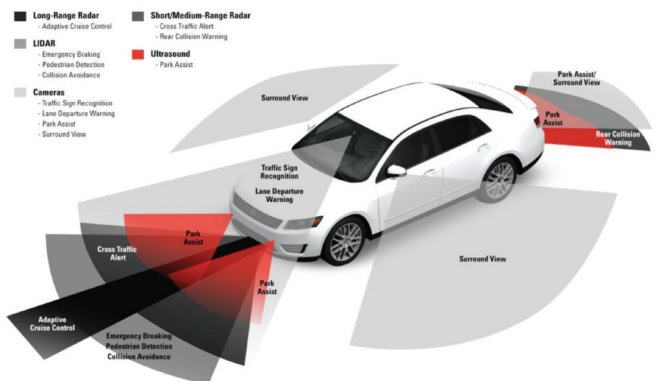
ADAS is substantially an **“Active”** safety function, whereby these systems (in addition to assisting the driver in operating the vehicle) are working to prevent a collision or impact event occurring, in the first instance.

By necessity, Active and Passive safety systems will be working in harmony with each other at any given time while the vehicle is being driven -

With that in mind, it’s now more important than ever before that both work-providers and service-providers in the collision repair industry work together to identify and follow the correct processes for returning any vehicle that features ADAS to its “Pre-Accident” condition.

As the level of sophistication and proliferation of ADAS equipped vehicles continues to evolve, of major concern to many interested parties is not only the dramatic increase in the overall cost of repairs, but more importantly, the safety of the occupants should any system(s) fail to operate correctly after having had even “basic” repairs completed.

ADAS: THE CIRCLE OF SAFETY



ADAS facts: -

- There are more than **36** different advanced driver assistance systems being used today by vehicle-makers globally (e.g. Lane Departure Warning – LDW / Blind Spot Monitoring – BSM and so on).
- Automatic Emergency Braking (AEB) is expected to be a global standard requirement on all new vehicles from 2022.



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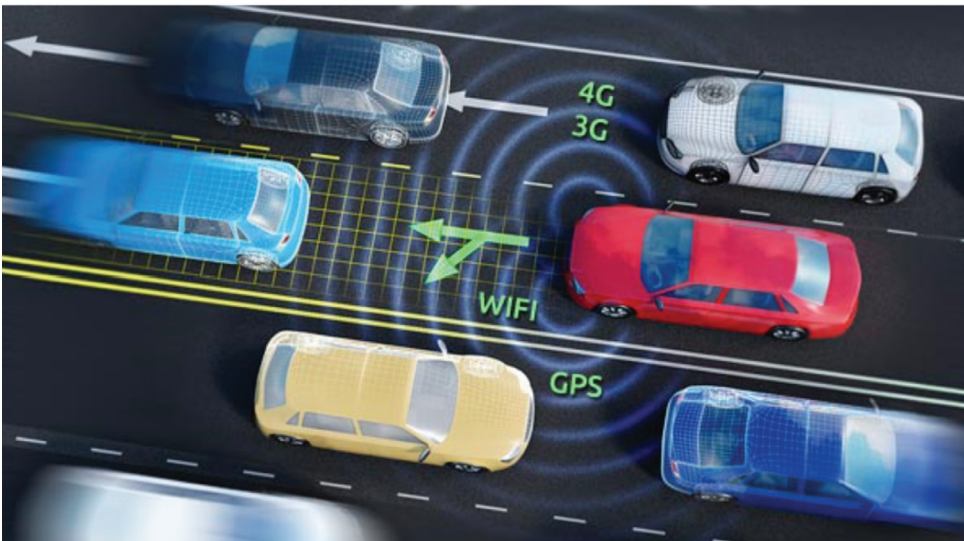
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- **ADAS** electronic components include:
 1. LIDAR (Light Imaging Detection And Ranging)
 2. RADAR (Radio Detection And Ranging)
 3. SONAR (Sound Navigation And Ranging)
 4. Camera(s) (Some now with 360-degree monitoring)
 5. Vehicle to Vehicle (V2V) and Vehicle to Infrastructure (V2X) communications (via mobile phone or WiFi data networks)



Simple bumper removal and replacement will now often require: -

- Pre - Scan (To log any DTCs)
- Post - Scan (To clear any DTC's)
- Re-Calibration (To confirm the ADAS unit(s) are aimed correctly)

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There have already been numerous “Horror” stories of ADAS - equipped vehicles that were returned to their owners after having everyday repairs such as a bumper swap, screen replacement or mirror changeover carried out, without completing the appropriate scans and calibrations and then subsequently, the vehicle has behaved in such a way as to create dangerous situations (erratic steering and braking, non-operation of warning devices, and non-engagement of intervention systems, as examples).



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The NZ collision repair industry, in general has come a long way over the last decade in identifying and completing correct and proper repair procedures, with the focus on following OEM repair procedures, welding requirements and so on. Effectively, the modern collision repairer and insurer are working together to develop appropriate repair strategies for their mutual customers (the motoring public). So, all the boxes are being ticked for PASSIVE safety awareness...

THE ON-GOING CHALLENGES OF WORKING WITH ADAS EQUIPPED VEHICLES: -

Unfortunately, when it comes to ACTIVE safety systems – in particular ADAS, there is still some resistance by some parties to carry out basic vehicle-maker requirements when a vehicle that has ADAS functionality, arrives at a repairer's workshop for appraisal / damage analysis.

To make it abundantly clear – correct and comprehensive blueprinting (estimating) is impossible to complete without interrogating (pre-scanning), the vehicle as soon as is practical to do so after a collision event. Traditional tools and techniques used by damage appraisers previously, are not capable of identifying fault codes that may have been set after an impact – Essentially, YOU DON'T KNOW WHAT YOU DON'T KNOW!!

This is all about AWARENESS in particular, as it would be fair to say that a large number of repairers do not have the appropriate expertise or training to comprehensively reset DTC's - and even less capability to perform re-calibration procedures - and that is to be expected.



There are certainly a number of industry experts across the country (and in addition to dealerships), that can and do perform appropriate procedures successfully, but in many instances, their engagement or intervention only occurs at the completion of the repair when malfunctions occur or worst still, complaints are made by the customer after pick up ...

Much of this can be alleviated simply by completing a **pre-scan** or **"health check"** of the vehicle's electronic systems prior to power disconnection and component removal. We need to be more pro-active in identifying issues first up, and less about having "the ambulance at the bottom of the cliff" mentality.



These articles have been written by Martyn Lane: I-CAR Instructor, Weld Test Administrator and Technical Specialist to the auto body industry

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