

Prepare for ADAS and EVs with I-CAR Training and Resources



By Jeff Poole - Lead Subject Matter Expert at I-CAR

he wave of Advanced Driver Assisted Systems (ADAS) technology has not nearly crested, and rolling right behind it is a surge in Electric Vehicles (EVs). These trends will continue to influence vehicle repairs, and there's no time to waste for the industry to train and equip.



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Electrical Theory: Where It All Begins

It all begins with electrical theory, and the more the collision repairers understand it, the better prepared they will be to diagnose and repair modern and future vehicles that are equipped with ADAS and/or are electric-powered.

For many decades, electrical systems of vehicles were relatively basic. Some elementary knowledge could be enough to troubleshoot and repair these systems; although many found it intimidating and shied away from the challenges of a bad ground, high resistance connection or other fault.

Fast forward to the complex vehicles of today. The same electrical principles still apply. At the root of every electronic system, electron theory, voltage, current, and resistance are all at work – carrying out millions of lines of code, signals and data pulsing through an interconnected system that helps get drivers from Point A to Point B.

ADAS: Interconnected with Other Vehicle Systems

With the continued proliferation of ADAS, it's evident the industry needs to understand vehicles equipped with these technologies in order to prepare accurate estimates and properly repair them. Many other aspects of vehicle service and repair work are either directly affected by these systems or have an indirect effect on ADAS operations. Do you have confidence that ADAS systems will function properly after the customer's vehicle leaves the shop? Knowledge is the key to the right outcome for every repair. That includes knowledge of how these systems operate, the tools and equipment required, and the training to support your staff.

Modern ADAS sensors like radar have evolved from military and aerospace roots to become small boxes mounted at different locations around the vehicle. Unfortunately, they are prime targets in the collision world. But it goes far beyond the direct damage to a sensor. These sensors, collecting information about the environment around the vehicle, can only do their job

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if positioned correctly and calibrated for a focused, accurate collection of data to be processed and translated to the correct warnings or actions. Vehicle structure; panel alignment; sensor mounting brackets; damage mounting locations; other aspects like wheel alignments, ride height and steering wheel angle sensors, to mention a few, are all players in the game.

Get in front of ADAS to stand behind every repair confidently. Visit our free online ADAS Resource Library – offering webinars, podcasts and other resources – and sign up for our training.

EVs: Knowledge Essential for Your Safety

Similar to ADAS, EVs have electrical theory roots. Their high voltage systems and controllers and a multitude of safety monitors ensure that the formidable energy stored in batteries goes where it is supposed to and remains isolated from the vehicle chassis to keep occupants safe.

There are many unseen aspects of an EV's electrical architecture that are foundational to the continued safe operation of the vehicle. Anyone working on estimates or repairs for EVs needs to have advanced knowledge of how EVs work, as well as new tools and equipment they likely have never used before to diagnose and repair these high voltage marvels that continue to gain popularity on our highways.

Even if you are not directly working on HV systems, there is still much you should understand before you start poking around the unknown. I-CAR is here to take you into the world of EVs from the ground up.

Begin your ride down the electrified highway to the future today by signing up for our basic electrical, ADAS and EV courses.

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I-CAR New Zealand have the following ADAS / EV courses currently available:

- EA070E01 Damage Analysis of Driver Assist Systems
 EA125E01 – Basic Electronics for Estimators
- MK025E02 Electrical Damage Inspection
- MK175E01 ADAS and Convenience Systems Overview and Service
- VT210E02 Introduction to Diagnostics and Scan Tools
- VT215E02 Camera Calibration, Inspection and Initialisation'
- VT220E02 Calibration Requirements for Blind Spot and Parking
- VT250E02 Windshields and Advanced Driver Assist Systems
- VT405E01 Understanding High Voltage Safety
- VT430E01 Introduction to Electric Vehicles
- VT435E02 Understanding OEM Calibration Procedures and How to Locate Them
- VT450E01 Electric Vehicle (EV) Initial Inspection and Handling
- VT465E01 Damage Discover for ADAS Sensor Mounting Locations

VT405E01 is a $\frac{3}{4}$ hour course from Bronze level for all strands.

It will count towards their hours to achieve Bronze. It will count towards their hours for revalidation. It will count for C-CAR points for CRA Membership

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