

ADVANCED DRIVER ASSISTANCE SYSTEMS

New Technology, New Challenges,
Unprecedented Opportunities

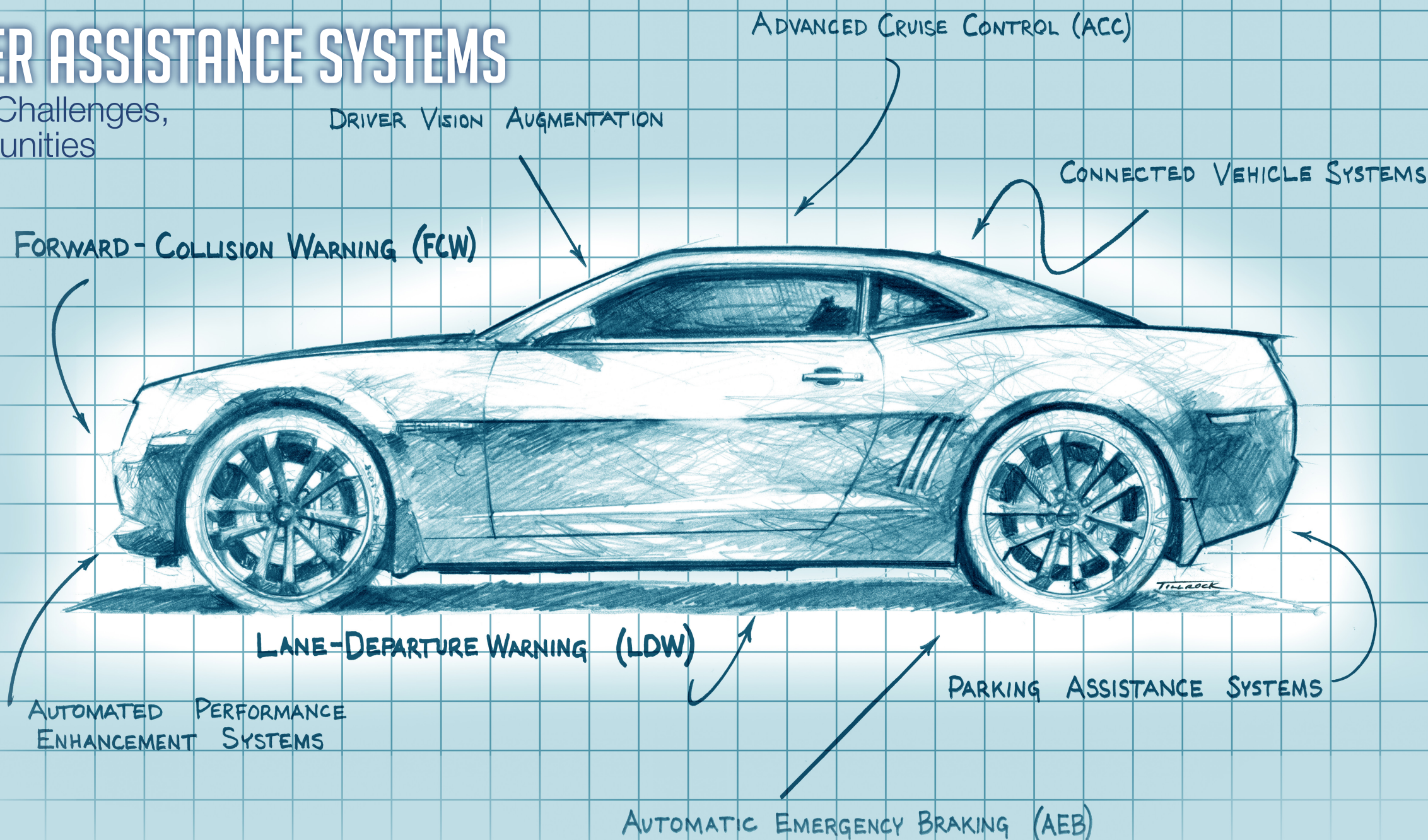
By Mike Imlay

If you think the drive toward more vehicle autonomy and connectedness won't impact your business, think again. Advanced driver assistance systems (ADAS) and connected vehicle technologies (CVT) are already flooding the OEM marketplace and rippling through the aftermarket in new and unexpected ways, reshaping the design, production, sales and servicing of a surprising array of parts and accessories. The only question is whether your business is ahead of, keeping pace with, or behind the rapid wave of opportunities heading our way.

"Transformative technologies are changing how cars are designed, developed, customized, sold, serviced, shared and owned," said John Waraniak, SEMA vice president of vehicle technology. "We are witnessing one of the most fundamental shifts in the history of the automotive industry. New vehicle technologies from ADAS to autonomy are driving this shift, and it's also being shaped by demographic, regulatory, social and environmental pressures."

Groundbreaking Research

The tremendous opportunities that lay ahead for the automotive specialty-equipment industry are underscored in a new SEMA-led Advanced Vehicle Technology Opportunities report conducted with Ducker Worldwide and the Center for Automotive Research. It is set to be unveiled at the 2017 SEMA Show (see sidebar, p. 38). This groundbreaking research estimates the current value of the ADAS aftermarket at just under \$1 billion, with that dollar value expected to increase at a 9%–10% compound annual growth rate through 2021, when it will reach \$1.51 billion. Currently, passive park-assistance units make up the bulk of aftermarket offerings, but other yet-untapped areas can be



CONNECTED VEHICLE SYSTEMS

Allow vehicles to "talk" to each other to allow for better functionality and implementation of ADAS systems.

DRIVER VISION AUGMENTATION

Provides enhanced views of the road ahead to reduce collision incidents. Includes infrared night vision displays and heads-up displays.

PARKING ASSISTANCE SYSTEMS

Help parking in high-traffic and close-quarter environments. May include backup cameras and/or 360-degree cameras.

AUTOMATIC EMERGENCY BRAKING (AEB)

Detects a forward crash with another vehicle or pedestrian before it occurs and alerts the driver to take corrective action or automatically applies the brakes.

ADAPTIVE CRUISE CONTROL (ACC)

Uses radar and camera systems to maintain vehicle speed and safe driving distances as the vehicle approaches slower-moving vehicles.

FORWARD-COLLISION WARNING (FCW)

Recognizes when a vehicle gets too close to another vehicle and signals the driver to apply the brakes to avoid a collision. FCW systems boast the greatest current aftermarket opportunity.

LANE-DEPARTURE WARNING (LDW)

Monitors lane markings and alerts the driver if a vehicle appears to be inadvertently drifting into an adjoining lane.

AUTOMATED PERFORMANCE ENHANCEMENT SYSTEMS

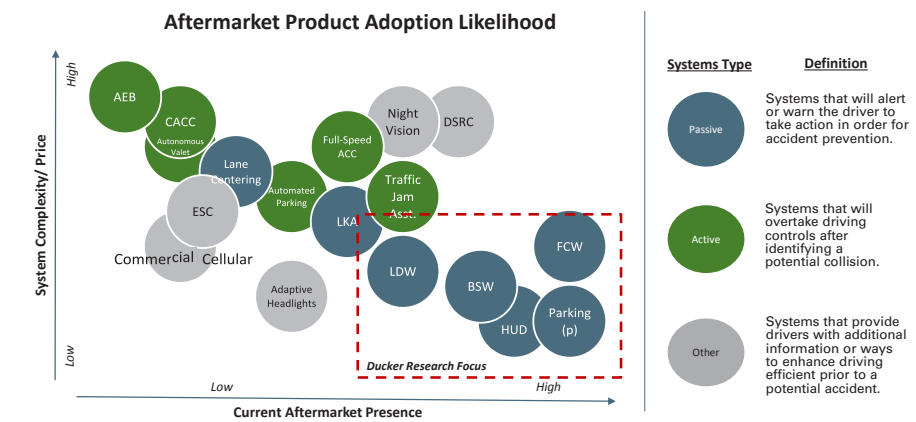
Assist the driver in regaining vehicle control in traction-loss and roll-over situations. They include electronic stability control (ESC), which applies braking to individual wheels during sudden turns.

Source: SEMA/Center for Automotive Research and Ducker Worldwide Driver Assistance Technology and Aftermarket Potential Research Report

EXECUTIVE SUMMARY – SCORING SUMMARY

SEMA Advanced Vehicle Technology Opportunity Study - 2017

Passive ADAS systems have the lowest overall complexity and the largest presence in the aftermarket currently, with limited presence for active systems due to system complexity, OE access and pricing requirements.



■ The SEMA Advanced Vehicle Technology Opportunities report notes that such “passive” ADAS technologies as lane-departure, blind-spot and forward-collision warning, along with heads-up displays and parking assistance feature the “lowest complexity” and currently the largest aftermarket adoption.

expected to grow as well, driven by several key factors:

- 1.The lower cost of aftermarket ADAS alternatives to OEM products, which are often bundled into higher trim and option packages.
- 2.The potential for aftermarket brands to fill the gap with ADAS products lacking sufficient annual take-rates for OEMs to offer.
- 3.The aftermarket’s ability to retrofit older vehicles and lower new-model trim levels.

- 4.The improvement and simplification in aftermarket systems, such as passive parking assistance, that allow for easier self-installations.
- 5.The increasing consumer interest in the safety and awareness that ADAS delivers.

The report also identifies several challenges that the aftermarket will have to overcome along the way. They include heavy integration of ADAS and related CVT into OEM vehicle control systems; increasing regulatory requirements that



■ Brandmotion, an aftermarket leader in ADAS technologies, will debut its new ADAS-1000 OEM-grade forward-crash and lane-departure warning system with DVR at the 2017 SEMA Show. The system is among the many ADAS technologies from a variety of manufacturers that will be front and center at the Show.

favor OEM installations; liability and insurance concerns; compatibility issues in emerging vehicle-to-vehicle and vehicle-to-infrastructure across state lines; a lack of U.S. Department of Transportation standards to build and test to; and continuing cybersecurity concerns.

Ready or not, however, ADAS and CVT are already exploding onto the scene, and aftermarket sales and service outlets will soon be grappling with the need for the right equipment and skilled personnel to keep up with market growth. While OEMs have a tight grip on these technologies now, it’s expected that new legislation and

Media Conference:
New Tech for Old Cars;
The Billion-Dollar Tech Transformation

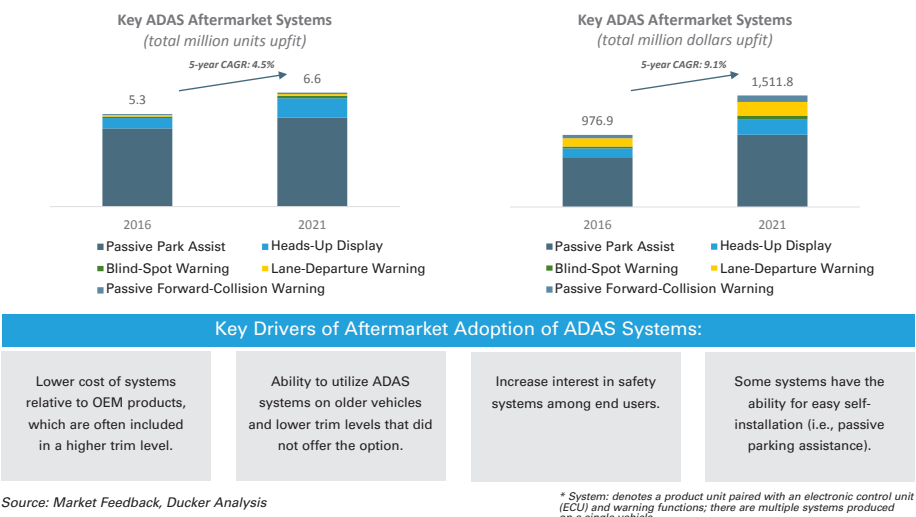
- **When:** Wednesday, November 1, 12:00 p.m.
- **Where:** The SEMA Central Stage, 2017 SEMA Show, Las Vegas Convention Center

What’s the single biggest opportunity for the automotive specialty-equipment industry? Equipping the 200 million vehicles already on the road with today’s ADAS. Safety features such as lane-departure warning, passive park assist and forward-collision alerts are at an all-time high, with interest continuing to grow. The opportunity for the aftermarket to modify older vehicles or vehicles without ADAS is growing as well.

Learn how the aftermarket is responding at this special SEMA Show media event, to be held at SEMA Central (located in the lower Central Hall), where industry experts will unveil the newest findings and outline what the future has in store.

With the ADAS safety, connectivity and navigation market projected to grow to \$1.5 billion over the next five years, SEMA Central will also host a dedicated ADAS exhibit along with related resources throughout Show week. Whether you’re a manufacturer, buyer, reseller or member of the media, the SEMA Show’s seminars and ADAS-focused displays and events are an ideal way to familiarize yourself with these evolving trends.

The market for aftermarket ADAS systems is being driven by a blend of safety, consumer, product availability and installer capabilities to offer vital add-ons for older vehicles and cost-effective solutions for new vehicles.



■ SEMA research projects significant growth in ADAS aftermarket systems by 2021 in terms of millions of upfits and therefore multiple millions of dollars. Much of this growth potential will be from “retrofitting” older vehicles and filling gaps left by OEMs in newer-model trim and option packages.

aftermarket refinements will open new sales and repair channels. In short, the specialty-equipment industry can’t ignore the trend toward ADAS/CVT. Manufacturers, retailers, service and repair providers must begin now to not merely adjust to the new reality but also grasp its tremendous growth potential.

The Drive Toward Safety

Presently, the aftermarket’s greatest growth potential lies in low-complexity

passive safety systems. These include lane-departure, blind-spot and forward-collision warning systems, heads-up displays, and parking-assistance systems encompassing backup cameras and/or radar.

According to Waraniak, Millennials especially covet these vehicle features. A recent Foresight Research’s “Accessories Immersion Report” found that today’s 18–35 demographic values seamless technology and advanced safety performance to the point that they’ll spend an average of \$2,220 to tailor their vehicles accordingly.

“The consumer now is becoming more and more aware of the availability of safety features and options in new cars, and they want those same conveniences and safety features for their older vehicles, so that’s a great opportunity for the industry,” said Brett Riggs, AAMP Global vice president for integration and infotainment.

To meet that rising demand, AAMP recently relaunched its Echo Master brand, which encompasses everything from basic backup cameras to blind-spot detection sensors, front cameras, 360-degree cameras, DVR products and more.

“A whole new category is integrated safety, where we can integrate those cameras, sensors and so forth into either the factory radio screen of the vehicle or an aftermarket radio where the [factory unit] has been replaced,” Riggs explained.

Available from a range of infotainment manufacturers, current aftermarket safety-

enhancement products already run the gamut from do-it-yourself (DIY) to professionally installed items, with price points to match. Indeed, DIY backup cameras and rearview mirror replacements with integrated view screens are now popular offerings at virtually every big-box chain. However, it’s not just traditional vehicle sound and entertainment manufacturers that are jumping into the ADAS/CVT marketplace. Entirely new companies are forming around those technologies—and for good reason.

“We’ve been coming across National Safety Council and other government reports on the safe-driving movement and finding that there’s a huge opportunity for the aftermarket,” said Jeff Varick, president of Brandmotion.

Founded in 2006, the company made high-tech safety solutions its main focus three years later.

“The biggest thing I’ve been talking about lately—and we’re doing something pretty exciting with it at the upcoming SEMA Show—is the fact that 10,000 of the 40,000 lives lost on American roads last year could’ve been saved if every vehicle on the road had the same safety technologies as new vehicles coming out of the factories,” Varick said. “The fascinating thing about that is those are lives that *only the aftermarket can save*, because the cars have already left [the factories]. They’re already part of the [millions of] vehicles on the road.”

Varick noted that such studies urgently call for equipping all vehicles with forward-crash avoidance, blind-spot detection, night vision, lane-departure warning, adaptive front lighting and surround-view camera systems, including features such as backup cameras and sensors.

“Of that list of technologies, six are being done in the aftermarket today, and Brandmotion is doing five of them,” Varick said, adding that adaptive lighting, in which headlights anticipate and adjust for changing road conditions, is proving trickier for aftermarket companies than for OEMs, making it a sort of Holy Grail technology.

On the other hand, blind-spot detection, a relatively simple technology for the aftermarket, is currently offered on only about 22% of new vehicles, but J.D. Power research indicates that 60% of auto purchasers want it. The irony, Varick said,

► Cont. on p. 36

Compiled by Alex Perez

**Autoequips Tech Co. Ltd.
Booth #11622**

Autoequips Tech Co. uses CCTV camera systems as a rear camera and monitoring system for drivers to see their vehicle's blind spots.

**Brandmotion
Booth #11733**

Brandmotion is a supplier of after-market and OEM vehicle personalization products, including radar blind-spot detection systems, 360-degree camera systems, authentic OEM rear-vision systems, curb-alert PRO parking sensors and other OEM integration solutions.

**Cammsys Corp.
Booth #50433**

Cammsys develops and manufactures camera modules, auto electronics, EV powertrain parts and security items. Its camera technology is recognized globally, along with Samsung, Vestel, Sanyo, BYD and Parrot. It supplies 360 systems, rearview cameras to OEMs and aftermarket, and lead ADAS camera and sensing tech to Asia, the Middle East, North America and Europe.

**Chainstar Technologies Co. Ltd.
Booth #50904**

Chainstar's blind-spot detection system is designed with the latest microwave technology to warn a driver of another vehicle approaching in an adjacent lane. The system can enhance driving safety and help avoid accidents when changing lanes.

**Cyber Concept Technology Co. Ltd./
Cybcar America Drive Assist
Technology
Booth #11633**

Cybcar America does OEM integration for various aftermarket add-on products. They feature fully integrated navigation to OEM systems with trouble-free installation. Products include driver-assist technology, SideSpotter blind-spot detection systems and more.

**Gentex Corp.
Booth #12071**

Gentex is an electronics manufacturer and a supplier of advanced-feature rearview mirrors to the global automotive industry. Products include auto-dimming mirrors, displays, camera systems, lighting and driver-assist functions, microphones and interior lighting.

**Global Media Industry
Group Co. Ltd.
Booth #12053**

Global Media Industry Group is a manufacturer of car interior rearview mirrors with DVR, reversing display auto-dimming, navigation with iGo Primo, full display with Mirrorlink and Tem and Compass. It values patent safety and innovative brackets to fit car brands.

**Gryphon Mobile Electronics/
Gryphon Electronics
Booth #12061**

The company manufactures the PowerAll Jump Start Power Bank, the TekMat Floor Liner, DreamWave Bluetooth Speakers, and the Protruly night-vision safety camera system.

**Steelmate Co. Ltd.
Booth #11680**

Steelmate has produced automotive electronic items such as car security systems, TPMS and audio equipment for the global markets for 20 years. It also creates driving video recorders and parking-assist systems.

**Guangzhou Candid Co. Ltd.
Booth #11668**

Guangzhou Candid Co. Ltd. offers such electronic equipment as car camera systems, backup camera systems and digital wireless camera systems. Other products include rearview cameras, reversing cameras, wireless cameras and car monitors.

**Guangzhou PJ-Auto Electronic
Technology Ltd.
Booth #50034**

PJ-Auto Electronic Technology Ltd. came into existence in 2009 with the mission of providing safety and joy to international automobile users and their families by bringing excellent vehicle safety and

in-car entertainment electronic products to the global market.

**Hanyang Information & Communications Co. Ltd./ADAS ONE Inc.
Booth #51245**

ADAS ONE is a strategic brand name from Hanyang Information & Communications for professional ADAS product development. ADAS ONE brings the value of safe and convenient driving to the world with its HM310 camera system with DTG (digital tachograph) and car DVR.

**Hyndsight Vision Systems
Booth #50606**

The company says that its custom-designed camera and monitoring system is so versatile that it can be taken anywhere and set up in seconds. No wires or no internet required for transmission and high-definition real-time video stream.

**Kamama Inc./
Pearl Automation Inc.
Booth #15207**

Pearl Automation is working on advancing the underlying technologies in autonomous vehicles to improve the experience for drivers. Created by former leaders in Apple's iPod and iPhone teams and inspired by the world-changing products they helped produce, the company aims to improve 1.2 billion cars.

**Integration Electronic Ltd. (Sintegrate)/
LinksWell Automotive
Booth #51626**

Backed by more than 25 years of automotive electronics engineering, LinksWell delivers in-vehicle safety, entertainment and integration products that feel and function like factory-installed components. Its goal is to enhance the driving experience with seamless solutions that add to the existing plethora of driver features.

**MCY Technology Ltd.
Booth #38177**

MCY Technology Ltd. is a manufacturer of surveillance technical systems. Its products include mobile cameras, IP cameras, surround-view monitor systems, ADAS, anti-fatigue driving systems, TFT monitors and MDVRs.

**MITO Corp.
Booth #11661**

MITO is a distributor of OE-grade automotive electronic products, including Gentex auto-dimming rearview mirrors available with a compass, thermometer, rear camera and HomeLink displays. MITO also carries a full line of OE screen integration products, dash cameras, wireless charging and remote starts.

**Newest One Tech Co. Ltd.
Booth #51551**

Newest One Tech is a certified manufacturer founded in 2008 and experienced in OEM/ODM. It specializes in manufacturing a wide range of vehicle security products such as a full HD heavy-duty camera and quad monitor, an AHD quad monitor, a radar object detection sensor, a waterproof monitor, a DVR monitor and a backup camera.

**Rostra Precision Controls Inc.
Booth #11617**

Rostra Precision Controls Inc. is a leading manufacturer of automotive parts and accessories, including customized and universal electronic aftermarket cruise-control systems, automotive parking assists, exterior vehicle camera systems, automotive lumbar supports, seat massagers and seat heaters.

**Sforauto
Booth #11627**

Sforauto Co. is a high-tech company specializing in LED light manufacturing and marketing of LED headlight products. It also offers parking sensors, license plates, backup cameras and sensors as well as in-car wireless phone chargers.

**Shenzhen Aotop Electronic
Industrial Co. Ltd.
Booth #11670**

Shenzhen Aotop Electronic Industrial produces on-board monitors, rearview cameras, rearview mirrors with GPS navigators, 1080p HD multimedia playback, and ADAS.

**Shenzhen Brvision Technology Co. Ltd.
Booth #51534**

Shenzhen Brvision Technology is a professional mobile-electronics and sur-

veillance developer and supplier. Its commercial vehicle system products include a heavy-duty and car reversing system, a TFT LCD monitor, a license plate camera, a wireless module, and DVR recording equipment.

**Shenzhen Matego Electronics
Technology Co. Ltd.
Booth #51335**

Matego Electronics is a manufacturer of action, dash and innovative cameras. It is a professional OEM/ODM supplier with experience in producing car DVRs, dash and rearview cameras.

**Shenzhen Sunway Industry Co. Ltd.
Booth #16129**

Shenzhen Sunway Industry has been producing tire-pressure monitoring systems, DVRs, parking sensors, car rearview systems and driving security assistance systems for 10 years. It fulfills ODM and OEM orders for its clients.

**Shenzhen Xiaofeida
Electronic Co. Ltd.
Booth #51553**

Shenzhen Xiaofeida Electronic is a producer of car DVRs, 360-degree surround-view parking systems and microwave blind-spot detection systems.

**Thinkware
Booth #11967**

Thinkware is a Korean-based global tech company producing dashboard camera technology as well as other related accessories. The company was launched in 1997.

**Toppking Electronics Ltd.
Booth #11711**

Toppking supplies customers with blind-spot detection systems, parking sensors, car security integration and more. It is a business partner as well as a provider of product-line and OEM solutions.

**Ultronix Products Ltd.
Booth #11828**

Established in 2005, Ultronix Products Ltd. is a professional manufacturer of parking sensor systems and parking cameras. TS16949 certified since 2009, the company has established a business relationship with

more than 14 OEMs and OESs around the world.

**Vision Automobile Electronics
Industrial Co. Ltd.
Booth #12049**

Vision Automobile Electronics Industrial is a professional manufacturer in the electronic industry with 33 years of experience. It is a supplier to major manufacturers such as Ford, Honda, Suzuki, Toyota, Nissan and Mazda. Vision produces ADAS, TPMS, parking and alarm solutions.

**Vision Tech America Inc.
Booth #11671**

Vision Tech America focuses on after-market rearview camera systems and auto security system technology, producing backup cameras and monitors, mirror monitors, heads-up displays, dash camera DVRs and keyless entry systems.

**Voxx International Corp.
Booth #12017**

Voxx International produces items across many fields, including telematics, audio products, specialty products, mobile video products, car alarms and remote starts.

**Voyomotive
Booth #11665**

Maker of a plug-and-play connected car system giving car drivers/owners a variety of data and control features.

**Waylens Inc.
Booth #38227**

The Waylens Horizon is an automotive camera system designed to amplify fun behind the wheel. It allows drivers to easily capture, edit and share interesting moments in real time from the road with its innovative camera, OBD-II transmitter, remote and mobile app.

**Yosky Global LLC/Yosky
Booth #15723**

Yosky Global is the sole U.S. distributor of Yosky-branded products tailored for the American market, including electronic automotive mirrors with forward- and rear-facing cameras and articulated DVRs (dash cams).

ADAS 101—Advanced Driver Assistance Systems Explained

Compiled by Alex Perez

What They Are: ADAS are a mix of active and passive vehicle technologies developed to assist safer driving.

How They Work: ADAS features alert drivers to potential problems with warnings or enhance vehicle control to prevent collisions.

Why They're Hot: ADAS technologies and applications are one of the fastest-growing segments in aftermarket automotive electronics, creating new opportunities and challenges for manufacturers, distributors and retailers. These systems include, but are not limited to:

- **Electronic Stability Control (ESC):** Applies braking to individual wheels during sudden turns so that drivers will not lose control of their vehicle. ESC ensures that the vehicle travels in the direction intended by the driver.
- **Lane-Departure Warning (LDW):** Monitors lane markings and alerts the driver if the vehicle is drifting into an adjoining lane.
- **Forward-Collision Warning (FCW):** Recognizes when a vehicle gets too close to another vehicle and signals the driver to brake in order to avoid a collision.
- **Advanced Cruise Control (ACC):** Uses radar and camera systems to track vehicles ahead and adjust the speed accordingly while regular cruise control holds the car at a steady velocity until the driver intervenes.
- **Automatic Emergency Braking (AEB):** A sensor-based technology that detects a forward crash with another vehicle or pedestrian before it occurs. It alerts the driver to take corrective action or automatically applies the brakes.



■ Innovative Creations brings its new line of Magnum Bumpers for the Ford Raptor and Super Duty to this year's SEMA Show. The line is an example of how ADAS technology is re-innovating the designs of even the most traditional aftermarket parts and appearance accessories.

◀ Cont. from p. 33

is that most consumers remain unaware of their aftermarket options, making consumer education a major priority. To that end, Brandmotion will use the 2017 SEMA Show not only as a platform to launch fresh ADAS products but also to announce a new nonprofit initiative aimed at educating and equipping drivers who otherwise lack the means with these advanced technologies.

On the Front Line

While aftermarket manufacturers rush in to supply a consumer demand that can only mushroom for ADAS/CVT products, the collision-repair segment is already embracing the opportunities—and challenges to traditional business models—that come with these rapidly emerging technologies.

“The conversation surrounding this has really taken the industry by storm over the last couple years,” said Aaron Schulenburg, executive director of the Society of Collision Repair Specialists (SCRS). “[ADAS products] are becoming far more standard in baseline vehicles, and obviously our job as collision repairers is to restore a vehicle and its functionality to its pre-loss condition.”

In doing so, the SCRS is working diligently to promote new tooling and diagnostic best practices, educate shop professionals and consumers alike in ADAS

technologies, navigate rapidly changing OEM standards and government mandates, and deal with the fresh liability issues the technology inevitably raises.

“There’s some great technology in these vehicles that really does a great job today of identifying flaws or failures within them and communicating that to the repair professional when you speak to it properly with the right equipment and with the right diagnostic background, skill sets and expertise,” Schulenburg explained. “But we have to go through those processes. We have to make sure that we’re following the specific requirements of those specific vehicles and not a more generalized or standardized practice.”

“Each of the automakers provides specific requirements relative to each make and model, and that’s one of the pieces for our industry. We have third-party payers paying for repairs, [and] there has been a lot of resistance over the costs associated with performing some of this diagnostic work—especially the concept of pre- and post-scanning—because it is a newer conversation, even though the diagnostic requirements have been part of the repair manual procedures for many years.”

In addition to knowledge and best practices surrounding OEM systems, Schulenburg pointed out that repairers must also become adept in restoring and calibrating the functionality of aftermarket ADAS



■ 2017 SEMA Show exhibitor Castel Technologies can transform even the oldest car into a “connected car” with its Enicar Connected Car kit, connecting to the cloud and to the user’s phone. The kit enhances car functionality and infotainment while improving safety, security and navigation.

options as they become increasingly integrated into customer vehicles. He views the biggest business challenges ahead as cultural—creating a shop of highly trained professionals with a firm understanding of the implications of not following best practices or properly documenting their work.

“The education and information needs to be as much about restoring the vehicle for the consumer as it is about protecting the business that’s working on that vehicle,” he explained. “You look at some of the sad and horrific incidences of vehicles out there where the systems didn’t perform as anticipated. If there were repair professionals or modifiers—or anyone who was in between the sale of that vehicle, the customer and that incident happening—[a shop would] certainly want to be able to go back and point to the fact that you restored the system and have documentation of that.”

Rethinking Everything

Waraniak asserted that this cultural shift will apply to the entire aftermarket as well.

“ADAS sensors, cameras, radar and computer processors are often integrated in the parts and systems that SEMA companies are providing modifications for or in many cases replacing,” he noted. “Most ADAS technologies are not yet regulated and can be addressed today with functional compliance testing, system evaluation and full-vehicle scanning and software tools. Automakers

have guidelines and best practices available to dealers and collision repair shops to help ensure that ADAS technologies are calibrated and function as intended after a vehicle has been modified or repaired. If SEMA members are not using these tools and checking the OEM information data base, they may be missing an important step in the customization and modification process of late-model vehicles.”

Indeed, the trend toward ADAS can affect virtually any vehicle modification

down to the bumpers. Innovative Creations Inc. (ICI), based in Peoria, Arizona, found that to be literally true in the manufacturing of the Magnum Series Ford Raptor and Super Duty bumpers it’s exhibiting at the 2017 SEMA Show.

“We like to accommodate the safety and convenience features that come from the factory so that our customers don’t have to sacrifice the options that came on their truck,” explained ICI Lead Product Development Engineer Kyle Dahlquist, who added that the engineering involved more than providing a few cutouts for sensors. “Any time you eliminate any of these features, you will run into problems in the form of check-engine and error messages that are nearly impossible to clear.”

Those types of modules and sensors do not work well when they are moved from the factory locations, so ICI had to take that into consideration while designing its Tundra rear bumper with side-impact sensors and the new Ford models with adaptive cruise control.

“In both of those cases, the sensor locations are within the bumpers,” Dahlquist said. “Those sensors cannot detect anything through steel, so we had to use another composite material to cover the sensors so they would fit into our design and still work properly. With our new Raptor and Super Duty bumpers, one of the best features is that they work with



■ Cloud connectivity and data sharing promise consumers an entirely new range of convenience, safety, productivity and infotainment options. Voyomotive is helping to break this ground with Voyo, an advanced telematics system that connects a vehicle’s OBD-II port to the cloud, allowing vehicle owners to monitor and control an array of vehicle functions from virtually anywhere via their mobile devices.

both ACC and non-ACC equipped trucks. This eliminates the need to have multiple part numbers and additional warehouse space for distributors. It also causes less confusion to the consumer and cuts manufacturing and design costs.”

Greater Connectedness

No discussion of ADAS would be complete without at least a glance at vehicle connectivity—a closely related field of emerging technology. Even as the aftermarket evolves, a new segment is forming within the mobile-electronics category—one that is driven by software, digital connectivity and cloud-data sharing.

A case in point is Voyo, a recently debuted aftermarket telematic system that essentially connects a vehicle’s OBD-II port to the “Voyo cloud” to enable a suite of convenience, security and fuel-saving applications. Plug-and-play, the Voyo unit interfaces with a smartphone or other mobile device via Bluetooth, allowing users to remotely locate, lock and unlock their vehicles; monitor malfunctions, driver behavior and speed; read detailed diagnostic codes; and more.

“We’re a combination of Silicon Valley and Detroit automotive,” said Peter Yorke, CEO of Voyomotive, the device’s manufacturer. He sees huge, untapped product-development and market potential in vehicle data.

“We’re one of the few companies, if not the only one, that is actually reverse-engineering data from vehicles so that we can get very advanced data from vehicles that we can make available for apps for consumers, for fleets as well as for channel partners, whether it be insurance companies, dealerships or service centers,” he explained. “Typically when data is acquired from an OBD-II port of a car, its use is very narrow in focus. It is data used for emissions testing that the companies have to, by law, make readily available. We’re getting the other 99% of the data that is generally out of reach both for consumers as well as for fleets.

“For instance, we [can] know things such as when is your oil change? What is your remaining oil life? Have you gotten a flat tire? Has there been a malfunction code in the vehicle? So we’re getting 70–100 non-generic parameters off the

ADAS/CVT Education Opportunities at the 2017 SEMA Show

The following is a brief summary of seminars and discussion panels slated for the upcoming SEMA Show. Space for some of these educational events is limited. For further information, costs and registration, go to www.SEMAShow.com/education.

Vehicle Technology: Advanced Driver Assist Systems: Customizing With Confidence, Powered by ETTN

- **When:** October 30, 1:00–2:30 p.m.
- **Where:** Las Vegas Convention Center, Upper North Hall, N258
- **Presented by:** John Waraniak, SEMA

Leading SEMA companies customize with confidence and ensure compliance by knowing how ADAS and advanced vehicle technologies are impacting their products, installations and businesses. If you want to ensure that your aftermarket products and modifications can be successfully integrated with the latest ADAS and safety performance technologies as well as comply with functional, system and federal motor vehicle safety regulations, this forum is for you.

Vehicle Technology: Connected and Autonomous Vehicles: Smart, Cool and Connected, Powered by ETTN

- **When:** November 2, 1:00–2:30 p.m.
- **Where:** Las Vegas Convention Center, Upper North Hall, N258
- **Presented by:** John Waraniak, SEMA

Connected vehicle technologies integrate automotive and consumer electronics through systems of sensors, hardware and software. The number of connected cars is growing 30% a year, and one in every five cars on the road will be connected to the internet by 2020. Connected vehicles exchange data with other vehicles through vehicle-to-vehicle communications and with the roadside through vehicle-to-infrastructure communications. Attendees at this forum will learn from automotive leaders and technology experts how to compete in today’s rapidly evolving automotive industry and leverage new growth opportunities and technological advancements in connected cars, autonomous vehicles and new mobility solutions.

OEM Collision Repair Technology Summit

- **When:** November 2
- **Where:** Las Vegas Convention Center, Upper North Hall, N241

(Space will be limited. Early registration is encouraged. Sessions can be selected individually or as part of the full series pass.)

Held in connection with SCRS, the OEM Collision Repair Technology Summit is designed to put SEMA Show attendees in a room with innovators in automotive structural design and technology. The Summit’s three session times (see below) will feature distinctly different topics that host discussion between companies and individuals with rich histories of producing sophisticated advancements in the automotive and collision repair fields.

OEM Session I: How Automotive Research Is Driving Change in Vehicle Design Technology and Function

- **Time:** 9:00 a.m.–10:30 a.m.

OEM Session II: The Impact of Advanced Vehicle Systems on Routine Repair Process and Procedure

- **Time:** 11:00 a.m.–12:30 p.m.

OEM Session III: The Hidden Dangers of Vehicle Technology, Improper Repair Methodology and Your Liabilities

- **Time:** 3:00 p.m.–5:00 p.m.



■ As consumers come to enjoy and rely upon such enhanced vehicle safety features as backup cameras and lane-departure warning systems, they will naturally demand them as updates to their older cars that lack them. AAMP Global is helping to fill this gap with its EchoMaster product line of cameras, sensors and monitors.

vehicle, and those look at how the vehicle is being operated, how the driver is driving the vehicle, and even parameters related to the weather. That allows us to determine if the vehicle is in good operating condition and if it’s being driven safely.”

Voyo’s implications are vast. For one, parents can monitor teen driving habits from a home computer or smartphone. Fleets can network vehicles, and crowdsourcing can serve up routes and road conditions to consumers in ways that rival current navigation apps. But beyond even that, Yorke sees a future in licensing Voyomotive’s application programming interface to third-party developers who can mine the data trove to innovate countless other applications, products and services. The company is also in the process of supplying its data analytics to Tier 1 companies researching vehicle handling characteristics, driver habits and related information for the development of next-generation products.

“We’ve seen in the last 20 years that many of the products and businesses that have changed the way we live have been digitally based,” said Yorke. “Vehicles have kind of lagged in that field, and now are racing to catch up with the advent of driverless cars, [vehicle] intelligence and safety features. Cars were wide open in the days of do-it-yourself fixing it at home. The risk is that the data and what you can learn about the car is becoming more closed as

you add more electronics. What we and others are saying is that we should be opening up this data, not only for consumers or for fleets but also for the distributors and channels that want to provide additional services and goods to their customer base. At the end of the day, I think history has shown that the ones who opt for more open solutions and support consumer preferences will be the ones who win.”

Changing Channels

Amid all this technological flux the old saying “this changes everything” will apply to sales channels as well. In the short term, retail installers can anticipate growing opportunities for integrating safety cameras, radars and related devices and software into fleet and older-model vehicles as consumers learn to expect and rely on such features in their newer cars. However, the SEMA Advanced Vehicle Technology Opportunities report projects all aftermarket sales and service channels to evolve significantly over the next five to 10 years.

OEM and vehicle dealers, which currently hold an advantage to data and access to original ADAS equipment, will see a declining share of sales and service as aftermarket retail installers become more skilled, competent, supplied and competitive. Current ADAS/CVT systems that require advanced tools to install and service

are also anticipated to become less complex and therefore cheaper, more ubiquitous and within the reach of a larger number of retailers.

In the next decade, retail and online parts chains are forecasted to command 35% of the ADAS market, with other independent retailers and vehicle dealers taking 60% and 5% shares, respectively. The big winners will be sales and service channels offering advanced diagnostics, testing and calibration; OEM system knowledge; remote software updates; aftermarket product knowledge and employees with strong technical backgrounds.

As Schulenburg concluded, “The opportunity exists in staying ahead of the curve, maintaining pace with the escalating technology on vehicles, and keeping up with what is going to be on the roadways. Maintaining an ongoing pace is much easier than trying to catch up down the road.”

Get the Facts

For more information about ADAS technologies and how they may impact your business, visit the SEMA Garage Vehicle Technology webpage at www.semagarage.com/services/vehicletechnology.

To download a copy of the “SEMA Advanced Vehicle Technology Opportunities” report, go to www.sema.org/avt-opportunities.