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Interview: Autel on advanced driver assistance systems and electrification aftermarket trends in India

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Source: Getty

Original equipment manufacturers introduced various advanced driver assistance system (ADAS) technologies within their vehicles from the 1980s including parking sensors, adaptive cruise control (ACC), lane-departure warning systems (LDW) and automatic emergency braking (AEB). Blind spot monitoring (BSM) also featured more prominently from the 2000s, with the combination of these technologies typically classified as Level 1 ADAS.

Technologies in vehicles have now evolved to include more advanced features including city and highway assist systems and parking assist, moving to the level of partial driving automation, all being categorized as Level 2. Higher levels of ADAS are still in various stages of development, testing or deployment, with higher resolution cameras, more powerful radar and Lidar sensors, control units and other components expected to enable even safer vehicles.

The presence of ADAS in vehicles in operation (VIO) has grown tremendously, especially in developed markets such as North America and Europe.

The demand for safer vehicles by consumers and government, increased competition among OEMs, and added comfort and convenience features have been some of the key reasons behind the increase in vehicle fitment of these technologies.

According to forecast data by S&P Global Mobility, approximately 95% of all vehicles sold in the US in 2022 had ADAS functionality between Level 0 and 2, with majority of them being the latter. However, the share of these technologies in VIO is still low.

According to the same data, the highest percentage of VIO in the US market in 2022, which had AEB pedestrian systems, was about 25%; while in Europe, lane-keep assistant technology was under 20%. However, by the end of the decade, these numbers are expected to be about 70% and 50%, respectively.

In India, various ADAS technologies were introduced into new VIO since the 2010s, predominantly in luxury vehicles. However, from the past few years, a higher number of mass-market brands including Mahindra, Hyundai, Kia and Tata have multiple models in their lineup that feature Level 1 or 2 capabilities. More OEMs are expected to bring several of these technologies in their vehicles owing to stiff competition, across different price points, increasing the share of ADAS-equipped VIO in the market.

As the volume of ADAS-equipped VIO grows in the country, there is expected to be a huge aftermarket opportunity in terms of parts replacement or repair, and especially recalibration, in the event of a collision or parts failure. It is imperative that approach to this by both OEM aftersales and the independent aftermarket must be of the highest accuracy and so that the vehicles continue to operate as designed, which would involving using the right tools and equipping technicians with the required skillset. This is especially significant in a market such as India, where road safety is of critical importance. According to the Indian Ministry of Road Transport and Highways, in 2022, 429 people died every day, and vehicles equipped with ADAS could prove to be a vital solution in preventing or reducing the number of accidents.

At the Automechanika New Delhi 2024 trade show, Autel, a global supplier of diagnostic tools, equipment and services for the automotive industry, displayed its ADAS recalibration product for the Indian market, which could provide the required services to ensure accurate fitment and recalibration of ADAS parts in the country.

To understand more about their products and specific strategies for the market, S&P Global Mobility interviewed Vivek George, product manager, IMEA. The following are some edited excerpts of the interview:

S&P Global Mobility: For ADAS and BEV [battery-electric vehicle] charging components, what are you specifically targeting in the aftermarket?

Vivek George: For India, these segments of products are new for the country, with the technologies only coming into the market now. Vehicles will remain within warranty for at least four to five years and therefore, right now our target is the OEMs in the country and their aftersales network. [We have] already had this solution in other markets for the past seven to eight years, but now that we are seeing many news models, especially mass-market on the road in India, we decided to launch our technologies in the country.

Similarly, our BEV chargers have also been on the market for the past four years but now with the growth of vehicles in the Indian market, we are looking to launch the product here. We are displaying all our products in the booth, but we are only bringing AC chargers to the country to focus on our automotive end customers through the OEMs.

Once we get more data from the market in terms of the number of BEVs and their usage, we can then scale up our products to meet the demand. It is at a niche stage currently, but this is when OEMs are trying to hunt for suppliers. We could work with them on a project basis because we have to make sure their vehicles are covered by our products. We feel that currently the market in India for TPMS [tire pressure monitoring systems] is growing considerably and we buy a lot of research for this technology at a global level. There is nothing specific for India yet, but it is starting off in a big way and is expected to be a huge market.

Do you offer the ADAS solution as an OEM solution or completely aftermarket, and further, where do you get the calibration data?

We are an OEM replacement brand. Despite the high number of models and various OEM parts numbers, our products and solutions are able to work with any vehicle [in] the market. We analyze which brands, models and variants are being sold with the technology, what their unit sales are and therefore, understand how to target the right customers for our products.

Calibration parameters are open data because [it is] not the OEM that makes the technology, rather a few tier 1 suppliers globally [such as] Continental, Siemens [and] Bosch do. Once we get the data, we just have to fine-tune for each vehicle specifically.

You mentioned that this is now a recent product for the market for India. Is there an Indian-specific ADAS solution, and how are you looking at supporting the service industry?

In terms of hardware no, only the software will be fine-tuned. This is common across all the tools that you see here where the software could be different for the country compared to what is shown

in the booth. Similarly, for ADAS, the software will change, but the frame is a common system.

Of course, all the OEMs will be looking at local sourcing and who will be able to support them locally. This is especially important in a market especially in which price and immediate support is a concern. In India especially, there are very few players who actually do this. Autel being one of the world's leading suppliers of this technology for other markets, we believe we are the first to offer such a solution to OEMs domestically.

Your solution would be ideal for aftersales businesses that have the space and financial strength. However, when it comes to the independent aftermarket, especially a small garage who wants to get into calibration, [will they not] have challenges in this regard, including training?

So, we have four different models for ADAS hardware, among them a midrange model called the IA600, which we have displayed here. This model is portable and can be disassembled into about five parts, and is economical, user friendly, convenient, which we believe is ideal for the Indian market, especially for the OEM aftersales network. The target boards that are to be mounted on the frame, along with other attachments, all form the key components required for calibration. There are more attachments that will go on the frame depending on the vehicle you are going to recalibrate.

We provide these individualized target boards along with [a] modular frame as kits to the OEMs. The frame has to be modular because if there is a change in supplier, they [will not] need to change the whole frame. This modular service saves time and money, especially over the manual approach to recalibrate.

When it comes to training, we have a dedicated training academy in India, which is in Ahmedabad, Gujarat. We are planning on starting training sessions there for our ADAS customers. There are already 50 to 60 students every month who are being trained there when they buy any tool from us, where we offer a free three-day training with accommodation and everything else. For ADAS, we could pursue something similar to introduce them to the concept especially.

[What is] the learning curve like when it comes to knowing about calibration of ADAS for a technician, and what method do you think is going to become popular?

ADAS calibration is very similar to wheel alignment and there is no one way of doing it so. At Autel, our instructions are very detailed, providing a video and graphical representation of the process. The technician really [does not] need any prior experience, as long as they are physically able to work on the system. They will just have to follow instructions on the screen, which is possibly even easier than wheel alignment. Once the technicians set the tool, the process can be completed in about 10 minutes, especially with the machine we have here. We also have a high-end version of the same tool, which takes about three minutes.

In terms of the types of ADAS recalibration, in dynamic recalibration, a device will be attached to the vehicle and the driver would operate the vehicle based on the instructions given. [However,] dynamic recalibration definitely has challenges especially in terms of weather conditions, road conditions, lane markings and even driver safety. It also involves time investment by workshops to delegate a driver [or] technician to perform the recalibration outside the premises, leading to a possible safety risk.

Some OEMs [such as] Tesla enable drivers to download and install the service software recalibration package into their vehicles, which automatically recalibrates the cameras [after] driving a certain

distance.

However, with all this in mind, we believe the trend is changing to static as it is a much quicker and safer procedure.

You also provide a wide range of diagnostics and tools for BEVs. Are you bringing any of those for the Indian aftermarket?

We already have a wide range of BEV diagnostic tools and software, which we launched about a year ago. In the event a customer's BEV dies on the road, with our diagnostic tools, the technician would be able to communicate with the vehicle and know what exactly is wrong, especially in the high-voltage circuitry and components.

Our existing tools and diagnostic equipment can be upgraded with high-voltage BEV kits and additional software to accomplish this service. Some of our models that were launched in 2022 are already capable of handling the high-voltage system.

In the future, we can always convert old device customers to cater to new technology vehicles.

(As told to **Viroop Narla**, Senior Research Analyst, Automotive Supply Chain, Technology and Aftermarket,
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