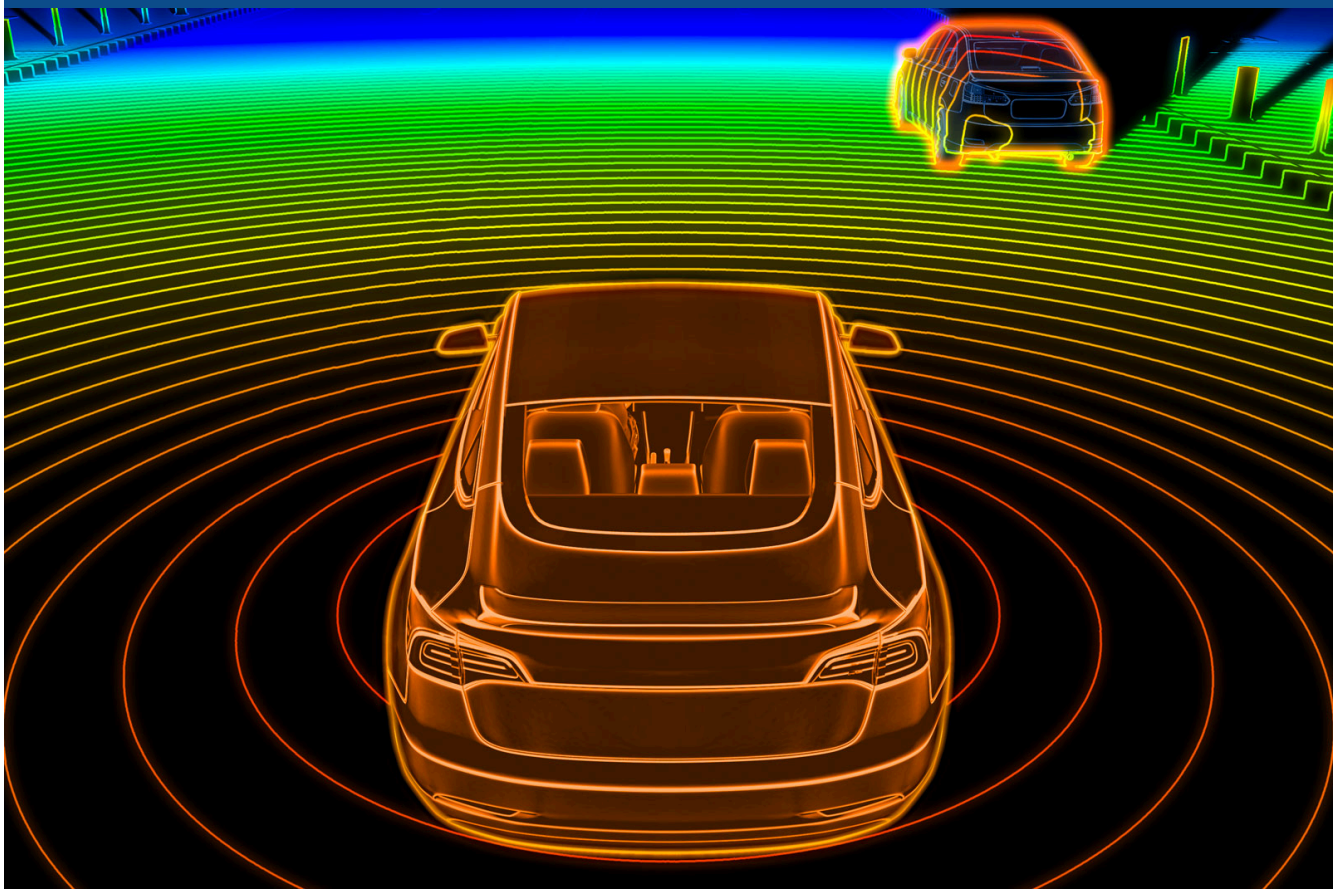
DVN

Sensing & Applications

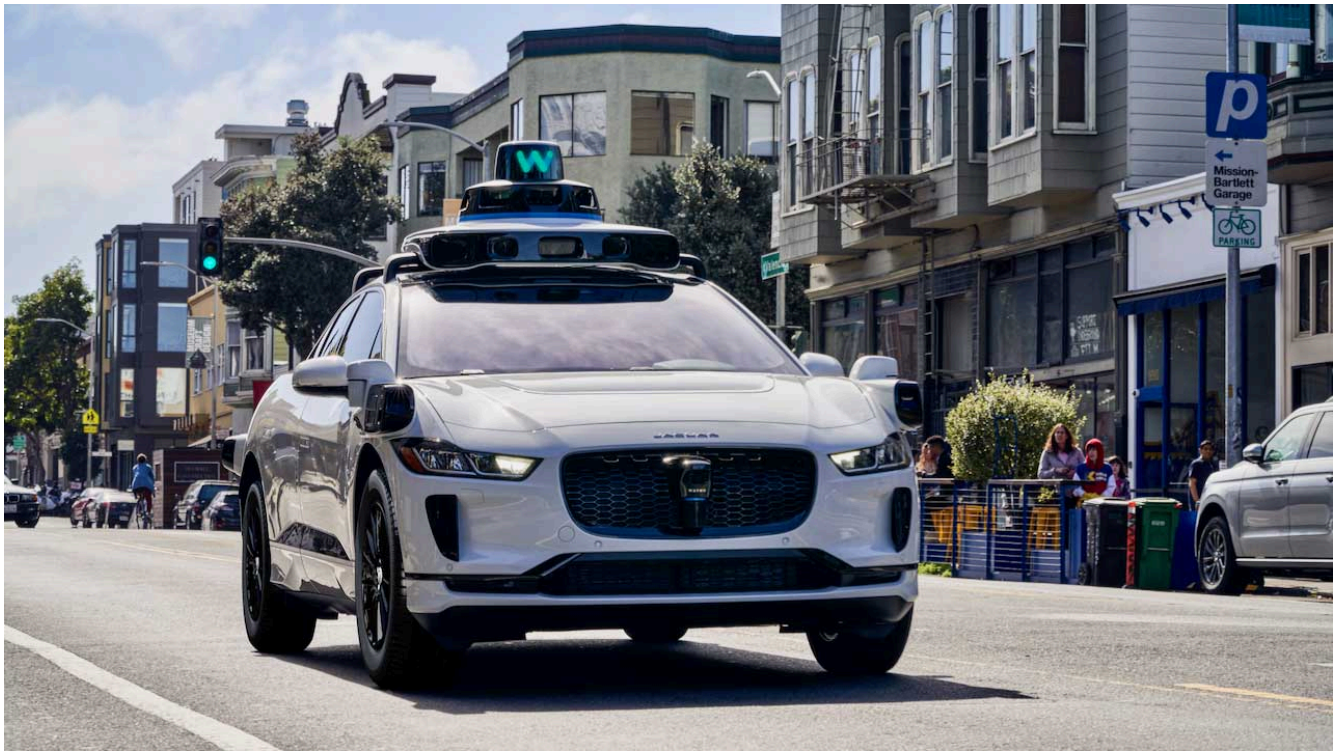
Monthly newsletter #5.2

MAY 14, 2025



EDITORIAL

DVN ADAS/AD Applications Newsletter May 2025



We held our AEB Workshop in Detroit on April 9th/10th. Around 85 people from OEMs, Tier1's and technology suppliers attended. There is a brief summary in the newsletter, below, and a separate special report that we published on the DVN website for members that covers this in more detail.

Waymo has now driven more than 50M driverless miles and its cars have been involved in roughly 60 crashes (since 2020), but most of them were the fault of other vehicles. The most serious crashes involved other drivers speeding and hitting the cars while stopped at red lights. Since last July, Waymo was involved in roughly 38 crashes, of which 3 may have been the fault of the Waymo car – in one case the Waymo hit a plastic crate, pushing it into the other lane causing a motorcycle to crash and in the other cases vehicles moved into Waymo's travel lane causing it to brake but not in time to avoid hitting the vehicle. Overall, the reduction in airbag deployed crashes was around 80% compared to human drivers and insurance claims are 90% lower. Robotaxis will be involved in crashes, but the industry needs to publish data showing these sorts of statistics to inspire consumer confidence.

NHSTA rolled out a new AV Framework at the end of April which replaces the current patchwork of state laws aimed to make it easier to deploy robotaxis on public roads and streamlines crash reporting requirements with the changes taking effect on June 16th. These changes should accelerate L3 and Robotaxi deployments in the US market.

DVN will be co-hosting the EAC conference in China with Enmore in June which will include tracks on ADAS and Lidar. More details are on the website. If you are interested to speak and exhibit at our November conference in Germany, please reach out as soon as possible as we expect this to be a sold out event

Thank you,

Martin Booth

DVN USA Representative
mbooth@drivingvisionnews.com

SPECIAL REPORT

Summary of DVN AEB Workshop, Novi, MI

DVN held a AEB Workshop in Novi Michigan, April 9/10th and we had more than 80 industry attendees from OEMs, Tier1's and technology suppliers.

We also had live demos from Teledyne/Flir, Compal/Obsidian, Adasky, Forvia/Hella. Magna and Valeo showing next generation sensor performance. Eighteen speakers presented different solutions to the FMVSS 127 challenge from headlight improvements to image sensor advances, radar, AI software, thermal cameras, lidar and simulation.

Tests done on existing vehicles show that meeting the new standard is going to be challenging, especially for the nighttime and higher speed tests. New car models can be designed around improved headlight platforms and additional sensor architectures. For existing models, OEMs are going to try and squeeze more performance from the existing front camera architecture through software algorithm updates, but this will be a risky strategy. Camera sensor supplies like Omnivision are improving sensor low-light and dynamic range performance which might also be needed to pass the new tests.

OEMs should also consider driver experience factors like reducing false positives and smoother braking, beyond just meeting the basic standard.

Starting from a clean sheet of paper gives OEMs more options including radar based solutions that will require advanced AI perception software. Forvia-Hella, Perciv.ai and Zendar spoke about improvements possible with software enhancements. SABIC also spoke about the importances of plastics design to radar performance.

IR cameras clearly offer a compelling night-time solution that works well in other adverse lighting conditions. There were impressive demos from Teledyne-Flir, Compal and Adasky and Obsidian spoke about new manufacturing techniques to lower the cost of thermal sensors.

Lidar will also be increasingly deployed for L2+ and L3 driving and offers a good solution for AEB as well. Next generation technologies like FMCW reduce processing workload and can map stationary objects like bumps, potholes and debris on the road better than many of the other sensors.

Clearly there is no single ideal solution. Software improvements to existing solutions will be needed to keep costs down, however, as other more advanced ADAS features come to next generation cars, sensors such as radar, thermal and even lidar will play important roles. Drivers will likely look beyond just meeting the test requirements and consider the overall driving experience which will be better met with sensor redundancy and sensors that can also operate in adverse weather conditions.

Simulation will play an increasingly critical role in development of ADAS software as exponentially more scenario testing becomes impossible in the physical world. End-of-line calibration solutions and re-calibration after accident repair or even during routine service are also factors OEMs should consider as part of the solution.

A copy of the full report is available separately on the DVN website.

INTERVIEW

Interview with Greg McGuire, Managing Director, Mcity

During our trip to Detroit, we made a visit to the University of Michigan's Mcity facility and spent some time with Greg McGuire, Managing Director of Mcity. Mcity is a public/private partnership between the University, Michigan DOT and commercial partners that started about a decade ago to test V2X technology. It has since branched to research and testing on various autonomous projects and is currently focused on how to close the gap between simulation and the real-world.

Mcity is part of the University of Michigan's Transportation Institute and has around 25 scientists plus support staff. Part of the facility is an 18 acre test track area and they have worked with Nvidia to create a digital twin of the facility and open source tools that allow OEMs and researchers to run their AV simulations on the digital twin environment.

Greg told us that one of the big issues in the US market with AV adoption is that there is no framework for testing and certifying L3/L4 driving. OEMs are currently self-certifying, and most are not very transparent about how they have tested and what the criteria to certify are. There is a need for some organization like SAE or Mcity to bring the industry together to agree on such frameworks and tests and then have a body like TuV supervise and certify such tests. China and the EU are likely to be ahead in regulating this.

Simulation tools have become key to developing AV software, rather than collect data from millions of miles driven in the real world. In the simulated environment you can focus on crash and near miss scenarios, add challenging weather conditions and other corner cases that lead to accidents. The simulation challenge however is how close this correlates to the real world. If you change an end-end AI driving model everything has to be re-tested which is not possible in the real-world due to time constraints, so an accurate simulator becomes key.

Mcity's digital twin has been developed with Nvidia and is available as an open source version and has been used by six or seven simulation vendors. Realistic modelling of sensors is key and Nvidia provides such models from its partners. Terra SIM is another open source model that allows the environment to simulate other driver (bad) behavior and create safety critical events that can be tested in the digital twin environment.

Radar has been the hardest sensor to simulate, however, this is getting easier with HD Radar.

The test facility is also used by a lot of start-ups, some of which are funded by the State Office of Future Mobility and Electrification. Mcity performed a safety assessment for May Mobility and the DOT before a trial shuttle service was rolled out in the City of Detroit. There are many other projects, funded by NSF, DARPA and others that are on-going.

The Mcity facility is a useful resource for OEMs, Tier1's, sensor and software vendors. Most of the research is focused on what is coming 5 years down the pipe and Greg encourages other industry players to join the consortium. You can contact Greg and Mcity at mcguireg@umich.edu.

ADAS/AD APPLICATIONS - BUSINESS NEWSBITES

ADAS/AD Business and Applications – News Bites

Korea Provides Tariff Relief For Autonomous Driving

As part of its emergency support measures for its auto industry the Korean government set a goal to designate autonomous driving technology as a national strategic technology so that companies investing in that field and doing research and development on that end can receive more tax credits. The government plans to draft a roadmap for the country's autonomous driving technology in the first half of this year, targeting 2027 to commercialize level 4 autonomous driving vehicles.

Nissan next-generation ProPilot to use Wayve

Nissan will use Wayve AI driver software with Lidar for its next generation ProPILOT technology. Nissan's current system is a hands-on driver assist system with ACC and LKA technology that can also be linked with the navigation system to predict the road ahead. ProPilot Assist currently costs $3,200 as part of a tech package (for the2025 Nissan Rogue). The new system is set to launch in 2027 and will still be an L2 system.

Waymo Kicks off Testing in Japan
Waymo held a launch event in Japan as it plans to start testing with Nihon Kotsu (Tokyo's largest taxi company), This is Waymo's first operation on public roads outside of the US, With an aging population and shortage of drivers, Japan is a large potential market for robotaxi service. Separately, Waymo also announced a partnership with Waymo to explore collaboration on autonomous driving technologies that includes plans to integrate Waymo technology into Toyota vehicles. Waymo has integrated its technology into Stellantis, Jaguar, Hyundai and Zeekr vehicles and it makes sense to also work with a Japanese OEM as it rolls out service in Japan.

iMotion wins new program for automated parking system
iMotion won a new production program with a volume China OEM for its automated parking system. iMotion. Was founded in 2016 a and makes iintelligent front camera modules and domain controllers. iMotion has been used in many Chery, Geely and Zeekr models as well as by Volvo and Polestar.

Horizon Robotics and VW expand collaboration
VW will use Horizon's SuperDrive solution in China. VW had already stared to develop hardware with Horizon's Journey 6 SoC for an L2+ system scheduled for production in 2026. The SuperDrive system uses the Journey 6P chip that provides more performance for advanced features, More OEMs will use China developed technologies in China as the political environment keeps shifting to favor domestic supply.

Hyundai launches its Pleos software brand
Hyundai launched its Pleos software brand as it focuses on software defined vehicles and stated a goal to deploy L2+ software on all of its vehicles by 2027. Pleos is a proprietary OS that will also form the basis of the 2026 infotainment system and will connect to the cloud for software updates. The platform also allows developers to create in-vehicle apps.

China's Ministry of Industry and IT rolls out new rules on Autonomous Driving

Following the recent Xiaomei Crash, China's MIIT has published new regulations for automakers that restrict how OEMs can develop test and market autonomous driving features.

No public "beta testing' is allowed without official approval. Marketing terms including autonomous driving and intelligent driving are banned. Remote parking, summoning and valet modes are disallowed.

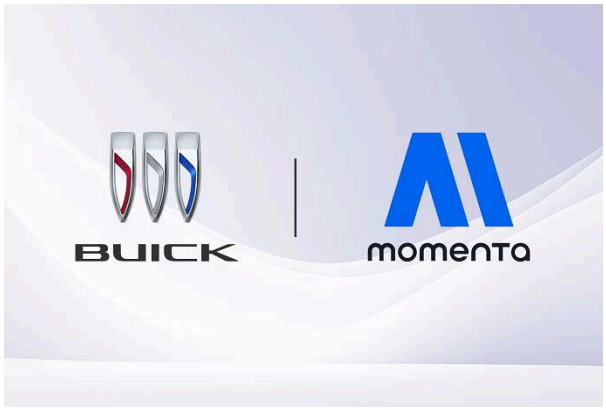
Driver monitoring must make sure that if the driver's hands are off the wheel for more than 60 seconds the car must slow down or stop.

Frequent OTA updates are discouraged. Emergency updates require a recall process and approval from the State regulator. Any other new algorithm updates must undergo extensive testing before being deployed.

China has been able to create and change regulations much faster than countries like the US where such policies often get tied up in government committees and/or lawsuits for years. This has actually allowed China to speed up development.

QCraft and Luxshare-ICT to co-develop smart driving solutions

Qcraft is a software developer that has already delivered 600K NOA systems is teaming up with Luxshare-ICT to deliver integrated solutions. Luxshare-ICT is ICT a China Fortune 500 co. and Apple supplier who also has expertise is domain controllers. They have previously worked with China OEMs including BYD and Nio.



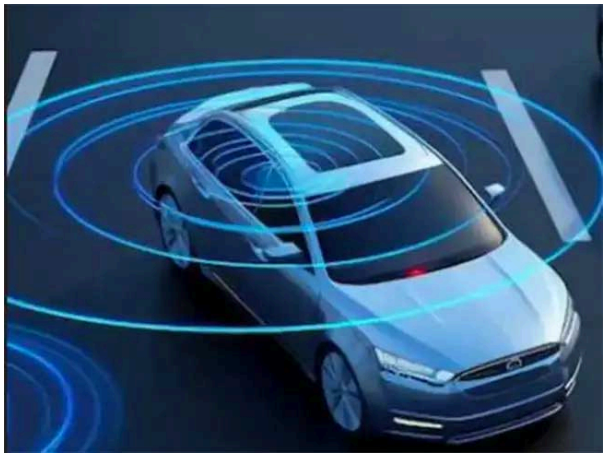
GM/SAIC and VW partner with Momenta for urban pilot.

GM's Buick division is working with Momenta on urban pilot solutions. The first Buick/Momenta equipped car is due to be launched in 2H '25. VW/SAIC also announced a similar partnership with Momenta.

Momenta announced extended strategic partnerships with other major brands at the Shanghai auto show including Toyota, Honda and IM Motors.

We contimnue to see an increasing number of not just domestic but also multinational OEMs in China adopt local software solutions.

Baidu Updates Map to support Intelligent Driving
Baidu updated its map software to support auto-pilot systems with 12 million KM of roads mapped and daily static and live real-time updates. Baidu is partnering with BYD and Leapmotor to integrated the capabilities into their vehicles. Baidu already had advanced features such as bus lane reminders, camera reminders and traffic signal timing and is already used by many Chinese OEMs and others such as Tesla.



Wayve expanding autonomous testing to Japan
After raising more than $1B in a series C round last year, Wayve continues to expand testing to more regions. Wayve's Yokohama test center will all training on Japan's complex road environments and deepen collaboration with local OEMs.

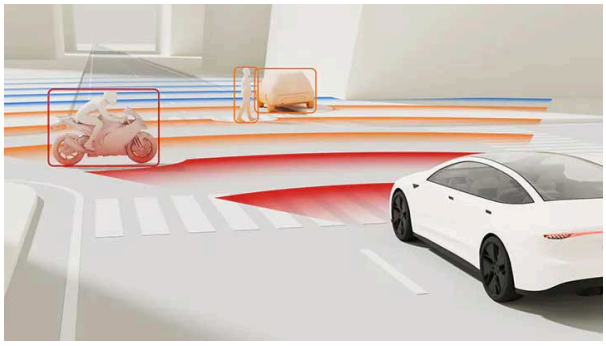
Inyo Mobility to use Aeva Lidar
Inyo Mobioity, a German Robo Shuttle company has selected Aeva Lidar for its tobo shuttles. Inyo is focused on last mile solutions. Inyo has performed demonstration rides at Paderborn Airport in Germany, but as a start-up may struggle to compete with some of the larger vendors like ZF in this space.

VW and Uber Partnership
Uber and VW will bring the ID.Buzz autonomous shuttles to Los Angeles in 2026 with plans for thousands of autonomous vehicles across the US by the 2030s. Uber is partnering with multiple robotaxi providers as ride share services transition to autonomy and Uber aims to remain the leading ride hailing service in the US and Europe.

Glydways Announces Autononomous Shuttle Project at San Jose Airport
San Jose is planning an autonomous shuttle connector service from the airport to the Diridon railway station. Glydways solution involves a network of personal shuttles or pods, that would operate on the predefined route. They also have projects in Atlanta and Conta Costa County in the bay area. An increasing number of US cities are planning roll outs of similar autonomous shuttle projects as alternatives to busses and other public transit options, with a goal of cleaner, cheaper and more flexible operations. West Palm Beach also announced a recent project with Guident.

DiDi and GAC Showcase L4 Robotaxi
DiDi and GAC showcased a new L4 robotaxi at Auto Shanghai that will start pilot testing in Guangzhou and Bejing in 2026. The car is purpose built for L4 and has 33 sensors including multiple Hesai lidars. The China robotaxi market is projected to reach more than $55B by 2030 and many OEMs are racing to capture a slice of that.

DeepRoute.ai and Qualcomm Collaboration
DeepRoute.ai will use Qualcomm Snapdragon Ride for future lidar and vision only based ADAS systems. This gives automakers another alternative to Nvidia and Horizon Robotics hardware for NOA and other functions. Qualcomm has done well with US and EU OEMs and this partnership puts them in a stronger position in China.



NXP Introduces more powerful radar processing
NXP introduced a new imaging radar processor (S32R47) based on 16nm FinFET technology delivering up to 2X the performance of the previous generation solution as well as lower cost and power. The new SoC can process three times more antenna channels in real-time versus today's production solutions enabling high resolution 4D imaging radar for next generation L2+ to L4 systems.