MOBILITY **INDUSTRY** INSIGHT

Advanced Driver-Assistance Systems (ADAS)

February | 2020

BULLETIN

FutureBridge

WHAT'S INSIDE!

Our February 2020 edition highlights several funding activities received by start-ups like:

- **Pony.ai** receiving funding from Toyota to develop autonomous vehicle technology
- **Outrider** raising funding to develop autonomous truck technology
- **IVEX** to develop ADAS safety products

The industry also witnessed several collaborative business models from players like:

- **Daimler Trucks** & Torc Robotics for autonomous truck testing
- FCA & **AutoX** collaborating to develop self-driving robotaxi vehicles

Read our spotlight about **Qualcomm** launching a palm-sized autonomous driving computer

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-Expert Says-

"Over the next five years, we are planning further investments in the high-triple-digit million euro range in the areas of assisted and automated driving. The capacity expansion in New Braunfels is part of our growth strategy."

- Frank Jourdan, Continental's board member for autonomous mobility & safety

"Safety is our highest priority. By expanding our testing to new routes in the U.S., we are able to learn more, work with various partners, and apply our advanced testing methods to new environments. These learnings help us to achieve our goal of safe and reliable highly automated driving, delivering value to our customers and society"

- Peter Vaughan Schmidt, Head of Autonomous Technology, Daimler Trucks

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16 Feb 2020

Qualcomm launches palm-sized autonomous driving computer

The company claims its Snapdragon Ride processor provides Level 1 to Level 5 autonomy

- The system gathers information from the GNSS, CAN and other systems and combines all the data with the data collected directly from the car
- The system uses data on the map to plan the route, locations, throttle, braking etc
- The processor doesn't require cooling system to prevent overheating
- It aims to have it on road by 2023

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07 Feb 2020

Continental to build $110M plant in Texas to manufacture ADAS products

The plant will produce radar systems and is expected to provide with state-of-the art production facility for high-tech products

- The capacity expansion is part of company's growth strategy
- It will invest $110M in the facility over the next three years
- Company aims to break ground on the new plant in mid-2020 and will start production in 2021
- Its existing plant in Seguin Texas which produces radar sensors, will focus on powertrain components. The New Braunfels plant will take over ADAS production

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24 Feb 2020

Daimler Trucks and Torc Robotics expand autonomous testing

It will soon expand testing of automated truck technology to new public routes in the U.S

- Testing aims to collect data from real-world traffic scenarios. The extensive testing is part of companies comprehensive validation approach to bring safe, highly automated trucks to the road
- With Active Drive Assist in Mercedes-Benz Actros and Fuso Super Great, and Detroit Assurance 5.0 with Active Lane Assist in Freightliner Cascadia, Daimler Trucks has brought partially automated driving features into series production

Read this story ➡

-Expert Says-

"Outrider is introducing the transformational technology required for large logistics-dependent enterprises to keep pace"

- 8VC Founding Partner Jake Medwell

"We are therefore pleased with the entry of several investors who, like IVEX, recognize the importance of accelerating the roll-out within a sector that is on the eve of a series of important developments, specifically aimed at reducing the number of road casualties through the use of new technologies"

- Mario Torres, CEO of IVEX

"It will enable us to make the commercialization of autonomous-driving vehicles faster. We will put more money into building up the fleet "

- James Peng, CEO of Pony.ai

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19 Feb 2020

Outrider raises $53M to develop autonomous truck technology

Outrider has raised seed funding led by NEA and series A funding led by 8VC

- Company doesn't own or operate vehicles itself, instead it provides **SaaS solution** for its customers who own fully and semi-autonomous freight and transportation fleets

- As per company its software solution is capable of upto level 4 automated driving

- Its stack handles autonomous distribution yard operations at logistics hubs

- The goal is to automate vehicle movement in freight hubs to reduce costs and improve safety

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19 Feb 2020

IVEX to accelerate roll-out of safety co-pilot and safety assessment tool for autonomous cars

With this funding, it aims to accelerate the roll-out of its two marketable products:-

- **Safety Co-Pilot** : It is used to access every decision made by the self-driving software, against the car safety requirements

- **Safety Assessment Tool** – It is a tool that car manufacturers use during the development of autonomous cars to accelerate testing and validation. The tool generates a thorough safety report as an assessment

- It aims to reduce the number of road causalities to zero by 2030

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23 Feb 2020

Pony.ai raises $400M to develop autonomous vehicle technology

Toyota invested $400M in Pony.ai to strengthen its ties with the Chinese provider of driverless car systems

- The startup has developed a perception module which combines the strengths of heuristic approach and deep learning models as well as sensor-fusion technology

- The new funding will benefit the startup's robotaxi operations and technology development in the future

- The firm aims to reach Level 4 or fully autonomous standards

- In 2019, both companies had started a pilot program to test self-driving vehicles in China

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-Expert Says-

"Nissan's Intelligent Mobility vision is to develop autonomous drive technologies for use in all of our cars in any area of the world. The door is now open to build on this successful UK research project, as we move towards a future which is more autonomous, more electric, and more connected."

- David Moss, Senior VP R&D, Nissan Europe

"Achieving completely driverless operation needs a very reliable vehicle platform with full redundancy of the vehicle's drive-by-wire system. This level of redundancy is still new and rare in the auto industry. The Chrysler Pacifica platform has proven trustworthy for driverless deployment"

- Jianxiong Xiao, AutoX CEO

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05 Feb 2020

Nissan Leaf breaks UK record for the longest self-driving car journey

The Nissan Leaf fitted with GPS, radar, LiDAR laser measurement expertise and cameras completed a 230-mile journey across the UK's public roads. The journey named 'GrandDrive' relied on advanced positioning and autonomous technology to assess its surroundings and make decisions about how to navigate roads and obstacles

Analyst Comment: Nissan has carried out initial trials for self-driving cars in London in 2017 at a speed of 50 mph. It is an incredible achievement for Nissan and the HumanDrive consortium to safely complete the longest autonomous drive in Britain. We hope to see similar consortiums in the future to promote self-driving cars

Other companies like FiveAI, Ford Mondeos, Oxbotica are already working on passenger trials of autonomous car sharing services in London

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21 Feb 2020

FCA partners with AutoX for self-driving robotaxi vehicles

AutoX has integrated its AutoX AI Driver onto FCA Chrysler Pacifica and is launching this new platform for self-driving robotaxi deployment in the Chinese market, including Shenzhen and Shanghai, in the first half of 2020. A Chrysler Pacifica was recently shown at CES 2020 with new flat rooftop design, integrating an array of sensors including solid-state LiDAR sensors, radars, cameras, GPS, IMU, and also the AutoX XCU

Analyst Comment: In December 2019 AutoX, which has recently received $100 funding from Dongfeng Motor group and Alibaba, applied for driver-less test permit to test self-driving vehicles in California

FCA has a partnership with Google Waymo and Aurora for its self-driving vehicle future ambitions. So this partnership with AutoX might help FCA to deepen its ties to China, which has the largest auto market in the world

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SPOTLIGHT

QUALCOMM

Qualcomm launches palm-sized AD computer

Analyst Comment

➢ With ADAS sensor content in vehicles increasing to support Level 2, but most importantly Level 3 and 4 cruising, safety and parking features, the "brain" of the Automated Driving System presents significant opportunities for suppliers

➢ Qualcomm aims to compete in AD computing platforms with a scalable solution which is designed for ASIL-D systems and leverage their partnership with GM to build a strong position in the growing ADAS & AD market

Read this story ➡

ADAS
Qualcomm launches palm-sized autonomous driving computer

Features of Processor

➢ Snapdragon Ride processor supports Level 1 to Level 5 autonomy
➢ No need of any cooling system to prevent overheating
➢ Consumes very little electricity and generate low heat

The vehicle will have eight cameras and six radars at key positions like side-view mirrors, hood, trunk etc. Using Snapdragon Ride's powerful processor the system predicts what other cars might do. It maps out all the possible trajectories of the vehicles that are within the camera range

How it works

➢ The system gathers information from the GNSS, CAN and other systems and combines with the data collected directly from the car
➢ The system uses all data on the map to plan the route, locations, throttling, braking etc

Future Plans of Snapdragon Ride Processor

• To create a platform that mimics the thinking of human driver combined with the safety and security of a computer
• General Motors already planning to use Snapdragon Ride for more advanced next generation ADAS by 2023
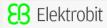
Other companies working with Qualcomm's Snapdragon Ride technology

BlackBerry QNX

Snapdragon Ride incorporates Blackberry's QNX operating system for safe, secure software for autonomous driving applications >>

ON Semiconductor

ON Semiconductor to have its ADAS family of sensors integrated into Snapdragon Ride >>

Elektrobit

Elecktrobit is working to integrate its EB corbos software with Snapdragon Ride >>

* Not very exhaustive list of collaborations

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