MOBILITY INDUSTRY INSIDER

Bulletin | Dec 2020

ADAS

Robotaxis and new features for AMoD & autonomous deliveries dominate activities in December

ADAS & AD in passenger vehicles

What's inside ?

- Watch out for robo-taxis by Aurora, Zoox for future ride-hailing services and autonomous deliveries
- Subscription business models for higher levels of autonomy
- New entrants: Apple
- State-of-the art vision sensors

Uber Aurora ZOOX TESLA MOBILEYE dSPACE LeddarTech

ADAS & AD in commercial vehicles & motorbikes

What's inside ?

- Covid-19 has expedited the public need for contactless delivery services
- Advanced autonomous trucks, fast reliable connectivity and enhance safety systems at mine operations

Walmart Gatik pony.ai nuro Ike Epiroc COMBITECH ABB

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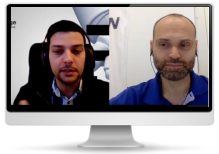
INSIDER TV



RIDEVISION

FutureBridge

THEMES AND KEY TAKEAWAYS IN Bulletin

01 **Major developments in ADAS & AD in passenger vehicles**

02 **Spotlight: Ride Vision's technology in motorcycle safety and the future of ARAS**

03 **Major developments in ADAS & AD in commercial vehicles**

Do you like our coverage? Share your thoughts

Key topics covered in this scope

Major developments in ADAS & AD in passenger vehicles

- Uber sells its self-driving unit Advanced Technologies Group (ATG) to Aurora
- Amazon's Zoox unveils robo-taxi for future ride-hailing service
- Tesla Will Release Full Self Driving Car Subscription Service In 2021
- Apple Project Titan said to target self-driving cars production by 2024
- dSPACE and LeddarTech unite to develop LiDAR for self-driving cars

Interview with RideVision's CEO Uri Lavi

- Aftermarket camera-based collision assistance technology for motorbikes and mobility services

Major developments in ADAS & AD in commercial vehicles

- Walmart will use fully driverless trucks to make deliveries in 2021
- Pony.ai gets green light to test self-driving trucks in Guangzhou
- California DMV grants permit to Nuro to charge for autonomous deliveries
- Epiroc and Combitech continue to break new ground in mine automation

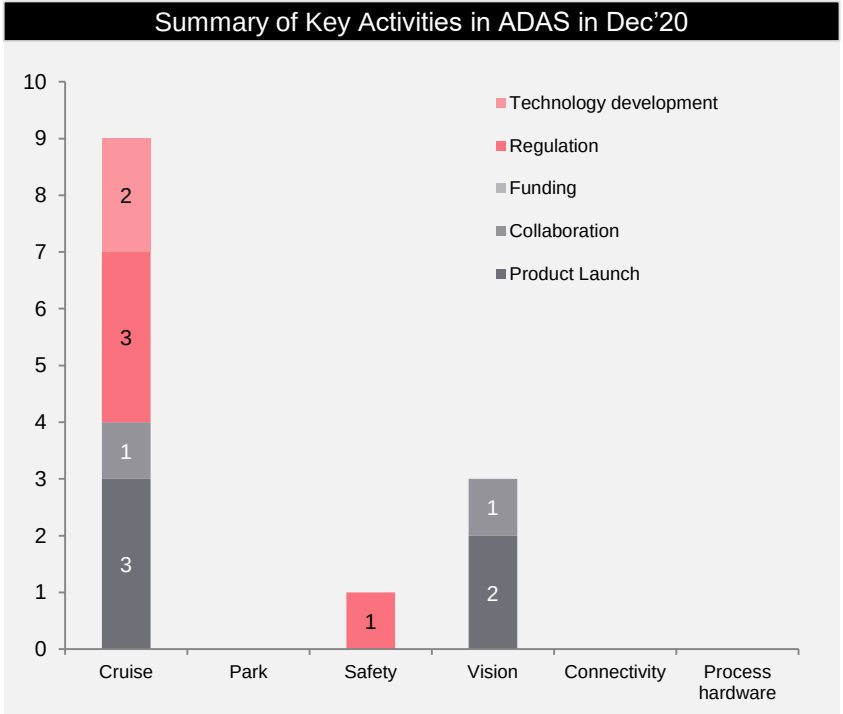
Key Takeaways

- Fully autonomous vehicle for ride-hailing services & trucking is the next anticipated thing to watch out for. Today, testing is carried out in geo-fence areas with mass adoption coming later
- Players are increasingly focusing on monetization of higher autonomy solutions by leveraging subscription models and new products
- Collaborative business models & new product development is gaining traction among players to offer state-of-the art vision sensors

RIDEVISION

- The company develops a platform which fits in any bike, whether its OEM or aftermarket and that platform can grow with multiple features as we go. It starts with collision avoidance and has much more potential
- Autonomous driving in commercial vehicles is getting serious attention. Players are carrying out driverless truck tests
- Covid-19 has expedited the public need for contactless delivery services, regulations fuel to accelerate it
- Players are focused on deploying advanced autonomous trucks, fast reliable connectivity and enhance safety systems at mine operations

Our Industrial Development Trackers shows that among 13 key industry developments in December cruise, regulatory announcements, and new product developments dominated ADAS



Cruise	
14-Dec-20	Amazon's Zoox unveils robo-taxi for future ride-hailing service
10-Dec-20	General Motor's Cruise to Deploy Fully Driverless Cars in San Francisco
15-Dec-20	Walmart expands self-driving program with fully driverless vehicles
03-Dec-20	AutoX becomes China's first to remove safety drivers from robotaxis
21-Dec-20	Tesla Will Release Full Self Driving Car Subscription Service In 2021
22-Dec-20	Apple Project Titan said to target self-driving cars production by 2024

Vision	
15-Dec-20	Mobileye looks to build its own LiDAR to drive down self-driving costs
10-Dec-20	dSPACE and LeddarTech unite to develop LiDAR for self-driving cars
22-Dec-20	Smart 4D image radar to debut for self-driving cars

Safety	
18-Dec-20	UK says drivers in self-driving cars shouldn't be liable for accidents

01

Major developments in autonomous passenger vehicles

Players in our coverage

Uber, ZOOX, Apple, dSPACE, Aurora, Tesla, Mobileye, LeddarTech

What do we see happening

- Countries like China & Japan are encouraging local companies to build vehicles with partial self-driving technology
- Initiatives by California Public Utilities Commission (CPUC) and Waymo are exploring the possibility of the driverless vehicles in the near future
- Players are focusing to build next-generation autonomous driving architecture along with 5G connectivity capabilities
- Collaborative business models & new product development is gaining traction among players to offer state-of-the art vision sensors

Rise of robo-taxis: Fully autonomous vehicles for future ride-hailing services

Players are working to deliver the self-driving vehicles safely, quickly in geo-fence areas with mass adoption coming later

07-Dec-2020

For upcoming roll-out of robo-taxis by 2022-2024 please refer H1'20 TDD – ADAS >>

14-Dec-2020

Uber sells its self-driving unit , Advanced Technologies Group (ATG) to Aurora

Uber Aurora

Disruptiveness : High
Feasibility : Moderate
Timeframe : Near Future
Focus areas : AMoD

- Amazon-backed Aurora, the self-driving car company, has announced that it is acquiring Uber Technologies Inc.'s self-driving unit, Advanced Technologies Group (ATG)
- Aurora says ATG will strengthen and accelerate the first 'Aurora Driver' autonomous applications for heavy-duty trucks while allowing the company to accelerate work on light-vehicle products

Analyst Comment

With the addition of ATG, Aurora aims to position itself to deliver the self-driving products safely, quickly and broadly. Also, Aurora unveiled a strategic partnership with Uber that connects its technology to the global ride-hailing platform and strengthens its position to deliver the Aurora Driver broadly. The relationship with Uber puts it a unique position to be a leading player in both autonomous trucking and passenger mobility. The move doesn't mean Uber is abandoning self-driving cars. The company is investing $400 million in Aurora and is forming a technology partnership with Uber. ATG had been a long-term play for Uber, but the unit brought high costs and safety challenges. The deal is expected to close in the first quarter of 2021

Read this story

Amazon's Zoox unveils robo-taxi for future ride-hailing service

ZOOX

Disruptiveness : High
Feasibility : Moderate
Timeframe : Near future
Focus areas : AMoD

- Amazon-owned autonomous vehicle firm Zoox has unveiled an electric, autonomous robotaxi that is capable of moving at up to 75 mph (about 120 kph), with four people seated in it
- Zoox is powered by a 133kWh battery, allowing it to operate for up to 16 hours continuously on a single charge
- The vehicle features a four-seat, face-to-face symmetrical seating configuration that eliminates the steering wheel and bench seating seen in conventional car designs

Analyst Comment

The company plans to put it into circulation exclusively for public and private passenger transport, making it a potential competition for companies in the sector such as Uber and DiDi. To commercialize the technology, Zoox plans to launch an app-based ride-hailing service in cities like San Francisco and Las Vegas. The company claims that it can manually operate the vehicles remotely and communicate with passengers in real-time. To begin with, it will work in predefined areas with the help of a purpose-built geometric and semantic map. Its prediction system uses machine learning to anticipate what people and vehicles will do next. On each corner a "sensor pod" has a 270 degree field of vision, enabling the car to see more than 360 degrees of terrain at once. The unveiling of a production car marks a significant step for a company since 2014.

Read this story

Players are increasingly focusing on higher autonomy solutions by bringing subscription models and new products

Tesla plans to release subscription model for its full self-driving feature, while Apple announces next-generation self-driving car

21-Dec-2020

For commercialization roadmap for autonomous vehicles by different OEMs please refer H1'20 TDD – ADAS >>

14-Dec-2020

Tesla Will Release Full Self Driving Car Subscription Service In 2021

Disruptiveness : High
Feasibility : Moderate
Timeframe : Near Future
Focus areas : Autonomous vehicle

- Elon Musk has confirmed on Twitter that the company will deploy a fully self-driving car service on a monthly subscription basis in 2021
- The "Full Self-Driving Capability" system, which does not give cars full autonomy, is currently a $10,000 add-on
- Recently, Tesla has been making more moves into software-as-a-service and is already looking for a wide release of the self-driving package in the U.S

Analyst Comment

With the release of FSD beta, Tesla has taken some concrete steps towards autonomy, but there is still a lot of work to be done. It makes FSD's $10,000 price more of an investment for the system's capabilities in the future. It is no surprise some Tesla customers who lease their vehicles are hesitant to pay the full price of FSD. A subscription service for the Full Self-Driving system, however, makes a lot of practical sense, since the advanced driver-assist features would only require payment when they are needed. It will be interesting to watch how much a subscription to Full Self-Driving would cost. Musk even intends to be working on a plan allowing people to transfer the ownership of the self-driving package to another owner.

Read this story

Apple Project Titan said to target self-driving cars production by 2024

Disruptiveness : High
Feasibility : Moderate
Timeframe : Near Future
Focus areas : Autonomous vehicle

- Apple is planning to build a self-driving car and could launch it in the market in 2024
- It could produce a passenger car with its own battery technology. Apple had reported started working on Project Titan, which is the name given to its auto venture
- It would introduce a battery that could 'radically' reduce the cost of the batteries and increase the vehicle's range

Analyst Comment

The car could be Apple's 'next star product' and aims to offer better integration of hardware, software and services than potential competitors in the automotive market, with Apple-designed chips manufactured by TSMC. Apple may work with a manufacturing partner to produce the vehicles, and is developing next level battery technology to extend range and efficiency. Apple plans to use a unique "mono cell" design means more active material can be packed inside the battery, giving the car a potentially longer range. Since early 2017, Apple has been testing self-driving vehicles on public roads in California, using several 2015 Lexus RX450h SUVs leased from Hertz. Apple has several of the Lexus SUVs outfitted with a range of different sensors running its self-driving software.

Read this story

Technological advancements in vision sensors is accelerating to offer production ready autonomous driving hardware

Collaborative business models & new product development is gaining traction among players to offer state-of-the art vision sensors

15-Dec-2020

For ADAS sensors upcoming launches in 2020-22 refer H1'20 TDD – ADAS >>

09-Dec-2020

Mobileye looks to build its own LiDAR to drive down self-driving costs

Disruptiveness : High
Feasibility : High
Timeframe : Near future
Focus areas : Vision Sensors

- The chief executive of Intel Corp-owned Mobileye laid out plans for a self-driving car system for 2025 that could use house-built LiDAR sensors rather than units from Luminar Technologies Inc
- In November, Mobileye signed a supply agreement with Luminar to use its LiDAR units in the first generation of Mobileye's driverless vehicle fleet

Analyst Comment

For 2025, Mobileye is developing its own LiDAR sensor that works on a principle called frequency modulated continuous wave, or FMCW, which is different from Luminar's technology. Mobileye is making rapid progress toward a full autonomous driving system using cameras and a custom-made processor chip, but the company plans to augment its cameras with LiDAR and radar sensors that will capture a three-dimensional view of the road. It has deals to supply its current camera-based driver assistance systems to BMW, Volkswagen AG and Nissan Motor Co. In November, Mobileye said it had selected Luminar to supply LiDAR units starting in 2022. LiDAR systems with cameras, radar and Luminar units will cost between $10,000 and $20,000 and will be targeted at robo-taxis

Read this story

dSPACE and LeddarTech unite to develop LiDAR for self-driving cars

Disruptiveness : High
Feasibility : High
Timeframe : Near future
Focus areas : Vision Sensors

- The partners are intending to provide high-precision simulation models and interfaces for LiDAR sensors, enabling OEMs and suppliers to integrate LiDAR innovations into ready-for-application solutions more quickly
- These tools enable customers to simulate their own LeddarEngine-based LiDAR sensor designs versus integration of third-party black box LiDARs

Analyst Comment

The cooperation will support the emulation of new LeddarTech laser sensors in simulation solutions at an early development stage. dSPACE will provide simulation models for testing and validation, as well as the sensor simulation environment for validating camera, LiDAR and radar sensors throughout the development process for accelerating customers projects. This partnership will enable customers to accurately and quickly perform validation tasks for LiDAR applications. Both the companies aims to deliver key tools for enabling deployment of ADAS and AD systems. This validation includes physically accurate information of the LiDAR and the vehicle environment including objects in motion, road and other static objects

Read this story

For LiDAR state of the art trend product benchmarking and competitive landscape refer H1'20 TDD – ADAS >>

02

Spotlight

Spotlight: Ride Vision’s technology in motorcycle safety and the future of ARAS (Advanced Rider Assistance Systems)

INSIDER TV

We recently sat down with Ride Vision's CEO & Co-Founder Uri Lavi to discuss their unique technology in motorcycle safety and the future of ARAS.

Ride Vision is an Israeli startup developing Advanced Rider Assistance System (ARAS) for motorbike accidents prevention utilizing advanced computer vision & AI algorithms and without disturbing riders' focus. It’s aftermarket camera-based collision avoidance technology for motorbikes can be retrofitted. The company has a partnership with Continental.

Ride Vision's technology in motorcycle safety and the future of ARAS (1/2)

Can you please introduce RideVision as a company for our viewers?

Ride Vision : *" RideVision develops collision avoidance technologies for motorbikes. The company develops a platform which fits in any bike, whether its OEM or aftermarket and that platform can grow with multiple features as we go. It starts with collision avoidance and has much more potential."*

You have a unique 360° proprietary collision avoidance, can you explain about technological differentiation as most of the rider assistance system we see are radar based collision, adaptive cruise control features, would you like to expand little-bit on this?

Ride Vision : *" Before talking about the CAT - 'Collision Aversion Technology' by Ride Vision, let me quickly talk about safety in motorcycles. The industry is witnessing the beginning of adaptive cruise control (ACC) based on the radar. ACC is not a safety system it is a convenience system. By convenience one can target a very narrow market. As a biker myself, I have the technology that intervenes into my bike and so many things such as weight shifting, leaning angles etc. ACC in motorbikes do not work at specific angles, curves, standing vehicles so that is not the safety system. Integrating technologies on a motorcycle possesses tough and unique challenges, ABS started in motorcycle in 1988 and only became commodity may be last 5 years, it's really hard to integrate things on motorbikes, because it accelerates, decelerates, tilting-up & down, moves left-right when you move your handle bar, majority of the times you lean and maneuvering in traffic etc. CAT Collision Aversion Technology is specially build to cater to all these unique points and builds a software that understands the trajectory of bike vs. any other trajectory on the road. I don't see autonomous motorcycle on the roads in next 1o years. The sensors of the radars are very narrow, camera allows to understand situation better on the roads and potential alerts and this is uniquely used by Ride Vision."*

How is Ride Vision's offerings different from other blind spot monitoring systems that are available in the market? There are differences in the business model because you can retrofit as an aftermarket solution. Can you help us to understand from companies such as Innovor sensor how would you position your technological solutions differently?

Ride Vision : *"The companies you mentioned claims to put ultrasonic solutions from behind. Ultrasonic radar is used for parking and is not the suitable solution for blind-spot. If you look at BMW CT-650, long ago, they had such solution with ultra-sonic radar, majority of the biker's didn't understand how it worked, it made lots of false alerts and works in very narrow space. Our solution is different, we utilize front and rear camera, it is installed in such a way that it covers 360° areas covering frontal collisions, frontal side collisions, blind-spot monitoring, dangerous overtakes. Our algorithm understands the trajectory, relative speed and intentions of the vehicles coming behind. We actually built a software system that alerts the driver only when required and is real and does not disturb the rider while driving. Ride Vision can alert sometimes 20 to 25 meters back in the event of harsh speed against bike. Ride Vision One is the most sophisticated solution for the safety of the motorcycles."*

What are your thoughts on areas such as connected motorbikes that sees beyond the limitations of the sensors? How different it is across geographies ? Can you please help us to understand the product roadmaps to understand the vision of the company in terms of active safety?

Ride Vision : *Yes, you are right about the sensors. But in motorcycle business, it is different, I do not see any Indian or Chinese market installing big radars, or LiDARs that actually do not fit in any motorcycle due to energy consumption, the cost of the sensors, limitations of the sensors in terms of field of view. I do believe cameras in motorcycles are specific to the majority of the market. Ride Vision wants to give the aids to the bikers to respond and act based on the alerts it delivers. I do believe while the motorcycles will not be fully autonomous , there will definitely be kind of the middle, not Level 4 or Level 5, but Level 1*

RIDEVISION

Uri Lavi
CEO & Co-founder at Ride Vision
LinkedIn: https://www.linkedin.com/in/urilavi/

"Every year we have 4,00,000 fatalities due to motorcycles, we need to bring safety first that will assist and aid the biker before we actually talking about the futuristic solutions"

Ride Vision's technology in motorcycle safety and the future of ARAS (2/2)

Ride Vision : *" In Level 1, there will be some intrinsic technology that will take some control and Ride Vision knows how to deliver that. We let manufacturers and Tier-1s to use our data and incorporate into the bikes, and that could save or give additional time and alerts to the bikers to mitigate hazardous situations. It will not be fully autonomous because it will create other issues. Ride Vision One has WiFi-in bluetooth, we already have connectivity that goes with Ride Vision app that's supplementary product, and based on that extensions of solutions can be done. The next versions would have V2V communication addressing further potential issues around the motorcycle. The company has capabilities of OTA to increase the functions for the riders which adds to the safety and the convenience"*

Due to Covid, there are more riders now , Ride Vision also wants to target fleet management solutions, can you touch-upon the business model and aftermarket solutions providing warnings, but also can be retrofitted for below 1,000€ or even lower than that like 600€
Ride Vision : *" Yes that is the right range. 600€ is a premium product with two HD cameras front and rear. Talking about the fleet operator, they suffer from the immediate problem and then there is extended business model that can be built. The immediate problem is the liability of the company, basically operates all fleets usually those will be last-mile delivery, delivery of food and other potential goods. Here, Firstly Ride Vision offers safety mechanism that helps them to orient the environment. Secondly Ride Vision One offers dash cam that capture everything in the unit that can be accessible by mobile app, bluetooth or WiFi or installed in SD card etc. That helps fleet operators to look at the accidents, or specific use cases. Thirdly, insurance companies that are coming in the game and now there is obviously a mitigation point between the liability of the fleet operator and the insurance company through Ride Vision through evidence recording and safety. Finally there is data, Ride Vision One can extract lot of data, as an aftermarket product the bikers choose what they want, fleet operator can use the data to optimize the things, up-scale things and multiple business model goes through the time."*

Ride Vision One is available in domestic market in Israel as well as Italy. Can you also help us to understand the strategy behind expanding in Europe, strategy and partnership with insurance companies and Tier-1 companies in which Ride Vision is active in ?

Ride Vision : *" We continue for expansion in Europe, we usually work via resellers, distributors for specific countries. Very soon people from Germany, Spain and from other countries will basically be able to buy Ride Vision One in their local countries. In terms of partnership in the Europe, an Italian insurer Sara Assicurazioni , they provide 20% discount in Italy for everyone who will retrofit Ride Vision One in their bikes. We have good partnership with Continental, there is lot of work we are doing together in terms of automotive solutions.*

Any key message you would like to share for our viewers who are also OEMs, Tier1's working in rider assistance systems and development of sensors?

Ride Vision : *" Ride Vision is primarily a fusion software that is very unique in terms of understanding the maneuverability of the bike. We can fuse a lot of points. For e.g. we need to integrate solution that has already ACC and radar, than its just another input we are taking and optimizing based on that. But in essence to summarize I would say Ride Vision is the most advanced solution in understanding the maneuverability of the bike and delivering the right alerts to the biker based on multiple usage experiences, focus groups and reality testing in different geographies".*

RIDEVISION

Uri Lavi
CEO & Co-founder at Ride Vision

"97% of accidents happen in good weather conditions. There will not be Level 4 or Level 5 for autonomous motorbikes, but Level 1 will have some intrinsic technology that will take some control and Ride Vision knows how to deliver that"

03

Major developments in autonomous commercial vehicles

Players in our coverage

Walmart — Save money. Live better.
pony.ai
Ike
COMBITECH
Gatik
nuro
Epiroc
ABB

What do we see happening

- Autonomous driving in commercial vehicles is getting serious attention. Players are carrying out driverless truck tests
- The pandemic has expedited the public need for contactless delivery services; regulations fuel to accelerate self-driving technologies in logistics areas
- Players are focused on deploying advanced autonomous trucks, fast reliable connectivity and enhance safety systems at mine operations

Autonomous driving in commercial vehicles is getting serious attention. Players are carrying out driverless truck tests

Walmart is aiming to launch its fully driverless trucks; while Pony.ai gets regulatory approval from Chinese Guangzhou authority to test self-driving trucks

15 Dec-2020

To know more about commercialization roadmap of autonomous commercial vehicles refer H1'20 TDD – ADAS >>

18-Dec-2020

Walmart will use fully driverless trucks to make deliveries in 2021

Disruptiveness : High
Feasibility : High
Timeframe : Near future
Focus areas : Autonomous CV

- Walmart will use fully autonomous box trucks to make deliveries in Arkansas starting in 2021
- Next year, the two companies plan on taking their partnership to the next level by removing the safety driver from their autonomous box trucks
- It is also planning on expanding to a second location in Louisiana, where trucks with safety drivers will begin delivering items from a "live" Walmart Supercenter to a designated pickup location where customers can retrieve their orders

Analyst Comment

Walmart is working with a variety of self-driving companies in its search for the best fit for the company's massive retail and delivery operations. The company has been working with a startup called Gatik on a delivery pilot for 18 months. Since then, the vehicles have racked up 70,000 miles in autonomous mode with a safety driver. In addition to Gatik, the company is working Waymo, Cruise, Nuro, Udelv, Baidu, Ford, and Postmates. E-commerce giant Amazon in September said it is creating a new team focused on driverless delivery in the UK. The new team at the Cambridge development centre will work on Amazon Scout, the company's fully-electric autonomous delivery service.

Read this story

Pony.ai gets green light to test self-driving trucks in Guangzhou

Disruptiveness : High
Feasibility : High
Timeframe : Near future
Focus areas : Autonomous CV

- Pony.ai received a permit from Guangzhou authority that allows the startup to test its autonomous trucks on public roads
- Pony.ai said its autonomous trucks sailed through many testing items for such complex scenarios as traffic light recognition, obstacle avoidance, car-following, lane merging, overtaking, emergency parking, and travelling across crossroads and roundabouts

Analyst Comment

By testing vehicles on roads, the company will expedite the R&D and the validation of autonomous truck technologies, promoting the trials and application of its self-driving technologies in logistics area. The startup revealed the R&D is being carried out in China and the U.S. at the same time. The company said it is working on developing "virtual drivers" available for all types of vehicles models and driving scenarios since its foundation in late 2016. It could be easier to use self-driving technology in logistics trucks than in passenger cars because trucks spend most of the time on expressways which have less complex road conditions. Recently it showcased its Level 4 self-driving hardware and software system specially designed for heavy trucks.

Read this story

Covid-19 has expedited the public need for contactless delivery services, regulations fuel to accelerate it

The pandemic has expedited the public need for contactless delivery services & aims to boost autonomous delivery of essential goods & services

23 Dec-2020

To know more about recent collaboration in autonomous commercial vehicles refer H1'20 TDD – ADAS >>

23-Dec-2020

California DMV grants permit to Nuro to charge for autonomous deliveries

Disruptiveness : High
Feasibility : High
Timeframe : Near future
Focus areas : Autonomous CV

- The California Department of Motor Vehicles awarded permit to deploy autonomous vehicles on public streets for commercial purposes, meaning it can make money from the services its cars provide
- The vehicles will be limited to a maximum speed of 25mph and can only operate in fair weather conditions on streets with a speed limit of no more than 35mph

Analyst Comment

Nuro has been allowed to test its autonomous vehicles on public roads with a safety driver since 2017 and received a driverless testing permit in April 2020. Autonomous vehicles could help alleviate the strain on existing delivery services while reducing the risk of exposure for citizens. The company said it would launch a delivery service with a fleet of autonomous Toyota Priuses, and later add its own low-speed R2 vehicle, which has no pedals or steering wheel and only room for packages. Last month, Nuro raised $500 million in a funding round, driven by a massive boost to e-commerce from the COVID-19 pandemic. Further it was permitted by NHTSA in February to deploy up to 5,000 low-speed electric delivery vehicles in Houston without human controls such as mirrors and steering wheels.

Read this story

Nuro acquires autonomous trucking startup Ike

Disruptiveness : High
Feasibility : High
Timeframe : Near future
Focus areas : Autonomous CV

- Autonomous delivery company Nuro has acquired Ike aimed to commercialize self-driving trucks
- Ike is focused on developing Class-8 self-driving trucks for the shipping industry, so any tie up will likely include the further development of driverless trucks
- Nuro developed a small, fully-electric autonomous delivery vehicle called the R2. The R2 is designed to carry groceries, hot meals, last-mile package deliveries and other goods

Analyst Comment

The deal brings together two companies that have deep ties and shared technology. While Nuro focuses on local delivery, Ike offers long-haul freight solutions. Ike, a self-driving truck startup previously raised $52 million in venture capital in a February 2019. Rather than develop a driverless solution in-house, it licensed Nuro's localization, perception, prediction, and planning software. Nuro will be able to leverage the technology that Ike built and pull that in to its own local delivery application as well as use it for potential future applications. Further coronavirus outbreak has hasten the adoption of driverless vehicles for delivery. Recently Nuro has been allowed to charge for autonomous deliveries by California DMV.

Read this story

New product developments & collaborative business models is gaining traction for operational efficiency & safety

Players are focused on deploying advanced autonomous trucks, fast reliable connectivity and enhance safety systems at mine operations

23-Dec-2020

To know more about ADAS in Mining refer Q3'20 Pulse >>

Epiroc and Combitech continue to break new ground in mine automation

Disruptiveness : High
Feasibility : High
Timeframe : Immediate
Focus areas : Autonomous mining

- In partnership, Epiroc and Combitech have developed a solution for traffic management of autonomous loaders for mines
- The utilization of a driverless fleet of machines in a risky work environment has meant achievement of a new level of efficiency and safety

Analyst Comment

The solution developed in collaboration, in which autonomous machines can perform complete assignments and interact with each other in a shared area. The solution's driver is a proprietary module known as the Traffic Management System (TMS). It allows machines to share roads, service locations and loading and dumping sites without collisions or locking events. As well as the TMS module, there is the Fleet Management System (FMS) to automate assignment and resource management so that the mine operator can focus on the work to be performed. A fully-autonomous mine is still a long way off, but the latest addition to the solution allows mining companies to actually proceed towards autonomous operation and increases the degree of utilization of the investment in infrastructure, machinery and employees.

Read this story

18 Dec-2020

ABB to lead automation innovation for sustainable mining project

Disruptiveness : High
Feasibility : Moderate
Timeframe : Immediate
Focus areas : Autonomous mining

- Swiss technology company ABB has joined the Sustainable Underground Mining (SUM) led by high-tech ore processing company Luossavaara-Kiirunavaara Aktiebolag (LKAB), which aims to reach zero-carbon dioxide emissions and a productivity increase of 50%
- ABB is providing electrification, connected control, and operations management systems as part of the global mining partnership, which also includes mining firm Epiroc, engineering company Sandvik, and technology consultancy Combitech

Analyst Comment

The project is conducting test work in LKAB's Kiruna mine in northern Sweden, as well as a virtual test mine study to optimize the design of a carbon dioxide-free and autonomous production system. The framework outlines ambitions for zero carbon dioxide emissions, completely safe mines for humans, productivity increases of 50% and deeper mining. By 2022, the ABB electrification and automation solutions will be fully installed, and the aim is that a new standard for mining production will be set globally by 2030. Implementation of the project will require a significant investment on a national scale and the partners are therefore seeking collaboration with more suppliers, the Swedish state, research institutes and universities.

Read this story

MOBILITY INDUSTRY INSIDER

INSIDER TV

COMING UP
On your Insider platform…

Q4' ADAS Pulse

15th Jan 2021

Jordan Greene
VP of Strategy & Partnerships at AEye

"We have the unique ability to plug and play the ADAS market, the mobility market and others by having fundamentally the same product and share the common components which is very important distinction from our competitors"

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