

Auto2x publishes new report "Autonomous Driving roadmaps Level 1-4 of 30 major Carmakers by 2030"

Auto2x examines the go-to-market strategy, technology, innovation, and market positioning of the world's Top-30 Carmaker Groups (45 brands) in Automated Driving

LONDON, UNITED KINGDOM, February 6, 2023 /EINPresswire.com/ -- Auto2x's new report examines the current status of SAE Level 0-Level 4 automation by driving and parking features and the outlook by 2030. It also provides a roadmap for

Automated Driving deployment for 30+ major carmakers in Europe, the USA, Japan and China.



Auto2x, Autonomous Driving Roadmaps 2030

UNTAPPED ADAS REVENUE GROWTH IN THE 2020S



Auto2x assessed the autonomous driving strategy, technology roadmaps and market share of leading carmakers to unveil leaders and followers and emerging value pools"

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ADAS revenues in 2020 amounted to €13.87 Billion, coming mostly from the fitment of sensors (cameras, radars, lidar, ultrasonics and supercomputers) to support Level 1-2 features, found Auto2x.

Revenues from ADAS & Automated Driving will almost double between 2020 and 2025 to reach €35 Billion due to the increase in sensor content, according to Auto2x. Level 3 and 4 require enhanced redundancy, new centralized architecture, & driver-facing camera among others. This

will drive demand for ADAS sensors, supercomputers, AI, high precision maps etc. It will also drive further collaboration between OEMs and Tier 1s-2s for the development of AD platforms.

But carmakers need further transformation to become mobility providers. What's more, Autonomous Driving Level 3-4 commercialization strategies impacted by regulation; rise of new

innovation hubs.

LEARN ABOUT CARMAKERS' STRATEGIES & BUSINESS MODELS TO MONETIZE AUTONOMOUS VEHICLES

The approval of SAE Level 3-Conditional Automation under the UNECE ALKS regulation allows drivers to take their eyes off the road while the vehicle is driving and monitoring the road. This could lead to a greater utilization of the time spent inside the car by engaging into side tasks, such as reading. New business models arise to monetize the new opportunities, e.g., in new entertainment features, on-demand autonomous features, SOTA updates.

However, the mass market adoption of Level 3 is uncertain given the high cost/benefit ratio, i.e., the marginal impact on safety and driver convenience from L2 comparing to the massive engineering challenge. Hence, carmakers are taking different approaches to reach L4 in an attempt to gain competitive advantage and reshape profitability.

One thing is certain though, L4/fully-automated vehicles will revolutionize transportation and mobility leading to what we call Intelligent Mobility. This includes the rising car-sharing and ride-sharing businesses as well as new vehicle ownership models in the Passenger Car market.

This report focuses on leading car manufacturers' ADAS&AD portfolio, strategies and business models to transition towards full automation and self-driving cars. Moreover, it examines the regulatory landscape and other technical challenges and their implications on deployment of higher level of vehicle autonomy. Finally, we provide a technological roadmap for the introduction of L2-4 by leading OEM and a penetration forecast of cars equipped with different levels of autonomy until 2025.

ASSESS THE STATUS OF VEHICLE AUTOMATION IN 2022 AND ITS OUTLOOK BY 2030 IN THE MAJOR CAR MARKETS:

- What is the availability of key ADAS features, such as Level 3-Traffic Jam Pilot, Level 4-Valet

RECOMMENDATIONS FOR MOBILEYE TO LEAD AUTONOMOUS MOBILITY

Winning strategies will leverage AI and control over the software value chain to offset downward pressure from less-differentiated, low-cost platforms

- By building competence in Autonomous Driving software and sensors needed by carmakers to develop higher autonomy
 - Huawei supplies L2/AD and car networking to BAIC for L2+ Huawei has recently launched new products in Autonomous Driving focusing on ADAS sensors (4D imaging radar), ICM (AR-HUD) during their product launch titled "Focalized Innovation for Intelligent Vehicles"
 - Samsung Electronics will work together with Tesla to develop chips for their HW 4.0.
- By forming commercial and product development partnerships with volume carmakers to support their connected, electric and ADAS roadmaps. The AI and connectivity domains in the booming Chinese market are particularly crucial for new AD Suppliers to claim market share from global Tier1s
 - Consortium of OEM Suppliers to co-develop Autonomous Driving technology
- By fueling investments in innovative technologies and business models incl. robotics, last-mile delivery

FIGURE 2 | PARALLEL STRATEGIES FROM AI TECH SUPPLIERS EXPLORE TO DIVERSIFY CURRENT LEADERS

- By building competence in Autonomous Driving software, new generation sensors and start-up for higher autonomy that are currently on the way
 - Expansion of major customers and suppliers respectively
- By forming commercial and product development partnerships with major carmakers to support their connected, electric and ADAS roadmaps
- By fueling investments in innovative technologies and business models tailored to the Chinese market, including robotics, last-mile delivery, connected driving and more

TABLE 4 | HOW TO DITCH INTEL AND CAPTURE MORE MARKET SHARE IN ADAS BY 2030

Reduce ADAS prices	Reduce production cost and increase complexity
-Generate fusion, economies of scale and system integration to reduce ADAS prices	
Safety & Security	Modify or optimize features to meet different safety and security standards
-Strong and extensive portfolio to meet regional safety requirements	-Differentiate their technologies based on safety and/or security features
Competitive Adv.	Defend position and/or claim more market share
-Expand offerings beyond hardware	-Expand role from suppliers of systems and components to providers of complete mobility solutions
-Collaborate closely with OEMs, TSMAs or technology partnerships to strengthen portfolio	

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MOBILEYE POSITION A FUTURE POTENTIAL IN ADAS, AUTONOMOUS DRIVING & SHARED MOBILITY

ASSESSMENT OF MOBILEYE'S STRATEGY IN AUTONOMOUS DRIVING

Mobileye N.V. is an Israeli subsidiary of Intel corporation. Intel acquired Mobileye for \$15 billion in March 2017. Mobileye focuses on computer vision technology (software algorithms and chips), machine learning-based sensing, localization, data analysis and mapping solutions for ADAS and autonomous driving

Intel's acquisition of Mobileye is part of its strategy to complement its computing and cloud capabilities with computer vision to increase vehicle data and systems that could become a \$20 billion market by 2030

Prior to Mobileye acquisition, Intel operated an autonomous driving lab in Chandler, Arizona. Intel has received all of its autonomous driving research to Intel to join Mobileye researchers and engineers

HOW DOES MOBILEYE FIT IN INTEL'S VISION FOR FUTURE MOBILITY

Intel is gradually diversifying away from its traditional PC business of and into New Mobility with the acquisition of Mobileye in 2017 and the addition of Intel's Mobileye division in May 2020. The company is also part of a consortium for Autonomous Driving Technology. In Nov'16, Intel announced that it would spend \$500 million over two years developing ADAS

Intel envisions that driverless vehicles will use roughly 4,000 gigabytes (GB) of data a day. Rapid and secure communication between the in-vehicle embedded electronics systems, between vehicles (V2V), and between vehicles and infrastructure (V2I) are essential parts of the autonomous driving ecosystem

FIGURE 3 | MOBILEYE'S REVENUE AS PERCENTAGE OF INTEL'S 2017 TO H1 2022 (USD MILLION)

Year	Mobileye as % of Intel Revenue
2017	0.5%
2018	0.6%
2019	0.7%
2020	0.8%
2021	1.0%
2022	2.5%
2023 (Est.)	3.5%

Source: Mobileye's Intel financial reports 2017-21, 2022, Auto2x analysis

In Mar'22, Mobileye filed for an IPO but the exact date of the IPO has not been released yet. Earlier in Dec'21, Intel announced the intent to take Mobileye public in 2022

Mobileye operates through two segments: OEM and Aftermarket

- Original Equipment Manufacturing (OEM) segment: Mobileye sells its ADAS systems and software applications directly to automotive Tier 1 auto suppliers
 - ADAS include Lane Departure Warning, Automatic Emergency Braking, Forward Collision Warning, Lane Keeping Assist, ACC, Lane Centering, Traffic Jam Assist
 - Mobileye supports ADAS functions using EyeQ system-on-chip (SoC). The latest version is the EyeQ 5, to support full-driving capabilities. The EyeQ 4 and 5 can handle sensor signal processing and fusion while its Road Experience

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Parking, Level 2-Traffic Jam Assist, L1-AEB, TSR, ACC, LKA in leading carmakers in the EU, US & China? We provide in depth analysis by SAE Level;

- What is the penetration rate of SAE Level 0-3 in European, U.S & Chinese car sales?
- Which OEMs lead L2-3 deployment and why? Which are the most prominent features?
- What changes are coming in terms of deployment of Lv.2 and L3-4 by 2025?

UNDERSTAND THE REGULATORY AND ENGINEERING CHALLENGES CARMAKERS FACE FOR THE DEPLOYMENT OF HIGHER LEVEL OF VEHICLE AUTONOMY:

- What is the status of Autonomous Driving Regulation in major car markets?
- What are the differences in the legal and regulatory framework between Europe, the United States and China? How will these differences in policy affect L3-5 deployment?
- Which geography presents the most favorable environment for deployment of Level 3?
- What breakthroughs are required in the area of SW/HW and validation for L3-4?

READ HOW CARMAKERS, TIER-1S AND NEW-ENTRANTS, INCLUDING TECH GIANTS APPLE AND GOOGLE (WAYMO), PLAN TO OVERCOME THE CHALLENGES AND COMMERCIALIZE AUTONOMOUS DRIVING

- How do leading OEMs plan to achieve L4/5 capabilities? By when?
- Analysis of OEM strategy, new business models and key collaborations
- Learn why leading Tier-1s are well positioned to monetize ADAS growth

WHO WILL LEAD AND WHO WILL FOLLOW IN THE AUTONOMOUS VEHICLE RACE?

- Discover when leading carmakers will launch capabilities of L2, L3, and L4, segmented into Driving (L2-TJA vs L3-TJP) and Parking features (e.g. L2-Self Park, L4-Valet Parking)
- What are the trends by ADAS levels in Top Premium OEMs' model range by 2025-30?
- Learn about the penetration of different levels of autonomy in European car sales?

BENCHMARK COMPETITION IN SENSORS, FEATURES AND MARKET LEADERSHIP:

- Strengths and weaknesses of ADAS&AD product portfolio, suppliers and competitiveness
- Shares in automation mix in key markets and roadmap of deployment by key carline

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