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HD Map for Autonomous Vehicles Market by Solution (Cloud-Based & Embedded), LOA(L2, L3, L4, & L5), Usage (Passenger & Commercial), Vehicle Type, Services (Advertisement, Mapping, Localization, Update & Maintenance), & Region - Global Forecast to 2030

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Abstracts

The HD maps for autonomous vehicles market is estimated to be USD 1.4 Billion in 2021 and is projected to grow at a CAGR of 31.7% during the forecast period, to reach USD 16.9 Billion by 2030. HD maps are primarily used in autonomous vehicles. These are the maps designed for use by the machines that drive the autonomous vehicles. HD maps offer high-precision localization, environment perception, planning and decision making, and real-time navigation cloud services to autonomous vehicles. OEMs across the globe are investing in the development of autonomous vehicles. Although level 5 fully autonomous vehicles are not expected to be commercially available until 2025, many of the associated technologies have already been developed, and thousands of patent applications have been filed to secure intellectual property rights. Ford had the largest number of patents related to autonomous vehicle technology, followed by Toyota by the end of 2020. Since 2011, Ford submitted 14,354 patents and 13,000 patents were submitted by Toyota by the end of 2020.

With the growing trend of autonomous driving technology, the global HD maps market is expected to grow at a significant rate in the future. The promising market for self-driving car renting services and increased investments in autonomous driving technology startups are expected to boost the HD maps market. In addition, increasing R&D activities related to HD maps by leading HD map suppliers and several startups will further fuel the growth of HD maps for autonomous vehicle market. However, high

investment costs and slow adoption rates in developing countries are considered the major restraints for this market.

North America is estimated to be the largest market for HD maps for autonomous vehicles during the forecast period. The North American market is principally driven by the increasing demand for a safe, efficient, and convenient driving experience; rising investment in autonomous vehicle technology; and a strong presence of HD map suppliers. The increase in government support and the availability of suitable infrastructure for semi-autonomous and autonomous vehicles are likely to drive market growth in the region. Asia Oceania is projected to grow at the highest CAGR of 34.3%. China, Japan, and South Korea are the key countries in the region leading the fast-paced development. The government support for autonomous vehicle technology is also a driving factor for the growth of the Asia Oceania market.

Some of the major players in the HD map for autonomous vehicle market are TomTom (the Netherlands), HERE Technologies (the Netherlands), Waymo (US), NVIDIA (US), Baidu (China), Dynamic Map Platform (Japan), NavInfo (China), and Zenrin (US). These players have long-term supply contracts with leading automotive manufacturers and autonomous vehicle technology developers. These companies have adopted the strategies of new product developments, acquisitions, agreements, collaborations, expansions, joint ventures, partnerships, and supply contracts to gain traction in the HD map for autonomous vehicle market. Partnership and collaboration are the most widely adopted strategies by major players. For instance, in September 2019, TomTom and HELLA Aglaia collaborated to update the TomTom High Definition Map in real-time using crowdsourced camera data from vehicles. As part of the collaboration, HELLA Aglaia will use AutoStream, which is TomTom's innovative map delivery system, to access the latest TomTom HD Map on demand and will use the HD Map in the vehicle for accurate localization.

"Wide adoption of HD maps in passenger mobility segment expected to lead to market growth"

Personal mobility is estimated to be the largest segment of the HD map for autonomous vehicle market, by usage type, owing to the higher volume of semi-autonomous vehicle sales, and a majority of semi-autonomous vehicles would be used for personal transportation. OEMs such as Honda, Nissan, General Motors, and Mercedes-Benz promote the use of HD map and use it to develop its level 2 and level 3 semi-autonomous vehicles. The commercial mobility segment is projected to be the fastest-growing because of the high demand for ride-sharing services, predominant usage of

autonomous vehicles for ride-sharing and robo-taxi services, and growing partnership between ride-sharing companies and HD map providers.

The transportation of goods by autonomous vehicles helps minimize the cost of delivery. E-commerce companies mostly drive the delivery of goods by autonomous vehicles. According to companies like Continental, 80% of all business-to-consumer deliveries will be done by driverless cars in the future. OEMs, autonomous vehicle technology providers, and logistics/transportation companies such as Pony.ai, FedX, and Ford are involved in testing autonomous last delivery vehicles across the world. For example, in June 2021, Ford and Hermes, a consumer delivery company in the UK, started testing autonomous vehicles for delivery. HD mapping companies can focus on developing HD maps and other related solutions for the commercial mobility segment as it can provide high growth opportunities, especially for new entrants.

“Level 2&3 semi-autonomous vehicles to ensure dominant position of the segment”

HD map market for Level 2&3 semi-autonomous vehicles is estimated to be the largest market, and the market for Level 4&5 autonomous vehicles is expected to be the fastest-growing market during the forecast period. The semi-autonomous vehicle segment dominates because of the demand for features such as Co-operative Adaptive Cruise Control, Highway Autopilot, Auto Lane Change, and Hands-free Auto Parking. Other factors include stringent laws concerning autonomous driving and a greater number of semi-autonomous vehicles on road than autonomous vehicles during the forecast period. Rapid advancements and the decreasing cost of ADAS components and solutions are expected to spur the growth of the HD map market for semi-autonomous vehicles. For example, ZF unveiled its coASSIST level 2+ driving system in 2020 with a price range of USD 1,000. Such affordable ADAS solutions would increase the penetration of major ADAS features in a standard ADAS package. ZF offers copilot, a scalable ADAS solution for level 2+ to level 4 driving systems, was co-developed with NVIDIA. These affordable ADAS solutions would significantly boost the adoption of ADAS and the demand for HD maps for semi-autonomous vehicles. The autonomous vehicles segment is projected to have a significant growth rate during the forecast period. The continuous improvement in HD map technology is also a major factor boosting the growth of the market. Increasing investments for the development of level 4 and level 5 technologies and the growth in the testing activities of level 4 and level 5 autonomous vehicles will drive the HD map market for autonomous vehicles.

The study contains insights from various industry experts, ranging from component suppliers to tier 1 companies and OEMs. The break-up of the primaries is as follows:

By Department: Sales/Marketing - 45%, Production & Procurement – 35%, CXOs - 20%

By Designation: C level - 40%, D level - 35%, Others - 25%

By Region: Asia Pacific- 40%, North America - 20%, Europe - 35%, RoW-5%

Major players profiled in the report are TomTom (Netherlands), HERE (Netherlands), NVIDIA (US), Waymo (US), Baidu (China), Dynamic Map Platform (Japan), and NavInfo (China).

Research Coverage

The report segments the HD maps for autonomous vehicles harness market and forecasts its size, by value, on the basis of service type (mapping, localization, updates and maintenance, and advertisement), level of automation (semi-autonomous driving vehicles, autonomous driving vehicles), solution type (cloud based, embedded), usage type (operational data, commercial mobility), vehicle type (passenger car, commercial vehicles) & region. It also covers the competitive landscape and company profiles of the major players in the HD maps for autonomous vehicles harness market ecosystem.

Key Benefits of Buying the Report:

The report will help market leaders/new entrants in this market with information on the closest approximations of revenue and value for the HD maps for autonomous vehicles harness market and its sub segments.

This report will help stakeholders understand the competitive landscape and gain more insights to better position their businesses and plan suitable go-to-market strategies.

The report will also help the market players understand the impact of COVID-19 on HD maps for autonomous vehicles harness market.

The report also helps stakeholders understand the pulse of the market and provides them information on key market drivers, restraints, challenges, and opportunities.

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*Details on Business overview, Products offerings, Recent developments, Product launches, Deals, MNM view, Key strengths/Right to win, Strategic choices made, and Weaknesses and competitive threats might not be captured in case of unlisted companies.

15 RECOMMENDATIONS BY MARKETSANDMARKETS

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