

Sensor Fusion Market for Automotive by Technology (Camera, LIDAR & RADAR), Data Fusion Type & Level (Homogeneous, Heterogeneous, Data, Decision, Feature), Software Layer, Vehicle Type (ICE, Autonomous & Electric) and Region-Global Forecast to 2030

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Abstracts

The ICE sensor fusion market for automotive is projected to reach USD 22.2 billion by 2030 from an estimated USD 2.9 billion in 2021, at a CAGR of 25.4% during the forecast period. Various governments globally are implementing safety standards by making safety features such as automated emergency brake, adaptive cruise control, lane departure warning a mandatory feature in vehicles, driving adoption of cameras, radars and LiDARs in automobiles. This is expected to strongly drive the adoption of sensor fusion in developed as well developing countries. Also, growing popularity of high-end and luxury cars is boosting sensor fusion market for automotive. Countries such as India, China, Brazil, Mexico, Argentina, European Union, US are focusing on enhanced automotive safety standards. Thus, the demand is expected to gain momentum globally.

“Heterogeneous fusion type is expected to be the largest market by data fusion type”

The key benefits of heterogenous sensor fusion are enhanced system performance and robustness. Examples of multi-modal fusion systems or heterogeneous sensors are visible cameras, Far IR cameras, visual cameras LASER scanner radar, GPS localizer CAN bus Gyroscope, etc. Various modern sensor networks are heterogenous - a combination of a variety of wired and wireless sensors/actuators. For instance, in a driver assistance system, the system collects data from internal and external sensors

installed in the car. This includes various types of sensors such as GPS localizers, a CAN bus, a gyroscope, radar, and cameras. Thus, the multiple benefits offered by heterogeneous sensor data fusion are driving its popularity in vehicles.

“Decision fusion market segment is expected to be the fastest”

In decision level sensors, each sensor makes an individual decision before forming a combination of decisions to arrive at a more informed final decision, i.e., target decision fusion. Decision fusion is less complex than data fusion. Decision-making algorithms, as a key technology for uncertain data fusion, is the core to obtain reasonable multisensory information fusion results. Thus, there is a broad application of decision-making algorithms on target attributes, characteristics, and types through detailed processing of information obtained through various sensors. A multitude of theorems and algorithms are emerging in decision sensor fusions. Decision fusion is expected to gain popularity globally in the coming years, owing to its advantages and less complex architecture. One of the many practical benefits offered by decision fusion is that it allows combining individual results, even if it was not expected in the testing of the algorithm. Consequently, different sources of information can be easily exchanged, and the fusion strategy is readily adapted to unknown future changes of input sources.

“Asia Pacific market is expected to register the highest growth during the forecast period”

The Asia Pacific sensor fusion market for automotive is estimated to be the fastest-growing regional market. The growing adoption of advanced ADAS technologies in China, Japan, South Korea, and India is expected to drive market growth in the region. China’s passenger car production is expected to reach 24 million units by 2026, presenting a huge opportunity for sensor fusion hardware manufacturers and software/algorithm developers globally as well as domestically. Not only passenger cars but trucks are also set to reach 2 million units by 2026. The South Korean transport ministry announced that it requires all new large passenger vehicles and trucks to be fitted with AEB and LDW systems from January 2019. Thus, the implementation of government mandates is expected to drive the adoption of sensors- cameras, radars and LiDARs. Such factors would in turn, drive the growth of sensor fusion technology during the forecast period.

In-depth interviews were conducted with CEOs, vice-presidents, marketing directors, innovation and technology directors, and executives from various key organizations operating in this market.

By Company Type: Supply Side- 70%, Demand Side- 30%

By Designation: C Level - 11%, D Level – 11%, and Others - 78%

By Region: Asia Pacific- 56%, Europe - 22%, North America - 22%

The sensor fusion market for automotive is led by globally established players such as Robert Bosch GmbH (Germany), ZF Friedrichshafen AG (Germany), Continental AG (Germany), NXP Semiconductors N.V. (Netherlands), Infineon Technologies (Germany), and Denso Corporation (Japan), Aptiv (Ireland). The study includes an in-depth competitive analysis of these key players in the sensor fusion market for automotive with their company profiles, MnM view of the top five companies, recent developments, and key market strategies.

Research Coverage:

The sensor fusion market for automotive is segmented by region (Asia Pacific, Europe, North America, and RoW), vehicle type (passenger car, LCV, and HCV), technology (camera, radar and LiDAR), electric vehicle type (BEV, PHEV and FCEV), autonomous vehicle (L4 and L5), software layer (operating system, middleware, and application software), data fusion type (homogeneous, and heterogeneous), data fusion level (data, feature, and decision), sensor type (temperature, pressure, oxygen, NOx, speed, inertial, image, position, and other sensors), application (powertrain & drivetrain, safety & body control, exhaust, infotainment, navigation & telematics, sensor fusion environment (internal and external).

The study also includes an in-depth competitive analysis of the key players in the market along with their company profiles, key observations related to product and business offerings, recent developments, and key market strategies.

Key Benefits of Buying the Report:

The report will help the market leaders/new entrants in this market with the information on the closest approximations of the revenue numbers for the overall sensor fusion market for automotive and the sub-segments. This report will help stakeholders understand the competitive landscape and gain insights to better position their businesses and plan suitable go-to-market strategies. The report also helps stakeholders understand the pulse of the market and provides them with information on

key market drivers, restraints, challenges, and opportunities.

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