

Global and China Vision ADAS Industry Report, 2015-2020

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Abstracts

Global and China Vision ADAS Industry Report, 2015-2020 focuses on the followings:

1. Global vision ADAS system market and industry
2. Lane detection
3. Emergency braking (Anti-collision)
4. Night vision and adaptive high beam system
5. Parking Assist
6. Vision ADAS Companies

Camera-based vision ADAS systems can be divided into several categories of applications: 1) Lane Detection, i.e., LDW/LKA/LCA (Lane Centering Assist) to prevent the car from deviating in the working state of either ACC or TJA (Traffic Jam Assist); 2) Obstacles Detection and Recognition, i.e., FCW (Forward Collision Warning)/AEB (Autonomous Emergency Braking); 3) Surroundings Display, i.e., Parking Assist, including Rear View and 360° Surround View. 4) BSD (Blind Spot Detection); 5) HBA (High Beam Assist) and Night Vision.

In application field, warning-only ADASs will gradually exit market, while the ADASs with actuator represent the mainstream in the future. For example, it is hard for drivers to take prompt countermeasures, as the warning time of FCW is no more than 3 seconds. Moreover, AEB (Autonomous Emergency Braking) may become the most important ADAS application. AEB will be a mandatory safety function across the world during 2021-2025.

Future orientation of development will be stereo camera rather than mono camera, especially in AEB field. As AEB concerns human life, there must be as much

performance redundancy as possible, thus ensuring the safety of drivers to the utmost extent. Stereo camera has an overwhelming advantage over mono camera in the aspect of pedestrians recognition. However, the majority of companies (OEMs & Tier 1 suppliers) still adopt mono camera, as AEB is largely an optional component rather than a standard one, and the costs of stereo camera are much higher, resulting in higher price and low popularity.

Pedestrians Recognition will be a must of next-generation AEB, meaning that stereo camera has to be employed. Mercedes-Benz, Subaru, Jaguar, and Suzuki have adopted stereo camera from the very beginning, while VW, Toyota, Honda, and Nissan all employ stereo camera in their experimental models. As to Tier 1, Hitachi Automotive System has used stereo camera at the very start, while Continental, Bosch, Denso, and Fujitsu Ten see stereo camera as the priority of development. These companies are iconic ones in automobile industry and their moves represent the direction of automobile industry as a whole.

Global automotive camera module shipments approximated 50.3 million pieces in 2015 and are expected to reach 62.1 million pieces in 2016, 141 million pieces in 2020, and 246 million pieces in 2025. There are three cameras on each light vehicle on average, respectively for LKA, AEB, and Parking. Unlike mobile phone camera modules, automotive camera modules are highly demanding on reliability and range of operating temperature. Major vendors are Panasonic, Sony, Valeo, Fujitsu Ten, MCNEX, Magna, Gentex, Continental, and Hitachi. Panasonic ranks first globally in terms of market share and is far ahead of the second place.

Global automotive vision system market size was worth about USD3.1 billion in 2015 and is expected to hit USD6.1 billion in 2020. Magna, TRW (ZF), Hitachi Automotive System, and Continental are in the first camp, with Magna being the world's largest, and Autoliv, Valeo, Denso, Fujitsu-ten, and Bosch are in the second camp. As the demand from carmakers varies greatly, the market concentration has been lower and this will continue for a considerable time.

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