

ADAS，为汽车业而重生¹

内容概览：

- 更好的传感器性能，可实现自动驾驶。
- 以雷达引领的传感器市场价值将在 2025 年达到 224 亿美元。
- 新冠危机过后，更强大的 ADAS²功能性将令产业重启。

“新冠危机将严重影响汽车生产”，**Yole Développement (Yole)**的固态照明技术与市场分析师 **Pierrick Boulay** 断言道：“预期将需要三年才能恢复到同等的产量水平。”

Yole 的分析师们估计 2020 年雷达、摄像头、激光雷达和运算型 ADAS 的全球市场应达到 86 亿美元。这一市场收益中几乎一半将由雷达产生，为 38 亿美元，紧随其后的是摄像头带来的 35 亿美元，激光雷达不会是重头戏，只占 4 千万美元，而运算型 ADAS 将带来 13 亿美元。

在此背景下，市场研究与策略咨询公司 Yole 于今日发布了《2020 年 ADAS 车辆传感与计算报告》。在这份新报告中，Yole 的专家们对该行业进行研究以描述并提供关键传感器的市场数据，这些传感器包括：摄像头、激光雷达和雷达，数据则包含每种传感器的收益预期和出货量、市场份额，并按厂商和每种传感器的应用焦点进行细分。该报告展示了对主要传感器供应链、基础架构和竞争厂商的深入了解，同时也带来了对未来技术趋势和挑战的关键技术洞察与分析，以及对这些传感器在车内如何协同作用的深度理解。

在新冠危机过去后，哪种策略将被用来让产业重启？传感器竞争厂商有哪些，它们之间有何关联？这些传感器的供应链是什么样的？……Yole 的分析师们将为您剖析应用于 ADAS 车辆的传感与计算产业。

汽车行业已经见证了新冠危机的影响从对供应链的冲击发展成为对全球需求量的冲击。新车产量预期将比 2019 年的产量水平下降 30%。接下去，汽车行业向前发展的四大主要趋势预期将保持不变，即：互联、自主、共享和电动驾驶。然而，这些趋势的应用速度可能会因这次紧急事件而改变。随着对二氧化碳排放量的限制与相关惩罚仍将持续，电动化将成为 OEM³的主要关注。

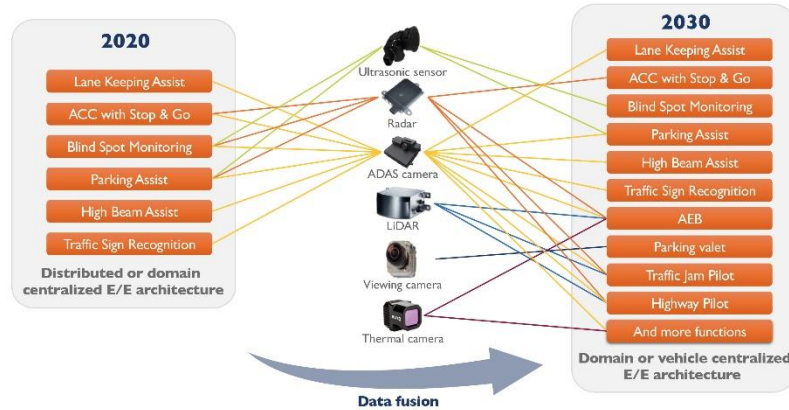
¹ 摘自：《2020 年 ADAS 车辆传感与计算报告》，Yole Développement

² ADAS：先进驾驶辅助系统

³ OEM：原始设备制造商

Towards data fusion for automated driving, 2020 vs 2030

(Source: Sensing and Computing for ADAS vehicle 2020 report, Yole Développement, 2020)



OEM 的第二个目标将关乎 ADAS 开发，以实现安全与自动驾驶性能。根据 AAA⁴在 2019 年 10 月所展示的情况，AEB⁵ 的开发对于避免前向碰撞迈进了一大步，但仍有待完善。消费者们希望自动驾驶功能能应用于交通拥堵或高速公路上，因此 OEM 也将对此进行开发。此类性能的开发将成为 OEM 提升自身区分度的一种方式。要做到这点，就必须增加更多传感器、更多运算能力和新的 E/E⁶架构。

Yole 射频器件与技术业务的技术与市场分析师 Cédric Malaquin 点评道：“奥迪和特斯拉都已开始了这一趋势。以奥迪为例，它们是通过将雷达、摄像头和激光雷达相结合的方式。为了融合由此产生的数据，奥迪和安波福（Aptiv）为前置传感器开发了一款域控制器，zFAS。而特斯拉的 Autopilot 硬件设备则在域控制器开发上更进了一步。Autopilot 要复杂得多，功能也更多，能进行频繁的 OTA^{Erreur ! Signet non défini.} 软件升级。”

举个例子，System Plus Consulting 的首席执行官 Romain Fraux 在接受 EETIMES 主编 Junko Yoshida 的采访时深入而详细地谈到了专用于奥迪 A8 的技术进步：“……汽车制造商们所面临的挑战将不再是提供最快的速度或从零到 100 km/h 的最短加速时间，而是确保先进自动驾驶与辅助系统的日渐提升。这就是奥迪 A8 的目标：利用激光雷达技术不断改进 2 级驾驶辅助系统……”您可以在 [i-Micronews](http://i-micronews.com) 网站上阅读全文。毫无疑问，这些性能带来的创新对于想要重启市场的 OEM 而言将成为关键的区分因素。

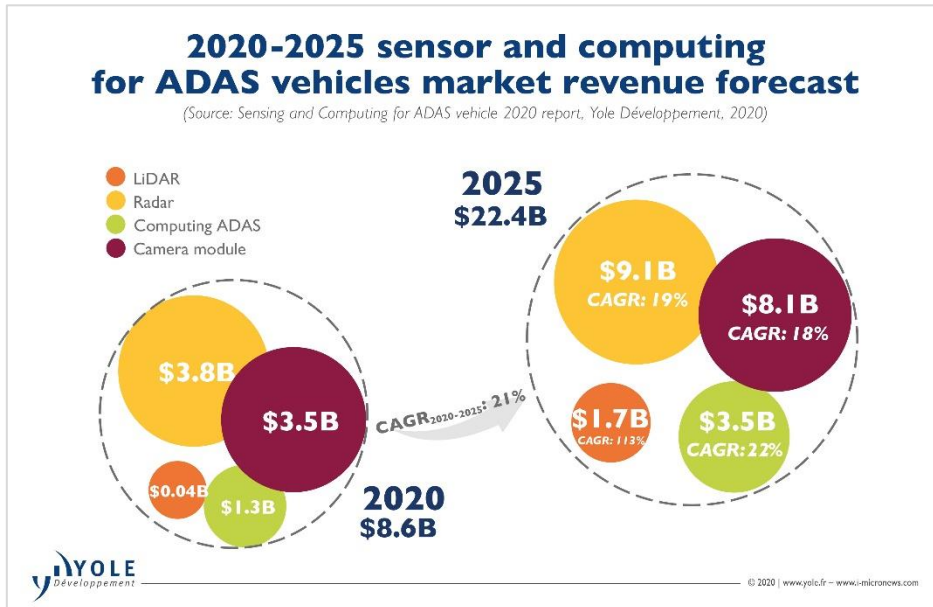
雷达和摄像头在汽车中的高渗透率将使相关的市场收益从这场新冠危机中快速恢复过来。

⁴ AAA: 美国汽车协会

⁵ AEB: 先进紧急制动系统

⁶ E/E: 电动/电子

Yole 的 Pierrick Boulay 称： “雷达市场收益预计将在 2021 年超过 2019 年的收益，并以 19% 的 CAGR⁷ 增长，在 2025 年达到 91 亿美元。摄像头市场收益也将在 2021 年超过 2019 年的收益，并以 18% 的 CAGR 增长，在 2025 年达到 81 亿美元。运算型 ADAS 的市场收益预计将以 22% 的 CAGR 增长，在 2025 年达到 35 亿美元。”



目前激光雷达市场的收益相当有限，因为只有一家 OEM 在其生产的部分车型中提供这一技术选项。其他 OEM，如宝马和沃尔沃，预期将在接下去的几年里采取类似做法，但其实施仍将仅限于高端车辆，因此出货量预期也将受限。在此背景下，激光雷达的市场收益预计将以 113% 的 CAGR 增长至 2025 年的 17 亿美元。对 OEM 和一级厂商而言，激光雷达是一种集成起来十分复杂的传感器，而与此同时雷达和摄像头的性能则在持续改进。

在未来几个月到几年里，ADAS 和汽车行业将迎来许多变化。在创新和新功能集成的推动下，市场将对诱人的机遇和新的竞争者敞开大门。市场研究与策略咨询公司 Yole 将持续关注这一演变，并通过报告、文章和活动呈现其展望与分析。敬请期待！

Yole Développement 全年持续发布大量传感与计算相关报告。敬请关注 i-Micronews，紧跟来自业界的最新动向，了解我们的整体活动安排，包括与领先企业的访谈、来自我们专家的分析，以及线上和线下的专题活动。

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⁷ CAGR: 年均复合增长率

About our analysts

As part of the Photonics, Sensing & Display division at Yole Développement (Yole), **Pierrick Boulay** works as Market and Technology Analyst in the fields of Solid State Lighting and Lighting Systems to carry out technical, economic and marketing analysis. Pierrick has authored several reports and custom analysis dedicated to topics such as general lighting, automotive lighting, LiDAR, IR LEDs, UV LEDs and VCSELs. Prior to Yole, Pierrick has worked in several companies where he developed his knowledge on general lighting and on automotive lighting. In the past, he has mostly worked in R&D department for LED lighting applications. Pierrick holds a master degree in Electronics (ESEO – Angers, France).

As a Technology & Market Analyst, specialized in RF devices & technologies within the Power & Wireless division at Yole Développement (Yole), **Cédric Malaquin** is involved in the development of technology & market reports as well as the production of custom consulting projects. Prior his mission at Yole, Cédric first served Soitec as a process integration engineer during 9 years, then as an electrical characterization engineer during 6 years. He deeply contributed to FDSOI and RFSOI products characterization. He has also authored or co-authored three patents and five international publications in the semiconductor field. Cédric graduated from Polytech Lille in France with an engineering degree in microelectronics and material sciences.

As a Technology & Market Analyst, **Yohann Tschudi**, PhD is a member of the Semiconductor & Software division at Yole Développement (Yole). Yohann is daily working with Yole's analysts to identify, understand and analyze the role of the software parts within any semiconductor products, from the machine code to the highest level of algorithms. Market segments especially analyzed by Yohann include big data analysis algorithms, deep/machine learning, genetic algorithms, all coming from Artificial Intelligence (IA) technologies. After his thesis at CERN (Geneva, Switzerland) in particle physics, Yohann developed a dedicated software for fluid mechanics and thermodynamics applications. Afterwards, he served during 2 years at the University of Miami (FL, United-States) as a research scientist in the radiation oncology department. He was involved in cancer auto-detection and characterization projects using AI methods based on images from Magnetic Resonance Imaging (MRI). During his research career, Yohann has authored and co-authored more than 10 relevant papers. Yohann has a PhD in High Energy Physics and a master degree in Physical Sciences from Claude Bernard University (Lyon, France).

About the report

Sensing and Computing for ADAS vehicle 2020

Advanced Driver Assistance System functionality will attract customers and restart growth of the automotive business. – Performed by Yole Développement

Companies cited:

AGC, Algolux, Altera, Ambarella, ams, Apple, Aptiv, Argo, ARM, Audi, Aurora, Avis, Baidu, Blackmore, Blickfeld, BMW, Bosch, BrightWayVision, Cambricon, Cepton, Chevrolet, Continental, Cruise, Delphi, Denso, Didi, Dodge, Excelitas, Fiat, First Sensor, Ford, Freescale, Fujitsu, Geely, GM, Google, Hella, Hitachi, Honda, Horizon Robotics, Hyundai, Hyundai-Mobis, Infineon, Innoviz, Jabil, Jaguar, Kalray, Koito, Kostal, Land Rover, Laser Components, Lattice, LeddarTech, Lexus, Lumileds, Luminar, Lumotive, Magna, Marelli, Maxel, May Mobility, Mazda, Melexis, Mercedes, Metawave, Micron, Mobileye, Nichia, Nidec, Nissan, NXP, Omnivision, OnSemiconductor, Osram, Ouster, Panasonic, Peugeot, Pioneer, Pony.ai, Porsche, Qualcomm, Quanergy, Renault, Robosense, Samsung, Seeing Machine, Seminex, Smart Eye, Sony, STMicroelectronics, Sunny Optical Technology, Tesla, Texas Instrument, Toshiba, Toyota, Trumpf, TSMC, Uber, Valeo, Velodyne, Veoneer, Volkswagen, Volvo, Waymo, Xenomatix, Xilinx, Xperi, ZF, ZKW and many more...

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Press Release

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Founded in 1998, Yole Développement (Yole) has grown to become a group of companies providing marketing, technology and strategy consulting, media and corporate finance services, reverse engineering and reverse costing services and well as IP and patent analysis. With a strong focus on emerging applications using silicon and/or micro manufacturing, the Yole group of companies has expanded to include more than 80 collaborators worldwide... [More](#)

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