



Ansys and Oculii Reimagine Automotive Radar Systems

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New agreement with Ansys helps Oculii boost development of autonomous driving technology

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oculii_3quarter_carview

/ Key Highlights

- Oculii leverages Ansys electromagnetic solutions to deliver vastly improved automotive radar systems
- Ansys HFSS helps close design cycles more quickly, accelerating software development while reducing time to market
- With 100 to 150 million radars sold in automotive alone, radars are the fastest growing active safety segment in the market; Ansys supports radar development

Using [Ansys](#) (NASDAQ: ANSS) simulation solutions, [Oculii](#) is developing artificial intelligence (AI) software and hardware for radar systems that will allow autonomous vehicles (AVs) to more accurately perceive their surroundings. The company relies on Ansys for its predictive accuracy, driving more refined design optimizations that shorten design cycles and support Oculii's mission of enabling high performance perception at lower cost.

Commercial radar systems have long been hampered by a simple design tradeoff: improving resolution requires more antennas, which increases size, cost and power. This is a significant problem for AVs that need to perceive any environment with a high degree of accuracy to operate safely. AVs compensate for poor radar resolution by employing a suite of various sensors, which increases system complexity and cost. Oculii's technology unlocks the full potential of commercially available radar, using AI to learn and adapt to the environment, increasing resolution by up to 100X.

[Ansys HFSS](#) helps Oculii evaluate and optimize key elements of radar transmission, including antenna and sensor placement and performance, with a predictive accuracy of 80 to 90 percent — improving overall design speed. This enables compact radar technology that offers superior resolution through low-cost, mass-manufacturable hardware.

"The way to improve radar technology is through software, because software fundamentally improves with data," said Steven Hong, CEO at Oculii. "Ansys HFSS has been invaluable because it allows us to make high-fidelity measurements and predictions around how design optimizations will impact real world performance. Using HFSS, we can close design cycles more quickly, and build confidence in what we do. We have also been impressed by Ansys' support team — they helped us overcome a number of challenges to get the most out of the solution, which helps us get the most out of radar systems."

Driven by consumer demand for active safety features and other self-driving technologies, the global automotive radar market is estimated to reach \$12.5 billion by 2026 [according to industry research](#). Radar is a key enabler for AVs and advanced driver assistance systems (ADAS). Radar's advantages lie in its superior range, and the ability of its radio waves to pass through rain drops, snow and fog.

"AVs face immense engineering challenges before they'll be deemed safe," said Shane Emswiler, senior vice president of products at Ansys. "There is great demand within the market for higher-performing, cost-effective autonomous technology. Our collaboration with Oculii enables us to facilitate solutions that will define autonomous radar technologies of the future."

/ About Oculii

Oculii is creating a next-generation AI software platform for radars that's exponentially higher resolution, longer range, more accurate, and less expensive than conventional solutions – increasing safety and reliability. The promise of autonomous vehicles depends on high-performance, all-weather, low-cost, and scalable perception technology, and Oculii is bringing it to the world. The company has raised more than \$75 million from leading investors and strategic partners and is headquartered in Dayton, Ohio, with offices in Silicon Valley and Beijing. For additional information, please visit www.oculii.com.

/ About Ansys

If you've ever seen a rocket launch, flown on an airplane, driven a car, used a computer, touched a mobile device, crossed a bridge or put on wearable technology, chances are you've used a product where Ansys software played a critical role in its creation. Ansys is the global leader in engineering simulation. Through our strategy of Pervasive Engineering Simulation, we help the world's most innovative companies deliver radically better products to their customers. By offering the best and broadest portfolio of engineering simulation software, we help them solve the most complex design challenges and create products limited only by imagination. Founded in 1970, Ansys is headquartered south of Pittsburgh, Pennsylvania, U.S.A. Visit www.ansys.com for more information.

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