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MERCEDES-BENZ X ZENDAR

Lidar-level Precision through Software-defined Radar for ADAS

Zendar could enable Mercedes-Benz to develop enhanced automated driving features and expand its Operational Design Domain (ODD) with a scalable, software-defined radar solution.

The Challenge

Zendar addresses the need for high-performance radar solutions to enable safe and reliable autonomous mobility that would scale. Alternative solutions are either too expensive or their performance is too limited. Radar is known for its reliability in all conditions, including adverse weather and low light. However, it also had some critical weaknesses like poor resolution and accuracy as well as stationary object blindness. Zendar set out to eliminate these limitations of radar with software-defined solutions, positioning radar as a primary sensor in next-gen ADAS.

The Solution

Zendar pioneered two foundational radar technologies to advance autonomous mobility. The first is distributed aperture radar, which enables lidar-like resolution at a fraction of the cost. Building from there, Zendar developed Semantic Spectrum Radar AI, a first-of-its-kind perception software that ingests raw radar data instead of point clouds for enhanced precision. These two innovations have the potential to reshape automotive radar, establishing it as a key sensor for solving critical perception challenges that today limit the Operational Design Domain (ODD) of ADAS. Working with the Mercedes-Benz radar group, Zendar identified these critical scenarios and started to plan testing to benchmark today's performance of the solution. Additionally, this step will allow Zendar to develop the technology further to optimize based on customer needs.

The Outcome

First results indicate that Zendar's approaches might have the potential to achieve a radar system solution with performance rivalling or exceeding that of industry-leading alternatives at a substantially lower cost. The expected impact is that Mercedes-Benz will be able to develop enhanced ADAS technology and bring higher levels of assistance to more cars with a scalable approach, providing significant cost savings.

Project Highlight

Potential to achieve the performance of an imaging radar with a considerable reduction in cost.

Zendar

Zendar develops safe, reliable autonomy solutions that are built to scale

Zendar's technology enhances ADAS perception capability while potentially reducing overall perception compute requirements by leveraging radar's strengths.

Headquarters
Berkeley, CA, United States

Founded
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No. Employees
51+

Website
www.zendar.io

Acknowlegement

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About STARTUP AUTOBAHN powered by Plug and Play

STARTUP AUTOBAHN powered by Plug and Play is an open innovation platform that provides an interface between innovative tech companies and industry-leading corporations.

The basis of the program is the partnership that develops between startups and the corporate business units. The two entities hold an equal footing from the get-go: together they evaluate the potential for a joint venture, move forward to pilot the technology, and work to achieve the ultimate goal – a successful production-ready implementation.

Designed with the intention to exceed startup acceleration, STARTUP AUTOBAHN powered by Plug and Play moderates a community for collaboration with a focus on implementable results.

Over the years, the platform has successfully cultivated over 500 projects with more than 350 startups since its founding in 2016.

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