

From racing to series production: This is how Arnold NextG uses motorsport as a development accelerator

With its multi-redundant drive-by-wire technology, Arnold NextG is paving the way for the safe autonomous driving of the future. The company uses motorsports as a highly dynamic development environment and unique data source.. The final rounds of the GTC Race and ADAC GT Masters season at the Hockenheimring provided the setting for the first deployment.



Arnold NextG entered two Mercedes-AMG GT3s in the ADAC GT Masters. Source: GruppeC Photography

Arnold-NextG CEO Kevin Arnold hung up his active motorsport career in 2018 - but racing still plays an important role for him as an entrepreneur. But it's no longer about best times and trophies. Having already been active as an innovation partner in the technology-savvy GTC Race series with Arnold NextG GmbH, he is now massively expanding development work in the motorsport environment with his company. Supported by the industrial group Bosch, with which the startup agreed on a cooperation on steer-by-wire steering systems in the summer independently of the racing series, Arnold NextG used two Mercedes-AMG GT3s in the final races of the GTC Race and ADAC GT Masters seasons. Arnold NextG pursues the goal of actively using motorsport as a development environment. The knowledge, data and requirements gathered in the process flow directly into the development and optimization of steer-by-wire systems for all areas of application - from individually adapted prototypes to large-scale production.



Strong partners with common development focus

Steer-by-wire systems are regarded as the steering systems of the future. In this context, the Bosch technology group and Arnold NextG announced a development partnership in June 2023. Both partners want to pool their development expertise and accelerate the systems' market maturity. As one of the world's leading suppliers of electric steering systems, Bosch recognized the potential of these systems early on and is systematically driving their development forward. Bosch aims to bring steer-by-wire steering systems to market in large-scale production by the middle of the decade. "We are certain that, thanks to this cooperation, we will continue to gain momentum in optimizing the systems," says Dr. Stefan Waschul, the member of the board of management of Robert Bosch Automotive Steering GmbH responsible for development. "Arnold NextG's motorsport activities will provide valuable input."

For Arnold NextG, the focus of the racing project is on testing and further developing drive-by-wire technology: "Motorsport as the workbench of the industry is the ideal development environment for us to confirm the performance and reliability of our technology under the toughest conditions. The data and requirements that we are already aggregating and deriving today form the basic prerequisite for the next generation of our by-wire technology with a focus on autonomous driving according to Level 4/5. In this way, we are not only laying the foundation for the safe mobility of the future - together with partners such as Bosch, we are already defining the requirements for the technology of tomorrow," emphasizes Kevin Arnold, CEO of Arnold NextG, regarding the role of motorsport as a development accelerator.

Family-owned cockpit

One of the two cockpits will remain firmly in family hands. Luca Arnold, younger brother of Kevin Arnold and the second driving force behind Arnold NextG, competed in both races and will have a direct influence on the further development of the Arnold NextG technology as a development driver.

Testing and development under the toughest conditions

At the center of the development work is the friction value data between the road surface and the wheel, which the electronic steering and braking system from Arnold NextG permanently determines and can make available to providers of autonomous driving systems and sensor manufacturers (camera, radar, LiDAR) via flexible interfaces. In combination with the corresponding algorithms, it will thus be possible in the future for assistance and driving systems to reliably calculate the driving dynamics of almost any vehicle at any speed. This data thus forms the basis for safe autonomous driving and represents a genuine revolution in the entire vehicle and mobility industry. The data and values determined in motorsports are directly incorporated into the further development of NXNextMotion, and the findings and improvements derived from them can be tested immediately under the toughest conditions.

PRESS RELEASE

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Valuable insights from Hockenheim

"The ADAC GT Masters weekend was a very good introduction for us to present our multi-redundant central control unit NX NextMotion. There was huge interest in our technology, which is the basis for autonomous driving. The racetrack is an ideal development environment. We are laying the foundation here and generating data that is essential for future development. The next step is the vehicle integration of NX NextMotion, so that we can then use the steer-by-wire Technology in the extreme environment of motorsports to determine and test resilient data and further optimize the system!" says Arnold-NextG CEO Kevin Arnold, summing up the successful Hockenheim weekend.

Contact

Hilmar Dunker Head of Communication, Arnold NextG GmbH
Tel.: +49 151 1881 77 62
Mail hilmar.dunker@arnoldnextg.de

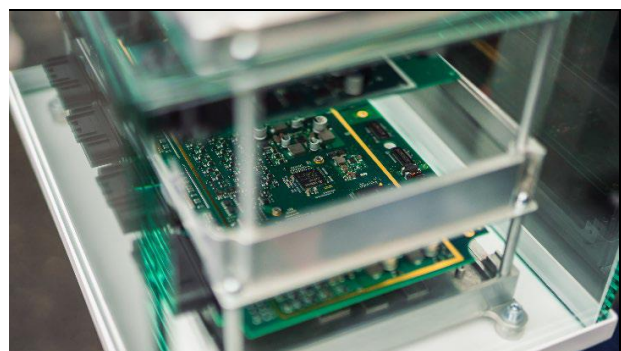
About Arnold NextG GmbH

Arnold NextG realizes the Safety-by-Wire® technology of tomorrow - whether on land, in the water or in the air. We offer the worldwide unique and multi-redundant central control unit NX NextMotion, which enables fail-safe and individual implementation. As an independent advance developer, incubator and system supplier, Arnold NextG takes care of planning and implementation - from vision to road approval. www.arnoldnextg.com



FFamily affair: Kevin Arnold (left), CEO of Arnold NextG, can count on his younger brother Luca as a development driver.

Source: GruppeC Photography



The Arnold NextG central control unit offers a vehicle-independent system solution for fail-safe control of all primary and secondary functions as well as secure interfaces for all AD systems

Source: GruppeC Photography.

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The racetrack is an ideal development environment for Arnold NextG. Here, foundations are laid, and data generated which are indispensable for future development.

Source: GruppeC Photography



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