AI Assists Development Of ADAS Systems

Modern, automated driver assistance systems require a large number of sensors in order to precisely analyse the vehicle's environment and derive safe driving maneuvers.

To further advance the development of these ADAS and AD solutions, technology group ZF has developed the cloud-based and AI-enabled validation service ZF Annotate, which was unveiled at the ZF Global Technology Day recently.
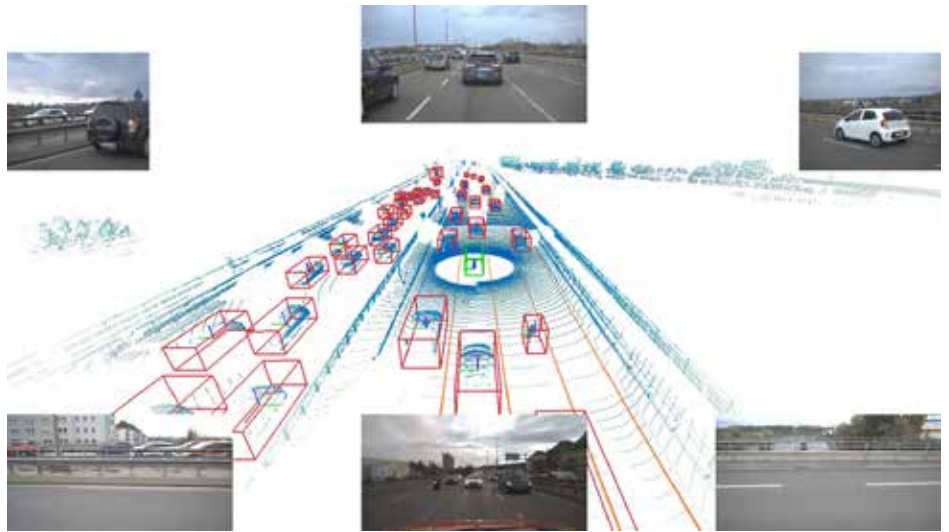
Cameras, radar, lidar or ultrasonic sensors continuously supply information from which the vehicle creates a three-dimensional image of its environment.

The systems must recognise a wide variety of objects in real time, including vehicles, people, lanes and traffic signs, for example.

This sensor data must be processed digitally correctly so that the vehicle always receives the "absolute truth"–known in the industry as "ground truth"–to calculate and implement a driving function based on it. Comparing the collected sensor information with a reliable and high-precision reference sensor set increases accuracy.

Based on the customer's own vehicle data and additional ZF sensor data recordings–the reference measurement–the cloud-based service solution provides the "ground truth".

ZF Annotate acts as a redundant setup that is independent of the sensor set to be checked and is confronted with the same information while driving on the road.

The recorded data is then uploaded to the cloud and analysed. Thanks to artificial intelligence, all relevant objects are accurately marked, classified, attributed and assigned unique ID numbers and moving objects are tracked.

This object information forms part of the complete description of the environment model — the ground truth. After this "annotation", the software provides a highly precise comparative measurement.

"ZF Annotate combines the advantages of a robust and independent reference sensor set with a scalable cloud service that uses intelligent 2D and 3D tracking algorithms," said Dr. Holger Klein, Chairman of the Board of Management.

Previous comparable systems mainly relied on 2D annotation for the validation of reference data and thus map the environment in distance and horizontal angle. The 3D-capable ZF Annotate adds height information to the data.

Furthermore, the reference data recorded is not just limited to a front view. Depending on customer requirements, the reference sensor set can provide a comprehensive 360-degree view, providing a detailed and precise representation of the vehicle's surroundings.

REGIONAL NSW WORLDSKILLS COMP

Automotive apprentices across NSW recently put their skills to the test in the regional WorldSkills Competitions.

The apprentices put their skills to the test for the chance to represent their region at the WorldSkills National Championship next year, and potentially the International Championships in 2026.

Working to a set time limit, apprentices are required to demonstrate their skills in various problem-solving challenges, including brake repair, electrical checks, and engine management diagnostics.

The Gold Medal winner for Western Sydney was 21-year-old, Callahan Smith, a third-year TAFE NSW apprentice completing the Certificate III in Light Vehicle Mechanical Technology.

"Winning the WorldSkills Regional Competition is a huge achievement. It was great to see how I could apply my skills under pressure and I'm excited to move to the next round," said Callahan.

"I like the challenge of working with cars, pulling things apart, finding the problem and putting them back together. It's more challenging than I thought, and it's important to combine both the practical skills and the theory we learn at TAFE NSW."

TAFE NSW Head Teacher for Automotive Daniel Birin added, "The need for qualified automotive technicians continues to be one of the highest in the state. We're committed to training high-quality apprentices who will be ready to hit the ground running."

"We are focused on delivering apprentices who have the job-ready skills to succeed in the industry and competitions like this give them the chance to put those skills to the test."