AutoDrive

Advancing fail-aware, fail-safe, and fail-operational electronic components, systems, and architectures for highly and fully automated driving to make future mobility safer, more efficient, affordable, and end-user acceptable

Objectives

AutoDrive will provide: fail-aware, fail-safe, and fail-operational integrated electronic components, Electrical/Electronic architectures as well as (deeply) embedded software systems for highly and fully automated driving to make future mobility safer, more efficient, affordable, and end-user acceptable. Advancing towards fail-operational systems will require increased reliability and availability of components, new redundancy schemes as well as architectures, and methodologies to appropriately manage and balance complexity, cost, robustness, and flexibility.

The AutoDrive project will advance the current level of safety and reliability by considerably driving forward fail-operational technologies and by making use of safety and security concepts from the aviation domain.

Acknowledgment

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Relevance and Impact

Automated driving and connected active safety and advances ADAS-Systems based on fail-aware sensor systems, fail-operational powertrains and control systems and functional integrated actuators.

AutoDrive with 10 key impacts as technology driver for EU industries and society:

• Adds novel technology properties for fail-operational systems with high robustness and availability based on novel semiconductors for functional integrated actuators, fail-aware sensor-systems and fail-operational control systems at reasonable costs which are required but currently missing;
• Fosters the market introduction of this new and for Europe’s industry very important technology of automated systems;
• Enables Europe to gather forces in order to take advantage of business and societal opportunities and to maintain European leadership regarding trustworthy automated driving;
• Strengthens European leadership in electronics and smart embedded computer systems, but also strengthen Europe’s role as a frontrunner for innovation and engineering quality in the automotive and aviation;
• Covers with the very strong consortium of 60 partner the whole automotive, aviation and semiconductor value chain based on roughly 67 Mio€ budget which give the critical mass;
• Allows Europe to advance to global leadership for the pivotal industry automotive, aviation, ECS and semiconductors;
• Drives the standardization for fail-operational and redundancy levels, which are not yet defined;
• Involves for the first time in a research project certification bodies (EASA, Luftfahrtbundesamt) to facilitate the introduction of technologies and at the same time insurance companies to cover the unavoidable residual risk to get the license to drive the automated cars on public roads. Europe’s largest insurance company will join the project during the GA process.