

New role for software in the **ACES vehicle**

Accelerate the time-to-market, change the outlook on software



The far-reaching impact of the ACES vehicle

The automotive industry is in the midst of the largest transformation ever experienced by this market. This is mainly driven by the trend that vehicles are becoming Autonomous, Connected, Electric and Shared (ACES). Software is driving most of the key breakthroughs in ACES and thus is becoming progressively more important as it increasingly determines the value of a car. Success is no longer determined by the design and the driving style, but also by the time-to-market of new functionalities and by launch excellence of new software-driven features.

New outlook on software development

The increasing number of functions and complexity are central reasons for automotive product-launch delays, which have multiplied rapidly in the recent years. In this era an OEM needs to have a platform where new and even more complex vehicle functions can be added rapidly, without causing launch delays and being cost efficient. Therefore OEM's decide to transform their classic hardware defined decentralized E/E architecture to a more centralized E/E architecture, where powerful domain controllers will host the software. This implies that the SW is fully decoupled from – as traditionally – the hardware. This change enables that new complex vehicle functions can be added without the need for new hardware.

The vehicle of the future will be a more software defined vehicle and the software launch excellence becomes the decisive factor bringing new features to the market in time. And this software excellence is exactly the domain of ICT Group's expertise – as we are a software company by heart.

Identify integration challenges at an early stage

With over 1500 professionals, ICT Group is a leading services and solutions provider for end-to-end, full-stack software. We work for large and well-known Tier-1 and Tier-2 suppliers in the international automotive OEM supply chains, as well as the well known global silicon vendors. We work closely together with our clients as thought partner and as software development partner for function development, validation & verification and system integration.

ICT Group has a forty-year track record of experience in embedded software, with strong focus on the key-area's

of Cyber Security, Functional Safety, AI and cloud services. We play an active role in many markets; besides the automotive market we also play a prominent role in the world of public transport. We developed a Mobility-as-a-Service-platform that allows people to plan their trip from door to door.

We know the complexity that is created when a large and widely varying number of functions have to interact with one another on one, single platform. We know the importance of using early and continuous chain tests during every phase of the development process in order to identify integration challenges and resolve them immediately. After all, in most cases the complexity lies in the (pre)integration instead of in the development of new functionalities. This approach allows us to achieve a substantial reduction of the time-to-market of software functionality.

Ecosystem becomes part of the lifecycle management

In the same way in which you need to install a software update on your phone at regular intervals and just as you can add functionality by installing apps, the vehicle of the future will also be continuously updated with new versions, upgrades and functionalities that are chosen by the customer. This means that car manufacturers will have to change their way of thinking about lifecycle management and that they will have to closely involve the ecosystem of their suppliers. Time-boxing in terms of projects is a thing of the past, because software modules will develop continuously. This requires a different way of collaborating and more intensive relationships with suppliers following a more Agile approach.

A different way of collaborating with your ecosystem

ICT Group clearly takes things a step further than merely developing software – it enters into long-term partnerships with its customers. We participate in their thought processes, we are proactive, and we pride ourselves on our problem solving capabilities. Today's world requires much more than developing functionalities – as a software partner you also have to remain integrally involved in all phases of the development and improvement of a vehicle. And you need to be given the space to participate in thought processes that transcend individual domains. After all, it is a fact that you will continuously encounter unexpected challenges when you



are involved in integrating functions. Software partners are, therefore, required to be able to deal with these challenges in a flexible manner and collaborate with one another in the ecosystem. For this is the only way in which you can resolve issues promptly and reduce the time-to-market.

Our experience

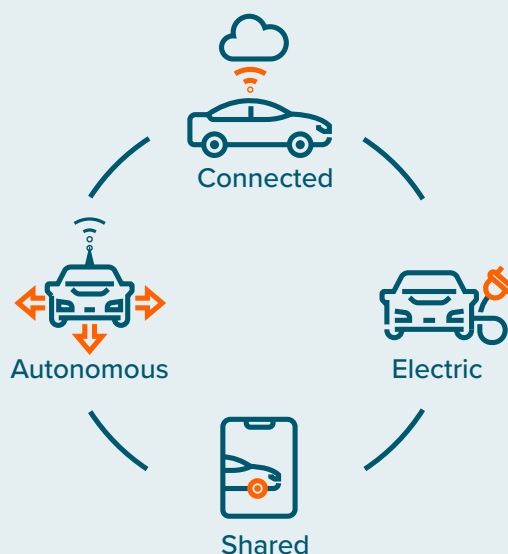
ICT Automotive is part of ICT Group. Our first automotive customer in 1990 was Philips, for whom we developed the navigation software CarIn. Today we develop software with a large number of OEM manufacturers, including Volkswagen, Audi, Mercedes, Porsche, Hyundai, Ferrari and Daimler. In addition we work in partnership with a large number of Tier-1 suppliers.

ICT Group has a certified quality management system according to DIN ISO 9001:2015. Automotive software development projects can be carried according CMMI or ASPICE levels. Furthermore, ICT Group has certified information security management systems according to DIN ISO 27001:2013 and TISAX VDA ISA 5.0, to comply with the standards for the automotive industry in Germany. If required for the project and to accelerate the driving safety, ICT Group provides all its software conforming to the ISO 26262 functionality safety standard for automotive. ICT Group helps its customers to develop highly secure software in accordance with the latest UNECE regulations.

ICT Automotive's areas of expertise

ICT Automotive's initial activities focussed on the areas of infotainment, body, chassis and ADAS/AD. In addition, ICT Group has extensive expertise in related areas such as Mobility-as-a-Service, AI and ML, cloud and security. Recently we combined these areas of expertise in four groups that collaborate closely: Autonomous Driving, Connectivity, Electric and Shared.

Expertise that is required in all areas has been combined in a separate unit that works for all four areas, for instance security, cloud and AI.



More information

Would you like to learn more about ICT's services? Please contact us!

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