Success Story: Cybersecurity Compliance of Elektrobit's AUTOSAR-Based Products

Leveraging AUTOSAR for Cybersecurity-Compliant ECUs

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The legal requirements for homologation, mandating compliance with UN Regulation No. 155 (UN R 155) starting in mid-2024, posed a significant challenge for Elektrobit. UN R 155 focuses on vehicle cybersecurity and the establishment of a cybersecurity management system to protect vehicles against cybersecurity threats. Car manufacturers are required to implement protective measures to ensure robustness against cybersecurity risks, as outlined in Annex 5 of the regulation.

To support this, Elektrobit, as a supplier, needed to ensure that its AUTOSAR-based product portfolio adhered to these new directives. Specifically, these products had to comply with the ISO/SAE 21434 "Road Vehicles – Cybersecurity Engineering" standard, which defines the framework for cybersecurity in the automotive domain.

To address this challenge, Elektrobit conducted a comprehensive, project-independent, out-of-context Threat Analysis and Risk Assessment (TARA) for its AUTOSAR-based products, EB tresos and EB corbos. This approach began with defining the assumed context of the products, leading to the identification of generic assets. Furthermore, the process involved the identification of threat scenarios, potential threats, attack paths, and the resulting cybersecurity goals, which were translated into specific cybersecurity requirements. The analysis highlighted a series of protective control measures necessary to safeguard these assets. Importantly, all identified protective measures are fully supported by functions specified within the AUTOSAR standard. This underscores the robustness and comprehensiveness of AUTOSAR in providing the necessary functionalities to implement a cybersecurity-compliant Electronic Control Unit (ECU).

By leveraging the capabilities of AUTOSAR, Elektrobit ensures that its products not only meet the stringent regulatory requirements set forth by UN R 155 but also enhance the overall cybersecurity posture of automotive systems. This proactive approach facilitates compliance and positions Elektrobit as a leader in delivering secure and reliable automotive solutions.