VeTeSS: Verification and Testing to Support Functional Safety Standards

Description

New safety standards, such as ISO 26262, present a challenge for companies producing safety-relevant embedded systems. Safety verification today is often ad-hoc and manual; it is done differently for digital and analogue, hardware and software.

The VeTeSS project developed standardized tools and methods for verification of the robustness of safety-relevant systems, particularly against transient common-cause faults. Bringing together partners from every part of the supply chain, VeTeSS developed automated, quantitative processes usable at all stages of development. These provided standardized data from verification for safety standards qualification. Development costs and time to market can be reduced, even with the increasing complexity of embedded systems and software. European industry can benefit from vendors being able to supply standard components for multiple applications, rather than products designed to a specific customer's requirements. To test these as "safety elements out of context", assumptions must be made about the environment in which they will be used. A standardized, evidence-based verification process enables this reuse of components in different applications.

The focus of VeTeSS is the strategically important automotive market. There are other industries with similar requirements and we have actively engaged with them to share knowledge and disseminate results. The developments are relevant to conventional vehicles as well as to new electric/hybrid vehicles. The safety of the latter habe been proven to allow wider adoption, which will in turn be an important contribution to carbon emissions reduction.

The results of the project can improve the competitiveness of the European embedded hardware and software industry. It can improve the safety, quality and reliability of products and enable innovative technologies to increase road user safety. It can also benefit society by reducing accidents and related costs.

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