

Safe Development Processes for Cognitive Systems

We offer support for the development processes of safety-relevant software systems, empowering businesses to decide whether and how processes need to be adapted. Therefore, we provide an effective analysis and suggest concrete next steps by combining industrial experience and academic insight. Your benefit is a (software) development process tailored to your needs in line with existing standards like IEC 61508.

Challenge: Balancing innovation and safety in cognitive systems development

Cognitive systems are expected to be reliable, flexible, and intelligent. Developing software for cognitive systems is challenging, even more when they provide safety-relevant services. Documentation requirements for compliance with safety standards are overwhelming and, together with the need for simple safety measures, often seen to hinder innovation. There can be a resistance to adopting safety practices due to a lack of understanding or perceived inconvenience. A misalignment between technical teams and safety experts will lead to misunderstandings about safety requirements. Safety measures should not compromise the user experience and system utility. Improper integration of safety-relevant and non-safety-relevant parts either results in additional work or threatens the safety integrity. Variability and integration with existing legacy products add to the complexity. Finally, there might be an uncertainty if enough and the right safety measures have been chosen or how to prepare for the safety assessment.

Solution: Fraunhofer IKS ensures compliance and efficiency

We act as a neutral external party with an impartial perspective on your development processes. We help align existing processes and documentation with established standards like IEC 61508,

ensuring compliance and efficiency. We examine the effectiveness of your safety measures and their verification. Our expertise supports the design of individual safety mechanisms and their integration into a sound safety argumentation, empowering your team to innovate confidently while maintaining the highest safety standards.

Our offer:

- **Workshops:** Organizing workshops to collect information from stakeholders and from the existing development process, identifying overarching goals and deriving requirements.
- **Findings report:** Compiling a report that details the analysis findings, provides insight into the strengths as well as weaknesses of the current development process, and outlines next steps for improvement.
- **Safety process analysis:** Analyzing your safety documentation and process against standards such as IEC 61508.

Why work with Fraunhofer IKS:

We provide an unbiased evaluation of your (software) development process. As outsiders to the system, we do not have biases that may affect the objectivity of the analysis. We use our experience in research of cognitive systems with safety-relevance and methods for their development to improve your development processes.

Contact us for more information

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