

Software Architecture Evaluation

We provide the architectural evaluation for a software system which enables a business to decide whether it should update the system's structure. Therefore, we provide an effective analysis and suggest concrete next steps by combining industrial experience and academic insight. The benefit is an unbiased and technology-agnostic architecture evaluation.

Challenge: Before changing a software system, a complex analysis is needed.

Changes to the architecture of a software system can be costly, so before embarking on this project it is necessary to answer a series of questions to clarify which elements of the architecture should be restructured. This includes understanding the advantages and limitations of the current approach, how well it matches the desired requirements, and what aspects could be updated for a better outcome. Answering these questions requires a thorough analysis of the existing system architecture, which is complex but essential to reveal the concrete next steps for improvement.

Solution: Fraunhofer IKS as neutral external partner for software architecture evaluation

We act as a neutral external party for conducting the architectural analysis, making it possible to perform it from an impartial perspective. In addition to examining the technical aspects of the existing architecture, the analysis aims to shed light on the requirements of stakeholders, as well as on the connections to other tools in the company's ecosystem. Our analysis approach combines industrial experience and academic insight, leading to next steps that are simultaneously practically applicable and incorporate state-of-the-art ideas. To carry out the process systematically, we rely on standards such as ISO 25010, which provides guidelines for the evaluation of software.

Our offer:

- **Workshops:** Organizing workshops to collect information from stakeholders and from the existing architecture, identifying overarching goals and deriving requirements.
- **Findings report:** Compiling a report that details the analysis findings, provides insight into the strengths as weaknesses of the current architecture, and outlines next steps for improvement.
- **Safety analysis:** Analyzing an existing architecture with regards to system safety by verifying the existing documents against standards such as IEC 61508.

Why work with Fraunhofer IKS:

We provide an unbiased and technology-agnostic software architecture evaluation. As outsiders to the system, we do not have biases that may affect the objectivity of the analysis. Additionally, our focus is not on recommending any specific technology solutions, which leads to an impartial outcome.

Contact us for more information

Dr. Christian Drabek
Automation Systems
Tel. +49 89 547088-357
christian.drabek@iks.fraunhofer.de

Dr. Gereon Weiß
Department Head Automation Systems
Tel. +49 89 547088-348
gereon.weiss@iks.fraunhofer.de