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Certifications of Critical Systems - The CECRIS Experience

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Description:

In recent years, a considerable amount of effort has been devoted, both in industry and academia, to the development, validation and verification of critical systems, i.e. those systems whose malfunctions or failures reach a critical level both in terms of risks to human life as well as having a large economic impact.

Certifications of Critical Systems - The CECRIS Experience documents the main insights on Cost Effective Verification and Validation processes that were gained during work in the European Research Project CECRIS (Certification of Critical Systems). The objective of the research was to tackle the challenges of certification by focusing on those aspects that turn out to be more difficult/important for current and future critical systems industry: the effective use of methodologies, processes and tools.
Starting from both the scientific and industrial state of the art methodologies for system development and the impact of their usage on the verification and validation and certification of critical systems, the project aimed at developing strategies and techniques supported by automatic or semi-automatic tools and methods for these activities, setting guidelines to support engineers during the planning of the verification and validation phases.

Keywords: Safety Assessment, Reliability Analysis, Critical Systems and Applications, Functional Safety, Dependability Validation, Dependable Software Systems, Embedded Systems, System Certification