

KEYNOTE

Software Reliability Engineering – Risks, Challenges and Chances for Product and Process Improvement

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1 Abstract

Software Reliability Engineering (SRE) refers to those software production processes that design reliable performance and functionality into information & knowledge processing systems. In short, SRE seeks to build such systems that do exactly what we want, not only once, but measurable many times. The question is whether a general risk management (which we want, including the aspects of safety, security, etc.) can be achieved and measured by the approaches used in SRE. If not, why not? If so, how?

The talk will summarize overall aspects of SRE and address to some extent of detail well-selected special issues that strongly impact the product and process quality such as

- Fault/Failure Models, Dependability and Fault Management
- Internal/External Process Metrics
- Testing methods for reliability assessment
- Reliability Growth Models, Operational Profile
- Concepts of Software Fault Tolerance
- The wide spectrum of SRE applications, ranging from Information Systems to Knowledge-Based Expert Systems, etc.

2 Content

- Instead of Introduction
- What is Software Reliability Engineering (SRE)? Why?
- SRE Practices and Software Development Process
- Around SRE: Dependability and Fault-Management
- Software Testing and SRE
- Product Metrics and Process Metricalization
- Summary and Conclusion: Progress Brings even more Risks – Extreme SRE