"An Integrated Dependability Framework for System Design and Architecture"

The reliability of a system is much more than the cumulative reliability of all of the parts. This tutorial will focus on a dependability framework that provides guidance and analysis methods for system engineers and architects for the prevention, removal, and tolerance to faults in a system. Methods and tools normally used during system architecture and development can be coupled with reliability analysis methods in the dependability framework to have significant improvements in system reliability, safety, and availability while maintaining realistic design efforts and expectations. While a focus on faults, physics of failure, and methods to improve component and product reliability will always be needed and studied by reliability engineers, this dependability framework drives early and top-down focus on the fundamental causes of faults, how those faults propagate into system failures, and how system design decisions can often provide more elegant and cost-effective solutions for achieving a dependable system.

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