

## Automotive Quality Engineering: A Roadmap for Functional Safety

**Authors :** Hugo d'Albert, Udo Lindemann

**Abstract :** The number of automotive electronic systems that allow realizing new functions, like driver assistance systems, has been increasing extremely in the last decade. Although they bring several benefits, their malfunctions can lead to severe consequences, such as personal injury of road users. Functional safety is an approach to identify these critical malfunctions and arrange technical systems that include only tolerable risk. This approach is- in comparison with other technical areas- relatively new in the automotive sector. For a long time, the automotive systems have based on mechanical components and approved principles, like robust design. With a growing number of electric and electronic components in the modern cars and realizing by software of the system functions, the need for new standards and methods to assure the functional safety has arisen. This paper described the current state of engineering for safety in automotive sector and discusses new directions to meet the challenges of the future.

**Keywords :** automotive systems, functional safety, quality engineering, quality management

**Conference Title :** ICQE 2018 : International Conference on Quality Engineering

**Conference Location :** Montreal, Canada

**Conference Dates :** May 24-25, 2018