

## **A Study of Quality Assurance and Unit Verification Methods in Safety Critical Environment**

**Authors :** Miklos Taliga

**Abstract :** In the present case study we examined the development and testing methods of systems that contain safety-critical elements in different industrial fields. Consequentially, we observed the classical object-oriented development and testing environment, as both medical technology and automobile industry approaches the development of safety critical elements that way. Subsequently, we examined model-based development. We introduce the quality parameters that define development and testing. While taking modern agile methodology (scrum) into consideration, we examined whether and to what extent the methodologies we found fit into this environment.

**Keywords :** safety-critical elements, quality management, unit verification, model base testing, agile methods, scrum, metamodel, object-oriented programming, field specific modelling, sprint, user story, UML Standard

**Conference Title :** ICPE 2015 : International Conference on Production Engineering

**Conference Location :** Tokyo, Japan

**Conference Dates :** May 28-29, 2015