

The measurement of safety criteria in safety critical systems

ABSTRACT

Safety critical systems use software to meet their functionalities. Failures in these software lead to a very high impact on the environment in which the safety critical systems are used. Several criteria are considered in safety critical systems, which are: reliability, availability, maintainability and safety. In this paper, we focus on measuring the safety criterion in safety critical systems. Safety has some factors that are: correctness, security, responsiveness and testability. Correctness is one of the most important factors of safety. Correctness also has sub-factors such as: completeness and consistency. In this paper, we investigate the safety criteria and safety measurement via two specific domains: transportation systems and business intelligent systems. Also, these criteria are employed in our developed prototype for verifying the safety criteria of safety critical systems and supporting the management of safety critical systems..

Keyword : Safety critical systems; Safety; Correctness; Formal methods; Formal verification