Evaluating the Predicted Reliability of Mechatronic Systems: State of the Art

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Résumé en anglais	Reliability analysis of mechatronic systems is one of the most young field and dynamic branches of research. It is addressed whenever we want reliable, available, and safe systems. The studies of reliability must be conducted earlier during the design phase, in order to reduce costs and the number of prototypes required in the validation of the system. The process of reliability is then deployed throughout the full cycle of development; this process is broken down into three major phases: the predictive reliability, the experimental reliability and operational reliability. The main objective of this article is a kind of portrayal of the various studies enabling a noteworthy mastery of the predictive reliability. The weak points are highlighted, in addition presenting an overview of all approaches existing in quantitative and qualitative modeling and evaluating the reliability prediction is so important for the futures reliability studies, and for academic researches to innovate other new methods and tools. the Mechatronic system is a hybrid system; it is dynamic, reconfigurable, and interactive. The modeling carried out of reliability prediction must take into account these criteria. Several methodologies have been developed in this track of research. In this article, we will try to handle them from a critical angle.
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