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Evaluation of human error probabilities in railway systems

Walter SCHON et Mohamed SALLAK

In railway systems, human error has been defined as a behavior of the human operator which leads to accidents in railroad systems. During the last years, human error is an increasingly significant factor in train accidents. Therefore it is necessary to model human operators involved in the railway system. In the literature, there exist a variety of Human Reliability Analysis (HRA) models. HRA models are used to evaluate the Human error probability (HEP) throughout the completion of a task. A model is not developed to handle all the issues addressed in human reliability. Each model is developed only for certain issues. Thus, an appropriate HRA model should be chosen according to the characteristics of the research subject.

In this task of our project, an experimental protocol is developed to conduct an experiment on a railway platform, Route Control Centre System (RCCS), provided by Ansaldo STS. The main objective of the experiment is to assess the HEP of human operators. Several experimental subjects are invited to conduct the experiment under different conditions. The obtained experimental results are later analyzed by some classical Human Reliability Analysis (HRA) methods which estimate the HEP of each subject.