**Spin model checking using SpinRCP**

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**Abstract:**

The constantly increasing size and complexity of contemporary ICT (Information and Communication Technology) systems as well as demands for reduction in costs and shortening of time-to-market for a new product confront the designers with harder and harder task to ensure correct functioning of developed systems. Nowadays, ICT systems are becoming ubiquitous in our daily life and we have to rely on their correctness. If any of them malfunctions, it will be at least annoying for its user, but in the case of safety-critical systems, such as for example systems in transport, medicine, industry, ecology, telecommunications and the military, each undiscovered error in hardware or software may cause a lot of damage, threaten the health or even the life of the people.

Therefore, reliability of systems is a key issue in the system design process that takes the greatest part of design time and effort. A very promising approach toward ensuring correctness of ICT systems is that of model checking. Model checking is a formal verification method, which can automatically verify desired behavioural properties of a given system through exhaustive exploration of all states of a suitable model of the system. After an introduction to the concepts of model checking, one of the leading model checkers, called Spin, is described. In order to ease Spin model checking, we developed a SpinRCP IDE (Integrated Development Environment). It is written in Java and based on the Eclipse Rich Client Platform. The use of this IDE is demonstrated on models of several example systems.