Fakultät für Informatik

Autor(en) des Beitrags:
Haberl, Wolfgang; Baumgarten, Uwe; Kugele, Stefan

Titel des Beitrags:
Model-Based Generation of Fault-Tolerant Embedded Systems

Abstract:
Today, embedded systems are ubiquitous in highly safety-critical environments as represented by cars and airplanes. To avoid high warranty costs and human injury, their correct and thus safe operation must be ensured. Besides programming errors, hardware defects are a major source for the failure of such systems. Therefore, development approaches for safety-critical systems employ, in addition to strict rules for the software development, the redundant use of soft- and hardware in the run-time system in order to achieve the desired fault-tolerance. While redundancy may improve system safety, the correct integration of redundant soft- and hardware in the system's development further raises design complexity. In this paper we present an approach how redundancy may be generated automatically, disburdening the system developer from this task. This leads to less implementation effort and at the same time eliminates a potential source for coding errors. The concept is based on our deployment approach for automatic code generation and configuration of distributed embedded systems.

Jahr:
2010

Monat:
7

Hinweise:
Dieses Paper wurde im Rahmen der Proceedings folgender Konferenz veröffentlicht: ESA 2010, Juli 2010, Las Vegas, Nevada, USA

Occurences:
- Einrichtungen > Fakultäten > Fakultät für Informatik > Lehrstühle der Informatik > Informatik 13 - Fachgebiet Vernetzte Rechnersysteme (Prof. Baumgarten) > Autor > Kugele, Stefan