



GI/ITG/GMA Technical Committee “Dependability and Fault Tolerance” (VERFE) and  
DFG Priority Program SPP 1500 “Dependable Embedded Systems”

## 10<sup>th</sup> Workshop on Dependability and Fault Tolerance (VERFE’14)

Focus topics “Dependable Embedded Systems” and  
“Software-Controlled Adaptive Fault Tolerance in Microprocessors”  
in conjunction with ARCS 2014, Lübeck, Germany, February 25<sup>th</sup> – 28<sup>nd</sup>, 2014

# Call for Papers

### Background and Focus

Although the basic reliability of hardware and software components over the decades has steadily grown, their increasing number still causes severe problems. Moreover, in recent years it can be observed that in an increasing number of devices, e.g. cars, digital components are integrated into environments of other physical components. Here the complexity of the interactions with these other components, as well as the limited accessibility of the digital ones create problems with regard to maintaining a dependable operation of the entire system in case of faults or external disturbances.

While this is not a problem with microprocessors, there, the ever shrinking feature sizes, the higher complexity, lower voltages, and higher clock frequencies increase the probability of design-, manufacturing-, and operational faults, making fault tolerance techniques in general purpose processors to be of crucial importance in the future. As simple solutions (such as TMR) easily can get too expensive, the ability to trade increased reliability against performance/power overhead will become important, resulting in light-weight fault tolerance techniques implemented in hardware, but controllable from higher software layers.

This workshop aims at presenting contributions and work-in-progress from the research area of dependable and fault tolerant computing in order to bring together scientists working in related fields, especially from the central European countries.

### Topics

Contributions on the topics of “Dependable Embedded Systems“ and “Software-Controlled, Adaptive Fault Tolerance in Microprocessors” are of particular interest; contributions on general topics of dependability and fault tolerance are also welcome but not limited to:

- reliability models for hardware and software
- modeling and simulation of fault-tolerant systems
- fault-tolerant systems and system components
- formal verification of systems
- testing of hardware and software
- fault treatment
- detection and correction of transient faults
- quantitative assessment of reliability improvements
- safety-critical applications
- timeliness problems
- dependability of networks
- dependability of embedded systems
- highly available systems
- dependable organic computing
- self-organization within redundant systems
- dependable ubiquitous and pervasive computing
- composability of dependable systems
- dependable mechatronic systems / micro systems
- dependability of mobile and wireless systems
- robustness and robustness metrics
- validation and verification
- fault models and fault model abstraction
- fault-injection techniques
- software-controlled fault tolerance
- on-chip backward recovery techniques (e.g. pipeline flush and re-execution)
- forward recovery techniques (notification of higher layers)
- fault-tolerant caches
- dynamic re-use of currently unused resources in processors for fault-tolerance

### Information for Authors

The workshop will focus on research presentations as well as brainstorming sessions.

Therefore, two kinds of contributions are welcome:

- research papers documenting results of scientific investigations and
- position papers proposing strategies or discussing open problems.

### Deadlines:

Submission: **EXTENDED December 13, 2013** (extended abstracts (3-4 pages) or full papers, PDF)  
to: [bernhard.fechner@informatik.uni-augsburg.de](mailto:bernhard.fechner@informatik.uni-augsburg.de)

Notification: **December 31, 2013**

Camera-ready: **January 12, 2014** (max. 8 pages); will appear in ARCS 2014 Workshop Proceedings (CD, IEEEExplore).

Format: A4, [http://www.ieee.org/conferences\\_events/conferences/publishing/templates.html](http://www.ieee.org/conferences_events/conferences/publishing/templates.html)

VERFE'14 Workshop site: [http://www.arcs2014.iti.uni-luebeck.de/download/Cfp\\_VERFE.pdf](http://www.arcs2014.iti.uni-luebeck.de/download/Cfp_VERFE.pdf)

Further information about ARCS 2014: <http://www.arcs2014.iti.uni-luebeck.de>

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