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Titolo	Formal Techniques in Real-Time and Fault-Tolerant Systems [[electronic resource]] : Third International Symposium Organized Jointly with the Working Group Provably Correct Systems - ProCos, Lübeck, Germany, September 19 - 23, 1994. Proceedings / / edited by Hans Langmaack, Willem-Paul de Roever, Jan Vytopil
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Descrizione fisica	1 online resource (XIV, 787 p.)
Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 863
Disciplina	004.0151
Soggetti	Computers Programming languages (Electronic computers) Computer logic Microprocessors Special purpose computers Computer memory systems Theory of Computation Programming Languages, Compilers, Interpreters Logics and Meanings of Programs Processor Architectures Special Purpose and Application-Based Systems Memory Structures
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Hybrid verification by exploiting the environment -- Correctness of real time systems by construction -- Specifying and verifying fault-tolerant systems -- Development of hybrid systems -- Linear duration invariants -- Efficient reconfiguration of trees: A case study in methodical design of nonmasking fault-tolerant programs -- A comparison of Statecharts variants -- A calculus of stochastic systems -- Verification of an audio control protocol -- Verifying invariance

properties of timed systems with duration variables -- Predicting logical and temporal properties of real-time systems using Synchronized Elementary Nets -- Designing and implementing correct real-time systems -- Specification and refinement of finite dataflow networks — a relational approach -- Activation-oriented specification of real-time systems -- Provably Correct Systems -- Simulation approach to provably correct hardware compilation -- Verification methods for the divergent runs of clock systems -- Fault-tolerant bisimulation and process transformations -- Layering of real-time distributed processes -- Testing and refinement for nondeterministic and probabilistic processes -- Proving safety properties of hybrid systems -- A layered real-time specification of a RISC processor -- A real time fault tolerant microprocessor based On-Board Computer System for INSAT-2 spacecraft -- Reasoning about durations in Metric Temporal Logic -- Scheduling in critical real-time systems: a manifesto -- Stepwise development of fault-tolerant reactive systems -- Distributed implementation of SIGNAL: Scheduling & graph clustering -- Derivation of the input conditional formula from a reactive system specification in temporal logic -- From physical modelling to compositional models of hybrid systems -- Specification and transformation of reactive systems with time restrictions and concurrency -- Languages for reactive specifications: Synchrony vs asynchrony -- Specification and verification of controlled systems -- Towards a duration calculus proof assistant in PVS -- Algebraic reasoning for real-time probabilistic processes with uncertain information -- Specifying timed state sequences in powerful decidable logics and timed automata -- A calculus for hybrid sampled data systems -- Formal design of hybrid systems -- A formal proof of the Deadline Driven scheduler -- Tools Demonstration.

Sommario/riassunto

This volume presents the proceedings of the Third International Symposium on Formal Techniques in Real-Time and Fault-Tolerant Systems held jointly with the Working Group Provably Correct Systems (ProCoS) at Lübeck, Germany in September 1994. The book contains full versions of 5 invited talks and 33 carefully selected refereed contributions as well as 12 tool demonstrations. It documents that formal techniques constitute the foundation of a systematic design of real-time, fault-tolerant, and hybrid systems, throughout the whole engineering process, from the capture of requirements through specification, design, coding and compilation, right down to the hardware that embeds the system into its environment.