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Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Industrial Issues -- Industrial Requirements for the Efficient Development of Reliable Embedded Systems -- Concurrency -- How to Combine Z with a Process Algebra -- The Specification and Refinement of an Environmental Model -- Formal Derivation of Finite State Machines for Class Testing -- Tools -- Using B to Specify, Verify and Design Hardware Circuits -- Z on the Web Using Java -- Visualizing Z Notation in HTML Documents -- Z and HOL -- On the Semantic Relation of Z and HOL -- HOL-Z in the UniForM-Workbench -- A Case Study in Tool Integration for Z -- Safety-Critical and Real-Time Systems -- Designing a Requirements Specification Language for Reactive Systems -- Analyzing a Real-Time Program with Z -- Semantic Theory -- Recursive Definitions in Z -- A Logic for the Schema Calculus -- Theory and Standards -- Combining Specification Techniques for Processes, Data and Time -- Innovations in the Notation of Standard Z -- Reasoning and Consistency Issues -- Comparing Extended Z with a Heterogeneous Notation for Reasoning about Time and Space -- Inconsistency and Undefinedness in Z -- A Practical Guide -- Refinement -- Compositional Specification of Controllers for Batch Process Operations -- Testing Refinements by Refining Tests -- More Powerful Z Data Refinement: Pushing the State of the Art in Industrial Refinement -- Object Orientation -- Network Topology and a Case Study in TCOZ

-- Object-Oriented Specification of Hybrid Systems Using UML h and ZimOO -- Translating the OMT Dynamic Model into Object-Z -- Appendices -- Select Z Bibliography -- Comp.specification.z and Z FORUM Frequently Asked Questions.

Sommario/riassunto

1 In a number of recent presentations – most notably at FME'96 – one of the foremost scientists in the field of formal methods, C.A.R. Hoare, has highlighted the fact that formal methods are not the only technique for producing reliable software. This seems to have caused some controversy, not least amongst formal methods practitioners. How can one of the founding fathers of formal methods seemingly denounce the field of research after over a quarter of a century of support? This is a question that has been posed recently by some formal methods skeptics. However, Prof. Hoare has not abandoned formal methods. He is reiterating, albeit more radically, his 1987 view that more than one tool and notation will be required in the practical, industrial development of large-scale complex computer systems; and not all of these tools and notations will be, or even need be, formal in nature. Formal methods are not a solution, but rather one of a selection of techniques that have proven to be useful in the development of reliable complex systems, and to result in hardware and software systems that can be produced on-time and within a budget, while satisfying the stated requirements. After almost three decades, the time has come to view formal methods in the context of overall industrial-scale system development, and their relationship to other techniques and methods.

We should no longer consider the issue of whether we are “pro-formal” or “anti-formal”, but rather the degree of formality (if any) that we need to support in system development. This is a goal of ZUM'98, the 11th International Conference of Z Users, held for the first time within continental Europe in the city of Berlin, Germany.
