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Titolo	Modular Compiler Verification [[electronic resource]] : A Refinement-Algebraic Approach Advocating Stepwise Abstraction / / by Markus Müller-Olm
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 1997
ISBN	3-540-69539-7
Edizione	[1st ed. 1997.]
Descrizione fisica	1 online resource (XVI, 260 p.)
Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 1283
Disciplina	005.4/53
Soggetti	Programming languages (Electronic computers) Computer architecture Software engineering Computer logic Computers, Special purpose Programming Languages, Compilers, Interpreters Computer System Implementation Software Engineering Logics and Meanings of Programs Special Purpose and Application-Based Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Complete Boolean lattices -- Galois connections -- States, valuation functions and predicates -- The algebra of commands -- Communication and time -- Data refinement -- Transputer base model -- A small hard real-time programming language -- A hierarchy of views -- Compiling-correctness relations -- Translation theorems -- A functional implementation -- Conclusion.
Sommario/riassunto	This book presents the verified design of a code generator translating a prototypic real-time programming language to an actual microprocessor, the Inmos Transputer. Unlike most other work on compiler verification, and with particular emphasis on modularity, it systematically covers correctness of translation down to actual machine code, a necessity in the area of safety-critical systems. The formal

framework provided as well as the novel proof-engineering ideas incorporated in the verified code generator are also of relevance for software design in general.