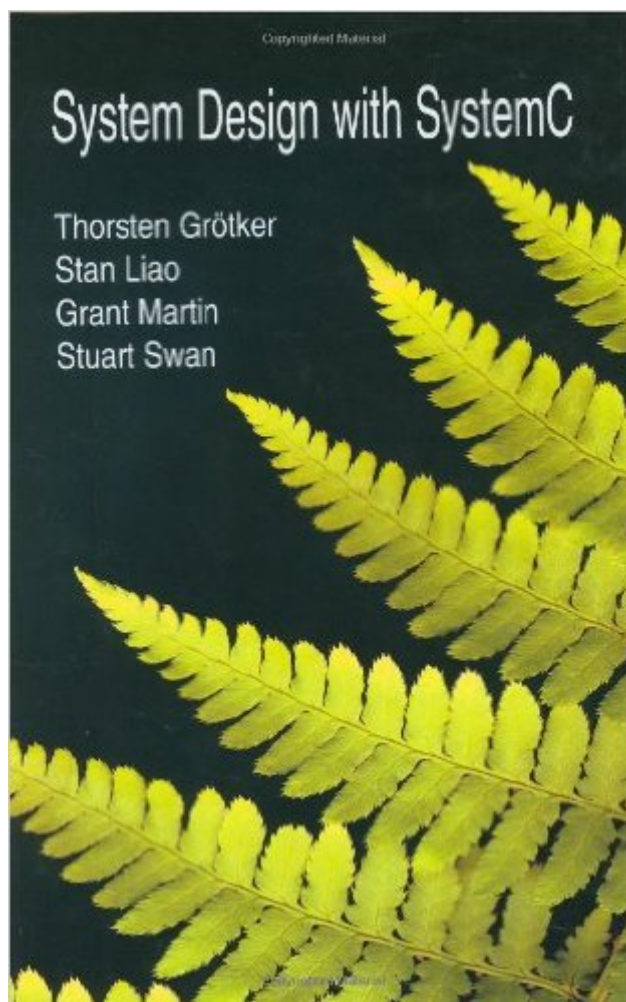


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# System Design With SystemCTM



## Synopsis

I am honored and delighted to write the foreword to this very first book about SystemC. It is now an excellent time to summarize what SystemC really is and what it can be used for. The main message in the area of design in the 2001 International Technology Roadmap for Semiconductors (ITRS) is that the cost of design is the greatest threat to the continuation of the semiconductor roadmap. This recent revision of the ITRS describes the major productivity improvements of the last few years as small block reuse, large block reuse, and IC implementation tools. In order to continue to reduce design cost, the required future solutions will be intelligent test benches and embedded system-level methodology. As the new system-level specification and design language, SystemC directly contributes to these two solutions. These will have the biggest impact on future design technology and will reduce system implementation cost. It took SystemC less than two years to emerge as the leader among the many new and well-discussed system-level design languages. In my opinion, this is due to the fact that SystemC adopted object-oriented system-level design—the most promising method already applied by the majority of firms during the last couple of years. Even before the introduction of SystemC, many system designers have attempted to develop executable specifications in C++. These executable functional specifications are then refined to the well-known transaction level, to model the communication of system-level processes.

## Book Information

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## Customer Reviews

I am an active user of SystemC, so had great hopes for either a real reference or even an

introductory book. Unfortunately, this book provides neither an introduction to the language, real world help for coders, or even reference material. The free manual with SystemC is better than this. Worse, it badly needs editing to clean up awkward sentences. Generally I expense technical books, but I feel too guilty to bear the company with this overpriced book. Back it goes.

This book is not meant to be an introductory book about the SystemC language or coding guidelines. For that please refer to other elementary or primer books or the user guide available for download from the systemc website. This book is mainly useful for researchers to understand the philosophy behind the SystemC language and interesting problems addressed by the language.

A very good book, if it is used as a reference material, especially for TLM modeling, it helps along with the code for `simple_bus` available at [...]. For starters, I will recommend to add more examples in the text of the book as the systemC library is huge. It is sometimes very hard to remove the bugs, if sufficient examples are not available. A suggestion will be to add a functional model example of a CPU based system design, so that the ideas can be extracted out of the text easily.

SystemC is my bread and butter and I bought this book with great hopes to understand both the language and the underlying concepts of the language, unfortunately the book provides neither. I think it is a grossly overpriced useless book.

I read this whole book trying to figure out who it was written for, and failed. To all outward appearance, it seems to address the C++ programmer who, for reasons unknown, has been thrown into the task of creating executable specifications for complex HW/SW systems. Well, it happens. That poor slob's problems are never really addressed. The authors spend significant time discussing bit-accurate, cycle-accurate, both-accurate, and neither-accurate simulations. Those topics all deserve attention, as does optimization of the model for faster simulation time. The typical programmer, however, just won't be ready for concepts of sensitivity and some of the weirder forms of assignment. Straight-up hardware guys won't get the classing structures, and won't see all the discussion they need to translate statements into cycles; software guys won't get enough of the class hierarchy to follow along, and will need to sit down with someone for a long time to understand why all those fixed-point formats deserve to exist. (You wouldn't believe some of the questions I've gotten. For example, "0.56 isn't a fraction with power-of-two denominator - so why does that scaling logic assume I can just shift?" Lawd lumme, what kids don't learn these days.) There's not enough

here of hardware system analysis for the software guys, and not enough of the C++/SystemC strangeness for a logic designer to grab hold of. On the whole, it looks like a fair answer to a question that I didn't hear asked.-- wiredweird

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