





this book explicitly accounts for integration of Smart Systems components and subsystems as a specific constraint. It includes methodologies and EDA tools to enable multi-disciplinary and multi-scale modeling and design, simulation of multi-domain systems, subsystems and components at all levels of abstraction, system integration and exploration for optimization of functional and non-functional metrics. By covering theoretical and practical aspects of smart device design, this book targets people who are working and studying on hardware/software modelling, component integration and simulation under different positions (system integrators, designers, developers, researchers, teachers, students etc.). In particular, it is a good introduction to people who have interest in managing heterogeneous components in an efficient and effective way on different domains and different abstraction levels. People active in smart device development can understand both the current status of practice and future research directions.

- Provides a comprehensive overview of smart systems design, focusing on design challenges and cutting-edge solutions;
- Enables development of a co-simulation and co-design environment that accounts for the peculiarities of the basic subsystems and components to be integrated;
- Describes development of modeling and design techniques, methods and tools that enable multi-domain simulation and optimization at various levels of abstraction and across different technological domains.

Visit the authors' companion site! <http://www.electronicssystemlevel.com/> - Includes interactive forum with the authors! Electronic System Level (ESL) design has mainstreamed – it is now an established approach at most of the world's leading system-on-chip (SoC) design companies and is being used increasingly in system design. From its genesis as an algorithm modeling methodology with 'no links to implementation', ESL is evolving into a set of complementary methodologies that enable embedded system design, verification and debug through to the hardware and software implementation of custom SoC, system-on-FPGA, system-on-board, and entire multi-board systems. This book arises from experience the authors have gained from years of work as industry practitioners in the Electronic System Level design area; they have seen "SLD" or "ESL" go through many stages and false starts, and have observed that the shift in design methodologies to ESL is finally occurring. This is partly because of ESL technologies themselves are stabilizing on a useful set of languages being standardized (SystemC is the most notable), and use models are being identified that are beginning to get real adoption. ESL DESIGN & VERIFICATION offers a true prescriptive guide to ESL that reviews its past and outlines the best practices of today. Table of Contents CHAPTER 1: WHAT IS ESL? CHAPTER 2: TAXONOMY AND DEFINITIONS FOR THE ELECTRONIC SYSTEM LEVEL CHAPTER 3: EVOLUTION OF ESL DEVELOPMENT CHAPTER 4: WHAT ARE THE ENABLERS OF ESL? CHAPTER 5: ESL FLOW CHAPTER 6: SPECIFICATIONS AND MODELING CHAPTER 7: PRE-PARTITIONING ANALYSIS CHAPTER 8: PARTITIONING CHAPTER 9: POST-PARTITIONING ANALYSIS AND DEBUG CHAPTER 10: POST-PARTITIONING VERIFICATION CHAPTER 11: HARDWARE IMPLEMENTATION CHAPTER 12: SOFTWARE IMPLEMENTATION CHAPTER 13: USE OF ESL FOR IMPLEMENTATION VERIFICATION CHAPTER 14: RESEARCH, EMERGING AND FUTURE PROSPECTS APPENDIX: LIST OF ACRONYMS \* Provides broad, comprehensive coverage not available in any other such book \* Massive global appeal with an internationally recognised author team \* Crammed full of state of the art content from notable industry experts

Digital Communication using MATLAB and Simulink is intended for a broad audience. For the student taking a traditional course, the text provides simulations of the MATLAB and Simulink systems, and the opportunity to go beyond the lecture or laboratory and develop investigations and projects. For the professional, the text facilitates an expansive review of and experience with the tenets of digital communication systems.

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