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Descrizione fisica	1 online resource (xlix, 1150 pages) : illustrations (some color)
Collana	Expert guide
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Soggetti	Software engineering Embedded computer systems
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Note generali	"Expert guide"--Page 1 of cover.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Software Engineering for Embedded Systems; Copyright Page; Contents; Software Engineering for Embedded Systems: A Roadmap; Foreword to Software Engineering for Embedded Systems; Acknowledgments; About the Editors; About the Authors; 1 Software Engineering of Embedded and Real-Time Systems; Software engineering; Embedded systems; Embedded systems are reactive systems; Real-time systems; Types of real-time systems - soft and hard; Differences between real-time and time-shared systems; Examples of hard real-time Based on signal sample, time to perform actions before next sample arrivesHard real-time systems; Real-time event characteristics; Real-time event categories; Efficient execution and the execution environment; Efficiency overview; Resource management; Challenges in real-time system design; Response time; Recovering from failures; The embedded system software build process; Distributed and multi-processor architectures; Software for embedded systems; Super loop architecture; Power-save super loop; Window lift embedded design; Hardware abstraction layers (HAL) for embedded systems; Summary 2 Embedded Systems Hardware/Software Co-DevelopmentToday's embedded systems - an example; HW/SW prototyping users; HW/SW prototyping options; Prototyping decision criteria; Choosing the right

prototype; Industry design chain; The need to change the design flow; Different types of virtual prototypes; A brief history of virtual prototypes; The limits of proprietary offerings; What makes virtual prototypes fast; Standardization: the era of SystemC TLM-2.0; SystemC TLM-2 abstraction levels; Architecture virtual prototypes; Software virtual prototypes
Summary - the growing importance of virtualization3 Software Modeling for Embedded Systems; When and why should you model your embedded system?; Modeling; What is a modeling language?; Examples of modeling languages; The V diagram promise; So, why would you want to model your embedded system?; When should you model your embedded system?; Mission- and safety-critical applications; Highly complex applications and systems; Operational complexity; Cost of defect versus when detected; Large development teams require modeling; Modeling is often the only choice
So - modeling is great, but aren't all models wrong?You have your prototype - now what?; Conclusion; Next steps - try it!; Closed-loop control with a DC motor; Learn more about prototyping with a downloadable kit; Designing applications with the NI Statechart Module; Design and simulate a brushed dc motor h-bridge circuit; Multi-domain physical modeling with open-source Modelica models; References; 4 Software Design Architecture and Patterns for Embedded Systems; Overview of architecture and design; Architecture is about system-wide optimization; Three levels of design
What are design patterns?

Sommario/riassunto

Software Engineering for Embedded Systems clearly explains the software engineering tools and techniques needed to optimally design and implement embedded systems in contexts sure as networking, storage, and automotive applications. Written by experts with a solutions focus, this encyclopedic reference is a useful aid to tackling typical problems and issues, including: Architecture and design patternsHardware interfacesEmbedded operating systems, including Linux and AndroidMemory, performance, and power optimizationUser interface consi

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Titolo	Metrology in industry [[electronic resource]] : the key for quality / / [edited by] French College of Metrology
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ISBN	1-280-51063-3 9786610510634 1-84704-501-4 0-470-61212-6 0-470-39478-1 1-84704-601-0
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Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Metrology in Industry; Table of Contents; Preface; Foreword; Chapter 1. Analysis of the Metrological Requirements Needed to Ensure Quality; 1.1. Introduction; 1.2. Definition of the objectives; 1.3. Choice of the method of measurement; 1.3.1. Accounting for the selection of the method; 1.3.2. Defining the method and the principle to implement; 1.4. Choice of the means of measurement; 1.4.1. Introduction; 1.4.2. Analysis of what is already available; 1.4.3. Assessment and acquisition of material; 1.4.4. Technical criteria; 1.4.4.1. Basic characteristics 1.4.4.2. Comportment towards influence quantities1.4.4.3. Durability of the instruments used; 1.4.4.4. Homogeneity of the supply of instruments; 1.4.4.5. Quality of the supplier's service; 1.4.4.6. Adaptation of the instrument; 1.4.4.7. Possibility of traceability; 1.4.4.8. Computerization and the speed of taking measurements; 1.4.4.9. Ergonomics; 1.4.4.10. Capability of measuring instruments; 1.4.5. Economic criteria; 1.4.6. Grid of the analysis of the choice;

1.4.6.1. Stage 1: primary technical requirements (unavoidably necessary)
1.4.6.2. Stage 2: secondary technical requirements (desirable)1.4.7. Technical assistance for users of measuring instruments; 1.4.7.1. The EXERA (France); 1.4.7.2. VDI/VDE-GMA (Germany); 1.5. The traceability of the measurements; 1.5.1. The necessity of traceability of the measurements; 1.5.2. Calibration requirements; 1.5.3. The selection of standards; 1.6. Conclusion; Chapter 2. Organization of Metrology: Industrial, Scientific, Legal; 2.1. A metrological organization: why?; 2.2. Metrology: how?; 2.3. Scientific and technical metrology; 2.3.1. The BIPM
2.3.2. Results of the international activities2.3.3. Regional organizations; 2.3.3.1. EUROMET; 2.3.3.2. European Cooperation for Accreditaton (EA); 2.3.3.3. Accreditation procedure; 2.3.4. Organization at the national level; 2.3.4.1. The Laboratoire National de Metrologie et d'Essais (LNE); 2.3.4.2. The Italian national calibration system (SNT); 2.3.4.3. The Swiss national calibration system; 2.4. Legal metrology; 2.4.1. Scope of legal metrology; 2.4.2. The International Organization of Legal Metrology (OIML); 2.4.3. The European level; 2.4.3.1. European Union harmonization; 2.4.3.2. WELMEC
2.4.3.3. Other regional bodies2.4.4. At national level; 2.4.4.1. Legal metrology in Italy; 2.4.4.2. Legal metrology in Switzerland; 2.4.4.3. Legal metrology in France; Chapter 3. Mastering Measurement Processes Approach to the Setting up of a Metrology Function; 3.1. What to do at the beginning?; 3.2. Goals and role of the measurement management system-metrological function; 3.3. The measurement processes; 3.3.1. Conception and development of a new measurement process; 3.3.1.1. Analysis of the requirements
3.3.1.2. Transcription of the characteristics of the product in "measurand" form or "characteristics to be measured" form

Sommario/riassunto

Metrology is an integral part of the structure of today's world: navigation and telecommunications require highly accurate time and frequency standards; human health and safety relies on authoritative measurements in diagnosis and treatment, as does food production and trade; global climate studies also depend on reliable and consistent data. Moreover, international trade practices increasingly require institutions to display demonstrated conformity to written standards and specifications. As such, having relevant and reliable results of measurements and tests in compliance with mutually rec