1. Record Nr. UNINA9910254984403321 Autore Vissers Chris A Titolo Architectural Design: Conception and Specification of Interactive Systems / / by Chris A. Vissers, Luís Ferreira Pires, Dick A.C. Quartel, Marten van Sinderen Cham:,: Springer International Publishing:,: Imprint: Springer,, Pubbl/distr/stampa 2016 3-319-43298-2 **ISBN** Edizione [1st ed. 2016.] Descrizione fisica 1 online resource (XXII, 388 p. 276 illus., 215 illus. in color.) Disciplina 658.4038011 Soggetti Software engineering Management information systems Computer communication systems Software Engineering Software Management Computer Communication Networks Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di bibliografia Includes bibliographical references and index. Nota di contenuto 1. Systems and Systems Design -- 2. Design Models and Design Languages -- 3. Basic Design Concepts -- 4. Behaviour Modelling with Casually Related Actions -- 5. Behaviour Structuring -- 6. Interaction Refinement and Abstraction -- 7. Interaction Systems -- 8. Service Design -- 9. Service Elements -- 10. Protocol Design -- 11. Protocol Elements -- 12. Reference Models and Standard Interaction Systems. Sommario/riassunto This book presents a design methodology that is practically applicable to the architectural design of a broad range of systems. It is based on fundamental design concepts to conceive and specify the required functional properties of a system, while abstracting from the specific implementation functions and technologies that can be chosen to build the system. Abstraction and precision are indispensable when it comes to understanding complex systems and precisely creating and representing them at a high functional level. Once understood, these concepts appear natural, self-evident and extremely powerful, since

they can directly, precisely and concisely reflect what is considered

essential for the functional behavior of a system. The first two chapters present the global views on how to design systems and how to interpret terms and meta-concepts. This informal introduction provides the general context for the remainder of the book. On a more formal level, Chapters 3 through 6 present the main basic design concepts, illustrating them with examples. Language notations are introduced along with the basic design concepts. Lastly, Chapters 7 to 12 discuss the more intricate basic design concepts of interactive systems by focusing on their common functional goal. These chapters are recommended to readers who have a particular interest in the design of protocols and interfaces for various systems. The didactic approach makes it suitable for graduate students who want to develop insights into and skills in developing complex systems, as well as practitioners in industry and large organizations who are responsible for the design and development of large and complex systems. It includes numerous tangible examples from various fields, and several appealing exercises with their solutions.