1. Record Nr. UNINA9910784365203321 Autore **Douglass Bruce Powel** Titolo Real time UML workshop for embedded systems [[electronic resource] /] / by Bruce Powell Douglass Massachusettes, : Elsevier, c2007 Pubbl/distr/stampa **ISBN** 1-281-00685-8 9786611006853 0-08-049223-1 Edizione [1st edition] Descrizione fisica 1 online resource (433 p.) Embedded technology series Collana Disciplina 005.117 Soggetti Embedded computer systems - Programming Real-time data processing Object-oriented methods (Computer science) Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Includes index. Nota di contenuto Front Cover: Real-Time UML Workshop for Embedded Systems: Copyright Page; Contents; Preface; Audience; Goals; Where to Go After the Book; Evaluate UML on ARM; Acknowledgments; About the Author; What's on the CD-ROM?: Chapter 1. Introduction: Basic Modeling Concepts of the UML; Structural Elements and Diagrams; Behavioral Elements and Diagrams; Use Case and Requirements Models; Summary; Check Out the CD-ROM; Chapter 2. The Harmony Process; Introduction; The Harmony Development Process; Summary; Chapter 3. Specifying Requirements; Overview Problem 3.1 Identifying Kinds of Requirements for Roadrunner Traffic Light Control SystemProblem 3.2 Identifying Use Cases for the Roadrunner Traffic Light Control System; Problem 3.3 Mapping Requirements to Use Cases; Problem 3.4 Identifying Use Cases for the Coyote UAV System; Problem 3.5 Identifying Parametric Requirements; Problem 3.6 Capturing Quality of Service Requirements in Use Cases; Problem 3.7 Operational View: Identifying Traffic Light Scenarios:

Problem 3.8 Operational View: CUAVS Optical Surveillance Scenarios;

Specification View: State Machines for Requirements CaptureProblem

Problem 3.9 Specification View: Use-Case Description

3.10 Specification View: Capturing Complex Requirements; Problem 3.11 Operational to Specification View: Capturing Operational Contracts; References; Chapter 4. Systems Architecture; Overview; Problem 4.1 Organizing the Systems Model; Problem 4.2 Subsystem Identification; Problem 4.3 Mapping Operational Contracts into Subsystem Architecture; Problem 4.4 Identifying Subsystem Use Cases; Looking Ahead; Chapter 5. Object Analysis; Overview; Key Strategies for Object Identification

Problem 5.1 Apply Nouns and Causal Agents StrategiesProblem 5.2 Apply Services and Messages Strategies; Problem 5.3 Apply Real-World Items and Physical Devices Strategies; Problem 5.4 Apply Key Concepts and Transaction Strategies; Problem 5.5 Apply Identify Visual Elements and Scenarios Strategies; Problem 5.6 Merge Models from the Various Strategies; Looking Ahead; Chapter 6. Architectural Design; Overview; Problem 6.1 Concurrency and Resource Architecture; Problem 6.2 Distribution Architecture; Problem 6.3 Safety and Reliability Architecture; Looking Ahead

Chapter 7. Mechanistic and Detailed DesignOverview; Mechanistic Design; Detailed Design; Problem 7.1 Applying Mechanistic Design Patterns-Part 1; Problem 7.2 Applying Mechanistic Design Patterns-Part 2; Problem 7.3 Applying Detailed-Design State Behavior Patterns; Problem 7.4 Applying Detailed Design Idioms; Summary; Chapter 8. Specifying Requirements: Answers; Answer 3.1 Identifying Kinds of Requirements; Answer 3.2 Identifying Use Cases for Roadrunner Traffic Light Control System; Answer 3.3 Mapping Requirements to Use Cases; Answer 3.4 Identifying Use Cases for Coyote UAV System Answer 3.5 Identifying Parametric Requirements

Sommario/riassunto

This practical new book provides much-needed, practical, hands-on experience capturing analysis and design in UML. It holds the hands of engineers making the difficult leap from developing in C to the higher-level and more robust Unified Modeling Language, thereby supporting professional development for engineers looking to broaden their skill-sets in order to become more saleable in the job market. It provides a laboratory environment through a series of progressively more complex exercises that act as building blocks, illustrating the various aspects of UML and its application to re