

**Coming
Soon!**

Make your software systems robust and long-lasting

CRC Press
Taylor & Francis Group
A CHAPMAN & HALL BOOK

Building Enterprise Systems with ODP

An Introduction to Open Distributed Processing

Peter F. Linington • University of Kent, Canterbury, UK
Zoran Milosevic • Deontik Pty Ltd., Brisbane, Australia

Akira Tanaka • view5 LLC, Yokohama, Japan
Antonio Vallecillo • University of Málaga, Spain

***20%
Off!**

A volume in the **Chapman & Hall/CRC Innovations in Software Engineering and Software Development Series**
Series edited by **Richard LeBlanc**, Seattle University, Washington, USA

A Framework for the Design of Large, Complex Distributed IT Systems

The Reference Model of Open Distributed Processing (RM-ODP) is an international standard that provides a solid basis for describing and building widely distributed systems and applications in a systematic way. It stresses the need to build these systems with evolution in mind by identifying the concerns of major stakeholders and then expressing the design as a series of linked viewpoints.

Although RM-ODP has been a standard for more than ten years, many practitioners are still unaware of it. **Building Enterprise Systems with ODP: An Introduction to Open Distributed Processing** offers a gentle pathway to the essential ideas that constitute ODP and shows how these ideas can be applied when designing and building challenging systems. It provides an accessible introduction to the design principles for software engineers and enterprise architects. The book also explains the benefits of using viewpoints to produce simpler and more flexible designs and how ODP can be applied to service engineering, open enterprise, and cloud computing.

The authors include guidelines for using the Unified Modeling Language™ (UML) notation and for structuring and writing system specifications. They elucidate how this fits into the model-driven engineering tool chain via approaches, such as Model-Driven Architecture® (MDA). They also demonstrate the power of RM-ODP for the design and organization of complex distributed IT systems in e-government, e-health, and energy and transportation industries.

All concepts and ideas in the book are illustrated through a single running example that describes the IT support needed by a medium-sized company as it grows and develops. Complete UML models and more are available at <http://theodpbook.lcc.uma.es/>

Catalog no. K12956, September 2011, c. 272 pp.

ISBN: 978-1-4398-6625-2, \$69.95 / £44.99

***Your discounted price: \$55.96 / £35.99**

See reverse for details.

FEATURES

- Offers a concise, focused presentation of the essentials of RM-ODP and where it fits within today's software processes
- Explains all the major concepts and mechanisms of the ODP framework
- Explores the latest developments in the ISO ODP standards
- Uses the widely adopted UML notation for modeling large open distributed systems using the ODP concepts
- Describes interoperability frameworks applicable to both government and industry sectors
- Presents a case study of a realistic IT system that illustrates the possibilities and advantages of the ODP approach
- Includes questions and practical exercises
- Provides complete UML models and more on a supporting website

CONTENTS

THE FRAMEWORK

What Is ODP About?

The ODP reference model

Viewpoints

Fundamental concepts

Useful building blocks

Service orientation

Human computer interaction

The right tools for the job

THE VIEWPOINTS

Enterprise Viewpoint

Designing with communities

Identifying roles

See reverse side for continuation of Contents and ordering information

Organizational structure
 Roles and role filling
 More than one community
 Community behavior
 Accountability and related concepts
 Quality of service and other constraints
 Identifying the system's user interfaces
 Writing enterprise specifications
Information Viewpoint
 The primacy of information
 The elements of the information language
 Writing information specifications
 Structure of the information specification
 Relationship with other viewpoints
Computational Viewpoint
 Designing with computational objects
 Computational objects
 Bindings
 Interaction between computational objects
 Environmental contracts and transparencies
 Writing computational specifications
 Relationship with other viewpoints
Engineering Viewpoint
 What is the engineering viewpoint for?
 Objects and distribution
 Node architecture
 Channel architecture
 Common functions and processes
 Writing engineering viewpoint specifications
 Incorporating current technologies
 Relationship with other viewpoints
Technology Viewpoint
 Linking to the real world
 The elements of the technology language

Relationship with other viewpoints
Correspondences—Joining It All Up
 The need for correspondences
 Different kinds of correspondence
 Correspondences required by the ODP architecture
 Anatomy of a correspondence specification
 Taking a formal view
 Examples of correspondences
 Tool support for specifying correspondences
USING ODP
Conformance—Does It Do the Right Thing?
 Compliance and conformance
 A conformance community
 Types of reference point
 Conformance to viewpoint specifications
 Claiming compliance or conformance
Transparencies—Hiding Common Problems
 What is a transparency?
 Types of transparency
 Transparencies and viewpoints
Policies—Tracking Changing Requirements
 Why do we need policies?
 What is a policy?
 Implementing policy
Federation—Talking to Strangers
 How does interoperation work?
 Interpreting and sharing information
 The basis of interoperation
 Engineering the federation
 Federating type systems
 Federating identity
 Legacy systems
 Interoperability or integration?

Using Existing Products
 What does this product do for me?
 Supplier and user views
 Competing sets of viewpoints
System Evolution—Moving the Goalposts
 Coping with change
 The importance of tool support
 Making changes to viewpoints
 Avoiding synchronized transitions
 Evolution of the enterprise
 Version control
MOVING ON
Modelling Styles
 The importance of formal models
 What is a system?
 Modelling open or closed worlds?
 Capturing requirements
 Expressing obligations
 Expressing semantics
Sharp Tools
 What should a tool do?
 Model editors and analysis tools
 Model-driven approaches
 Model transformations
 Languages for transformations
 Viewpoints and transformations
 More integration
A Broader View
 Where to look next
 Integration of other standards
 Uses of ODP
 Tools
 Comparing enterprise architectures
 Coda
Appendix A: The PhoneMob Specifications
Appendix B: Selected Exercises
Bibliography
Index

**Receive Free Standard Shipping
 when you order online at
www.crcpress.com**

Catalog no. K12956, September 2011, c. 272 pp.

ISBN: 978-1-4398-6625-2, \$69.95 / £44.99

***Your discounted price: \$55.96 / £35.99**

Use promo code 367EM when ordering at www.crcpress.com to receive the discount.

Offer available for a limited time.

CRC Press/Taylor & Francis Group

1-800-634-7064 • 1-561-994-0555 • +44 (0) 1235 400 524



e-mail: orders@taylorandfrancis.com

web: www.crcpress.com