THE OPEN GROUP SERIES

ArchiMate® 3.0.1

A Pocket Guide

Andrew Josey et al.

Van Haren PUBLISHING

THE Open GROUP

ARCHIMATE® 3.0.1 – A POCKET GUIDE

The Open Group Publications available from Van Haren Publishing

The TOGAF Series:
TOGAF® Version 9.1
TOGAF® Version 9.1 – A Pocket Guide
TOGAF® 9 Foundation Study Guide, 3rd Edition
TOGAF® 9 Certified Study Guide, 3rd Edition

The Open Group Series:
The IT4IT™ Reference Architecture, Version 2.1
IT4IT™ for Managing the Business of IT – A Management Guide
IT4IT™ Foundation Study Guide, 2nd edition
The IT4IT™ Reference Architecture, Version 2.1 – A Pocket Guide
Cloud Computing for Business – The Open Group Guide
ArchiMate® 3.0.1 – A Pocket Guide
ArchiMate® 2 Certification – Study Guide
ArchiMate® 3.0.1 Specification

The Open Group Security Series:
O-TTPS - A Management Guide
Open Information Security Management Maturity Model (O-ISM3)
Open Enterprise Security Architecture (O-ESA)
Risk Management – The Open Group Guide
The Open FAIR™ Body of Knowledge – A Pocket Guide

All titles are available to purchase from:
www.opengroup.org
www.vanharen.net
and also many international and online distributors.

ArchiMate® 3.0.1

A POCKET GUIDE

Title:	ArchiMate® 3.0.1 – A Pocket Guide
Series:	The Open Group Series
A Publication of:	The Open Group
Author:	Andrew Josey et al.
Publisher:	Van Haren Publishing, Zaltbommel, www.vanharen.net
ISBN hard copy:	978 94 018 0231 4
ISBN eBook:	978 94 018 0232 1
ISBN ePuB:	978 94 018 0233 8
Edition:	First edition, first impression, March 2012
	Second edition, first impression, December 2013
	Third edition, first impression, July 2016
	Fourth edition, first impression, September 2017
Layout and cover design:	Coco Bookmedia, Amersfoort – NL

The views expressed in this document are not necessarily those of any particular member of The Open Group.
In the event of any discrepancy between text in this document and the official ArchiMate documentation, the ArchiMate documentation remains the authoritative version for certification, testing by examination, and other purposes. The official ArchiMate documentation can be obtained online at www.opengroup.org/archimate.

ArchiMate® 3.0.1
A Pocket Guide
Document Number: G163

Published by The Open Group

Comments relating to the material contained in this document may be submitted to:

The Open Group
Apex Plaza
Forbury Road
Reading
Berkshire, RG1 1AX
United Kingdom

or by electronic mail to: ogspecs@opengroup.org

Contents

Preface

This Document

This is the Pocket Guide to the ArchiMate® 3.0.1 Specification, an Open Group Standard. It is intended to help architects by providing a reference for the ArchiMate graphical modeling language and also assist managers in understanding the basics of the ArchiMate language. It is organized as follows:

- Chapter 1 provides a high-level introduction to the ArchiMate Specification and its relationship to Enterprise Architecture
- Chapter 2 describes the high-level structure of the ArchiMate language, including an introduction to layering, and the ArchiMate Framework
- Chapter 3 describes the Generic Metamodel for the language
- Chapter 4 describes the relationships that the ArchiMate language includes to model the links between elements
- Chapter 5 describes the Motivation Elements, which includes concepts such as goal, principle, and requirement
- Chapter 6 describes the Strategy Elements, which includes concepts such as resource, capability, and course of action
- Chapter 7 describes the Business Layer, which includes the modeling concepts relevant in the business domain
- Chapter 8 describes the Application Layer, which includes modeling concepts relevant for software applications
- Chapter 9 describes the Technology Layer, which includes modeling concepts relevant for system software applications and infrastructure
- Chapter 10 describes the Physical Elements, which include concepts relevant for the modeling of physical concepts like machines and physical installations
- Chapter 11 describes the relationships between different layers of the language
- Chapter 12 describes the Implementation and Migration Elements, which include concepts to support modeling Enterprise Architecture-enabled transformation

- Chapter 13 introduces the concept of ArchiMate Viewpoints
- Appendix A contains a summary of the changes from ArchiMate Version 2.1 to ArchiMate Version 3.0
- A Glossary of terms and Index are provided

The audience for this document is:

- Enterprise architects, business architects, IT architects, application architects, data architects, software architects, systems architects, solutions architects, infrastructure architects, process architects, domain architects, product managers, operational managers, and senior managers seeking a first introduction to the ArchiMate modeling language

After reading this document, the reader seeking further information should refer to the ArchiMate documentation[1] available online at www.opengroup.org/archimate.

Conventions Used in this Document

The following conventions are used throughout this document in order to help identify important information and avoid confusion over the intended meaning:

- Ellipsis (…)
  Indicates a continuation; such as an incomplete list of example items, or a continuation from preceding text.
- **Bold**
  Used to highlight specific terms.
- *Italics*
  Used for emphasis. May also refer to other external documents.

1 ArchiMate® 3.0.1 Specification, Open Group Standard (C179), published by The Open Group, August 2017; refer to: www.opengroup.org/bookstore/catalog/c179.htm.

In addition to typographical conventions, the following convention is used to highlight segments of text:

A Note box is used to highlight useful or interesting information.

About The Open Group

The Open Group is a global consortium that enables the achievement of business objectives through IT standards. With more than 500 member organizations, The Open Group has a diverse membership that spans all sectors of the IT community – customers, systems and solutions suppliers, tool vendors, integrators, and consultants, as well as academics and researchers – to:

- Capture, understand, and address current and emerging requirements, and establish policies and share best practices
- Facilitate interoperability, develop consensus, and evolve and integrate specifications and open source technologies
- Operate the industry's premier certification service

Further information on The Open Group is available at www.opengroup.org.

Trademarks

ArchiMate®, DirecNet®, Making Standards Work®, OpenPegasus®, The Open Group®, TOGAF®, UNIX®, UNIXWARE®, X/Open®, and the Open Brand X® logo are registered trademarks and Boundaryless Information Flow™, Build with Integrity Buy with Confidence™, Dependability Through Assuredness™, FACE™, the FACE™ logo, IT4IT™, the IT4IT™ logo, O-DEF™, Open FAIR™, Open Platform 3.0™, Open Trusted Technology Provider™, Platform 3.0™, the Open O™ logo, and The Open Group Certification logo (Open O and check™) are trademarks of The Open Group.

UML® and Unified Modeling Language® are registered trademarks and BPMN™ and Business Process Modeling Notation™ are trademarks of the Object Management Group.

All other brands, company, and product names are used for identification purposes only and may be trademarks that are the sole property of their respective owners.

About the Authors

Andrew Josey

Andrew Josey is VP Standards and Certification, overseeing all certification and testing programs of The Open Group. He also manages the Standards Process for The Open Group. Since joining the company in 1996, Andrew has been closely involved with the standards development, certification, and testing activities of The Open Group. He has led many standards development projects including specification and certification development for the ArchiMate®, TOGAF®, IT4IT™, POSIX®, and UNIX® programs.

He is a member of the IEEE, USENIX, UKUUG, and the Association of Enterprise Architects (AEA). He holds an MSc in Computer Science from University College London.

Marc Lankhorst, BiZZdesign

Marc Lankhorst is Managing Consultant and Business Design Evangelist at BiZZdesign. He is responsible for market development, consulting, and coaching on digital business design and Enterprise Architecture, and spreading the word on the ArchiMate modeling language for EA. His expertise and interests range from Enterprise Architecture and business process management to agile methods, portfolio management, and digital business design. Previously, Marc was a Senior Member of Scientific Staff at Novay (formerly Telematica Instituut), where he managed the collaborative R&D project that developed the initial version of the ArchiMate language. He leads the core team of The Open Group ArchiMate Forum that has defined the new version of the standard.

Iver Band, Cambia Health Solutions

Iver Band is a practicing Enterprise Architect and a developer and communicator of Enterprise Architecture standards and methods. At Cambia Health Solutions, he has guided initiatives focusing on provider systems, web and mobile experiences, and architecture methods and

tools. He is currently focused on solutions that provide information about healthcare consumers and groups. Iver is also the elected Vice-Chair of the ArchiMate Forum. He has led development of several Open Group White Papers and contributed to the second and third major versions of the ArchiMate language. He holds TOGAF 9 and ArchiMate 3 Practitioner certifications from The Open Group. He is a Certified Information Systems Security Professional (CISSP), a Certified Information Professional, an AHIP Information Technology Professional, and a Prosci Certified Change Consultant.

Henk Jonkers, BiZZdesign
Henk Jonkers is a Senior Research Consultant, involved in BiZZdesign's innovations in the areas of Enterprise Architecture and engineering. He participates in multi-party research projects, contributes to training courses, and performs consultancy assignments. Previously, as a member of scientific staff at the Telematica Instituut, he was involved in research projects on business process modeling and analysis, EA, SOA, and model-driven development. He was one of the main developers of the ArchiMate language and an author of the ArchiMate 1.0, 2.1, and 3.0 Specifications, and is actively involved in the activities of The Open Group ArchiMate Forum.

Dick Quartel, BiZZdesign
Dick Quartel is a Senior Research Consultant at BiZZdesign. In this role he contributes to the development and improvement of BiZZdesign's products and services, is involved in research projects, supervises MSc students and interns, and performs consultancy assignments. In addition, he is an author of many scientific and professional publications, and an author of the ArchiMate 2.1 and 3.0 Specifications. Previously, he worked as a Senior Researcher at Novay (formerly Telematica Instituut), where he acted as researcher and project manager and contributed to the definition and acquisition of research projects. As an Assistant Professor at the University of Twente, he worked in the areas of distributed systems design, protocol design and implementation, and middleware systems.

Steve Else, EA Principals

Steve Else is the CEO of EA Principals, a Gold Member of The Open Group. Steve is certified in the TOGAF 8, TOGAF 9, ArchiMate 3, Open FAIR, and IT4IT certification programs. A former Air Force pilot with a rating to fly the Boeing 717 and Lear Jet commercially, Steve became an Enterprise Architect about 20 years ago while helping direct the US Air Force Business Transformation initiative. He has been Chief Architect at numerous organizations, done consulting at uniquely challenging organizations, such as the United Nations and Fannie Mae, and taught EA to thousands of students over 10 years. He has also written two books on the TOGAF framework, along with one on Organization Theory and the Transformation of Large, Complex Organizations.

Acknowledgements

The Open Group gratefully acknowledges:

- Past and present members of The Open Group ArchiMate Forum for developing the ArchiMate Standard.
- The following reviewers of this document:
  - Peter Bates
  - Sonia Gonzalez
  - Dave Hornford
  - Russel Jones
  - Jean-Baptiste Sarrodie

Chapter 1
Introduction

This chapter provides an introduction to the ArchiMate Specification, an Open Group Standard.
Topics addressed in this chapter include:

- An introduction to the ArchiMate Specification
- A brief overview of the ArchiMate Specification
- The ArchiMate language and its relationship to Enterprise Architecture and the TOGAF Standard

1.1 Introduction to the ArchiMate Specification

The ArchiMate Specification, an Open Group Standard, is an open and independent modeling language for Enterprise Architecture that is supported by different tool vendors and consulting firms. The ArchiMate language enables Enterprise Architects to describe, analyze, and visualize the relationships among architecture domains in an unambiguous way.

Just as an architectural drawing in classical building architecture describes the various aspects of the construction and use of a building, the ArchiMate Specification offers a common language for describing the construction and operation of business processes, organizational structures, information flows, IT systems, and technical and physical infrastructure. This insight helps stakeholders to design, assess, and communicate the consequences of decisions and changes within and between these architecture domains.

This document is the Pocket Guide to the ArchiMate 3.0.1 Specification, referred to simply as the "ArchiMate Specification" within this document. The ArchiMate 3.0 Specification was first published as an Open Group Standard in June 2016. A set of corrections was published in August 2017, and incorporated into the specification to become the ArchiMate 3.0.1 Specification. New features included in the major

update include elements for modeling the enterprise at a strategic level, such as capability, resource, and outcome. It also includes support to model the physical world of materials and equipment. Furthermore, the consistency and structure of the language have been improved, definitions have been aligned with other standards, and its usability has been enhanced in various other ways.

Development of the ArchiMate Language
The ArchiMate language was created in the period 2002-2004 in the Netherlands by a project team from the Telematica Instituut in co-operation with several partners from government, industry, and academia, including Ordina, Radboud Universiteit Nijmegen, the Leiden Institute for Advanced Computer Science (LIACS), and the Centrum Wiskunde & Informatica (CWI). The development included tests in organizations such as ABN AMRO, the Dutch Tax and Customs Administration, and the Stichting Pensioenfonds ABP.

In 2008, the ownership and stewardship of the ArchiMate language was transferred from the ArchiMate Foundation to The Open Group. Since 2009, The Open Group ArchiMate Forum has developed successive versions and published them on The Open Group public website.

1.2 ArchiMate Specification Overview

The ArchiMate Specification is The Open Group Standard for the ArchiMate architecture modeling language. It contains the formal definition of the visual design language.
The contents of the specification include the following:

- The introduction, including the objectives, overview, conformance requirements, normative references, and terminology
- Definitions of the general terms used in the specification
- The structure of the modeling language
- The generic metamodel of the language
- The relationships in the language

- A detailed breakdown of the modeling framework covering the motivation elements, strategy elements, the three layers (Business/Application/Technology), and the physical elements
- Cross-layer dependencies and alignment, and relationships within the framework
- Implementation and migration elements for expressing the implementation and migration aspects of an architecture
- The concepts of stakeholders, viewpoints, and views, and also the ArchiMate viewpoint mechanism
- Mechanisms for customizing the language for specialized or domain-specific purposes
- Notation overviews and summaries
- Informative descriptions of the relationship of the ArchiMate language to other standards, including the TOGAF framework, Business Process Modeling Notation (BPMN), Unified Modeling Language (UML), and Business Motivation Model (BMM)

The ArchiMate 3.0.1 Specification is the latest version of the specification and is an evolution from the ArchiMate 2.1 and earlier.

1.3 The ArchiMate Language and Enterprise Architecture

The role of the ArchiMate Specification is to provide a graphical language for the representation of Enterprise Architectures over time (i.e., including strategic, transformation, and migration planning), as well as the motivation and rationale for the architecture. The ArchiMate modeling language provides a uniform representation for diagrams that describe Enterprise Architectures, and offers an integrated approach to describe and visualize the different architecture domains together with their underlying relations and dependencies.

The design of the ArchiMate language started from a set of relatively generic concepts (objects and relations), which have been specialized for application at the different architectural layers for an Enterprise

Architecture. The most important design restriction on the ArchiMate language is that it has been explicitly designed to be as compact as possible, yet still usable for most Enterprise Architecture modeling tasks. In the interest of simplicity of learning and use, the language has been limited to the concepts that suffice for modeling the proverbial 80% of practical cases.

1.3.1 The ArchiMate Language and the TOGAF ADM

The ArchiMate language consists of the ArchiMate core language, that includes the Business, Application, and Technology layers, and elements to model the Strategy and Motivation for an architecture, as well as its Implementation and Migration. Figure 1 shows a simplified mapping of how the ArchiMate language can be used in relation to the phases of the TOGAF ADM.

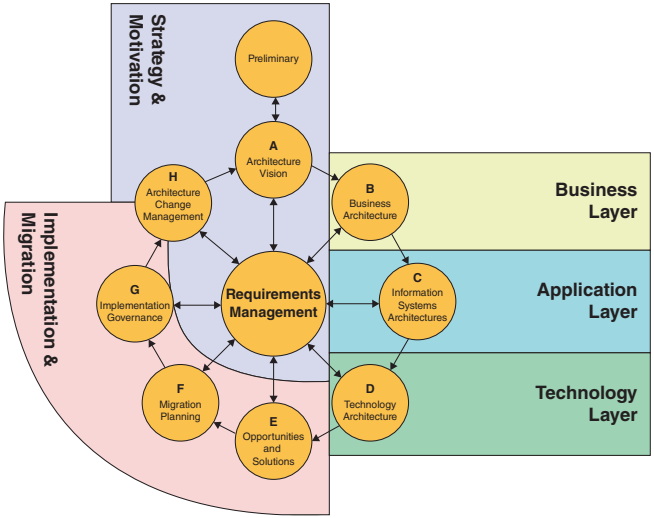

Figure 1: The Relationship between the ArchiMate Language and the TOGAF ADM