



# Archimate<sup>®</sup> 2.0

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## **An Introduction**

*A White Paper by:*

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## ***An Introduction to ArchiMate® 2.0***

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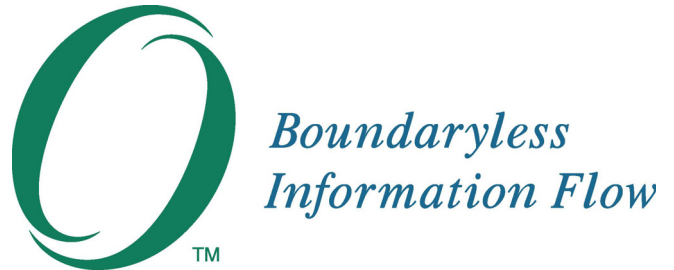
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## **Executive Summary**

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This document provides an introduction to ArchiMate 2.0. Topics addressed include:

- An Introduction to ArchiMate, an Open Group Standard
- ArchiMate, its structure and content
- What's new in ArchiMate 2.0

## Introduction to ArchiMate, an Open Group Standard

ArchiMate®, an Open Group Standard, is an open and independent modeling language for enterprise architecture that is supported by different tool vendors and consulting firms. ArchiMate provides a notation to enable enterprise architects to describe, analyze, and visualize the relationships among business 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, ArchiMate offers a common language for describing the construction and operation of business processes, organizational structures, information flows, IT systems, and technical infrastructure. This insight helps stakeholders to design, assess, and communicate the consequences of decisions and changes within and between these business domains.

ArchiMate was created in the period 2002-2004 in the Netherlands by a project team from the Telematica Instituut in cooperation 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 ArchiMate was transferred from the ArchiMate Foundation to The Open Group. It is now managed by The Open Group ArchiMate Forum. In February 2009, The Open Group published ArchiMate 1.0 as an Open Group standard.

This document provides an introduction to ArchiMate 2.0. ArchiMate 2.0 was first published in January 2012, and is a major update to the ArchiMate standard. It is an upwards-compatible evolution from ArchiMate 1.0 adding new features, as well as addressing usage feedback and comments raised. A description of the changes is provided in What's New in ArchiMate 2.0?.

### Reasons for Moving to ArchiMate 2.0

In contrast to the ArchiMate 1.0 standard that has a focus on documenting the actual enterprise architecture, the ArchiMate 2.0 standard supports modeling throughout the TOGAF Architecture Development Method (ADM).

ArchiMate 2.0 consists of:

- The ArchiMate Core, which contains several minor improvements on the 1.0 version.
- The Motivation extension, to model stakeholders, drivers for change, business goals, principles, and requirements. This extension mainly addresses the needs in the early TOGAF phases and the requirements management process.
- The Implementation and Migration extension, to support project portfolio management, gap analysis, and transition and migration planning. This extension mainly addresses the needs in the later phases of the TOGAF ADM cycle.

ArchiMate 2.0 offers a modeling language to create fully integrated models of the organization's enterprise architecture, the motivation for the enterprise architecture, and the programs, projects, and migration paths to implement this enterprise architecture. In this way, full (forward and backward) traceability between the elements in the enterprise architecture, their motivations, and their implementation can be obtained.

## An Introduction to ArchiMate® 2.0

### ArchiMate 2 Certification

New with ArchiMate 2.0 is the introduction of a certification program. This includes certification for people and accreditation for training courses. It also includes certification for tools supporting the ArchiMate standard.

The ArchiMate 2 Certification for People program enables professionals around the globe to demonstrate their knowledge of the ArchiMate standard. ArchiMate 2 Certification for People is achieved through an examination and practical exercises as part of an Accredited ArchiMate 2 Training Course.

The Open Group Accreditation for ArchiMate training courses provides an authoritative and independent assurance of the quality and relevance of the training courses.

The Open Group ArchiMate Tool Certification Program makes certification available to tools supporting ArchiMate. The goal of the Program is to ensure that architecture artifacts created with a certified tool are conformant to the language.

### What does ArchiMate Contain?

ArchiMate Version 2.0 consists of the ArchiMate Core (the core language), aimed at the description of the four architecture domains defined by the TOGAF standard (business, data, application, and technology architectures, as well as their inter-relationships), and extensions to model the motivations for the architecture, and its implementation and migration planning. Figure 1 shows how ArchiMate Core, the Motivation Extension, and the Implementation and Migration Extension relate to the phases of the TOGAF Architecture Development Method (ADM).

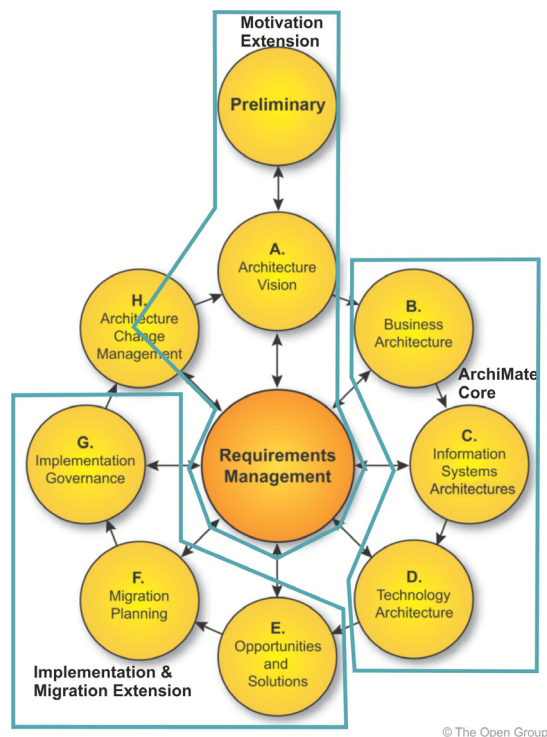


Figure 1: Correspondence between ArchiMate and the TOGAF ADM

## ***An Introduction to ArchiMate® 2.0***

In addition to modeling concepts and relationships, ArchiMate, like TOGAF, defines a set of architecture viewpoints.

### **Structure of the ArchiMate Standard**

The ArchiMate standard is divided into chapters, as summarized in Table 1.

Table 1: Structure of the ArchiMate Standard

<b>Chapter</b>	<b>Description</b>
Chapter 1: Introduction	This chapter provides a brief introduction to the purpose of the ArchiMate standard.
Chapter 2: Language Structure	This chapter presents some general ideas, principles, and assumptions underlying the development of the ArchiMate metamodel and introduces the ArchiMate framework.
Chapter 3: Business Layer	This chapter covers the definition and usage of the business layer concept, together with examples.
Chapter 4: Application Layer	This chapter covers the definition and usage of the application layer concept, together with examples.
Chapter 5: Technology Layer	This chapter covers the definition and usage of the technical infrastructure layer concept, together with examples.
Chapter 6: Cross-Layer Dependencies	This chapter covers the relationships that the ArchiMate language offers to model the link between business, applications, and technology.
Chapter 7: Relationships	This chapter covers the definition of relationship concepts.
Chapter 8: Architecture Viewpoints	This chapter presents and clarifies a set of architecture viewpoints, developed in ArchiMate based on practical experience. All ArchiMate viewpoints are described in detail. For each viewpoint the comprised concepts and relationships, the guidelines for the viewpoint use, and the goal and target group of the viewpoint are specified. Furthermore, each viewpoint description contains example models.
Chapter 9: Language Extension Mechanisms	This chapter handles extending and/or specializing the ArchiMate language for specialized or domain-specific purposes.
Chapter 10: Motivation Extension	This chapter describes an optional language extension with concepts, relationships, and viewpoints for expressing the motivation for an architecture (e.g., stakeholders, concerns, goals, principles, and requirements).
Chapter 11: Implementation and Migration Extension	This chapter describes an optional language extension with concepts, relationships, and viewpoints for expressing the implementation and migration aspects of an architecture (e.g., project, programs, plateaus, and gaps).
Chapter 12: Future Directions	This chapter is an informative chapter that identifies extensions and directions for developments in the next versions of the language.

## What's New in ArchiMate 2.0?

In the ArchiMate Core, a large number of minor improvements have been made compared to ArchiMate 1.0: inconsistencies have been removed, examples have been improved, and additional text has been inserted to clarify certain aspects. Two new concepts have been added, based on needs experienced by practitioners:

- **Location**, to model a conceptual point or extent in space that can be assigned to structural elements and, indirectly, of behavior elements.
- **Infrastructure Function**, to model the internal behavior of a node in the technology layer. This makes the technology layer more consistent with the other two layers.

The Motivation extension defines the following concepts:

- **Stakeholder**: The role of an individual, team, or organization (or classes thereof) that represents their interests in, or concerns relative to, the outcome of the architecture.
- **Driver**: Something that creates, motivates, and fuels the change in an organization.
- **Assessment**: The outcome of some analysis of some driver.
- **Goal**: An end state that a stakeholder intends to achieve.
- **Requirement**: A statement of need that must be realized by a system.
- **Constraint**: A restriction on the way in which a system is realized.
- **Principle**: A normative property of all systems in a given context, or the way in which they are realized.

For motivation elements, a limited set of relationships has been defined, partly re-used from the ArchiMate Core: aggregation (decomposition), realization, and (positive or negative) influence.

The Implementation and Migration extension defines the following concepts (and re-uses the relationships of the Core):

- **Work Package**: A series of actions designed to accomplish a unique goal within a specified time.
- **Deliverable**: A precisely defined outcome of a work package.
- **Plateau**: A relatively stable state of the architecture that exists during a limited period of time.
- **Gap**: An outcome of a gap analysis between two plateaus.



## Further Reading

ArchiMate 2.0 is available for online reading and download from The Open Group Bookstore at [www.opengroup.org/bookstore/catalog/c118.htm](http://www.opengroup.org/bookstore/catalog/c118.htm).

Consult the ArchiMate web site at [www.opengroup.org/archimate](http://www.opengroup.org/archimate) for the latest information on publications and white papers.

## About the Authors

Andrew Josey is Director of Standards within The Open Group. He is currently managing the standards process for The Open Group, and has recently led the standards development projects for TOGAF 9.1, ArchiMate 2.0, IEEE Std 1003.1-2008 (POSIX), and the core specifications of the Single UNIX Specification, Version 4. Previously, he has led the development and operation of many of The Open Group certification development projects, including industry-wide certification programs for the UNIX system, the Linux Standard Base, TOGAF, and IEEE POSIX. He is a member of the IEEE, USENIX, UKUUG, and the Association of Enterprise Architects.

Henry Franken is the managing director of BiZZdesign, and is chair of The Open Group ArchiMate Forum. As chair of The Open Group ArchiMate Forum, Henry led the development of the ArchiMate Version 2 standard. Henry is a speaker at many conferences and has co-authored several international publications and Open Group White Papers. Henry is co-founder of the BPM-Forum. At BiZZdesign, Henry is responsible for research and innovation.

## About The Open Group

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- 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
- Offer a comprehensive set of services to enhance the operational efficiency of consortia
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