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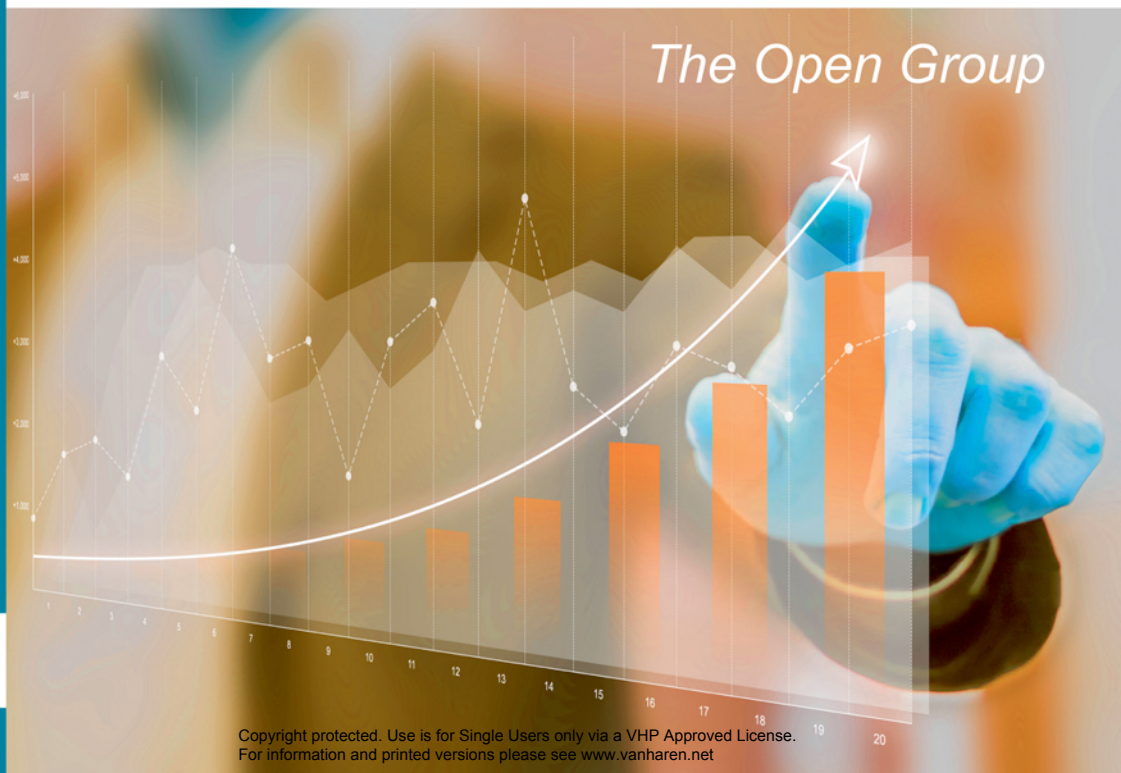

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Preface

The Open Group

The Open Group is a global consortium that enables the achievement of business objectives through technology standards. Our diverse membership of more than 700 organizations includes customers, systems and solutions suppliers, tools vendors, integrators, academics, and consultants across multiple industries.

The mission of The Open Group is to drive the creation of Boundaryless Information Flow™ achieved by:

- Working with customers to capture, understand, and address current and emerging requirements, establish policies, and share best practices
- Working with suppliers, consortia, and standards bodies to develop consensus and facilitate interoperability, to evolve and integrate specifications and open source technologies
- Offering a comprehensive set of services to enhance the operational efficiency of consortia
- Developing and operating the industry's premier certification service and encouraging procurement of certified products

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

The Open Group publishes a wide range of technical documentation, most of which is focused on development of Open Group Standards and Guides, but which also includes white papers, technical studies, certification and testing documentation, and business titles. Full details and a catalog are available at www.opengroup.org/library.

This Document

This document is the ArchiMate® 3.1 Specification, a standard of The Open Group. It has been developed and approved by The Open Group.

This edition of the standard includes a number of corrections, clarifications, and improvements to the previous edition, as well as several additions.

Intended Audience

The intended audience of this standard is threefold:

- All those working to shape and implement complex organization change

  Typical job titles include Enterprise Architecture practitioners, Business Architects, IT architects, application architects, data architects, information architects, process architects, infrastructure architects, software architects, systems architects, solutions architects,

product/service managers, senior and operational management, project leaders, and anyone working within the reference framework defined by an Enterprise Architecture.

- Those who intend to implement the ArchiMate language in a software tool

  They will find a complete and detailed description of the language in this document.

- The academic community, on which we rely for amending and improving the language based on state-of-the-art research in the architecture field

Structure

The structure of this standard is as follows:

- Chapter 1, Introduction, provides the introduction to this standard, including the objectives, a brief overview, conformance requirements, and terminology
- Chapter 2, Definitions, defines the general terms used in this standard
- Chapter 3, Language Structure, describes the structure of the ArchiMate modeling language, including the top-level structure, layering, the ArchiMate Core Framework, and the ArchiMate Full Framework
- Chapter 4, Generic Metamodel, describes the structure and elements of the ArchiMate generic metamodel
- Chapter 5, Relationships, describes the relationships in the language
- Chapter 6, Motivation Elements, describes the concepts for expressing the motivation for an architecture, together with examples
- Chapter 7, Strategy Elements, provides elements for modeling the enterprise at a strategic level, together with examples
- Chapter 8, Business Layer, covers the definition and usage of the Business Layer elements, together with examples
- Chapter 9, Application Layer, covers the definition and usage of the Application Layer elements, together with examples
- Chapter 10, Technology Layer, covers the definition and usage of the Technology Layer elements, together with examples
- Chapter 11, Physical Elements, describes the language elements for modeling the physical world, together with examples
- Chapter 12, Relationships Between Core Layers, covers the relationships between different layers of the language
- Chapter 13, Implementation and Migration Elements, describes the language elements for expressing the implementation and migration aspects of an architecture (e.g., projects, programs, plateaus, and gaps)
- Chapter 14, Stakeholders, Architecture Views, and Viewpoints, describes the ArchiMate viewpoint mechanism

- Chapter 15, Language Customization Mechanisms, describes how to customize the ArchiMate language for specialized or domain-specific purposes
- Appendix A, Summary of Language Notation, is an informative appendix
- Appendix B, Relationships, is a normative appendix detailing the required relationships between elements of the language and the rules to derive these
- Appendix C, Example Viewpoints, presents a set of architecture viewpoints, developed in ArchiMate notation based on practical experience

  All viewpoints are described in detail. The appendix specifies the elements, relationships, usage guidelines, goals, and target groups for each viewpoint.
- Appendix D, Relationship to Other Standards, Specifications, and Guidance Documents, describes the relationships of the ArchiMate language to other standards and specifications, including the TOGAF® framework, the BIZBOK® Guide, BPMN™, UML®, and BMM™
- Appendix E, Changes from Version 2.1 to Version 3.1, is an informative appendix outlining the changes in the standard between Version 2.1 and Version 3.1

Trademarks

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- Centrum voor Wiskunde en Informatica
- Dutch Tax and Customs Administration
- Leiden Institute of Advanced Computer Science
- Novay
- Ordina
- Radboud Universiteit Nijmegen
- Stichting Pensioenfonds ABP

Referenced Documents

The following documents are referenced in this standard. These references are informative.

(Please note that the links below are good at the time of writing but cannot be guaranteed for the future.)

[1] Enterprise Architecture at Work: Modeling, Communication, and Analysis, Third Edition, M.M. Lankhorst et al., Springer, 2013.

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[15] Business Motivation Model™ (BMM™), Version 1.1 (formal/2010-05-01), Object Management Group, 2010.

[16] Using the ArchiMate® Language with UML®, White Paper (W134), September 2013, published by The Open Group; refer to: www.opengroup.org/library/w134.

[17] TOGAF® Series Guide: Value Streams (G178), October 2017, published by The Open Group: refer to: www.opengroup.org/library/g178.

[18] Business Architecture Guild. A Guide to the Business Architecture Body of Knowledge® (BIZBOK® Guide), Version 7.0, 2018; refer to: www.businessarchitectureguild.org.

[19] TOGAF® Series Guide: The TOGAF® Technical Reference Model (TRM) (G175), September 2017, published by The Open Group: refer to: www.opengroup.org/library/g175.

[20] ArchiMate® Model Exchange File Format for the ArchiMate Modeling Language, Version 3.0, The Open Group Standard (C174), May 2017, published by The Open Group; refer to: www.opengroup.org/library/c174.

1 Introduction

1.1 Objective

This standard is the specification of the ArchiMate Enterprise Architecture modeling language, a visual language with a set of default iconography for describing, analyzing, and communicating many concerns of Enterprise Architectures as they change over time. The standard provides a set of entities and relationships with their corresponding iconography for the representation of Architecture Descriptions. The ArchiMate ecosystem also supports an exchange format in XML which allows model and diagram exchange between tools [20].

1.2 Overview

An Enterprise Architecture is typically developed because key people have concerns that need to be addressed by the business and IT systems within an organization. Such people are commonly referred to as the "stakeholders" of the Enterprise Architecture. The role of the architect is to address these concerns by identifying and refining the motivation and strategy expressed by stakeholders, developing an architecture, and creating views of the architecture that show how it addresses and balances stakeholder concerns. Without an Enterprise Architecture, it is unlikely that all concerns and requirements are considered and addressed.

The ArchiMate Enterprise Architecture modeling language provides a uniform representation for diagrams that describe Enterprise Architectures. It includes concepts for specifying inter-related architectures, specific viewpoints for selected stakeholders, and language customization mechanisms. It offers an integrated architectural approach that describes and visualizes different architecture domains and their underlying relations and dependencies. Its language framework provides a structuring mechanism for architecture domains, layers, and aspects. It distinguishes between the model elements and their notation, to allow for varied, stakeholder-oriented depictions of architecture information. The language uses service-orientation to distinguish and relate the Business, Application, and Technology Layers of Enterprise Architectures, and uses realization relationships to relate concrete elements to more abstract elements across these layers.

1.3 Conformance

The ArchiMate language may be implemented in software used for Enterprise Architecture modeling. For the purposes of this standard, the conformance requirements for implementations of the language given in this section apply. A conforming implementation:

1. Shall support the language structure, generic metamodel, relationships, layers, cross-layer dependencies, and other elements as specified in Chapters 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13
2. Shall support the standard iconography as specified in Chapters 4, 5, 6, 7, 8, 9, 10, 11, and 13, and summarized in Appendix A

3. Shall support the viewpoint mechanism as specified in Chapter 14
4. Shall support the language customization mechanisms as specified in Chapter 15 in an implementation-defined manner
5. Shall support the relationships between elements as specified in Appendix B
6. May support the example viewpoints described in Appendix C

Readers are advised to check The Open Group website for additional conformance and certification requirements referencing this standard.

1.4 Normative References

None.

1.5 Terminology

For the purposes of this standard, the following terminology definitions apply:

Can — Describes a possible feature or behavior available to the user.

Deprecated — Items identified as deprecated may be removed in the next version of this standard.

Implementation-defined — Describes a value or behavior that is not defined by this standard but is selected by an implementor of a software tool. The value or behavior may vary among implementations that conform to this standard. A user should not rely on the existence of the value or behavior. The implementor shall document such a value or behavior so that it can be used correctly by a user.

May — Describes a feature or behavior that is optional. To avoid ambiguity, the opposite of "may" is expressed as "need not", instead of "may not".

Obsolescent — Certain features are obsolescent, which means that they may be considered for withdrawal in future versions of this standard. They are retained because of their widespread use, but their use is discouraged.

Shall — Describes a feature or behavior that is a requirement. To avoid ambiguity, do not use "must" as an alternative to "shall".

Shall not — Describes a feature or behavior that is an absolute prohibition.

Should — Describes a feature or behavior that is recommended but not required.

Will — Same meaning as "shall"; "shall" is the preferred term.

1.6 Future Directions

None.

2 Definitions

For the purposes of this standard, the following terms and definitions apply. The TOGAF® framework [4] should be referenced for Enterprise Architecture-related terms not defined in this chapter. Merriam-Webster's Collegiate Dictionary (11th Edition) should be referenced for all other terms not defined in this chapter.

Any conflict between definitions described here and the TOGAF framework is unintentional. If the definition of a term is specific to the ArchiMate modeling language, and a general definition is defined by the TOGAF framework, then this is noted in the definition.

2.1 ArchiMate Core Framework

A reference structure used to classify elements of the ArchiMate core language. It consists of three layers and three aspects.

Note: The ArchiMate Core Framework is defined in detail in Section 3.4.

2.2 ArchiMate Core Language

The central part of the ArchiMate language that defines the concepts to model Enterprise Architectures. It includes concepts from three layers: Business, Application, and Technology (including Physical).

2.3 Architecture View

A representation of a system from the perspective of a related set of concerns.

Note: In some sections of this standard, the term "view" is used as a synonym for "architecture view".

2.4 Architecture Viewpoint

A specification of the conventions for a particular kind of architecture view.

Note: In some sections of this standard, the term "viewpoint" is used as a synonym for "architecture viewpoint".

2.5 Aspect

Classification of elements based on layer-independent characteristics related to the concerns of different stakeholders. Used for positioning elements in the ArchiMate metamodel. See also Section 2.9.