

The TOGAF® Standard

10th Edition

ADM Practitioners' Guide



The
TOGAF®
Standard — *10th Edition*

The TOGAF® Standard, 10th Edition
ADM Practitioners' Guide

The Open Group Publications available from Van Haren Publishing

The TOGAF® Standard, 10th Edition:

Introduction and Core Concepts
Architecture Development Method
Content, Capability, and Governance
Leader's Guide
ADM Practitioners' Guide
Business Architecture
Enterprise Agility and Digital Transformation
A Pocket Guide

The TOGAF Series:

The TOGAF® Standard, Version 9.2
The TOGAF® Standard, Version 9.2 – A Pocket Guide
TOGAF® 9 Foundation Study Guide, 4th Edition
TOGAF® 9 Certified Study Guide, 4th Edition
TOGAF® Business Architecture Level 1 Study Guide

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® 3.1 Specification – A Pocket Guide
ArchiMate® 3.1 Specification
The Digital Practitioner Pocket Guide
The Digital Practitioner Foundation Study Guide
Open Agile Architecture™ – A Standard of The Open Group

The Open Group Press:

The Turning Point: A Novel about Agile Architects Building a Digital Foundation
Managing Digital

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.

The TOGAF® Standard, 10th Edition

ADM Practitioners' Guide

The
TOGAF®
Standard — 10th Edition



Title: The TOGAF® Standard, 10th Edition — ADM Practitioners' Guide
Series: TOGAF Series Guide
A Publication of: The Open Group

Publisher: Van Haren Publishing, 's-Hertogenbosch - NL, www.vanharen.net
ISBN Hardcopy: 978 94 018 0871 2
ISBN eBook: 978 94 018 0872 9
ISBN ePub: 978 94 018 0873 6
Edition: First edition, first impression, April 2022

Layout and Cover Design: The Open Group

Copyright: © 2018-2022 The Open Group. All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior permission of the copyright owner. Any use of this publication for commercial purposes is subject to the terms of the Annual Commercial License relating to it. For further information, see www.opengroup.org/legal/licensing.

The TOGAF® Standard, 10th Edition — ADM Practitioners' Guide

Document number: G186

Published by The Open Group, April 2022.

This document supersedes the previous version published in April 2018.

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

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

or by electronic mail to: ogspecs@opengroup.org

Contents

Part 1: Introduction.....	1
1 Introduction.....	3
1.1 Overview.....	3
1.2 How to Use this Guide with the TOGAF Framework.....	5
1.3 Referenced Techniques.....	6
2 Definitions.....	7
2.1 Enterprise.....	7
2.2 Enterprise Architecture (EA).....	7
2.3 Practitioner.....	7
Part 2: Guidance on Enterprise Architecture.....	9
3 The Purpose of Enterprise Architecture.....	11
3.1 Why is it Important to Develop an Enterprise Architecture?.....	11
3.2 What is an Enterprise Architecture?.....	12
3.2.1 Introduction to the EA Landscape.....	13
3.2.2 Introduction to Purpose.....	16
3.2.3 What an Enterprise Architecture Looks Like.....	18
3.3 How to Use an Enterprise Architecture?.....	20
3.3.1 Communicating with Stakeholders (Concern and View).....	20
3.3.2 Communicating with Implementers (Gap, Specification, and Control).....	22
3.3.3 Communicating with Decision-Makers (Other Useful Things).....	23
3.4 Conclusion.....	25
4 Business Cycle.....	27
4.1 Budget Cycle.....	27
4.1.1 Budget Planning and Architecture to Support Strategy.....	28
4.1.2 Budget Preparation and Architecture to Support Portfolio.....	29
4.1.3 Budget Allocation and Architecture to Support Project.....	29
4.1.4 Budget Control and Architecture to Support Solution Delivery.....	30
4.2 Business Cycle Conclusion.....	31
5 Coordination Across the EA Landscape and EA Team.....	33
5.1 What to Expect in a Well-Run Architecture Repository & EA Landscape.....	33

5.1.1	What to Expect in a Well-Run EA Repository: EA Landscape.....	37
5.1.2	What to Expect in a Well-Run EA Repository: Reference Library.....	39
5.1.3	What to Expect in a Well-Run EA Repository: Standards Library	41
5.1.4	What to Expect in a Well-Run EA Repository: Architecture Requirements Repository	41
5.1.5	What to Expect in a Well-Run EA Repository: Compliance Assessments	43
5.2	How is ADM Iteration Realized in Practice?	45
5.2.1	Phase A: The Starting Point	46
5.2.2	Essential ADM Output and Knowledge.....	47
5.2.3	Iteration	48
5.2.4	ADM Plan for Architecture to Support Strategy	50
5.2.5	ADM Plan for Architecture to Support Portfolio	51
5.2.6	ADM Plan for Architecture to Support Project.....	52
5.2.7	ADM Plan for Architecture to Support Solution Delivery.....	52
5.2.8	Iteration Conclusion	56
5.3	Operating in the Context of Superior Architecture.....	56
5.4	Managing Multiple States (Candidate, Current, Transition, and Target).....	56
5.5	Where are ABBs?	57
Part 3: Guidance on Developing the Enterprise Architecture		59
6	Approach to the ADM.....	61
6.1	Key Activity.....	61
6.1.1	Stakeholder Engagement and Requirements Management	61
6.1.2	Trade-Off.....	62
6.2	Trade-Off Decisions	62
6.3	Phases B, C, and D – Developing the Architecture	63
6.3.1	Select Reference Models, Viewpoints, and Tools.....	63
6.3.2	Develop Target, Baseline, and Gap.....	63
6.3.3	Identify the Work to Reach the Target Considering Cost and Value	64
6.3.4	Resolving Impacts	64
6.3.5	Approval.....	64
6.3.6	Minimum Needed and Look in the EA Repository	65
6.4	ADM Conclusion.....	65
7	Walk Through Architecture to Support Strategy	67
7.1	Introduction.....	67
7.2	Understanding Context	69
7.3	Assess the Enterprise	70
7.4	Define an Approach to Target State.....	71
7.4.1	Confirm Enterprise Change Attributes.....	72
7.4.2	Develop Value Proposition	72

7.4.3	Identify and Sequence Work Packages	72
7.5	Finalize Architecture Vision and Target Architecture	73
7.6	Conclusion	73
8	Walk Through Architecture to Support Portfolio	75
8.1	Introduction	75
8.2	Group Work Packages to Themes	79
8.3	Balance Opportunity and Viability	81
8.4	Run Up to Budget	82
8.4.1	Internal Engagement	82
8.4.2	Has the Target been Reached?	83
8.5	Drive Confidence of Delivery	83
8.6	Request for Architecture Work Originating from a Random Idea from the Wild	84
8.7	Conclusion	84
9	Walk Through Architecture to Support Project	87
9.1	Ascertain Dependencies	89
9.1.1	Project is not a Magical Place to Swap Out Stakeholders	89
9.1.2	Stakeholders <i>versus</i> Key Players	90
9.1.3	Viewpoints and Requirements	90
9.1.4	Go Talk to the “Neighbors”	91
9.1.5	Delivery and Acceptance Ability Assessment	91
9.2	Balance Options and Suppliers	91
9.2.1	Performing Trade-Off	92
9.2.2	Managing the Current Approach towards Implementing the Change	92
9.3	Finalize Scope and Budget	93
9.4	Prepare for Solution Delivery Governance	93
9.5	Project Request for Architecture Work Originating from the Wild	94
10	Walk Through Architecture to Support Solution Delivery	95
10.1	Introduction	95
10.1.1	Scoping	97
10.1.2	Function Purity and Solution Innovation	97
10.1.3	Handover and Closure	97
10.2	Aligning Implementers	97
10.3	Guiding Delivery	98
10.4	Realizing the Solution	100
10.5	Project Request for Architecture Work Originating from the Wild	100
10.6	Conclusion	100
	Part 4: Guidance on Using an Enterprise Architecture	101
11	Jumping to Phase G	103
11.1	Failure Pattern: Missing the Purpose	103
11.2	Failure Pattern: Missing the Business Cycle	104

11.2.1	Architecture after Decision	105
11.3	Failure Pattern: Not Doing Architecture.....	105
11.4	Managing Innovation, Creativity, and Circumstance	106
12	Special Cases.....	109
12.1	Architecture in an Agile Enterprise	109
12.2	Architecture for a Domain	109
12.3	Architecture in Response to an Incident.....	109
Part 5: Guidance on Maintaining an Enterprise Architecture.....		111
13	Transition Architecture: Managing Complex Roadmaps.....	113
13.1	Roadmap Grouping.....	113
13.2	Comparing Architectures.....	114
13.3	General Guidance	115
14	Phase H (Coordination and Business Cycle in Action).....	117
15	Architecture Governance	121
15.1	What is Governed and Why?.....	121
15.1.1	Target Architecture.....	121
15.1.2	Implementation Projects and Other Change.....	122
15.2	Roles, Duties, and Decision Rights.....	122
15.2.1	Target Checklist	123
15.2.2	Implementation and Other Change Checklist.....	125
15.2.3	Long-Term Compliance Reporting	127
15.3	Conclusion	127
Part 6: Appendices.....		129
A	Partial List of Modeling Approaches	131
B	Stakeholder/Concern Matrix	133
B.1	Common Stakeholder Classes	133
B.2	Common Concern Classes.....	134
C	Sample Viewpoint Library.....	136
D	Architecture Contract Template.....	137
E	Another ADM Journey: Leader’s Guide Capability-Based Planning Journey	139
F	Evolving List of Domain Architectures	142

Preface

The Open Group

The Open Group is a global consortium that enables the achievement of business objectives through technology standards. With more than 870 member organizations, we have a diverse membership that spans all sectors of the technology community – customers, systems and solutions suppliers, tool vendors, integrators and consultants, as well as academics and researchers.

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 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.

The TOGAF® Standard, a Standard of The Open Group

The TOGAF Standard is a proven enterprise methodology and framework used by the world's leading organizations to improve business efficiency.

This Document

This document is a TOGAF® Series Guide: A Practitioners' Approach to Developing Enterprise Architecture Following the TOGAF® ADM. It has been developed and approved by The Open Group.

About the TOGAF® Series Guides

The TOGAF® Series Guides contain guidance on how to use the TOGAF Standard and how to adapt it to fulfill specific needs.

The TOGAF® Series Guides are expected to be the most rapidly developing part of the TOGAF Standard and are positioned as the guidance part of the standard. While the TOGAF Fundamental Content is expected to be long-lived and stable, guidance on the use of the TOGAF Standard can be industry, architectural style, purpose, and problem-specific. For example, the stakeholders, concerns, views, and supporting models required to support the transformation of an extended enterprise may be significantly different than those used to support the transition of an in-house IT environment to the cloud; both will use the Architecture Development Method (ADM), start with an Architecture Vision, and develop a Target Architecture on the way to an Implementation and Migration Plan. The TOGAF Fundamental Content remains the essential scaffolding across industry, domain, and style.

Trademarks

ArchiMate, DirecNet, Making Standards Work, Open O logo, Open O and Check Certification logo, Platform 3.0, The Open Group, TOGAF, UNIX, UNIXWARE, and the Open Brand X logo are registered trademarks and Boundaryless Information Flow, Build with Integrity Buy with Confidence, Commercial Aviation Reference Architecture, Dependability Through Assuredness, Digital Practitioner Body of Knowledge, DPBoK, EMMM, FACE, the FACE logo, FHIM Profile Builder, the FHIM logo, FPB, Future Airborne Capability Environment, IT4IT, the IT4IT logo, O-AA, O-DEF, O-HERA, O-PAS, Open Agile Architecture, Open FAIR, Open Footprint, Open Process Automation, Open Subsurface Data Universe, Open Trusted Technology Provider, OSDU, Sensor Integration Simplified, SOSA, and the SOSA logo are trademarks of The Open Group.

UML is a registered trademark and BMM, BPMN, Business Motivation Model, Business Process Modeling Notation, and Unified Modeling Language are trademarks of the Object Management Group, Inc. in the United States and/or other countries.

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

(Please note affiliations were current at the time of approval.)

Dave Hornford, Conexiam

Dave Hornford is Conexiam's Managing Partner and leads Conexiam's Boston practice. Dave serves on the board of trustees of The SABSA® Institute. He is the former Chair of The Open Group Architecture Forum and was a key contributor to the TOGAF® 9 standard. Based in North America, he works in a variety of industries including financial services, oil and gas, technology, and capital-intensive industry. Typically, he helps clients develop and execute a roadmap to transform.

Nathan Hornford, Conexiam

Nathan Hornford is a management consultant and ABACUS Certified Architect and Designer. Nathan is based in Canada. Nathan works with all of Conexiam's practices to provide consistent architecture methods and tools that address the client's change needs.

Sriram Sabesan, Conexiam

Sriram Sabesan is a Certified Distinguished Architect, certified by The Open Group. Based in North America, he specializes in technology, manufacturing, telecommunication, and financial services industries. Sriram helps clients to develop and execute strategies in response to digital or economic disruptions. He is actively involved in development of different Open Group standards.

Sadie Scotch, Conexiam

Sadie Scotch is an Enterprise Architect. Sadie is based in the US and is a member of Conexiam's Boston practice. Sadie specializes in governance, option analysis, and roadmap development. She helps clients to develop and govern change programs to address current Enterprise priorities.

Ken Street, Conexiam

Ken Street is an Enterprise Architect. Based in Canada, he leads Conexiam's Governance and IT4IT™ initiatives. He is the current Vice-Chair of The Open Group Big Data project and is active within The Open Group IT4IT™ and Open Platform 3.0™ Forums. He works primarily in financial services and oil and gas, helping clients to develop their EA Capability, improve their IT organization, and execute architecture-driven change programs.

Samantha Toder, Conexiam

Samantha Toder is a management consultant and ABACUS Certified Architect and Designer. Sam is based in the US. She helps clients to develop in-house EA Capability and execute complex transformation programs in the financial services industry.

Acknowledgements

The Open Group gratefully acknowledges the authors and also past and present members of The Open Group Architecture Forum for their contribution in the development of this Guide.

Referenced Documents

The following documents are referenced in this TOGAF® Series Guide:

- ArchiMate® 3.1 Specification, a standard of The Open Group (C197), published by The Open Group, November 2019; refer to: www.opengroup.org/library/c197
- Architecture Project Management: How to Manage an Architecture Project using the TOGAF® Framework and Mainstream Project Management Methods, White Paper (W16B), published by The Open Group, August 2016; refer to: www.opengroup.org/library/w16b
- John Carver: Reinventing your Board: A Step-by-Step White Paper to Implementing Policy Governance, Jossey-Bass, 2006
- Jeff Conklin: Wicked Problems & Social Complexity within Dialog Mapping: Building Shared Understanding of Wicked Problems, Wiley, 2005
- Donald C. Hambrick, James W. Fredrickson: Are you Sure you have a Strategy?, The Academy of Management Executive, 15, 4; ABI/INFORM Global, November 2001
- ISO/IEC 38500:2015: Information Technology – Governance of IT for the Organization
- ISO/IEC/IEEE 42010:2011: Systems and Software Engineering – Architecture Description
- Robert S. Kaplan, David P. Norton: The Balanced Scorecard – Measures that Drive Performance, Harvard Business Review, 70(1), Jan-Feb 1992
- Philippe Kruchten: Architectural Blueprints – The “4+1” View Model of Software Architecture, November 1995; refer to: www.cs.ubc.ca/~gregor/teaching/papers/4+1view-architecture.pdf
- Henry Mintzberg, Bruce Ahlstrand, Joseph Lampel: Strategy Bites Back: It is Far More, and Less, than You Ever Imagined, April 2005
- The TOGAF® Standard, 10th Edition, a standard of The Open Group (C220), published by The Open Group, April 2022; refer to: www.opengroup.org/library/c220
- TOGAF® Series Guide: Architecture Project Management (G188), published by The Open Group, April 2022; refer to: www.opengroup.org/library/g188
- TOGAF® Series Guide: Integrating Risk & Security within a TOGAF® Enterprise Architecture, The Open Group Guide (G152), published by The Open Group, April 2022; refer to: www.opengroup.org/library/g152
- World-Class Enterprise Architecture, White Paper (W102), published by The Open Group, April 2010; refer to: www.opengroup.org/library/w102

Suggested Reading

- Cuypers Ataya: Enterprise Value: Governance of IT Investments, The Business Case, IT Governance Institute, 2006
- Peter Swartz: The Art of the Long View: Planning for the Future in an Uncertain World, Currency Doubleday, 1996
- Kees van der Heijden: Scenarios: The Art of Strategic Conversation, 2nd Edition, Wiley, 2005

Part 1: Introduction

1 Introduction

1.1 Overview

This Guide provides guidance on using the TOGAF framework to develop, maintain, and use an Enterprise Architecture (EA). This Guide is a companion to the TOGAF framework and is intended to bring the concepts and generic constructs in the TOGAF framework to life. This Guide puts forward an approach to develop, maintain, and use an EA that aligns to a set of requirements and expectations of the stakeholders and enables predictable value creation.

It is intended to take the TOGAF concepts and show how each Practitioner can use the same concept to (a) deliver useful EA for their Enterprise and (b) deliver improvements to EA Capability. This point is important: use the same concept. Not the same technique, not the same template, not the same process. The same concept. For example, evidence from prevalent practice shows that there is not a single EA team that didn't use a repository, whether the repository is a file folder or a fully-fledged installation of modeling and analytic software. If you are struggling with this point, stop and think about any preconceptions you are carrying into the conversation. For example, while reading, if you have a reaction similar to “but a real repository includes ...”, ask yourself if this is universally true. The concept of a repository is universal; the implementation varies.

The essential scaffolding of the TOGAF framework is the concepts. Everything else in the TOGAF framework is either an example or a starter set to get you moving. If you do not like the example, then you can take advantage of the modular structure of the TOGAF framework and substitute it. Leading Practitioners and users often take this approach. This Guide is about advising the Practitioner in making the universal structure of the TOGAF framework work.

This Guide is written for the Practitioner, the person who is tasked to develop, maintain, and use an EA. Choice of the term Practitioner is deliberate, reflecting the role, rather than one of the myriad job titles in an Enterprise the Practitioner may have.

This Guide is structured to provide the context, content, and rationale behind choices and steps that an EA Practitioner can consult at any point. When effectively used, a thoughtfully developed EA optimizes Boundaryless Information Flow™ within and between Enterprises based on open standards and global interoperability.

This Guide is explicitly about developing, maintaining, and, most importantly, using an EA. The range of potential Enterprises and purposes require a guide of this length to define the direction.¹ Following the approach suggested in the World-Class Enterprise Architecture White Paper (see Referenced Documents), the TOGAF Standard is routinely applied to develop architectures supporting strategy development, portfolio management, project planning and execution, and solution development. Collective experiences reflect that there is no one right EA deliverable, model, view, work product, or technique. Rather, the correct approach is specific to the purpose

¹ See the definition of Enterprise in Chapter 2. The important concept to keep in mind is that the term “Enterprise” is used as a boundary of analysis.

of the architecture development initiative. Anyone who suggests there is a single correct approach, model, view, work product, or technique is not providing the right advice for you to succeed. This Guide will help you, the Practitioner, to identify the approach that is appropriate to any particular purpose.

Developing, maintaining, and using an EA requires deep interaction with several specialized functions such as strategy development, budgeting, benefits realization, portfolio management, program & project management, and operational units. This Guide will:

- Introduce key topics of concern
- Describe the TOGAF Standard concepts related to the topic
- Show how it is related to developing, maintaining, and using an EA
- Discuss what the Practitioner needs to know
- Describe what the Practitioner should do with this knowledge

Even though this Guide has a logical structure, it is not simple task list. The depth and detail of the steps needed to be taken by the Practitioner are specific to the purpose and are iterative. The only variable is time spent for every step. As with all change work, listing what you need to know is not the same as defining the level of detail in the documentation.

Key decisions are made in an Enterprise following a business cycle. An architecture should inform and enable decision-making. Just align the delivery of architecture to the Enterprise's business cycle and the purpose of the architecture development initiative. The value is delivered when the architecture is used. It is plain and simple.

This Guide is divided into six parts, as follows:

Part 1: Introduction

This part contains this introductory part and a set of definitions.

Part 2: Guidance on Enterprise Architecture

This part addresses:

- What an Enterprise Architecture is and what it is used for
- Coordinating EA development across the EA Landscape
- Coordinating EA development with the business cycle

Part 3: Guidance on Developing an Enterprise Architecture

This part addresses:

- Using the ADM
- Developing an Enterprise Architecture to Support Strategy
- Developing an Enterprise Architecture to Support Portfolio